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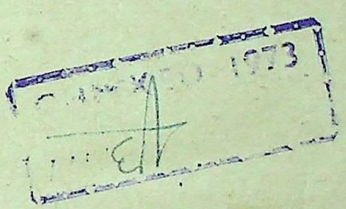

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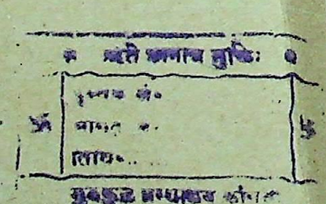

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The first Branch runs in the Interstice between the two last Toes; and being divided, goes to the corresponding lateral Parts of both. The other Branch goes to the inferior, external, lateral Part of the little Toe.

During this Course, the external Nervus Plantaris supplies the Aponeurosis Plantaris and the Ligaments and Integuments, in the same manner as the rest.

The small sciatic Branch, or Sciaticus externus, called, likewise, Sciatico-peronæus, runs outward over the Head of the Fibula, and is divided into several Branches, of which three or four are considerable, one posterior, one superior and anterior, one internal and anterior, and one external and anterior.

The posterior Branch runs down between the Integuments and the Fibula, as low as the outer Ankle, and terminates in the Outside of the Foot, having detached several cutaneous Filaments in its Passage.

About the Middle of the Fibula, it sends out a small Branch, which joins another Branch, from the large or tibial Branch of the Plexus ischiadicus, and is distributed together with it, after the manner to the sciatic Nerve; and is distributed together with it, before observed.

The posterior Branch of the small sciatic Branch, ments go, likewise, reached the outer Ankle, runs up a little Way on the Foot, form a plexus wards the Root of the fourth Toe, where it divides into mesenteric smaller Ramifications.

One of these Ramifications divides into two others, for the Mesentericum responding lateral Parts of the third and fourth Toes; the ents of the goes to the external, lateral Part of the fourth Toe, with Ganglion. joins a Branch of the external Nervus Plantaris, which is from its tion of the buted to the last two Toes.

After having sent off the posterior Branch, the small eric Artery Branch runs outward over the Head of the Fibula; and, interwoven given some Filaments to the Gastrocnemii and Soleus, it surrounds across the upper Extremity of the Peronæus Posticus, from the Interior hind forward.

Afterward it passes between the Bone and the Muscle last named, and sends several Filaments forward to the neighbouring Parts; and then produces three or four Branches already mentioned, which are distributed in the following Manner.

The superior and anterior Branch runs a little transversely between the Head of the Fibula, and the upper Extremity of the Extensor Digitorum longus; and, having given Filaments to this Muscle, and to the Extensor Pollicis longus, it is distributed to the upper Extremity of the Tibialis Anticus, giving Filaments to the neighbouring Integuments.

The inner anterior Branch runs down on the fore Side of the interosseous Ligament, between the Extensor Pollicis Longus, Tibialis Anticus, giving Filaments to each of these Muscles; afterwards under the annular Ligament of the Extensor Pollicis, behind the Extensor Pollicis, to the upper Part of the Extensor Digitorum Brevis. In its Passage Filaments to that Muscle, and to the first superficial

Having communicated, by a Filament, with the external anterior Branch, it is spent on the corresponding lateral Parts of the first two Toes.

The external anterior Branch of the small sciatic Branch runs down betwixt the Fibula and the Peronæus Longus, and then between the Peronæus Medius, and Extensor Digitorum longus; to which, and to the neighbouring Ligaments, it gives Filaments all the Way to the upper Side of the Foot.

In this Course, having run along about two third Parts of the Leg; and having reached the great, annular Ligament, it runs forward, and toward the Integuments, being there divided into two Portions; one of which goes to the great Toe; the other to the last Toes.

The first Portion of this Branch gives a Nerve to the internal, lateral Part of the great Toe, and is afterwards distributed to the neighbouring Integuments, on the convex Side of the Foot; and, lastly, to the corresponding lateral Parts of the great and second Toes.

The other Portion, which goes to the last Toes, is, first of all, joined to a Filament of the first Portion; and afterwards to another, from the internal anterior Branch.

After this Union, they are presently divided, and distributed to the last two Toes, and to the Integuments. One Filament, arising from this Union, joins a Branch belonging to the great sciatic Branch.

Nervi Sympathetici maximi, vulgo Intercostales.

It is the common Opinion, that each of the great sympathetic Nerves begins by a Filament from the sixth Pair, belonging to the Medulla Oblongata, and by two Filaments from the fifth Pair; and that these Filaments, at first, compose a very small Nerve, which runs backward to go out of the Cranium, through the bony Canal of the Apophysis Petrosa, and increases gradually in its Course downward.

But, having examined attentively the pretended Origin of these Filaments, they seem to me, rather to ascend from the I the Cranium, with the internal Carotid; and to run from hind forward, to join the fifth and sixth Pairs; and I find Angle formed by this Union to be turned forward; and, wit al, so very acute, that these Nerves cannot be looked upon same thing is to Trunk, the first Recurrents.

As I have ever found this Angle disposed the same Way, i all the Subjects which I have dissected; I have always been o Accumulation Opinion, that what had been taken for the original Root, and descending Stem, of the Nerve called Intercostalis, was really *in Homi* an ascending Branch thereof; which, as it enters the Cranium, *ffus Ephe* is divided into Filaments, by which it becomes closely united with the two Pairs already named. HATA. N.

The Observation, communicated to the Royal Academy, by Dr. *Petit*, concerning the different Size of the Portions of the sixth Pair, appears to be indisputable, he having found this Nerve larger on the fore Part, between the Filament of the opposed Intercostal, and the Orbit, than on the back Part, between the same Filament, and the Origin of the sixth Pair; and Experiments, concerning the real Co-operation of this Nerve farther confirm his Observation.

These Nerves, as I have said, are commonly called Intercostal, though this Name does not agree, either with their Situation, or with the Extent of their Course. Therefore, I believe Opinion of Sympathetici Majores, or Maximi, will be Ass better, because of their frequent Communications with Pairs, which were Peculiar to these principal Nerves of the Body.

and Verbal of these two Nerves, in general, is on the nice whole twenty-four Vertebræ, immediate Bodies of the transverse Apophyses; and, likewise parts of the Inside of the Os Sacrum.

Though this large Extent, they appear like two and, in a manner, intersected, at different D great Number of Gangliform Tubercles; by mea they communicate backward, with the Ganglions ward, and their particular Ramifications.

These Ganglions differ in Size, Figure. An Epithet for a Ligament and may be looked upon as so partly membranous. sperse through this great Pair of Nerves. as so many little Brains.

We shall consider these Gs. These F we did the Vertebral Nerves, A salia, Lumbaria, and Sacra, with the Number contained in each Class

The first Cervical Ganglion is the but not in Consistence, represent the Figure of an Olive, and situated Root of the transverse Apophyses of immediately behind the Pharynx.

It produces, from its superior Extre which runs up with the internal C Side, into the bony Canal of the

At its Entrance into this Canal, it forms Filaments, which second, those

both they, and their Trunk, more solid than the former. The is immediately afterwards divided into Filaments. One Portion is united to the Nerve of the sixth Pair; the rest Pair, as has been already said. The Filament Fourth, I know the sixth Pair, is commonly single; but I have often seen it double, or divided all the Way to the Union.

Immediately below the inferior Orifice of this bony Canal in the Apophysis Petrosa, and thence all the Way down to the occipital Condyle, on the same Side, or to the Top of the Ganglion, the small ascending Trunk is a little stronger, and altogether so soft, as it is in the Canal.

The first Cervical Ganglion is of a middle Consistence, adheres very closely to the Trunk of the eighth Pair, or Nervus Sympatheticus Medius, by numerous, small, ing Filaments.

It likewise communicates on both Sides, by short Branches with the ninth and tenth Pairs of Nerves, of the Medulla Oblongata; with the first, second, and sometimes the third Cervical Pairs; and also with that Branch, which the eighth Pair sends to the Pharynx.

In its Passage, it gives Filaments to the Pharynx, to the neighbouring Muscles, and to the Carotid Artery, from which it receives very fine capillary Vessels, which are plainly visible

Inflamma-

V. 3
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nations; and seem to form a curious Net-work, with nervous Filaments.

Laſtly, it ſends downward a very long nervous Filament, which runs in the Thorax, and joins other Filaments, of which hereafter.

This Ganglion terminates below, in a ſmall Rope or Trunk, which runs down on the anterior vertebral Muſcles of the Neck, in the ſame Courſe with the eighth Pair, and the Carotid Artery of the ſame Side; to both which it is connected by membranous Expanſions, as by a kind of Vagina, all the Way to the laſt Vertebra of the Neck. In this Courſe, the deſcending Trunk communicates on the outer, or back Side, with the third, fourth, fifth, and often with the ſixth Cervical Pairs, by ſhort Branches, more or leſs oblique; by which it ſeems to be gradually increaſed in Size.

At the Places of theſe Communications we obſerve ſmall Ganglions in this Trunk; which, however, in ſome Subjects, are ſcarcely perceptible; and it is very difficult to determine by which Extremity theſe Branches ariſe, and by which they are inſerted.

On the inner, or fore Side, this Trunk gives off two Filaments, which run obliquely downward, toward the Arteria, into the Thorax. Another Filament goes to the firſt Cervical Ganglion, which paſſes on the fore Carotid Artery, and joins a Filament of the eighth which it forms a ſmall diſtinct Rope.

This ſmall Rope runs before the Subclavian V joins another Filament, which ariſes bel tery, and runs down in the Manner hereaf ſending off Filaments in its Paſſage to the hbouring Parts.

nk, having reached as far as the laſt Vertebra a ſmall Ganglion, called Ganglion Cervicale is pretty ſolid, and ſometimes double. terwards, the Trunk turns from within outward, the firſt Rib, behind the Subclavian Artretty large Ganglion, which is the firſt alia.

ions are very near each other, hort Portion of the Trunk, orms a kind of ſmall Plexus,

weſt Cervical Ganglion, a ſmall runs before the Subclavian Arwnward, and ends in the Top of the ing, by this Courſe, a ſort of nerthe Subclavian Artery.

mmunicate by ſhort Branches, more ighbouring Vertebral Nerves, that is, Cervical Pairs; and ſometimes with ending Filament. The firſt Dorſal kewiſe, with the firſt Dorſal Pair of

imes the firſt recurrent Ganglion, a Filament is detachTrunk of the Axillary from the eighth he Plexus Pulmo-

the Trunk, which Ganglions, behind the ament goes out, which unites to the great Sympatheticus, and to ns down before the Subclavian Artery; s Filament, compoſes the Plexus Cardia-

de, this Filament runs down to the Right Ven-, and then between the Aorta, and Arteria Pul-, wh communicates with ſome Filaments, from the Recurrent the eighth Pair.

the Left S , a Filament goes out from the laſt Cervical, nother from the firſt Dorſal, or Thoracic Ganglion, which together, to form a kind of Arch; in which, however, ng is contained.

om this Arch, a Nerve goes out, which runs down be- the Curvature of the Aorta, and the Left Branch of the monary Artery, where it communicates with a Filament of eighth Pair, and forms a gangliform Plexus, with the like municating and united Filaments from the Right Side.

rom this gangliform Plexus, which may be looked upon as Origin of the Plexus Cardiacus Superior, a great Number Filaments run down, over the Trunks of the great Blood- and over the Auricles and Ventricles of the Heart.

The chief of theſe Filaments run in the cellular Subſtance, behind the Aorta, or between that and the Trunk of the pulmonary Artery, where they are divided into a great many ſmall nerves, which run before and behind the Aorta, to the Baſis and Auricles of the Heart.

NER

The Filaments that run down from the Trunk itſelf, between the firſt and laſt Cervical Ganglions, are united and interwoven in the Thorax with the Filaments common to the laſt Cervical and firſt Dorſal Ganglions; and thus contribute to the Formation of the Plexus Cardiacus, and ſome Part of the Plexus Pulmonaris.

The long Filament of the firſt Cervical Ganglion contributes, likewiſe, to theſe Plexus. It runs along the Inſide of the Trunk, and then unites with the Filaments of the laſt Cervical Ganglion, the firſt Dorſal Ganglion, and the great Recurrent Nerve.

From all theſe Conjunctions, a particular Nerve is formed in ſome Subjects, which meets like a Rope from the other Side behind the Aorta; and forms, together with that, a kind of ſubordinate Trunk about a Finger's-breadth in Length, which ſends out, on all Sides, ſeveral Filaments, that are diſtributed to the neighbouring Parts.

From the firſt Dorſal Ganglion, the Trunk runs down on the de of the Heads and Necks of all the Ribs, over the artigaments, by which they are ty'd to the Vertebræ. On ſe Rib, it bends a little toward the Bodies of the Ver-

is Courſe, the Trunk forms a ſmall Ganglion between Rib, and communicates backward by two ſhort Filaments, r leſs oblique, with the correſponding Dorſal, or Coſtal

eſe two communicating Filaments, one is more oblique, ſmaller than the other; one runs backward, towards ſt Ganglion of the Coſtal Nerve; the other runs forthe Head of the Rib, to the Trunk of the great Sym- Nerve; and, for this Reaſon, one of theſe Filaments to be more anterior, and longer, than the other.

ing reached about Half-way between its Entry into the ax and the laſt Vertebra of the Back, this Trunk ſends comonly five Branches obliquely downward on the lateral, and a little toward the anterior Part of the Bodies of the Vertebræ.

The firſt four Branches come commonly from the fifth, ſixth, ſeventh, and eighth Thoracic Ganglions, and the fifth ariſes from ſeveral of the following Ganglions. The firſt is the longeſt, and the laſt the thickeſt.

All theſe Branches approach each other gradually in their Deſcent, as far as the laſt Vertebra of the Back, where they unite into one large, ſhort, collateral Rope, which pierces the upper lateral Part of the lower Muſcle of the Diaphragm, ſending ſome Filaments to the upper Side.

Having got below the Diaphragm, and given off ſome Filaments to the lower Side of that Muſcle, this great Trunk produces, behind the Glandulæ Renales, a kind of irregular Ganglion of a curve oblong Figure, called, *Ganglion ſive Plexus Semilunaris.*

The convex Side of this Semilunar Plexus, or Ganglion, is turned obliquely backward and downward; the concave forward and upward, one of its Cornua being turned forward, ſo that the inferior Cornua of the Ganglions on each Side are turned toward each other.

Theſe Ganglions, on each Side, communicate together, behind the Stomach on the Cœliac Artery, and likewiſe with the eighth Pair, or Nervus Sympatheticus Medius, principally by means of the Nervus Stomachicus poſterior, belonging to that Pair.

From the reciprocal Communication of theſe two Semilunar Ganglions, a kind of middle Plexus is formed, which partly ſurrounds the Cœliac Artery, and is partly ſpent on the Meſocolon.

The Semilunar Ganglion, on the Right Side, together with a large Portion of the Plexus Cœliacus, and ſome Filaments of the Plexus Stomachicus, forms a particular Intertexture, called Plexus Hepaticus.

This hepatic Plexus, having communicated with ſome Filaments of the diaphragmatic Nerve, produces ſeveral Filaments, which ſurround the hepatic Artery, and Vena Portæ, in form of a reticular Vagina, and accompany the Branches of theſe Veſſels thro' the whole Subſtance of the Liver. The hepatic Plexus ſupplies, likewiſe, the Veſicula Fellis, Ductus Bilarii, Duodenum, Pancreas, and Glandulæ Renales.

The Left Semilunar Ganglion, formed by the anterior or collateral Trunk of the Left Side, produces ſeveral Branches, which form the Plexus Splenicus, nearly in the ſame manner as has been already mentioned.

This Plexus Splenicus, having communicated with the Hepaticus, and, by the Intervention of the Plexus Stomachicus, with the eighth Pair, ſurrounds the Splenic Artery, ſupplies the Pancreas, and is diſtributed to the Spleen.

This Left Ganglion is ſometimes accompany'd by another, which gives Filaments to the Spleen.

Each ſemilunar Ganglion ſends Branches from its convex Side, which, being joined to the Filaments of the firſt Lumbar Ganglions, form an Intertexture, called Plexus Renalis, which ſurrounds the Renal Artery; is diſtributed to the Kidneys, and Glandulæ Renales; and ſends out a Filament, which accompanies the ſpermatic Veſſels.

This

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This Renal Plexus concurs, likewise, with the Semilunar Ganglion in the Formation of the great mesenteric Plexus; and communicates, by several Filaments, with the Plexus Coronarius Stomachicus.

The Right Renal Plexus communicates particularly with the Plexus Hepaticus, and the Left with the Splenicus; and each of them, by two Filaments, with the true Trunk on the Side of the first two Vertebræ of the Loins. This Portion of the principal Trunk is commonly called the inferior Rope of the intercostal Nerve.

The Right and Left Semilunar Ganglions send nervous Fasciculi to each other, which, by a particular Intertexture, form a kind of flat Ganglion, or Plexus, immediately under the Diaphragm, before the Articulation of the last Vertebra of the Back with the first of the Loins.

From this plexiform Union, called commonly Plexus Solaris, several Filaments are detached in a radiated manner to the M[illegible] Gall. The[illegible] colon, and Mesentery; and some of them go, likewise, t[illegible] Diaphragm. A great Number of other Filaments go, lik[illegible] from it, which, with the Ramifications thereof, form a [illegible] nervous Capsula, or Vagina, round the superior mesenter[illegible] tery, and round all its Ramifications on the Intestines, and [illegible] the mesenteric Glands. This is termed Plexus Mesentericu[illegible] perior, which comes principally from the Filaments of the P[illegible] Hepaticus and Renalis of the Right Semilunar Ganglion.

The superior mesenteric Plexus sends down from its [illegible] along the Aorta, and behind the descending Portion of the [illegible] colon between the superior and inferior mesenteric Arter[illegible] veral Filaments, or nervous Fasciculi, differently interwoven [illegible] which a nervous Vagina is, likewise, formed, that surrounc[illegible] inferior mesenteric Artery, and its Ramifications on the Intes[illegible] This has been named Plexus Mesentericus Inferior.

The descending nervous Fasciculi, between the two mesenteric Arteries, which may be named Mesenterici Posteriores, receive some communicating Filaments from both Plexus Renales, and, likewise, communicate with the Trunk of the great sympathetic Nerve, by Filaments which run down obliquely from the Lumbar Ganglions. Afterwards they detach a Filament on each Side, which accompanies the spermatic Vessels.

The Fasciculi Mesenterici Posteriores, having produced the Plexus Mesentericus Inferior, send other Filaments downward, over the Extremities of the Aorta, behind the inferior Curvature of the Colon.

These inferior Fasciculi, or Filaments, adhere strongly to the neighbouring Parts of the Peritonæum, and, together with other Filaments from both Sides of the Trunk, form a third Plexus, which may be called Infra-mesentericus, or Hypogastricus.

[illegible]ty of [illegible]hypogastric Plexus, at the Extremity of the last Curvature four or five [illegible]on, on the fore Side of the last Vertebra of the Loins, sometimes into two flat Ganglions, which surround [illegible] beginning [illegible]ways. Earth, [illegible]um Rectum back[illegible]ard, to which they [illegible] after-[illegible]rate [illegible] and it is [illegible]ted, and, also, to the Bladder, and to the spermatic [illegible]s, and, having communicated by lateral Filaments with each Trunk of the great sympathetic Nerve, they send Filaments to all the Parts contained in the Pelvis.

The Trunk of the great sympathetic Nerve, having detached the five Branches, which form the collateral Rope, becomes much smaller; and, having reached the eleventh Vertebra of the Back, it approaches the collateral Trunk, and perforates the inferior Muscle of the Diaphragm.

Afterwards it runs more forward on the Bodies of the Vertebræ, and increases by the Addition of Filaments, from the last two Dorsal Pairs of Nerves.

It runs down between the Psoas, and neighbouring Tendons of the small Muscle of the Diaphragm, on the lateral Parts of the Vertebræ Lumbares, and anterior Side of the Os Sacrum.

At this Place the Right and Left sympathetic Trunks approach each other, and at the Extremity of the Os Sacrum they form a Communication, in the manner of an inverted Arch.

In its Passage, each Trunk receives commonly two Filaments from each Ganglion of the Nervi Lumbares and Sacri; and likewise forms small Ganglions between each Vertebra, which send some Filaments to the neighbouring Parts, and others which communicate with the Fasciculi of the Plexus Mesenterici.

The Pairs of Filaments which come from the first two or three Lumbar Ganglions, run a little downward, but the following run gradually upward; and it ought to be observed, that capillary Blood-vessels are discernible between and upon the Filaments of each Pair.

The inverted Arch, or inferior Union, of the two Trunks gives off, together with the two lowest Nervi Sacri, several Filaments to the Rectum, Anus, and Muscles of the Coccyx.

Lastly, the great sympathetic Nerve, from the first Vertebra of the Neck to the Extremity of the Os Sacrum, communicates by Filaments with all the Vertebral Nerves, as has been already said; but it must be observed, that in the Thorax these communicating Filaments are very small and slender, where the sympathetic Trunk is largest; and that, below the Diaphragm, they are stronger, because there the Trunk diminishes, especially on the Os Sacrum, where it is very small. The same thing is to be observed concerning the Ganglions of the Trunk, the first Cervical Ganglion only excepted. See SPIRITUS.

NERVINUS. Nervine, or nervous.

NESIS, νῆσις. From νέω, to accumulate; an Accumulation of Humours, inducing a Disease. *Hippocrates de Locis in Homi*[illegible]

NESTIS, νῆστις. The *Intestinum Jejunum. Ruffus Ephe*[illegible] *Appellat. Part. Corp. Human. Lib.* 1. *Cap.* 27.

NET, or NETA. The same as GALIA MOSCHATA. *N. Myrepsus, Sect.* 10. *Cap.* 73.

NETOPON, νήτωπον, according to *Hesychius*, is an Ointment composed of many Ingredients, and is otherwise called νεσώπιον, *Netopion*. *Foesius* says it was a fragrant and costly Ointment, consisting of a Mixture of many Kinds of Spices; such were the Ointments in Use among the delicate *Roman* Ladies; for Instance, the *Unguentum spicatum, foliatum, Comagenum*, and *Susinum*. We find frequent Mention made of νήτωπον, in *Hippocrates*'s Books of Womens Diseases, where it is prescribed, [illegible]ong other sweet-scented Things, in Affections of the Uterus. [illegible]. 4. Vide[illegible] the fifth and seventh Books of the Epidemics, we read, [illegible]. [illegible]owe[illegible] was infused into the Ears, for the Cure of Deafness; [illegible] [illegible]DCp a[illegible]nion was infused into the same Ears, for the Cure of Deafness; of [illegible] Quotation [illegible]nteſtinpose was used, in the same manner, Amaracinum, [illegible] Fruit is [illegible] of Nardinum, and other Sorts of Oils, which were [illegible] Peratu[illegible] Intercluſu[illegible] their Tenuity and Heat, for cutting and discussing and *Verhaave* m[illegible] viscous Humours, which were the Occasion of the [illegible] Nicotian[illegible] Ἔτωπον seems to be the same which *Erotian* calls *Bon. b. Ind.* an insa[illegible]and expounds by Oil of bitter Almonds; but [illegible] [illegible]ght on, occurs in *Hippocrates*, and we ought, doubtless, [illegible] [illegible] [illegible]gredient of [illegible] or μεσώπιον (*Metopion*); for Metopion is fre[illegible] [illegible]mon Degree [illegible] Oil of Almonds, as well as for *Unguentum Ægyp*[illegible] [illegible] Refrigeran[illegible]

[illegible]flammator[illegible]RAS, νῆδες. A Name for the *Exterion*, a Species of [illegible] If [illegible]GACANTEA. *Dioscorides, Lib.* 3. *Cap.* 17.

NEUROCHONDRODES, νευροχονδρώδες, from νεῦρον, a Nerve, and χόνδρος, a Cartilage. An Epithet for a Ligament partly cartilaginous, and partly membranous. [illegible]talks,

NEURODES. Nervous.

NEUROLOGIA. A Description of [illegible]ith the Brim[illegible]

NEUROMETRES. The[illegible] [illegible]umber of [illegible]

NEURON, νεῦρον. A Ne[illegible]hastrity of [illegible]2. 107 [illegible]he Word *Nerve* is extended, by the[illegible]ey are to be [illegible]e Bodies which are exanguious, wh[illegible]ed or sp[illegible]nsis. Park. [illegible] this Purpose are the Words of Gal[illegible] [illegible] γάρ ἐσι γένη, &c. "There are in A[illegible] [illegible] col[illegible] "Bodies, which appear to be exangu[illegible] [illegible] Matters, the the "one proceeding from the Bones, ano[illegible] [illegible] Catarrhs. The so "Spinal Marrow, and a third from th[illegible] [illegible] "usually called by *Hippocrates* [illegible] [illegible] "ment); the second νεῦρον (*Neuron*) a[illegible] [illegible] "last τένων (*Tenon*, a Tendon). But, [illegible] [illegible] "on account of that Similitude wh[illegible] [illegible] "tween them, giving to the first Sc[illegible] [illegible] "(ligatory), to the second, those [illegible] [illegible] "sory) and πρωαιρεσιακὸς (*proair*[illegible] [illegible] "to the Will in Motion); [illegible] [illegible] "the Word ἀπονεύρωσις ([illegible] [illegible]

NEUROTICA. Nerv[illegible] [illegible]

NEUROTOMIA. [illegible] [illegible]

NEUROTONUS. [illegible] [illegible]

NEUROTROTOS, be[illegible]pon the [illegible] τιτρώσκω, to wound. [illegible] [illegible] or Puncture of a Nerve. [illegible] flatulent [illegible]

NEUTER. Neutral. As [illegible] a considerable Reputation in Medicine, [illegible] monly understood, it will be of some Impedi[illegible] to specify their Nature, and medicinal Virtue[illegible]

As Salts of various Kinds are the principal Foundations [illegible] I know [illegible] eases, so there are no Medicines of greater Efficacy [illegible] venting and curing Diseases, than Salts; some of Nitre. Contribute to produce salutary Effects in one manner, [illegible] in another. But, among all the various Salts in Nature, none are more safe and efficacious, than neutral Salts, which are, also, possessed of a cathartic Quality.

Neutral Salts are those compounded of an alcaline Salt, or Earth, and an acid Salt, in such a manner as that the one does not predominate over the other: Now as alcaline and acid Salts, when separate, are of so strong a Taste and Quality, as often to approach to a corrosive Nature; so, when mixed in a due Proportion with each other, they are, by the mutual Allision and Conflict of their Parts, so corrected, as, not only with respect to Taste, but, also, all their other Qualities, to become a Salt of a middle Nature, highly innocent in itself, and friendly to the human Constitution. Perfectly neutral Salts, therefore, are such as produce no Degree of Effervescence, but are perfectly [illegible]rated, upon the Affusion of any acid or alcaline Liquor. The most considerable and efficacious Salts of this kind are, among the native Salts, common Salt, Nitre, Aphronitrum, and those Salts which are, by boiling, obtained from some medicinal and acidulated Springs. The most considerable Salts of the neutral

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Kind, prepared by Art, are the Arcanum Duplicatum, antimoniated Nitre, *Glauber*'s Salt, and vitriolated Tartar, in all which there is no Effervescence produced by the Affusion either of an acid or an alcaline Liquor, unless the Acid is very strong and penetrating, such as Oil of Vitriol, which, when poured upon common Salt, or even upon Nitre, not only produces a violent Ebullition, but, also, raises a large Quantity of a subtile white Vapour from the common Salt, and one of a redish Colour from the Nitre; but such a Phenomenon is hardly ever produced by a gentler Acid, such as Spirit of Salt, Spirit of Vitriol, Vinegar, or Lemon-juice.

From what has been said, we may justly conclude, that neither Tartar, which is obtained from the Vegetable Kingdom, nor Alum or Vitriol, which are produced in the Mineral Kingdom, are properly to be classed among the neutral Salts; since the latter of these, upon the Affusion of any alcaline Liquor, whether of a mild or more drastic Quality, are forthwith put into violent Commotion, and raised in Bubbles; a manifest Proof that an acid Salt predominates in them, and that this Salt is intimately mixed with the metallic or earthy Alcali; for ought to be the Nature and Qualities of neutral Salts component Parts being intimately united with each may not be easily precipitated, upon the Affusion of Liquor; for which Reason, neither Salt of Silver, Lead, are, strictly and properly, neutral Salts. N also, differ among themselves, since, in some, the alcaline and acid Principles is more close and others.

Those in which this Union is highly close and such as cannot be easily destroyed, such as all Salts an alcaline Principle, and the Acid of Vitriol; of which are the Neutral Salts of mineral Waters, the Arcanum catum, vitriolated Tartar, the Salt prepared of Quick-lime, the Acid of Vitriol, or Salt, as, also, common Salt and Nitre. But those Salts in which the Union of the acid and alcaline Principles is less intimate, and their Cohesion less firm, are such as are com of a gentle Acid, and an alcaline Earth; among th which are the Salt of Coral, the Salt of Crabs-e and the Terra Foliata Tartari; all sub Acid, have their Parts easily re- fol

we now come to shew by con- ments, that Salts of a temperate and ly of all others the most salutary, but, t efficacious, both for preventing and rders incident to the human Body.

es of all Animals, when in a sound and ither a pure acid nor alcaline Salt, either ure, but only Salts of a neutral Kind: cid to be found, either in the Blood was formerly asserted by Physicians even in a morbid and preternatural pure Acid to be obtained from the Fluids means whatever: Hence it is obvious not ngerous, the Hypothesis of idly affirmed, that an Acid ich Reason they not only also, asserted, that the either to destroy the Gr ment gtly by means of the Ali- to the greatmach, especially when re- ns down, Acid Juices are generated in the s Filling of a Quality unfriendly to Nature, xcite violent Disorders, and not only pro- de, crease, the Symptoms; for which Reason, in Ca ature, such Medicines as correct and temperate Ac , wh e most speedy and efficacious Relief: Yet it does not f current of this, that these acid Juices are, in an entire and unchanged State, as to their Texture, conveyed to the Mass of Blood, or mixed with the animal Fluids: But they are rather to be looked upon as foreign and morbid Humours in the Primæ Viæ, especially when they are not corrected by the digestive Powers, and the Admixture of other Liquors; for, though the Stomach can well enough bear a mild Acid, which, by its gentle Stimulus, not only creates an Appetite, but, also, promotes the Dissolution of the Aliments, yet a pure Acid is highly offensive to all the other Parts of the Body, both of the fluid and solid Kind; for an Acid so inspissates and coagulates the Fluids, as to retard their Circulation, and remarkably injures the solid Parts, especially those of the nervous and fibrous Kind, by its stimulating, corroding, or even constricting Quality.

For this Reason it is wisely ordered by bountiful Nature, that when the Aliments are dissolved in the Stomach, and expelled thence, there is forthwith poured upon them a Liquor, which, by its mild, sulphureous, and somewhat alcaline Nature, corrects the foreign Acid contained in them, and renders it friendly to the Veins, and all the other Parts of the Body: This Purpose is, also, greatly promoted by the lymphatic Juices, convey'd from the Pancreas, and other Glands: Nor is a pure alcaline Salt, either of a fixed or volatile Kind, ever to be found in the Juices of Animals, especially when in a natural State. The Bile, that useful Liquor, justly accounted the most natural and efficacious Medicine of Animals, so nearly approaches to an alcaline Nature, that it corrects Acidity. But there can be no pure Alcali obtained from the human Fluids, because it produces an Effervescence with no Acids, unless highly strong and drastic; and even in this Case the Ebullition is not to be ascribed to an alcaline, but rather to a sulphureous and oleous Principle, because both expressed and distilled Oils are observed to excite an intense and hot Effervescence with any strong Spirit, such as Oil of Vitriol, or the Spiritus Nitri Fumans, prepared in the manner directed by *Hoffman*.

Nor is there any Alcali, either of a fixed or volatile Nature, to be obtained without the Help of Fire, either from the Blood, Milk, the Chyle, the Lymph, the Excrements, the Sweat ine of Animals, in a sound and natural State: But if a vocaline Matter is exhaled from the Juices, or if a manifest Quality is observed, either in the Excrements, the Bile, Urine, it is a certain Sign of a Corruption or Putrefac- But, in a sound and natural State, the excrementitious Salts ther of the neutral Kind, and composed of a fixed or vocid and alcaline Salt, as is obvious from the saline Taste of ine. But the neutral Salts of the human Body incline the Nature of Sal Ammoniac, by reason of the Com- of the volatile, alcaline, and urinous Salt, with the Acid; Quick-lime, or any alcaline Salt, is mixed with inspissated it forthwith diffuses the Smell of a volatile Salt. Be- the Salt contained in the Urine is of a tartareous Nature, ounded of an acid and an oleous earthy Principle; as is iently obvious, partly from the Inspissation of the Urine, partly from that Tartar which adheres to the Sides and Bottoms of the Chamber-pots used by hypochondriac and scorbutic Patients.

Besides, the salutary Quality of neutral Salts is obvious from this, that they produce no Change nor Commotion in any of the animal Juices, which, we find, is quickly done by other acid or alcaline Salts, whether of a fixed or volatile Nature; for if, with any Quantity of human Blood, taken from a Vein, any acid Liquor is poured, such as Spirit of Salt, or Vitriol, a Solution of Salt, which is excessively acid, or a Solution of Alum or Vitriol, the Colour and Consistence of the Blood are destroyed, whilst the redish-purple Colour is changed into one of a livid and unseemly Kind, and the Blood, before thin and fluid, is coagulated; and the same Effect is generally produced by these Liquors when mixed with the Lymph, the Serum, the Chyle, Milk, or the Whites of Eggs. It is, also, certain from the experiments made in order to illustrate the Transfusion of Blood, that by injecting acid Liquors into the Vein, by means of a Syringe, the Death of the Animal was very soon produced, the Blood found coagulated in the larger Vessels. he we pour into Blood newly taken from the Veins any liquor, such as Oil of Tartar per Deliquium, or well saturated Spirit of Sal Ammoniac, we observe a no less considerable Change in the Blood, since its natural purple Colour is heightened, and render'd nearer to that of Scarlet, and its Consistence becomes more fluid.

These alcaline Substances, in like manner, when mixed with Milk, Serum, or the Whites of Eggs, render them more fluid and though the intensely red Colour, and preternatural Fluidity, induced in the Blood by alcaline Substances, are not destructive of its progressive and circulatory Motion through the numberless small Vessels of the human Body, yet a pure Alcali, exhibited in a pretty large Dose, effectually destroys and inverts the vital Crasis, and due Mixture, of the Mass of Blood, as is obvious from injecting alcaline Liquors into the Veins of Animals, since, by this means, mortal Convulsions are brought on, an Effect never produced by neutral Salts, which are of such a Nature as to induce no Change in the Texture and Mixture of the Blood, and vital Fluids. For if a Solution of common Salt and Sal Ammoniac, or of the Arcanum Duplicatum, the Terra Foliata Tartari, or antimoniated Nitre, is mixed with the human Blood, or Milk, it produces no Change in them. That Nitre, which is, also, a neutral Salt, is not prejudicial to the Mixture and vital Motions of the Blood, is, among other Circumstances, sufficiently obvious from the Experiments of *Malpighi*, in his Book *de Polypo Cordis*, since, by injecting six Drams of Nitre dissolved, into the jugular Vein of a strong Dog, there was no Alteration or Change observed, except a preternaturally copious Discharge of Urine.

But, among all the Classes of neutral Salts, none is better suited, or more friendly, to the human Body, than common Salt, whether obtained from the Sea, Fountains, or the Earth. Neither human Creatures, nor many other Animals, can be without this Species of Salt, because it not only seasons their Aliments, but, also, contributes to their better Digestion, or intimate Resolution. Nor is common Salt admitted into the Mixture of the vital Fluids, but ought again to be totally expelled thro'

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thro' proper Emunctories, since, when left in the Body, it proves prejudicial to the Texture of the slender Fibres, by vellicating and corroding which, it produces various Misfortunes. When used, however, with Aliments, it produces several happy Effects, besides those already mentioned; for, by gently stimulating the moving Fibres, and the excretory Ducts composed of them, it not only accelerates the Motion of the Blood and Humours, by which means their grosser Parts are excellently triturated, and better mixed with the more fluid Parts; but, also, promotes the salutary Secretions, and the necessary Excretions, of other superfluous Substances, by means of which the Salt itself is, also, more happily eliminated from the Body.

Among the neutral Salts highly salutary and friendly to the human Body, we may justly reckon Sugar, which, when duly used, is not so offensive to the Blood as is generally thought, though it is not proper in all Diseases, nor for particular Persons at all Seasons. But that it is daily used to a kind of Excess by some, who, instead of being injured by it, live [illegible] sound and perfect State of Health, is certain from daily Experience; for Sugar is a sweet and mild Salt, which is far from being unfriendly to the Mixture of the Fluids, both because it corrects acid and bilious Humours, and, by lubricating the Viæ, and gently stimulating the intestinal Fibres, renders the Body more soluble. Besides, another Advantage may arise from the Use of Sugar among Aliments; for it is known, that Oils, and pinguious Substances, are incapable of uniting with Water; but this Union is excellently produced by the Addition of Sugar, as is obvious from this Experiment: Oil of Cinnamon does not mix with Water, but falls to the Bottom; but a few Drops of it are previously mixed with Sugar, and then put into Water, upon agitating them together, we forthwith perceive an intimate Conjunction of the Oil and Water, so that by this Method an extemporaneous Cinnamon-water may be prepared. Since, therefore, human Creatures often eat large Quantities of Fat, which are with Difficulty resolved, and converted into a lacteal Juice, by means of Water; yet that this Effect may be produced by means of Sugar, and sweet Substances, is sufficiently obvious, since there is no more speedy and effectual manner of fattening Geese and Capons, than by mixing Sugar with their Aliments. This, in my Opinion, is, also, proved, by adding Sugar to Cream, by which means the Separation of the buttery Part from the others is prevented.

As neutral Salts, used among Aliments, are of singular Efficacy in preserving Health, so, as Medicines, they are highly efficacious in the Cure of Diseases. And, since this is the Point I principally intend to prove, we shall, for the sake of Perspicuity, distinguish neutral Salts into two Classes, that is, those produced naturally, and those prepared by Art. Among the former, therefore, spontaneously produced by Nature, besides Quantity of Earth, together with an Intermixture of sulphureous Particles; and it is highly probable, that the medicinal Virtues of Plants are derived from this neutral Salt they contain; for it is certain from Experience, that such Vegetables as, by a due Encheiresis, yield the largest Quantity of neutral Salts, are far superior, in Virtue and Efficacy, to such as yield a smaller Quantity.

The most considerable Herbs belonging to this Class are such as are appropriated to the Cure of Wounds, and the Purification of the Blood; the most considerable of which are Paul's Betony, Scordium, Carduus Benedictus, Dead-nettle, Yarrow, Colts-foot, Plantain, Ground-ivy, Borrage, Bugloss, the lesser Centaury, Fumitory, Winter-green, Daisies, Chamomile-flowers, Wormwood, Brook-lime, Bears-breech, Water-cresses, Germander, Ladies-mantle, Middle Consound, Spleenwort, and Scabious; the Juices, Decoctions, and Infusions of which produce the most surprising and salutary Effects in the most violent chronical Diseases arising from Obstructions, Infarctions, or Corruptions of the Viscera, or Obstructions of the Emunctories, and excretory Ducts. And these happy Effects are owing to nothing but the neutral Salt contained in these Herbs, and which is partly of a tartarous, and partly of a nitrous Quality. Hence, by reason of the large Quantity of this neutral Salt, the Extracts of these Herbs cannot be easily preserved dry, and without dissolving, in the open Air; which is, also, observable in essential Salt, or the Terra Foliata Tartari, and in that Salt which is obtained from the Acid of *Rhenish* Wine, and the Oil of Tartar mixed, after due Inspissation. By reason, also, of this large Quantity of neutral Salt of a tartarous Nature, these Plants, by burning, also, yield a considerable Quantity of an alcaline fixed Salt; for as the Tartar of Wine, or Nitre, is, by Calcination, changed into an alcaline fixed Salt, so we are of Opinion, that this alcaline fixed Salt, which, by burning, we obtain from these Plants, derives its Origin from the neutral tartarous Salt they contain.

Among the most salutary neutral Salts spontaneously produced without any artificial Mixture of an acid and alcaline Salt, we may justly reckon Nitre, which is generated by sulphureous, pinguious, and alcaline Earths, by the Fæces and Excrements of Animals in a State of Putrefaction, as, also, by Ashes, Quick-lime, and putrid Earths, when long exposed to the Sun and Rain, by imbibing, as it were, and attracting the universal Acid of the Atmosphere. And so surprising are the Virtues of this Medicine, that the Healing Art would be very imperfect without it; for Nitre is a Salt of a Quality so friendly to Nature, that, except when exhibited in too large Doses, it not only produces no Misfortunes, but is, also, of all other the most efficacious and instantaneous Remedy for preventing and removing those violent Disorders, which arise from a Redundance of Bile, a violent Ebullition, or preternatural Heat, of the Blood and Humours. For this Reason Lord *Verulam*, in his *Historia Vitæ & Mortis*, affirmed, that a Scruple of Nitre, frequently exhibited for a Dose, greatly contributed to the Protraction of Life: And, if any Medicine deserve the Title of Universal, common Water and Nitre certainly are so; for if the Body is to be rendered soluble, and a Discharge of the Urine promoted, or if, in a State of preternatural Heat, Pain, and Spasms, the Transpiration is to be rendered freer, these Effects are excellently produced by Nitre. Besides, if the Intention is to correct Acrimony of the Humours, which lays a Foundation for Cholera, Diarrhœa, and other Dysenteries, immoderate Vomitings, Nauseas, bilious Fevers, and violent Inflammations of the Stomach and acute Intestines, no Medicine in Nature produces either more instantaneous Effects than Nitre. If the Pulp of any Fruit is membranate so seized with an Inflammation, as to be, in a Manner, Intercloisure into Parenchyma, and, in consequence of this, the most [illegible] and *Verhaave* mentions the Blood are carried off, the Patient's Strength is [illegible] *Nicotiana*; may an insatiable Thirst, together with continual Watchings, agent on, Nitre, mixed with other proper Medicines, [illegible] *major*. gredient of the highest Efficacy, and contributes in an unParliamon Degree to the Cure; for, among all the safe and genuine Refrigerants appropriated to the Extinction of febrile and inflammatory Heats, we find none in Nature comparable to Nitre. If a preternatural Spissitude of the Humours, which lays a Foundation for Obstructions of the Vessels [illegible] Concretions, is to be resolved, the Effect is somewhat hastened more effectually produced than by Leaves, without Foot-[illegible] of a Power of coagulating the Juices of the Stalks, of a pale-[illegible] Men of Skill and Learning, with the Brims spread [illegible] the Evidence of Sense; since a [illegible] long and round-Water, added to a Portion of co[illegible] number of very Blood, renders it both more fluid, [illegible] 2. 107 in the darkish-black Colour is changed [illegible] proaching that of scarlet. And, as Nitre [illegible] *nsis*. Park. liar Virtue of colliquating the Serum [illegible] such Parts as are dry, softens such as [illegible] Matters, quating the tenacious Humours, remov[illegible] Catarrhs.

Besides, such is the Efficacy of Nitre [illegible] tartarous Concretions in the Kidneys [illegible] This is not only certain from Experi[illegible] by the Authorities of judicious Physicians [illegible] *Medicamentis Chymicis*, affirms, that Patients [illegible] Stone or Dysury, whether [illegible] are greatly relieved by *Vinus* [illegible] a due Dose of it is take great [illegible] sible there should ever [illegible] *Timæus*, also, gives [illegible] the long-continued [illegible] from the Stone. And [illegible] these Words: "It is [illegible] "is an excellent Remedy, [illegible] "Gravel"

What violent spasmodic and flatulent [illegible] of uncommon Misfortunes through the [illegible] a Stagnation of the Blood in the Vessels of the [illegible] testines, is sufficiently obvious from the [illegible] of hypochondriac and hysteric Patients. But I [illegible] that among all the Medicines allotted for these [illegible] none so effectual in removing the Spasms, dissolving the Flatulences, and allaying the Severity of the Pains, as Nitre. For which Reason its Use in the spasmodic or convulsive Colic cannot be too highly extolled. If, in consequence of violent Pain and Spasms, Transpiration, Sweat, or a Discharge of the Urine, are obstructed, if the Patient is costive, or if the salutary Excretions of Blood, whether from the hæmorrhoidal Veins, or the Uterus in Child-bed Women, are defective, Nitre, duly exhibited, allays the Pains and Spasms, and, by this means, rendering the small Ducts pervious, restores these salutary Evacuations. But since, by these violent and spasmodic Strictures of the Vessels and Viscera, the free Circulation of the Blood is hindered, and the Humours conveyed to other remote Parts, with a greater Motion and Impetus, by which means the Vessels, distended by too copious a Congestion, are ruptured, and immoderate Effusions of Blood happen, hence Spittings of Blood, immoderate Discharges of Blood from the Nose, Uterus, or hæmorrhoidal Veins, or a Discharge of bloody Urine, draw their Origins.

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In Cases of this Nature the most effectual Medicines are those of the nitrous Kind, which, by removing the Spasms, without any subsequent Constriction, restore the free Circulation of the Blood, and stop these immoderate and excessive Evacuations. Among all the Physicians of the preceding Age, none made more frequent Use of Nitre than *Riverius*, who, in stopping Hæmorrhages, exhibited it with uncommon Success. Thus, in an immoderate Flux of the Lochia, he, in *Cent.* 1. *Obs.* 26. highly extols the Use of Nitre. In an immoderate Discharge of the Menses he recommends it, in *Cent.* 1. *Obs.* 94. In a Spitting of Blood he orders it, in *Cent.* 1. *Obs.* 82. And in Hæmorrhages, accompanied with malignant Fevers, he prescribes Nitre, in *Cent.* 1. *Obs.* 18. After *Riverius*, *Mynsicht* always thought the medicinal Virtues of Nitre of the greatest Importance, as is obvious from his *Armamentarium Chymicum*, in which there are various excellent Compositions, the Basis of which is Nitre.

To the Class of neutral Salts, also, belongs Aphronitrum, which was not unknown to the Antients, and especially to *Pli*. This Substance drops from the Tops of stony Caves, becoming concreted, and is the joint Offspring of that acid uni... Salt which the Air contains, and of a gypseo-calcare... It is a Salt of a somewhat bitterish Taste, but fixed, ... of sustaining the Force of the Fire, since it is ne... takes Fire, nor is evaporated by its means. Large ... of this Substance are not only produced in the *Devil's ... Jena*, but, also, great abundance of it is often found ... neous Passages, especially those cut thro' Rocks. ... of webra ... Experience, that this Salt, which resembles that ... Arcanum cale... only of an inciding and diuretic, but, also, wh... lick-lime, ... large Doses, of a cathartic Quality.

As common Salt is highly salutary among Aliments, ... alcaline ... Use is not to be entirely banished from Medicine. It ... ch ... ciently known of what Efficacy it is in rendering the Body ... ; ... luble, and procuring a Discharge of the Fæces, when added ... Clysters, in which one Dram of it proves more effectual than a whole Ounce of any other Aperient. When taken internally, also, in a pro... Quantity, among Aliments, it renders the Body solub... is Purpose the Eating salt Herrings is ... very pro... very certain, whether common Sal... is ... ipal Ingredient in some ... ral... ny of ... lebrated for cathartic V... ues. A... t effic... *Hornhusen*, in the Principality o... rders ... al Waters were discovered, to which ... es of ... ort of Sick. I, being Physician in Ordina... s, upon instituting a chymical Analysis of the ... t they contained nothing but common ... lsum, like the Arcanum Duplicatum. T... Crystallization retained a cubical, and th... gure. But the Weight of the common ... S... he other. Three or four Pints of these ... e Body gently soluble, and procured ... of Stools. They, also, increased a ... by inciding the thick and viscid Humours ... ently contributed to Digestion, and ren... nd ag... hey were, also, in a particular ... Virtue, since, along with ... nities of Worms of all ... des. The external Use ... to the ... mach ... also, cured the Itch, ... and acid Juices ... rs ago, not far from ... eing of a Quality ... medicinal Spring, the ... xcite violent Disor... , and were possessed of ... rease, the Symp... former; and, upon making a ... ature, such ... Waters, I could obtain nothing but ... Ac... , w... e most ... le ... not ... Recurren... this, ... ngs did not continue for any considerable ... Time, ... ome to consider those, which, for many Ages, have ... , or mixe... ated for their medicinal Virtues, and which derive ... looked up... y principally from common Salt. Of this Kind ... especially ... of *Wisbaden*, long ago mentioned by *Tacitus*; ... and though, till a few Years ago, these were only used externally, yet their medicinal Use is highly proper and efficacious in Infarctions of the Viscera, Loss of Appetite, Flatulences, and Costiveness. They are, also, highly beneficial in the Cure of those Disorders, which sometimes succeed Abortions, and hard Labours. Having, with great Accuracy, instituted a chymical Analysis of these Waters, which were of themselves highly light and subtile, I could obtain nothing but a genuine common Salt, mixed with a certain alcaline Salt, which not only discovered itself by its Taste, and cubic Crystals, but, also, upon an Admixture of Oil of Vitriol, sent up a copious Smoke, of an highly penetrating Smell, like that commonly arising from Sal Ammoniac.

Among the neutral Salts of the native and salutary Kind, we may, also, class those for the most part contained in all the hot and cold medicinal Springs of *Germany*, and from which these celebrated Waters derive their principal Virtues. The Antients foolishly derived the Virtues of medicinal Springs from the various Earths, Minerals, and Metals they supposed them to contain, without so much as making mention of one of the Principles they really contained. But it is still more surprising, that many, even of the Moderns, should still maintain, that cold medicinal Springs are impregnated with a vitriolic Salt, and contain a very strong Acid; whereas it is obvious, that they contain an alcaline Salt, since they produce an Effervescence with all Acids, and afford a neutral Salt. And even many of these Waters, after Evaporation, leave an highly pure Salt; and, when poured into Milk, are so far from coagulating it, that they render it more fluid. And though most of the hot and cold medicinal Springs have, in some Degree, a vitriolic Taste, yet their medicinal Virtues, and Efficacy in the Cure of Diseases, by no means depend upon their vitriolic Salt; for, when they are but a little warmed, they immediately lose this Taste, and no longer acquire a dark-purple Colour from a Mixture of Galls; which is a manifest Proof, that the chalybeate, or vitriolic Parts they contain are not only small in Quantity, but, also, of a volatile Nature.

... is much more certain, that, if we except that spirituous ... ethereal, penetrating, and subtile Principle, which is the ... th ... of the sparkling Bubbles, the principal Elements and In... ... its both of hot and cold medicinal Springs are either fixed ... e Salts, or those of a neutral Kind, approaching nearly to ... Nature of *Glauber*'s Salt, or vitriolated Tartar; and it is ... to these Salts, that these Waters are so efficacious in incid... ... iscid Humours, removing Obstructions, correcting Acidi... ... the Primæ Viæ, and promoting all the Excretions, espe... ... those by Stool and Urine. It is, therefore, obvious, that ... ... gredients of these Springs are of so innocent a Nature, ... ier ... divested of every drastic Quality, that their Waters may ... p... nk without any Dread of Danger; so that those Physi... roms ... are not only deceived themselves, but, also, grossly impose ... Patien... others, who, by specious Arguments, drawn from the Dread ... Danger, and the violent Operation, dissuade Patients, capable ... of having their Lives saved by this very means, from the Use of these salutary Waters. From what has been said, we may perceive how efficacious both neutral and alcaline Salts must be in the Cure of obstinate chronical Disorders, if they are diluted with a sufficient Quantity of Water, used with a due Regimen, and exhibited at proper Seasons.

It is, also, worth our Observation, with respect to the native Salts of mineral Waters, that these Springs, which, besides an alcaline Salt, contain large Quantities of neutral Salts, are far more cathartic than those which only contain a large Quantity of alcaline Salt. And this is the Reason why, among almost all the hot medicinal Springs in *Europe*, there are none more purgative than the *Caroline* Waters; whereas those of *Embden*, which contain a pure alcaline Salt, are but a ... weak and languid Purge; for the *Caroline* Waters, be... ... alcaline and saline earthy Principle, also, contain a n... ... compounded of the alcaline Salt, and the Acid ... ell saturated ... For from that Salt of the *Caroline* Waters, left a... is considerable ... tion, by the Addition of the Powder of Charco... ur is heighten... by Fire, a Liver of Sulphur is obtained; an... Consi... ... at ... Liver of Sulphur the Tincture of Sulphur may be extracted with Spirit of Wine; and, by boiling it with Water, the Milk of Sulphur is precipitated. This Regeneration of common Sulphur from this Salt, sufficiently demonstrates the Presence of a neutral Salt, formed by the Acid of Vitriol or Sulphur; since, without this Salt, common and inflammable Sulphur could not be regenerated. Besides, this Salt of the *Caroline* Springs, though of a considerably alcaline Taste, is not, however, like other alcaline Salts, colliquated in the open Air; which is owing to the mineral Acid with which it is joined.

Among all the cold medicinal Springs in *Germany*, hardly any are more purgative than those of *Egra*; for five or six Pints of them, drank, sometimes procure six or eight Stools, without any Uneasiness; whereas the same Quantity of those of *Pyrmont* procure only three or four. But the *Selteran* and *Antonian* Springs, as, also, those of *Wildungen*, *Elsteria*, and *Buchen* in *Bohemia*, are only faint and languid Purgatives, but rather promote a Discharge of the Urine. This Diversity of Effects in these medicinal Springs is only to be accounted for from the Presence of a larger Quantity of neutral Salt in some, than is to be found in others; for, by a due Boiling and Inspissation of the Waters of *Egra*, a large Quantity of neutral Salt is obtained, half an Ounce of which, exhibited in a proper aqueous Vehicle, purges very briskly; and this Salt is sold very cheap at *Egra*. The Springs of *Schwalbac*, besides their subtile Waters, contain not only an aereal and subtile Principle, but, also, an alcaline Salt, and one of the neutral Kind; for which Reason, they are, also, of a pretty purgative Quality, of which, however, the *Antonian*, *Selteran*, and some other Springs, are destitute, because, by Boiling and Inspissation, they only yield a pure alcaline Salt. Some time ago I discovered an extemporaneous Method of rendering these alcaline Waters sufficiently cathartic, and not only of the same Taste, but, also, of the same Virtues with those of *Egra*, by only adding to them a proper Quantity of the Spirit of Vitriol, which, by incorporating with their alcaline Salt, forms a neutral Salt, resembling vitriolated Tartar.

Not

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Not only in *Germany*, but, also, in other Parts of *Europe*, such as *France* and *England*, there are cold medicinal Springs remarkable for their cathartic Virtue, and from which a neutral Salt may be, also, obtained by boiling: Among these the most celebrated in *England* are those at *Epsom*, which, by means of the bitterish Sal salsum they contain, are an excellent Purgative. This Circumstance prompted the celebrated Dr. *Grew* to obtain by boiling, from these Waters, a neutral Salt of a bitterish Taste, and a purgative Quality. This Gentleman, also, wrote a small Treatise on the Nature and Virtues of that Salt. Some time ago I procured some of this Salt genuine and unadulterated from *England*, and was told, that a Pint of the Water hardly yielded half a Dram of the Salt. I, also, mixed this Salt with the Powder of Charcoal, and fused it; upon which I obtain'd a sulphureous Mass of a purple Colour, and which bore a great Resemblance to the Liver of Sulphur.

Dr. *Grew* informs us, that this Salt, when genuine, is never COT
destitute of a cathartic Quality. 'Tis said to be an efficac The Cha
Remedy in many violent Distempers, without producing The Roc
other Disorder, if it is duly exhibited. 'Tis the mild's so divided purchased the Method of preparing it at the Price of five almost all other Purgatives, does not throw the Humou 4. ride, and then Commotions, and never produces Sickness, Deli.iums, ower is mon Gripes. The Use of this Salt is recommended in Disorde DCp and acute the Stomach, such as Cardialgias, immoderate Vomitings, io.ar.t and obtu hypochondriacal Disorders arising from an hot Cause. s F. Fruit is membr also, commended in Diseases of the Intestines and lower rat.. Intercloisure int in the Colic, the Gravel, Disorders arising from Worm Heat and Suppression of Urine, the Jaundice, and the h Passion. 'Tis, besides, highly beneficial in Disorders of the and Inflammations of the Eyes. It may be exhibited in S water, or any other pure Water; as, also, in Barley-w or Water-gruel, or Whey: It may be, also, boiled a little Water, and season'd with Mace; half an Ounce, or a whole Ounce, of the Salt may be added to two or three Pints of the Water.

Some Years ago, when I resided at the *Toplitz* Springs, in order to investigate their Natures, upon making an accurate chymical Examination of the *Sedlitz* Waters, about two Miles distant from *Toplitz*, I obtained a Salt of a bitterish Taste, and cathartic Quality, in every respect like that of *Epsom*, only with this Difference, that one Pint of the Water by Evaporation yielded a Dram and half of the Salt: The Water from which this Salt is obtain'd is so bitter, that the Tongue can hardly endure it; for it is far bitterer than the Salt itself. Six Purposes of the Salt purge briskly, and the same Effect is pro- NDU *sol.* four Pints of the Water. And, as I lately had a very a small Shple Quantity of the *Caroline* Salt sent me by Mr. *Go-* bears a Sed some Part of it, with an equal Quantity of the ge as those Charcoal, in an ignited Crucible; by which means he best Or Liver of Sulphur, of a disagreeable sulphureous es of this P a purple Colour; from which, by means of highly rectified Spirit of Wine, I extracted the true Tincture of Sulphur of a golden Colour.

Some time ago there was, also, inscribed to Dr. *Gorelli*, an epistolary Dissertation concerning the lately discover'd cathartic Salt in the Mines of *Hungary*, by Dr. *Herman*, who, in the subterraneous Passages of *Newhausel*, found a white, bitterish, and highly tender Salt, adhering to the Sides of the Rocks, in Form and Taste like the cathartic *Epsom* Salt, and which, when taken in a pretty large Dose, procured several Stools. He afterwards, also, found another Salt of the same Nature and Virtues, white like Snow, and of a bitterish Taste, adhering to the Sides of the Passages in the largest of the Mines. And since with this Salt, by means of the Salt of Tartar, and Powder of Charcoal, he produced a true mineral Sulphur, 'tis not to be doubted but it is of the same Nature with the *Epsom* or *Sedlitz* Salts. The Generation of this cathartic mineral Salt, which is partly found moist in the Springs, and partly dry, adhering to the Rocks, seems to agree pretty much with that of the Aphronitrum, which is coagulated by the sulphureous Principle of the Air, in stony, calcarious, and gypseous Earth, as its Matrix, and is found in large Quantities in the Cavities of the Mountains about *Jena*; and with respect to its Form, Taste, and Virtue, both in the Fire, and in the human Body, does not differ from the *Epsom*, *Sedlitz*, and *Hungarian* Salts, but only in this, that, being of the native fossile Kind, it is generated of a sulphureous and subterraneous Acid adhering to alcaline Earths, which in those Places are found in great abundance. This is, also, obvious, because from the *Epsom*, *Sedlitz*, and *Hungarian* Salts, a certain stony Earth is partly precipitated by an Alcali, and may be partly obtained by a second Solution and Depuration of this Salt with Water.

From what has been said, we may be convinced of the Efficacy of native neutral Salts, which are partly moist, and partly dry, in the Cure of Diseases; and that, when taken in large Doses, they are, besides other Virtues, possessed of a cathartic Quality, by means of which they powerfully safely and easily, eliminate the Fæces. But we now pass the native neutral Salts, to those of the pharmaceutic and c mical Kind, with an Intention to inquire, whether the sa cathartic and medicinal Qualities are, also, to be found in them That chymical Salt, then, which is prepared of the Acid mineral Sulphur mixed with an alcaline Salt, approaches v nearly to the Nature of that neutral Salt, which the medic Springs contain; for which Reason similar Effects may be justly expected from it. But as that specific Acid, which is the principal Ingredient in mineral Sulphur, is, also, contain'd in other Minerals, such as Vitriol and Alum, so there are various Methods of preparing this Salt, in each of which its Virtues and Efficacy remain the same; for there is one Salt prepared of Nitre and Vitriol, and consequently may be obtain'd from the Residuum of Aqua-fortis, and is call'd, *Vitriolated Nitre*, which *Mynsicht* call'd *The Arcanum Duplicatum*, because it as formed of these two Salts, and formerly look'd upon as a cret at the Court of *Gottorp*, since *Frederic* Prince of *Hol-* purchased the Method of preparing it at the Price of five Imperials. But this Salt may be prepared in a far more us Method, if, after the Nitre is reduced to an Al- ed, the Spirit of Vitriol is poured upon it Drop by the just Point of Saturation, that is, till it is render- Salt. And certainly this Method is far safer than because the Vitriol, which is an Ingredient in the en partakes of Copper, which must be duly mentions to repeated Calcinations, otherwise the Arcanum major; Boer. Ind. alt. 230. If more of it than one Scruple is exhibited, wi Park. Para- cause the Salt of Tartar fix'd, and duly calcin'd, diff Chab. 52 tle in its Nature and Virtues from fix'd Nitre, s Peruvian Opinion, that the same Remedy, which in the call'd *Vitriolated Tartar*, may be prepared of Salt and Spirit of Vitriol; and *Tachenius* thinks, th alk made of Vitriol, and an alcaline Salt. And sin hairy, tracted from mineral Sulphur is not in Foot- Spirit of Vitriol, and since in Antaks, of a pale- Quantity of pure mineral Sulphe with the Brims spread prepare the Arcanum Dupli ong and round- phy, or of Nitre and Antim umber of very they call *Sal Polychrestum*, w of 2. 107 in Calcination of equal Portions of cible. But the latter Medicine is nis. Park. Antimony, made with three Parts of Antimony, by dissolving and crystalliz Matters, Preparation is in the Shops generally Catarrhs. for, if Nitre is burned with Sulphur, exhaled from the Nitre; and the mo phur, by uniting itself more closely Nitre, constitutes a neutral Salt of and of a detergent and laxative Quality. of Alum does not differ from the Acid Sulphur, but is of a like and the same Medicine may be cature fixed alcaline Salt, well me or Pot-ash.

From what has be canum Duplicatum, Vitriolated Nitre, pr Vitriol, Vitriolated Tart chrestum, and the purgative Salt o gius, a Physician of *Isleben*, and describ *Clavis Schroederiana*, because their Ingred ferent Natures, are therefore of the same and that, in the Cure of Diseases, the one m be used as a Succedaneum to another; for all of in a moderate Dose in some proper Vehicle, incid viscid Humours, and, by stimulating the excretory Ducts, not only preserve the Body soluble, but, also, promote a Discharge of the Urine: But when they are exhibited in a larger Dose, half an Ounce for Instance, or more, in a due Quantity of some aqueous Vehicle, they operate in the same manner with cold medicinal Waters, by procuring five or six Stools. For this Reason, when there is a Necessity for a Purgative, which operates without producing any Ebullition of the Blood, any spasmodic Contraction of the intestinal Fibres, any Virulence or Exacerbation of the vital Motions, these Salts are commodiously exhibited in a pretty liberal Dose. But, in a smaller Dose, any one of them mix'd with Nitre, Salt of Tartar, or Crabs-eyes, affords an aperient and detergent Salt, of singular Efficacy in Medicine, and which may with uncommon Success be exhibited in all intermittent Fevers, hypochondriacal Disorders, the Stone, the Asthma, the flatulent Colic, Costiveness, a Jaundice, and a Cachexy.

The Sal Mirabile of *Glauber*, by him so much commended, not only for its Use in chymical Preparations, but, also, for its

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Ki edicinal Virtues, of a neutral Nature, and com-
n ded of a ſtrong Acid of Vitriol, and common Salt, or Sal
t hmæ, whilſt the penetrating Acid of Vitriol attacks the
In aline and earthy Salt, and Principle of which the common
f the conſiſts, and, by uniting itſelf with it, conſtitutes a neutral
any ſub whilſt the acid Spirit of Salt is evaporated. This Salt,
Blood. h is of a conſiderably bitteriſh Taſte, and an excellent ſto-
machic and aperient Medicine, is purgative, when exhibited in
pretty large Doſes. This Salt was by *Glauber* call'd *Mirabile*,
or *Wonderful*, becauſe, if equal Quantities of it, and the Filings
of any Metal, are mix'd with half the Quantity of Powder of
Charcoal, and treated with a fuſory Fire, he imagin'd, that, by
this means, Sulphur might be extracted from any Metal, whilſt
the dephlegmated Spirit of Wine, poured upon it, extracts a
ſulphureous Tincture. But that *Glauber* err'd in this, is ſuffi-
ciently obvious, becauſe, without the Addition of any Metal,
a ſulphureous Maſs like the Liver of Sulphur, from which
true mineral Sulphur may be extracted, may be obtain'd fro
this Salt alone, and the Powder of Charcoal, if a ſm
Quantity of alcaline Salt is only added, as *Stahl* has ſh
by various Experiments; for by this means the
which is compounded of the peculiar Acid contain
Sulphur, and a phlogiſtic combuſtible Principle, is onl
rated; as Mr. *Boyle* obtained a perfect common
from the Oils of Vitriol and Turpentine; and
obtain'd the ſame by Diſtillation, from Opium
of Vitriol.

Jen. But ſince *Glauber*'s Salt conſiſts of the ſam
neo th the above-mentioned neutral Salts, ſuch as t
Expl icatum, and others of a like Kind, that is, of
only of a and Vitriol, and an alcaline fixed Salt, like tha
large Doſes common Salt, (for by Spirit of Salt, and Salt
As comm perfect common Salt is formed) hence we ma
Ule is not to le, that artificial Sulphur may be produced from
ciently known or treated with Salt of Tartar, and an Addition of
luble, and procurin harcoal, for the ſake of Fuſion; and as the
Clyſters, in which one D the *Epſom* Salt, that of *Egra*, that of
a whole Ounce of any other *Hungary*, and the Salt obtained
alſo, in a pr Quantity, am we may juſtly infer, tha all
Body ſolub is Purpoſe rtificial, as they are of the
ver pro ver ſame Ingredients, muſt nearly
Sal is y of icinal Vertues.
rab t eſſ that neutral Salt, which is ſold
Ab Salt; and is imported to *Germany*
o Quantities. That this Medicine is no
which e *Epſom* Waters, we may readily
Ordina Quantity of Salt theſe Waters con-
of the t th at which the ſpurious Salt is ſold.
S lſum however, I am ſo far from con-
Cryſt ſure, I extol and commend it for its
th Qualities. This Salt is artificially
S ike that of *Glauber*, which is, alſo, ſome
V lt; but becauſe *Glauber*'s Salt is ſold at
oy riſon the th of *Epſom* Salt, 'tis not
lently ntributed l of cheaper Ingredients
d ag ey werner; for, as *Lentilius*,
Virtuo ly obſerves, ſome of
ntities alt of the Caput
des. d, and the Lixivium
to
acid J which, beſides common
cin Salt. This Salt I treated
xc and the Addition of Powder of Char-
reus it was not fuſed, but, by means of a
C ature the Whole of it was evaporated, and filled
the C e a fetid Vapour, like that of common Sulphur.
But, w ition of Salt of Tartar, I obtained a Liver of
Sulphur recurr n. From which Circumſtance 'tis certain, that
this Salt is generated of the Acid of Sulphur contained in the
Vitriol joined with the Earth of the Alcaline, or Sea Salt. See SAL.

Having treated of thoſe Salts which are generated of the
Acid of Sulphur, and an alcaline Salt, we now come to con-
ſider the Nature of ſome other Salts uſed in Medicine: Among
theſe are Sal Ammoniac, which is generated of the volatile
Salt of Urine, or Soot, and Sea Salt; and which, by the Addi-
tion of the volatile urinous Principle, is of a far more acrimo-
nious and penetrating Nature, and, for that Reaſon, highly
efficacious in attenuating and reſolving viſcid and tenacious Hu-
mours in the Primæ Viæ. And *Muys*, a celebrated *Dutch*
Phyſician, in a particular Treatiſe, affirms, That Intermittent
Fevers of all Kinds may be infallibly cured by this Salt, if it
is exhibited in due Quantities, and at proper Times. But I am
of Opinion, that this Remedy is far better ſuited to robuſt
Patients, ſuch as the *Dutch* generally are, than to Perſons of
delicate and tender Conſtitutions.

Of the ſame Nature and Virtues is the digeſtive Salt of *Sylvius*,
which that Phyſician frequently uſed, in order to deſtroy viſcid
Crudities, quicken the Appetite, and remove Intermittent Fe-
vers: And this Salt is prepared of the Reſiduum of the Spirit of
Sal Ammoniac prepared with Salt of Tartar, by Elixiviation
with Water. 'Tis, alſo, certain from Experience, that theſe
Salts, when exhibited in a pretty large Doſe, are highly pur-
gative: But I would adviſe Practitioners, never to preſcribe
large Doſes of them; ſince, unleſs their acrid Spicula are, in
ſome meaſure, ſheathed up by viſcid and tenacious Particles in
the Body, and unleſs they are diluted with a ſufficient Quantity
of Liquor, they may eaſily deſtroy the villous Contexture of
the Glands and Inteſtines. There are, alſo, uſed in Medicine
neutral Salts prepared of Tartar, as, alſo, of Vinegar and Salts,
or alcaline Subſtances. Of this Kind is the Tartarus Tartari-
ſatus, the *Sal Eſſentiale*, or the Terra Foliata Tartari, a Solu-
tion of Crabs-eyes, the Salt of Coral, and of Mother of Pearl;
all which Salts were in former Times highly eſteemed, eſpeci-
ally by *Tachenius*, who ſold the Terra Foliata Tartari, mixed
with a Solution of Crabs-eyes, for the fixed Salt of Vipers, by
which means he acquired immenſe Riches. The Salts of this
Kind have this Advantage peculiar to themſelves, that, in con-
ſequence of the great Subtilty of their ſaline Parts, they pene-
trate more effectually into the Maſs of Blood than other Salts,
and powerfully evacuate the peccant Humours by Urine.

We have already ſhewn, that almoſt all the neutral Salts,
eſpecially thoſe of a bitteriſh Taſte, are poſſeſſed of a very con-
ſiderable and powerful purgative Quality; and we aſſirm, that
they produce this Effect by ſtimulating the nervous and muſcu-
lar Fibres of the Inteſtines, and by that means increaſing their
Peristaltic Motion. It may by ſome be objected, that by many
Phyſicians not only deſtitute of a ſaline and bitteriſh Taſte, but,
on the contrary entirely inſipid, the Inteſtines are, alſo, powerfully ſtimu-
lated to a Diſcharge of their Contents, as well as by theſe Salts,
which we obſerve in the *Magneſia Alba*, an highly fine, inſipid,
and whitiſh Powder, apparently deſtitute of every ſtimulating
Quality: But the *Magneſia Alba* does not produce this Effect,
in conſequence of the earthy and alcaline Principle of which it
conſiſts; but becauſe this Medicine not only produces a violent
Effervescence with any Acid, but is diſſolved by it, and in the
Solution acquires a more ſaline bitteriſh Taſte than that of any
other earthy Alcali, whether Crabs-eyes, Shells, or Egg-ſhells.
From this Circumſtance we may conclude, that the *Magneſia
Alba* only proves purgative, when, being diſſolved by the Acid
in the Primæ Viæ, it is converted into a neutral Salt; and this
is confirmed by Experience, ſince hypochondriac Patients are
excellently purged by it; but not thoſe whoſe Stomachs are
full of a thick and viſcid Phlegm.

From what has been ſaid, I think, 'tis obvious, that neutral
Salts are of great Efficacy in the Cure of Diſeaſes, poſſeſſed of
an aperient and detergent Quality, capable of promoting
the Excretions, and, when exhibited in large Doſes, of a
thartic Quality. 'Tis, alſo, ſufficiently obvious, that the
this Kind are, of all others, the moſt ſalutary, and
to Nature, that the Phyſician can neither practiſe
without them, nor eaſily produce any bad Effects by uſing
them. But I foreſee, that many Objections may be made to
this Doctrine, ſince both Experience, and accurate Obſervation,
convince us, that thoſe Medicines which are highly acid, as,
alſo, volatile, urinous, and fixed alcaline Remedies, are ſo far
from being unſalutary and unfriendly to the Conſtitution, that
they may be ſaid to be the moſt ſafe of any. But to this I
anſwer, that neither acid nor alcaline Medicines, whether of
the fix'd or volatile Kind, ever produce a ſalutary Effect, un-
leſs by the internal Diſpoſition of the Humours, eſpecially thoſe
lodged in the Primæ Viæ, they are converted into a neutral
Salt, and by that means render'd friendly to the ſolid as well as
fluid Parts of the human Body.

For this Reaſon, when a large Quantity of Bile, eſpecially of
an alcaline and oleous Kind, is collected, and becomes ſtagnant,
in the Flexure of the Duodenum, ſtrongly affects the nervous
Syſtem, and by that means often produces bilious Vomitings,
Nauſea, Loſs of Appetite, hectic Heats, Cephalalgias, and an
inſatiable Thirſt, then acidulated Liquors, ſuch as Julaps,
Refrigerants, or other acid mineral Spirits edulcorated, are of
ſingular Service. Beſides, when an intenſe febrile Heat, ariſing
from a violent inteſtine Motion of the ſulphureous Parts of the
Blood, by deſtroying its temperate and due Texture, exhauſts
the Body, and impairs the Strength, Acids are, in ſuch Caſes,
more beneficial than neutral Salts, alcaline Subſtances, or any
other Remedies, becauſe they are capable of fixing and ſubdu-
ing the ſulphureous Particles, by whoſe Motion the Heat is
produced. In malignant Diſorders ariſing from a Putre-
faction of the Humours, more Relief is to be expected from
Acids than from any other Remedies, becauſe a Putrefaction
not only generates an Alcali, but, alſo, proceeds from a large
Quantity of it: And, when this Alcali is corrected and ſubdued
by an Acid, the Putrefaction is forthwith ſtopt. In inveterate
Scurvies, and arthritic Diſorders, large Quantities of Salts are
generated in the Maſs of Blood, which approach more nearly

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to an alcaline and lixivious, than to a neutral Nature. Hence the Blood of such Persons, when taken from the Veins, appears thin and florid, and their Urine is, for the most part, highly red, saline, and lixivious. And Experience teaches us, that, in such Cases, more happy Effects are often produced by temperate Acids, than by alcaline, urinous, and volatile Medicines, or those of an hot and spirituous Nature.

Those Medicines which abound with an alcaline Salt, whether of the fix'd or volatile Kind, are by no means to be promiscuously and indiscriminately used, tho' they are of singular Service, when prudently exhibited; for when a Redundance of acid Humours is lodged in the Primæ Viæ, and excites violent Symptoms, as we observe in hypochondriac, hysteric, and melancholic Patients, such as Corrosions of the Stomach and Intestines, Anxieties, Inflations of the Stomach attended with a Cardialgia, Coughs accompanied with Pain of the Stomach, Cephalalgias, excessive Costiveness, or preternatural Looseness accompanied with a Tenesmus, in these Cases, certain earthy Alcalines, and especially Crabs-eyes, prepared Sh[illegible] Oil of Tartar *per Deliquium* alone, will produce more Effects, than any other Medicines, because to absorb Acid they convert it into a neutral Salt, which is after[illegible] easily carried through the excretory Ducts, without exciting violent Symptom. But if there is rather a Defect than dundance of Acid in the Primæ Viæ, and if these are [illegible] of viscid and tenacious Humours, alcaline earthy Substances in large Quantities, are highly prejudicial; for since they not dissolved, they rather, by uniting with the earthy and slim Particles, augment the Quantity of the Phlegm, and by that means destroy the Appetite, load the Stomach, obstruct the Mouths of the lacteal Vessels, and render the Patient cost[illegible] *Hoffman.*

NEUTHA. A Pellicle covering the Eyes, or Ears, or the whole Face of a Child in the Birth.

NHAMBI, *Brasilienſibus*, Marggr. An acrimonious Plant with a naked Flower, and a ligneous, geniculated Stalk, which creeps like Purslane, and takes Root from Place to Place by its Fibres: The Leaves, chewed, have a pungent Taste, like Mustard, or Nasturtium.

The Leaves, or Seeds, rubbed upon the Top of a Bubo, speedily remove it. An Ounce and an half of the Seeds, drank in Wine, are an excellent Remedy against the Wounds inflicted by any venomous Animals whatever; or the Decoction of the like Quantity of its Seeds may be drank with an equal Quantity of Wine. The Herb itself is generally boiled with Fish, and is very proper to that Purpose. *Raii Hist. Plant.*

QUARANDU *seu Piper caudatum.* Marcg. Pison.

[illegible]tity of a small Shrub, which is produced in some Woods of four or [illegible]d bears a Species of Katkins, full of round blackish [illegible]sometim[illegible]ge as those of the Poppy, and of an acrid Taste ways diure[illegible]he best Oriental Pepper.

[illegible]rate that [illegible]es of this Plant cure Ulcers of the Legs: Its Root [illegible]beneficial in Apostems; and, as both are very strong, they are proper for Baths in cold Disorders, even after they are dried, and kept for a considerable Time. A Decoction of the Roots and Suckers discusses and incides thick and viscid Humours, and cures a Dropsy of the Feet. *Raii Hist. Plant.*

NHUA *Brasilienſibus* Marcgrav. *L.* 3. *C.* 4. Otherwise called *Prunifera Brasilienſis, fructu rotundo albescente.*

When the Fruit is ripe, it falls off, is gathered and eaten by the Inhabitants of those Countries in which the Tree is produced; but I find no medicinal Virtues ascribed to it. *Raii Hist. Plant.*

NICARION. The Name of a Collyrium, described by *Aetius, Tetrabib. 2. Serm. 4. Cap.* 113.

NICCOLUS. The Name of a Gem, to which some superstitious Virtues are ascribed. *Castellus* from *Chioccus.*

NICEPHORI PASTILLUS. The Name of a Troche described by *N. Myrepsus, Sect.* 41. *Cap.* 29.

NICODEMI OLEUM. The Oil of *Nicodemus.*

Take of the Seeds or Tops of St. John's-wort, and old Turpentine, each one Pound; Litharge, six Drams; Hepatic, Aloes, and Tutty, of each three Drams; of Saffron, one Ounce, of White-wine, four Pounds; and of old Oil, two Pounds: Let them digest together in the Sun for a sufficient time; then boil, and strain off the Oil. *Old College Dispensatory.*

NICOLAI EMPLASTRUM. The Name of a Plaister described by *Paulus Ægineta, Lib.* 7. *Cap.* 17.

NICOLAUS MYREPSUS. This Author, says Dr. *Freind*, was the last of the *Greek* Writers, if we may reckon such an impure Style, as he uses, *Greek*; who, indeed, has taken the Pains to collect together, by way of Dispensatory, the several compound Medicines, which we find dispersed in the *Greek* and *Arabian* Writers. It is very certain, that *Myrepsus* compiled this Work before 1300. for not only *Petrus de Abano*, the famous Conciliator, who died in 1316. but *M. Sylvaticus* and *F. Pedemontanus*, both Physicians to *Robert* King of *Sicily*, and who wrote very early in his Reign, which began in 1310. by Name refer to several Receipts, which we find in him.

The Works of this Author, which relate to the Composition of Medicines, and are divided into forty-eight Sections, were never published in *Greek*; but were translated into *Latin*, and illustrated with Notes, by *Leonardus Fuchsius*. This Translation, though none of the most correct, has, however, undergone several Editions; one, for Instance, at *Basil*, in the Year 1549. *Fol.* another at *Lyons*, in 1550. *Octav.* another at *Frankfort*, in 1626. *Octav.* another among the *Medicæ Artis Principes* of *Stephens*, in 1567. *Fol.* and another at *Noremberg*, in 1658. *Octav.* with a Preface, by *Johannes Hartmannus Beyerus*, which is the best Edition of all hitherto extant. *Fabr. Bibl. Græc.*

NICON, or NINORS. Barbarous Names for Hellebore. *Castellus.*

NICOTIANA.

The Characters are;

[illegible]The Root is annual; the Calyx is either long and tubulous, [illegible]so divided into five long and acute Segments, or else short [illegible]4. wide, and then divided into five Segments, which are obtuse. [illegible]. Flower is monopetalous, Funnel-shaped, and cut either into [illegible]DCP and acute Segments, which expand like a Star, or into Qu[illegible]rt and obtuse ones; and is furnished with five Stamina. [illegible] Fruit is membranaceous, oblong, or roundish, and divided [illegible]erat[illegible] Intercloſure into two Capsulæ, or Cells.

[illegible] and *Verhaave* mentions four Species of this Plant; which are,

[illegible] Nicotiana; major; latifolia. *C. B. P.* 169. *Tourn. Inst.* 117. *Boerh. Ind. alt.* 230. *Nicotiana, Petum, Tabacum.* Offic. *Nicotiana major, ſive Tabacum majus.* J. B. 3. 629. *Tabacco latifolium.* Park. Parad. 363. Raii Hist. 1. 717. *Tabacum, Nicotiana.* Chab. 526. *Petum ſive Tabacum.* Pison. 206. *Hyoscyamus Peruvianus.* Ger. 285. Emac. 357. TOBACCO. *Dale.*

The Tobacco has very large, broad, softish, and clammy green Leaves, two Feet long, and sharp-pointed at the Ends; the Stalk is about as thick as one's Thumb, round, and somewhat hairy, beset alternately with the like, but smaller, Leaves, without Foot-stalks. The Flowers grow on the Tops of the Stalks, of a pale-red Colour, in Shape of long hollow Tubes, with the Brims spread out into five Segments. The [illegible]ong and round-pointed, divided into two Parts [illegible]he [illegible]umber of very small brown Seeds. It is sown [illegible]hantity of [illegible]07 in *July* and *August*. The Leaves a[illegible]hey are to be [illegible]

Much has been said upon this [illegible]atered or sprinkl[illegible]*nſis.* Park. [illegible]nved particular Treatises having been wrote abo[illegible] cold are used only in Oils and Ointments, an[illegible] Matters, the Wounds, Ulcers, Inflammations, Tum[illegible] Catarrhs. Th Evil. The dried Leaves are a strong [illegible] bears a [illegible] used with the utmost Caution, by reasoey make [illegible] ing; chewed in the Mouth, it evacuat[illegible] as well as smoked in a Pipe, in whi[illegible] sumed, the greatest Part by way of [illegible] commend it as an Helper of Digestio[illegible] servative against the Plague; but *Rivinus* [illegible] of *Leipsic*, several died, who were great [illegible] The distilled Oil is of a pos[illegible] inwardly, will destroy a C[illegible] Tooth, to cure the To[illegible] helps the Itch, and ot[illegible] stroys Fleas, Lice, a[illegible] in Tobacco being seldo[illegible] Tobacco, beat well w[illegible] applied in a Linen Rag on th[illegible] ing, and has sometimes very good Effects in r[illegible] mors of the Hypochondria. I know two Insta[illegible] a complete Cure: One is, of an old Man, w[illegible] the open Air, while the Serenadas, or Night-Mu[illegible], was taken, in the *West-Indies*, with a Numbness of per[illegible] Body, which soon was followed with Purging and Vomi[illegible] these going off, he had all the Symptoms of Jaundice, and Hardness, and Pain, under the short Ribs of the Left Side. The Pain went off in a few Days, but the Tumor increased. After he had used Variety of Medicines, for five Years, to remove this Disease, a Sea Surgeon applied a Poultice of Tobacco, disguised with Green Tea, Sugar, and Cochineal, upon the Epigastrium and Hypochondria. After this Application had been made four or five Hours, he vomited a great deal of purulent Matter. When the Poultice was taken away, the Vomiting ceased. He continued to apply this Mash once a Day for a Month, and was perfectly cured. The other Example is of a Boy, who was cured, much in the same manner, of an hard indolent Tumor of the Left Hypochondrium.

The Man had six Ounces of Tobacco in his Poultice; the Boy had only one; and the Quantity must always be regulated by the Age of the Patient. Mr. *John Stedman*, from the *Medical Essays, Vol.* 2.

As *Nicolaus Monardus*, in his *Simpl. Med. Histor. Cap.* 14. has given a fuller and more ample Account of Tobacco, than any other Botanist, we shall, as briefly as possible, exhibit his Sentiments, with respect to this Plant.

Its

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Its true Name, therefore, among the *Indians*, is *Picelt*; for it was called Tobacco, by the *Spaniards*, from a certain Island of that Name, in which it is produced in great Quantities.

It rises to a great Height, so as sometimes to equal the Malus Assyria, commonly called the Lemon-tree: Its Trunk is streight, with many large Ramifications springing out from it: Its Leaf is almost like that of the Malus Assyria, but larger, of a faint-green Colour, like that of the Leaf of the sharp-pointed Dock; and somewhat hairy, as the whole Plant itself is: On the Extremities of its Branches it bears a Flower, resembling a small Bell, of a whitish Colour, and in the Middle somewhat inclined to that of a Purple. When this Flower falls off, it is succeeded by a Fruit, resembling the Heads of the black Poppy, and in which a small Seed, of a blackish and cineritious Colour, is contained. Its Root is divided into many Branches, is of a woody Contexture within, of the Colour of Saffron, and of a bitter Taste: Its Bark is easily taken off; but we know of no medicinal Virtues ascribed to it.

It grows in most Parts of the *Indies*, but thrives best in moist and shady Places, where the Soil is light and uncultivated. It may be planted at all Seasons of the Year; but, when it is above-ground, is to be carefully preserved from Cold: A great Ornament to Walls, because, like the Citron-tree, its Verdure through the whole Year.

This Plant was formerly used by the *Indians*, especially the Inhabitants of *New Spain*, for curing Wounds; and first, it was imported into *Spain*, it was more used for adorning Gardens, than admired for its medicinal Virtues: But now the Scene is changed, and the Plant become far more famous on the latter than on the former Account; for it is of an heating, resolvent, cleansing, and somewhat astringent Virtue.

Its Leaves, if applied warm, and frequently renewed, are a very efficacious Remedy in Cephalæas, and Hemicranias arising from a cold Cause, or Flatulencies, as, also, in a Stiffness of the Neck, or Tetanus, and in Pains of the whole Body, arising from the same Causes. Some anoint the Part affected with Oil of Orange-flowers, before the Application of these Leaves.

By cleansing the Teeth affected with a Linen Cloth, dipt in the Juice of Tobacco, and wrapping up the Leaf, in form of a Peel, to be put we may justly infer, Tooth-achs are not only removed, but, rtificial, as they of the Corruption prevented.

[illegible] same Ingredients, with Water, and a Linctus pre- [illegible] icinal Vertues. neficial in Disorders of the Breast, [illegible] er that neutral Salt, and other Disorders arising from a [illegible] Salt; and is im- prepared of Sugar, and a Decoction of [illegible] Quantities. That the Expectoration of putrid Humours: [illegible] e *Epsom* Waters obacco is sometimes beneficial to asth- [illegible] Quantity of Salt essary Evacuations must be previously [illegible] at which the spu e Patients will admit it. [illegible] Cry, however, I am under the Ashes, and frequently applied [illegible] I extol and con e Ashes are wiped off, are beneficial to [illegible] ualities. This Chilness and Flatulences. Others, af- [illegible] like that of *Glauber* ds with Oil, rub the Leaves between [illegible] lt; but because m to the Region of the Stomach, for the [illegible] arising the t Leaves triturated with a little Vinegar, and [illegible] lent ter contributed Salt, beneficial in Obstructions [illegible] nd ag they were dipt in, as *Lemon* Juice of Tobacco, to [illegible] Virtuously observes, some be had, Snuff may be [illegible] ntities Salt of the Ca ment, with which the [illegible] des d, and the Lixivor a considerable time [illegible] to which, besides co

[illegible] men greedily extol Tobacco in Crudities of the [illegible] and the Addr in Children or Adults; for they first anoint [illegible] s it was not th Lamp-oil, and, heating the Leaves under the [illegible] the Whole of it e of them to the Region of the Stomach, and [illegible] others apour, ick, in that Part most contiguous to the Stomach; [illegible] by whi lt of as the Crudities are concocted, and the Body ren- [illegible] der'd so uble, if the Application is repeated, as often as is neces- sary. A small Quantity of the Juice of Tobacco, boiled with Sugar, expels flat and round Worms from the Intestines. But, in this Case, the Leaves, when triturated, are to be applied to the Navel, and a Clyster is to be injected.

The Leaves, when heated in the manner already mention'd, and applied as hot as the Patient can possibly bear, afford great Relief in nephritic and flatulent Pains: They are, also, a proper Ingredient in Clysters, Fomentations, and Plaisters, designed for certain Purposes.

When render'd sufficiently hot, and applied to the Navel, and Region of the Uterus, these Leaves afford present Relief in Suffocations of the Matrix; and, if a Deliquium should ensue, the Smoke of them is to be blown into the Nostrils; by which means the Patient will be forthwith recovered. This Piece of Practice is so common among the *Indian* Women, that, for this Purpose, they preserve and highly esteem Leaves of Tobacco. Some of them, before the Application of these Leaves, apply fragrant Substances to the Navel, the most considerable of which are Tacamahac, Oil of liquid Amber, Balm of *Gilead*, Caranna, or a Plaister made of all these, and wore constantly on the Navel.

In Pains of the Joints, arising from cold Humours, or, at least, such as are not very hot, the warm Leaves of Tobacco are efficaciously applied, or a Linen Cloth dipt in the warm Juice; for these resolve and digest the Humours: For which Reason the warm Leaves are successfully applied to œdematous Tumours, previously washed with warm Tobacco-juice.

It is certain from Experience, that Chilblanes are cured by rubbing them three or four times with Tobacco-leaves, and then washing the Hands or Feet with warm Water and Salt.

Some have found from Experience, that they resist the Poison with which the Canibals tinge their Arrows; whereas, before, it was customary to sprinkle Sublimate in the Wounds inflicted by that means. For this Purpose, the expressed Juice is to be poured into the Wounds, and the triturated Leaves afterwards applied.

When applied to poisonous and pestilential Carbuncles, the Leaves induce a Crust, and promote a Cure: They are, also, a present Remedy for the Stings and Bites of poisonous Animals.

[illegible] acquired [illegible] en applied to recent Wounds, they stop the Effusion of [illegible] Advantage and conglutinate them; but, if the Wounds are consider- [illegible] the great Subti ge, their Lips are to be brought into Contact; after [illegible] effectually into the Juice of Tobacco is to be poured upon them, and [illegible] fully evacuate t triturated Leaves applied, and secured upon the Wounds: On [illegible] ve already shew emaining Days, the same Method of Dressing is to be used, [illegible] se of a bitter proper Regimen observed.

[illegible] powerful put *Olaus Monardus* informs us, that he knew a Man afflicted [illegible] this Effect by Ulcers of the Nose, which discharged a Sanies seemingly [illegible] a contagious Quality: By his Advice, the Patient dropt To- [illegible] bacco-juice into his Nostrils; after the second Instillation of this [illegible] Liquor, a large Quantity of Worms fell out of his Nostrils, [illegible] hen a smaller Quantity, and, a few Days after, the Ulcer was [illegible] ge of ed, though the corroded Parts were not restored. Rubbing [illegible] petigos, and scald Heads, with the Leaves, also, proves bene- [illegible] cial. *Nicol. Monardus.*

Smoking Tobacco produces a Discharge of Phlegm, and dries Catarrhs: Hence, by evacuating the Glands of the Mouth and Fauces, it proves beneficial in a Tooth-ach, and Stuffing of the Head; but, as it is heating and drying, it is so far from being useful, that it is rather hurtful, to Persons of hot, bilious, and lean Constitutions; which, says Mr. *Ray*, I myself have experienced, except when afflicted with a Tooth-ach, or when the Fauces were turgid with Humours.

Some condemn Smoking: Thus *Caspar Hoffman* informs us, that he was told by the Soldiers, who had lived for some time in *Holland*, that they saw the internal Parts of the Cranium of Malefactors black, when their Heads were dissected; and that he was informed by a certain Soldier, who served in the last [illegible] against *Bohemia*, that all the *Englishmen* slain had the [illegible] niums in a like Condition, because the *Hollanders* an [illegible] are much addicted to the Smoking of Tobacco. [illegible] says Mr. *Ray*, was asserted to me by Mr. *Bouchay* [illegible] thecary of *London*.

But if these Facts were true, which, however, be- Reason to doubt, yet it does not hence follow, that [illegible] is prejudicial; since there are many Persons, who have smoked copiously every Day, for many Years, remain sound and healthy to an extreme old Age, without ever sustaining any Injury, but rather reaping Advantage, from that Practice; for, in some, it strengthens the Stomach, and promotes the Concoction of the Aliments; in others it renders the Body gently soluble; and others use it for the sake of Amusement, without either Injury or Benefit.

According to *Hernandez*, taking Snuff renders the Person, who uses it, less sensible of Blows, or any kind of Punishment, augments the Courage, and makes Persons more fit for enduring Labour and Fatigue: But it is not to be used to Excess.

The green Leaves of Tobacco, bruised and applied, alleviate Gout Pains, and are of a narcotic Quality. The Juice, also, of Tobacco, or the green Leaves, applied, remove the Heat, and cure the Pustules, excited by Nettles.

Joan. Torrentius, in his Notes upon *Fernandez*, gives us a singular Method of purging the Brain, which he received from a Capuchin, who asserted, that by its means he had freed many from the Gout.

As much of the dried Leaves of Tobacco are to be taken, as may be contained in a Walnut-shell; and, compressing the Tobacco with the Fingers, it is to be put into a Piece of clean Linen, or Silk, wrapt up into a Nodulus, as large as an Hazel-nut, and bound hard with a Thread. This Nodulus is put into the Mouth, and, by means of the Tongue, applied to the Palate for half an Hour: Upon which a tenacious Phlegm is immediately discharged, so tough as to hang from the Mouth like a Thread. And though by this means a slight Vertigo is produced, yet it is soon removed, and is entirely inoffensive, unless the Brain is of an highly warm Nature.

Some, in consequence of the narcotic Quality of Tobacco, affirm that it is of a cold Quality; but that it is hot, is sufficiently obvious

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obvious from its resinous grateful Smell, its Acrimony, by which it heats the Fauces, and its vomiting almost as powerfully as Hellebore, as is certain from the Experience of many: Besides, according to *Joan. Torrentius*, there is no Narcotic as yet known, which is not of an hot Quality.

The Use of the Water, distilled from the green Leaves of Tobacco, powerfully removes Stones firmly lodged in the Kidneys. *Chesneau ex Zacut. Lib. 2. Prax. Mirand. Obs. 66. ex Collectaneis D. Hulse.*

Tobacco sufficiently calcined in a Crucible, and put into the Cavities of the affected Teeth, immediately removes the Tooth-ach, as I myself, says Mr. *Chesneau*, have frequently experienced.

A Drop or two of the Oil of Tobacco, put upon the Tongue of a Cat, or any other Animal, quickly kill it. But *Francis Rhedi* observes, that all Animals are not killed by this Oil, and that all the Animals it produces this Effect upon, are not equally soon destroyed by it; because there are great Differences between various Tobaccos, and between the several Animals on which the Oil acts. Dr. *Tancred Robinson.*

Surgeons sometimes use this Oil, in order to induce a Volent: when they amputate Limbs. Dr. *Palmer, è Dictatis Dy*, and *manni.* Nitre,

I recommend the Use of Tobacco in the Plague; for, by es means, I myself was freed from that Misfortune; and almo kin, the Houses, both of *London*, and *Nimmegen* in *Gelderland*, Nitre Tobacco was sold, were free from the Contagion, thou of Inhabitants of the adjacent Houses were infected. *Diem de Peste, ex Adversariis D. Tancred Robinson.*

In order to cure a Palsy, infuse the green Leaves of Tobacco in Malmsey-wine; and, after Sweating, rub the paralytic Parts with this Wine, which is preferable to all other external Medicines. *Hartmannus.* This was communicated to me by the ingenious Dr. *Edward Hulse.*

Anton. Recchus informs us, that the Smoke of Tobacco, blown into the Uterus, in a Suffocation of that Part, in a Difficulty of Breathing, Straitness about the Præcordia, and Syncopes, produces very happy and instantaneous Effects. *Ex Excerptis D. Hulse.*

The Leaves of Tobacco, rubbed on the Hand, or a Piece of Paper, or Linen, produce a beautiful green Colour. *D. Meret. in Not. ad Anton. Neri.*

An Instance of a violent Vomiting, constantly produced by sprinkling Snuff upon a contused and lacerated Thigh, is found in *Ephem. German. An.* 12. *Obs.* 108.

I once saw a Gentleman of Distinction so fat, that he could neither move from Place to Place, nor sit on Horseback, without immediately falling asleep; but one soon became able to do Qua being restored to his natural Size by chewing Tobacco, tity of self assured me; for this Plant is beneficial for phleg four or cold Constitutions. *Borelli, Cent. 2. Obs.* 11.

sometimes ing Tobacco has not always the same Effect on all ways diure I know a Gentleman preternaturally fat, who was rate that Weaner by its Use; but he told me, that his Teeth, ve formerly loose, were fixed by that means.

I knew three robust young Men freed from Dysenteries, by drinking a Decoction of Tobacco, which by its violent Operation totally evacuated the Cause of the Disorder, and produced the Effects of an Anodyne and Narcotic. *Diemerbroeck, Obs. Medic. Obs.* 19. But though, in these Patients, this Medicine produced salutary Effects, yet I think it hardly adviseable, promiscuously to exhibit a Decoction of Tobacco to all dysenteric Patients, because it operates very violently, both by Vomit and Stool.

Willis recommends the Use of Tobacco in Camps, because by its means the Scarcity of Provision may be supplied, and the Men render'd less sensible of Fatigue and Danger: It is, likewise, efficacious, not only in preventing, but, also, in curing some of the Disorders which most generally rage in Camps, such as Colics, Diarrhœas, Ulcers, and Pains of the Head and Joints. *Raii Hist. Plant.*

The various Abuses of Tobacco are so numerous, that it would be too tedious to enumerate them all. The Curious, however, may consult *Simon Pauli de Abusu Tabaci.*

The Cases, also, in which this Plant is proper and improper, are so various and perplexing, that great Skill and Judgment are requisite, to determine when it is to be used, and when not.

It is, however, universally granted, that an excessive Use of this Plant, or any of its Preparations, never fails to be productive of bad Effects. But as the precise Quantity proper for each Constitution cannot be determined, so this Excess can only be estimated by the Effects produced by it; so that it seems to be a kind of Absurdity, to lay down general Rules, either with respect to the Use or Abuse of Tobacco.

2. Nicotiana; major; angustifolia. *C. B. P.* 170. *Nicotiana sive Tabacum, folio angustiore.* J. B. 3. 630. *Hyoscquami Peruviani altera.* Icon. Dod. p. 452.

3. Nicotiana; minor. *C. B. P.* 170. *Tourn. Inst.* 117. *Boerh. Ind. A.* 230. *Petum Rivini.* Rupp. Flor. Jen. 19. *Petum Anglicanum.* Pharm. Bat. 161. *Tobacco Anglicum.* Park. Theat. 711. *Priapeia quibusdam, Nicotiana minor.* J. B. 3. 630. Chab. 527 (*Figara transposita*). Raii Hist. 1. 715. *Hyoscyamus luteus.* Germ. 284. Emac. 256. *Hyoscyamus, flore luteo.* Rivin. Irr. Mon. 103. ENGLISH TOBACCO.

This is a lower and smaller Plant than the first, the Stalks are round and hairy, two or three Feet high. The lower Leaves are pretty large, oval, and round-pointed, and clammy in handling; they are much less than the first; those which grow on the Stalks, are smaller, set on alternately. The Flowers are hollow, and Cup-fashion'd, with the Brim cut into five Parts, of a yellowish-green Colour, set in hairy Calyces. The Seed is rather bigger than the first Sort, growing in a Seed-vessel, which, by some Persons, is compared to the Glans of the Penis, whence it is sometimes called *Priapeia:* It is sown in Gardens, flowering in *July* and *August.*

This Tobacco is not so much used as the first Sort, as being believed to have less Strength and Virtue, though it is too frequently sold by the Herb-women for that, being, as I suppose more easily propagated; the Leaves of this they, also, usually sell for those of *Mandragora*, in the *Unguentum Populeon. Miller's Bot. Off.*

4. Nicotiana; minor; foliis angustioribus amplioribus. *Vaill. dilueb. Ind. alt. Plant.*

of DOR. The Smell of burnt animal Substances. Hence Qu ations, which have a Savour like putrefy'd Flesh, are call'd A ous.

Perat ENGHALA. A Name for the *Methonica*; *Malabaro-* and

NIGELLA.

The Characters are;

The Root is annual; the Leaves are capillaceous; the Calyx generally consists of five very thin, and very branched small Leaves, which expand in form of a Star. The Flower is rosaceous, pentapetalous, or polypetalous, and furnished with numerous short Stamina, from the joining of the Placenta and Ovary, a Multitude of Corpuscles interposing, in the Form of a monopetalous, anomalous, and bilabiated Floscule. The Ovary, which adheres to the Placenta, consists of many Pods furnished with a crooked Tube; and becomes at last a membranaceous, roundish, or oblong Fruit, consisting of many Cavities, or Cells, horned at the Top, and full of numerous [illegible]

Boerhaave mentions ten Spec[ies] the F[amily] which are,

1. Nigella; arvensis; cornuta, [illegible] charity of [illegible] *Hist.* 2. 1070. *Tourn. Inst.* 258. *Boerh. Ind. A.* 2[illegible] they are to be [illegible]ific. *Melanthium sylvestre sive arvense.* J. B. 3. watered or sprinkl[illegible]nsis. Park. Theat. 1376. WILD FENNEL-FLO[illegible]

The Seed of this Plant is used to disso[illegible] Matters, which, gathering in the Sinuses of the [illegible] Catarrhs. For this Purpose, infuse a Pugil of Ma[illegible] beats a[illegible] of White-wine; and add a Dram of [illegible] ney make [illegible] Whole thro' a Linen Cloth, and snuff [illegible] Nose. For the Colic, a Ptisan is made [illegible] Leave[illegible] mile, Melilot, and *Nigella* Seeds. [illegible] same Virtues: It is very incisive and [illegible] not cause it[illegible] sion of the same Seeds, in Wine, is diureti[illegible] Menses. *Martyn's Tournefort.*

2. Nigella; latifolia; flos [illegible]; sim[illegible] P. 145. *Prodr.* 75. *Melan*[illegible] *Hispani*[illegible] Æst. 0. 2. F. 12. Fig. 1. *a H.*[illegible]

3. Nigella; angustifer of [illegible] B. P. 145. *Melanthium* [illegible]

4. Melanthium; flore [illegible] *Melanthium, capite vel calice,* [illegible]

5. Nigella; flore minore, [illegible] *Raii Hist.* 1071. *Tourn. Inst.* 258. *Boerh. Ind.* [illegible] *Gith.* Offic. *Nigella Romana sive sativa.* Pa[illegible] *Melanthium.* Ger. 924. Emac. 1084. *Melanthium* [illegible] *minore, semine nigro.* J. B. 3. 208. FENNEL-FLOWER.

This Plant has a small sticky Root, which per[illegible] every Year, after ripening the Seed. The Stalk arises to be a Foot and an half, or two Feet high, hollow, branch'd, and chanel'd, having several finely laciniated Leaves, pretty much resembling those of Lark-spurs, set alternately on them. The Flowers grow on the End of the Branches, of five small white, sharp-pointed Leaves apiece, with several Stamina in the Middle; and are succeeded by oblong, round, horn'd Heads, having on their Tops five or six crooked Horns; the Seed is black, and somewhat sweet; it is sown in Gardens; and flowers in *June* and *July.* The Seed only is used.

It is accounted heating and drying, and serviceable, as an Errhine, to discharge tough mucous Phlegm from the Head, and recover the lost Sense of Smelling; it is said, also, to provoke Urine, and to help Tertian and Quartan Agues; but it is seldom used. *Miller's Bot. Off.*

The Seed of *Nigella* is principally used in Medicine; as, for Instance, in resolving and expectorating the Mucilage of the Lungs, for increasing Milk, for provoking Urine, and the Menses, and against the Bites of venomous Animals; it is esteemed in Quartan and Quotidian Fevers. Outwardly, it is of frequent Use in Cucuphas, Epithems, and the like Applications for easing the Head-ach, and drying up of Rheums. *Schroder.*

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The Root has a peculiar Property of ſtopping Hæmorrhages, being chewed in the Mouth, and intruded into the Noſtrils. The Seeds afford an Oil by Expreſſion, which many ignorant Apothecaries, by a pernicious Error, make uſe of inſtead of Oil of Nard. The green Seeds abound with an excrementitious Humidity, and therefore are not taken inwardly with Safety, as *Tragus* obſerves. For this Reaſon, ſays *C. Hoffman*, they are to be carefully dry'd, after waſhing, as well as the Seeds of Caraways and *Melanthium*: On the ſame account, they are rather uſed parched, than crude, in Catarrhs, and Colds, in which Caſes they are of admirable Service, when parched or burnt. In ſuch Diſorders, I recommend the following Nodulus.

Take Seeds of Nigella parched, Tobacco, Styrax Calamita, each one Scruple; Ambergriſe, two Grains: Mix them, and tie them up in a fine red Linen Cloth, to be held to the Noſtrils at Intervals. *S. Pauli.*

For Loſs of Smelling, take of Roman Nigella, a ſufficient Quantity: Reduce it to Powder, and work it with old Oil in a Mortar. Let the Patient, with his Head held backward, and his Mouth full of Water, receive this Liquid into his Noſtrils, drawing up his Breath. *Galen.*

For a noble Lady, very ſubject to a Coryza, I preſcribed the following Nodulus.

Take Seeds of Nigella parched, half an Ounce; Abelmoſs Leaves of Caraways and Marjoram, each two Drams; Storax Calamita, Tobacco, each one Dram; Ambergriſe, ſeven Grains: Mix them, and tie them up into a Nodulus.

By the Uſe of this Remedy, the Lady preſerved herſelf, for the future, free from all manner of Catarrhs and Coryzas, to which ſhe was before very ſubject. *S. Pauli.*

The Flowers of *Nigella*, tho' of a Sky-blue, yet rub'd with the Hands on Paper, or Linen, dye them of a beautiful green Colour. *Raii Hiſt. Plant.*

6. Nigella; Orientalis, flore flavo; ſemine alato, plano. *T. Cor.* 19.

7. Nigella; Cretica. *C. B. P.* 146. *Prodr.* 75. *M. H.* 3. 515.

8. Nigella; Creticaſtri inſtes; odorata. *Park. Theat.* 1376. *M. H.* 3. 51[illegible] as they of[illegible]

9. Nige[illegible]ngredients, wi[illegible]multiplici. *H. Eyſt. Æſt.* 6. 2. *F.* 16. *Fig.* 1. [illegible]Vertues. [illegible]nef

10. Nige[illegible] neutral Salt, and *Boerh. Ind. alt. Plant. Vol.* 1. *p.* 283. [illegible]and is impre[illegible]

It is calle[illegible]. That th[illegible]uaſi *Nigrella*, from the black Colour of its Seeds; [illegible]m Waters[illegible]obned *Melanthium*, that is to ſay, Blackfl[illegible] Quantity of Salt eſſare not black; and *Melaſpermum*, that is[illegible] at which the ſpe[illegible]

[illegible]ſu[illegible]unt are aperitive, inciſive, reſolvent, and [illegible]Cry[illegible], however, I am[illegible]Aled for the Stone in the Kidneys, and [illegible]gur[illegible] I extol and com[illegible]Chilermitting Fevers, and for deſtroying [illegible]Qualities. This [illegible]ds wtwo Ounces thereof being boiled in [illegible]ike that of *Glaube*[illegible]m is an inephritic and carminative, whence, [illegible]lt; but becauſe [illegible]Leaures the Colic; the Seeds increaſe Milk, [illegible]yriſoning the t[illegible]blon by S[illegible]ng are of an acrimonious Qua[illegible]ilen[illegible]ter contributed [illegible]o[illegible]rmulate[illegible]s Leem[illegible]

[illegible]nd ag[illegible]hey we[illegible]dipt[illegible]

[illegible]Virtu[illegible]CA[illegible]es, ſon[illegible]be for the *Garidella*; *foliis* [illegible]ntities ſalt [illegible]the Camen[illegible]

[illegible]ſides d, and the Lixiv[illegible]r [illegible]the *Lychnis*; *ſegetum*, [illegible]which, beſides cor[illegible] *tenuiſſime diviſis.*

[illegible]th, [illegible]reamſome BUS. [illegible]is Salt.

See MORBUS NIGER.

[illegible]and the Addr[illegible]in M, & GRISEUM. See CADMIA.

[illegible]ns it was not [illegible]th NIL *Malabarenſis*. H. M. Otherwiſe call'd, *Bac-*[illegible]he Whole of it[illegible]*rica fructu oblongo, tetracocco, calyculato.*

[illegible]rs[illegible]t is a[illegible]r, [illegible]kle low Tree, or rather a Shrub, about ſix Feet in Height, growing in watry Places, and by the Banks of Rivers. The Leaves dry'd and pulveriz'd, and then exhibited every Day with Sugar, in an Infuſion of Rice, are ſaid to cure the Lues Venerea. Of the Leaves, boiled and baked in the Yolk of an Egg, is prepared a Cataplaſm, which they believe to be of great Service, when apply'd to the Venereal Buboes of the Groin; of the Leaves and Roots boiled in Water, is prepared a Bath, which is ſuppoſed to have an extraordinary Effect in the Phrenſy, Mania, and other cephalic Affections; and of the Root boiled in Oil, they prepare a Liniment againſt the Gout. *Raii H. P.*

NIIR-PONGELION. H. M. Otherwiſe call'd, *Arbor ſiliquoſa Indica ſiliquis longis contortis, in quatuor Cellulas per longum diviſus.*

It grows to the Height of about ten Feet, and is not unlike a Pear-tree; it delights in a moiſt and muddy Soil.

The Fruits are delicious Food to the Parrots; of the Branches and Root, they make Fiſhing-nets, which are preſerved in the reddiſh Decoction of the Bark; of the Seeds of the Fruit bruis'd, with dry'd Ginger, and the Root or Fruit of *Pavetta*, and the Waſhings of Rice, is prepared an excellent Liniment for ſpaſmodic Affections, which the *Malabarians* call *Paddavenera. Raii Hiſt. Plant.*

NIL. See ANIL, and INDIGO.

NIL ARABUM. A Name for the *Convolvulus*; *cærulens*; *hederaceus*; *ſeu trifolius.*

NILA HUMMATU. A Name for the ſecond and third Species of the *Datura Malabarica*; the firſt, which is the *Nila hummatu, Daturæ Malabaricæ ſecunda Species*, Hort. Mal. differs little from the *Stramonium majus, album*; which ſee deſcribed under STRAMONIUM.

This Species grows in ſundry Places, and flowers all the Year, but principally in the rainy Seaſon.

The Decoction is good for Pains in the Limbs, or for an Induration thereof, contracted in waſhing the Body. The Plant, or the Root, boiled in Oil, are good to anoint the Body, under a cold Fever; the Leaves, bruiſed with Lime, are of Service for anointing the Body, when affected with an Itching. The Decoction of the Leaves and Fruits in Oil mitigates Pains of the Body, being anointed therewith; and the Fruits bruiſed, the Seeds being taken out, are apply'd with very good Succeſs to remove Tumes and Carbuncles. The Seeds, too freely taken, intoxicate, Sopor, and endanger Life. This Plant is of greater Virtue than the *Datura Malabaricæ Hummatu dictæ prima Species*; as to which ſee under STRAMONIUM. The other Species, under this [illegible]

[illegible]*ela-nila-hummatu, Daturæ Malabaricæ tertia Species.* This [illegible]ſem from the former only in the Duplication or Triplication [illegible]Flowers growing one within another. *Raii H. P.*

[illegible]AMMON. The Name of a *Collyrium*, deſcribed by [illegible]; *Tetrab.* 2. *Serm.* 3. *Cap.* 105.

NILEI COLLYRIUM. The Name of a Collyrium in *Celſus, Lib.* 6. *Cap.* 6.

NILEI EPITHEMA. The Name of an Epithem mentioned by *Aetius, Tetrab.* 3. *Serm.* 1. *Cap.* 17.

NILI COLLYRIUM. The ſame as the NILEI COLLYRIUM. *Aetius, Tetrab.* 2. *Serm.* 3. *Cap.* 108.

NILIACUM, νιλιακὸν. An Epithet for the beſt Sort of Honey; that is, *Attic* Honey.

NILICA-MARAM. H. M. Otherwiſe called, *Acaciæ foliis Malabarica fructu rotundo, ſemine triangulo.* D. Syen. *An Myrobalanos Emblica?* A kind of *Indian* Plum.

The tender Leaves, or the dry'd Fruit, pulverized, and exhibited in the thick acid Milk, called *Tayr*, is good for the dyſenteric Flux; the Decoction of the ſame is given with Succeſs in an hot Fever; boiled with Sugar, and taken, they cure the Vertigo; the diſtilled Water of the Fruit is proper to be drank for a preternatural Heat of the Liver. *Raii H. P.*

NIMBO ACOSTÆ, *ſeu Aria Bepou.* H. M. P. 4. T. 52. p. 107. *Arbor Indica Fraxino ſimilis, Oleæ fructu.* C. B. *Nimbo folio & fructu Oleæ.* J. B. [illegible]. 1. 6. C. 8. *Azedarach floribus ſempervirens.* Herman. A tall Tree growing in the [illegible]of *Zeylan*, and other Countries of the *Eaſt Indies*; it r[illegible]an Aſh, and bears a Fruit like an Olive, from which th[illegible]an Oil, which the Painters uſe in ſtaining their Cotto[illegible]Leaves boiled in Water, they prepare a Bath, wh[illegible]vice for driving out the Small-pox, and mitigating e[illegible]Joints; of the ſame, dry'd and pulveriz'd, and mix[illegible]expreſſed Oil of the Fruit, is prepared an Ointment, which is uſed with Succeſs in anointing ſuch Parts as are affected with Pains, Spaſms, or Convulſions; and cures Wounds, Punctures, and Contractions of the Nerves. The Juice of the Leaves, taken either alone, or in Wine, Water, or Cock-broth, or apply'd to the Navel, either alone, or with a little Ox-gall, or Vinegar of Aloes, is of extraordinary Service for expelling all Kinds of Worms; for which Reaſon it is a moſt familiar and ſalutary Remedy to all the Inhabitants of *Malabar*, becauſe they are very ſubject to Worms. *Garcias* and *Acoſta* compare this Tree to the Aſh, for Bigneſs, and external Appearance at a Diſtance, tho' its Leaves are unlike thoſe of the Aſh. *Raii H. P.*

Karibepou ſeu Nimbo altera. H. M. P. 4. T. 53. p. 109.

This is a very tall and beautiful Tree, always green, and bearing Flowers and Fruit twice in a Year; it grows in ſeveral Parts of *Malabar*. From the Fruit is expreſſed an Oil; of the tender Leaves, bruiſed and boiled in Oil, is prepared a Cataplaſm, which heals the Bites of Serpents, and other venomous Animals, being apply'd to the injur'd Part; of the ſame, boiled with the Leaves of the *Aria Bepou*, is prepared an Apozem, which is very ſerviceable in peſtilential Fevers, and other malignant Diſeaſes; the Root, taken any manner of Way, purges by Stool. *Raii H. P.*

NINZIN. A Name for the GINSENG; which ſee.

NIOPON, νιωπον. This Word occurs in *Erotian*, and is thought to be a Miſtake for NETOPON, νιτωπον.

NIRUALA. H. M. *Pomifera Indica trifolia, fructu Pruniformi caudato. Tapia Braſilienſium ſimilis.* D. Comelin. A Tree of a vaſt Bigneſs, and thirty Feet in Height, and growing in rocky and ſandy Places, and particularly in the Provinces of *Mangatti* and *Poigu*, in *Malabar*, on the Banks of Rivers.

The Juice of the Leaves, received in Linen, and apply'd to the Groin, provokes Urine. The Leaves bruiſed, and with Salt, Camphire, and the Dung of a Cat, reduced into the Form of a Cataplaſm, and apply'd to the ſame Parts, produce the ſame Effect. The Bark, macerated in Water, and, with Ginger and Long-pepper, boil'd in Cows-milk, and Oil of Seſamum, to the Conſumption

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Conſumption of the Liquor, makes an excellent Liniment for the drying up of cold Humours. The Seed boiled in an Infuſion of Rice, and then bruiſed, and with freſh Butter reduced to a Cataplaſm, effectually mollifies and ripens Abſceſſes. *Raii Hiſt. Plant.*

NIRURI. H. M. *An Frutex Indicus baccifer Vitis Idæ ſecundæ Cluſii Foliis*, Breyn.? An *Indian* bacciferous Shrub, ſeven or eight Feet in Height, growing in ſandy Places.

The Root, bruiſed, and apply'd in the Form of a Cake, is effectual for Inflations of the Belly, or Tumefactions of any Part. The Leaves, bruiſed, and apply'd with ſour Milk, ſerve to ripen Abſceſſes; which Purpoſe is, alſo, promoted by waſhing them with warm Water, in which the Leaves and Bark have been bruiſed. Under this Head, *Ray* reduces the

Katou Nirouri, H. M. which is a low Shrub, much like the former, growing in moiſt and ſandy Places about *Cochin*, in the *Eaſt Indies*, and having always Leaves, Flowers, and Fruit upon it.

Of the Leaves boiled in common Water, is prepared a Gargariſm for the Cure of putrid and corroded Gums, and for faſtening looſe Teeth. Of the Leaves boiled with the Fruit, ſolent: and Root, is prepared a Bath for the Gout. The Bark y, and Root, boiled with Long-pepper and Ginger, makes a Nitre, which is ſaid to be highly ſerviceable for ſtrengthening the oves mach, and for cutting and attenuating pituitous Humours. ſkin, *Hiſt. Plant.* Nitre

NISI, or NINSI, according to *Blancard*, imports GINSIN of

NISSOLIA. Crimſon Graſs-vetch.

The Characters are;

It reſembles the *Lathyrus* in every thing, except that the Leaves ſtand ſingle, and have no Tendrils, but are much like the Leaves of the *Geniſta Sagittalis*.

Boerhaave mentions but one Sort of this Plant; which is,

Niſſolia vulgaris. *T.* 656. *Lathyrus, ſylveſtris, minor.* C. B. P. 344. *Catanance, leguminoſa, quorumdam.* J. B. 2. 309. *Ervum ſylveſtre.* Dod. p. 529. *Boerh. Ind. alt. Plant. Vol.* 2. *p.* 25.

NISUS. The Sparrow-hawk. See ACCIPITER.

NITEDULA. The ſame as CICENDELA; which ſee.

NITIALIA. The Name of a Star, in *Paracelſus*, which he whimſically repreſents, as having the ſame Influence as Salt of Vitriol.

NITRIALES. All Things capable of reducing to a Calx, as Nitre, Sulphur, &c. *Rulandus.*

NITRUM. Nitre.

'Tis certain, that the Nitre of the Antients was different from ours, which being inflammable, and form'd into Cryſtals, *Striæ*, and a kind of Spears, was abſolutely unknown to them. Tho' the preciſe Time in which this artificial Nitre of ours was invented cannot be poſitively determined, yet it is not to be doubted but its Invention laid a Foundation for diſcovering ſeveral other. There is a very conſiderable Difference between ſometimes the Antients, and that of the Moderns. For,

1. Sometimes the Nitre of the Antients is a native Foſſile dug out of the Earth, that was not pure, ſince it muſt be afterwards elutriated; whereas this is an artificial Subſtance produced by the Air. Hence thoſe are miſtaken, who affirm, that ſome Malt Liquors are prepared with nitrous Waters.

2. The Nitre of the Antients is of an alcaline abſterſive Quality; for which Reaſon it may commodiouſly be uſed as a Succedaneum for Pot-aſh, in making Glaſs or Soap. It is produced in *Egypt*, where it is called *Natron*. At *Smyrna* there is, alſo, a pure alcaline Earth found, which, when boiled, affords an alcaline Salt, exported to other Countries in large Quantities. And *Carolus Cluſius, de Exotic. Lib.* 2. *Obſervatione Bellon. Cap.* 13. informs us, that in *Grand Cairo* the Nitre of the Antients is ſo common, that large Quantities of it are ſold at a very inconſiderable Price. The *Egyptians* apply this Subſtance to various Uſes, ſince they coat their Veſſels with it, and dreſs their Leather with a Mixture of it, and the Pods of the *Egyptian* Thorn. But *Bellonius*, in *Lib.* 2. *Obſervat. Cap.* 21. informs us, that the Nitre of the Antients is very rare among us; and confidently affirms, that the ſmalleſt Quantity of it is not produced in *Europe*, tho' 'tis very common and cheap in *Egypt*. But our Nitre is a *Sal ſalſum*, neither of the acid, nor of the alcaline, but of the neutral Kind, ſince it neither produces an Effervescence with acid nor alcaline Subſtances.

3. The Nitre of the Antients was not combuſtible and inflammable like ours; for which Reaſon it was by no means proper for preparing Gunpowder Conſidering theſe Differences, 'tis ſufficiently obvious, that when *Hippocrates* and *Pliny*, *Dioſcorides* and *Galen*, treat of Nitre and its Virtues, they do not mean our common Nitre, but a native alcaline Salt.

But tho' *Bellonius* affirms, that none of the Nitre of the Antients is produced in *Europe*, yet I am of Opinion, that tho' it is not, in this Quarter of the World, produced in ſuch large Quantities, as in *Egypt*, yet there is even here produced, in the Bowels of the Earth, a pure fixed alcaline Salt, in every reſpect ſimilar to Pot-aſh, Salt of Tartar, or the Nitre of the Antients, as is ſufficiently obvious from our medicinal Springs, hot Baths, and mineral Waters, from many of which an highly pure alcaline fix'd Salt may be obtain'd by boiling. Hence appears the Falſhood of the common Opinion of the modern Chymiſts, who affirm, that a fixed alcaline Salt is only the Product of Art, or of the Fire, and cannot be obtained, but from Vegetables burnt to Aſhes.

Our Nitre is artificially prepared of two Elements or Principles, one of which is the highly ſimple, univerſal, acid, and primogenial Salt contained in the Air, and the other an alcaline ſulphureous, and pinguious Earth, which like a Matrix, or Loadſtone, attracts the univerſal Acid lodg'd in the Air. Nor are Earths of every Kind, when expoſed to the free and open Air, fit for generating Nitre, but only ſuch as are of an alcaline Nature, and contain a pinguious and ſulphureous Subſtance. Hence we find, that the Earths, left after the burning of Houſes, are of all others the moſt proper for generating Nitre. The ſame holds true of calcarious Subſtances; when, for Inſtance, Mud, Earth, or Clay, is mix'd with Lime, and expoſed to the free Air, the Salt of Nitre eaſily breaks thro' it like Froth. Quick-lime, alſo, the Aſhes of Wood, or of Soap-boilers, as yet turgid with an alcaline Salt, greatly contribute to the Production of Nitre, when mix'd with Earth.

The Earth proper for generating Nitre muſt not only be alkaline, but, alſo, pinguious and ſulphureous; nay, a volatile alcaline Principle is neceſſary for this Purpoſe. Hence all Putrefaction contributes to the Generation of Nitre in Sands. For this Reaſon nothing in Nature ſo powerfully promotes the Generation of Nitre, as dunging the Land with the Excrements and Urine of Animals. Hence thoſe who prepare Nitre, diligently dig up, and preſerve the old and ſqualid Earth in Sheep-folds, Stables, and other Places where Animals are kept. They, alſo, carefully collect the Earth dug up about Bog-houſes, which being impregnated with the Salt and Sulphur of the human Excrements, is, for that Reaſon, highly proper for producing Nitre.

They, alſo, chuſe pinguious Earths of Church-yards, Ponds, Marſhes, and Walls, built of a pinguious Earth, and putrefied Straw, eſpecially their Surfaces taken off for about the Depth of a Finger's-length, becauſe theſe, being long expoſed to the Sun and Air, have conceived a nitrous Salt, diſcoverable by the acrid and bitteriſh Taſte. Hence it follows, that the more Putrefaction and volatile ſulphureous Salt can be ſubdu'd to Earths, the more proper they are for producing Nitre.

Earths, in order to yield a large quantity of Nitre, muſt be managed in the following manner: They are to be made up in Heaps, which are to be frequently watered or ſprinkled with the Urine of Animals; by which means, and the Advantage of the Air thro' them, they ſoon contract a nitrous Quality. It is to be obſerved, that neither a too intenſe Heat, eſpecially ſuch as burns the Earths, nor too pinching Cold, beats a proper Temperature in the Atmoſphere, and eſpecially rainy Weather make for the Production of Nitre. The Heat of Summer, without the Aſſiſtance of temperate windy Air, accompany'd with ſeaſonable Showers, is not ſufficient in the Spring or Autumn, and in the Winter Leaves, &c. are not ſufficient for the Production of Nitre. The Heat of Stoves, without the Aſſiſtance of Air, is unable in drying the Earths from which the Nitre is to be extracted, but does not at all contribute to the Production of Nitre.

Nor is its Generation promoted by intenſe Cold, or by Eaſterly or Weſterly Winds; but Weſterly Winds following Rains, and Northerly Winds bring the primogenial Acid. Elaboration of Nitre does by means of Rains, which waſh it out of the Earths.

'Tis, alſo, to be obſerved, that by Elixiviation and Evaporation of nitrous Salt, by Elixiviation and Evaporation of Nitre, which is inflammable, upon the Addition of Aſhes, in which there is an Admixture of Quick-lime, or that Lixivium, which remains after the Cryſtallization; for if the Lixivium of nitrous Earths, is boiled by itſelf, a ſaline Magma is obtained, which neither runs into dry, much leſs inflammable Cryſtals, nor is eaſily dried, but is eaſily diſſolv'd in the Air, eſpecially when moiſt and humid. Hence we may reaſonably conclude, that the inflammable Salt of Nitre is compounded of an acid Salt, a fixed Alcali, and a ſulphureous Principle.

And as neutral Salts are eaſily formed into Cryſtals; ſo, on the contrary, neither acid nor alcaline Salts, nor ſulphureous acid Subſtances, mix'd with alcaline Earth, of which Kind this Lixivium, extracted from nitrous Earths, ſeems to be, are diſpoſed to Cryſtallization.

But that there is in Nitre ſuch a fixed Alcali, is ſufficiently obvious, not only from its Generation, already deſcribed, but, alſo, from this, that Powder of Charcoal alone, added to Nitre, fus'd in a Crucible, converts it into a pure alcaline Salt, commonly called Fix'd Nitre, tho' it is not, in reality, different from Salt of Tartar, or any other alcaline Salt; as, alſo, from this Circumſtance, that if this alcaline Salt is again combined with acid Spirit of Nitre, or Aqua-fortis, the Nitre is forthwith regenerated.

Earths impregnated with a nitrous Salt, of which Nitre is prepared, are not only to be found in *Europe*, but 'tis, alſo, certain, that an inflammable Nitre may be prepared every-where, becauſe the Matter, or Matrix of Nitre, which is Earth, rendered alcaline and ſulphureous by Putrefaction, may be had every-where. Neither is it to be doubted, but that primogenial and univerſal Acid,

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Acid, which is formed into a nitrous Salt with the alcaline sulphureous Earth, is contained in the Atmosphere, where-ever it extends.

And, 'tis certain, that not only in the *Indies*, which are hot, but, also, in *Muscovy*, which is a cold Climate, a large Quantity of Nitre is prepared, which is better than the *German* Nitre, and far more fit for preparing Gun-powder. The *Indian* Soil favours the Generation of Nitre, because, for several Months, no Rains fall to wash and carry off the nitrous Salt from the Earth. But, in the Northerly Climates, the Air is not only serene, but its elastic and expansive Portion compressed and condensed by the Cold; for nitrous Salt seems not only to be compounded of an acid, sulphureous, and alcaline Principle, but, also, the Air, condensed into Water, seems to be a principal Ingredient in it; for there is scarce any Salt, such as common Salt, Vitriol, and Alum, which has not, for an Ingredient, an aqueous Principle, call'd Phlegm, and which, in Distillation, is copiously yielded. Hence 'tis not to be doubted, but nitrous Salt has, for Ingredients, both an aqueous, and an aereal Principle, which is principally concealed under a sulphureous Substance.

This may be confirmed by various considerable Proofs; for 'tis surprising, that since no Flame can subsist without the immediate Access and Action of the Air, nitrous Salt should, when most closely shut up from this Fluid, send forth a conspicuous Flame. Hence the Reason is obvious, why in Northerly Countries, and by means of Northerly Winds, a larger Quantity of Nitre is produced, than where the Air is either too much rarefied, or too moist. 'Tis well known to the Preparers of Nitre, that more of this Substance is form'd in its Matrixes in the Night-time, than during the Day, under the Heat of the Sun.

Besides, the Inflammability, and highly-expansive Rarefaction, observed in kindled Nitre, and which increase the Impetus of the Fire and Flame, seem to me to be derived from the aqueous and aereal Particles, inclos'd within the Pores of the pinguious, sulphureous, and saline Parts, which, by means of the Fire, suddenly acquire the highest Degree of Rarefaction and Expansion, and are discharged, as it were, in Wind, just as in an *Æolipyle*, in which Water, when included and rarefied by Fire, is totally discharged in the Form of a dry Wind, with a considerable Noise, thro' a narrow Hole; whereas cold Wind, arising from the hot Water, surprisingly augments the Force and Impetus of Flame. Hence Nitre may be justly called an aereal Salt, because it is not only produced by the Air, but, also, because that Fluid, condensed into Moisture, is intimately mixed with it.

Nitre could is impure heterogeneous, saline, and earthy Parts, from which to be separated and purified; for, besides its terrestrious, and sulphureous Parts, it contains a pure Quantity of Salt ...an Alum, from which, however, the pure ...Salt ought to be separated; for these for... however, I am ...nately hinder its Deflagration, but, also, di... extol and com... Expansion. For this Reason all the Nitre ... Chebe duly depurated; before it is used for ... Qualities. This ...ds; or medicinal Purposes.

...ke that of *Glauber*...m is to be made in the following manner: The ...lt; but, because ...Loved by boiling it in a Kettle, with a Quantity ...risonding the ...o... to render it solid. Then the Lixivium is to ...lenter contributed o... close V... ...ceedged in some cool Place; by ...d ag... ...they wine... Surface ...Lem... ...e Sides of the Vessel, long ... Virtuity ...s, som... be formed, from the Cir... ...nities Salt of the Casm... be taken out and dry'd ... ...ded, and the Lixivium remaining lixivial Liquor is ... ...ed by a besides seat, strained, and again set by for ... ...same ...allization. Thus a considerable Quantity of Nitre ... and the Addi... concreted about the Bottom and Sides of the Vessel, ...s it was not ...tod is to be repeated three times; and, last of all, the ... Waste ..., which contains no more Nitre, is to be inspissated by farther Boiling; by which means a common Salt, highly similar to Sea-salt in its Taste, cubical Figure, and Properties, is concreted, and subsides to the Bottom; and the Remainder of the inspissated Lixivium is coagulated into a Mass of a bitterish Taste, of a brownish Colour, and which has many earthy, pinguious, and sulphureous Particles mix'd with it. This is the most proper Method of depurating Nitre.

The Goodness, therefore, of Nitre differs much, according to the Quantity of impure, saline, and earthy Matter mix'd with it. Some Countries, also, produce purer Nitre than others. The *Indian* and *Muscovy* Nitres are reckoned best, because an hundred Pounds of them, under a depuratory Crystallization, lose only seven Pounds; and that of *Poland*, fifteen Pounds. But the Nitre prepared in the Principality of *Halberstadt*, and the Duchy of *Magdeburg*, loses twenty-five Pounds, before it is fit for making Gunpowder. 'Tis, also, to be observ'd, that all Nitres, if duly and throughly depurated and freed from their Sordes, are possess'd of the same Virtues, and produce the same Effects. Hence some depurate and crystallize it several times; and, that it may be the purer, mix Wine-vinegar in the Water, in which it is to be dissolved; for, as there is but one common Salt, so there is but one Nitre in Nature; but the Difference of both depends upon the different Quantities and Qualities of the Sordes, and impure Substances, with which they are mix'd.

But it is, in a particular Manner, worth our Consideration, whence, or by what means, the common Salt, which is generally every-where associated with Nitre, is produced. Many Chymists are of Opinion, that it is produced by the Urine of such Animals as eat common Salt, because the Preparers of Nitre often pour the Urine of such Animals upon the Earths design'd for this Purpose. But this Hypothesis, to me, seems incumbered with various Difficulties; for, first, Animals rarely eat Salt, and Urine is, also, rarely sprinkled on Walls, and the Heaps of nitrous Earth. Secondly, from the Urine of human Creatures, who use large Quantities of Salt, a Salt in every respect like common Salt, can by no means be obtained; for common Salt, taken with the Aliments, and mix'd with the various Particles of the Juices in the Stomach and Intestines, and with the Blood and Serum in the Vessels, is so chang'd, and its Crasis so dissolv'd, that it can hardly be again obtained genuine and unadulterated from the Excrements of Animals.

For this Reason it seems highly probable, that the common Salt, contained in Nitre, is, also, produced by the universal Acid of the Subt... and a certain specific Earth such as is contain'd in common ...ge for, as Alum, Vitriol, Nitre, and a neutral sulphureous Salt, ...th as that extracted from Pot-ash, long exposed to the Air, re... ...ture a peculiar earthy Matrix, in which the highly simple and ...ersal Acid of the Air, which is determined to no particular ...m, may insinuate itself, by the Presence of which, and the ...pid Part of the Air, they revive, and are regenerated; so, also, if in nitrous Earth such a specific Earth of common Salt is contained, it is no Wonder, if, being impregnated by the universal Acid of the Air, it should be transform'd into common Salt. But even this Salt differs from the common Salt we eat: First, with respect to its greater Acrimony. Secondly, with respect to its Solidity: And, thirdly, in this, that by an Affusion of Oil of Vitriol, after an Effervescence, it not only sends forth a Smoke, penetrating like that of common Salt, but, also, ungrateful and disagreeable, like that of Aqua-fortis: So that, by this Method, an Aqua Regia, compounded of the Spirit of Nitre, and capable of dissolving Gold, may be obtained by Distillation.

'Tis, also, observable, that common Salt, which, in Crystallization, retains a cubical Figure, in the Beginning of the Preparation of Nitre, subsides and falls to the Bottom of the Lixivium extracted from nitrous Earths, Ashes, and Quick-lime, when inspissated; but, in its Depuration by Water, it remains in the last Lixivium, by boiling of which it is, at last, form'd into Crystals. But a large Quantity of Water must not be used in the Depuration; otherwise the common Salt, which is heavier than the Nitre, will be first precipitated, and carry'd to the B... For we must observe, that Salts of different Natures, ... solved in an aqueous Menstruum, are easily separated ... other, and mutually united by Crystallization: Thus, ... of common Salt run together, and form a Body o... gure; whereas the Particles of Nitre, when unite... Body of a pyramidal Form. be...

The essential Characters and Properties, by whi... distinguish'd from other Salts, are these following.

1. Nitre is, by the Force of Fire, easily fus'd in a Crucible without flaming; but, as soon as an oleous sulphureous Substance, capable of flaming, is added to it, it takes Flame, and produces an Explosion; which Effect happens not only by the Addition of common Sulphur; of Antimony, which abounds with Sulphur; of Charcoal; of Tartar, which abounds with Oil; of some Parts of Animals, the Blood or Bones, for Instance; but, also, by the Addition of Metals impregnated with Sulphur, such as Tin, Iron, and Zink; as also, by an Addition of Sal Ammoniac, which from the Urine receives a certain oleous and sulphureous Principle.

2. Nitre, mix'd and distil'd with a vitriolic Salt, or the Acid of Vitriol, yields an highly volatile acid Spirit, of an ungrateful Smell, and yellowish Colour, as appears in the Preparation of *Hoffman's Spiritus Fumans*, or *Aqua-fortis*; and, because all Clay contains some Quantity of a vitriolic Salt, hence, if three Parts of Nitre are mix'd with one Part of Clay, form'd into small Balls, and dried, the Nitre by Distillation yields its Acid Spirit in the Form of a red Vapour; and, because the acid of Alum is of the same Nature with that contain'd in Vitriol, hence, in Conjunction with Alum, as well as with Vitriol, an acid Spirit, or Aqua-fortis, may be distil'd from Nitre. It must, also, be observ'd, that no other Acid, except one of the vitriolic Kind, can by any means extract the Acid of Nitre, since a very fix'd and strong Acid, such as that contain'd in Vitriol and Alum, is requir'd for that Purpose.

3. Nitre, fus'd in a Crucible, is almost totally converted into an alcaline Salt; and this Effect is first produc'd by mixing equal Quantities of Tartar and Nitre, and putting them into an ignited Crucible; by which means the *black Flux-powder*, commonly us'd by Workers of Metals, in separating their Metals from adventitious Mixtures, is produc'd. Nitre is, also, converted into an highly pure Alcali, when it is mix'd and detonated with Powder of Charcoal; and by a strong Calcination it becomes an highly caustic Salt, of a Sky-colour, and this is call'd Fix'd Nitre. 'Tis, also, worth

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worth our Observation, that the Whole of Nitre may be converted into a caustic Alcali, of an highly acrid Taste, and which, by pouring Water upon it, becomes intensely hot, when mix'd with an equal Quantity of Regulus of Antimony, and melted together to a Mass, in a red-hot Crucible. The same Phenomenon is said to be produc'd with Zink and Tin.

4. Nitre is a Salt of so singular a Quality, that there is none like it in Nature; for it not only cools the Tongue, when applied to it; but, also, the whole Body, when taken internally; and, when put into Water, augments its Coldness.

5. A Solution of Nitre, put into Blood coagulated, and become black after it is taken from the Veins, not only renders it more fluid, but, also, procures it a florid and beautiful red Colour; an Effect not to be expected from any other neutral Salt. By this Experiment, we may, in some measure, account for its Operations, and refrigerating Effect, on the human Body; for Nitre is a Salt, which, by means of its aereal Principle, of an elastic and expansive Quality, allays and stops the tumultuous and exorbitant Motion of the Æther in the Blood and Humours, which, when confin'd, becomes more violent: And to this aereal Principle we are to ascribe the Fluidity, and florid Colour, which Nitre communicates to the Blood. Nitre, also, by procuring a greater Fluidity to the Humours, removes Stagnations and Obstructions, and opens the Pores of the Skin, thro' which the hot and fiery Particles are exhal'd: And as Nitre stimulates the Ducts and Glands to a more copious Secretion of Lymph, hence it moistens the Body, and relaxes and softens Parts spasmodically constricted.

6. Nitre, when detonated with Sulphur, or any other inflammable Substance, is totally carried off in Smoke; by which means, the whole Crasis, and, as it were, the Substance of Nitre, which consists of an acid and alcaline Salt, together with a pinguious and sulphureous Substance, is totally destroy'd; for Gunpowder, kindled in a tubulated Retort, is neither transform'd into an acid Spirit, nor an alcaline Salt, but yields a somewhat acid Phlegm.

7. 'Tis, also, a Property peculiar to Nitre, that, when put into a Crucible, exposed to a calcining Fire, with Regulus of Antimony, Zink, Bismuth, Arsenic, Regulus of Cobalt, Tin, and Lead, it converts them to a Calx; by which means the purer Metals, such as Gold and Silver, are separated from them. For this Reason, the most expeditious way of separating Gold dispers'd in Antimony, is to calcine and fuse it with Nitre, whereas 'tis a tedious and laborious Task to separate its reguline and antimonial Parts by the Force of intense Fire; and as these Minerals are, in a great measure, virulent, so, when calcin'd with Nitre, they not only lose their deleterious Qualities, Quickly become salutary Medicines.

tity of sufficiently known to Chymists, that Aqua-fortis dissolves four other, but not Gold; but it has not as yet been adverted sometimes Aqua-fortis, distil'd by Abstraction from common Nitre, ways dissolve Silver, but converts it to a Calx; whereas it rate that Works and dissolves Gold. This will perhaps seem [illegible] him, who considers that Aqua-fortis is the Off-spring of Nitre, and, in every respect, agrees with the acid Spirit of Nitre; but his Surprize will cease, when he reflects, that in undepurated Nitre there is a large Quantity of common Salt, which must be separated by Art; and considers that Aqua-fortis, drawn off common Salt, becomes an Aqua-regia, capable of dissolving Gold; for, if Aqua-fortis is even ten times drawn off depurated Nitre, its Virtues will not be alter'd by common Salt; but, if common Salt is mixed with the Nitre, the Aqua-fortis attacks and disentangles it; by which means an highly subtile Spirit of Salt ascends, and this Spirit, in consequence of its highly penetrating Subtility, enters the most minute Pores of Gold, and, by means of the elastic Sulphur of the Nitre, destroys the Cohesion of its constituent Parts.

9. 'Tis, also, to be observed, that if Spirit of Nitre, or Aqua-fortis, are in a due Proportion drawn off common Salt, there remains in the Bottom a Salt, which deflagrates like Nitre; for the Acid of Nitre intimately associates itself with the alcaline Earth of common Salt, and with it is converted into Nitre, from which it expels the Spirit of Salt.

Tho' Substances highly volatile enter the Composition of Nitre, it is nevertheless of a very fix'd Nature. The Volatility of its Principles is sufficiently obvious from the Account before given of its Generation, whilst, on the other hand, its fix'd Nature is evinc'd from this, that it remains fus'd over a Fire for some Hours, without any Diminution of either Weight or Bulk; neither is its Texture alter'd by Flame, tho' a Change is soon produc'd in it by the Addition of a small Quantity of ignited sulphureous Earth.

Tho' an highly volatile and corrosive acid Spirit, as also a very caustic fix'd alcaline Salt, may be prepared from Nitre; yet it is possess'd of a singular Power of removing the septic, and consequently the virulent and corrosive Qualities of almost all Substances, and rendering them propitious, temperate, and salutary. The violent and emetic Virtues of Regulus and Sulphur of Antimony are sufficiently known; and 'tis certain, that by the Addition of a due Quantity of Nitre, and the Assistance of Fire, both these may be converted into mild, temperate, and gently diaphoretic Medicines. That most of the Insects, which, by means of their highly acrid Salt, excite Blisters, are excellently corrected by Powder of Nitre, intimately mix'd with them, is certain from Experience: Thus Cantharides, and other Substances of a like Nature, may be safely exhibited even in delicate Constitutions, in order to remove a Difficulty of Urine, provided due regard be had to the Causes of the Disorder, and a small Quantity of Camphire, which powerfully resists Inflammation, is added. Some Purgatives are so highly drastic, that, when imprudently exhibited, they raise violent Commotions in the nervous System, and often excite an Inflammation in the Coats of the Stomach: Of this kind are Gamboge, Scammony, Resin of Jalap, Coloquintida, Elaterium, and Spurge; which two last excite Blisters, when applied externally. Now the caustic Quality of all these is greatly impair'd, by being mixed with any nitrous Salt; and, if there is any genuine and efficacious Corrector of Purgatives, which guards the tender Membranes against Heat, Spasms, and Inflammations, 'tis certainly Nitre. Aloes, which is otherwise of a laxative and balsamic Quality, has by its subtile acrid Salt been frequently observ'd to excite Hæmorrhages; but it is render'd more benign and propitious, by a proper Admixture of Nitre. The Bile, in consequence of its detersive and bitter Quality, is a balsamic and natural Medicine, without which no Animal can long remain sound, and in a due State: Now, if the Bile is vitiated by a Congestion of acrid Sordes retain'd in the Humours, it acts like Poison by irritating the nervous System, and producing preternatural Heat, Anxiety, Inquietudes, enormous Evacuations, and intense Pain: Now, in order to correct this peccant State of the Bile, no Medicine is more efficacious than Nitre.

As Nitre *is* a powerful Cooler, when internally exhibited; so there is no more effectual Antisebrile, no Medicine which either so soon, or so safely, corrects the febrile Heat, and removes the woeful Train of Symptoms produc'd by it. Accordingly *Angelus Sala*, in *Myrotech. Sect.* 5. informs us that in Quotidian and chronical Tertian Fevers, as also, in that Species of Fever call'd the *putrid Hemitritæus*, Nitre is us'd with wonderful Success; for when the Patients are properly purg'd before, and kept in a moderately warm Place, the [illegible]ibition of Nitre twice or thrice, two or three Hours before the Paroxysm, gives such a Change to the State of the Disorder, that Health soon succeeds: And, as all other Refrigerants, the most considerable of which are acid, inspissate and coagulate the human Juices, so, on the contrary, Nitre rather attenuates and renders the whole Mass of Humours more fluid: Hence we under[illegible] it is highly efficacious in extinguishing the Heat of [illegible] and why no Salt is more friendly to the Constitution [illegible] beats a [illegible] jecting various Liquors into the Veins [illegible] they make [illegible] found, that several of them have been [illegible] alcaline Injections, only with this Di[illegible] he Leave [illegible] produced too great a Coagulation, a[illegible] make, which [illegible] Assistan[illegible] Fluidity, of the Humours: But *Malp[illegible] Cordis, Tom.* 2. informs us, that he injecte[illegible] Ounces of Nitre into the jugular Veins of [illegible] out producing any other C[illegible] than a pl[illegible] Discharge of Urine. Hen[illegible] ay justly[illegible] is excellently suited, an[illegible] very friendly [illegible] Blood: For this Reaso[illegible] affirms, that a Scruple [illegible] contributes greatly to the Pro[illegible] seems to have a kind of formal [illegible] which, when dried, reduc'd to a Powder, and th[illegible] Coals, produces a kind of Ebullition like that of N[illegible]

Nitre, also, prevents Putrefaction in Substances [illegible] Corruption; and tho' common Salt is highly efficacious for this Purpose, yet 'tis doubted, whether Nitre is not preferable to it in preserving Bodies. Thus Blood, taken from the human Veins, may, by an Admixture of a Solution of Nitre, be for a long time preserv'd fluid and beautiful, without any Putrefaction. Besides, 'tis sufficiently known, that Fleshs either by means of Nitre alone, or Nitre mix'd with common Salt, for a long Time retains a beautiful red Colour, even after boiling; the Reason of which seems to be, that this Salt exalts the red and beautiful Colour of the Remainder of Blood contained in the minute Vessels of such Flesh. Hence 'tis obvious, that Nitre resists the Putrefaction, which is often form'd in the Primæ Viæ, and diffuses itself thro' the whole Body; and may for this Reason be exhibited with Success in putrid Fevers, and Disorders of Children arising from Worms.

Nitre, taken internally, powerfully promotes the Excretions by Stool, Urine, and Sweat: One Ounce of depurated Nitre, dissolv'd in Water, renders the Body soluble, and procures some Stools, tho' it answers these Intentions better, when mix'd with a proper Quantity of the laxative Decoctions of Tamarinds, Sena-leaves, and Manna. When the Fluids are to be deriv'd to the interior Parts of the Body, especially in Fevers, Nitre is highly efficacious. Among all the Class of Diuretics, none is better calculated for quickly removing Obstructions of the urinary Ducts, rendering the Discharge of

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the Urine free, and diſſolving calculous Concretions, than Nitre. *Penotus*, in his Treatiſe *de Medicament. Chym.* affirms, that, if a proper Doſe of Nitre is taken once every Fortnight, it never ſuffers the Generation of Sand in the Kidneys, either in Patients ſubject to calculous Concretions, or Dyſuries, whether adult or young, robuſt or delicate. *Timæus*, in *Conſil. Conſult.* 3. informs us, that he heard of a certain Man's being perfectly cur'd of the Gravel, by a long-protracted Uſe of prepar'd Nitre; and *Grulingius*, in *Obſerv. de Calculo*, informs us, that Sal Prunellæ is not only an excellent Preſervative againſt, but, alſo, an efficacious Cure for a Nephritis; and I have found from Experience, that an Emulſion of various Seeds, invigorated with Nitre, is with great Succeſs exhibited for alleviating Nephritic Pains: A proper Exhibition of Nitre renders Perſpiration more free and liberal, in Patients afflicted with immoderate Watchings, Thirſt, and intolerable Heat, becauſe it corrects the Heat of the Blood, and checks the hot inteſtine Commotion of the Fluids; by which means every thing in the Conſtitution is rendered calm, the preternaturally conſtricted Parts are relaxed, and conſequently the Blood is freely convey'd to the Emunctories of the Skin. In Practice we daily obſerve, that the precipitating nitrous Powders excellently promote Sweat, in all Inflammations; but in languid, cold, and cachectic Conſtitutions, the moving Force of whoſe Muſcles is impair'd, a Diaphoreſis muſt be excited by more hot and active Medicines.

Nitre, is alſo, an excellent Carminative: The Diſorders ariſing from Flatulencies, ſtagnating, and pent up, in the Inteſtines, ſometimes ſpaſmodically conſtricted, are ſufficiently obvious to Practitioners; for which Reaſon they ought to be diſſipated and expel'd with all Expedition: For this Purpoſe I have found no Medicine more effectual and ſucceſsful than Nitre, either alone, or mix'd with Carminatives; ſince, by its means, a Diſcharge of Wind by the Anus is procur'd, the Flatulencies diſcover themſelves by their Fluctuation and Noiſe, and are happily eliminated with a Noiſe, which is in my Opinion, principally owing to a Solution and Relaxation of the conſtricted inteſtinal Fibres: For which Reaſon it is juſtly commended in ſpaſmodic Colics, eſpecially that of the bilious Kind, on which the Antients beſtow'd the Epithet *hot*. But, above all other Medicines, Nitre affords the moſt conſiderable Relief to hypochondriac and hyſteric Patients, ſince it is excellently calculated for removing the Spaſms and Flatulencies, which are the Cauſe of all the Symptoms incident to ſuch Patients.

But one of [illegible]ure, is itſt conſiderable and important Virtues of Nitre is, this [illegible] it reſiſts Inflammations; for no Diſorders [illegible] That [illegible] to be the animal Oeconomy than Inflammation [illegible]reſem Waters[illegible]us, an acute Diſeaſes generally deſtroy the [illegible]lantity of Salt [illegible]an Alhey ſeize the Stomach, they produce [illegible]t which the ſpi[illegible] Salt [illegible]; when they affect the Meninges, a [illegible], however, I am [illegible]inly hinitis, or Convulſions; and when the [illegible] extol and con[illegible]xpantion: When an Inflammation happens [illegible]ualities. This S[illegible]reternatural Heat of the internal, and an [illegible]ke that of *Glaube*[illegible]ds the external Parts is produc'd; whilſt, in [illegible]lt; but, becauſe [illegible] is [illegible]mations of the ſanguiferous Viſcera eaſily [illegible]yriſonding the [illegible] Lived[illegible]eſſes or [illegible]g it in [illegible]es. In order, therefore, to [illegible] to re[illegible]Nitre, [illegible]id. [illegible]ne, or mix'd with a little [illegible]lenter contributed o[illegible] close bezoar[illegible]ecdged [illegible]nces, is, of all other [illegible]nd ag[illegible]hey wine[illegible]di[illegible]Surface[illegible]m[illegible]e Sid[illegible]f ſalutary Effects are [illegible] Virtſtly[illegible]a ma[illegible]es, ſom[illegible]b[illegible]e[illegible]e juſtly deſpair'd of. [illegible]nitie[illegible]ait or the C[illegible]may [illegible]ong. [illegible]ch a Powder with uncommon [illegible]found that in Pleuriſies, a Phrenitis, a Peri[illegible] Angina, an Inflammation of the Oeſophagus [illegible]ſ, and an Eryſipelas, a frequent Exhibition of it [illegible]a great meaſure, remov'd the Heat, the Pain, the Thirſt, and Watching, by exciting a gentle Moiſture all over the Body, which was before dry and parched: When mix'd with other proper Ingredients, and applied externally, it alſo affords Relief to inflam'd Parts: Thus camphorated Spirit of Wine ſo dexterouſly prepar'd, as not to be precipitated by an Affuſion of Water, when mix'd with a Solution of Nitre, and a due Quantity of diſtil'd Vinegar, diſcuſſes an Eryſipelas, and removes an intenſe Head-ach.

Beſides, Nitre is one of the moſt conſiderable of thoſe Medicines calculated for the Cure of Spaſms and Conſtrictions, the Misfortunes excited by which, in the nervous Parts of the human Body, are ſufficiently apparent to thoſe who are bleſs'd with a Knowledge of Diſeaſes, and their various Cauſes: At leaſt, 'tis certain, that enormous Hæmorrhages ſometimes ariſe from no other Cauſe, than an Inequality of the Circulation of the Blood; ſince the Veſſels, which in ſome Parts are ſmaller than in others, being ſpaſmodically conſtricted, the Blood is impetuouſly convey'd to the adjacent Veſſels, and their Ramifications; by too much diſtending which, and opening their Orifices, violent Hæmorrhages are often produc'd: By this means, Spittings of Blood, Hæmorrhages of the Noſe, exceſſive Evacuations from the hæmorrhoidal Veins, Bloody Urine, and immoderate Diſcharges of Blood from the Uterus, are produc'd. In the Cure of theſe Diſorders, the moſt rational Method of proceeding is, to relax the ſpaſmodically conſtricted Parts, and reſtore a free and eaſy Circulation of the Humours thro' the Veſſels. This Intention, as we learn from Experience, is excellently anſwer'd by Nitre, which in theſe Diſorders is highly extol'd by the moſt judicious practical Phyſicians. Thus *Riverius*, in *Cent.* 1. *Obſ.* 94. extols it in an immoderate Diſcharge of the *Lochia*; in *Cent.* 1. *Obſ.* 96. in an exceſſive Evacuation of the Menſes; in *Cent.* 1. *Obſ.* 94. in a Spitting of Blood; in *Cent.* 1. *Obſ.* 83. in Hæmorrhages attended with a malignant Fever; and, in *Cent.* 2. *Obſ.* 81. he recommends it for theſe and ſimilar Purpoſes. And as Spaſms are frequently the Cauſes of a Suppreſſion of the uſual Evacuations of Blood from the Uterus in Women; ſince its conſtricted Parts reſiſt the Impulſe of the Blood to the uterine Veſſels, hence 'tis obvious, that Nitre in ſuch a Caſe affords ſingular Relief; for which Reaſon *Riverius*, in *Cent.* 1. *Obſ.* 80. recommends it in a Suppreſſion of the *Lochia*; and *Grulingius*, in *Obſ.* 50. in a Diminution of the menſtrual Diſcharge. As Pains are often the Off-ſpring of Spaſms, ſo thoſe terrible Pains, which generally accompany the Excretion of Stones which affect the Inteſtines, and are taken for a colical Indiſpoſition, or which ſeize the Pericranium, are happily remov'd by the Uſe of Nitre: And *Welſchius*, in *Cent.* 2. *Curat. ult.* informs us, that by Nitre alone, a large Number of Soldiers in the *Hungarian* Camp were freed from an Epidemical Cephalalgia.

Though theſe Things are obvious in Practice, and confirmed by Experience, it is, nevertheleſs, an additional Satisfaction to the Mind, to know the Reaſon why, and the Manner in which, Nitre produces theſe Effects in the human Body.

Though it is, certainly, a difficult Task to know and demonſtrate the Virtues of Medicines, yet this Difficulty ought not to make us deſpair in our Purſuit, but rather animate our Courage in the painful and glorious Reſearch; for Experience, ſupported by Reaſon and Judgment, in the Exhibition and Application of Medicines, are the two things on which the Truth and Certainty of Phyſic depend. We ſhall, therefore, endeavour to deduce the various Effects of Nitre from one common Principle or Source. The principal Virtue, then, of Nitre is, to refrigerate and extinguiſh the preternatural Heat of the Blood. Now it is not only certain, but agreed upon by Phyſicians, that all Heat in the Body is produced by a turbulent inteſtine Motion of the Particles of the Blood, eſpecially its ſulphureous Parts, round their Axis; ſo that the briſker and greater this Motion is, the greater is the Attrition produced by the Preſſure of the Blood, by means of the Heart, Arteries, and fibrous Parts of the Body; and the greater the Attrition, the greater the Heat muſt, of courſe, be. Whoever, therefore, knows how to [illegible] this inteſtine Motion, muſt, of courſe, know how to [illegible] the preternatural Heat. This Motion is ſtopt, when [illegible]ticles of the Blood ceaſe to move around their Axes, [illegible]ceed in ſtreight Lines, which, according to the mo[illegible]ſophy, is the Cauſe of Cold. This is ſufficiently [illegible] contracting the Mouth very narrow, and blowing q[illegible] produces a Senſation of Cold, whereas, when the Br[illegible] emitted, a Senſe of Heat is excited: And I am of Opinion, that this artificial Cold is not ſo much owing to any material Principle, as to a particular Direction of Motion in the Particles; and this ſeems to be demonſtrated by the curious Converſion of Water into Ice, in the middle of Summer, by means of Nitre, common Salt, and Sal Ammoniac.

But that there is ſuch a Motion in Nitre, or that the Motion of its Parts, when diſengaged by Heat, is rectilineal, may be proved from various Circumſtances. That Nitre is elaſtic and expanſive, is ſufficiently certain from Gunpowder, whoſe Virtues can only be deduced from this Quality; for this Powder is of ſo elaſtic and expanſive a Nature, as to force Objects from itſelf to a certain unlimited Circumference. Beſides, that Nitre is poſſeſſed of ſuch a Quality, is ſufficiently obvious from its Mixture with coagulated Blood, which, by its means, is forthwith reſolved, becomes fluid, and aſſumes a red and florid Colour. To this elaſtic Expanſion of Nitre it is, alſo, owing, that, when mixed with Spring-water, it ſenſibly augments its Coldneſs. Hence it is agreeable to Reaſon, and our Conceptions of Things, that Nitre, taken internally, by producing ſuch an Expanſion in the Fluids, diminiſhes the hot and inteſtine Commotion of the Parts of the Blood and Humours. And this Effect it produces not only by diminiſhing the Agitation and Effervеſcence of the acrid Bile with other Juices in the Primæ Viæ, but, alſo, by correcting the exorbitant Heat and Commotion of the Parts of the Blood in the Heart and Lungs. When this hot and inteſtine Motion is allayed, the Fibres, before conſtricted by the Heat, are relaxed, the Mouths of the cutaneous Emunctories opened, and Perſpiration rendered freer: So that the active and ſulphureous Parts, retained in the Body, exhale; by which means the Heat and Thirſt are allayed, the Spaſms removed, the Pain alleviated, and both the Excrements and Flatulencies freely evacuated from the Inteſtines. Beſides, when the Heat, which conſumes the Moiſture of the Body, is mitigated, this Moiſture is afterwards retained, and ſoftens and relaxes the Parts before conſtricted; ſo that Nitre not only refrigerates, but moiſtens.

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We have, also, observed, that Nitre preserves Bodies from Putrefaction, which it powerfully resists. This Effect is, also, produced by the expansive Quality of Nitre, which extinguishes the intestine Motion, which dissolves the Union of the Parts of which the Body is composed, and in which the Force and Cause of Putrefaction consist: So that in the Preservation of Bodies Nitre produces an Effect analagous to that of Cold.

We now come to inquire into the Cause of that singular Virtue, by which Nitre corrects and subdues the caustic and drastic Qualities of some Medicines, as we have already observed with respect to drastic Purgatives, Insects abounding with an acrid Salt, and Minerals of a deleterious Quality, the drastic Force of all which is so corrected by Nitre, that the Physician needs no longer dread their dangerous Consequences. The Reason of this seems to be, that all virulent Substances, by an highly penetrating and active Motion of their minute and subtile Parts, irritate, lancinate, and corrode, the tense Nerves, and delicate tender Fibres. Now the more numerous, and the more closely united, such Particles are, the more forcibly they exert their Power; and, on the contrary, the more they are divided, the more of their Force they lose. It is confirmed by Experience, that not only all Caustics, whether acid or alcaline, but, also, Sublimate itself, than which there is no stronger Poison, lose their deleterious Quality, when only exhibited in a sufficient Quantity of Water. In like manner, when Nitre, calcined with Regulus of Antimony, does, by its resolvent and expansive Quality, separate the antimonial Particles from each other in the Fire, dissolve their close Union, and, by dividing them, render them more subtile, an innocent, mild, and diaphoretic Quality is conveyed to them. But this Division of the Parts must be sufficient; for which Reason two or three Parts of the Nitre are requisite to one of the Antimony; for, if the Quantity of Nitre is too small, the Calx of the Antimony will, in some measure, excite a Nausea and Vomiting. This diaphoretic Calx, when duly prepared, and fused with an equal Quantity of Nitre, and Powder of Charcoal, immediately resumes its virulent Quality, because its Parts, which were formerly divided, are now collected, and closely united. Nor is it improbable, that Nitre, when mixed with drastic Purgatives, and Vesicatories, acts by dividing and separating their Particles.

From what has been said, it is sufficiently obvious, that Nitre is an excellent Corrector of all drastic Substances, and, consequently, of singular Service in the Practice of Physic. Thus, it is commodiously mixed with Emetics, Purgatives, Diuretics, and Sudorifics of the drastic Kind: For [illegible] Reason an highly safe Vomit may be prepared by mixing two Grains of emetic tart with twelve Grains of the Powder of Crabs-eyes, and Quarter Grains of the Powder of Nitre. Very safe purging Pills, fit for various Cases, may be prepared by adding six Grains of Nitre to four or five *Pilulæ Avicennæ*, and the *Extractum Panchymagogum* sometimes to ten Grains. A valuable Diuretic may be, also, prepared by dissolving some Grains of purified Nitre to Millepedes, Crabs-eyes, and the like, of each ten Grains. If twelve Grains of Bezoar Mineral are mixed with one Grain of Camphire, and with volatile Salt of Hartshorn, and Nitre, each four Grains, we have a very safe and efficacious Sudorific. If we desire a safe Mercurial Medicine for removing Coagulations of the Lymph, and Infarctions of the Glands, take prepared Cinnabar of any Kind, whether native, or Cinnabar of Antimony, and mix with a due Quantity of Nitre, and other precipitating Substances. And this is a valuable and safe Remedy in chronical Disorders. We, also, use, with singular Benefit, Nitre and Cinnabar with those Sedatives, the principal Ingredient of which is Opium, such as the Theriaca Cœlestis, Laudanum Opiatum, and the Pilulæ Cynoglossæ; since, by this means, their narcotic Quality is much corrected. *F. Hoffman.*

The Examination of Nitre.

1. Put Nitre into a clean Crucible, and fuse it with a gentle Fire, without Fulmination: It remains melted like pure Water, without changing its Nature, and scarce losing any thing by Exhalation. It passes through the Crucible, but does not grow alcaline, or become sharper; and, when poured out, it presently becomes solid; and never, when thus melted, takes Flame, nor ignites; whence it is falsely called an inflammable Salt. And yet, while it remains thus fused, if any combustible Matter be thrown into it, it immediately takes Flame, whence it came to be called Inflammable; but, when taken internally, it cools the Body more than any other Salt.

2. Put a Solution of the purest Nitre, in Water, into separate Glass Vessels, and pour successively to them different Acids; and the Liquors will be found to make no Ebullition, nor to grow warm, opaque, or turbid. To another Parcel of the same pure Oil of Tartar *per Deliquium*; whereupon the Liquor will grow opaque and muddy, and soon deposite a large Sediment at the Bottom; from whence the Liquor being decanted, it will no longer grow troubled by the Addition of fresh Alcali. Nearly the same Thing happens upon the Addition of a volatile Alcali. And this is the true Nature of Nitre.

Remarks.

Hence it appears, that Nitre is neither alcaline, nor acid, nor of itself inflammable; but of all Salts the most easily fused in the Fire.

The Refinement and Crystallization of Nitre.

Dissolve common Nitre in six times its Quantity of boiling Water; strain the hot Lixivium quick; put it into a clean cylindrical Vessel; and exhale it over a clear Fire, to a Pellicle: Set it in a cool Place with clean Sticks a-cross the Vessel; there will presently be formed long, prismatic, hexagonal, transparent Crystals. Collect these, and put them into an earthen Colander, that the Liquor may drain from them; afterwards dry the Nitre in the open Air.

2. Dissolve Nitre in eight times its Quantity of boiling Water; filtre the Lixivium; then drop therein some pure Oil of Tartar; mix them well; then drop in more, and continue to do thus, till the Liquor appears no more disturbed. Boil the Lixivium for a single Minute; strain it hot to make it perfectly clear; exhale to a Pellicule; pour it out into a clean cylindrical Vessel, with little Sticks laid a-cross, and let it stand in a quiet Place; prismatic Crystals, like the former, will thus be formed. No Experiment shews, that any Alcali here adheres to the Crystals of Nitre, which is thus made pure; nor does it appear, that any Method can afford it purer.

3. Let the Lixivium that remains after this first Crystallization, be diluted with an equal Quantity of fair Water; then boil for a Moment, filtre hot, inspissate to a Pellicle, and set in a cold Place, as before: It will thus shoot into Crystals of pure Nitre, which are to be dried as above. The remaining Lixivium, being again treated in the same manner, and again set to crystallize, yields more of them. And now the remaining Liquor, which is fat and sharp, will afford no more Crystals, and dries with great Difficulty; and this happens not only when Alcali has been used in the refining, but, also, when nothing but pure Nitre was added. This last Remainder is a peculiar and very saline Fluid, that long remains fixed in the Fire.

Remarks.

1. By this means an excellent Nitre is procured for Medicinal Uses, being very light, of a particular bitterish Taste, and, when taken into the Body, it easily dissolves therein; wonderfully cools and thins the Blood, giving a florid Colour thereto, and checking the Inclinations to Venereal Heat; changed in the Body, not being unalterable therein, [illegible] but turning into the human Salt. If the moist [illegible] beats [illegible] be salted with this Nitre, they are they make [illegible] and free from Putrefaction: Whence [illegible] for this [illegible] tempers, attended with an inflamm[illegible] the Leave[illegible] Blood, this Salt proves excellent[illegible] Assistance same time, no way offends by any vi[illegible] not cause it from prejudicial by its Weight. It does not [illegible] where prevents the Salt of the Body from turn[illegible] at the Oil from putrefying; and [illegible] this account [illegible] be called an Antiphlogistic [illegible]
2. Here we see an Exa[illegible] that Ope[illegible] Crystallization of S[illegible] very is a [illegible] ciples, of the same [illegible] always of the same Figure, and [illegible] This Depuration depends upon the Law of [illegible] the Parts of different Salts, being diluted in Wa[illegible] to a certain Proportion in respect of the Wate[illegible] quire a Faculty of uniting their own particular Parts [illegible] more than of uniting with the Water, or any other Salts: Whence they repel both the Water, and other Salts. And thus those Salts always begin to come first together, when several Kinds are mixed, which require most Water to keep them dissolved; for thus these associate first, and repel from them the other saline Parts, that remain fluid in less Water; so that, if any Salts could be resolved in one and the same Proportion of Water, it would be extremely difficult to separate and distinguish them, which is now easily and certainly performed. And thus Nitre is perfectly separated from Sea-salt, and Sea-salt from Salt of Tartar. For, when Nitre is thoroughly purified from Sea-salt by Crystallization, it affords an acid Spirit by Distillation, which dissolves Silver, but will not touch Gold; whereas, if a little Sea-salt remained with the Nitre, it would afford an Aqua-regia, not an Aqua-fortis. The same Nitre, being dissolved in Water, and purified with the Addition of fixed Alcali, by the bare Crystallization, throws off all the Alcali; for in Distillation it is converted into an acid Spirit, which would not be such, if any fixed Alcali adhered to the Nitre. Whence we may observe a wonderful attractive and repelling Power, in this Action of Crystallization.
3. If these Crystals are well prepared, they always appear transparent, and of their own exact particular Figure; and so long as they appear thus, they always consist of the Salt and Water, united

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united in a certain Method and Proportion. This appears from hence, that if these Crystals be put into a clean Glass, covered with an Alembic-head, and heated by the Fire, they yield a pure Water; but, at the same time, presently grow white, opaque, and, losing their Figure, fall into a Powder of no particular Figure. But if this Powder be again dissolv'd in Water, inspissated, and crystallized, the same Form and Transparency return. Whence this ought to be considered by those who write about the Figure of the saline Principle. Nitre, thus purified, remains dry in the Air, and does not easily run by the Moisture thereof.

Nitre changed to Alcali, with Tartar and Fire.

Take six Ounces of pure dry Nitre, reduced to Powder; and the same Quantity of pure, dry, and pulveriz'd Cream of Tartar: Mix them together in a Mortar, and again dry the Powder thoroughly. Put an Ounce of this Powder into a clean and dry Bell-metal Mortar, first well heated; and apply thereto a little Bit of burning Coal: The whole Mixture will then instantly deflagrate, with a violent Noise, scattering many Sparks abroad, dispersing a strong-smelling Fume, and leaving behind a white Mass, somewhat greenish in several Parts. As soon as the Deflagration is over, throw half an Ounce of the same Powder upon the burning Mass; and this, also, will deflagrate as the former, but quicker, because of the greater Heat. Continue thus, till the whole Mass is deflagrated, and leaves behind a white, greenish, uniform Mass, except a few small Parts up-and-down, which have not sufficiently felt the Fire. These, therefore, should be carefully separated from the Mass: And hence it would be better, if only a small Quantity were deflagrated at once, because the Fire would be thus more equably applied thereto.

REMARKS.

Hence it appears, that Nitre, which, of itself, is not inflammable, according to the first Process, yet, being mixed with Tartar, which is oily, it immediately takes Fire, with a violent Agitation, like Gunpowder, upon the Application of a live Coal; and that the manifestly acid Salt, made by a Mixture of Nitre and Tartar, is, at once, by a sudden, single, inflaming Action of the Fire, turned into Alcali: of which, a little before, there appeared no Sign, either in the Nitre, or the Tartar. Nor indeed are hitherto known any Method so sudden of producing that strong fixed Alcali, from a Mixture of Salts that are Waters or Juices; but, on the contrary, giving manifest Quantity of Salt resembling Acid. For the Salt, thus produced, it which the spir[illegible] Strong Alcali in all its Effects, and al- however, I am unable, medicinal, and physical Operation. I extol and com[illegible]ewhat from other fixed Alcalies, as qualities. This Sc[illegible]triol is poured upon it, a certain acid like that of *Glauber*[illegible] appears by its Scent to be Spirit of Nitre; lt; but because [illegible]is some true Nitre still remains in this Alcali, orrisonding the [illegible] Liv[illegible] of this Acid is small. We have here, llenter contributed o[illegible]r it is wanting. And this sudden Change nd ag[illegible]hey wine di[illegible]ill not [illegible]nge to him who knows, Virtue[illegible]a [illegible]om be[illegible]hout the Assistance of ntities Salt of the Ca[illegible]Ashes of burnt Wood. Lastly, [illegible]der[illegible]d the Li[illegible]y runs in the Air.

[illegible]ny Alcaline turned to an Alcali, with live Coals.

and the Addi[illegible]

Fill a strong and large Crucible with very dry powdered Nitre, laid in light; set the Crucible firm in the Furnace, and surround it with burning Coals, at a Distance; then gradually bring them nearer, that the Crucible, with the Nitre it contains, may be thus heated equably, to prevent bursting. When all is now thoroughly hot, apply as strong a Fire as is necessary to make the Nitre run like Water: Then take a little Piece of Wood-coal, thoroughly ignited, and put it gently into the melted Nitre, now at Rest; the Coal (not the Nitre) will thus instantly take Flame with an hissing Noise, and move over the whole Surface of the melted Nitre, with a brisk Motion, till it is consumed, and the Flame extinguished, so as to leave the Nitre melted, as before it was thrown in. Now, throw in another Bit of live Coal, as before, and the same Phenomena ensue. Continue repeating the Operation, till, at length, the Nitre remains fixed with the same Degree of Fire, so as to flow no longer, nor give Flame to the Coal thrown in, which, at length, will always prove the Case. This State may be known to approach, when the Nitre begins to lose its Fluidity, and the Coal leaps briskly about, and sometimes flies out of the Crucible. At this Time, therefore, the Fire should be a little increased. When the Coal ceases to flame any longer, let all cool, and there will remain in the Crucible a Mass with an hollow Part on its Top, where the last burning Coal had rested: This Mass is solid, ponderous, of a Colour between white and green, fiery, alcaline, and presently runs in the Air: Therefore, while yet very hot, let it be presently taken out, by breaking the Crucible, and put into a clean Glass, to be carefully stopped.

REMARKS.

1. Here the Eye perceives, that Nitre will not take Flame with a burning Coal; and that, between the inflammable Matter of the Coal, and the melted Coal, there arises a great Motion of Impulse, and Repulse; for, when the live Coal, that flew about in the Crucible, is consumed, the Nitre immediately remains without any visible Motion, and does not appear on Flame, till, by the Addition of a fresh Coal, the same Motion is renewed; and, therefore, the Consumption of the Coal is hastened by the melted Nitre, which it would otherwise consume much slower. And this accelerating Action of the Fire upon the combustible Matter seems to increase the Deflagration; and, therefore, that the Effect of Nitre upon Combustible Bodies, by means of Fire, is no more than this violent repulsive Motion, whereby the Coal, if somewhat large, is driven from the Nitre with an explosive Force; after which, the whole Nitre remains calm, and at Rest.
2. The Ashes of the fixed vegetable Coal, after the Deflagration, here turn into a fixed Alcali, which very easily relents in the Air; but this Alcali here produced is much larger than would be afforded by the burnt vegetable Matter, and must, also, proceed from the changed Nitre. This is another Method of converting Nitre into an Alcali: The Alcali thus produced is very difficult to keep dry, but presently relents in the Air, and runs into a strong, fiery, alcaline Liquor, leaving a large Quantity of Ashes behind. But if the Salt, as soon as prepared, be dissolved in Rain-water, and directly strained, and the Fæces, remaining in the Strainer, be washed so long, in Changes of Water, till they retain no Salt, they become insipid, when dried. And, if the several Solutions be evaporated to the Consistence of the Oil of Tartar *per Deliquium*, a Liquor like that will be obtained. And these pure Ashes, being weighed, will shew how much of each remained after the Deflagration, and, consequently, how much Salt of the burnt vegetable Coal might contribute to the making of this Alcali. Hence, also, may be known, how much the Nitre contributed to its Production. This Preparation is commonly called Alcalized, or Fixed Nitre.

Sal Prunellæ, from Nitre.

1. Take Nitre, purified according to the second Process; [illegible] it at the Fire, in a clean Crucible; and, as soon as [illegible] pour it out in Cakes upon a clean Marble; and k[illegible] under the Title of *Sal Prunellæ*, for Medicinal [illegible]

2. Dissolve this Nitre in clear Rain water, where[illegible] flowers have first been infused warm, so as to g[illegible] ful Tincture, which is to be filtred; inspissate [illegible] tion, and let it shoot into Crystals, in the common Method. These, being dried, are another Kind of Sal Prunellæ, or crystal Mineral; formerly held a Secret, as an infallible Antiphlogistic.

3. Melt four Ounces of pure Nitre in a clean Crucible, and throw a Scruple of the Flowers of Sulphur thereon; there will instantly arise a great Flame, like Lightning, which, when the Sulphur is entirely consumed, directly goes out of itself. This being three or four times repeated, and the Nitre poured out into Molds, so as to form little Cakes, is another medicated Sal Prunellæ.

REMARKS.

The Nitre, thus prepared, entirely agrees, in Virtue and Use, with that of the second Process; which I rather prefer, as the Trouble of the present Process seems unnecessary, and refined Nitre every way answers the Purpose. Hence we see, that melted Nitre, though perfectly at Rest in the Fire, has the same Effect upon inflammable Sulphur, as it before had on the ignited Coal; that is, to make it deflagrate quicker and stronger; and hence the Discovery of Gunpowder, which is prepared from Nitre, Sulphur, and Coal. This present Preparation has obtained the Name of Sal Prunellæ from the *Germans*, who observing that a certain kind of epidemical Camp Fever, attended with a dangerous black Quinsey, which they call *Die braune*, was happily cured by the Use of this Powder, they, thence, called it by that Name. For the same Reason they gave the same Appellation to the Plant Self heal, or Prunella, because this cures the same Distemper. The Salt, thus prepared, is never alcaline.

Sal Polychrestus.

1. Melt pure Nitre in a Crucible, and throw a little pure Sulphur thereon, not exceeding a Scruple at a time; it will deflagrate,

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deflagrate, as in the preceding Process: Continue throwing on the same Quantity after each Deflagration, till at length as much Sulphur is used as there was Nitre; towards the End of the Operation, the Sulphur thrown in does not flame so violently, nor so brightly, as before. Keep the Crucible still in the Fire, in the State of Ignition, for an Hour; the Salt will appear reddish up-and-down, but otherwise of a grey Colour: If immediately after the Deflagration, with an equal Quantity of Sulphur, the Salt be taken out, without any farther Application of Fire, it has always appeared to me, upon Examination, to have perfectly the same Efficacy as the former.

2. Or take equal Parts of pure dry Nitre, and Flowers of Sulphur; grind them to fine Powder, and heat it carefully; then throw two Scruples thereof at once into an ignited Crucible, while it remains in the Fire; a violent Deflagration will immediately arise; which being over, throw the like Quantity to the Remainder, and this will deflagrate as the former. Continue thus, till all the Powder be thrown in; there will now remain at the Bottom of the Crucible, a Salt extremely like the former.

3. Dissolve the Salt, thus prepared, in five times its Quantity of hot Water, in a Glass Vessel; strain it while it is hot; inspissate it to Dryness; it will be of a white Colour, of a bitterish, sulphureous, warm Taste, and of the same Nature with the Salt sometimes found in hot mineral Waters: It is neither Acid, nor Alcali, but consisting of Nitre, and some Proportion of Sulphur, changed by the Fire.

REMARKS.

Sulphur, therefore, which consists of the Acid of Vitriol, and Oil, united together, has here the greatest Part of its Oil consumed in the Flame with the Nitre; and its acid Part, now, perhaps, somewhat changed by the Fire, along with some Part of its Oil, intimately mixed among the Nitre, now, also, changed by the same, so as to produce a neutral fossil Salt in the Fire. Whence we see, that Nitre, which, when fired with a vegetable Coal, was converted into a fixed Alcali, is here, with Sulphur, changed into a fixed Salt, that is not alcaline, tho' it had so long, and so strongly, been deflagrated with Sulphur. Physicians, especially those of *Paris*, having thoroughly experienced the Virtues of this Salt, called it *Polychrestus*, because of its various Effects, and proving successful in many different Diseases. If taken upon an empty Stomach, by a Person in Health, in the Quantity of two Drams, diluted with twenty times its Quantity of Water, the Person walking gently after it, and drinking four or six Ounces of new Whey, for three or four times, it sometimes proves gently vomiting, oftener purgative, but always diuretic and sudorific, so often as it is determined to operate that Way, by Heat, Motion, and Sudorifics. It cuts cold viscous Phlegm, resolves in dense Inflammations of the Blood, opens the Passages, corrects the Bile, when tending to Putrefaction, excites it, when languid, and stimulates it with Gentleness and Safety. Hence, being prudently given in chronical and acute Distempers, it proves curative: It almost certainly cures inveterate Tertians, without any Danger of Relapse, or without obstructing the Viscera: It securely cures Quartans, by gradually resolving the sluggish Matter thereof; and, therefore, has deservedly obtained the Name of the Salt of many Virtues. If a little Sal Ammoniac be thrown into melted Liquor, it takes Fire; and, if saturated by repeated Addition, it affords a wonderful Salt, that deserves to be examined, on account of its particular Nature.

GLAUBER's Spirit of Nitre.

Put eighteen Ounces of pure dry Nitre, reduced to an impalpable Powder, into a clean Glass Retort, and pour thereon six Ounces of pure, and highly rectified, Oil of Vitriol: Immediately place the Retort in a Sand-furnace, and apply a large Glass Receiver; luting the Juncture with a Mixture of Lime-clay, and a little Sand. There will presently arise an Heat, and a red Fume; apply a moderate Fire, and the Receiver will soon be full of red Fumes, and a Liquor begin to drop gradually. Increase the Fire to the utmost that Sand will give; and then let all spontaneously cool. As soon as the Retort is a little cold, separate the Receiver, and have at hand a strong dry Glass, with a narrow Neck, fitted with a slender Funnel; pour the Liquor into a Bottle, through the Funnel, under a Chimney, to prevent the red Fume from any way coming to the Lungs; for it is sharp, fiery, incredibly volatile, and diffusive: As soon as the Spirit is in, exactly stop the Mouth of the containing Glass, with a Glass Stopper; in like manner, stop the Receiver, and set it by for the same Use; it will remain for many Weeks filled with a red Vapour, in continual Motion. The Liquor in the Glass will appear of a Gold-colour, with a red Vapour always appearing in the empty Part above, even for Years, as I have found by Experience; and, if at any time open'd, a volatile, copious, red Vapour immediately flies out. The Operation is best performed in the cold Winter-season.

REMARKS.

Oil of Vitriol can scarce touch Nitre, but there immediately arises a violently acid, sharp, fiery, volatile Spirit, that is perfectly nitrous, and has all the same Effects as common Aqua-fortis, and, with fixed Alcali, returns to true Nitre again. It is impossible to obtain more Spirit from this Nitre, by the Addition of less or more Oil of Vitriol, whatever Degree of a Sand-heat be used. All the Nitre, therefore, is not changed from fixed to volatile, from solid to fluid, from mild to sharp, from white to red, from neutral to acid, and from unactive to a moveable or restless Liquor. This Liquor is the true Spirit of Nitre, as appears by its Smell, Taste, Colour, red Fumes, Effects, and its Power of regenerating Nitre again. It contains nothing of the Oil of Vitriol employed, as appears from certain Experiments: The other Part of the Nitre, therefore, which is not render'd volatile by this Operation, unites with the Oil of Vitriol, fixes therewith, and becomes a white dense Salt, neither acid, nor alcaline, but neutral; and of a new Kind, somewhat resembling the Tartarum Vitriolatum. Upon considering this, some eminent Chymists have supposed, that Nitre, in its Origin, was made of a fixed alcaline Salt, and the proper Spirit of Nitre, such as is here produced; and mixed together to a perfect Saturation. But as Oil of Vitriol is a much stronger Acid, than Spirit of Nitre; when that comes to be mixed with the Nitre, they imagine, that the fixed alcaline Part of the Nitre attracts the acid Oil of Vitriol, so that the two here unite into a Salt, consisting of the Alcali of Nitre, and the Oil of Vitriol, while the pure Acid of the Nitre, now set free, by the Oil of Vitriol, from the Alcali that detained it before, remains a pure, red, volatile Acid, of its own peculiar Nature. Hence they attribute this whole Action to the bare Separation of the Parts pre-existing in this Form before, and not produced afresh by the Action of the Fire. This Explanation seems very plausible, and countenanced by other Experiments, particularly in the two next Processes but one. But if we consider the Origin of Nitre from Animals, and fixed Alcali, it seems difficult to find a Principle in them, any way resembling such an acid Spirit, as is here prepared; especially since the most diligent Inquirers into Nature cannot find any perfect Nitre spontaneously generated. Certainly there is no Instance of any natural Acid like that here obtained; we must, therefore, abide by our Experiments, and beware of hasty Conclusions. There is no knowing what Success Time, Chance, or Art or Nature, for obtaining a stronger, or [illegible] bears a greater Quantity of Nitre than this; whence we shall always [illegible] they make [illegible] for the future, in those Operations that require [illegible] Leave [illegible] who discovered this Art, which he [illegible] Assistance the Production at an extraordinary [illegible] from vulged the Method; to him are we [illegible] excellent an Invention. And hence we [illegible] what Numbers of new, useful, and excellent [illegible] be made, by applying [illegible] working upon them with [illegible] of the noblest that [illegible] er of [illegible] ence

GLAUBER's dulcified Spirit of [illegible]

1. Put into a tall Bolt-head eight Parts of pure [illegible] pared without Alcali; let fall into it only a [illegible] once, of *Glauber's* strong Spirit of Nitre; then [illegible] and shake the two Liquors well together, that they may perfectly mix; afterwards drop in more; shake as before: And thus proceed carefully, till an eighth Part of the Spirit of Nitre be added, in proportion to the Alcohol; observing, after each time, to shake the Glass thoroughly. Afterwards digest the Liquors for some time, and then distil twice or thrice over in a Retort: Thus a true dulcified Spirit of Nitre will be obtained.

2. If common Spirit of Nitre, and common Spirit of Wine, were here used, they would not thus afford so noble and balsamic a Spirit, on account of the Water they each of them contain.

3. I have often experienced, and shewn, the dangerous Effects that may arise upon mixing large Quantities of Alcohol, and strong Spirit of Nitre, together: For, if to two Drams of *Glauber's* Spirit of Nitre, contained in a Bolt-head, there be at once added six or seven Drams of Alcohol, there will arise a violent Heat, Ebullition, and Vapour; and all the Liquor suddenly escape out of the Glass, though it were ever so high, and this with great Danger of Suffocation, if it should touch the Lungs; and in this manner I have lost both the Liquors. The excellent Doctor *Slare* has more Observations to the same Purpose, in the *Philosophical Transactions*.

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REMARKS.

Upon thus mixing together Alcohol, and Spirit of Nitre, there immediately arises a fragrant Smell, like that of Southernwood; there is, also, observed an high Degree of Effervescence betwixt this volatile Acid, and pure subtile Oil, without the least Interposition of an Alcali: And yet the Effervescence is almost fiery; so that, if a lighted Candle were applied to the Vapour, the Inside of the Glass would appear of Flame, and the whole instantly burst in a dangerous manner. The oftener these two Liquors are digested and distilled together, the more exactly they unite, and thus afford a perfectly acid and oily Salt, which has an actual preservative, balsamic, detergent, dissolving Virtue, and prevents the Putrefaction of the Bile. Being properly diluted, and prudently used, it presently gives a beautiful Whiteness to the Teeth; but, if imprudently used, destroys them: It restores the Appetite, if depraved by a mucous Phlegm, or corrupt Bile; or if the Cause proceeds from a Weakness of the Stomach: It is a great Carminative; it is recommended as a Preservative against the Stone, and even as a Solvent for it: It was formerly the famous Lithontriptic of *Sylvius*, held at so dear a Price. It promotes Sweat, provokes Urine, allays Thirst, corrects a fetid Breath, and has particular Virtues in the Scurvy. It is conveniently taken upon an empty Stomach to twenty or thirty Drops in Wine, Mead, or Beer.

The Regeneration of Nitre.

1. Take an Ounce of dry fixed Nitre, made according to the third, or fourth Process; dissolve it in eight times its Quantity of Water, and filtre the Solution. Pour the Liquor hot into a clean, heated, large Glass, with a narrow Neck; drop thereto, successively, a few Drops of *Glauber*'s strong Spirit of Nitre. The falling in of each Drop suddenly occasions a great Effervescence; shake the Glass so long as this continues; then drop in more, as before; and continue thus, till the Effervescence begins to abate; after which add only a single Drop at a time, and strongly shake the hot Liquor. Proceed thus, carefully, till no more Effervescence appears: The Liquor will be transparent, and certain long and crystalline Shoots will begin to be form'd therein. It has no Scent; the Taste is somewhat bitterish, and perfectly nitrous. Dilute the Liquor a little more, boil it for a Moment, strain it hot, evaporate to a Pellicle, and the usual Crystals of Nitre will shoot. Again the remaining Liquor; inspissate, and crystallize as before; thus more true Nitre will be obtained.

2. If any [illegible] fixed Alcali, prepared from Tartar, or which [illegible] strong this Experiment, instead of fixed Nitre, however, [illegible] every respect the same, and no Difextol and con[illegible] the Nitre produced.
[illegible] Qualities. This S[illegible]

REMARKS.

[illegible] like that of *Glauber* [illegible] salt; but, because [illegible] of *Mr. Boyle* conceive [illegible] highly of this Experiment, [illegible] corresponding the [illegible] proper to write expeditiously upon it: And truly [illegible] excellent [illegible] most capital Arcana in Chymistry; as [illegible] they were [illegible] the strongest and most corrosive Acid and [illegible] Virtue [illegible] immediately to produce, by a bare proportional Mixture, a [illegible] nitrical, mild, cooling Salt, in no respect corrosive. [illegible] only odorous and volatile Acid is, in an Instant, attracted to a fixed Alcali, with the Loss of all its Odour and [illegible] fluidity, so as to bear a Fire of Fusion, without any remaining Volatility: Whence we may easily understand the great attractive Force there is betwixt Acid and Alcali. At the Instant of this Conflict, a Quantity of elastic and highly expansive Air arises, which is only generated in the Action of the Attraction, and ceases when that is over: Whence Air seems to be struck out of the Bodies of the Acid and Alcali in the Collision: Hence this Action seems to be an Attraction, not a Repulsion; and, perhaps, the violent and sudden Motion arises from the Expulsion and Breaking-out of the Air, while the Alcali and the Acid are closely uniting. Here we see, likewise, a subtile liquid Acid again forms a firm, solid, saline Body with an Alcali; and that the Alcali, which would before run spontaneously in the Air, and the Acid of the Nitre, scarcely by any other means to be render'd solid, afford a Salt, upon uniting, which, when dry, will remain firm in the Air, and even acquire a solid Form, or shoot into Crystals in Water. Here again we see, that an Alcali may be determined by an Acid, into that kind of Salt which afforded the Acid. Hence Alcali appears a kind of unimpregnated or Female Body, to be impregnated by an Acid, which acts as the Male, with respect thereto, and generates its own Kind, or preserves its Species; and, therefore, the indifferent Nature of Alcali is determined by the Acid. And hence, again, it appears, that the last Principles of Nitre may consist of any fixed Alcali, saturated with the acid Spirit of Nitre; and, therefore, that the Nature thereof, the Figure, and other Properties, may be owing to a Conjunction of them both. But whether all Nitre originally proceeded from this Acid, before pre-existing of itself, and united with a fixed Alcali, in like manner pre-existing by itself, I cannot say; and very much question. But that Nitre may be made in this manner, and, also, that it may be procured from Earth, impregnated with the dissolved Parts of Animals, and the saline Parts of Vegetables, as, also, with Quick-lime, I certainly know; and this is sufficient for me.

Nitre regenerated in an unfixed State.

1. Into a capacious Glass, with a narrow Neck, put three Ounces of pure volatile alcaline Salt; dilute it with six times its Quantity of fair Water; and, when dissolved, drop in a Quantity of pure Spirit of Nitre; an Effervescence will arise like that of the preceding Process. Continue in the same manner as there directed, till the Point of Saturation be exactly hit; soon after which, oblong, saline, prismatic, eight-sided Crystals will shoot, exactly like Nitre.

2. Again, dilute this compound Liquor, with twice its Quantity of Water; filtre; exhale to a Pellicle, over a gentle Fire; and set the Whole in a cold Place; and nitrous Crystals will be formed. Prosecute the Operation, till all the Salt be shot, which will appear in the Form of scentless Crystals of Nitre. These Crystals easily melt in the Fire, but at the same time fly off, not remaining fixed like Nitre: They make a Flame with all inflammable Matters, like true Nitre; and, with Oil of Vitriol, afford a Spirit like true Nitre. Hence they are true Nitre, but semivolatile.

REMARKS.

This is an excellent Experiment, and teaches the several Particulars explained under the last Process; to which we may add, that here, from two of the most odorous Bodies, there arises a perfectly inodorous Salt; from two violent Caustics, an exceeding cool and mild Salt; from two very volatile Bodies, a Salt that is not volatile, except with a considerable Heat. Here the volatile Alcali, of itself indifferent, is, by a saturating Acid, turned into a particular Salt, of the Nature of the Acid employed, which thus regenerates the Body that produced it: Hence we see, that the Volatility of a Salt depends upon the Alcali contributing to its Composition; which Alcali if fixed, the Salt is fixed; if volatile, the Salt is volatile: And that the Nature of the Salt produced depends upon the Acid mixed therein. Hence we have the Method of procuring a volatile Nitre; the Discovery of which has exercised the Labour and Industry of the Chymists of all Ages. The Virtues of the semivolatile Liquor, thus prepared, as far as I could observe, are of the same Kind with those of common Nitre, or the fixed regenerated Kind, though more gentle; and differ only, as the Virtues of Sea-salt differ from those of Sal Ammoniac.

Glauber's Alcahest.

Put the alcaline Salt, prepared according to the fourth Process, in a glazed Dish; and expose it to the open Air, in a cold quiet Place, free from Dust; it will soon begin to run: Pour off what is dissolved into a clean Glass. Again, expose the Remainder to the open Air, and repeat the Operation, till the whole Salt is run into a Liquor. Much Ashes will remain behind; but the Liquor, when strained, becomes clear, alcaline, and thick, like Oil of Tartar per Deliquium.

REMARKS.

This is that famous Liquor of the Chymists, boasted as so great a Secret by its Inventor *Glauber*, who put it off for the true Alcahest; but Secrets once revealed are slighted, and this seems to be the Case here. By all the Experiments I have made, I could never discover any thing particular, and which I did not, also, find in Oil of Tartar per Deliquium, in whatever Case I applied it; but *Glauber*'s Alcahest is prepared with more Difficulty, obtained in less Quantity, and comes dearer; and hence, perhaps, pleases better.

Nitrum nitratum.

To eight Ounces of the Lixivium of pure Nitre, put thirty Drops of the strongest Spirit of Nitre; evaporate to a Pellicle, and crystallize after the common manner: Perfect nitrous Crystals will be thus obtained, but of an acid Taste.

REMARKS.

This Process serves to shew how certain Salts may be united, which the Acids themselves afford, into the Form of a compound Salt; and, by adding more or less of the Spirit, the Salt may be made more or less acid; but the more acid it is made, with the more Difficulty it afterwards dries, and keeps dry; being thus always subject to run in the Air. The Nitre, thus

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thus prepared, is advantageously used in burning Fevers, attended with a dry, foul Tongue, and Thirst.

Vegetating Nitre.

If, in the Preparation of *Glauber's* Spirit of Nitre, there are taken four Parts of Nitre, and one of Oil of Vitriol, and, after all the Spirit is entirely driven off, the white Salt, remaining perfectly dry in the Retort, be left in the open Air, its Surface will soon begin to be covered with a thick long Down, as if it grew; which Phenomenon I do not remember to have observed in other Salts. But if the Salt be dissolved in Water, strained and evaporated to Dryness, in a cylindrical Glass, then kept exposed to the open Air, its upper Surface will often appear thick-set with a kind of actual little branching Plants; all which dissolve away, upon the Application of Heat, so as to leave the Surface even; but upon exposing the Vessel to the open Air, in a quiet Place, they have grown up, as before; thus several times exhibiting the Resuscitation of Plants, as it were, from their own Ashes, of which some of the Chymists have formed so many Fables; and I have sometimes suspected the thing might, perhaps, be done by these means.

REMARKS.

This curious Experiment shews, that the great Disposition which Nitre has to crystallize, affords an Opportunity of imagining a kind of artificial Vegetation, such as some over-credulous Artists have feigned, but never, I conceive, exhibited under the Title of vegetable Resuscitation.

Spirit of Nitre with Bole.

1. Take a Pound and an half of purified Nitre, reduced to Powder; and four Pounds and an half of common red Bole: Mix them well together; put the Mixture into an earthen long Neck, so as not to rise into the Neck thereof, as the long Neck lies horizontal in the Furnace: Let two of these long Necks be used at once, and lute on their Receivers; apply a gentle Fire, at first, to warm the Matters, and increase a little every Quarter of an Hour, till, by degrees, the Furnace and Vessels become thoroughly hot. A moist Vapour will now begin to come into the Receiver; increase the Fire so far, by degrees, in the Space of half an Hour, till the Vapour comes over reddish; and gradually raise the Heat, till the Vapour comes over perfectly red. Continue thus for three Hours; at length raise the Fire so high, till the long Necks grow red-hot, so that the ignited Matter may, in the long Necks, be [illegible] received through the Glass Receivers; and keep the Fire [illegible] up to this Height for two Hours: Then let all cool; and, as soon as the Necks of the long Necks are cooled, take off the Receivers, with Care to avoid the Fume: Pour the distilled Liquor through a Funnel into a Glass Vessel, which, being exactly fitted with a Glass Stopper, is to be set in a cold Place. This will be a very strong, acid, sharp, and caustic Spirit of Nitre, exhaling very red Fumes, like *Glauber's* Spirit of Nitre, but is never so strong. When the Distillation has been well performed, I have had of this Spirit, nine Sixteenths, in respect of the Nitre employed.

2. The Bole, remaining behind, still retains a Taste of the Nitre. I have boiled the Whole of it in a large Proportion of Water, strained the hot Liquor, and repeated the Boiling with fresh Water, till it would fetch out nothing more: Then, boiling all the strained Lixiviums, which were now clear, and of a nitrous Taste, I evaporated them to a small Quantity, of the Thickness of Milk; it had a Taste not very sharp, but lixivious, as if somewhat alcaline; and, examining it by putting Acids thereto, I found it, in some measure, alcaline, a little changed from the former Nature of Nitre, and yet not true Alcali.

3. Great Care is to be taken in this Operation, that the Coals thrown into the Furnace, during the Distillation, are first thoroughly heated; otherwise they would break the long Necks by the Coldness suddenly driven out of them by the Fire. Hence, Care, also, should be taken upon opening the Door of the Furnace, to feed the Fire, lest the cold Air, entering in too suddenly, should crack the Vessels; and be cautious, likewise, lest, upon opening the Door of the Furnace, the Flame should violently burst out into the Face of the Operator, or be received with the Air into the Lungs.

4. Pure Nitre, by itself, in a Glass Retort, and a Sand-heat, melts long before the Glass; and, when heated so as to melt, it receives no more Heat by increasing the Fire; and, tho' long kept in this State, it affords no acid Spirit, but remains fixed, without considerably exhaling. And if long detained thus in an *Hessian* Retort, and the Fire be violent, the Salt, at length, passes through the Pores of the earthen Vessel, without sending any acid Spirit into the Receiver; but is at length almost lost, by transuding through the Vessel.

5. Nitre, mixed with thrice its Quantity of Bole, Brick, or Tobacco-pipe-clay, reduced to Powder, then put into a Crucible, and set in the Fire, does not melt, but fume; affords an acid Vapour; and thus, in a short time, evaporates its greatest Part into the Air.

REMARKS.

1. Hence it is plain, that the Fire, acting upon Nitre, while it is prevented from melting, by the Interposition of thrice its Quantity of a Matter that will not flow in the Fire, has a very different Effect, and heats much more strongly, than when the Salt flows in the Fire; and, therefore, cannot be farther changed thereby. The Change is effected, by rendering a fixed Substance volatile, a mild one sharp, changing a Solid into a Fluid, and a neutral Body into a violent Acid; all which can only be obtained, by preventing the Fusion of the Salt, as, in the seventh Process, we did, by means of Oil of Vitriol, in a Sand-heat. But whether, in the Spirit thus prepared, there is not, also, some Liquor proceeding from the Bole, has been much questioned; principally, because the Bole, once employed in this Operation, is said to be incapable of serving again; for that the Spirit of Nitre cannot hence be obtained. But, certainly, the Spirit of Nitre prepared with the Oil of Vitriol, and that with the Calx of Vitriol, under the Name of Aqua-fortis, and that with calcined Alum, are alike to this, almost without the least Difference; and yet no Bole was employed in their Production. Let the Experiments, therefore, of each Side of the Question be collected; a longer Time will shew what a short one cannot.

2. Again, some discerning Chymists among the Moderns suppose Nitre to be made up of Alcali, and a particular nitrous Acid, as we explained in the seventh, ninth, and tenth Processes. The incomparable M. *Homberg* has, by a laborious Experiment, and a subtile Calculation, here determined the Proportion of the Alcali to the Acid, to be as four hundred and eighty to [illegible] hundred and eighty-three. But here, by Distillation, nine Sixteenths of Acid are obtained, in respect of the Nitre, and yet scarce any Alcali is obtained from the Remainder; whence it certainly appears, that this Acid proceeds from the Nitre, as changed by the Fire, and not by a Separation of the Acid, and the Alcali, [illegible] existing in the Compound before the Operation; so that [illegible] they make powerful Action of the Fire here performs what is otherwise [illegible] effected by the Oil of Vitriol. Since, therefore, true [illegible] never found spontaneous in Nature, and its Spirit [illegible] make, without the Assistance of Oil of Vitriol or Fire, while [illegible] does not cause it [illegible] from melting, we conceive that the acid Spirit [illegible] there existed in Nature, before the Discovery [illegible] of the procuring Nitre, and drawing a Spirit from [illegible] mean, as can be known [illegible] from chymical Ex[illegible] it was impossible by [illegible] Art and Na[illegible] thors; and powder before the [illegible] very of Nitre, [illegible] and is natural Things were [illegible] own, except Nitre alone, by entrance

3. But when the red Colcothar of Vitriol, or calcined [illegible] mixed with Nitre in a certain Proportion, [illegible] from melting in the Fire, and, consequently, delivered [illegible] a greater Heat; it thus, also, affords an acid Spirit in [illegible], in every respect resembling the true Spirit of Nitre of the present Process, and in a large Quantity. We are here to consider, that the Colcothar, and burnt Alum, conceal a large Quantity of a very strong Acid, called Oil of Vitriol, or Spirit of Alum; and these Acids, being actuated by the Fire, enter the Nitre, separate its Spirit, substitute themselves in its Place, and thus leave, for a Remainder, a *Caput mortuum*, containing that called the *Panacea duplicata*, which is considerably like the Salt produced in the making of *Glauber's* Spirit of Nitre; and this is the Origin of all the Aqua-fortis, whose Production entirely depends upon the Reason above assigned, in the seventh Process. This Transmigration of saline acid Spirits is a wonderful Operation, while one of them, possessing the Place of another, drives the former out, and thus appears to produce unexpected Transmutations. By what we can hitherto learn, Oil of Sulphur made by the Bell, and Oil of Alum, are perfectly the same Acid; having all of them this Property, that they separate all the other known Acids from the Bodies that hold them, render them perfectly volatile, possess the Places thereof, and, driving out the former acid Spirits, form, with the Remainder, a new Body, of its own particular Nature, according to that of this stronger Acid. Aqua-fortis is a mere Spirit of Nitre; Colcothar can, by no Violence of Fire, though ever so long continued, be deprived of all its Acid: Hence the *Caput Mortuum* of Vitriol and Alum abound with a strong Acid, which the Fire cannot drive over; this Acid is attracted by the other Part of the

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Nitre, which cannot be converted into Acid; and, uniting with this Part by the Force of the Fire, makes a new kind of Salt, and ſends over all the volatile acid Spirit, in the Form of Aqua-fortis. But they who promiſe, by the Art of Chymiſtry, to convert the whole Body of Nitre by Diſtillation, into the Spirit of Nitre, by a true Change of the Whole, ſo as from a Pound of Nitre to procure a Pound of Spirit, aſſert a Thing, which to me, ſeems perfectly impoſſible, and contrary to the Nature of the Art. I have made various Experiments to aſſure me of this Truth.

The Spirit of Nitre, of the preſent Proceſs, *Glauber*'s Spirit of Nitre, and the common Aqua-fortis, well prepared, afford a nitrous Acid, diſtinguiſhed by its red Fumes from all other Acids; and always diſcovers itſelf by means of theſe Fumes, and its particular Odour. When mixed with fixed Alcali, they regenerate a true Nitre.

Frederic Hoffman's fuming Spirit of Nitre.

In Chymical Authors, there is frequent Mention made of Flame, produced by a Mixture of certain Liquors. Thus *Becher*, in his *Phyſica Subterranea*, tells us, that Oil of Vitriol, mixed with Oil of Turpentine, excites an intenſe Heat, attended with Flame; but any one will, upon trying the Experiment, find that it is not ſo, even though the ſtrongeſt Oil of Vitriol ſhould be uſed. An Experiment of the like Kind is mentioned by *Olaus Borrichius*, in *Act. Haffnien. An.* 1671. *Obſ.* 71. in which two Liquors, cold to the Touch, when mixed together, produce a Flame. The Experiment is this:

Take of recent-drawn Spirit of Venice Turpentine, after it is cold, four Ounces; put theſe in a large Glaſs, and pour to them ſix Ounces of recent and generous, but cold Aqua-fortis. Then, agitating the Veſſel, leave the Liquor expoſed to the open Air; and, in half an Hour's time, thick Clouds of Smoke, and a conſpicuous Flame, breaking out at the Mouth of the Glaſs, will be perceived.

Though I frequently tried this Experiment, by mixing ſtrong Aqua-fortis with Spirit or Oil of Turpentine, I only obſerved an Ebullition, which was, indeed, intenſely hot, and accompanied with a large Quantity of Smoke, but would never flame. But that the Authority of *Borrichius* is not, even in this Aſſertion, to be doubted of, is ſufficiently obvious from the following Conſiderations.

Some more than twenty Years ago, having mixed and diſtilled the beſt Oil of Vitriol with common Salt, according to *Glauber*'s Method, but, inſtead of common Salt, diſtilling the ſame Oil with ſtrong Acid Dry Nitre, by means of a gentle Fire from a Glaſs Retort ſtrong luted in Sand, I obtained a Spirit of a yellowiſh-red Colour, and ſmoked ſtrongly; and, by means of its Subtilty, could ſcarce any how be confined within the Veſſel.

Wo[illegible] and ſome Quantities. This S[illegible] made various Experiments, mixing it with [illegible]ke that of *Glauber* [illegible] of Wine, and diſtilled Oils; upon which [illegible]lt; but, becauſe [illegible] violent Ebullition, accompanied with an in[illegible]ſufferable Smoke, ſurrounding the [illegible] large Quantity of thick and fetid Smoke breaking [illegible]. Afterwards, pouring it upon a very ſmall [illegible]lenter contributed excellent [illegible]on Oil of Cloves uſually left in a Glaſs, [illegible]nd ag[illegible]hey wine [illegible] an Effervescence proceed, and then a ſmall [illegible] Vi[illegible]only laſted for a Moment. Some Days after, I [illegible]ntit[illegible]ſhew the ſame Experiment to ſome Lovers of [illegible]de[illegible]coveries; but the Effect did not anſwer my Ex[illegible]. Without Doubt, becauſe the Glaſs was not ſufficiently [illegible]ed, but only cloſed with Wax, which was almoſt totally conſumed by the Spirit. I, therefore, took care that the Spirit ſhould be again diſtilled, and put into a Glaſs, which I ſtopped with a ſmooth Glaſs Stopper, that the ſmoking and penetrating Volatility might be the more effectually preſerved. By this means, the Experiment ſucceeded happily, ſince a clear and tranſparent Flame, hardly attended with any Smoke, aroſe every time this Spirit was poured upon Oil of Cloves.

The Account of this Experiment happening to reach *Leipſic* and *Berlin*, the ſame Year, two celebrated Men, *Leibnitz* and *Tſchirnhauſen*, paid me a Viſit, and were ſtruck with Surprize, upon ſeeing the Experiment performed. But, in the *Acta Eruditorum*, I afterwards read, that Dr. *Slare*, of the Royal Society in *England*, ſent Word from *Paris*, that Mr. *Homberg* prepared a Spirit, which, when mixed with aromatic and *Aſiatic* Oils, produced a tranſparent and conſpicuous Flame. This Experiment was, alſo, afterwards mentioned by Dr. *Slare*, in the Royal Society, and deſcribed in their Tranſactions. Notwithſtanding this, I can ſafely affirm, that, without any Inſtruction, I was caſually the Inventor of this Experiment. For this Reaſon the illuſtrious *Leibnitz*, in his *Theodicæa*, calls this Spirit, *Spiritus Hoffmanni*, and thinks that ſome of my Diſciples had revealed it at *Paris*. Perhaps, alſo, at one and the ſame time, this Diſcovery was made in different Countries; but I am far from aſpiring after any Praiſe on this Account, ſince the Diſcovery is rather curious than uſeful, and only tends to illuſtrate the Generation of Flame.

It is prepared in the following Manner;

Take of well-depurated Nitre, ſuch as that of *Ruſſia*, which is free from common Salt, half a Pound; this we render ſufficiently dry, in a gentle Heat. Afterwards, we pour upon it, in a Glaſs Retort, an equal Quantity of highly-rectified Oil of Vitriol; and, diſtilling by a gentle Sand-heat, we, in a few Hours, obtain this highly volatile and ſulphureous Spirit.

If the Nitre is not ſufficiently dried, or if it is impure, and contaminated by ſaline or earthy Parts, a very ſtrong Spirit is at firſt yielded, which is to be ſeparated; for that which comes over with the Phlegm, is leſs fit for this Purpoſe, though, at the ſame time, it is very uſeful for making the *Spiritus Nitri Dulcis*. 'Tis, alſo, to be obſerved, that this Spirit is always more penetrating and ſtrong, when it is conveyed into the Receiver, not of a reddiſh, but of a yellowiſh Colour, becauſe the former indicates, that the Nitre is mixed with many heterogeneous Parts.

In the Retort, there ſubſides a Salt, compacted into an highly ſolid Form, of a very white Colour, and of a convex Figure, which it receives from the concave Part of the Retort. This Salt is of an highly aqueous Taſte, and not without the greateſt Difficulty to be diſſolved by an aqueous Menſtruum. But 'tis ſurpriſing, that, by ſo gentle a Sand-heat, theſe two Salts, Vitriol and Nitre, which cannot be, without Difficulty, fuſed by a ſtrong Fire, ſhould be colliquated into one highly ſolid Maſs, which, without Doubt, is to be aſcribed to theſe igneous Spirits, excited by the mutual Union of theſe two Bodies, by means of which, the intimate Union, Mixture, and Colliquation, of all the Parts was produced.

With this Spirit I have made various Experiments, by mixing it with diſtilled Oils; and 'tis obſervable, that this Spirit, when mixed with the heavieſt Oils, ſuch as thoſe of Cloves, Cinnamon, and Saſſafras-wood, quickly, and in a Moment, produced a tranſparent Flame, almoſt without any viſible Smoke. When a ſmall Quantity of this Spirit was mixed with Spirit of Turpentine, in a narrow-bottomed Glaſs, I obſerved, that a ſtrong and very hot Smoke, but no Flame, was produced. But if an Ounce of each Liquor is put into a wide-mouthed Glaſs, and the Mixture ſhaken, a violent Flame will be produced.

From this Experiment, therefore, duly made, I was convinced that we ought to judge more favourably of the Experiment of *Borrichius*; and that we were not to doubt of its Truth, if the Cautions he lays down are obſerved, that is, if the Aqua-fortis is recent and generous; and if ſome Ounces of both Liquors are mixed in a large Veſſel. And as this ſmoking and inflammable Spirit is nothing but a generous, and eaſily diſtilled Aqua-fortis, as is obvious from its Colour, Smell, and Virtues, 'tis not to be doubted, but Aqua-fortis, prepared in the common Manner from Nitre and Vitriol, provided the firſt and ſtrongeſt of it is ſet apart, and kept in cloſe Veſſels, may produce a ſimilar Effect. *Hoffman. Obſ. Phyſ. Chym. Lib.* 2. *Obſ.* 3.

If there is any highly penetrating and corroſive Liquor, which inſinuating itſelf into all Bodies, corrodes, diſſolves, deſtroys, and changes their Craſis and Mixture, it is certainly the highly acid and concentrated Spirit of Nitre, deprived of all its Phlegm, rendered inflammable, and totally volatile, and by the Application of which, Excreſcences, Warts, and preternatural Tumors of the human Body, may be commodiouſly deſtroyed and eradicated. Notwithſtanding theſe Circumſtances, this Spirit, by the Addition of the volatile Salt of Sal Ammoniac, or Salt of Tartar, is, after its Efferveſcence, totally deprived of its corroſive Quality, ſince the Mixture degenerates into a nitrous Salt, which, when diſſolved in Water, affords a powerfully diuretic Liquor, excellent for provoking Urine, in ſerous and cachectic Diſorders: Beſides, the corroſive Quality of this Spirit is excellently corrected by mixing eight Parts of highly rectified Spirit of Wine with one Part of it; and diſtilling from an Alembic, by means of a Sand-heat: By which means, there is yielded a Spirit of a fragrant Smell, an acrid penetrating Taſte, entirely free from a corroſive Quality, excellently adapted for diſcuſſing and reſolving viſcid Humours, and, conſequently, carminative. This dulcified Spirit, in conſequence of the vaporous Sulphur it contains, is, alſo, poſſeſſed of an anodyne and ſedative Virtue, highly efficacious in Pains and Spaſms; for which Reaſon it is of far more Uſe in Practice, than the common Spiritus Nitri Dulcis.

The Reaſon of the Proceſs is this, that highly rectified Spirit of Wine is nothing but a very ſubtle Oil, intimately mixed with Phlegm; for which Reaſon, it is united, and intimately mixed with this corroſive Spirit, and both of them, when united, form a Mixture of a third Nature, which, when diſſolved in the inflammable Spirit, comes over the Helm, and conſtitutes the dulcified Spirit of Nitre. But 'tis to be obſerved, that at leaſt five, ſix, or eight Parts of the rectified Spirit of Wine, ought to be added to one Part of this Spirit; for if only two or three Parts of the former were uſed, a violent Conflict would be produced, and the corroding acid Quality of the latter, not totally

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totally destroy'd: But, in the Preparation of this Spirit, it is to be observ'd, that the Spirit of Wine is not to be poured into the corrosive Spirit; otherwise a violent Conflict is produc'd, accompanied with a thick red Smoke, which is prejudicial to the Health of the By-standers, and sometimes succeeded by the breaking of the Glass. But when the corrosive Spirit is in small Quantities, and gradually mix'd with the Spirit of Wine, all these Disadvantages are prevented.

This dulcified Spirit, when poured into a Silver Spoon, and set on Flame, leaves behind it a greenish Spot on the Spoon, which is a Proof of an acidulated subtile nitrous Salt: In such a Case, 'tis, therefore, expedient to dulcify this Spirit more, and augment its Virtue, by pouring into it a proper Quantity of the vinous Spirit of Sal Ammoniac: When the Acid of this Spirit is thus corrected, it no longer leaves any Spot upon the Spoon, and its anodyne and sedative Virtues are at the same time rather augmented.

This dulcified Spirit of Nitre differs from the common Sort sold in the Shops, since the former is of a far more penetrating Taste and Smell, and consequently more efficacious. They also differ with respect to the Preparation, since that of the Shops is prepared with Aqua-fortis; and mine with a duly dephlegmated Spirit, impregnated with a vitriolic and highly concentrated Sulphur: My Spirit produces a violent Conflict and Effervescence with highly rectified Spirit of Wine; but the common dulcified Spirit of Nitre none at all: Hence it also happens, that there is not an intimate Union of the Acid of Nitre with the oleous Parts contained in the rectified Spirit of Wine, which happens in my highly concentrated Spirit. In the Preparation of my Spirit, nothing remains in the Cucurbit, but all the Fluid ascends; whereas, in the Preparation of the common *Spitus Nitri dulcis*, the acid and corrosive Liquor of the Nitre remains after Distillation.

My dulcified Spirit of Nitre, by the Addition of a proper Quantity of the Salt of Tartar, loses almost all its acid Acrimony, and may for this Reason be commodiously mix'd with common Water, for Drink in burning Fevers: Thus, if two Drams of it are mix'd with about two Pints of Spring-water, they make a Drink which powerfully allays Thirst, provokes Urine, and procures Sleep. In Inflammations of the Fauces, especially such as attend Quinseys, nothing affords more immediate Relief, than this Spirit mix'd with Sugar, and a small Quantity of the Spirit of Camphire, diluted in common Water, and us'd as a Gargarism. Sugar itself, also, swallowed in a small Quantity, affords Relief in Inflammations of the Fauces.

This dulcified Spirit of Nitre, when mix'd in a small Quantity with rectified volatile Spirit of Hartshorn, acquires a bezoardic and diaphoretic Virtue; for which Reason it is highly beneficial in all malignant Fevers, where Sweating is necessary, *Hoffman, Obs. Phys. Chym. Lib.* 2. *Obs.* 4.

NIX. Snow.

The higher Water rises in the Air, the farther its Parts recede, and the colder it grows; for, in all the habitable Parts of the Globe, the Heat is the greatest, *cæteris paribus*, on the Surface of the Earth; and a freezing Cold is constantly found on the Tops of the highest Mountains, which are covered with Snow, even in the torrid Zone, and the Increase of the Cold is in proportion to the Altitude. Hence the Water, rising to the freezing Height, must necessarily be turned to Ice, unless all its Particles should separate, so as not to touch each other; but, if the Particles should come into Contact, they must begin to freeze into small icy Flakes, floating in the Air. If they should happen to dash against the Surface of any Bodies in their Way, they would constitute a fine Hoar-frost, that would otherwise scarce be perceivable. Whence, therefore, there is a Space in the Atmosphere, concentrical with the Earth, where the Water of the Air, when it arrives and unites, is constantly turned to Ice. It is, however, probable, that this Water, being at first little united, can seldom freeze, but remains floating about in its separate Particles, till some Cause happening to unite them, it is then turned into Ice.

The Water of the Air, in Space assigned, growing heavier by a large Quantity coming under less Surface, and being now frozen, it immediately begins to fall downwards into Spaces fuller of Water; where, joining with other aqueous Particles, it gradually forms larger Masses of Snow or Hail; and as there are many different Causes, that may make these Particles of Water, which were dispersed in the upper Air, suddenly unite in large Quantities, it is easy to understand how these Collections, coming into the freezing Height of the Atmosphere, may presently form considerable Masses of Snow or Hail.

Snow-water is found to be the lightest of all Rain-waters; and therefore Snow-water, received at a great Height from the Earth, is the purer and freer of gross ponderous Parts; and if a long-continued sharp Frost shall, at a great Height, convert Water to Snow, after a long-continued clear and dry Season, the Snow, thus formed, will be of the purest Kind, especially if no Wind has disturbed the Air, or intermixed any foreign volatile Particles with it. Thus, if, in these Circumstances, Snow should fall upon a barren sandy Mountain, in a Desart far remote from any inhabited Place, and the Snow should lie deep; if the upper Part be now carefully collected, it will thus be obtained, as pure as possible; for there can scarcely be contain'd in it either Salt, Oil, or other foreign Substance; so that the Water procured by melting this Snow will greatly differ from all other Water, and be extremely pure, unchangeable, or capable of being kept for Years, as an excellent Remedy against Inflammations of the Eyes.

The antient Alchymists have said, that from such pure Snow there may, by a secret Art, be obtain'd a very red Substance, that by the Force of Fire may be intimately buried and concealed therein. *Boerhaave Chymistry.*

NIX FUMANS. Quick-lime.

The white Flowers of Regulus of Antimony are, also, call'd Antimonial Snow.

NIXIA. A Word coin'd from *Nixus*, a Labour-pain, and importing much the same as the *Lucina* of the Antients.

NOAS. Brass, or Copper, *Rulandus.*

NOCASIT. A Sieve, or perforated Vessel. *Rulandus.*

NOCHAT. Copper. *Rulandus.*

NOCTAMBULO. A Person who walks in his Sleep.

NOCTILUCA. The Glow-worm. See CICENDULA. Phosphorus is, also, call'd by this Name, because it shines in the dark, or by Night.

NOCTISURGIUM. Walking in the Sleep.

NOCTUA. *The Barn or white Owl.* The same as ALUCO; which see.

The Flesh, Fat, and Gall, are used. The Flesh cures the Palsy, *Plin.* and melancholy Persons, and the like, *Rabbi Moyf.* The Ashes of the Bird, burnt entire with the Feathers, being introduced into the Throat, have an admirable Effect in opening and breaking the Impostume of the Quinsey. The Gall absterges Specks in the Eye, and the Fat sharpens the Sight. *Schroder.*

NOCTUINI OCULI. Grey Eyes.

NODOSA, knotted, in Surgery, is an Epithet for a sort of Suture; see SUTURA: And for various Bandages; see FASCIA. The Gout, also, when it forms Knots at the Articulations, is call'd *knotted.*

NODULUS, in Pharmacy, is a Knot tied on a Rag, including some medicinal Ingredient, or Ingredients, with which the Liquor this *Nodulus* is suspended in, is intended to be impregnated. It, also, imports a Bag, in which Ingredients are included, in order to be suspended in a Diet-drink, or medicated Wine.

NODUS. A Node. A Disease of the Bones. See Os.

NOELA-TALI, *H. M.* or *Indian* Barberry-tree with an Orange-leaf. It is a Tree of a moderate Size, grows everywhere in *Malabar*, is always green, and bears a Fruit like our Barberries. Of the Bark of this Tree they make Ropes, as we do of Hemp. The Fruit is esteemed delicious and refrigerating in an high Degree, as are Barberries. The Leaves are accounted an Antidote against the Bite of the Snake, which the *Malabarians* call *Heretimandel*, whose Poison does not cause immediate Death, but an universal Corruption of the Flesh, which [illegible] fies, and falls off; and the Patient, after suffering [illegible] at the last yields to Death, unless prevented by the [illegible] prepared of a Decoction of those Leaves with [illegible] of *Mangæ* in Water. *Raii H. P.*

NOERA. The Cover of an Alembic, or Vessel [illegible] tion. *Rulandus.*

NOLA-ILY. A Species of *Bambu* Cane, [illegible] *labar.*

NOLI ME TANGERE. In *English*, Touch-me-not. A sort of corrosive Ulcer, thus call'd, because it is exasperated by Medicines.

In Botany, *Noli me tangere* is a Species of *Balsamina.*

NOME, νομὴ, from νέμω, to eat away. A phagedenic Ulcer.

NONUS HUMERI MUSCULUS PLACENTINI, is the *Teres Minor.*

NORA. Lime, or any Salt, or Nitre. *Rulandus.*

NOSI. See NEGUNDO.

NOSOCOMIUM, νοσοκομεῖον, from νόσος, a Disease, and κομέω, to take care of. An Hospital.

NOSOCOMOS, of the same Derivation as the preceding Word. One who takes care of the Sick.

NOSODOCHIUM. νοσοδοχεῖον, from νόσος, a Disease, and δέχομαι, to take. An Hospital.

NOSOLOGIA. Nosology; that is, an Explication of Diseases.

NOSOS, νόσος, a Disease.

NOSTER. This is frequently us'd by spagirical Writers, as an Epithet for their Gold, their Silver, or any other Substance; by which they would insinuate, that it is not the same as what they mean by the Word, but something peculiar to themselves, which is freed from the Elements, and of an Astral Nature.

NOSTOCH. A Name for the COELIFOLIUM; which see.

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NOTHOS, νόθος. Spurious; thus the ſpurious Ribs are call'd COSTÆ NOTHÆ.

NOTIÆUS, νωτιαῖος. An Epithet for the ſpinal Marrow, from νῶτος, the Back.

NOVACULA, in Surgery, is a Knife.

NOVALE, in *Paracelſus*, is a Prodigy, or Portent.

NUBA, ſignifies a Species of Manna, or Celeſtial Dew, of a roſy Colour: Or it imports Braſs. *Rulandus.*

NUBES, or NUBECULA. A Cloud in the Urine. A Diſorder of the Eye is, alſo, thus call'd, which is the ſame as ALBUGO.

NUCAMENTA. Catkins.

NUCES è NARBADOES, a Name for the *Palma*; *Americana, Goſſypii folio.*

NUCHA. The Back of the Neck, properly the Region upon the firſt Vertebra of the Back.

NUCIOSITAS. The ſame as MYOPIA. *Blancard.*

NUCIPERSICA. The Nectarine.

NUCISTA. The Nutmeg.

NUCLEUS. A Kernel.

NUCULA TERRESTRIS. See BULBOCASTANUM.

NUHAR. Copper. *Rulandus.*

NUMENIUS. The Name of a Bird, the ſame as ARQUATA.

NUMMULARIA.

The Characters are;

The Leaves are orbicular and conjugated; the Calyx is quinquefid, incloſing a ſeminal Veſſel, and conſiſting of five long ſlender Segments, which expand themſelves in form of a Star. The Flower is monopetalous, rotated, quinquefid, being cut even to the Nail, or Unguis, and furniſhed with five Stamina, which, ariſing from the Circumference of the Baſe of the Flower, grow together into one, in proceeding from the Wings of the Leaves. The Placenta is ſeated in the Bottom of the Calyx, and on it grows the Ovary, which becomes a round Veſſel cloſely lodged within the Calyx, and ſhooting forth a long Tube.

Boerhaave mentions two Species of this; which are,

1. Nummularia; Lutea; major. *C. B. p.* 309. *Boerh. Ind. a.* 205. *Nummularia.* Offic. Ger. 505. Emac. 630. Raii Hiſt. 2. 1099. Synop 3. 238. *Nummularia vulgaris.* Park. Theat. 555. *Nummularia ſupina ſive Nummularia Officinarum.* Rupp. Flor. Jen. 14. *Nummularia ſive Centimorbia.* J. B. 3. 378. *Lyſimachia humifuſa, folio rotundiore, flore luteo,* Tourn. Inſt. 141. MONEYWORT.

Fuchſius's Figure of this, under the Name of *Centimorbia*, repreſents the *Anagallis lutea nemorum*, Pin. much better than the Money-wort; for *Pena* and *Lobel* obſerv'd theſe two Plants differed principally in their Leaves, which, in the yellow *Anagallis*, are a little longer, and more pointed. *J. Bauhine* took the Flowers of the Money-wort to be pentapetalous, but they are plainly monopetalous.

Its Leaves are ſouriſh, ſtyptic, and give a deep-red Tincture to [illegible] Paper: The Acid abounds in the Money-wort, [illegible] duces with the Earth an aluminous Salt, involved in a [illegible] like that of *Glauber*, ſo that 'tis very aſtringent and vulnerary. *Camerarius* [illegible] lt; but, because [illegible] at, being boiled with Milk, it is good for the Scurvy. [illegible] riſon ding the [illegible] es to boil it with Wine and Honey, and to give [illegible] lenter contributed [illegible] ion to drink to thoſe that have an Ulcer in the [illegible] nd ag[illegible] hey wi[illegible] ane ſame Author commends it in the Dyſentery, Loſs [illegible] Vi[illegible]nand the Whites. *Fuchſius* preſcribes the Herb, applied [illegible] nitiaſm, to dry up Ulcers. *Matthiolus* ſays it is very [illegible] ruptures in Children. *Martyn's Tournefort.*

[illegible]nbone of the principal Vulneraries; the Flowers and Leaves, [illegible]d and apply'd, are effectual in conglutinating all kinds of Wounds and Ulcers; the ſame, taken in Wine, cure Dyſenteries, and Weakneſſes, Fluxes, and Humidities of the Belly; they are alſo good for vomiting of Blood, uterine Fluxes, and all Wounds or Ulcers of the inward Parts, and eſpecially of the Lungs. *Raii H. P.*

2. Nummularia; rubra. *J. B.* 3. 371. *Lyſimachia, humifuſa, folio rotundiore, flore purpuraſcente.* T. 141. *Boerh. Ind. alt. Plant. Vol.* 1.

It is called *Nummularia*, from *Nummus*, Money, becauſe its Leaves are orbicular, like Pieces of Money; it is alſo named *Centimorbia*, from *centum*, an hundred, and *Morbus*, a Diſeaſe; that is to ſay, a Plant which cures a hundred Diſeaſes.

The Juice of the Herb is like that of *Beccabunga*; for it has a ſaponaceous, aromatic, and balſamic Taſte: Hence it has the ſame Virtues. It has an Acrimony, which is not ungrateful, mix'd with ſomewhat aromatic, and of an aſtringent acid Taſte. Hence, it works the ſame Effect as *Cochlearia*, mixed with *Acetoſa*, which we uſe when we are apprehenſive of ſpitting of Blood. For this Reaſon it is proper in all ſorts of Scurvy, where the Humours are to be render'd more fluid without danger of too great a Reſolution, or Tenſion; for Inſtance, in an exceſſive Flux of the Menſes, where a total Stop would be ſucceeded by an Inflammation; and yet the immoderate Evacuation requires to be reſtrained, for which Purpoſe this Herb is very proper. A Decoction of the Leaves, in Wine ſweeten'd with Honey, is good for Ulcers of the Lungs, the Fluor Albus, Diarrhœa, Dyſentery, Aſthma, Spitting of Blood, Hæmorrhoids, and the dry Coughs of Infants: The Powder of the Leaves is good for an *Hernia* in Infants; and the Leaves, bruiſed, and applied in the Form of a Cataplaſm, cleanſe and dry up fetid Ulcers. This Plant reſiſts Putrefaction, generates Pus, is corroborative, and cures many Diſeaſes. For the Arthritis, Podagra, Scurvy, Dropſy, and Jaundice, take an Ounce or two of the Juice in the Morning faſting; it is opening, and purges by Stool and Urine. *Hiſt. Plant. adſcript. Boerhaav.*

3

NUSIADAT. Ammoniac. *Rulandus.* I ſuppoſe he means *Sal Ammoniac.*

NUSTUM, in *Paracelſus*, is the Cream of Milk; or the Cream-like Subſtance, which ſwims on the Top of Urine.

NUTRICATIO. Nutrition.

NUX { AVELLANA. BECUIBA. BEN. INDICA. } See { AVELLANA. BECUIBA NUX. BALANUS MYREPSICA. PALMA; INDICA; COCCYGERA; ANGULOSA.

NUX JUGLANS.

The Characters are,

The Leaves are pinnated, and grow to one common Rib, which terminates in an odd Leaf. The Flowers are male, and all amentaceous, conſiſting of ſix thick, green, ſmall Leaves, growing to one Pedicle, in form of a Calyx. From the ſpacious Bottom of theſe Leaves ariſe numerous Stamina, which are collected, as it were, into a Cluſter; a Multitude of which Cluſters, growing to one long Axis, form the floriferous Tail, or Catkin, in a ſeparate Part of the Plant. The Ovary, in another Part of the ſame Plant, is roundiſh, furniſhed with a bifid Tube, and divided into wide, rough, fimbriated, and reflexed Segments; and becomes a Fruit, which, under a pulpous Cortex, contains an oſſeous and bivalve Shell, incloſing a fat pulpous Kernel, divided into four Parts by coriaceous Interciſures.

Boerhaave mentions five Species of this; which are,

1. Nux Juglans, ſive Regia, vulgaris. *C. B. P.* 417. *Tourn. Inſt.* 501. *Boerh. Ind. a.* 2. 175. *Nux Juglans.* Offic. Ger. 1252. Emac. 1440. Raii Hiſt. 2. 1376. Synop. 3. 438. J. B. 1. 241. *Nux Juglans vulgaris.* Park. Theat. 1413. *Juglans ſive Nux Regia.* Merc. Bot. 1. 44. Phyſ. Brit. 62. THE WALNUT-TREE.

This is uſually a large-ſpreading Tree, with a ſtrait ſmooth Body, a whitiſh Bark, and a firm ſolid Wood; it bears large-winged Leaves, of a yellow-green Colour, of a pretty ſtrong aromatic Smell; they conſiſt uſually of ſeven oval Pinnæ, whereof the two next the Stalk are the leaſt, and the odd one at the End the largeſt; the Catkins come out early in the Spring, being looſe and yellow. The Nuts grow two, three or four together, upon ſhort Foot-ſtalks, being each covered with a green juicy thick Peel, having under it an hard wrinkled Shell, which parts in two, incloſing a Kernel, conſiſting of ſeveral white Lobes, of a pleaſant ſweet Taſte, included in a thin bitter Skin.

The Walnut-tree is planted in Walks, Parks, and Fields; the Nuts are ripe in *September*. The Bark of the Tree, the green Peel, the Nuts, and the Shells, are uſed.

The Bark is a ſtrong Emetic, either green, or dried and powder'd: The green Nuts are cordial, alexipharmac, of great Uſe in all contagious malignant Diſtempers, and the Plague itſelf: They are one of the principal Ingredients in Treacle-water. The Nuts preſerv'd are ſtomachic, and good to be eaten in a Morning, to prevent Infection in the time of peſtilential Diſtempers. Two or three Ounces of the Oil, expreſs'd from the ripe Kernels, is a very good Medicine for the Stone and Gravel. The Shells, powder'd and burnt, are accounted reſtringent, though but ſeldom uſed. *Miller's Bot. Offi.*

Of the Virtues of this Plant *Dioſcorides* and *Pliny* ſpeak as follows: Walnuts, eaten as Food, are difficult of Digeſtion, hurtful to the Stomach, generate Bile, cauſe Head-achs, are bad for a Cough, [*Pliny* writes thus of dry Walnuts, which are of a more unctuous Nature; for the freſh, he ſays, are more pleaſant] and of Uſe, eaten faſting, to provoke Vomiting [Inſtead of this, *Pliny* ſays, they are prejudicial to thoſe who vomit on an empty Stomach, and are only proper in a Teneſmus by attracting Phlegm]. Eaten beforehand with Figs and Rue, they reſiſt Poiſon; and ſubdue it, if taken afterwards. *Pliny* adds, that they are effectual in the Quinſey, being uſed with Rue and Oil. The free and plentiful eating of them expels the broad Worm: Mixed with a little Honey and Rue, they are apply'd to Inflammations of the Breaſts, Abſceſſes, and Luxations; and with Honey, Salt, and an Onion, they cure the Bitings of Men or Dogs. Burnt with their Calyx, or outer Peel, and apply'd to the Navel, they eaſe the Gripes. The Shell, burnt and triturated in Wine and Oil, procures a comely Head of Hair to Children, the Part being anointed therewith, and cures an *Alopecia*: The Kernel within it, being bruiſed, and applied in Wine, ſtops the Menſes. The Kernels of very old Nuts, being chewed, and applied to Gangrenes, Carbuncles, an Ægilops, or Alopecia,

are

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are a present Remedy. They are mixed with Garlick, and, as *Pliny* says, with Onions, to correct their Acrimony.

The outer Peel of Walnuts is good for the Lichen and Dysentery; and the Leaves, bruised in Vinegar, ease Pains in the Ears. The Antidote of *Mithridates*, which was found written with his own Hand, consisted of two dry'd Walnuts, as many Figs, and twenty Leaves of Rue bruised together, with a Grain of Salt. He who takes this Remedy fasting, can be hurt by no Poison during that Day. *Pliny*.

The Walnut, says *Galen*, is easier of Digestion than the Filberd, and more grateful to the Stomach; and especially when it is eaten with dry'd Figs. This must be understood of the fresh Nut; for, when it is dry, it passes into a pinguious Juice quite unfit to be eaten. The expressed Juice of the outer Peel, either crude, or boiled in Honey to give it a Consistence, being used as a Gargarism, was experienced by *Galen* to be very effectual in a Relaxation of the Uvula, or an Inflammation of the Throat and Tonsils, by virtue of its astringent Quality, in Conjunction with its Fineness of Parts.

Green or fresh Walnuts provoke to Stool. *Galen*, *Aetius*. Old and dry ones are rather binding; they are well concocted in a cold Stomach, but in an hot one are converted into Bile. The inner Bark of the Tree, being dry'd, is a strong Emetic; the Iuli, or Catkins, are a more gentle one.

Walnuts have a singular Quality of provoking the Menses, when suppressed, and all other Medicines fail. They are macerated in Water, till the Kernel may be stripped of their Membranes; after which they are macerated in Aqua-vitæ for two Days; and then two or three of them are exhibited in the Morning fasting, for ten Days together, before the time of the menstrual Flux. The Juice of the Root is said to be a violent Purge, and not fit to be given to any but those of robust Habits.

The distilled Water of immature or green Walnuts is recommended for many Purposes, particularly for dissolving concreted Blood, for Wounds, and hot Ulcers, and for a pestilential Carbuncle, being apply'd outwardly; the Water of Walnut-leaves is effectual for the same Disorders: But *J. Bauhine* justly doubts whether the Water of Walnuts be refrigerating, and consequently proper for a Carbuncle.

Walnuts eaten after Fish are supposed to promote their Digestion, according to that Verse of the *Schola Salernitana*.

Post pisces nux sit, post carnes caseus esto.

"After Fish eat Walnuts, after Flesh Cheese." It is certain, that they resist poisonous Infections, being eaten in Food; for which Reason, in pestilential Times, all sorts of People from the highest to the lowest, both in Town and Country, roast them, and eat them in the Morning fasting.

Green Walnuts gather'd in *May* or *June*, before their Shells harden, and preserved in Sugar, are good for the Stomach; and we have observed, that green and immature Walnuts, taken entire with their outer Coat and Shell, and candy'd with Sugar, or, as the Fashion is, boiled in sugared Water, till they become tender, and afterwards put into the same Water, first boiled to the Consistence of a Syrup, that they might be preserved, being taken to the Number of two or three in the Evening after Food, gently provoke to Stool. The Decoction of outer Peels of Walnuts, being poured on the Ground, attracts Worms from their Holes to the Surface. *Tragus* writes, that some dry the outer Peel, and, reducing it to Powder, use it instead of Pepper for seasoning of Meats, to which some, for the better Relish, add Powder of Sage-leaves.

Walnuts bruised, heated, and pressed, yield an Oil, which some use for Gangrenes, Carbuncles, Ægilops, and Ulcers of the Nerves. The same, infus'd into the Ears, cures Deafness, and is good for hot Pains, the affected Part being anointed therewith. But *Matthiolus* says, it is of no Use in Medicine, but in great Request for burning in Lamps, because it is more durable than Oil of Olives. It is preferred, also, by Painters, before Linseed-oil, because this latter, when mixed with Ceruss, in Length of Time, changes Colour, whereas the other preserves it immutable. But the same Author in another Place says, that it is a potent Discusser of Flatulencies, and is very serviceable in Affections of the Colon proceeding from Wind. *Aetius* ascribes the same Virtues to it, as to Oil of Almonds; and adds, that it is particularly serviceable to Gilders and Enamelers; for it dries and preserves the Work for a long time.

The *Isciæ*, ἴσχιαι, in *Paulus*, are spongy Bodies, (I suppose he means *Fungi*) growing on Oaks and Walnut-trees, and most in Use among the Barbarians. The same Author says, that the Antients made use of them among other Cauteries, in inveterate Defluxions on the Stomach, and hydropical Cases. The Manner of employing these *Isciæ* in cauterizing is thus describ'd by *Cœlius Aurelianus*: Having made the ligneous Fungi narrow or slender, as well in the upper, as in the lower Part, [it would be more convenient to have them wide in the lower Part, that they might stand the better on the Skin] they set them upon the affected Place; and, kindling them at the Top, suffer them to burn, till they are reduced to Ashes, and fall off of themselves. The *Turks*, in Imitation of this Method, at this Day take a well-dry'd Branch of Vine, and, applying it to the diseased Part, set Fire to its Top. The Walnut-tree, wounded in the Beginning of the Spring, before it puts forth Leaves, discharges a Liquor, which flows in great Plenty, but is not so sweet as that of the Birch-tree.

Juglans is thought by some, as *Macrobius* says, to be derived *a juvando*, from helping or benefiting, and *Glans*, a Nut; importing, that it is a beneficial Nut; but it was doubtless so called, as implying the same as *Jovis Glans*, the Nut of *Jupiter*: Thus is *Juglans* derived from *Joviglans*, in the same manner as *Jupiter* from *Jovipater*. For, as we say, *Marspiter*, and *Diespiter*; so, also, we say, *Jovipater*, or *Jovispater*, where *Jovis* is the antient nominative Case.

The *Juglans* however is not the Διὸς βάλανος, *Glans Jovis*, of *Theophrastus*, which is rather the Chesnut-tree, but, as some will have it, the *Nux Persica*, or, as others, the *Nux Euboica* of the same Author. The *Juglans* is called *Nux Basilica Regia* by *Dioscorides* and *Galen*, and *Persica* and *Basilica* by *Pliny*. The Walnut, it is agreed, says *Pliny*, *Lib.* 15. *Cap.* 22. was called *Caryon* [κάρυον from κάρα, the Head] from an Heaviness or Oppression of the Head, which it occasions by its strong Smell. *Raii H. P.*

2. Nux Juglans; fructu maximo. *C. B. P.* 417.

3. Nux Juglans; fructu tenero, & fragili putamine. *C. B. P.* 417.

4. Nux Juglans; fructu serotino. *C. B. P.* 417.

5. Nux Juglans; Virginiana, nigra. *H. L.* 452. *Boerh. Ind. alt. Plant. Vol.* 2.

Nux Moschata. Offic. Ger. 1353. Park. Theat. 1600. Raii Hist. 2. 1522. *Nux Moschata rotunda, sive Fœmina.* Ger. Emac. 1536. *Nux Moschata fructu rotundo.* C. B. P. 407. *Nux Moschata, Nux Myristica, Nucista.* Mont. Exot. *Nux Aromatica.* J. B. 1. 265. *Pala.* Pis. Mant. A. 173. THE NUTMEG-TREE.

This is the Fruit of a Tree, which grows principally in *Banda*, an Island in the *East Indies*; it is about as big as a Pear-tree, with fragrant Leaves, like those of the Peach-tree, but broader, and not serrated about the Edges; it bears yellowish five-leaved Flowers, which are succeeded by Fruit, in Bigness and Shape, like small Peaches, whose outside Covering is soft and juicy, like that of a Walnut; under which lies the Mace, firmly sticking to the hard woody Shell, that includes what we call the Nutmeg, which is of an oval Shape, brown, and somewhat rough on the Outside, and wrinkled, and whitish, and marbled with red Veins within, of a most pleasant aromatic Smell and Taste: The best are firm and weighty, and, being pierced by a Needle or Pin, emit an oleous Substance. *Miller's Bot. Off.*

It is the Opinion of some, among whom is *C. Bauhine*, that what the Moderns call *Nux Moschata*, or *Myristica*, was unknown to the Antients. *J. Bauhine*, and *Gallandinus*, fancy it to be the *Comacum* of *Theophrastus*, and the *Cinnamum* and *Caryopos* of *Pliny*; and *J. Bauhine* conjectures it to be the *Chrysobalanos* of *Galen*.

C. Bauhine makes three Species of this Tree: The first [illegible] the *Nux Moschata fructu rotundo.* C. B. *Muscata ro*[illegible] the *Fœmina.* Ger. *Nux aromatica Fœmina.* J. B. The [illegible] meg-tree.

This Tree grows spontaneously, and in vast P[illegible]thor[illegible] Island *Banda*, and no-where else, if we may believe [illegible]nd is [illegible] make *Banda* to be one of the *Molucca* Islands; but [illegible] it a distinct Island. It is situated near the Equator, [illegible] from North to South in a curve Direction, being [illegible] Figure of an Horseshoe, three Leagues in Length, [illegible] Breadth. The Tree is long-liv'd, always green, and [illegible] and loaded with Nuts, some riper than others; and yields its Fruit twice, and sometimes thrice in a Year. The first Harvest is in *August* and *September*, the second about *March*, and the third happens in this, or that Month, as the Weather proves more or less favourable. The Nuts must not be gathered before they are throughly ripe, otherwise they are less durable: When gathered, they are stripped of their outer Shell, and dry'd first in the Sun; after which the Mace is taken off, and then the Kernels, which we call the Nuts, are washed with Lime, which is their only Preservative against Corruption, and all external Injuries, and fit to be transported by long Voyages into all Parts of the World. The best are of a Sad-red, inclining to an Ash-colour, and intermixed with whitish Striæ.

The Fruit is devoured by several Sorts of Birds, but especially by a small and white Kind of Pigeon, which, when the outer Shell gapes, being allured by the Sweetness of the Mace, seize upon it together with the Nut, and swallow it whole, never desisting till they are throughly glutted: These Nuts are afterwards voided by the Birds entire, and being premacerated with the Heat of the Craw, soon bud forth. But the Trees thence arising, as being of too hasty Growth, are easily subject to Corruption, and bear a Fruit which is much less esteemed, than that of the others, and therefore, neglected by the Inhabitants, except the Mace which they use in adulterating the better Sort. *Clusius* says, that the Mace is, at first, of so beautiful a Red, as to strike the Eye with Admiration; but, being exposed to the Air, loses its Beauty by

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by degrees, and at length contracts a yellowish Colour. The second Species is the

Nux Moschata fructu oblongo. C. B. *Myristica oblonga sive Mas.* Ger. *Nux Aromatica.* J. B. *Pala Mesiri Moluccensibus.* The Male Nutmeg-tree.

It is not called *Male* on account of its superior Excellency and Virtues, as tho' Nature had made it bigger and longer, on purpose to shew its Eminence in Worth; for, as *Piso* says, the Case is quite otherwise, since the Nuts of this Tree do not so much exceed those of the other in Bulk, as they are surpassed by them in their aromatic Virtue, and all the Qualities which belong to the genuine and more noble Kind of Nutmeg. But the common People give it the Title of *Male*, not for any Reason, but from a superstitious Opinion, that the oblong Nut, eaten by Men, is a potent Stimulus and Strengthener to Venery. As for the Mace, tho' it be, also, of a very beautiful Colour, it is of so weak Virtues, that it is of no Value where it grows, and the Tree itself is neglected, as wild and degenerate.

This Tree is described to have longer, thicker, and more fibrous Leaves, than the other: The Nuts are larger, and not only oblong, but almost square, and grow not from the Interstices of the Branches, as the others, but out of the Tops, three or four together, like Walnuts; the Mace, also, when dry'd, is of a more beautiful Colour.

Nutmegs are somewhat astringent, stomachic, cephalic, and uterine; they discuss Flatulencies; promote Concoction; correct a stinking Breath; enliven the Fœtus; and relieve under a Lipothymy, and Palpitation of the Heart; alleviate Disorders of the Spleen; stop a Looseness and Vomiting; provoke Urine; and sharpen the Sight. *Aetius* writes, that they are bad for the Lungs. They may justly be recommended in a Dysentery, and other Kinds of Fluxes, since they possess all those Qualities, which are necessary for subduing those Disorders. Their oily Substance defends the Intestines from Abrasions by acrid Humours, and mitigates Pains; their aromatic Quality, consisting in an aereal Spirit, penetrates the noble Parts, and highly corroborates them; and their terrestrial Part astringes and dries up Ulcers, and induces a Cicatrix. *Hildan. de Dysent.*

The *Brachmans* use candy'd Nutmegs for all cold Diseases of the Brain, the Palsy, and other nervous and uterine Affections; they are, also, esteemed cordial. Nutmegs candy'd, or preserv'd in Sugar, have now, for a long time, been imported among us, and served up at rich and plentiful Tables among other Sweetmeats; and some of a more delicate Palate are pleased only with the exterior green Coat, or Peel; and prefer it, while quite immature, to the Nut itself, both on account of its Fragrancy, and its grateful Taste, which is accompany'd with an Astringency, that is very agreeable to the Stomach. Experience, however, has taught us, that such Delicacies are not without their Inconvenience, whether the Peel be eaten alone, or together with its inclosed Nut. For they are endued with a narcotic Quality, and that to a considerable Degree, by virtue of which, if too freely or frequently used, they may induce soporous or co-matose Disorders. Hence we are told, by *Tavernier*, with an Air like that of *Glaucability*, that, when the Nutmegs begin to ripen, the Birds [illegible] it; but because [illegible]so called, who are very greedy of those Fruits, fly [illegible]risonding the [illegible]rks to the *Moluccas*, as the Thrushes, in the time [illegible]leriter contributed into *France*. But they frequently pay dear for their [illegible]d ag[illegible]hey [illegible]he; for, being seized with a Vertigo, they fall to the [illegible]ain in a drunken Fit, and have their Legs eaten, in a [illegible]aby the Ants.

[illegible] Nuts themselves, when dry'd and used immoderately, [illegible]ons'd of the same Quality, is obvious from a Case told by *Lobelius*, who informs us, that he was called to *England*, in order to attend a pregnant Lady of Distinction, who, by greedily eating twelve Nutmegs, as if they had been as much Bread, was seized with a kind of Delirium, or rather Intoxication; but, after sufficient Rest and Sleep, she recovered by means of Repellents applied to her Head.

Tachenius, in his Book *de Morborum Principe*, informs us, that the Wound of a certain Soldier was soon consolidated by the internal Use of Nutmeg. *Le Fevre* and *Wedelius*, also, commend this Fruit for the Consolidation of Wounds. *John Bauhine*, when travelling on the *Apennine* Mountains, having greedily drank a Draught of cold Water, was suddenly seized with violent Pains in his Bladder, accompany'd with Flatulencies, and a Tumor of the Scrotum, tho' without any previous or subsequent Hernia. When his Pain was so intense, that he imagined he should have dy'd on the Mountain, his Fellow-traveller, *Oswald Gabelkover*, gave him some Nutmegs, by eating four of which, he was instantaneously freed from his Pains.

According to *Ettmuller*, Nutmegs chew'd and swallowed are an excellent Remedy for a Palsy of the Parts subservient to Deglutition.

From recent Nutmegs, bruised and heated in a Pan, an Oil is expressed, which is highly beneficial in many Diseases. Thus, for Instance, when exhibited in some warm Liquor, it removes Gripes, and nephritic Pains. When apply'd by way of Ointment to the umbilical Region of Children, it removes Gripes. Long-continued Pains of the Nerves and Joints are remov'd by anointing the Parts affected with it; and, if the Temples are anointed with it, it gently induces Sleep.

A great many of the modern Botanists, probably induced by the Resemblance of the Names, confound the *Macis*, which is the second Covering of the Nutmeg, with the Macer of the *Greeks*, whereas these are widely different from each other; for the Macer is the Bark of a Root produced in *Malabar*, of a cold and earthy Nature, and for that Reason appropriated to the stopping of Fluxes. The *Macis*, or Mace, on the contrary, is the Covering of the *Indian* Nut, of an highly aromatic Nature, and possess'd of a great Degree of spirituous Heat; for which Reason it is generally used against cold Disorders, and those produc'd by Poison. Before the Mace is perfectly ripe, and as yet of a beautiful scarlet Colour, it is commonly preserved with Salt and Vinegar by the *Indians*, and presented as the first Dish, in order to excite an Appetite for the subsequent Repast. But, after the Mace is ripe, it is taken off the Nutmeg, dry'd in the Sun, and carefully preserv'd. Its Smell is always grateful, but, when 'tis recent, 'tis in a particular manner agreeable. Its Taste is a kind of Mixture between Bitter and Sweet, and leaves a sort of Driness in the Mouth behind it. The same Virtues with those of the Nutmeg are ascribed to it; but, because its Parts are more small and minute, it is thought to operate more effectually, and to be possess'd of a more penetrating Quality.

Tho' Mace yields a smaller Quantity of Oil than Nutmeg; yet that of the former is preferable to that of the latter, and is more commended in Disorders of the Nerves, and other cold Distempers; and, which is still more surprising, *Cronemburgius* informs us, that it cures the Gout, if the Part affected is anointed with it.

In order to expel Wind, shut up in the Uterus, take a sound Nutmeg; cut it into four Parts; throw one of them upon live Coals, and let the Patient receive the Smoke through a Funnel, into the Uterus. Let this Method be repeated three times. *Hartman* cured a young Woman at *Bonn*, upon the *Rhine*, by this Method. Dr. *Hulse*.

Nux Myristica major spuria Malabarica. Panem palka. H. M. *Avellanæ Indicæ genus oblongum.* Clus. *Nux Indica oblonga intrinsecus similis Nuci Moschatæ.* J. B. *Palma cujus Fructus oblongus Faufel similis.* C. B. *Malè Palmam vocat. Arecæ sive Avellanæ Indicæ varii coloris genus oblongum.* Park.

This Tree grows every-where in the Woods of *Malabar*; and bears ripe Fruit once or twice every Year, that is, in the Months of *June*, or in *December*, and *January*. It, also, bears Fruit for a long time.

Tho' these Nuts are of no Use in Medicine, yet the *Turkish* and *Jewish* Merchants mix them with Nutmegs, and their Mace with genuine Mace, in order to impose upon those who purchase those Commodities: From these Nuts, and their Mace, they, also, express the Oil, and mix it with the true Oil of Nutmeg.

NUX PISTACIA. The Pistachio. See TEREBINTHUS; *Indica*; *Theophrasti*.

NUX VIRGINIANA. Offic. *Prunifera vel Nucifera seu Nuciprunifera Arbor Americana præcelsa, angustis Lauri foliis latè virentibus, Mastichen odoratum fundens.* Pluk. Almag. 307. Phytog. 217. Fig. f. 5. Cat. Jam. 180. Sloan Hist. 1. 40. Raii Dendr. 44. THE VIRGINIA NUT. MASTICH OF LIGON. *Dale.*

It has smooth and shining Leaves, like those of the Bay-tree; and differs from other pruniferous Trees in its Fruit, which is small, turbinated, and contains but a little Pulp. It grows everywhere in the Island of *Barbadoes*.

The Part in Use is the Fruit, which is nearly of the Shape and Size of the Kernel of a Filberd, smooth, of a brown Colour, with an Eye near one End, and containing an hard Stone, which incloses a white, globular Kernel, of a bitterish Taste, and aromatic Smell.

It potently opens Obstructions, depurates the whole Mass of Blood, and corrects a scorbutic and bad Habit of Body, by impregnating the vital Liquor, the Blood, with those volatile Salts, which exalt it from its low and vapid State to a more pure and spirituous one; and, by that means, preserve it from Stagnation: It, also, clears the Skin of Spots, and all other Defedations. *Marl. Obs.*

NUX VOMICA. Offic. Ger. 1362. Emac. 1546. Park. Theat. 1601. Raii Hist. 2. 1814. *Nux Vomica, Nux Metella.* Mont. Exot. 10. *Nux Vomica in Officinis.* C. B. P. 511. *Nux Vomica vulgò Officinarum, compressa, hirsuta.* J. B. 1. 339. *Caniram.* Hort. Mal. 1. 67. Tab. 37. *Malus Malabarica fructu corticoso, amaricante semine plano compresso.* D. Syen. Raii Hist. 2. 1661. *Solanum arboreum Indicum maximum foliis Oenopliæ, sive Napecæ majoribus, fructu rotundo, rubro, semine orbiculari compresso maximis; Nuces Vomicas & Lignum Colubrinum Officinarum ferens.* Breyn. Prodr. 2. 92. Commel. Flor. Mal. 249. *Malus Indica venenata amara nucleis argenteis compressis orbiculatis; Ghodhakadura; Nux Vomica Officinar.* Herm. Mus. Zeylan. 41. VOMIC-NUTS. *Dale.*

These are flat round Seeds, about the Bigness of a Silver Groat in Circumference, somewhat thick; and a little concave on the one Side, and convex a little on the other, of a greyish Colour, and a little downy on the Outside, but hard and horny within: They are the Seeds of a large round Fruit, growing in *Malabar*, upon an arboreſcent

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rescent Solanum, having Leaves like the white Jujube, with Flowers in small Umbels, which is the *Lignum Colubrinum tertium Acostæ* of *Parkinson*. *Miller's Bot. Off.*

It is improperly called *Nux Vomica*, since it does not excite Vomiting. Some have erroneously thought it a Root, others a Fungus; but, by the Description, it appears to be a Fruit, though whether of a Tree, or an Herb, is uncertain. Some will have the *Metel* of the *Arabians* to be the same with the Nux Vomica; but their Descriptions do not agree.

The Nux Vomica is narcotic, virulent, and even worse than Opium. Reduced to Powder, and given in Food, it kills Dogs and Cats: Instances of which you have in *Gesner* and *J. Bauhine*; to which we shall add what Dr. *Hulse* communicated to us, taken from the Observations of *Antonius de Hude*. I gave two of these Nuts, says he, cut small, and mixed with Bread and Butter, to a Dog, who greedily eat them: Half an Hour afterwards he filled himself with boiled Bones and Cartilages; but in half an Hour more he was seized with an universal Trembling, and ran about from Place to Place, could not stand without Support, and his Legs were stiff, and affected with Convulsions. At the End of the third Half-hour he fell down as dead, and soon after began to fetch his Breath very short; and, with Assistance, got upon his Legs: He seemed to shiver at the least Noise, and to fetch his Breath the shorter: In this State he lived out the fourth Half-hour, and at last died suddenly. In dissecting the Carcase I made the following Observations: The Stomach was very full of Food, mixed with Bits of the Nuts, which did not seem to have undergone any Alteration, except that they were softer, which was, also, the State of a Bit of Nut that had lain, during the same time, in hot Water. The Stomach, Oesophagus, and Intestines, were in their natural Constitution; the lacteal Vessels in the Mesentery were turgid with Chyle, the Lungs were redder than usual, and the Ventricles and Auricles of the Heart were more tumid than they ought to appear. After dissecting the Right Ventricle of the Heart, on straining the *Vena Cava ascendens & descendens*, there flowed out a great Quantity of Blood, which immediately coagulated in the Cavity of the Thorax; about the Brain nothing preternatural could be observed. A Cat, after taking a Nut, which had been macerated for some time in Water, and in part decorticated, was affected with the same Symptoms as the Dog before-mentioned, as was, also, another Dog, which had only eat up the Reliques which the Cat had left. I had no Opportunity to ascertain the just Quantity of the Dose required for killing an Animal; but, from what I have observed, I am inclined to think, that this virulent Nut exerts its Influence, chiefly, in infecting the Fluid which irrigates the Brain and Nerves; for to such a Cause may be easily ascribed the Restlessness, Rigor, Convulsions, Horror, Trembling, and irregular Respiration. The fore-mentioned Symptoms deter me from making Experiments with this Nut on human Creatures, though some pronounce it noxious to Brutes, and not to Men: But let them say what they please, I cannot in the least doubt, but that it will have the same destructive Effects on Man, as on other Animals: On Birds, it is certain, it has the same pernicious Influence as on Beasts; for the People of our Country are wont to lay Bits of Flesh, sprinkled over with the Powder of this Nut, as Baits for Crows, Rooks, and other mischievous Birds, and so destroy them. *Adolphus Occo, in Pharm.* tells us, that *Julius Alexandrinus* wrote to him, that the Nux Vomica ought utterly to be discarded, and not admitted into any Composition, because it would always be deleterious, and prejudicial to the human Nature, under what Shape soever, and could never be render'd beneficial to the same. I am mightily pleased, says *J. Bauhine*, with that very learned Gentleman's Opinion; nor did I ever find any Person who could assure us from his own Experience, that any laudable Effects were produced by the Use of these Nuts. Upon these Considerations, our later Physicians, in their Dispensatories, have justly omitted it in their Descriptions of the *Electuarium de Ovo*. The Nux Vomica is reduced to Powder by rasping, and not by pounding in a Mortar, because of its horny Substance. *Raii Hist. Plant.*

NYALEL. H. M. *An Sambucus Indica Bontii? Arbor baccifera racemosa, Fructu corticoso, dipyreno.* It rises to the Height of forty Feet, and grows in *Malabar*. The Fruit is esteemed a Delicacy; the Kernels, bruised with fresh Ginger, and Sugar added thereto, provoke to Stool. Of the Juice of the unripe Fruit with Sugar is prepared a Syrup, which is very serviceable in the Cough, Asthma, and other Affections of the Thorax. *Raii Hist. Plant.*

NYCTALOPS, νυκτάλωψ, from νύξ, Night, and ὤψ, an Eye, or so called, as being τῆς νυκτὸς ἀλαὸς ὤπι; *captus Oculis Nocte*, (blind by Night) according to *Paulus* and *Aetius*, is one who sees not at all by Night, and but obscurely at Sun-setting. Such an one, they say, in *Latin* is called *Luscitiosus*, or *Nuscitiosus*; but *Luscitiosus* is one who sees but little through some Defect of the Eye, and sees better in the Evening than at Noon. *Varro* calls these *Luscios*, who see not in the Evening; and *Nonius*, by the same Name, those who see not by Candle-light; and *Pliny*, *Lib.* 28. *Cap.* 11. calls those *Luscios*, which the *Greeks* call νυκτάλωπες (*Nyctalopes*); and these, *Lib.* 8. *Cap.* 50. he describes as seeing in the Day-time, but not by Night, or by Twilight: The same Signification is given to the Word *Nyctalops*, by *Galen*, in his *Exegesis*, and by *Actuarius*, *Meth. Med. Lib.* 2. *Cap.* 7. where he says, also, that this Disorder is generated by a Collection of thin Humours, which in the Day-time is prevented by the copious Appulse of the Light, but at Night casts a Mist before the Sight.

In a contrary Sense to the foregoing, *Hippocrates* calls those νυκτάλωπες, *Nyctalopes*, who see best by Night, and worst by Day; and this Sense of the Word is, also, taken notice of by *Aetius*, when he says they are, also, called *Nyctalopes*, who see pretty well by Night, but worse by Day, and by Moon-light nothing at all; but this Disorder, he assures us, is very rare, but the other common enough. The Author of the *Definitiones Medicæ* says, that "A *Nyctalops* is an Affection of the Eyes, without a manifest Cause, in which the Patient sees nothing in the "Day-time, but sees in the Night." And the Author of the *Isagoge* comprehends both Significations, where he tells us, "They "are called *Nyctalopes* who see but obscurely in the Day-time, "but more clearly at Sun-setting, and at Night best of all; or, "on the contrary, they are such as see but little by Day, and in "the Evening, and at Night, nothing at all." *Foesius.*

NYCTERIS, νυκτερίς. The Bat.

NYGMA, νύγμα, a Puncture, from νύσσω, to prick.

NYMPHÆ.

Galen, and other antient anatomical Writers, sometimes call the Clitoris, and sometimes the Hymen, by the Name of *Nympha*; but what the Moderns call *Nymphæ, Cristæ Clitoridis*, or, as they may, also, be termed, *Alæ Minores sive Internæ*, are two prominent Folds of the inner Skin of the greater external Alæ, reaching from the Præputium of the Clitoris to the two Sides of the great Orifice of the Uterus: They begin very narrow, and, having increased in Breadth, in their Course downward, they are again contracted at their lower Extremity.

They are of a spongy Substance, intermixed with Glands, several of which may be perceived by the naked Eye. Their Situation is oblique, their upper Extremities lying near each other, and the lower at a much greater Distance. In married Women they are more or less flaccid and decayed. *Winslow's Anatomy*, *Sect.* 8.

THE METHOD OF TREATING THE NYMPHÆ, WHEN TOO LARGE.

The Nymphæ are sometimes so large, as not only to hang without the Labia Pudendi, but, likewise, to prove troublesome in Walking, Sitting, and even in Coition. In this Case, let the Patient be laid on her Back, with her Legs distended, and the Labia Pudendorum open'd: Then let the Operator, with his Left Hand, take hold of the Nymphæ one after another, and with a Pair of Scissars, cut off as much as may be necessary, taking care to be provided with Styptics for preventing an Hæmorrhage, and Medicines for relieving the Patient from fainting. The Wound may be afterwards dressed with some vulnerary Balsam, and easily healed in the common Method. *Solenander*, at the 80th *Obs.* 80. *de Morb. Mulier.* gives us a Case, in which two were extirpated, after they had begun to be affected [illegible] tification.

NYMPHÆA.

The Characters are;

It has a great perennial Root, which grows in [illegible] Rivers; the Leaves are thick, fungous, and [illegible]. The Calyx consists of five floscular Leaves, disposed [illegible] a Rose. The Flower is rosaceous, consisting of many [illegible] yellow, stiff Petals, expanded like a Rose; within these are situated a vast Number of Stamina, which arise from the circular and outwardly curve Joining of the Ovary and Placenta. The Fruit is globular, urceolated, multicapsular, like that of the Poppy, and contains many small oblong Seeds.

Boerhaave mentions two Species of this Plant; which are,

1. Nymphæa; lutea; major. *C. B. P.* 193. *Tourn. Inst.* 261. *Boerh. Ind. alt.* 281. *Park. Theat.* 1252. *Nymphæa lutea.* Offic. Ger. 672. Emac. 819. J. B. 3. 771. Raii Hist. 2. 1319. Synop. 3. 368. YELLOW WATER-LILY. *Dale.*

The yellow Water-lily pretty much resembles the white, in its manner of Growth; only the Leaves are somewhat longer, lying, also, on the Top of the Water: The principal Difference is in the Flower, which in this is yellow, and less than the white, made of five round Leaves, with several Chives in the Middle, of the same Colour. The Seed-vessel is large, resembling a Bottle, with a Crown like the Head of a Poppy, growing on the Top, full of Seed, which is larger than the white: This grows in the same Places with the white, and is much more frequent.

It is much of the Nature of the white, but is accounted the weaker of the two: It is, also, cooling and anodyne, and good in delirious Fevers, and for the Heat and Sharpness of Urine. *Miller's Bot. Off.*

2. Nymphæa; lutea; minor; magno flore. *C. B. P.* 193. *Boerh. Ind. alt. Plant.*

Nymphæa alba. A Name for the *Leuconymphæa.*

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Nymphæa, alba, minor. A Name for the *Leuconymphæa*; *minor.*

Nymphæa, minor, lutea. A Name for the *Micronymphæa, quæ Nymphæa lutea, minor, parvo flore.*

Nymphæa flore minimo. A Name for the *Microleuconymphæa, quæ Nymphæa*; *alba*; *minima.*

Nymphæa, lutea, minor, flore fimbriato. A Name for the *Nymphoides*; *aquis innatans.*

It is called *Nymphæa*, becauſe it lives in Waters, where the Nymphs are feigned by the Poets to inhabit.

The Plant is of a nitrous, paregoric, aperitive, moiſtening, refrigerating, and ſomewhat narcotic Quality. The Juice is drank in Inflammations of the Kidneys and Bladder. Of the Flowers is prepared an Oil, which has the ſame Virtues as Oil of Olives, or Oil of Roſes. The Leaves bruiſed make an excellent Cataplaſm for inflamed Parts; and a Decoction of the Roots and Flowers is beneficial in burning Fevers, by refrigerating; and the more, if the ſame Remedy be applied to the Soals of the Feet, and the Groins. Of the expreſſed Juice of the Stalks, Leaves, and Fruit, boiled, is prepared a Syrup, which is a moſt efficacious Remedy for a Gonorrhœa, and not the leſs proper when the Diſorder is attended with an immoderate Heat; for it was always a celebrated Medicine for Heat of Urine. This Syrup partakes ſomewhat of a narcotic Quality, and is, therefore, extolled as a Specific in want of Sleep; it, alſo, prevents nocturnal Pollutions, and extinguiſhes Thirſt. *Hiſt. Plant. adſcript. Boerhaav.*

NYMPHÆA, alſo, imports a preternatural Excreſcence of the *Nymphæ.*

NYMPHODOTI PASTILLUS. The Name of a Paſtil, deſcribed by *Paulus Ægineta*, *L.* 7. *C.* 12.

NYMPHOIDES.

The Characters are;

It is in all reſpects like the *Nymphæa*, except that its Flower is monopetalous and robated, and its Fruit oblong, compreſſed, ſoft and unicapſular.

Boerhaave mentions one ſort of this, which is,

Nymphoides; aquis innatans. *T.* 153. *Nymphæa, lutea, minor, flore fimbriato.* C. B. P. 194. J. B. 3. 772. *Nymphæa, alba, minor.* Lugd. 1009. *Boerh. Ind. alt. Plant.*

It is called *Nymphoides* from its near Reſemblance to the *Nymphæa*, both in Form and Virtues; it is of ſingular Efficacy in Hæmorrhages. *Hiſt. Plant. adſcript. Boerhaav.*

NYMPHOMANIA. The ſame as FUROR UTERINUS.

NYMPHOTOMIA, νυμφοτομία. A Section of the *Clitoris* when too large; for by the Antients the *Clitoris* was called *Nympha.*

NYSADIR. Sal Ammoniac.

NYSTAGMOS, νυσταγμός. A Winking, or Twinkling with the Eyes; ſuch as happens when People are exceſſively ſleepy.

NYXIS, νύξις. A Puncture.

O.

O. For the Signification of O in the chymical Alphabet, ſee ALPHABETUM CHYMICUM. O is the Character for Alum; and three o°o is the Character for Oil.

OBELÆA, ὀβελαία, from ὀβελὸς, a Dart. An Epithet for the Sagittal Suture of the Skull.

OBELCHERA. A Cucurbit. *Rulandus.*

OBELISCOTHECA. Dwarf *American* Sun-flower.

The Characters are;

It hath radiated Flowers, having many Florets, which are fertile; but the Half-florets are barren. The Placenta is com-[illegible]nical, and filled with chaffy Empalements, which [illegible]ed up, in each of which is an Ovary, which is [illegible]n Obeliſk reverſed, having an hollow Baſe. Theſe [illegible]ntained in one common Flower-cup, which is [illegible]ato ſeveral Segments, and expands in form of a [illegible] Leaves are placed alternately.

[illegible]es are;

1. Obeliſcotheca integrifolia, radio aureo, umbone atro-rubente. *Boerh. Ind. alt. Hort. Elth.*

2. Obeliſcotheca doronici folio, radio purpureo, umbone atro-rubente.

Theſe are *American* Plants, the firſt being brought from *Virginia*, and the other from *Carolina*; but they are of no Uſe in Medicine that I know. *Miller's Dict.*

OBESITAS. Fatneſs, or Corpulence. The Cauſes of Obeſity are already conſider'd under the Article FIBRA, whence the proper Methods of Cure may, likewiſe, be collected. It is remarkable, that for one corpulent Perſon in *France*, *Holland*, or *Spain*, there is a hundred in *England* and *Holland*. This I apprehend ariſes more from the habitual Uſe of new and feculent Malt-liquors, in which the oleous Part is not ſufficiently attenuated, than to any Difference in the Climate, or Degrees of Perſpiration. Corpulence is ſaid to be reduc'd by a frequent Uſe of Camphire. Cyder is eſteemed a proper Liquor to prevent exorbitant Fatneſs.

OBLATÆ *Purgantes* are figur'd cathartic Cakes, made of fine Flowers, Sugar, and purging Ingredients. They are much the ſame as HOLIPPÆ.

OBLIQUUS. A Name for ſeveral Muſcles, two Pair of which, the *Obliqui Aſcendentes*, and *Deſcendentes*, belong to the *Abdomen*, and are deſcribed under that Article.

OBLIQUUS SUPERIOR SIVE MINOR.

This Muſcle is ſituated laterally between the Occiput and

firſt Vertebra, being nearly of the ſame Figure with the two Recti. It is fixed to the End of the tranſverſe Apophyſis of the firſt Vertebra; whence it runs upward, and very obliquely backward; and is inſerted in the tranſverſe Line of the Os Occipitis, almoſt at an equal Diſtance from the Criſta and Maſtoide Apophyſis, between the Rectus major, and Complexus minor, which covers it a little.

The Obliqui Superiores, and the two Recti Poſtici, turn the Head a little backward on the firſt Vertebra of the Neck; and they can neither act otherwiſe, nor ſeparately.

OBLIQUUS INFERIOR SIVE MAJOR.

It is ſituated in a contrary Direction to the Obliquus Superior, between the firſt and ſecond Vertebra of the Neck, reſembling that Muſcle in every thing but the Size. It is fix'd below to one Branch of the bifurcated Spinal Apophyſis of the ſecond Vertebra, near the Inſertion of the Rectus major; whence it runs obliquely upward and outward, and is inſerted in the End of the tranſverſe Apophyſis of the firſt Vertebra under the lower Inſertion of the Obliquus ſuperior.

The Obliqui inferiores, or majores, are true Rotators of the Head, by turning the firſt Vertebra upon the Odontoide Apophyſis of the ſecond; all which alternate Motions the Head follows, without being hindered in the Motions forward and backward, in any Degree of Rotation. Theſe oblique Muſcles cannot perform any other Motions, being only Aſſiſtants to the Splenii and Sterno-maſtoidæi. The Obliqui minores can have no Share therein, they being limited to the Inflexion backward. The Obliquity of their Direction which may have deceived ſome Anatomiſts, ſeems only to be contrived to make way for the Inſertions of the Complexi minores. *Winſl. Anat.*

OBOLUS, ὄβολος. A Weight, ſix of which make a Dram; it is equal to about nine Grains.

OBRIZUM, or OBRYZUM. Pure Gold, perfectly refin'd and purg'd from all heterogeneous Mixture.

OBSIDIANA, as *Pliny* expreſſes it, *in Genere Vitri numerantur*, "are reckon'd a Species of Glaſs." So called, it ſeems, from their Reſemblance to a Stone, which one *Obſidius* diſcover'd in *Ethiopia*, of a very black Colour, and ſometimes pellucid, of a muddy Water, and reflecting from the Walls, where it is placed on a Shade inſtead of an Image.

Pliny, alſo, informs us, that *Obſidianum* was a ſort of Colour with which Veſſels were incruſted, or glaz'd; probably a kind of Smalt. Hence the Name is apply'd by *Libavius*, to Glaſs of Antimony.

OBSTE-

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OBSTETRICATIO. Midwifry.

A Labour is said to be difficult, when the Infant is not brought into the World in the usual Time, that is, in an Hour or two; but for certain Causes is retain'd longer than ordinary, and cannot be brought away without Difficulty, and the greatest Care and Diligence. The most direct and immediate Causes of Accidents of this Kind are, first, a bad Conformation of the Body, as in deformed Women; and especially when the Bones of the Pelvis, the *Os Coccygis*, and the *Os Sacrum* in particular, are preternaturally form'd; by which means the Pelvis is frequently render'd so narrow, as not to admit the Hands. Secondly, the Age of the Patient; when for Instance, Women are either too young and tender, or too old, especially in their first Labour. Thirdly, when timorous, they are too delicate, or abound too much in Blood. Fourthly, when their Labour is too much hasten'd, before Nature concurs, and offers her Assistance; or when the Waters are either too soon discharged, or too long retained. Fifthly, when the Patients, not before accustom'd to such Circumstances, refuse to assist their genuine and legitimate Pains by their own Efforts. Or, lastly, when the Situation and Posture of the Fœtus is preternatural. The more of these Causes concur, the more difficult the Labour generally is. But when a Physician is call'd to a Woman in Labour, or at least under Pains resembling those of Labour, he ought, above all things, to inquire, whether she has gone her full Time, which is nine Months; and whether the Mouth of her Womb is as yet open or shut; for if the true and legitimate Time of Labour is not as yet arriv'd, if no Member of the Infant presents itself, if the Patient is not seized with her genuine Pains, and if the Mouth of the Womb is not as yet open, we ought not only to abstain from attempting her Relief by the Hand, but, also, from the Exhibition of such Medicines as provoke Labour. We are rather to endeavour, that the Patient be kept in a State of Rest, or be laid in a Bed. The skilful Physician ought, also, to prescribe proper internal Medicines, accommodated to the Variety of her Symptoms, and calculated for the Removal of the spurious Pains, which are often in due time succeeded by a genuine and legitimate Labour; for it often happens, that Women procure not only their own, but, also, the Death of the Fœtus, whilst either by their own Imprudence, the Instigations of unskilful Midwives and Nurses, or the Uneasiness of spurious Pains, they attempt the Expulsion of the Fœtus before the due time. But when the due Time of Gestation is elaps'd, and consequently the proper Time for Labour arriv'd, when the genuine Pains, or such as are propagated from the Loins down to the Pubes, are perceived, when the Limbs tremble in consequence of the Violence of the Pain; when the Patient is seized with a perpetual Tenesmus; when the Mouth of the Womb is sufficiently dilated, the Method of discovering which is represented in *Tab.* LIV. *Fig.* 1. the Midwife is carefully and skilfully to perform the several Functions belonging to her Office, either in a Bed, or a particular Chair contrived for that Purpose. When notwithstanding all these Circumstances, and the due Increase of the Pains, the Labour does not succeed happily, we are to have recourse to more efficacious Methods: But before we specify these, we must observe that the Women of *France*, and several other Nations, are deliver'd in Bed, whereas those of *Germany* are deliver'd in a peculiar Chair, represented in *Tab.* LIV. *Fig.* 14. which Method *Heister* thinks preferable to the other, for several Reasons; especially because their Feet being on the Ground, their Back at the posterior Part of the Chair A; their Buttocks on the transverse Seat C, so excavated that the Os Coccygis may commodiously yield, and their Hands holding the Handles D, D, they can make far stronger Efforts, and the Midwife and Assistants have far better Access, and Opportunity of doing their respective Duties. In some Places, where these particular Chairs are not to be had, 'tis customary to fix two common Seats of an equal Height so together, that there may remain six or eight Inches between them. One Buttock of the Woman in Labour is to be placed on each of these Stools, whilst her Anus and Pudenda correspond to the Interstice between them, by which means the Os Coccygis, and the Os Sacrum, are free from Compression, and easily yield to the Passage of the Fœtus. 'Tis become customary in *Germany*, among the common People, to place the Patient on the Knee of some robust Woman, who, holding her firm in their Arms, supplies the Place of a Chair contriv'd for that Purpose.

The Postures of parturient Women are different in different Countries, and in different Parts of the same Country, but there is no general Rule to be laid down, because some Postures suit some Women, and others do better in another Situation: Besides, one Posture is more commodious than another, as the Child happens to be situated, or as the Uterus happens to be placed obliquely towards the Spina Dorsi, too much forwards, or too much inclining to the Right or Left Side.

The usual way amongst common Midwives is to place the Woman upon another's Lap, with her Feet upon two Chairs, placed one on each Side, whilst the Person that delivers her, sits before the Woman upon a low Chair.

Others, again, especially in the Country, place the Woman upon her Knees and Hands, or Elbows, or else bending forwards against a Table, or something solid, and deliver her backwards.

The best Practitioners seem to think it most commodious to deliver a Woman in, or rather upon, a Bed, lying on one Side with the Thighs and Legs bent towards the Belly, with a large hard Pillow betwixt the Thighs, to keep them asunder.

In *France* it is the Custom to deliver a Woman in a Pallet-bed; but *La Motte* finds fault with them for being too low: His Method is, to lay the Woman upon a common Bed, either across or otherwise, taking care to have it made in such a manner, that it shall lie upon a Slope from the Woman's Head, downwards, and making a Depression, or kind of Trench, under the Anus, that nothing there may hinder the Birth of the Child: Mean time he places a Cloth four-double, just under the Region of the Kidneys; divides the Knees to a Distance from each other; places two Women, one on each Side, to hold the Knees with one Hand, and to sustain the above-mentioned Cloth, when necessary; the Woman's Heels are to be placed near the Buttocks, and must rest against something solid, the Bedstead, for Instance, or something else, set there on Purpose; the Woman must hold something fixed in both her Hands to hinder her from raising herself, and retiring during the time of the Pains, or when the Child is in the Passage; or else the Woman must be kept from Motion, by another Person's Hands laid upon each Shoulder.

La Motte orders a Cloth to be thrown over the Woman's Knees for Decency, and to prevent Cold.

A double Cloth must, also, be placed under the Woman to receive whatever is discharged from the Uterus; and a woo.en Cloth must be in Readiness to receive the Child.

La Motte is of Opinion, that the surest Way to succour a Woman in a long and difficult Labour, is to confine her to no constrain'd Situation, but to let her walk, sit, or lie in Bed, just as she finds it easy to her, till such times as the Waters are flow'd off, the Pains begin to be strong, and the Child advances.

It is often a great Relief to a Woman to have the lower Parts a little elevated by means of the doubled Napkin placed under the Region of the Kidneys, during the Pains.

La Motte tells us, that some Women will have no Pains in Bed, or lying, or even sitting, but will have them very strong as soon as they get up: This is true, as also *vice versa*.

The same Author gives an Instance of a Woman being deliver'd in the following Posture, which he seems very much to approve, when the Child is pretty far advanc'd in the Passage.

Another Woman was placed in an easy Chair, with the Back close to the Wall, and her Legs pretty much asunder upon this Woman's Lap the parturient Woman was placed the two more Women to support her under the Arms, more to sustain the Feet, and elevate the Knees them asunder.

When a Woman has not sufficient Pains, in one bring the Child, all others must be tried.

La Motte does not approve of laying a Woman Bed.

But it is, above all things, necessary, that Midwives livered ficians, attending Women in Labour, should be perfectly acquainted with the Mouth of the Womb, either from Anatomy, or from *Tab.* XVII. *Fig.* 3. at 5. or at *Fig.* 2. Letter L, in *Tab.* L. or at *Fig.* 1. Letter C, in *Tab.* LIV. It must, also, be adverted to, that the Womb, especially in pregnant Women, is, except in the Time of Labour, so close shut, that it will scarcely admit the Point of one's little Finger, till the genuine Pains approach. But when these come on, it gradually dilates itself, so as at first to admit one Finger, and afterwards several; and in this Aperture of the Uterus are perceived the Membranes including the Fœtus, resembling a Bladder distended with Water; and often some Part of the Fœtus, through these Membranes, enters the Mouth of the Uterus, or is so contiguous to it, as to be perceived by the Fingers. By these Circumstances the Delivery is known to be at Hand, and is so much the nearer, in proportion as the Mouth of the Womb is dilated. But that the Midwife or Physician who acts in that Quality, may, with Judgment, discover the State of the Mouth of the Womb, they are gently to introduce their fore and middle Fingers, or at least the middle Finger, anointed with Oil, up the Vagina of the pregnant Woman, as far as the Mouth of the Womb, (see *Tab.* LIV. *Fig.* 1.) in order to discover whether its Mouth is closed or open, much or little dilated; by which means they may, at the same time, discover whether the Delivery is near or not, whether the Mouth of the Womb corresponds directly to the Vagina, as in *Fig.* 1. or inclines to some Side; and consequently

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frequently whether the Situation of the Uterus is direct, which is the Sign of an happy Delivery, or whether it is more or less oblique; as, also, whether the Head, the Foot, the Arm, or any other Part, attempts its Exit; from which Circumstances an easy or difficult Labour may, with the greatest Certainty, be prognosticated, as we are informed by *Deventer*, *Van Hoorn*, and *Widemannia*. In making our Searches of this Kind, we must observe, never to make any Attempts, except in the Intervals of the Pains, which are the most proper Times for discovering what we want to know.

Before I proceed to difficult and unnatural Births, it will be necessary to take notice of some things relative to a natural Labour, both for the Instruction of those who intend to be Practitioners in this way, and for the general Information of parturient Women, who are frequently greater Sufferers in the most easy Labours, by unskilful Conduct, than the Circumstances require.

When a pregnant Woman approaches near the Term of her Delivery, she is attentive to every Variation of her State and Condition. Nor can she be blamed for this Caution, since she is most deeply interested in her own Fate, and is to act the most considerable and important Part in the Labour. Upon the first Approaches of Pain, a Sense of Danger prompts her to implore the Assistance, either of a Physician, or the Midwife. These, before they make any Attempts for her Delivery, ought carefully to inquire into the Nature of her Pains, because these may be either false and spurious, or of the genuine and legitimate Kind.

False Pains are such as neither proceed from the Uterus, nor bear downwards; but they draw their Origin either from Wind or Bile lodg'd in the Intestines, as is obvious from the Rumbling of the abdominal Viscera, and the Tenesmus or Inclination to go to Stool. Any violent Commotion, a Fit of Passion, or a Coldness of the Body, succeeded by a Paroxysm of a Fever, are Circumstances capable of exciting Pains, which, however violent, are not productive of a Delivery; for which Reason they are called false or spurious Pains.

True and genuine Pains, on the contrary, beginning in the Region of the Loins, extend themselves to that of the Uterus, render the Pulse more full, frequent, and elevated. They, also, produce an unusual Redness of the Countenance, because the Blood, being, by their means, more agitated and heated, is of course more quickly and copiously conveyed to the Face. These Pains remit and resume their Force at certain Intervals; but the succeeding Pain is always more severe than that which preceded, till at last they grow so strong as to terminate in the Birth of the Child.

Women who have not before born Children, very readily mistake the Nature of these Pains; but such as have, are sufficiently capable of distinguishing the true from the false and spurious Pains; and a Woman, upon the Approach of her first La[illegible], is excusable in taking her Pains for a Paroxysm of the [illegible]

[illegible]ke that of *Gla*[illegible]
[illegible]lt; but because, with respect to Pains, sometimes Women feel considerable [illegible]arisoning the[illegible] their Bellies, for some Months before Labour. In these [illegible]lerter contribute; *La Motte* says, Purges are not necessary; and recom[illegible]nd-ag[illegible]he ingysters of Whey only, with a Pugil of green Anise, [illegible]by *I*) boil'd in it.

[illegible]Ne Approach of Labour, a Woman feels generally, for [illegible]s'd purs, and frequently for some Days, Pains in the Loins [illegible]belly, which either do not bear downwards at all, or but very little. These they usually call *Grinding Pains*, which are very troublesome and fatiguing, but, however, of great Service; for they contribute to the gradual Dilatation of the Mouth of the Womb, promote by degrees the Formation of the Waters, bring the Child to a due Situation for the Birth, lubricate the Passages by expressing from the Womb an emollient and mucilaginous Fluid, and perhaps bear no small Part in loosening the Cohesion of the Placenta with the internal Surface of the Womb, in such a manner, that its Discharge may immediately follow the Birth of the Child.

A Midwife ought to be extremely cautious of putting a Woman upon Labour too soon; for every Pain that a pregnant Woman feels in her Belly, or Loins, must not be taken for Labour, even tho' the Head of the Child may be felt; because these Pains are not true ones, unless accompany'd with a Discharge of slimy Matter from the Uterus, and unless the Waters are formed.

In case of such Pains as these, the Woman must be kept easy and quiet, and the rest must be left to Nature.

In case these Pains are very troublesome, they are to be taken off by proper Clysters, and made of emollient and carminative Ingredients. *La Motte* recommends one of half Whey, and half Barley-water, wherein Agrimony and Mullein have been boiled, with an Addition of a Spoonful of Honey, and a few Aniseeds.

A Woman may have these spurious Pains for many Days, before 'tis necessary to give her any Assistance; and 'tis extremely wrong of a Midwife, to fatigue the Woman, by putting her upon Labour, and more so, to be perpetually touching the Parts.

La Motte asserts, That all sorts of Pains, in any Part of the Body whatever, are to be regarded in the last Days of Gestation; because they are frequently succeeded by, or accompany, true Labour-pains: Of this he gives two Instances; in one of which, an excessive Pain was felt in the Side; in the other, the Pain was in the Thigh, and the Woman was delivered in half an Hour, and the Pain entirely ceased.

Women so ill, that they seem deprived of all their Senses, whilst in Labour, have often a Motion with their Arms, Lips, or of the lower Parts; from which the Midwife may guess at their being in Labour.

Labour-pains often cease for a little time after the Waters flow off, but soon return again; however, the Author above quoted gives an Instance of their ceasing, and never returning at all. He was called in the third Day, and, upon Examination, found the Orifice of the Womb closed, but very easy to be dilated: Upon introducing his Hand, he found a dead Child presenting the Back, which he brought away by the Feet.

Labour-pains will sometimes continue for eight or ten Days, or more, by Intervals, before they become strong enough to bring the Child into the World.

La Motte, *Obs.* 374. gives the Case of a Lady at her full Term, who was in the Evening seized with Labour-pains: The Mouth of the Womb was dilated to the Bigness of a Crown-piece, and the Membrane began to be formed; but in half an Hour's time the Pains ceased till the next Evening, when they again returned; and then the Mouth of the Womb was very much dilated, and the Membranes seemed ready to break; but the Pains decreased by little and little, and again entirely left her. The Morning following she was seized with an excessive Pain in her Leg, from the Ancle to the Knee; which the Author judged not to be a Symptom of Labour, and therefore embrocated the Part with warm Brandy, and wrapt it up in a warm Napkin; upon which the Lady went to sleep, and waked without Pain. She continued in this manner thirty-five Days perfectly easy, and then the Labour-pains returning with Violence sufficient to break the Membranes, the Child was found to present with the Feet, and one Hand, which the Author brought away by the Feet, not without much Difficulty; for the Child was extremely large, and so strong, that he was obliged to make use of both his Hands to bring the Feet, not being able to fix the Feet in one Hand, the Child withdrawing one when he seized the other. This Child presented right, when the Lady was first of all seized with Labour; but, the last time, it presented wrong.

The Signs which happen a few Days before the Delivery, are the following: Some uncommon Pains are perceived in the Loins; the Mother observes the Prominence of the superior Part of the Abdomen sunk, as it were, and depressed to the lower Region; She cannot walk with that Ease and Freedom she did before; she is seized with a preternatural Inclination to discharge her Urine frequently; and a viscid Matter descends from the Uterus, in order to moisten and lubricate the Vagina, or Passage through which the Fœtus is to come into the World.

These general Signs are, in proportion as the Labour approaches, succeeded by others; such as, an universal Trembling of the Body, but more especially of the Thighs and Legs, which are seized with Shivering. This, however, does not, like that preceeding Fevers, arise from Cold. The Mother also, sometimes vomits; a Circumstance which surprises the By-standers, who are ignorant, that 'tis highly beneficial in this Case, because 'tis a Sign, that the Infant, situated in a natural Posture, pushes with its Feet against the Bottom of the Stomach, in making Efforts to find a Passage into the World. When the viscid Matter, discharged from the Uterus, appears tinged with Blood, 'tis a Sign, that the Delivery is not far off, tho' we are obliged to wait a longer, or a shorter time before it happens.

The Operator, who, before this, must not fatigue the Mother with superfluous handling the Parts, as most Midwives generally do, must now touch her, in order to discover the State in which the Mouth of the Uterus is; and that he may be able to form a judicious Prognostic with respect to the Time of the Delivery. If he finds the Mouth of the Uterus dilated, and the Membrane thrust into it, like a large Gut full of Water; 'tis a Sign, that the Waters are forming, and thus pushed forward by the Head of the Fœtus, which is soon to follow them. Lastly, when, during a violent Shock of Pain, produced by the Efforts of the Infant, this Membrane breaks, and the Waters are discharged, we may be assured, that the Delivery is at no great Distance.

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As a Phyſician cannot aſcertain, that the Meaſures he orders to be taken with one Woman in Labour, will exactly ſuit the Caſe and Circumſtances of another, who may be in a quite different Condition; ſo he cannot, in the very Nature of the Thing, reduce his Precepts and Directions to one general Rule, the following of which might indeed prove beneficial to one, but hurtful and pernicious to others. He muſt therefore diſtinguiſh himſelf from the common Herd of Midwives, who often tread in a beaten Path, and practiſe always in one manner, without Diſtinction, and without knowing what Conſequences it may produce.

The firſt Step to be taken by the Operator is, carefully to interrogate the Woman with reſpect to every Circumſtance which has the leaſt Tendency to make him acquainted with her State and Condition. He muſt carefully advert to every Anſwer ſhe makes, and guard againſt diſcovering the leaſt Degree of Aſtoniſhment, even tho' ſhe ſhould recount Circumſtances which give him Reaſon to ſuſpect a difficult Labour. If from the Bulk of the Abdomen he conjectures, that two Children are lodged in the Uterus, or that the Poſture of the Fœtus is bad and unnatural, he muſt not declare his Sentiments, becauſe he may do that in due time afterwards. Inſtead of diſcovering himſelf to be under the Influence of Dread or Terror, he muſt aſſume a gay Behaviour, and aſſure the Mother and By-ſtanders, that the Event will be happy and ſucceſsful.

He muſt by no means paſs too deciſive a Sentence with reſpect to the Delivery; for I have known Women, who have been told, that they would be deliver'd at ſuch a particular Hour, become intolerably impatient after that Hour was paſt. The Moments, at any rate, ſeem long and tedious to the Patient; but much more ſo, when her Pain continues beyond the Period foretold for its End. 'Tis more prudent to ſpecify a longer Time for this Purpoſe, than in all Probability it really requires, ſince, in this Caſe, one or other of theſe two Circumſtances muſt happen; either the Mother goes to the Time prefixed, or ſhe is delivered before it: If ſhe is not delivered, ſhe has no Occaſion to be impatient, ſince the Time fixed for her Relief is not yet arrived. If, on the contrary, ſhe ſhould be delivered before it comes, ſhe is inclined to imagine, that the Aſſiſtance of the Operator has exempted her from ſome Hours of Pain, which ſhe muſt otherwiſe have gone through.

Mauriceau, for a Patient in this Situation, orders a Clyſter, Veneſection, and Aliments of eaſy Digeſtion; ſuch as Jelly-broths, freſh Eggs, and a Toaſt and Wine with Sugar. At the ſame time he forbids the Uſe of all Wines, Rataſia, and every thing of an heating Nature: But, as, in ſome Caſes, we ought to abſtain from what he orders, and, in others, to do what he forbids, we muſt inquire when we are, and when we are not, to follow his Advice.

He aſſigns two Reaſons for his preſcribing a Clyſter; which are, firſt, in order to evacuate the groſs Fæces indurated in the Rectum, and which might, by means of their Hardneſs, obſtruct the free Paſſage of the Infant. The ſecond is, that, by ſtraining to diſcharge the Clyſter, Efforts capable of bringing on the Delivery are excited: But he forgets a third, which is, that the Contents of the large Inteſtines muſt be evacuated, leſt, being preſſed upon by the Head of the Infant, they ſhould be diſcharged during the Labour; a Circumſtance which not only ſometimes happens, but, alſo, brings along with it very conſiderable Diſadvantages.

But theſe Reaſons ceaſe, if the Mother has had a Stool the ſame Day; for, ſince the Fæces are evacuated, they can neither incommode the Infant, be diſcharged during the Labour, nor produce Efforts neceſſary to a Delivery; ſo that a Clyſter muſt, in the Nature of the Thing, be ſuperfluous and uſeleſs, in Caſes where there are no Fæces in the large Inteſtines: Beſides, *Mauriceau*, in ſeveral Paſſages, forbids the promoting the Labour too haſtily. Now, as Clyſters have a Tendency to produce that Effect, they ought not to be uſed, except in Caſes of abſolute Neceſſity, which cannot poſſibly occur in natural Labours, of which we now ſpeak.

Tho' Veneſection is ſometimes of ſingular Advantage in particular Labours, yet its Propriety muſt be indicated by ſome Symptom; but, in a natural Labour, no Circumſtance points out its abſolute Neceſſity. *Mauriceau*, however, warmly recommends it, affirming that we may ſafely empty the Veins of a Woman whoſe Labour is near; becauſe, having the Infant no longer to nouriſh, ſhe has no Occaſion for ſo large a Quantity of Blood as ſhe had before. But this Reaſon is too general and unlimited, to be taken in a literal and unreſtrained Senſe. If the Patient is ſanguine, plethoric, or has not been blooded for a conſiderable time before, his Advice may be followed, and Veneſection may be proper enough: But if the Mother is weak, delicate, or has eaten little during her Pregnancy her Strength and Blood muſt be carefully preſerved. Neither have we any Reaſon to dread either thoſe violent Hæmorrhages, which ſoon prove mortal, or too copious Purgation incident to Mothers of ſtrong and robuſt Conſtitutions, or who during their Geſtation have eaten liberally. And if thoſe Patients, for whom we judge Veneſection improper, ſhould happen to have a ſmall Redundance of Blood in their Veins, Nature is able to rid herſelf of it by the ſubſequent Purgations.

If a Woman ſhould happen to be ſeized with Pains ſoon after Dinner or Supper, we muſt give her no more Aliments; on the contrary, it were to be wiſhed, that her Stomach was empty, becauſe, in conſequence of that Circumſtance, it would be leſs ſtimulated to vomit. Some Women, in this Situation, are ſo much afraid of Hunger, that they imagine they ſhould die, if they wanted Aliments for four Hours. The Operator is reduced to a Neceſſity of humouring theſe, not in order to give them any additional Strength, as they themſelves idly imagine, but in order to ſatisfy their inordinate and importunate Cravings: But it would be far better, if the Mother was delivered without her taking any Aliments; I mean, in a natural Labour, which does not exceed ſeven or eight Hours; but, if it ſhould happen to be protracted longer, the Patient's Strength muſt be ſupported by proper Jellies or Jelly-broths.

Wines, ſpirituous Liquors, and all kinds of hot Compoſitions, are expreſly forbid by *Mauriceau*. I muſt indeed agree with him, that a Woman in Labour, whoſe Pulſe is elevated, whoſe Countenance is inflamed by the Violence of her Pains, or whoſe Throat is overheated by her Groans and Cries, muſt not uſe ſuch Subſtances as have a Tendency to render her Blood hotter, and conſequently augment her Symptoms. Ptiſan, or ſimple Water, are far more proper, in order to refreſh her, and lubricate her Throat.

As different Women are, during their Labours, accuſtomed to different Liquors, ſuch as Hartſhorn-water, Roſa Solis, Divine Waters, as they are called; Decoctions of Sugar and Cinnamon in Wine, or Wine alone; the Operator, if he cannot intirely baniſh their Uſe, is, at leaſt, to leſſen their Quantity as much as he poſſibly can.

As different Women are, alſo, accuſtomed to have themſelves delivered in different Poſitions and Situations, ſome ſtanding, others in a Chair, others on their Knees, others on a Matras before the Fire, and others in Bed, the Operator is obliged to gratify their ſeveral Humours, ſince, on theſe Occaſions, their peeviſh Obſtinacy is generally proof againſt the Remonſtrances of Reaſon, and the Suggeſtions of good Senſe.

Before the Labour comes on, the Operator muſt be previouſly furniſhed with whatever will be neceſſary; as Cloths, Thread to tie the Navel-ſtring, and Sciſſars to cut it: When all this Apparatus is at hand, he is patiently to wait the Increaſe of the Pains, and, during their Intervals, to entertain the By-ſtanders with ſome agreeable Converſation, carefully avoiding the Mention of difficult Labours, putting a favourable Conſtruction upon every Circumſtance, and affirming that all the Symptoms prognoſticate an happy Delivery.

When the Pains are augmented to ſuch a Degree, that the Mother can neither walk, nor ſit, without the greateſt U[illegible]neſs, the Delivery is to be attempted in what Po[illegible] Surgeon thinks moſt commodious.

Mauriceau orders the Patient not to be delivered, [illegible] Waters are diſcharged; but, in my Opinion, this is [illegible] too long. 'Tis true, ſome Women have a great many [illegible] after the Eruption of the Waters before their Delivery; [illegible] 'tis at the ſame time equally certain, that others are delivered during the ſame Pain which evacuates the Waters. For this Reaſon, I think, we ought not to delay ſo long, leſt the Waters being diſcharged, and the Mother in an erect Poſture, the Infant, which is ſoon to follow theſe Waters, ſhould fall on the Floor; a Circumſtance which may be attended with fatal Conſequences.

Tho' the Operator ought never to *touch* a Woman more frequently than is abſolutely neceſſary for making a Prognoſtic, and forming a probable Judgment with reſpect to the Time of the Delivery; yet, as ſome Women think themſelves ill uſed, when they are not often touched, he is often obliged to comply with this abſurd Piece of Practice, rather to gratify the Imagination of the Mother, than afford her any Relief.

As ſome Women cry as violently on the Approach of their firſt Pains, as they might be ſuppoſed to do in the Height of their laſt, the Operator muſt ſuggeſt to them, that they render their State worſe by that means; and that the giving a proper Check to their Cries, till they had real Occaſion for them, would be a Circumſtance of great Advantage.

Every time the Operator thinks it neceſſary to touch the Patient, he muſt convey a ſmall Portion of Butter into the Vagina, in order to anoint the Mouth of the Uterus; that, by this means, it may dilate itſelf with the greater Eaſe and Expedition; for the Length or Shortneſs of the Labours bear a Proportion to the Time it requires to open and dilate itſelf ſufficiently.

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Tho' Oils and Butter may facilitate the Dilatation of the Mouth of the Uterus, yet the Head of the Fœtus contributes more powerfully to the Production of this Effect, since, at every Pain, it pushes against it, and at last, so dilates it as to find a free Passage for itself: The stronger the Infant is, the more powerful Efforts it makes to come into the World; and this is the Reason why, as some imagine, Women pregnant with Male Children are generally more expeditiously delivered, than those whose Off-spring proves of the other Sex.

Women who have had frequent Opportunities of attending Labours, are so firmly persuaded of this, that, when they see a Labour protracted, they never fail to pronounce, that the Child will be a Girl. In a word, 'tis established as a kind of general Rule, that Boys force their Way into the World much sooner than Girls, tho' in some Cases it happens otherwise: When, for Instance, the Boy, having a large Head, and broad Shoulders, cannot make its Way through the Mouth of the Womb, which is not as yet sufficiently dilated. In this Case we must wait, till, by the redoubled Efforts of the Fœtus, it is opened sufficiently, and yields a free Passage to the struggling Infant.

Every Effort of the Infant produces a Pain, which bears a direct Proportion to the Strength or Faintness of that Effort; for which Reason severe and violent Pains are often wished for, because they contribute more powerfully to the Delivery, than such as are faint and languid.

Some Women, at every Pain, endeavour to bear downwards, with an Intention to forward the Delivery; but as these Attempts fatigue them, and impair their Strength to no manner of Purpose, the Operator is to advise them to reserve their Efforts, till the last Pains come on, when they may be employ'd to more Advantage.

As 'tis the Mouth of the Womb which retards the Delivery, the principal Intention of the Surgeon ought to be its Dilatation, by anointing it now-and-then, and turning one of his Fingers in it, taking care, at the same time, not to impair it in any manner.

In proportion as the Mouth of the Uterus is dilated, 'tis filled with a Membrane distended with those Waters in which the Infant swims, and which are thus driven forwards by the Head of the Fœtus. We must not, like some Midwives, break this Membrane with our Nails, in order to evacuate the Waters, which, among other Uses, are destined for the Lubrication of the Passage; for, if these should be discharged too soon, the Delivery would of course be rendered more difficult, since the Parts must by that means be drier: We must, therefore, wait the spontaneous Evacuation of the Waters, by the Efforts of the Infant, who, generally, very soon follows them.

When the Waters are thus evacuated, the Operator perceives the Head of the Infant advancing, and bearing directly on the Mouth of the Womb, where it, on some Occasions, remains for a short time, in consequence of the Resistance with which it meets. Sometimes the Head of a Fœtus, whose Sutures [illegible] as yet formed, assumes a more oblong Figure in the [illegible] the Womb, in order to facilitate the Delivery. At [illegible] Infant, by its reiterated Efforts, which are now [illegible] violent, because it has now more Liberty to extend itself, [illegible] the Mouth of the Uterus, as to enter the Vagina.

Tho' this be a Circumstance of great Importance, yet the Delivery is not, by its means, absolutely accomplished, since there is sometimes a considerable Resistance made by the external Orifice, the Caruncles, the Nymphæ, and Lips of which, with Difficulty, yield to the Passage of the Fœtus. The Head of the Infant, in this Case, presents itself, and is seen; but cannot be disengaged without the Assistance of the Operator, who, with both Hands passed between the Head of the Fœtus, and the Lips of the Pudenda, is to dilate the latter; then, conveying his Fingers below the Jaws of the Infant, he is to extract it.

But the Extraction of the Head is not enough; the Shoulders, which are sometimes with great Difficulty disengaged, must necessarily follow. The Operator must not for this Purpose draw the Head with too great Violence, since by that means, he might separate it from the Body; he must, therefore, draw it gently to the Right, in order to disengage one Shoulder; and then to the Left, to free the other. If these Measures should not succeed, he must pass two of his Fingers along the Neck of the Infant, to one of the Arm-pits, and disengage one of the Shoulders, and then the other, in the same manner. Thus, when the Shoulders are brought out, the rest of the Body will easily follow.

The Operator must neither draw the Infant too quickly, nor extract it totally, till he has observ'd, whether the Navel-string is twisted about its Neck, or any other Part of its Body; in which Case he might, by Precipitation and Rashness, either break the Navel-string, or draw down the Secundines, which, not being as yet sufficiently disengaged, might bring along with them the Bottom of the Uterus, to which they adhere.

When the Infant is brought alive into the World, it must be laid upon its Side, both that it may breathe more freely, and have its Face kept out of the Waters, &c. discharged during the Delivery.

The Birth and Life of the Infant may be known from its Cries as soon as it is born. From the Strength or Faintness of these, some Women pretend to decide, whether the Fœtus is a Boy, or a Girl; but this is an highly fallacious Circumstance, since Girls are frequently capable of crying as loud as Boys.

After the Child is born, two Steps remain to be taken, which are to tie the Navel-string, and bring away the Secundines, or After-birth. Some order the Navel string to be tied immediately after the Delivery, whilst others maintain, that the Secundines ought to be brought away first. The Abettors of these two Opinions advance peculiar Reasons for their respective Practices. But, in my Opinion, before doing either the one, or the other, we ought to examine, whether there is not another Child in the Womb; and, if there should, it is to be brought into the World before any Attempts are made to bring away the Secundines. That another still remains in the Uterus, may be known, if, after the Birth of the one, the Abdomen continues large, or the Mother is seized with Pains; or, if, upon the Touch, the Operator perceives a Membrane distended with Water, presenting itself to the Mouth of the Uterus. But when there is no Probability, that there is more than one, we are with all Expedition to attempt the bringing away of the Secundines.

Some Authors would have this done as soon as the Infant is born; and this was the Opinion and Practice of *Mauriceau*, who apprehends, that, during the Time employ'd in tying the Navel-string, the Mouth of the Womb is contracted, and by that means, the Extraction of the Secundines render'd more difficult; whereas, when 'tis taken away immediately after the Fœtus, the Uterus has not Time to contract itself; in consequence of which Circumstance, it may be more easily and expeditiously brought away afterwards.

Those, on the other hand, who order the Navel-string to be tied first, among whom *Clement* is one, think, that 'tis so much better, the sooner the Infant is taken from its Mother, and put into the Hands of the Assistants, in order to be cleansed, and have every other thing done, which its tender and helpless State requires.

They endeavour to give an additional Sanction to this Piece of Practice, by alleging, that the longer the Tying of the Navel-string is defer'd, the more Blood is convey'd from the Fœtus to the Placenta by means of the Umbilical Arteries; that by tying the Navel-string the Course of this Blood is obstructed, so that it remains with the Fœtus; and that allowing the Infant to cry near its Mother, is a Circumstance which might move her Compassion too strongly, and by that means retard the Elimination of the Secundines.

As these celebrated Authors furnish us with pretty plausible and specious Reasons, to support and authorize their different Practices, we shall, without condemning either, endeavour to keep a due Medium, and bring them as near to an Accommodation as we possibly can. When, therefore, the Infant is brought into the World, and laid upon its Side, the Operator is gently to pass his Hand along the Navel-string; and, if he does not find the Secundines adhering to the Womb, he is to attempt their Extraction before the Navel-string is tied. But if, in consequence of their strong Adhesion, he should not be able to bring them speedily away, he is to tie the Navel-string, cut it, and deliver the Infant to the Assistants; after which, he is to make the most proper and skilful Attempts he possibly can to bring away the Secundines.

When the Infant is disengaged from the Navel-string, which now hangs out of the Vagina, it is, in bringing away the After-birth, of great Service to the Operator, who must twist it about two or three Fingers of his Left Hand; then, passing his Right Hand up the Vagina, he must, with his Thumb and fore Finger, hold the Navel-string as near the Secundines as he possibly can; and, if, on drawing the Navel-string gently, he perceives the After-birth advancing gradually, there is some Hope, that he may soon bring it away. If, on the contrary, he perceives that it does not in the least yield to his Attempts, 'tis a Sign, that it as yet adheres too strongly to the Uterus. In this Case he must draw the Navel-string sometimes to the Right, and sometimes to the Left, in order gradually to disengage the Secundines. But this must be done gently, and without the least Degree of Violence.

The Operator must of Necessity implore the Aid, not only of the Nurse, who, after applying one of her Hands to the Region of the Uterus, is gently to press it, by passing her Hand several times from the Navel to the Os Pubis, but, also, of the Mother, who is to blow into one of her Hands shut, as if she

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ſhe was blowing into a Bottle; to retain her Breath, that the Breaſt being full of Air, the Diaphragm, and, conſequently the Bottom of the Uterus, may by that means be puſh'd downwards, to make the ſame Efforts as if ſhe was diſcharging her Excrements, and to put her Finger in her Throat, in order to excite a Vomiting. As all theſe ſeemingly trifling Circumſtances are often productive of happy Effects, they are by no means to be neglected.

If, notwithſtanding all theſe Meaſures, the After-birth cannot be brought away, the Operator muſt not loſe his Patience, ſince 'tis ſometimes half an Hour, and ſometimes ſeveral Hours, before it is diſcharged. In thoſe Mothers whoſe Blood is groſs and thick, who have eaten liberally, and had but little Exerciſe, the After-birth is with moſt Difficulty brought away, becauſe it adheres ſtrongly to the Womb.

If through Inadvertence, or a Want of due Patience, the Navel-ſtring ſhould be too ſtrongly pull'd, three Misfortunes might poſſibly enſue; for, firſt, it might be broken, a Circumſtance, which would render the Extraction of the After-birth very difficult. Secondly, by ſeparating the After-birth with too much Haſte and Precipitation from the Uterus, an Hæmorrhage might be produced, in conſequence of a Rupture of the Veſſels of the Womb. Thirdly, if the After-birth, which adheres to the Uterus, was pull'd too forcibly, it might bring along with it the Bottom of the Womb, a Falling down of which often occaſions the Death of the Mother.

A ſkilful Operator avoids all theſe Miſtakes, and gains his Point by Dexterity and Patience. When the Mother is completely delivered, the After-birth muſt be laid in ſome Veſſel, in order to be examined by the By-ſtanders, leſt, if any Misfortune ſhould afterwards befal the Mother, it ſhould be attributed to a Portion of the After-birth remaining in the Uterus.

As ſoon as the Woman is delivered, the Pudenda are to be covered with a moderately warm Cloth conſiſting of ſeveral Folds: She is to be ordered to bring her Thighs together, and ſtretch out her Legs: She is, alſo, to be kept very warm in Bed, and left for ſome time in a State of Repoſe, which is a grateful Alternative for her former Pain and Fatigue.

If the Operator ſuſpects, that the Parts have been too much diſtended, or injured, by the Largeneſs of the Infant, eſpecially in a Woman's firſt Labour, he muſt apply to them a Cataplaſm made with Eggs, and Oil of Nuts, mix'd together, and ſpread upon Lint, over which a large warm Cloth is to be apply'd for its more commodious Retention.

A great many Women uſe to take Syrup of Maiden-hair, Oil of ſweet Almonds, and Orange-juice, of which they make a Draught, to be taken ſoon after their Delivery, thinking by this means to alleviate their After-pains, and facilitate the Diſcharge of the Lochia: Others take Jelly-broths prepared of a Piece of Beef, Mutton, a Partridge, and Leeks. I ſhould preſer theſe Jelly-broths to the former Draught, ſince the Patient requires ſomething to ſupport and ſtrengthen, rather than to diſguſt and pall her Appetite.

Some Authors order, that the Mother ſhould not be allow'd to ſleep for a conſiderable time after her Delivery; but I believe this Advice is ſupported on no better Foundation, than that which directs a Perſon not to ſleep after Veneſection.

The Difficulty ſtarted above by the *French* Writers, relative to tying the Navel-ſtring, and bringing away the After-birth, may be very eaſily obviated; for a third Perſon, the Nurſe, for Example, may tie the Navel-ſtring, and ſeparate the Child from the Mother, whilſt the Operator brings away the After-birth. But as this is ſometimes attended with great Difficulty, and as Authors do not all agree together in the manner of doing it, the following Directions may poſſibly be of ſome Uſe to the Practitioner.

The *Secundines* are thoſe Parts, which, after the Birth of the Child, are diſcharged, as it were, by a ſecond Birth: Theſe conſiſt of the Navel-ſtring, the Membranes, or the Chorion and Amnion, by which the Fœtus was ſurrounded in the Womb, and, laſtly, the Placenta; theſe are what we call the *After-birth*. When the Placenta is excluded, the others generally accompany it, tho' ſometimes, after its Excluſion, a Part of the Membranes may continue adhering to the Uterus, and, by Putrefaction, produce very terrible Symptoms. The Secundines, immediately after the Birth of the Child, generally come away ſpontaneouſly, or by the Aſſiſtance of proper Efforts made by the Mother. 'Tis, however, in ſome Caſes, highly expedient to diſengage and extract them with the greateſt Caution and Circumſpection: When, for Inſtance, they do not follow the Child, either on account of their uncommon Largeneſs, or their ſtrong Adheſion to the Uterus; or when, in conſequence of the Breaking of the Navel-ſtring, the *Placenta*, with its annex'd Membranes, remains in the Uterus; for, unleſs theſe be extracted with all poſſible Expedition, 'tis to be dreaded, leſt the Mouth of the Uterus ſhould cloſe, and render their Extraction either highly difficult, or abſolutely impoſſible; in which Caſe they putrefy in the Womb, excite violent Pains, malignant Fevers, copious Hæmorrhages, and, as a great many Authors inform us, Death itſelf. Some Phyſicians, I know, maintain, that the Extraction of the Secundines by the Hand is ſuperfluous, ſince they either come away ſpontaneouſly ſoon after the Fœtus, or, when putrefied, are expelled a few Days, or, ſometimes, a few Weeks after. But I think the Advice of thoſe more ſafe and rational, who, unleſs the Secundines naturally follow the Fœtus, with *Hippocrates*, *Celſus*, and many of the Moderns, order them to be forthwith extracted by the Hand. I am induced to declare in favour of this Practice, not only by Obſervations of others, but, alſo, by Caſes which have occur'd to myſelf, where the Mothers, in conſequence of the Secundines being left in the Womb, have been ſubjected to violent Pains, malignant Fevers, copious Hæmorrhages, and even to Death itſelf. Unleſs, therefore, this Practice is contra-indicated by ſome Circumſtance of uncommon Importance, the Mother is not to be ſuffer'd to quit her Poſture, till all the Secundines are extracted, becauſe any Part of them, left behind, generally produces the moſt terrible Conſequences. This muſt be done with the greateſt Expedition, and immediately after the Birth of the Child, leſt the Mouth of the Womb cloſing ſhould prevent the ready Introduction of the Hand, and, by that means, render the Work very difficult, if not entirely impracticable. When, therefore, the Secundines do not immediately follow the Child, the Right Hand is forthwith to be paſſed along the Navel-ſtring into the Womb, where the Placenta is to be laid hold of, and extracted. But, if it ſhould happen to adhere pretty ſtrongly to the Womb, the Navel-ſtring is to be cut, and tied near the Navel of the Fœtus. Then the Part of the Navel-ſtring adhering to the Placenta is to be twiſted about the Fingers of the Left Hand, whilſt the Right is to be paſſed along it, and applied to the Placenta. See *Tab.* LIV. *Fig.* 13. which muſt be gently pulled by the Navel-ſtring, till, being ſeparated from the Uterus, it may be eaſily extracted. If by theſe Meaſures the End cannot be obtained, the Abdomen of the Mother is to be gently rubbed by the Hand of an Aſſiſtant, and ſhe is to be ordered, by coughing, and repeated Efforts, as in the Birth of the Fœtus, to attempt the Expulſion of the After-birth; by which means they are often happily diſengaged from the Womb, and excluded. But, in drawing the Navel-ſtring and Placenta, great Care and Moderation are neceſſary, leſt, by doing it with too much Force, the Womb, as it ſometimes happens by the Imprudence of Midwives, ſhould be drawn along with it, and the Life of the Mother expoſed to the moſt imminent Danger. When the Placenta is extracted, the Hand is again to be paſſed into the Womb, in order to remove Concretions of Blood, or the Remains of the Secundines, if there ſhould be any, becauſe, by leaving theſe, violent Pains, and dangerous Hæmorrhages, are excited. The Hand, alſo, is to be kept ſhut for ſome time in the Uterus, till it gradually contracts itſelf in an equable manner about it, ſince by theſe Precautions various Misfortunes, which would otherwiſe befal the Patient, are often prevented.

Theſe are the Rules laid down by late practical Authors; but I muſt remark, that the ſecond Introduction of the Hand is utterly ſuperfluous, provided the After-birth is brought away entirely by the firſt: Nor is it in the leaſt neceſſary to keep the Hand ſhut in the Womb, till it contracts.

When by theſe means the Adheſion of the Placenta to the Womb cannot be ſurmounted, 'tis neceſſary, by gently paſſing the Fingers between them, to diſengage the one from the other; which, as Experience teaches, may be done with no great Difficulty, eſpecially if any Part of it is already freed from the Womb, whilſt the Thumb is fixed at the Root of the Navel-ſtring, or Centre of the Placenta, and the other Fingers paſſed between the diſengaged Part of it and the Womb; by which means it may be gradually more and more diſengaged, till at laſt a total Separation renders its Extraction eaſy. But, when all the Parts of the Placenta adhere firmly to the Womb, the Caſe is far more difficult: We are, however, to endeavour by the Fingers, eſpecially the fore and middle Fingers, firſt gradually to diſengage ſome Part of its Edges from the Womb; and, when the Whole is diſengaged, to extract it in the manner already directed. But if, in conſequence of a ſtrong Adheſion, this cannot be done, the Placenta is to be perforated in the Middle, and gradually diſengaged by that means. But all theſe Meaſures muſt be taken with the greateſt Caution, leſt, by the Nails of the Fingers, or the Violence of the Pulling, the Womb ſhould be injured, or forcibly extracted along with the Secundines; for we know from Experience, that Caſes ſometimes occur, in which the Extraction cannot be performed without the Application of conſiderable Strength; and *Paré* mentions a Caſe, in which the Secundines could not poſſibly be extracted by any Art. Misfortunes of this Kind, eſpecially when the Placenta is forcibly torn from the Uterus, generally prove mortal to the Mother. Unleſs, therefore, they can, without great Force and Violence, be diſengaged; it ſeems,

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more expedient, for some time, to abstain from manual Operation, and rather to seek Relief from forcing Medicines, the most powerful of which are, the Powder of the dried Liver and Bile of an Eel, or Myrrh and Borax reduced to a Powder, and frequently exhibited to the Patient in Peny-royal, or Cinnamon-water, or aloetic Pills, or some other Medicines of a like Nature; to which we may add a strong Clyster, or Suppository, to stimulate the Anus, or a sternutatory Powder, which was long ago recommended by *Hippocrates*. When these Steps are taken, it is more prudent to commit the rest of the Work to Nature, than forcibly to tear away the Placenta, perhaps, strongly adhering to the Womb; by which means the Uterus may be violently dilacerated, and the Mother exposed to terrible Calamities, and, perhaps, to Death, as many Authors have observed. The like Care and Caution are to be observed, when, by the Ignorance of the Midwife, the Mouth of the Womb is suffered to close so far, that the Hand cannot have Access to extract the Secundines.

When the Navel-string, either by the Rashness of the Midwife, its own Weakness, or its Putrefaction, especially when the Fœtus has remain'd dead for a considerable time in the Womb, happens to be broken, especially near the Placenta, so that it can no longer be a Guide and Direction to the After-birth, it is, especially when strongly adhering, with great Difficulty found, because by the Touch alone it cannot easily be distinguished from the Womb, which by an unskilful Hand may be laid hold of, and injured, instead of the Placenta. The After-birth is, therefore, by the Touch to be carefully distinguished from the Womb. When some Part of the Navel-string as yet remains of the Placenta, the former is to be laid hold of, and the latter gently extracted by it; but, when it is wholly broken off, the Placenta is to be distinguish'd from the Womb by its vascular and uneven Substance, in which are perceived Blood-vessels, like those presented in *Tab.* LIV. *Fig.* 13. When the Placenta is thus found, it is, by moving the Hand sometimes one Way, and sometimes another, to be gently separated from the Womb, and extracted; which may be more commodiously done, if the Operator, with his other Hand, gently compresses that Side of the Abdomen which is hard, prominent, and contains the Placenta; or he may order this to be done by an Assistant. We must here observe, that tho' *Deventer*, and some others, affirm, that the Placenta is always lodged in the Bottom of the Womb; yet *de Graas*, *Slevogtius*, *Hoorn*, *Brunner*, and *Heister*, have found the contrary: For which Reason, if it is not found in the Bottom, it is to be sought for in the Sides, the posterior or anterior Parts, and, when found, disengaged and extracted. When 'tis taken away, we are carefully to examine, whether 'tis entire, or whether any Part of it is left: If this latter Circumstance should happen, the Part left is to be sought for, and carefully extracted, together with the concreted Blood.

Ruysch, a celebrated Physician at *Amsterdam*, in a small Book wrote for that Purpose, maintain'd, that an artificial Separation of the Placenta, when it did not follow the Hand, [illegible] swing gently, was by no means to be attempted, but left to [illegible] Efforts of Nature, and the Assistance of a certain orbicular [illegible]uscle in the Bottom of the Uterus, destined for this Purpose. This Author affirms, that by a long Course of Experience he had been taught, that unlucky Consequences were always produced by introducing the Hand into the Womb, in order to separate the Placenta from it; and that many Women, on whom this Operation had been perform'd, were destroy'd by it; whereas almost all those Women, in whom the Secundines adhering firmly, had been left to the Efforts of Nature, happily recovered, and had the Placenta, together with its Appendages, expelled. He, therefore, advises the Practitioner never to make a rash Attempt of this Kind. But as I myself, says *Heister*, and other skilful Operators and Midwives, have known many Patients destroy'd by leaving the Secundines in the Uterus, so I am, says he, persuaded, that *Ruysch* does not, as some imagine, forbid every Extraction of the Secundines, but only a forcible and violent one, as is obvious from his *Adverss. Anatom. Dec.* 2. Those Secundines, therefore, which require the Assistance of Art to disengage and extract them, are not to be left in the Uterus: But when they cannot be extracted without uncommon Violence, which is rarely the Case, or when the Mother is seized with Convulsions, they are to be left to Nature, and the Patient is to be treated with proper Medicines; for the Operator, when he can do no Service, is carefully to avoid doing any Injury; and in Process of Time the Secundines may be spontaneously and happily expel'd, Instances of which have occurred to a great many Practitioners. *Leporinus* wrote a Treatise in *High Dutch* on purpose to contradict the above-quoted Doctrine of *Ruysch*: *Cohausen*, also, opposes the Sentiments of *Ruysch*, with respect to deferring the Extraction of the Secundines.

If, after the Birth of one Child, there should remain another, or more, in the Womb, the Secundines of the first are by no means to be extracted, till all the Infants are brought into the World; for I and others, says *Heister*, have been experimentally taught, that by a Neglect of this Caution violent Hæmorrhages have been brought on, not only mortal to the remaining Infants, but, to the Mother.

When from the Neglect of a seasonable Extraction the Secundines are become putrefied, we must take proper Measures to prevent the Corruption of the Womb at the same time. If, therefore, the Secundines cannot be extracted with the Hand, the Womb is to be preserved from Putrefaction, by frequently injecting every Day, by means of such a Syringe, as those represented in *Tab.* XXVII. *Fig.* 12. 13. and some vulnerary Decoction, such as that, for Instance, which is prepared of Agrimony, Germander, or Wormwood, with the Addition of a certain Quantity of the Honey of Roses, and Elixir Proprietatis; acrid Clysters must, also, be injected; and these Measures must be persisted in, till no corrupted and heterogeneous Matter is perceived to remain in the Womb. Such Medicines must at the same time be used, as have a Tendency to prevent Putrefaction, and expel the Secundines.

When the Placenta, in consequence of a spasmodic Constriction of the Uterus, is retained, as it were, in a kind of Bag; Instances of which are recorded by some modern Authors; this Case is found very difficult, especially to Practitioners ignorant of this Circumstance, who may possibly conclude, that the Secundines are entirely wanting. But such Operators as are acquainted with Cases of this Nature, take the Navel-string for their Guide; pass their Hand along it; and when they have reached the Mouth of this Bag, which shuts like the Mouth of the Womb immediately before the Birth, they introduce first one or two Fingers, and then the others, formed in the Figure of a Cone, into the Mouth of it, which, by expanding their Fingers, they dilate, till the whole Hand can have Access; and then laying hold of the Placenta, they extract it with due Care and Circumspection. The Reader who desires a Variety of Observations, with respect to the Retention of the Secundines, may consult *Mauriceau*, *La Motte*, and *Cohausius*. *Heister. Chirurg.*

When 'tis not possible to introduce the Hand into the Womb, in order to bring away the Placenta, by reason of the ill Conformation of the Bones, which form the Pelvis, *La Motte* advises to draw gently at the Umbilical Cord, and at the same time to make the Woman bear down strongly, to shut her Hand, and blow in it, and to put her Finger down her Throat, and make herself reach.

The same Author affirms, that the Mouth of the Womb never obstructs the Introduction of an Hand, provided the Bones of the Pelvis will admit of it.

He, also, gives an Instance where the Hand could not be introduced, because the Bones which form the Pelvis, lay too near each other; and the Umbilical Cord breaking, he was obliged to leave the Expulsion thereof to Nature; and it came away three Days after, and the Woman did well.

This Author seems to have a very bad Opinion of forcing Medicines, when the Placenta stays behind, or a dead Child; and advises to trust to Nature.

After the Placenta has remain'd a Day, or longer, in the Womb, it may frequently be separated and brought away by introducing four Fingers only. *La Motte.*

La Motte affirms, contrary to the common Opinion, that the longer the Placenta has remain'd in the Womb, the more easily is the Mouth of the Womb dilated, the Parts being relaxed by the continual Humidity of what is discharged.

When a reddish Serosity, inclining to black, is discharged from the Womb, accompanied with violent After-pains, 'tis a certain Sign, that a Portion of the Placenta, or Membranes, remain in the Womb, and then a Finger, or two, or more must be introduced, as it seems necessary, and the remaining Parts must be brought away.

La Motte once met with a Placenta, that was not one third so thick as usual, but membranous like an empty Bladder, and attached to all the internal Circumference of the Womb, as others are to the Bottom.

Miscellaneous Observations.

When the Uneasiness about the Loins, and the other Circumstances mention'd above, change into true Labour-pains, they press strongly on the lower Part of the Belly, and terminate at the Uterus and Vagina; mean time the Pains grow stronger, and all the other Accidents above-mention'd increase, as the Head of the Child sinks lower into the Pelvis, and advances in the Passage; and then the Woman perceives frequent Motions for a Stool, and to make Water, without being able to do either.

Whilst the Woman is in Labour, she must, from time to time, be admonish'd to draw in her Breath leisurely, and not on a sudden, for fear of the Child's receding when she inspires.

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If the Woman is weary of a conſtrain'd Poſture, ſhe may, betwixt the Pains, be at Liberty to eaſe herſelf, by laying her Legs ſtrait, or ſomewhat altering her Poſture.

Nobody muſt be ſuffered to whiſper in the Room, on any account whatever.

La Motte gives ſeveral Inſtances of Delivery being retarded by Accidents ſeemingly inconſiderable: As, by ſomebody whiſpering in the Room, which, giving the Woman Apprehenſions of great Danger, has thrown off the Pains for many Hours. He, alſo, gives an Hiſtory of a Lady, whoſe Pains ceaſed, upon ſome Apprehenſions ſhe had, leſt any thing ſhould be indecently expoſed to his View, whilſt he was laying her. And, he tells us of another, whoſe Pains entirely ceas'd, upon a Perſon's being in the Room, whom ſhe did not care to have there; and which did not return, till ſhe left the Room.

Nothing retards the Birth of a Child more, than violent Screaming, during the Pain; and, beſides, it cauſes an Hoarſeneſs, great Heat of the Lungs, and Pain in the Head. The Woman muſt, therefore, keep her Mouth ſhut, and force downwards, as much as ſhe can.

In a Labour, it is ſeldom of any Service, to be frequently touching the Parts, and endeavouring to dilate the Mouth of the Womb, by rounding the Child's Head, with the Fingers. On the contrary, it may, and often does, do Miſchief, by inflaming the Parts, and making them ſwell, eſpecially in a long Labour. *La Motte.*

The laſt quoted Author will not allow, that the firſt Labour is more difficult than any of the reſt.

He, alſo, ſays, that the Potion ſo much boaſted of by *Mauriceau* for promoting Delivery, made of an Infuſion of Sena, and the Juice of a *Seville* Orange, is ſo far from doing good, that it does a great deal of Harm.

He recommends Broth, as the very beſt thing that can be given to a Woman in Labour, provided ſhe can drink it without vomiting it up again. The beſt thing, next to this, he ſays, is a Toaſt and Wine.

He gives an Inſtance of a Woman in Labour, whoſe Child was well ſituated, and far advanced in the Paſſage; but her Pains were ſlow and weak. The Midwife, through Haſte, had imprudently broke the Membranes. He gave her ſome Nouriſhment, and put her to Bed, where ſhe lay from Ten at Night, till Five in the Morning; and then, her Pains augmenting with Violence, ſhe was ſoon delivered.

He gives ſeveral Inſtances of the Waters flowing off ſeveral Weeks, and even Months, before Delivery; notwithſtanding which the Woman has gone out her Time, and been delivered of a living Child. Hence he takes Occaſion to caution againſt delivering a Woman too ſoon, before Nature declares the Labour, and is ready for the Expulſion of the Child.

Tho' in the Beginning of a Labour all Circumſtances ſeem favourable, and to promiſe a ſpeedy and ſafe Delivery, yet it is not always certain, that the End will be anſwerable to ſo happy a Beginning, many Circumſtances intervening, which may cauſe a long and difficult Labour, and which cannot at firſt be foreſeen.

La Motte ſays, that at certain Seaſons a great Number of Women will die after being well delivered, and without any Accident enſuing, tho' of a good Conſtitution, and that without any apparent Cauſe; and this he attributes to the epidemical Influence of the Air.

This Author is very much againſt Swathing a Woman during her Lying-in; for, he ſays, if it is done never ſo little too tight, it may cauſe a Suppreſſion of the Lochia, inſupportable Pains, Reſtleſneſs, Want of Sleep, Nauſeas, Cough, Belchings, Vapours, and Oppreſſion, which ſoon go off after the Bandage is relax'd, or taken away.

The Moment the Head of the Child is born, the Midwife ſhould apply both Hands flat, one on each Side upon the Ears, and take the Advantage of the Pain that brings it ſo far, to bring the reſt into the World. *La Motte.*

La Motte tells us, that he was never in any Pain about the Length of a Labour, provided the Membranes were not broke, nor the Waters run off; and ſays, he ſcarcely ever broke them, unleſs he was obliged to do it by ſome dangerous Accident happening in the Beginning, or unleſs there were ſome ſtrong Reaſons to apprehend it. And he adviſes all Midwives to follow his Advice, and wait with Patience, till the Membranes break, by the Force of the Pains.

When the Waters run off at the firſt Pains, and leave the Parts dry, it cauſes the Woman a great deal of Trouble, eſpecially if the Pains happen to be ſlight, and ſo diſtant, that they ſerve more to weaken the Woman, than to promote the Birth.

In ſuch a difficult Caſe, *La Motte* adviſes Patience, and by no means to fatigue the Woman, but to give her now-and-then ſome Nouriſhment eaſy of Digeſtion, as Broths, or a Toaſt and Wine, that, by keeping up her Strength and Spirits, ſhe may be enabled to wait for, and ſupport Pains, ſufficient to bring the Child into the World; and, when ſuch come on, the Defect of the Waters is to be ſupplied by Unctions. If the Waters continue dribbling, 'tis a certain Sign of a tedious Labour.

A Woman's Pains are never ſtrong, ſo long as the Waters continue dribbling; but always grow ſtronger, when that ſtops; and then the Labour generally comes forwards. *Giffard.*

The Method of letting off the Waters, when the Membranes are too ſtrong to be broke by Pains, is to perforate them with a pointed Probe, introduced carefully along the Hand, or betwixt the Fingers.

La Motte is of Opinion, that the Waters ſhould ſeldom or never be let off, by breaking the Membranes, unleſs when the Child is born coifed (as 'tis called); and then, if the Membranes are not broke, the Child will be ſuffocated. When the Membranes precede the Head of the Child, in the manner abovementioned, they make an Appearance, as if a Bladder, with a little Water in it, hung out of the Vagina.

It often happens, that, immediately after the Waters are run off, the Pains ceaſe for ſome time; which is an Happineſs to the Midwife, when the Child preſents wrong, or the Hand is to be introduced into the Uterus upon any Occaſion; becauſe, during a Pain, 'tis neither proper nor convenient to do it.

When black and thick Waters are diſcharged from the Uterus, 'tis cauſed by the Meconium diluted in a Portion of the Waters; and is a certain Sign, that the Child preſents in ſome unnatural and conſtrained Poſture. *La Motte.*

Sometimes the Waters will be diſcharged in great Quantities, in the eighth, ſeventh, ſixth, and even fifth Months of Pregnancy; of which *La Motte* gives many Inſtances, and takes Occaſion from hence to caution againſt attempting the Delivery too ſoon, before Nature declares itſelf ready; for, notwithſtanding this Diſcharge of Waters, a Woman may go out her full Time.

La Motte, Obſ. 334. gives the Hiſtory of a Caſe, where a great Quantity of Waters were diſcharged ſuddenly from the Womb, without any Pain, about the End of the ſeventh Month, the Woman being extremely big. Upon touching, he found the Os Internum dilated enough to admit of the Introduction of one Finger with Eaſe; and found the Child in its Membranes entire, and no Deficiency of Waters. He adviſed a little Reſt, and the Woman in a Day's time was very well, and about her Buſineſs, and went out her full Time. This was a true Hydrops Uteri. Hence the Author takes Occaſion to caution againſt delivering a Woman too ſoon, without Neceſſity.

He farther remarks, that, when there are great Quantities of Waters, the Children, tho' moderately large, are born either very weak, or dead; that the Umbilical Cord is very large but weak, and ſubject to break or ſeparate from the Placenta at its Root. The Placenta, alſo, is very large, and eaſy to ſeparate from the Uterus.

If the Umbilical Cord is tied too near the Child's Belly, an Inflammation may enſue; if too far off, an Omphacele. If the Ligature is too ſlack, the Blood may eſcape through it; if too tight, it may cut through the Navel-ſtring, and cauſe a fatal Hæmorrhage.

If, by any Accident, the Umbilical Cord is broke off pretty near the Belly, ſo as not to admit of a Ligature, *La Motte* adviſes to lay a little Button, or Pledgit, of Lint upon it, upon that a Plaiſter of Diapalma, then a Compreſs, and proper Bandage to retain it, till the Place is cicatrized, which ſometimes does not happen in ſeven or eight Months.

The Umbilical Cord ſhould be tied about two Inches from the true Navel.

Of the Touch.

With reſpect to the Touch, *La Motte* is of Opinion, that it is in vain to touch a Woman in the extreme Violence of her Pain, becauſe at that time the Waters are puſhed downwards with ſo great Violence, and ſuch Quantities, that it is impoſſible to know any thing certain with regard to the Situation of the Child: We are, therefore, to wait till the Pain is entirely over, or at leaſt, conſiderably abated.

Deventer is of Opinion, that the Woman ſhould be touched before the Pain begins; for then the Membranes, which contain the Waters, are lax, and therefore the Situation of the Child may be eaſily diſcovered; but then the Hand is not immediately to be withdrawn, but to be kept in the Vagina during the whole Pain, and even after it is over; for, during the Violence of the Pain, we may perceive, whether the Child keeps conſtantly preſenting towards the Orifice, in what Form the Waters are diſpoſed, whether long and ſlender, or flat and broad, whether the Pains are violent, or leſs ſharp; and, when the Pains are over, we may eaſily perceive, whether the Pains have profited, or not, that is, whether they have made the Child ſink lower. But, during the Touch, Care is to be taken, leſt the Membranes, which contain the Waters, ſhould be broke by too rough handling, eſpecially when they are much diſtended by the Vehemence of the Pains.

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A modern Author lays it down as a Rule, that the Situation of the Child is to be examined into during the Violence of the Pains. If he means before the Membranes are broke, the above-mention'd Writers ſeem to have more Reaſon on their Side.

The Uſes of the Touch are many; for by this are known, 1. Whether a Woman is with Child or not; for ſome affirm, that, in the firſt two Months after Impregnation, the Womb is cloſely ſhut, and hence appears in the Vagina to the Touch more acuminated, hard, and more ſolid; but this Hardneſs does not appear like that of a Scirrhus, from which it is eaſily diſtinguiſhed. *Mauriceau* compares the Mouth of an impregnated Womb to the Mouth of a Puppy juſt whelped, and ſays, that it is exactly ſhut, and a little longer than before.

Deventer is of Opinion, that it requires a great deal of Practice to judge of Impregnation by the Touch; and even then a Man may be miſtaken.

However, as the Time of Geſtation proceeds, the Orifice of the Womb grows ſhorter, more flat, and thin; and it is obſervable, that, in Women who have had frequent eaſy Labours, the Mouth of the Womb is ſo flat, ſoft, and attenuated, that often in the ſixth, or ſeventh Month it opens, and the Child may be perceived to move within the Membranes.

The Mouth of the Womb, as the Woman advances in her Pregnancy, through the Extenſion of the Womb, diminiſhes ſo in all its Proportions, that, when the Woman comes near her Reckoning, it is perfectly flat, and almoſt equal with the Globe of the Womb; ſo that it becomes like a ſmall Circle, a little thick at its Entry, where the Garland is made at the Time of Labour. *Mauriceau.*

Dionis is of Opinion, that one may know the very Time, and even the very Day, that a Woman will fall in Labour, by the Touch. This Author ſays, that the internal Orifice, which has preſerved its Thickneſs and Solidity duing the firſt Months of Geſtation, begins in the later Months to extend itſelf, and grow flat; and, in proportion as the Time of Delivery approaches, its Bigneſs diminiſhes, inſomuch that, at laſt, it is only to be diſtinguiſhed from the Body of the Womb by a ſmall Protuberance, which makes the Garland in the Time of Labour. He gives us an Inſtance of a Midwife at the *Hôtel Dieu*, who touched thirty-five Women one Afternoon, and foretold exactly which would come firſt, which next, and ſo of the reſt in Order.

2. The next thing to be learned from the Touch, is, whether the Time of Delivery is near at hand, or at a Diſtance; and, in order to judge of this, if we conſider what has been ſaid before, it will appear, that the more thin, ſoft, and flat, the Mouth of the Womb is, the nearer is the Time of Delivery.

The Mouth of the Womb is, in ſome Women, ſo dilated before Labour comes on, that two or three Pains at moſt are ſufficient to bring the Child into the World. In others, again, whoſe Child is ill ſituated, and eſpecially in thoſe who are robuſt, advanced in Years, and with Child for the firſt time, the Mouth is ſo ſtrongly cloſed, that it requires very ſtrong Pains in order to open it: And hence we take a Prognoſtic of an hard and difficult Labour.

This Mouth is very different in Women of an advanced Age, ing of the firſt Child, robuſt, and uſed to labour, from what it is in a tender young Woman, that has never ſuffered any Fatigue, and that has been tenderly brought up.

It is farther to be obſerved, that the Orifice of a Womb, which lies obliquely, has a very different Appearance from one that lies ſtrait. The Orifice of a Womb, in a direct Situation, ſinks lower into the Pelvis, and may eaſily be felt all round with the Fingers; on the contrary, the Orifice of an oblique Womb lies ſo high, that it ſometimes can be ſcarcely touched at all; or, if it lies within Reach, only one half of it can be touched.

3. Again, we know by the Touch, whether the Pains with which a Woman is ſeized are genuine or not; and the Knowledge of this is of a good deal of Conſequence to the Woman; becauſe, on the one hand, it is very imprudent to retard genuine Pains; on the other, when the Colic, or Gripes, or ſpurious Pains, are miſtaken for genuine Labour, it may endanger the Life both of the Woman and the Child, to endeavour to promote them by propelling Medicines, or otherwiſe.

If the Woman is ſeized with Pains about the ſeventh Month, or at any time before the ninth complete, they are rather to be ſuſpected as not genuine, and of conſequence not to be promoted; but if, even before the ſeventh Month, true Labour declares itſelf, it is not to be retarded, but aſſiſted.

Genuine Pains, therefore, are eaſily to be diſtinguiſhed by the Touch; for, if the Pains are ſpurious, the Mouth of the Womb will be cloſer ſhut, as ſoon as the Pain is over; and, on the contrary, if the Pains are genuine, the Mouth will be more dilated and relaxed, when the Pain is gone; and therefore the Mouth muſt be felt before, during, and after the Pain.

4. We diſcover by the Touch, whether a Woman in Labour will have an eaſy or difficult Time; for if the lower Part of the Womb, together with the Head of the Child, is ſunk into the Pelvis, in ſuch a manner as to be eaſily felt, as if entering into the Vagina, without being obliged to introduce the Fingers a great Way into the Body, then an eaſy Labour is to be expected.

Again, if the Mouth of the Womb is perceived to be thin, ſoft, and very much dilated, and by its Opening the Head of the Child is felt to preſent firſt to the Birth, without either the Arm, or Umbilical Cord appearing, it is a certain Sign of an eaſy Labour, which nothing can hinder, but the Want of ſufficient Pains.

Laſtly, if the Waters are formed very broad and flat, an happy Delivery is ſoon to be expected.

On the contrary, if the Mouth of the Womb is at a Diſtance very little, if at all, dilated, pointed, thick, and hard, and the Waters contracted lengthways, a difficult Labour is to be expected.

5. We learn, again, by the Touch, whether the Child is well or ill ſituated. The Situation of the Child is to be examined into, by the two firſt Fingers well anointed with Butter, Oil, or Lard: The Right or Left-hand is to be made uſe of according to the Convenience of the Midwife; for the Poſition of the Woman, and Situation of the Child, ſometimes render the Right, and ſometimes the Left-hand, moſt commodious.

With two Fingers we are better able to take Meaſure of the Bulk and Condition of any Part we have a mind to examine, than with one; and hence, by introducing two Fingers, we are better enabled to judge of the Mouth of the Womb when ſhut; and, when open, how much it is dilated; as, alſo, how, and in what manner, the Head, or other Parts, preſent.

Care muſt be taken, that the Nails are pared ſhort and ſmooth, without any Angles.

The Fingers muſt be paſſed directly through the Vagina, rather tending downwards than upwards, till they are paſſed the Bones; and then they are to be turned upwards towards the Navel, where they will meet with the Womb.

It is to be obſerved, that the Chin of a Child, that is rightly ſituated, is inclined towards its own Breaſt, and the Vertex is placed in the Middle of the Mouth of the Womb, or elſe comes farther into the Vagina; but, in order to perceive this diſtinctly, it is neceſſary, that the Mouth ſhould be open enough to admit of at leaſt one or two Fingers.

When the Mouth of the Womb is very much dilated, the Head of the Child comes a good deal more forwards than the Margin of the Mouth; and then the Fingers cannot be introduced farther than betwixt the Margin of the Mouth, and the Head of the Child.

The Buttocks, Knees, or Elbow, alſo, appear round, when they preſent to the Orifice, but may be eaſily diſtinguiſhed from the Head; for the Globe of the Head is much more broad and flat than either the Knee or Elbow, and is much harder than the Buttocks: Beſides, the Head may be diſtinguiſhed by that ſoft Membrane which lies betwixt the Bones, and is called the *Fontanella*.

It is of a good deal of Conſequence to diſtinguiſh the Head from the Buttocks, Knee, Elbow, Hands, Feet, Umbilical Cord, and Placenta, before the Membranes are broke, or the Waters flow'd off; and a Neglect or Error of this Kind is ſometimes attended with very ill Conſequences.

Some Women are eaſy to be touched, others very difficult. The firſt have generally very eaſy Labours; becauſe, in them, the Head of the Child is ſunk into the Pelvis, and points directly to the Birth; in the others, an ill Poſition of the Womb, or bad Situation of the Child, or both, generally render the Labour difficult.

In order to diſtinguiſh well the Poſition of the Womb, it muſt be obſerved, that, when the Womb is in a direct Situation, the Vertex of the Child falls down of its own Accord into the Cavity of the Pelvis, and the Mouth of the Womb is eaſily felt at the Extremity of the Vagina; but if the Child is well-ſituated, and, at the ſame time, the Mouth of the Womb, with the Head of the Child, is placed very much backwards towards the Os Sacrum and Vertebræ, it is a certain Sign, that the Body of the Womb is not in a direct Situation, but hangs too forwards, as it frequently happens in Women whoſe Bellies are large, and hang very much down: And hence it comes to paſs, that the Mouth is touched with Difficulty, being thrown towards the Inteſtinum Rectum, and Os Coccygis.

On the other hand, if the Mouth of the Womb is thrown forwards againſt the Os Pubis and Bladder, and for that Reaſon cannot ſlide down into the Pelvis, we may be certain, that the Body of the Womb lies too far backwards towards the Vertebræ of the Loins; and for that Reaſon is not in a direct Poſition.

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But if the Mouth of the Womb, and Head of the Child, are felt very much on the Left-ſide towards the Os Ilium, we may be ſure, that the Body of the Womb has an oblique Poſition, that is, lies too much on the Right Side. In the ſame manner, if the Mouth of the Womb, and Head of the Child, are perceived inclining to the Right Os Ilium, the Body of the Womb has certainly an oblique Poſition, and lies too much on the Left-ſide.

In the four laſt-named Poſitions of the Womb, the Woman is touched with ſome Difficulty: The Mouth of the Womb lying out of the Way, and at a Diſtance, a difficult Labour is to be expected.

6. By the Touch we, alſo, learn what is to be done, in order to aſſiſt the Mother and Infant, during a difficult Labour.

7. We are taught by the Touch, whether a Woman ſhould be delivered before the Time of Geſtation is complete, or not.

It frequently happens, that before the common Period a Woman is ſeized with violent Floodings, attended with Faintings and Convulſions. This is cauſed by a Fall, a Blow, Concuſſion, or ſome Injury, or elſe by violent Paſſions of the Mind, as Fear, or Sorrow. In this Caſe, the whole *Placenta*, or a Part of it, is detached from the Womb, and the Woman muſt continue to flood, ſo long as the Womb is kept diſtended with its Contents: The only Remedy, therefore, is to deliver the Woman immediately, no Medicines being of the leaſt Efficacy in this Caſe.

However, this Hæmorrhage muſt be diſtinguiſhed from the menſtrual Flux, which ſome Women ſuffer for the five or ſix firſt Months of their Pregnancy, and ſometimes longer; and it muſt, alſo, be diſtinguiſhed from another Evacuation of Blood, to which ſome Women, eſpecially thoſe who are plethoric, are ſubject; which ſometimes happens ſuddenly, and in conſiderable Quantities, without any ill Conſequences attending.

The menſtrual Flux proceeds leiſurely, without any other Pains than ſuch as are common upon the like Occaſion, when a Woman is not with Child.

The other extraordinary Flux, tho' more ſudden and abundant; yet, by proper Care and Remedies, ceaſes in a few Days, ſometimes Hours.

But thoſe Floodings which deſtroy the Woman without an immediate Delivery, break out ſuddenly, and in abundance, and flow without Intermiſſion; except that ſometimes they ſeem to abate, when the clotted Blood forms an Obſtruction, which is only temporary: Upon this Occaſion, the Mouth of the Womb will be found by the Touch to be ſomewhat open, and the Secundines, if entirely detached from the Womb, will be felt lying upon the Orifice, and then the Delivery is as much as poſſible to be haſtened; and, tho' the Secundines cannot be felt, yet it is poſſible they may be detached from the Womb: Therefore, if Medicines have no Effect, if the Flux is continued, and if Faintings and Convulſions increaſe, it is abſolutely neceſſary to deliver the Woman immediately, without any regard to the Age of the Fœtus, or the Time of Geſtation; nor are we to wait for Labour-pains, becauſe few Women in this Condition have any, or at leaſt, any that are ſufficient to expel the Fœtus. Therefore one Finger is firſt to be introduced into the Uterus, then two, and ſo by degrees the whole Hand. The Fingers are ſometimes to be extended lengthways, and joined; ſometimes to be bent and expanded, in order to dilate the Orifice. Then, if the Membranes preſent firſt, they muſt be perforated with the Fingers; after which, the Child is to be brought away by the Feet, and the Afterbirth to be fetched away as ſoon as poſſible. In caſe the Placenta ſhould preſent firſt at the Orifice, that muſt be perforated in the ſame manner as the Membranes. See ABORTUS.

At the time of Labour, when the Mouth of the Womb lies very high, or very far backwards, ſo as not to be felt by the Fingers, the whole Hand ſhould be paſſed to make a proper Examination by the Touch. There is no great Difficulty in doing this, eſpecially when the Woman has had Children before. *Giffard.*

La Motte ſays, that, when the Waters are in a ſmall Quantity, the Situation of the Child may be diſcovered by the Touch during the Pain; but, when they are in great Quantities, the beſt Time to touch the Woman is, when the Pain is juſt gone off.

Hippocrates, in his Treatiſe *de Natura Muliebri*, informs us, that, if the Mouth of the Womb is grown hard, I ſuppoſe he means ſcirrhous, it may be perceived by the Touch; and, in another Paſſage, he ſays, it feels rough.

In another Part of the ſame Work, he takes notice, that, in a Dropſy of the Womb, the Mouth thereof feels thin, and is ſcarcely perceptible.

When a Phyſician is call'd to a Woman in Labour, he ought, above all things, carefully to inquire of the Midwife, what the particular Poſture of the Fœtus is; whether natural, or unnatural. The moſt natural Poſture of the Infant is generally thought to be that, in which it preſents with its Head turned downwards in ſuch a manner, that its Face lies towards the Inteſtinum Rectum, its Occiput towards the Bladder, its Feet towards the Bottom of the Womb, and its Vertex, or Bregma, directly oppoſite to the Mouth of the Womb, as in *Tab.* LIV. *Fig.* 2. All other Poſtures and Attitudes are accounted unnatural. There are two of theſe, however, which, tho', ſtrictly ſpeaking, they are not natural, yet approach very near to it, and may, without any great Impropriety, come under that Denomination, ſince in them the Infant is born alive ſpontaneouſly, and with far leſs Aſſiſtance than is requiſite in other difficult Labours. One of theſe is, when the Fœtus preſents with its Feet firſt; and the Infants brought into the World in this manner, are call'd *Agrippæ*, becauſe a celebrated *Roman* of that Name was born in this Poſture, as is repreſented in *Fig.* 3. The other Poſture, which approaches pretty nearly to that which is natural, is when the Nates, or Buttocks, preſent themſelves to the Mouth of the Uterus, and the Infant endeavours to force its Paſſage from the Womb, with its Body almoſt doubled, as in *Fig.* 4. But theſe two Poſtures are not always attended with equally happy and ſucceſsful Labours; for if the Delivery ſhould not be carefully promoted by ſome ſkilful Hand, but the Infant ſhould be retain'd in the narrow Paſſage for a conſiderable time, it muſt in Proceſs of Time die, in conſequence of the ſtrong Compreſſion made both upon itſelf, and the Navel-ſtring. However, when the Feet preſent firſt, the Infant may not only be more eaſily preſerved, but, alſo, if the Work is duly gone about, more commodiouſly and ſpeedily extracted, eſpecially with the Help of a ſkilful Aſſiſtant. And, to ſpeak my Mind freely, I am of Opinion, that, when other Circumſtances are favourable, this Poſture is highly commodious for the Operator, becauſe in it he has an excellent Opportunity of relieving the Mother, as will appear from what follows. But, if the Infant ſhould preſent in another, and a leſs favourable Poſture, a great Variety of which daily occurs, ſuch as thoſe exhibited in *Fig.* 5. 6. 7. 8. 9. 10. 11. 12. the Delivery may not only be difficult, and ſometimes unpracticable, but, alſo, the Lives of the Mother and Fœtus expoſed to palpable Danger, without the ſkilful Attempts of a judicious Aſſiſtant. See AGRIPPÆ.

With reſpect to the Situation and Poſture of the Infant in the Uterus, unleſs 'tis indicated by the Prominence of the Hand, the Foot, or ſome other Part, we muſt get Information from the Midwife; and, leſt ſhe, in conſequence of her Ignorance, which is ſometimes ſurpriſingly great, ſhould give an unjuſt and fallacious Repreſentation, we are, in the manner already directed, to introduce a few of our Fingers, or, if the Mouth of the Womb is ſufficiently dilated, the whole Hand, in order to make this Diſcovery. But this is to be done when the Pains remit. If the Head is contiguous to the Mouth of the Womb, which is to be carefully diſtinguiſhed from other Parts, and if the Infant is, by the Hand or Fingers, found to be in a due and natural Situation, and the Labour, at the ſame time, does not ſucceed happily, we are from theſe Circumſtances to conclude, that there is ſome Fault in the Mother; ſuch as a Redundance of Blood, Weakneſs, or Narrowneſs, an Obſtruction or a Swelling of the Parts, an oblique Situation of the Uterus, or ſome other Imperfection; or, if neither of theſe ſhould be the Caſe with the Mother, we are to conclude, that the difficult Labour proceeds from ſomething preternatural in the Fœtus, ſuch as an exceſſively large Head, or an incommodious Situation of it, when, for Inſtance, it firſt preſents the Chin, the Face, the Ears, the Occiput, the Shoulder, the Arm, the Breaſt, the Back, or other Parts, which ought not to preſent themſelves. If the Patient has neither ſufficient Strength, nor due Pains, whilſt, at the ſame time, the Situation of the Infant is natural, or if the Delivery cannot ſucceed on account of the Narrowneſs of the Parts, as in Women under their firſt Labour, or by reaſon of the Largeneſs of the Infant's Head, 'tis, in this Caſe, neceſſary the Patient ſhould be relieved by corroborating Medicines, and ſuch as promote Delivery; and, anointing the Hand with Oil, it is to be introduced into the Vagina towards the Os Sacrum, and the Os Coccygis is carefully to be repreſſed, eſpecially during the Pains: Thus the Paſſage muſt be gradually dilated. When theſe Meaſures are carefully taken, the Strength of the Patient, and the genuine Pains, generally return, and the Labour ſucceeds happily, provided no other Circumſtances concur to render it difficult: Thus, if a Redundance of Blood retards the Delivery, a Vein is to be open'd. But when the Parts are either too narrow, as in Women in their firſt Labour, eſpecially when pretty old, or preternaturally dry, 'tis expedient often to anoint them with Butter, Fat, Lard, Oil, or other emollient Subſtances of a like Nature; and gradually to dilate them with the Fingers, and, at laſt, with the whole Hand: If any preternatural Membrane ſhould obſtruct or block up the Vagina, it is ſkilfully to

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be cut, and removed with proper Instruments. If the Parts should be so preternaturally swell'd, as to prevent the Exit of the Fœtus, digerent Fomentations, or Cataplasms prepared of the Flowers of Chamomile, Elder, and Mullein, Marsh-mallows, Mallows, and other Substances of a like Nature, boil'd in Milk, are to be applied warm. If any Tumor, large Fungus, or fleshy Excrescence, of the Vagina should happen to render the Delivery difficult, these are to be extirpated in a proper manner, and by a skilful Hand. When the Parts are too narrow in consequence of a Callus of the Vagina, or Mouth of the Womb, when any other Cause concurs to hinder the Delivery, or when the Uterus is lacerated, and the Fœtus fallen into the Cavity of the Abdomen, then there remains a deplorable, and sometimes an absolutely necessary Method of Relief, which is to perform the Cæsarean Section. If the Mother is entirely free from any Defect of this Kind, the Child found in a due and natural Posture, the genuine Pains are strong and sufficient, and yet the Birth does not succeed on account of the Narrowness of the Parts, the Patient, after having discharged her Urine, is to be placed in a proper Posture, or, after the manner of the *French*, laid across a Bed, with her Buttocks on its Edge, somewhat higher than her Head. Or she may be placed in a Chair contrived for that Purpose, and represented in *Tab.* LIV. *Fig.* 15. in such a manner, that the Fœtus may slip a little backwards; by which means the Hand of the Operator may have a more easy Access. She is, also, to have her Knees and Legs held firm, and secured by the Women about her. Then both the external and internal Mouth of the Womb is to be relaxed with Oils, Fats, or Ointments, and gradually dilated by the Fingers, and, if possible, by the whole Hand of the Operator, sitting before her, on a low Seat. The whole Pelvis is, also, to be gradually enlarg'd by repressing the Os Coccygis with the Back of the Hand, especially during the Pains; by which means the Head generally descends gradually, and, upon retracting the Hand, follows it; in which Case, if it can be laid hold of, it is to be gently drawn forwards. If the Fœtus should happen to present itself in an oblique and preternatural Posture, such as that exhibited in *Tab.* LIV. *Fig.* 8. and 9. we are, by the Hand, to attempt its Reduction to a due and natural Posture, not neglecting, at the same time, the Use of proper Corroboratives internally exhibited, and, if the due Pains are wanting, of such Medicines as promote them, till the Delivery is happily accomplished. If the Infant cannot easily be reduced to a natural Posture, its Feet are to be sought for, by which 'tis to be extracted as a Fœtus presenting in an unnatural Situation. If the Membranes of the Fœtus should happen to be so strong and firm, as not to break spontaneously, though the Mouth of the Womb should be dilated, and the Head perceived, and by this means the Delivery is retarded, and the Mother, perhaps, too much weakened, they are to be broken with the Nails of the Fingers, or a small Hook contrived for that Purpose. But we are by no means to attempt the Breaking of the Membranes, so long as the Mouth of the Womb is not sufficiently dilated, because by this means the Delivery would be rendered still more difficult. Besides, in assisting Women in hard Labours, we are carefully to abstain from the Use of Instruments, and only employ our Hands, so long as the Mother has a competent Degree of Strength, and the Child is perceiv'd to be alive; otherwise we run a Risque of severely injuring, if not of killing, the Infant with the Instruments. But if the Mother's Strength is exhausted, and her Death to be apprehended from a longer Delay, we are to take other Measures, and extract the Fœtus by the Feet, and, if that cannot be done, by proper Instruments; for it is better in this Case, by the Attempts of Art, to preserve, if possible, both the Mother and the Fœtus, than by trusting too much to Nature, as the Timorous and Unskilful generally do, to neglect and destroy both the Fœtus and the Mother.

I must here remark, that the best Authors and Practitioners agree, that if a Child presents in any Posture but that which is natural, the best Method of Relief is to bring the Child away by the Feet, without attempting to reduce it to a natural Situation; for thus the Birth is accelerated with less Danger and Difficulty, both with respect to the Mother and the Child.

We must here observe, that though this Posture, in which the Head of the Fœtus is adapted to the Mouth of the Womb, and the Vagina, is looked upon as natural, yet upon account of the Causes above-mentioned, but especially when the Situation of the Uterus is oblique, a Circumstance first remarked by *Sigismunda*, and afterwards by *Deventer* and *Hoorn*, a *Swede*, or when for some other Reason the Crown of the Infant's Head does not correspond to the Axis of the Vagina, but presents the Side of the Head, or the Face, as in *Fig.* 8. and 9. *Tab.* LIV. or the Ears, or the Occiput, it frequently occasions a Labour so difficult, that the Child cannot be brought into the World alive, either by the Force of Nature, or the Assistance of Art. Unskilful Practitioners generally, though falsly, lay the Blame on the Bulk of the Head, when 'tis no larger than it naturally ought to be, and has even already passed the Mouth of the Womb. But this difficult Birth, especially if the Side of the Head, or Ear, present themselves, arises rather from the Shoulders, which sometimes bear against the Bones of the Pelvis, in such a manner, that they cannot be remov'd, either by the Force of Nature, or the Assistance of Art, especially when the round and slippery Head cannot be laid hold on, and commodiously drawn out, with the Hands; by which means the Fœtus is gradually so compressed in the Uterus, as to fall a Sacrifice to its Situation. Hence it is, that the most skilful are so much afraid of these Situations, which by the promising Appearance deceive the most sagacious, that they are more willing to afford their Assistance in any other Cases, because in these their Hands can generally have Access to the Uterus, in consequence of which the Fœtus can be extracted; whereas in the former the Head is so forcibly thrust, and, as it were, wedg'd obliquely into the Mouth of the Womb and Vagina, and the Shoulders, at the same time, bear against the Bones of the Pelvis, that the Access of the Operator's Hand, and consequently the only Means of relieving both Mother and Child, is prevented; whilst the alluring Prospect of an happy Delivery at the Beginning, was the Cause of neglecting the proper Means of Relief, when they were practicable. See CÆSAREA SECTIO.

This seems to have been the Reason, why, when all other Arts fail'd, in Cases of this Nature, the celebrated *Palfyn*, a skilful Surgeon of *Ghent*, used neither Hooks, Forceps, or sharp Instruments, for fear of tearing and destroying the Infant whilst alive, but a double Instrument excavated like a Spoon, or Hook, broad, smooth, and blunt, by the Application of which to both Sides of the Head, the Fœtus may be extracted without a Dilaceration of the Head, or any other more terrible Injury, see *Tab.* LIV. *Fig.* 16. The real Size and Bulk of the Instrument sent me, says *Heister*, was only as large again as the Figure here exhibited. The Inventor would principally have Instruments of this kind used when the Fœtus is still alive, or, at least, when its Death is not sufficiently certain. It, also, frequently happens, that Infants, and more especially their Heads, in difficult Labours of this kind, and their long Continuance in these narrow Parts, are so compressed and weaken'd, that no Remains of Life are perceiv'd in them. Being thus taken for dead, sharp Hooks are employed for extracting them; by which means they are miserably mangled and torn to Pieces, I myself, says *Heister*, have used this Instrument contriv'd by Mr. *Palfyn*, but without the proposed Success; for, if the Head is only gently compressed by them, the Fœtus cannot be extracted; if, on the contrary, it should be strongly compressed, 'tis to be dreaded, lest the tender Cranium should be crush'd. When Experience had taught me this Disadvantage of Mr. *Palfyn*'s Instrument, I attempted an Improvement of it; for which Purpose I join'd them both together, by means of a moving Joint or Hinge, that thus the Head might be more commodiously laid hold of; but neither did this succeed upon Trial. This, therefore, is often an highly incommodious and disadvantageous Posture of the Infant, since it either requires the Cæsarean Section, or that, for the Preservation of the Mother, the Fœtus should be extracted dead or alive, by the Hooks represented in *Tab.* LIV. *Fig.* 17. 18. or by other proper Instruments. But we shall, in the Sequel, point out some other particular Means of affording Relief in Cases of this Nature.

If the Fœtus is preternaturally situated, for Example, in the different Manners represented in *Fig.* 5. 6. 7. 8. 9. 10. 11. 12. as, also, in the Figures exhibited by *Scipio Mercurius*, *Welschius*, *Guillemeau*, *Mauriceau*, *Voelterus*, *Peu*, *Viardelius*, *Sigismunda*, *Deventer*, *Mellius*, and others, unless these preternatural Situations and Postures are altered by the Hand, the Delivery cannot, without great Difficulty, succeed; but the Lives, both of Infant and Mother, must be exposed to imminent Danger: For forcing Medicines, and the Efforts of the Mother, in such Situations of the Fœtus, are so far from being beneficial, that they endanger the Death of the Fœtus by the strong Compression of the Uterus, or even the Death of the Mother, or at least some formidable Disorder, in consequence of a Loss of Strength, a violent Hæmorrhage, a Rupture, or Gangrene of the Uterus. No Measure is, therefore, more expedient in Cases of this Nature, than, as soon as possible, to introduce the Hand into the Uterus, rectify this unnatural Posture, and extract the Fœtus. Various Methods of obtaining this End are proposed by different Authors; but they are generally so improper and pernicious, that they can never be reduced to Practice. But the most commodious and infallible Method of reducing a Child to a proper and natural Situation, and bringing it into the World, is, after anointing the Hand with Oil, to introduce it into the Womb as cautiously as is possible, see *Tab.* LIV. *Fig.* 6. 10. and 11. and then searching for the Feet, and laying hold of them, to extract it by little and little, with all imaginable Circumspection.

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This we lay down and recommend to Practitioners as the moſt important and univerſal Rule to be obſerved in reducing Children, and extracting them, except in a few Caſes; when, for Inſtance, the Head deviates very little from its natural Poſture, and may be eaſily reduced to it; for not only the ſurpriſing Conſtriction and Narrowneſs of the Uterus of Women in Labour hinder the Turning of the Fœtus, as ſome of the leſs ſkilful Practitioners formerly directed, but, alſo, the Roundneſs and Slipperineſs of the Head itſelf is generally a great Obſtacle to its being ſecured in ſuch a manner, that it can be brought to a natural Poſture in ſo little Room: And, even when this is attempted, if the Head ſhould be laid hold of ſo firmly as is requiſite for its being reduced to its natural Poſture, there is conſiderable Danger, leſt it ſhould be compreſſed, the Brain injur'd, and the Eyes, or any other Part of the Head, hurt: So that the Advice of thoſe who order the Fœtus in the Uterus, however unnatural its Situation is, to be reduced, is not only impertinent, but hurtful and prepoſterous. I myſelf am no Enemy to the Opinion of *La Motte*, who, tho' the Head of the Fœtus can be reduced to its natural Poſture, yet orders the Child to be extracted by the Feet; for the Fœtus is more expeditiouſly brought away in this manner, than reduced to a natural Poſture; and, by this means, the Mother is not only ſpeedily eaſed, but, alſo, the Infant generally brought into the World alive. But when, after a great deal of Labour, the Head is reduced to a natural Situation, the Delivery is neither accompliſhed, nor the Mother eaſed; but the Work is rather left to Nature, and the Patient is to begin her Struggles afreſh; which, on account of her Weakneſs, or ſome other accidental Cauſes, ſhe is frequently not able to do; ſo that, after all, the Feet are at laſt to be ſought for, and the Fœtus extracted in that manner. And in this Caſe 'tis with the greateſt Difficulty we can reach the Feet, becauſe the Head is ſtrongly preſſed upon by the Uterus. The Fœtus, in the mean time, is either dead before this, or dies in the Extraction, whereas, before, it might have been brought into the World alive. The Mother is, alſo, now in a far worſe Condition than at firſt, ſince ſhe often dies after this Uſage, or is obliged for her Safety to have the Fœtus taken away by Inſtruments; ſo that I think it far more expedient to bring away ſuch a Fœtus by the Feet, than by long, and often unſucceſsful Attempts, to reduce its Head to a natural Situation.

But, before we proceed in our Directions with reſpect to the Reduction and Extraction of Children, it will be expedient here to point out in general, in what Caſes this Reduction of Infants, and their Extraction by the Feet, are neceſſary. It is, therefore, to be uſed, firſt, in all Caſes where any other Part of the Body than the Head, and eſpecially its Crown, preſent themſelves at the Mouth of the Womb. See *Tab.* LIV. *Fig.* 5. 6. 7. 8. 9. 10. 11. 12.

Secondly, In all Caſes, where any other Parts of the Body than the Head are protruded thro' the Mouth of the Uterus, and eſpecially the Hand, or the Navel-ſtring, provided the Operator cannot ſo replace it, that it may not be again thruſt out by the Acceſs of freſh Pains.

Thirdly, When any Side of the Head, as the Ears, the Face, the Chin, or the Occiput, preſents in ſuch a manner, that the Head may be eaſily reduced to its natural Situation, as in *Fig.* 8. and 9.

Fourthly, When either the Back, or the Belly, as in *Fig.* 5. and 7. or any of the Sides, preſent to the Mouth of the Womb.

Fifthly, In natural Poſtures of the Fœtus, when, for certain Cauſes already mentioned, the Delivery is not promoted, but 'tis rather to be dreaded, that the Infant cannot be born alive, and that the Labour threatens Death either to the Fœtus, or to the Mother, or to both. Inſtances of this Kind are, when violent Hæmorrhages of the Uterus, exceſſive Weakneſs, Convulſions, and Epilepſies, happen in Women during Labour, ; for, as, in all theſe Caſes, both the Fœtus and the Mother run a Riſque of being ſoon deſtroy'd, the former is to be extracted by the Feet with all poſſible Expedition, ſince 'tis better and ſafer, ſpeedily to extract the Fœtus, whilſt both that and the Mother have a ſufficient Degree of Strength, than by long and unneceſſary Labour to reduce the Child to another Poſture, and thus extract it; a Circumſtance which may prove detrimental both to the Mother, and the Child.

Sixthly, When the Navel-ſtring is protruded from the Uterus, before the Head of the Fœtus: For if, in this Situation, the Child is not immediately extracted, it ſoon dies, becauſe the Communication and Circulation of Blood betwixt that and the Mother, is intercepted by the Compreſſion of the Navel-ſtring.

Seventhly, When the Womb has an oblique Situation, tho' the Child ſhould be duly ſituated; for in this Caſe 'tis generally more eaſy to extract it by the Feet, than to reduce the Womb to a direct and natural Situation. In all theſe, and other Caſes of a like Nature, it is, for many Reaſons, and eſpecially because Delays are dangerous, expedient to haſten the Extraction, rather than delay it, as *Deventer* and *Hoorn* have ſufficiently demonſtrated.

Among the great Variety of preternatural Poſtures, one of the moſt dangerous, as well as common, is that, in which the Hand, or Arm, preſents, or is protruded, as in *Fig.* 11. With reſpect to this, we lay down the following Caution; that if, in the Beginning of the Labour, the Hand of the Fœtus is perceived through the Membranes, it often ſpontaneouſly retracts it, if the Midwife preſſes, and, as it were, pinches its Fingers with hers, after which it often preſents the Head, inſtead of the Hand or Elbow; by which means the Labour is frequently rendered eaſy and natural, as is obſerved by *Sigiſmunda* and *Deventer:* But, if the W[illegible]s are already diſcharged from their containing Membranes, this Pinching is of no Advantage; becauſe the Infant, in conſequence of the ſtrong Contraction of the Uterus, cannot retract its Arm. Moſt Authors, in this Caſe, adviſe the Midwife to replace it in the Uterus, bring the Head to its Mouth, commit the Work to Nature, and to wait for a natural Delivery: But becauſe this requires great Labour, which is frequently unſucceſsful, and is alſo accompanied with Danger, becauſe by the Reduction we often loſe the moſt favourable Opportunity of delivering the Woman; 'tis, in my Opinion, far more prudent forthwith to extract the Child by the Feet; for, when it preſents one Arm, it lies in ſuch a tranſverſe Poſture, that the Head and Neck are reclined on one Side, whilſt the Breaſt, Abdomen, and Feet, are turned towards the other; ſo that the Body cannot follow the preſenting Arm. If, in this Caſe, the Extraction ſhould be attempted by pulling the Arm violently, as unſkilful Midwives generally do, the Child would be more firmly fixed in the Paſſage, but could not poſſibly be extracted, unleſs it was imperfect, or at leaſt very ſmall: Inſtances of which I have ſometimes ſeen.

By Attempts of this kind, on a perfect Child, the Arm will be torn from the Body before the Birth can be accompliſhed, eſpecially if the Infant is either of a due Size, or ſomewhat larger than ordinary. Leſt, therefore, the Child, in this dangerous Situation, ſhould periſh together with the Mother, which frequently happens in a very ſhort time, it is highly neceſſary, ſince Medicines are of no Advantage, and ſince the replacing of the Arm, and Reduction of the Head to a natural Poſition, are of no Uſe, to introduce the Hand, anointed with Oil, into the Uterus, if Neceſſity requires it, as in *Fig.* 10. and 11. Then ſearching for the Feet, and laying hold of them in the manner we ſhall hereafter more fully direct, the Poſture of the Child is to be inverted; and the protruded Arm being thruſt back by the other Hand of the Operator, the Child is to be brought away; which, however, eſpecially when the Fœtus has remained long in ſuch a Situation, cannot be done without a great deal of Trouble.

Full Directions for conducting ſuch a difficult and dangerous Delivery as this, will be of great Service to the Operator, with reſpect to the Treatment of a great many others, provided he is acquainted with the Structure of the Bones of the Pelvis, and duly adverts to the Situation of the Fœtus.

We muſt always take care, when we intend to introduce the Hand into the Uterus, to make that Attempt in the Part of the Vagina which is contiguous to the *Rectum*; becauſe, in the ſuperior Part, the Bones of the Pubes render it leſs eaſily practicable.

As Caſes in which the Arm preſents, or is already protruded, are of ſuch Importance, as to be a kind of Model for Practice in other difficult Labours; we therefore think it neceſſary to be as full and explicit upon this Point as is poſſible. That a Labour, therefore, of this kind, may ſucceed happily, the Operator is, above all things, to take care, that the Patient be placed in a proper and commodious Poſture; becauſe in this, as well as in all other Operations, 'tis not to be doubted but this Circumſtance muſt contribute to the ſpeedy and ſucceſsful Relief of the Patient. The Mother, therefore, muſt be either placed in a Chair made for that purpoſe, and furniſhed with a Back which may be depreſſed at the Pleaſure of the Operator, and, as it were, transformed into a Bed, ſuch as that exhibited in *Tab.* 54. *Fig.* 15. Or ſhe muſt be laid upon her Back acroſs a Bed, or Table, or upon four Stools ſituated by two and two, oppoſite to each other, with her Head a little depreſſed, her Buttocks at the Edge of the Bed, Table, or Stools, ſomewhat higher than the reſt of her Body; and her Thighs carefully ſeparated by the Aſſiſtants, in ſuch a manner, that the Operator may have a full Command of her lower Belly, and an eaſy Acceſs to the Uterus, and the ill-ſituated Fœtus. When theſe Meaſures are duly taken, the next thing to be done is, carefully to examine which Hand of the Fœtus is protruded from the Uterus, that by this means we may the more eaſily diſcover, to what Part of the Abdomen the Feet are turned,

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and, consequently, where they are to be found: If, therefore, after such a Scrutiny, we should find the Feet turned to the Left Part of the Abdomen, as in *Fig.* 11. anointing the Right-hand with Oil, Lard, or Butter, gently introducing it into the Uterus along the Arm of the Fœtus, and placing it under the Armpit, the Operator is gently to thrust back the Arm and Head, that by these means he may obtain more room for the Ingress and Motion of his Arm; after which, passing his Arm gradually, but without Violence, along the Abdomen, Thighs, and Legs of the Child, he is to endeavour to lay hold of its Feet. Great Dexterity and Caution is requisite in this Attempt, since 'tis often very difficult to lay hold of the Feet, which frequently reach a great Way upwards, and lie at a considerable Distance from each other. In some Cases, however, and especially when the Misfortune is recent, the Uterus as yet not much contracted, and the Feet not separated, this Attempt succeeds pretty readily. All Attempts, however, are vain, unless the Feet be laid hold of: And the Difficulty of succeeding in this is increased, because the Uterus, now remarkably contracted, with great Difficulty admits the Hand; whereas 'tis, for the most part, necessary it should be introduced as far as the Flexure of the Elbow, as may be seen in *Fig.* 10. and 11. When, by a long Protraction of such a Scrutiny for the Feet, the Operator's Arm is become weary, he may withdraw it, and take a proper Interval of Respite, or begin his Work afresh, by forthwith introducing the other Hand. When the Feet are thus found, the Child is cautiously to be drawn forwards; by which means it is turned, and at last extracted. But, in this Attempt, we are not to draw the Infant upwards, nor strait forwards, but downwards; because there the Bones which form the Pubes, are at the greatest Distance. If at first only one of the Feet should be found, (for the Operator can rarely find both at once) it is cautiously to be drawn a little out of the Uterus, and a Fillet is to be gently wrapped about it, in order to prevent its Retraction, or Slipping-back. After this, the Operator's Hand is to be passed along the internal Side of the extracted Foot, which is known by the great Toe, to the Top of the Infant's Thigh; and thence, as in *Fig.* 12. descending by the other Thigh, till he comes to the Foot, he is to extract it in the manner already directed. Then both Feet, on account of their natural Slipperiness, are to be wrapped up in a dry and warm Linen Cloth, that they may be the more firmly held, and commodiously drawn forwards; and thus the Child, provided the Belly is turned towards the Os Sacrum of the Mother, is to be gradually extracted. If on account of the Narrowness of the Uterus, or any other Cause, I cannot, says *Heister*, with my Hand reach the Foot, I generally lay hold of the Thigh, by its means turn the Fœtus, bring the Knee to the Mouth of the Womb, and, at last, extract the Foot as far as the Knee; then I bring out the other Foot, in the same manner, and thus gradually extract the Fœtus entire.

If during the Extraction the Child is found lying on its Back, as in *Fig.* 3. with its Buttocks towards the Os Sacrum of the Mother, then, drawing out the Legs of the Fœtus, as far as the Belly, and laying hold of the Abdomen and Buttocks on both Sides, lest otherwise the Legs should be distorted, or injured, most Authors order it to be cautiously turned in such a manner, that it may lie with the Belly towards the Os Sacrum of the Mother; otherwise 'tis to be apprehended, that the Chin may catch upon the Bones of the Pubes, and the Uterus contract itself about the Neck of the Fœtus, and destroy it, as sometimes happens by the Ignorance of the Midwife. On the contrary, such Infants as are seasonably and cautiously turned upon their Bellies, are generally successfully brought away. We must, also, examine, by what Side it may be most easily turned upon its Belly; for 'tis frequently observed, that the Business succeeds easily when the Fœtus is turned on a certain Side, whereas, when it is turned on the other, the Neck is easily distorted. If in this Turning the Fœtus is extracted not in a streight, but in a spiral Direction, the Work generally succeeds the better. If the Legs of the Infant are extracted as far as the Abdomen, and if we are not inclined to alter the Posture, so as that the Face may be turned towards the Os Sacraum, the Hand is to be passed into the Uterus, along the Abdomen of the Fœtus, and under the Arch of the Bones of the Pubes, in such a manner, that, whilst the Fœtus is extracted with one Hand, the Chin and Face may slide along under the other, so as not to be retained by the Bones.

Almost all the Moderns order the Fœtus, when thus lying on its Back, to be turn'd upon its Belly; but *Hoorn*, a skilful and judicious Artist in this Way, for Reasons of Importance, doubts, whether 'tis not more expedient not to turn a Fœtus in this Position; but rather by other means to disengage it from the Bones of the Pubes, in the manner I shall afterwards direct, since by Attempts of this kind the Body of the Infant may indeed be turned, whilst at the same time its Neck is so distorted and twisted, as to create more Danger to itself, and greater Trouble to the Operator, than a careful disengaging of the Head from the Bones of the Pubes would have done. *Hoorn. Obs.* 26. See AGRIPPÆ.

Attempts to replace a protruded Arm in the Uterus are in this Case not only superfluous, but, also, frequently noxious, and sometimes absolutely impossible; for, after finding one of the Feet, whilst the Infant is a turning, it is either spontaneously retracted, or easily replaced by the other Hand of the Operator, and soon after extracted with the Fœtus; so that the Operator, in this Case, is under no Necessity of creating either superfluous Trouble to himself, or unnecessary Pain to his Patient. If the Feet of the Fœtus are turned towards the Right Part of the Abdomen, they are most commodiously discovered, and brought out with the Left-hand; but, if the Operator is not sufficiently dexterous with his Left-hand, he may perform this Operation with his Right. But, lest any one should be ignorant of the Reason, why, when one Foot is extracted, the other must be found with so much Caution, by introducing the Hand to the Top of the Thigh, it must be observed, that this Advice is necessary, lest, if there should be Twins in the Womb, the Leg of the wrong Fœtus should be laid hold of; and thus, by violent Attempts to extract the Legs of two different Children, both should be considerably injured. *La Motte*, and later Writer, laugh at this Caution, and pronounce it entirely superfluous, because Twins are not included in one common Membrane, but each has one peculiar to itself, in consequence of which the Feet of the different Fœtuses cannot be confounded and mixed with each other. But I would have these Authors reflect, that the Membranes may break at one and the same time, and consequently the Feet of the different Infants may be confounded and mixed: So that though this Caution is not always necessary; yet *Mauriceau* and *Deventer* are of Opinion, that it is not entirely to be neglected.

The Methods of Procedure already specified and directed are of such a Nature, that they serve as a kind of Model for Practice, in most unnatural Postures of the Fœtus; for, as I have already observed, unless the Head presents duly and directly to the Mouth of the Womb, without any farther Delay, and before the Womb is forcibly contracted, the Feet are carefully to be sought for, and the Fœtus is to be extracted by them; for by these Measures, if taken at first, the Labour is rendered easy to the Mother, and the Fœtus generally brought away alive. But, if the Infant should remain in this Posture for a considerable time, the Womb is so violently contracted, that the Hand cannot without the greatest Difficulty be introduced, and perform its Office. Hence many Disadvantages may accrue, both to the Mother, and the Fœtus. A prudent Expedition is, therefore, absolutely necessary in Cases of this Nature, for this Reason principally, that the Life of the Fœtus is endangered by the violent Compression from the Womb.

From what has been said, the following Rules may be deduced as so many practical Corollaries.

First, When the Feet of the Child present, as in *Tab.* LIV. *Fig.* 3. they ought not to be put back; much less ought the Head, as some direct, to be reduced to a natural Posture, since this Practice scarcely ever succeeds. But the Midwife, or Operator, taking hold of the Feet, may better, sooner, and more effectually, extract the Child thus, than when its Head is directed to the Mouth of the Womb, provided the Child, as we have already observed, is extracted not with its Back, but with its Face and Belly, towards the Os Sacrum of the Mother: But 'tis more convenient to deliver Women in this Case, when laid on their Backs in a Bed, than when seated in the common Chair contrived for this Purpose.

Secondly, If the Hand presents itself with one or both of the Feet, the Feet are to be laid hold of, and extracted, gently repressing the prominent Hand at the same time.

Thirdly, If the Hand presents itself with the Buttocks, almost the same Measures are to be taken, provided the Feet can be found; but, if the Operator cannot lay hold of these, the Buttocks, together with the whole Fœtus, are to be extracted in that Posture.

Fourthly, When after the Extraction of one Foot, the other cannot be found, and when we find by the Buttock of that Side, that the Foot, as yet retain'd in the Womb, is bent forwards, and rests against the Belly of the Child, it may be extracted by one Foot.

Fifthly, If by one Foot the Child cannot be turned, and at the same time the other cannot be found, the Foot which is found is to be secured by a Fillet, and drawn a little towards the Mouth of the Womb; then the other Foot is to be searched for, and joined to the former: Thus the Child may at last be turned.

Sixthly, If, in extracting the Child by the Feet, the Navel-string should appear between its Thighs, we are, for a little, to desist from the farther Extraction, and the Navel-string is to be

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be drawn somewhat farther out of the Womb, so as to form a kind of Doubling; then, bending the Knee of one Leg, the entire Leg is to be passed through the Doubling; by which means the Fœtus may be afterwards extracted freely, and without the Danger of any Injury. If, on the contrary, the Navel-string was left between the Legs, till the whole Child was extracted, it might either lacerate the Navel of the Infant, or happen to be broken near it, so as not to admit of being tied; from which Accident very terrible Symptoms sometimes arise.

Seventhly, When the Child is extracted by the Feet, the Operator has no great Reason to be over-solicitous about the Arms; because, for the most part, they follow the Body easily; and if we should attempt to extract them separately, and before the Head, the Neck, unless assisted by other means, would be compressed by the Contraction of the Mouth of the Womb; and the Death of the Child, or some other Misfortunes, brought on; all which are prevented by leaving the Arms, or at least one of them, to be brought away together with the Head.

Eighthly, When only one Foot appears, as in *Fig.* 12. 'tis by no means necessary to thrust it back, in order to reduce the Infant, and bring its Head to the Mouth of the Womb; nor ought the Child to be extracted by this Foot alone, but 'tis better when it is extracted as far as the Knee, with the Hand to seek for the other Foot, which is generally at no great Distance from it, as in *Fig.* 12. and, laying hold of both together, to extract the Child in the manner already directed; but, when one of the Legs is situated longitudinally on the Abdomen, we may, as has been already observed, make the Extraction by one Foot, provided, by laying hold of the Buttocks, the Operation be duly assisted.

When the Child presents its Buttocks, which it frequently does, as in *Fig.* 4. it may indeed be brought alive into the World, but the Labour is generally very difficult, especially in Women whose Parts are not very large; for, as, in this Case, the Child must be extracted with its Body, as it were, doubled, and its Legs applied to its Belly, it runs an Hazard of being destroyed by the forcible Compression of the narrow Passage; which frequently happens, especially when Women are delivered alone, or at least without the Assistance of a skilful Midwife; or, if this Misfortune should not happen, yet 'tis more than probable, that the Passage of the Mother must be miserably lacerated. For this Reason, if a Part of the Buttocks already appears, or at least is so far fallen down, that it cannot be commodiously reduced, it is necessary forthwith to lay the Woman on her Back, with her Buttocks elevated. Then thrusting back the Buttocks of the Infant a little, and passing the Hand along the Thigh to the Knee, we must lay hold of one of the Feet, which in this Case are not at a great Distance, and so extract it; then the other is, if possible, to be found, and extracted in the same manner: But, if both Feet cannot possibly be found, let that which is already laid hold of be extracted, and, by its means, the whole Body of the Child. If the Buttocks are already so far advanced, that the Child can neither be thrust back, nor its Foot laid hold of, then, laying hold of both Buttocks with both Hands, especially by introducing the fore and middle Fingers by way of Hook at the Groins, the Fœtus is forthwith to be artfully extracted. See *Fig.* 4. And this is to be done with all possible Expedition, lest by Delays, or the violent Compression made by the Parts, the Child should be destroy'd.

When a Child presents the Buttocks, a Midwife may easily be mistaken, and take them for the Head, before the Membranes break; but, so soon as ever the Waters are run off, 'tis easy to distinguish them.

If they are sunk low into the Passage, the Child must be brought in the Posture it presents in; but then it frequently causes a long and difficult Labour. *La Motte* says, he has delivered a great many Women in this manner, without losing one; but, if the Breech is not sunk very low, and the Feet can be come at, they are to be brought down.

In case the Child cannot be brought away by the Feet, but the Breech comes first, the Fingers are to be introduced on each Side the Child, into the Groin, as soon as it is sunk low enough to admit of it; and by this means the Child is to be pulled forward.

In this Situation a Child frequently discharges the Meconium; the Buttocks are readily distinguished from the Head, by the Separation betwixt them; and by the Scrotum, if a Boy.

When a Child presents the Breech, and lies very high, and the Membranes are not broken, the Fingers must be introduced into the Vagina; and, if they are not long enough, the whole Hand, in order to be perfectly sure, that 'tis the Breech which presents, it being otherwise very difficult to distinguish it from the Head. This is a thing of much Consequence; for, when the Buttocks are sunk down low, 'tis difficult, and often impossible, to bring the Child by the Feet. If, therefore, the Midwife cannot make herself certain, by introducing the Fingers, or Hand, *La Motte* advises breaking the Membranes, in order to be farther assured, and to bring the Child away by the Feet.

La Motte also advises, to break the Membrane, and bring away the Child by the Feet, as soon as ever 'tis known, that it presents the Buttocks.

He gives a Case, where he was called in very late, the Woman having been in Labour four Days, and the Buttocks being sunk so low, that 'twas impossible to return them, and the Passage being so strait, that he could not get a Nail of his Fingers between that and the Child, much less could he pass his Fingers to the Groin: However, at last, he introduced, first, one Finger, then two, and, by degrees, the whole Hand, into that Part of the Vagina which is nearest the Anus, acting all the while very gently; then he passed his Hand along the Thighs and Legs, till he came to the Feet, which he joined; and, pushing the Knees towards the Child's Belly, he at last made way for the Feet, brought them out, and so delivered the Mother.

If the Shoulders of the Child, after the Head and Neck are brought out, should stick in the Womb, we are then, after prudently applying our Fingers under both Arm-pits, to extract the Arm which yields most easily; and the whole Body, being attracted by it, for the most part, follows without any great Difficulty, especially if the Child is pressed towards the Intestinum Rectum, where the Interstice between the Bones of the Pubes is largest; which Caution is also to be observed in most other Cases. If, on the contrary, the Child should have its Feet and Abdomen protruded, but stick at the Arms or Axillæ, we are, with our Fingers, cautiously to extract one of the Arms, leaving the other within; then, by the Assistance of the extracted Arm, and the rest of the Body, we are to bring away the whole Child. And this Method generally succeeds pretty well, especially when the Child lies with the Face turned towards the Mother's Os Sacrum. The Arm left within, as we have already observed, hinders the Womb from contracting about the Neck of the Child, which it otherwise very readily does, and frequently proves fatal to the Infant.

When the Shoulders are too large for the Passage, they cause a difficult Labour, by sticking at the Bones of the Pelvis.

When the Obstacle is the Shoulder's sticking in this manner, the Woman has strong and repeated Throes; the Waters flow off, and the Head sinks well into the Passage, but can advance no farther; mean time there is an entire Liberty to pass the Hand round the Head.

The Method, in this Case, is, to depend pretty much on the Woman's Pains, assisting a little with the Hands placed on each Side the Child's Head, near the Ears; but the Head must not be pulled too hard, for fear of separating it from the Body.

Care must be taken to distinguish this Case from that where the Child, presenting with the Face towards the Os Pubis, is hooked there by the inferior Jaw.

La Motte, Obs. 460. gives a Case of this kind, where he was obliged to slide his Fingers under the Arm-pits, in order to bring the Child away after the Head was protruded; but, he says, the Fingers are not introduced in this manner under the Arm-pits, without a great deal of Difficulty.

It, also, frequently happens, that when an Infant has its Feet either spontaneously protruded, or extracted by the Hand, the Mouth of the Womb is so contracted about the Neck, especially when the Chin and Face lie towards the Mother's Belly, and the Hand cannot be soon enough introduced between the Face, and the Bones of the Pubes, that the Child at last sticks there. In this Situation the Child cannot possibly live long, because it is retain'd, and, as it were, suffocated, by the Mouth of the Womb, which strongly compresses its Neck. If, in this Case, we should attempt forcibly to draw the Child directly forwards, we should be in Danger of separating the Head from the Body, and leaving it behind, instead of bringing it away entire, especially, if the Infant lies with the Face towards the Mother's Belly, and has its Chin retain'd by the Bones of the Pubes. For this Reason we are rather to endeavour, if the Face lies towards the Os Sacrum of the Mother, to pass the Hand under the Neck, beyond the Chin and Mouth of the Fœtus, and with two Fingers so to lay hold of the Superior and Inferior Jaws, that the Nose may lie between them, and, pressing at the same time towards the Intestinum Rectum, thus gently to extract the Head, and whole Child. Most Authors advise, that, in this Posture, the two fore Fingers should be introduced into the Mouth of the Child, and the Head, by their means, drawn out; but because the tender Jaws are easily injured, or perhaps torn off, I think the former Method preferable to this; and the celebrated *Hoorn* is, also, of the same Opinion. If the Child should happen to lie with the Face towards the Mother's Belly, and its Chin stick on the Bones of the Pubes, as in this Case it generally does, we should sooner pull the Head from the Body, than extract it, the Bones of the Pubes so strongly resist the Egress of the Chin. Lest, therefore, the Child should be suffocated, or have its

Head

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Head torn from the Body, the Mother is forthwith to be laid in a proper Posture; then, passing one Hand into the upper Part of the Vagina, the Chin and upper Jaw are to be laid hold of in the manner already directed, whilst with the other Hand, apply'd to the Region of the Pubes, the Head is to be carefully pressed towards the *Intestinum Rectum*. The Fœtus, in the mean time, is to be gently drawn forwards by an Assistant, till it is totally extracted; which, on account of the strong Resistance of the Bones of the Pubes, is an Operation so difficult, that, notwithstanding the greatest Care of the Operator, the Infant can very rarely be extracted alive. But *Hoorn* thinks, that this End may be more commodiously obtain'd, when an Assistant, laying hold of the Feet, raises them upwards, and, at the same time, draws gently, whilst the Operator either proceeds in the former Method, or, passing his Left-hand under the Occiput, he is to repress the Os Coccygis, and with the Right manage the Face in the manner already mentioned. By this means the Neck and Occiput, may be first brought out, and, at last, the Face, in such a manner, that the Chin may be freed and disengaged from the Bones of the Pubes. According to *Hoorn*, it sometimes happens, that whilst we endeavour to turn the Child in such a manner, that the Belly may be turned towards the Os Sacrum of the Mother, the Head is not turned along with it, but the Neck twisted; and the Child being extracted as far as the Neck, the Chin remains behind the Bones of the Pubes, in the same manner as if the Infant had not been turned. If this should happen, we are either to proceed in the manner already directed, or to relieve the Patient by a prudent and seasonable Introduction of the Hands. If a Child in this Situation is already dead, it may be extracted in the same manner, tho' with somewhat more Freedom and Violence.

Miscellaneous Observations.

The Delivery must not be attempted when the Feet present, or any other Part, till the Mouth of the Womb is sufficiently dilated by the Force of natural Pains, except in case of great Flooding or Convulsions, or a dead Child. *La Motte.*

When the Feet present, accompany'd by the Head, or the Head and Hands, the Head must be thrust back with one Hand, whilst with the other the Feet must be joined, and brought away.

If both Feet cannot be found without Difficulty, a Woman may be delivered by one only. But *La Motte* cautions against drawing one Leg with the same Violence as both may be pull'd with, for fear of stretching the Ligaments, and laming the Child for ever.

The same Author, *Obs.* 458. reports a Case where the Feet presented, with the Toes towards the Mother's Belly, and the Heels towards the Anus; when he try'd to bring the Feet forwards, he found them immoveable; upon a farther Examination, he found the Buttocks of the Child were sunk down, and kept the Knees bent upwards, in such a manner, as to fill up entirely the Passage, insomuch that it was impossible to move the Legs in this Situation. He delivered the Woman by thrusting back the Buttocks, whilst he kept hold of the Feet, and then brought away the Child with a great deal of Ease.

That this important Branch of Medicine may be the more perfect, and the better adapted to the Necessities of young Practitioners, I shall subjoin some of those Directions, which to me seem of the greatest Importance.

First, then, if, whilst the Membranes are as yet entire, and the Mouth of the Uterus sufficiently dilated, any other Part than the Head is perceived by the Touch, such as the Foot, the Hand, the Elbow, the Axilla, the Knee, or the Navel-string, the Membranes may be then safely broken with the Nails, or some proper Instrument; after which, the Feet are to be sought for, and the Child is to be extracted by them.

Secondly, If the Head is not in its natural Situation, but deviates a little from it, and is capable of being reduced, this is to be attempted with the Hand; but if it cannot be easily done, the Child, lest a Delay should destroy it, is to be forthwith extracted by the Feet.

Thirdly, When the Waters are too soon discharged, and at a time when the Midwife is not present, we are to search whether any Part of the Child is to be perceived; and, if not, we are to wait till some Part or other can be distinguished by the Touch. If, then, we find the Head in its natural Situation, an happy Labour generally ensues; but, if any other Part presents itself, the Feet are forthwith to be searched for.

Fourthly, When, in the Beginning of the Labour, the Child presents its Chin and Face, with its Forehead resting on the Bones of the Pubes, which is a very disadvantageous Posture, then the Face is, with the Right-hand, to be so brought towards the Intestinum Rectum, with the fore and middle Fingers apply'd to the Superior Jaw in such a manner, that the Nose may lie between them; at the same time, with the Left-hand apply'd externally to the Pubes, the Head of the Fœtus is to be pressed down from the Os Pubis to the Vagina, till it comes to its natural Situation. This may be still more easily done, if, after introducing the Left-hand into the Vagina, the Os Coccygis is carefully depressed, whilst with the Right the Face is at the same time depressed. If the Child has remained in this Condition for a considerable time, the Mother is to be laid on her Back in the manner already directed, and the Reduction of the Head to its natural Posture attempted in the manner already, also, described. If this End cannot be speedily obtain'd, or if we want to avoid so troublesome a Piece of Labour, we are forthwith to pass the Hand under the Abdomen to the Feet, and by them, repressing at the same time the Head with the other Hand, to attempt the Extraction of the Child. We are, also, to proceed in the same manner in other Cases, where, after the Waters are discharged, we find the Head reclin'd to one Side; and these Measures are to be taken upon the first Approach of the Pains, when, with the friendly Concurrence of Nature, the Labour generally succeeds very well. But, if this Method cannot be speedily put in Practice, the Child, in order to prevent its Death, is always forthwith to be brought away by the Feet.

La Motte remarks, that in case a Child sinks low in the Pelvis, with the Forehead towards the Os Pubis, and the Face to the Passage, 'tis a very incommodious Posture; but may be born so by dint of very strong Pains; but the Face of the Child is always very livid, by reason of the Blood-vessels being compressed by the bending of the Neck; but it soon recovers the natural Colour. In such a Case, the Woman is always much in Pain, and has a very difficult Labour. A Linen Cloth, dipt in warm Wine or Brandy, is a proper Application to take off the Lividness of the Child's Face.

Fifthly, If the Child should present its Neck or Shoulder, with the Head reclined to one Side, as in *Fig.* 8. *Tab.* LIV. the Mother is to be laid on her Back, the Shoulder must be repressed, and the Head brought to its natural Posture. But, if this cannot be speedily done, the Feet are to be forthwith searched for.

When a Child presents the lower and back Part of the Neck with the superior Part of the Scapulæ, the Face bending towards the Breast, it must soon perish, because the Circulation cannot be carry'd on thro' the Neck, whilst bent in this manner. As soon, therefore, as it is perceiv'd, the Woman must be delivered; which is the more difficult to do, in proportion as the Child is sunk lower into the Passage, and engaged therein. *La Motte* says, he never saw more than one Instance, where the Child presented in this manner; and then a Quantity of black Waters were discharged from the Womb, caused by the Meconium, which, being discharged, colour'd the Waters wherewith it was diluted. This Lady he very soon delivered, by passing his Hand along the Spine of the Back: When he had found the Feet, he joined them together, brought them out, and so finished the Delivery.

'Tis not an easy matter to distinguish the Point of the Shoulder, when it presents, from the Knee, the Hip, or the Head, till the Membranes are broke, and the Waters discharged. This Situation is not very common; the way to be sure of it is, to search for the Neck on one Side, and the Arm on the other, after the Membranes are broken; and, when the thing is certain, the Feet must be found, and the Child brought away by them. *La Motte* says, that tho' he seldom or never breaks the Membranes, yet in such a Case as this, when he cannot be certain what Part presents, he breaks the Membranes, and brings away the Child, as fast as he can. I suppose he means, after the Mouth of the Womb is sufficiently dilated. *La Motte.*

Sixthly, If the Child with its Face towards the Os Sacrum of the Mother, together with either of the Arms, enters the Vagina, one of the Hands is to be introduced into the Vagina in such a manner, as to pass under the Face to the lower Jaw, thence to the Humerus or other Arm; and thus let the whole Fœtus be drawn downwards by both Arms, a Practice which frequently succeeds.

Seventhly, If both Hands, together with the Head, present at the Mouth of the Womb, the Child is to be extracted by the Feet.

Eighthly, In every transverse Situation, the Child is to be brought away by the Feet. Thus, when the Back presents, the Hand must be introduced into the Womb before 'tis possible to be certain, that 'tis the Back, the Fingers not being long enough; and then 'tis easy to lay hold of the Feet, and bring the Child away, without withdrawing the Hand.

The Membranes containing the Waters must break, before the Hand is introduced.

La Motte, Obs. 328. gives a very extraordinary History of a Woman in Labour, where the Waters flow'd off, the Membranes being broke by very violent Pains, which immediately discontinued, as it often happens; but then in some little time they return again; but in this Case they never return'd at all; mean

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mean time, the Mouth of the Womb contracted ſo very cloſe, that the Midwife, and a Surgeon, that was ſent for, both declared the Woman was not with Child; which was the more readily believed, becauſe the Woman was very fat. The third Morning after the Membranes were broken, *La Motte* was called in, who, after aſking about every Circumſtance, in regard to her Breeding, Geſtation, and Labour, both with reſpect to herſelf, and the Child, and after laying her upon her Back, and feeling an hard large Maſs through the Integuments in the Womb, he pronounced her certainly with Child. He then laid her in a proper Situation, and, introducing his Hand, found the Mouth of the Womb cloſely ſhut, but very eaſy to be dilated: In the Womb, he found a very large Child preſenting with the Back, which he brought away by the Feet, and the Woman did very well.

This Situation is the very worſt that can happen to a Child, it being impoſſible it ſhould be born with natural Pains; but is very eaſy for the Midwife, who may very readily bring the Feet.

Thus, alſo, when the Belly preſents, the Fingers are long enough to reach it: As ſoon, therefore, as the Membranes are broken, the whole Hand muſt be introduced; and then 'tis eaſy to lay hold of the Feet, and bring the Child away. Without introducing the Hand, 'tis impoſſible to be certain, that 'tis the Belly which preſents. *La Motte.*

The Belly is diſtinguiſhed from the Back by its larger Extent, Softneſs, and by the Umbilical Cord.

The Woman ſhould immediately be delivered, by bringing the Child by the Feet, tho' by the Coldneſs of, and want of Pulſe in the Navel-ſtring, it appears that the Child is dead.

If the Navel-ſtring is return'd never ſo often, it will fall down again at the firſt Pain; becauſe it can be return'd no farther than into the Vagina, the Head of the Child preventing its being return'd into the Womb.

It does no Good to wrap the Navel-ſtring in warm Cloths, in order to maintain the Circulation.

There is leſs Danger of the Child, when the Navel-ſtring falls down firſt, and the Child preſents in any unnatural Situation, than when it preſents right with the Head.

When the Navel-ſtring hangs out, 'tis proper to keep the Woman in a warm Bed, and not to expoſe the Navel-ſtring to the cool Air.

La Motte lays it down as a general Rule, that, when the Navel-ſtring preſents, let whatever Part come firſt, the Woman ſhould be immediately delivered.

When the Navel-ſtring is perceiv'd by the Pulſe to lie before the Head of the Child before the Waters are flow'd off, *La Motte* adviſes to break the Membranes, and haſten Delivery; I ſuppoſe he muſt mean, by bringing away the Child by the Feet. But the Falling-down of the Navel-ſtring cannot always be foreſeen, before the Membranes break.

But in ſuch Caſes, if the Pains are ſtrong and quick, and the Membranes ſeem ready to break, more Haſte is neceſſary, than when the Pains are ſlow, and the Membranes not likely to break very ſoon.

The Inſtant the Membranes are broke, is the Time to introduce the Hand into the Womb, in order to bring away the Child by the Feet; for then the Woman is without Pains, and that facilitates the Operation. *La Motte.*

Ninthly, When the Navel-ſtring falls down with the Head, the Mother is forthwith to be laid on her Back, and it is to be thruſt back behind the Head. But if, either in this, or any other Poſture, it cannot be retain'd in the Womb, but again ſlips down, which ſometimes happens, the Child, in order to prevent its Death, is to be extracted by the Feet, which is eaſily done.

This is a very dangerous Caſe for the Child; for it almoſt always dies, eſpecially if the Head preſents firſt, and exactly fills up the Paſſage; for then the Circulation betwixt the Mother and Child is entirely obſtructed.

In this Caſe Delivery muſt be haſtened as much as poſſible, if the Child ſinks very low immediately upon the breaking of the Membranes, and the Waters flowing off. But if, at the ſame time, the Pains are very ſtrong and redoubled, the Expulſion of the Child muſt be left to Nature, becauſe it would be very difficult, if not impoſſible, to turn the Child, and bring it by the Feet. But if the Child is not ſunk very low, and the Intervals betwixt the Pains will admit of it, the Child muſt immediately, and without Delay, be brought away by the Feet.

If the Child ſeems to be dead, the beſt way to revive it, is to lay it before the Fire, to waſh it with warm Wine, and ſpurt Wine into its Mouth.

Tenthly, if, whilſt the Child preſents in a natural Poſture, the Navel-ſtring is wrapt about the Neck, the Child is not, indeed, in ſuch immediate Danger, as in the preceding Caſes; but, as ſoon as this Circumſtance is obſerved by the Midwife, the Navel-ſtring is forthwith to be remov'd, that the Fœtus may afterwards be extracted with the greater Freedom. But if this cannot be commodiouſly done for fear of its breaking, it is to be cautiouſly cut near the Neck, and by an Aſſiſtant compreſſed, till, after the Delivery, it may be duly tied.

In the eleventh Place, when there are Twins, which, among other Signs may be known, if, after one of the Infants is born, by examining the Secundines, we find another Child; or if, when its Waters are not as yet diſcharged, we perceive by the Touch another Membrane diſtended with Water; in this Caſe, the Navel-ſtring of the Child already born is to be cut, and in the uſual manner tied, near the Navel. Afterwards, when the Membranes of the other Child are broken, if it preſents duly with its Head, its Paſſage is to be forwarded and aſſiſted. But, if it ſhould happen to preſent in an unnatural Poſture, it is forthwith to be extracted by the Feet, if they can poſſibly be found. But, if its Waters are not as yet diſcharg'd, we are not to wait their ſpontaneous Evacuation, becauſe this, as is often obſerved, would protract the Labour, and at once endanger the Mother, and the Child; for, if the Delivery ſhould be delay'd, the Mouth of the Womb would again be ſo contracted, that the Operator could not have a proper Opportunity of affording any Relief to the Patient. In this Caſe 'tis, therefore, expedient forthwith to break the Membranes, which at this time may be done without any Danger, and, by this means, relieve the Mother, who, for the moſt part, is ſufficiently weak, whilſt the Paſſages remain duly dilated.

La Motte blames *Mauriceau* for pretending to give any ſure Signs of Twins; for he ſays, that a great Quantity of Waters, or a very large Placenta, or both together, very often make the ſame Appearances as Twins, tho' the Child itſelf may happen to be very ſmall.

When there are Twins, immediately after the Birth of the firſt, the Hand muſt be introduced into the Womb, the Membranes muſt be broke, and the ſecond Child muſt be brought away by the Feet. *Chapman.*

This he ſeems to have learn'd from *La Motte.*

La Motte affirms, that an extraordinary Largeneſs of the Belly, ſwell'd Legs, Difficulty in Walking, and equal Motion on each Side the Belly, are not certain Signs of Twins; and that it is not true, that a Woman with Child of Twins comes ſome Days ſooner than the natural Time; which is contrary to the Opinion of *Mauriceau.*

La Motte ſeems to regard more the Shape of the Belly, which is pointed forwards, when there is but one Child; but, when there are two, the fore Part of the Belly is more flat and broad, and is very full towards the Sides, and backwards.

When a Woman is with Child of Twins, if the Placenta is ſmall, and the Quantity of Waters but little, 'tis not neceſſary the Woman ſhould appear more big, or be more incommoded, during her Pregnancy, than if ſhe is only with Child of one.

La Motte adviſes to open the Membranes of the ſecond Child, and to bring it away by the Feet always; unleſs the Pains are very violent, and the Child well placed, ſo as to be born immediately after the firſt.

When the After-birth does not readily come away, the Midwife muſt not pull too hard, ſo as to break the Cord; but muſt introduce her Hand into the Womb, and follow the Cord to its Root; and then, if ſhe finds another Child invelop'd in its Membranes, two Ligatures muſt be made upon the Cord, and it muſt be divided betwixt the Ligatures; then, as ſoon as the Child is ſeparated from the Mother, the Hand muſt be introduced, the Membranes broke, and the Child brought away by the Feet.

Sometimes Twins have each a ſeparate Placenta, and ſometimes one ſerves both; and then it would be of the worſt Conſequence to pull at the String.

Our own Country Authors all agree in adviſing to paſs the Hand, and examine the Contents of the Womb; and, if there is not a ſecond Child, the Placenta, Clots of Blood, and all other Contents, are then readily brought away.

La Motte ſays, a Labour of two Children is more eaſy than that of one, becauſe the Children are ſmaller when there are two.

When the Throat preſents.

This is a very uncommon Situation; but, when it happens, it renders a Labour very difficult. The Method of Delivery mentioned by *La Motte* in this Caſe is, to endeavour with one Hand to thruſt back gently the Breaſt, and, at the ſame time, with the other, to bring the Head down to the Paſſage. This muſt be done betwixt the Pains; and, during the Pains, Care muſt be taken to keep the Breaſt from falling down again. He gives the Hiſtory of two Caſes, where he endeavour'd to do this; but ſucceeded only ſo far, as to bring the Face towards the Paſſage; and in this Poſture both the Children were born, one dead, the other alive; that alive was extremely livid and

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ſwell'd, and was cur'd in twenty-four Hours by Linen Cloths dipt in warm Wine, or Brandy, and apply'd to the Face.

The Ear presenting.

One of the moſt inconvenient Situations a Child can preſent is, when the Side of the Head comes firſt to the Paſſage, which the Midwife readily diſtinguiſhes by feeling the Ear.

Midwives often are the Cauſe of this bad Situation, by not examining exactly the Poſture of the Child, before 'tis ſunk too low; for, when they perceive the Child's Head to come, they generally imagine all will do well in time, without aſſuring themſelves what Part of the Head preſents.

The Method here is, if poſſible, to turn the Child, and bring it away by the Feet.

But if this cannot be done, the Midwife muſt endeavour to place the Head right, by puſhing it backwards with one Hand placed under the Ear, and drawing down the Vertex with the other. This muſt be attempted immediately after the End of the Pain; and 'tis obſervable, that the enſuing Pain will frequently ſpoil what has been done during the Interval.

'Tis very eaſy to bring the Child away by the Feet, immediately after the Waters are run off.

When the Head is ſo far placed right as to admit of it, an Hand muſt be introduced flat on each Side the Child's Head, and with theſe the Delivery muſt be promoted.

But, when all theſe Endeavours prove fruitleſs, the Head muſt be brought forwards enough to admit of opening it with a Knife, or Sciſſars; and then two of the Fingers muſt be introduced into the Inciſion, Part of the Brain be taken out, and the Child brought away by the Fingers hook'd within-ſide the Cranium. *La Motte.*

The Knees presenting.

Before the Membranes break, the Knees may eaſily be miſtaken for the Head, by reaſon of their Hardneſs, eſpecially if they lie at a Diſtance; but, when the Waters are run off, they are eaſily diſtinguiſhed from the Head, being much ſmaller; and, beſides, one Knee generally comes firſt, and the other lies higher up in the Paſſage. In this Caſe, the Midwife muſt puſh it back a little, that ſhe may come at the Feet more readily, which are very eaſy to be found, and by them the Child muſt be brought away.

When one Knee preſents, the Child generally kneels, as it were, upon the Os Pubis, with the other; and this might cauſe ſome little Difficulty; the Knee firſt preſenting ſhould not be brought out alone, but ſhould be puſh'd a little back, that both Feet, which are very eaſily found, may be join'd and brought out together. *La Motte.*

The Hip presenting.

There is no Part of a Child that more reſembles the Head preſenting at the Mouth of the Womb, than the Hip, by reaſon of its Roundneſs and Hardneſs; but it cannot ſink ſo low as to be engaged in the Paſſage, unleſs the Body of the Child is pretty much bent, and forced down by very violent Pains. When there is any Reaſon to ſuſpect, that this is the Caſe, not only the Fingers, but the whole Hand, if thoſe are not long enough, muſt be introduced high enough to aſcertain, whether it is the Hip that preſents, or not; and, if it proves to be ſo, the Hip muſt be puſh'd back ſufficiently to admit the Hand into the Womb; which muſt be introduced with as little Violence as is poſſible; and then ſliding the Hand betwixt the Thighs, and afterwards betwixt the Legs, which ſerve as Guides, the Feet muſt be found and join'd. Then the Knees muſt be puſh'd towards the Child's Belly, provided the Parts are cloſely contracted about it, the Feet muſt be brought out, and the Woman deliver'd, as if the Feet had preſented firſt.

This Situation expoſes the Legs and Thighs of the Infant to be broke more than any other. *La Motte.*

Oblique Situation of the Womb.

When in the Beginning of the Labour, or at leaſt immediately after the Waters are diſcharged, the Mouth of the Womb, and conſequently the Crown of the Infant's Head, does not correſpond directly to the Vagina, but either reclines to one Side, or backwards to the Os Sacrum, or towards the Bones of the Pubes, an highly dangerous Labour is to be dreaded; becauſe, as has been already obſerved, this Circumſtance proceeds from an oblique Situation of the Womb in the Abdomen; which the Operator may at firſt diſcover by the Touch, both from the Situation of the Mouth of the Womb turned to ſome Side; and from the Abdomen of the Mother, when the Womb, with the Child, is found to be highly prominent. As in this Caſe the Labour rarely ſucceeds without the Aſſiſtance of the Hands, unleſs the Obliquity of the Womb ſhould happen to be very ſmall, the Mother is immediately to be laid on her Back, either in a Bed, or on a proper Seat, with her Buttocks ſomewhat higher than her Breaſt. After which we are, by introducing one of the Hands into the Vagina, to attempt the Reduction of the Mouth of the Womb, and conſequently of the Infant's Head, to a natural Situation. This muſt be attempted in the following Manner: If the Head of the Child inclines towards the Right Os Iſchium, and thus the Womb, together with the Buttocks and Feet of the Child, is perceived in the Left Hypochondrium, with one Hand in the Vagina, the Mouth of the Womb, together with the Head of the Child, is, during every Paroxyſm of the Pains, to be preſſed from the Right to the Left Iſchium, whilſt the Womb itſelf, with the reſt of the Child, is, either by the Operator's other Hand, or that of an Aſſiſtant, apply'd to the Side of the Abdomen, gently preſſed from the Left to the Right Hypochondrium. By theſe means it frequently happens, that the Head, ſometimes ſooner, and ſometimes later, enters the Vagina in a ſtrait Direction, and the Labour ſucceeds happily. If, on the contrary, the Mouth of the Womb, and Head of the Child, are inclined to the Left Os Iſchium, the Reverſe of the former Operation is, alſo, to be perform'd with the Hands; and from theſe we may eaſily judge what Meaſures are to be taken, when the Mouth of the Womb, and the Crown of the Infant's Head, incline to the Os Sacrum, which often happens, or are turn'd towards the Os Pubis; for when the Mouth of the Womb is with one Hand remov'd from the Os Sacrum, and with the other apply'd externally to the Abdomen above the Bones of the Pubes, preſſed, till it correſponds directly to the Vagina, the Deſcent of the Child is afterwards, as in other Caſes, to be promoted. But, with reſpect to all theſe Caſes, 'tis to be obſerv'd, that if this Reduction of the Womb and Child cannot be ſoon accompliſh'd, or if the Fœtus has remained long in ſuch a Situation, leſt that, or the Mother, ſhould be deſtroy'd, eſpecially if ſhe is afflicted with an Hæmorrhage from the Womb, Convulſions, or fainting Fits, the Feet are forthwith to be ſearched for, and the Child by them is to be extracted; which Method is generally prefer'd to all others, as being at once more eaſy and expeditious.

But, the moſt difficult and dangerous Caſe is juſtly acknowledged to be that in which the Head of the Child is ſo far fallen down into the Vagina as to be ſeen; and at the ſame time is ſo firmly fixed there, that it can neither proceed farther, nor without the greateſt Difficulty be extracted by means of the Hands; for this Poſture, as well as the preceding, often deceives the moſt ſkilful, by its ſpecious and natural Appearance at firſt; whilſt, as we cannot often know whether the Child is dead or alive, both that and the Mother are in Danger of being deſtroy'd, unleſs it is ſpeedily extracted either with the Hands, or with proper Inſtruments. The preternatural Bulk of the Head is commonly blam'd as the Cauſe of this difficult Labour; but generally without Reaſon, ſince it has already paſſed the narrow Mouth of the Womb: But the true Cauſe is rather to be aſcribed to a bad Poſition of the Womb, and Shoulders of the Child, the latter of which touch on the Bones of the Pubes, and the former on the Spine of the Back, as *Hoorn* juſtly obſerves, whilſt at the ſame time, in ſuch a Poſture, one of the Ears is generally turned upwards, and the other downwards. But becauſe, in this Situation, the Shoulders are retain'd by the Bones of the Pelvis in ſuch a manner, that they can neither come forwards ſpontaneouſly, nor without the greateſt Difficulty be extracted by the Hands of the Midwife, there are two Methods of Procedure directed. The firſt is, with the two fore Fingers of each Hand gradually to preſs down the Head from the Bones of the Pubes towards the Inteſtinum Rectum, particularly at the Approach of Pains, in ſuch a manner, that it may deſcend as near that and the Os Coccygis as is poſſible. After Attempts of this kind have been made for ſeveral times, the Head is to be drawn forwards with the four Fingers of both Hands placed round about it, whilſt the Lips of the Pudenda are to be gradually dilated below it; by which means the Head is ſo diſengaged, that the Hands may be applied behind the Ears or Occiput, and the Head extracted by them; which Practice, according to *Hoorn*, frequently ſucceeds very well. Sometimes, however, this Method does not ſucceed; in which Caſe the Arm, eſpecially the inferior, is to be ſearched for, extracted, and by its means the reſt of the Child freed from the Bones of the Pubes, and brought away, according to the Directions of *Hoorn*.

The ſecond Method is, after with the Fingers preſſing down the Head, as much as poſſible, towards the Inteſtinum Rectum, to anoint the Left Hand, all except the Thumb, with Oil, and to introduce it under the Head, ſo far into the Vagina, that the Extremities of the Fingers may be capable of graſping the Head like a Globe. Then with the Fingers of the Right Hand introduced in the ſuperior Parts of the Vagina, under the Bones of the Pubes, the Head is to be laid hold of; and, if the Pains ſhould be defective, we are to order the Mother to bear down as much

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much as is poſſible, in order to promote the Delivery, whilſt the Operator, in the mean time, draws both Sides of the Head with his Hands, and endeavours to put the Perinæum and Lips of the Pudenda behind it, which, according to *Hoorn*, is frequently attended with Succeſs. When the Head is extracted, the Child is to be laid hold of about the Neck, and its Head drawn obliquely upwards, ſhaking it, at the ſame time, backwards and forwards, whilſt with the other Hand introduced into the Womb, under the Neck, the Operator is to ſeek for the adjacent Arm, extract it, and, by drawing it obliquely, ſo to turn the Infant, as that it may lie flat on its Belly; after which 'tis ſo eaſily extracted, that it rather ſeems to come into the World ſpontaneouſly. But when, by none of theſe Meaſures, the Head can be extracted, which ſometimes happens, as we learn not only from Experience, but, alſo, from the Obſervations of the moſt ſkilful Authors, ſuch as *Mauriceau*, *Deventer*, *Hoorn*, and *La Motte*; and when the Strength of the Mother is gradually impair'd, or if Convulſions and Flooding ſhould ſucceed, by which means her Life is endanger'd; in this Caſe there remains only one Remedy, which is, by Inſtruments to extract the Fœtus, though alive, with as little Caution as if it was dead. This may be done, firſt, by opening the Cranium, either with a Knife, or a Pair of Sciſſars, and extracting the Brain, either with the Fingers, or a Spoon. Thus, when the Cranium is collaps'd, it is more eaſily extracted either by the Hands, or by a large Forceps uſed for extracting the Stone of the Bladder; or, as *Deventer* adviſes, by a broad Fillet, paſſed carefully about the Neck; which Method, he ſays, proves ſucceſsful, even when the Brain is not extracted from the Cranium. But if the Child cannot be brought away, when the Brain is taken from the Cranium, the Shoulders are to be freed from the Bones of the Pubes, and the Fœtus is to be extracted by them: Or,

Secondly, This End may be obtained by means of an Hook, like thoſe repreſented in *Tab.* LIV. *Fig.* 17. and 18. inſtead of which, in Caſes of abſolute Neceſſity, *Hoorn* recommends a large Nail, bended in form of an Hook, with a Cord tied about its Top, that it may be the more forcibly pulled: Or,

Thirdly, The Head may be brought away by a particular Inſtrument, invented by *Mauriceau*, and commonly known by the Name of *Tire-tête*, to which, however, *Deventer*, *Hoorn*, and *Heiſter*, prefer Hooks, as more commodious. The ſame Meaſures are very nearly to be taken in other Caſes, where the Fœtus cannot be extracted by the Aſſiſtance of the Hands, and eſpecially in caſe of monſtrous Children, ſuch as thoſe with two Heads, if the Life of the Mother is expos'd to Danger.

When the Woman has exceedingly violent and repeated Pains; when the Waters are flow'd off, and the Child, though well ſituated, is at a Diſtance, and advances but ſlowly; when the Child, being advanced betwixt the Os Sacrum and Pubis, low in the Vagina, ſticks there, without retiring betwixt the Throes, though the Intervals are very long; there is then Room to apprehend, that the Largeneſs of the Head retards the Birth.

When the Caſe is thus, the Head of the Child, and Face is much ſwelled and livid; this is ſoon cured by a Linen Cloth dipt in warm Wine, and applied to the Part. *La Motte.*

La Motte very much blames the Uſe of Hooks. His Method of delivering a Woman, when the Child's Head ſticks in the Paſſage, and cannot be protruded by the Pains, is thus, provided he is certain of the Child's being dead: He plunges a Pair of Sciſſars into the Head, about half the Length of the Sciſſars, and opens them; and by this means makes an Aperture large enough to take out Part of the Brain, and, if neceſſary, to take away ſome of the Bone; he then takes hold of the Bones of the Cranium, and brings away the Child.

He ſays, this Method may be practiſed without either the Woman, or any body preſent, knowing, that any Inſtrument was made uſe of.

But the very beſt way, in ſuch a Caſe, is, if poſſible, to turn the Child, and bring it away by the Feet. However, this cannot always be done; for the Head is ſometimes ſo lock'd betwixt the Bones of the Pelvis, that 'tis impoſſible to remove it.

This Author is of Opinion, that moſt difficult Labours of this kind are cauſed by the ſuperior Part of the Os Sacrum, where it is articulated to the inferior Vertebra of the Loins, being bent too much inwards, and coming too near the Os Pubis, and by this means making the Paſſage too narrow for the Excluſion of the Child: Not but a Child of an extraordinary Size muſt have the ſame Effect, and cauſe a difficult Labour. But he infers from hence, that all thoſe Fomentations, Liniments, and Embrocations, ſo much recommended by Authors, can be of no Service in making the Parts give way. And in this he ſeems to be very much in the right, becauſe thoſe Parts that are capable of Diſtention readily give way without them, except in very old Subjects; and I know of no Applications that will ſoften the Bones, and make them retire: So that the only Uſe of Ointments is, to lubricate the Paſſages, where they want it; and in Subjects pretty far advanced in Years.

La Motte makes a Diſtinction betwixt a Head that is too large to be forced into the Vagina, and be engaged in the Paſſage; and one that is ſmall enough to deſcend into the Paſſage, but too large to be brought away by the Force of the Mother's Pains. In the former Caſe, the Feet are certainly more eaſily come at than in the latter.

The latter Caſe he calls being lock'd *(enclavée)* in the Paſſage.

When the Head is ſo far advanced, as to be able to make uſe of a Biſtory without Hazard, that is, when it can be guided by the Eye, *La Motte* ſays, he cuts open the Head with one. But if not ſunk ſo far into the Vagina, he adviſes to plunge a Pair of common Sciſſars into the Head, as directed before. But when the Top of the Head lies at the Extremity of the Vagina, and at a Diſtance, he then makes a Canula with a ſtrong Paper, or Leather, and directs it to the Top of the Head, and then through it introduces a Knife, ſharp only on one Side, which he plunges into the Head, and makes an Opening ſufficient to admit of the Fingers, with which he empties the Brain, and then takes hold of the Head with the Fingers bent within-ſide the Skull, and ſo brings the Child away.

La Motte affirms, there is no Fear of injuring the Woman by the Bones of the Cranium, when a Part of them is obliged to be taken away, or come away by breaking off, during the Operation above-mentioned, becauſe the Scalp ſeparates from the Bone which comes away, and, ſtaying behind, covers the Edges of the broken Bones of the Cranium, and defends the Parts of the Mother from being hurt.

This he ſays in Contradiction to what *Mauriceau* has ſaid upon this Subject.

The Bones of the Cranium of ſome Children are ſo very hard, that they will not give way in the leaſt, and accommodate themſelves to the Size of the Paſſages, let the Pains be never ſo ſtrong and forcing; and this Circumſtance cauſes a very difficult Labour.

In this Caſe the Head of the Child lies very high, at the Extremity of the Vagina, and cannot enter it. The way to deliver the Woman, is to put back the Head, if poſſible, and bring away the Child by the Feet.

When the Child's Head has lain long compreſſed betwixt the Bones of the Pelvis, it will ſometimes be ſwell'd prodigiouſly, and ſo deform'd, that one would think it impoſſible it ſhould ever come to itſelf again. It is generally cured pretty eaſily with Compreſſes dipt in warm Wine. But, ſometimes, when it is very bad, an Abſceſs will be formed, and an Exfoliation ſometimes enſues. In caſe of an Exfoliation, *La Motte* recommends Pledgets dipt in a Lotion made of equal Parts of Brandy, Lime-water, and Honey of Roſes.

La Motte, in his Supplement, tells us of a very difficult Caſe, where the Labia Pudendi and Vagina were exceſſively hard and ſwell'd; the Child's Head lay very high, and was not yet ſunk into the Vagina, but was incapable of being brought away by natural Pains.

The Child being certainly dead, after trying in vain to bring it away by the Feet, he plunged his Sciſſars into the Cranium, and, by opening the Branches, dilated the Aperture. He then introduced a ſtraight Pair of Forceps, ſuch as are uſed for extracting the Stone, one Branch within the Cranium, and the other without; and with theſe laid hold of the Os Parietale, and Os Occipitis; and by this means eaſily extracted the Child.

This Author recommends this way of delivering Women very ſtrongly, and ſays, that, if one Pair of Forceps is not ſufficient, two may be made uſe of, and one fix'd on each Side; and theſe Inſtruments he prefers to all others in parallel Caſes.

Not only the Head, but the whole Body, alſo, is ſometimes ſo large to cauſe a very great Difficulty in delivering a Woman, inſomuch that a Man is ſometimes obliged, after the Head, and Part of the Body, is born, to pull with all his Force to diſengage the Hips; a Force which would certainly ſeparate the Head from the Body, if Hold was to be taken of it.

In ſuch Caſes, the Fingers, after the Head is born, are to be introduced into the Arm-pits, and by that means the Shoulders are to be extricated. Hold muſt then be taken of the Body, and the Child muſt be brought away by main Strength.

La Motte gives a Caſe of a Woman, *Obſ.* 315. who had been in Labour, and the Waters had been run off three Days; the Child was dead, preſented with the Head, but lay very high, and was not at all engag'd in the Bones of the Pelvis; he attempted to bring it away by the Feet, but could not come at them; then he open'd the Cranium with his Sciſſars, introduc'd his Fingers into the Aperture, and, breaking off ſeveral Pieces of the Oſſa Parietalia, made it large enough to take out Part of the Brain; then laying hold of the Cranium, he attempted to bring away the Head, but, as ſoon as it was engag'd betwixt the Bones, he could make it advance no farther. He then, ſeveral times, try'd the Crochet, which as often broke out; at laſt he took a Blackſmith's Forceps, and, with them, laying hold of the

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Os Occipitis, brought out the Head, but could not bring away the Child, which ſtuck at the Shoulders; he then introduc'd his Fingers into the Arm-pits, and pull'd himſelf, whilſt the Midwife pull'd at the Head; and by this means he brought out the Shoulders, and, diſengaging the Arms, brought the Child as far as the Hips, where it ſtuck, inſomuch that he was forc'd to make the Midwife help him a ſecond time, in order to bring the Child away. The Child was of an extraordinary Size; and the Woman did very well.

Dropsical Children.

The Bellies and Heads of Children are ſometimes dropſical. *La Motte* ſays, that no Inſtruments are neceſſary in this Caſe, but the Hands. If the Head comes firſt, he gets his Fingers under the Arm-pits as ſoon as he can come at them, and draws away the Child. If the Head by Accident ſeparates, he brings away the Child by the Feet; as he does, when the Head is too large to be engag'd in the Bones of the Pelvis.

Others adviſe letting out the Waters by perforating the Belly.

Extraction of a dead Foetus.

As the Death of the Child in the Womb, eſpecially if its Poſture ſhould happen to be unnatural, creates a very difficult Labour, the Aſſiſtance of the Hand is generally abſolutely neceſſary for the Relief of the Mother. In this Caſe the Labour is difficult for many Reaſons, however naturally the Child may preſent; for, on account of the Mother's Weakneſs, and a want of Motion in the Child, very faint and languid Pains are excited; beſides this, the Efforts of the Infant, which conſiderably promote a natural Labour, are wanting; add to theſe, that the Infants ſometimes retire, and the Womb cloſes upon them, when they could not be brought into the World at the due time, either on account of their unnatural Poſture, an exceſſive Largeneſs of the Head, a bad Conformation of any other Parts, or a Narrowneſs of the Mouth of the Womb, and Bones of the *Pelvis:* But, in a Caſe of this Nature, we muſt carefully examine, whether the Infant is as yet alive, or dead, leſt, if it ſhould be alive, we ſhould, by the raſh or preposterous Uſe of Inſtruments, deſtroy, or, at leaſt, greatly injure and lacerate it. The Neceſſity for ſuch an Examination is ſo much the greater, becauſe the Signs, commonly propos'd for judging of this important Circumſtance, are generally fallacious and uncertain; eſpecially, if the Infant preſents the Arm-pit, the Buttocks, the Back, or one Side of the Head; for theſe Parts exhibit ſo faint and uncertain Signs of the Life of the Child in the Womb, that it may readily be taken for dead, whilſt it is ſtill alive, tho' often conſiderably weaken'd by the Tedioufneſs of the Labour.

The moſt material and important Signs of a Child being dead in the Womb, are the following.

Firſt, If the Mother, for a conſiderable time feels, no Motion of the Fœtus; but rather perceives a certain unwieldy Maſs, which always falls to that Part, which happens to be reclin'd by her bending or turning her Body.

Secondly, If the Mother is ſeiz'd with frequent Shiverings, Faintings, and a Teneſmus, or frequent Inclination to going to Stool.

Thirdly, If her Breath ſmell ſtrong and rank.

Fourthly, When any thing of an highly fetid and cadaverous Smell is diſcharg'd from the Womb.

Fifthly, If the Abdomen of the Mother is cold, 'tis a Sign, that the Child is dead.

Sixthly, According to *Viardalius* and *Goueyus*, 'tis an infallible Sign, that the Fœtus is dead, if the Meconium, or the black Fœces evacuated by new-born Infants, is diſcharg'd from the Pudenda of the Mother. But that this laſt-mentioned Circumſtance has ſometimes happen'd whilſt the Infant was ſtill alive, I myſelf, ſays *Heiſter*, have found from Experience, and others have frequently obſerv'd the ſame in the Courſe of their Practice. I frankly confeſs, ſays the above quoted Author, that, induced by this and other Signs, I myſelf formerly took an Infant for dead, and extracted it as ſuch, tho' I afterwards found it alive. The five Circumſtances before enumerated, together with the following, are therefore, more certain and infallible Signs of a dead Child.

Firſt, If the Navel-ſtring, or Secundines protruded out of the Pudenda, are cold, and totally depriv'd of a Pulſation of the Arteries.

Secondly, When in an Arm or Foot hanging out, neither Pulſation, Heat, nor Motion of the Toes or Fingers are perceiv'd, but the Member is rather cold, livid, or black; and eſpecially when the Cuticle, or Scarf-skin, is ſeparated from the Skin, either ſpontaneouſly, or upon the Application of the Fingers to it.

Thirdly, In Infants preſenting with the Head, and conſequently in a natural Poſture, 'tis a pretty ſure Sign, that the Child is dead, if that Part of the Head, in which the Bone is wanting, and which by Phyſicians is call'd *Bregma*, *Fonticulus*, and *Fons Pulſatilis*, is ſo remarkably depreſſed and flaccid, that the adjacent Bones of the Cranium are found ſharp and moveable, and no Pulſation of the Arteries is felt in the Part; for, when the Child is ſtill alive, this Part is hard, in ſome meaſure prominent, and a Pulſation of the Arteries is frequently perceived in it. But we are not to be raſh in taking thoſe Infants for dead, in whoſe Heads we perceive no Pulſation of the Arteries; for in weak Infants this Pulſation is often ſo faint and languid, that it is not perceptible by the Fingers. But 'tis a ſurer Sign of the Death of the Fœtus, when the Cuticle is ſeparated from the Skin of the Cranium. When the Child is infallibly dead, and the Waters diſcharged from the Womb, the Mother is to be reliev'd with all poſſible Expedition, leſt the Putrefaction of the Fœtus, which ſoon happens, ſhould produce the worſt of Conſequences, ſuch as violent Fevers, or even Death. But, if without the due Pains, and conſequently before the legitimate Period of Birth, the Infant ſhould happen to die, whilſt, at the ſame time, the Waters are not diſcharged, we know from Experience, that the Infant may ſometimes remain in the Womb for ſome Weeks, or even ſome Months, without any Danger of Putrefaction, eſpecially if, in other reſpects, the State of the Mother's Health is good. Inſtances of this are given by moſt practical Authors. In this Caſe it ſeems more expedient to wait till Nature excites the due Pains, and by that means expels the Fœtus, than by Medicines, or the Aſſiſtance of manual Operation, to bring it away either too ſoon, or in too violent and forcible a Manner.

If during the Pains the Infant ſhould die, and is at the ſame time found in a natural Poſture, we are not immediately, and before we are certain of its Death, to uſe Hooks, or other Inſtruments, for its Extraction. And becauſe ſome Mothers are not eaſily prevail'd upon, immediately to admit the Hand of the Operator, corroborating Medicines, and ſuch as excite the Pains, are to be exhibited. We are not in the mean time, eſpecially when the Mother is weak, to neglect the Uſe of ſtimulating Clyſters, ſince theſe generally contribute very powerfully, both to excite the due Pains, and expel the Fœtus. But we are carefully to abſtain from exhibiting thoſe corroborative Medicines, and ſuch as excite the Pains, in too large Quantities, leſt, by their native Energy and Heat, they ſhould produce Fevers, or dangerous and even mortal Hæmorrhages. If, therefore, theſe Medicines ſhould produce little or no Effect, we are, with all poſſible Expedition, in order to prevent the Putrefaction of the Fœtus, to attempt its Extraction with the Hand, by which means the Pains are alſo excited. This Operation is one of the oldeſt practis'd in Surgery, as may be ſeen in *Hippocrates*'s Book *de Morb. Mulier.* and in his Treatiſe *de Extractione Fœtus:* See alſo *Fontanus*'s Treatiſe *de Fœtus Extractione.* That this Operation may ſucceed the more happily, the Mother muſt firſt of all, as when the Infant is alive, diſcharge her Urine. If this cannot be done, as it frequently cannot, on account of the Compreſſion made on the Neck of the Bladder by the Head of the Infant, the Urine is to be brought away by a *Catheter*, us'd either for Men or Women, ſuch as thoſe exhibited in *Tab.* XLVIII. by *Fig.* 1. 2. 3. 4. and 5. When the Urine is diſcharg'd, the Mother is to be plac'd in a Chair contrived for that Purpoſe, and repreſented in *Tab.* LIV. *Fig.* 15. or upon a Bed, with her Buttocks ſomewhat higher than the reſt of her Body. Then the Operator is with one, or, if poſſible, with both Hands, to lay hold of the Child's Head, in the moſt commodious manner he can, and gradually extract it in that manner; but, if he cannot extract it by the Head, he is to ſearch for the Feet, and bring it away by them. He may, alſo, if he thinks proper, try *Deventer*'s Method of applying a broad Roller about the Neck, or poſterior Part of the Head. If by theſe means the Delivery ſhould not ſucceed, it ſeems neceſſary to uſe proper Hooks every way ſmooth, and well-poliſh'd, ſuch as thoſe exhibited in *Tab.* LIV. *Fig.* 17. and 18. and even *Fig.* 21. which has a double Beak. Theſe are with the greateſt Caution to be fix'd in ſome commodious Part of the Infant's Head, ſuch as the Eye, the Ear, the Mouth, and ſometimes the Forehead and Occiput; after which, by drawing the Inſtrument cautiouſly downwards, the Fœtus is to be extracted. If theſe, or other proper Hooks cannot be had, the Operation may be perform'd in the manner directed by *Hoorn*, with a large Nail bended in form of an Hook. But *Celſus*, who ſeems to have been well acquainted with this Operation, ſays, that it is not to be perform'd at all times; for, if it ſhould be attempted when the Mouth of the Womb is ſo compreſs'd, as not to afford a due Paſſage for the Fœtus, that Part of the Infant in which the Hook is fix'd, breaks, and its Point runs into the Mouth of the Womb, a Circumſtance which muſt expoſe the Mother to imminent Danger of Death. When, therefore the Mouth of the Womb is compreſs'd, that is, when the Pains ceaſe, we are to deſiſt; but when it is dilated, or during the time of the Pains, we muſt draw gently. The Right Hand muſt be employ'd in drawing the Inſtrument, whilſt the Left directs the Fœtus, and that Part of the Hook which is in the Womb. If the Infant's Head is ſo large, or ſo obliquely ſituated, that it cannot, ſo long as 'tis entire, be brought thro' the Vagina, which frequently happens,

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we muſt either with the Fingers, a Knife, or ſharp Sciſſars, open ſome Part of the Cranium near the Bregma, and, extracting the Brain with the Fingers, ſo leſſen the Volume of the Head, that it may be more expeditiouſly and commodiouſly extracted, either with one, or both Hands, in the manner already directed. *Mauriceau*, that celebrated and skilful Man-midwife, invented a particular Inſtrument, to which he gave the Name of *Tire-tête*, both for perforating and laying hold of the Head. By this Inſtrument, on which he beſtows great Encomiums, after making an Inciſion near the Bregma with a double-edg'd or common Knife, he ſays, he has often had great Succeſs in extracting the Fœtus. But, as I before obſerv'd, this compound Inſtrument by no means ſeems abſolutely neceſſary, becauſe, after the Cranium is open'd, and the Brain extracted, the Inſtruments already directed, if properly made, the ſimple Hooks, for Inſtance, repreſented by *Fig.* 17, and 18. or a crooked Nail, or the Hand alone, are ſufficient for extracting the Fœtus, as *Heiſter* informs us, he has often found by Experience.

If the dead Fœtus is found in an unnatural Poſture, then, according to the Direction of *Celſus*, we are to lay hold of its Feet, and by them extract it, in the ſame manner as a living Child, which may be often done without any great Difficulty. But in this Attempt great Caution is to be us'd, eſpecially if the Fœtus is already putrefied and corrupted, leſt, by uſing too great Force or Haſte in the Extraction, the Head ſhould be torn from the Body, and left in the Womb; for, when the Head remains after the reſt of the Fœtus is taken away, and is not forthwith extracted before the Mouth of the Womb cloſes, the Mother is, by that means, not only afflicted with the moſt terrible Symptoms, but, alſo, expos'd to an immediate and imminent Danger of loſing her Life. For this Reaſon the Head, when left in the Womb, is to be extracted with all poſſible Expedition.

But, as the Head, in conſequence of its round Figure and Slipperineſs, cannot be commodiouſly ſecur'd by the Hand, it ſeems to be a proper Piece of Practice to introduce the Finger into the Mouth, or into the great Perforation of the Os Occipitis, and by that means to extract it. By this Expedient I myſelf, ſays *Heiſter*, have ſometimes, without the Help of Inſtruments, happily, and without much Trouble, brought away the Heads of Infants left in the Womb. If the Fingers are not ſufficient for this Purpoſe, a Linen Roller an Ell long, and about four Fingers broad, is to be introduc'd double into the Womb, ſo as to form a kind of Nooſe, in which the Head is to be included; and by that means it is often ſucceſsfully extracted. Any of the above-mentioned Hooks, accommodated to this Purpoſe, may, alſo, be fix'd in the Mouth, the Orbit of the Eye, the Noſtrils, the Perforation of the Occiput, or ſome other ſuch Part, whilſt, according to the Advice of *Celſus*, the Operator has previouſly paſs'd his Left Hand under the Head, in order both to direct the Hook, and prevent the Injury which might otherwiſe be done to the Womb. Then the Head is, by the joint Aſſiſtance of the Hand and the Hook, to be carefully and cautiouſly extracted. But, if the Head ſhould happen to be too large, it is with one Hand to be brought to the Mouth of the Womb, whilſt with the other the Cranium is to be open'd, and the Brain extracted; after which 'tis cautiouſly to be taken away, either by the Hands alone, or with the Aſſiſtance of an Hook. The celebrated *Amandus*, an expert Practitioner in this way, in order to avoid the Injury which might poſſibly be done to the Womb by Hooks, for this purpoſe us'd a kind of Bag, wove like a Net. This he paſs'd over the Head, clos'd its Mouth with Cords, and by that means extracted the Head without any Danger. But this Bag is with great Difficulty apply'd to the Head, and the before-mention'd Methods ſucceed more eaſily, and with leſs Apparatus.

When a live Child is brought away by the Feet, and ſticks at the Head, it ſometimes alſo happens, that the Head is pull'd from the Body, and left behind in the Womb.

La Motte gives two Inſtances of this, in one of which he introduc'd his Left Hand into the Womb, and with it ſecur'd the Head, and with the Right Hand he ſlided in a Biſtory, cover'd with a Sheath open at both Ends, with which he made an Opening in the Head, large enough to introduce his Fingers, with which he took away Part of the Brain, and then, taking, hold, drew out the Head.

In the other Caſe, the Mouth of the Womb contracting gave him a great deal of Trouble, by compreſſing his Hand, ſo that he could not uſe the Biſtory, as in the former Caſe. So he was forc'd to open the Cranium with the Fingers, to lay hold of the Jaw, the Orbit of the Eye, or any other Place he could hold; and ſo at laſt drew it out. *La Motte.*

When the Head is separated, and the Body left in the Womb.

When the Pains come on very quick, and redouble, as ſoon as ever the Head is born, the reſt of the Body ſoon follows; inſomuch that little more is neceſſary, than to receive the Child, and keep it from falling.

But when the Pains are ſlow, with long Intervals betwixt, and the Head happens to be born juſt at the End of a Pain, it ſometimes happens, that the reſt of the Body ſtays behind, ſo that the Child ſticks in that Situation.

La Motte will not allow, that this is caus'd by the Contraction of the Mouth of the Womb about the Child's Neck; but ſays 'tis owing either to the Largeneſs of the Shoulders, or the Shortneſs of the Navel-ſtring.

In order to bring away the Child, a flat Hand muſt be introduc'd betwixt the Neck of the Child, and Mouth of the Womb, on each Side; by which means the latter will readily give way, and admit of introducing a Finger, or Fingers, on each Side into the Axillæ, which may ſerve by way of a blunt Hook to bring away the Child. But this is not always done without Difficulty, and ſometimes the Midwife is oblig'd to bring down both Arms, before the Child can be brought away.

When the Shortneſs of the Navel-ſtring cauſes the Obſtacle, it muſt be cut; and then the Child is readily brought away.

If the Navel-ſtring is render'd too ſhort, by being twiſted about the Child's Neck, it muſt be cut, by introducing a Pair of Probe-ſciſſars along the Finger firſt introduc'd.

This is a dangerous Situation for the Child, which certainly dies, if it continues long in this conſtrain'd Poſture, becauſe of the Compreſſion of the Navel-ſtring.

In order to prevent this Accident, the Midwife ſhould pull boldly the Child's Head, the Moment 'tis born, in order to bring the Body away at the very ſame time, and by the very ſame Pain; taking care not to pull too hard, for fear of dividing the Head from the Body.

It does not ſeem prudent to pull hard at the Head at any time, but juſt the Inſtant 'tis born, becauſe the Fingers are readily introduc'd into the Axilla.

When the Head is divided from the Body, and the Body remains in the Womb, the Method of bringing away the Body when it is far advanc'd, is to ſlip the Fingers on each Side under the Arm-pits, and ſo to draw the Child away; but if the Body lies at a Diſtance, the Method then is to bring it away by the Feet. *La Motte.*

Sometimes Infants, when dying during the Labour, thruſt one of the Arms out of the Pudenda, in ſuch a manner, that, by reaſon of the Shoulders ſticking in the narrow Paſſage, it cannot again be replac'd in the Womb; nor indeed ought an Attempt of that kind to be made, eſpecially if it has remain'd in that State for a conſiderable time. When this happens, and when the Signs of the Infant's Death are ſufficiently manifeſt, that is, when the Arm is livid, black, and cold, when no Pulſation of the Arteries is felt in it, when the Fingers do not move, and when the Cuticle is ſeparated from the Skin, we are firſt to try, whether, by reclining the Mother, and placing her in a commodious Poſture, the Hand of the Operator cannot be introduc'd by the Infant's Arm into the Womb of the Mother, in ſuch a manner, as to reach the Feet of the Child. If this can be done, which it often can, eſpecially when the Labour has not been long, the Feet are forthwith to be ſearch'd for, and the Fœtus is by them to be extracted, as if it was alive. But if, in conſequence of a tumid State of the Infant's Arm, or a violent Conſtriction of the Mouth of the Womb, the Operator's Hand cannot be paſs'd into the Womb, which, however, rarely happens, 'tis neceſſary either to twiſt the Arm out of its Articulation at the Scapula, or cautiouſly to cut it off. When the Surgeon intends to perform this Operation, 'tis highly expedient carefully to extend the Arm, to twiſt it about, and to hold it for a conſiderable time in that Poſition, before the Knife is apply'd, ſince, by this means, the Ligaments being partly diſtended, and partly broken, the Arm may be more accurately and ſafely cut off at the Shoulder-joint. But, leſt the Mother ſhould be wounded by the Knife, I generally, ſays *Heiſter*, uſe with Succeſs one with a Button at the Point; take thoſe exhibited in *Tab.* XXVI. by *Fig.* 4. and 5. When the Arm is cut off, 'tis proper to try, whether the Hand cannot lay hold of the Feet; and, if it can, the Child is to be extracted by them.

If, on account of the Humerus ſticking firmly in the Neck of the Womb, a tranſverſe Situation of the Child, or a violent Conſtriction of the Womb, by means of which the Infant is ſo compreſs'd, as it were, into a Globe, that it cannot be directed by the Hands of the Operator, or if, in conſequence of the Pains excited by introducing the Hand, which are ſometimes ſo great, that the Mother cannot bear them, and a Rupture of the Womb, and the Death of the Patient, may be produced by the Application of a ſufficiently conſiderable Force, in theſe Circumſtances, it is not proper to paſs the Hand ſo far into the Womb, as is frequently neceſſary for finding the Feet: 'Tis more prudent, therefore, in the Opinion of *Celſus*, cautiouſly to open the Breaſt and Abdomen of the Infant, either with the Fingers, a Pair of ſharp Sciſſars, or an Hook, ſuch as thoſe repreſented in *Tab.* LIV. *Fig.* 17. and 18. Then, extracting the Viſcera and Inteſtines, we are to examine whether, the Body being leſſen'd by this means, and the Buttocks coming nearer the Mouth of the Womb, the Feet cannot be

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found; and, if they can, the Fœtus is to be extracted by them; a Practice which never fail'd to succeed with me, says *Heister*, as often as I attempted it. But if the Feet cannot be found, which frequently happens in consequence of a strong Constriction of the Uterus, then the Buttocks are, by the Hand pass'd under them, to be laid hold of; and, fixing an Hook in their superior Parts, they are thus to be extracted; for in this Case the Breast and Head follow, as it were, spontaneously, and with Ease; but it must be confess'd, that some Parts of the Body are frequently torn away, before the Delivery can be accomplish'd. But lest, in performing this Operation, the Womb should be wounded by the Hook, great Care is necessary in managing it. It, also, seems necessary so to sulcate or groove its Handle, that by the Touch only we may be able to judge how it ought to be directed in such a manner, that its Point may never be turn'd to the Womb, but always to the Fœtus. See *Tab.* LIV. *Fig.* 19. Lett. *a a a a:* Which Caution cannot be possibly observ'd in Hooks, whose Handles want such a Groove. Hence it has often happen'd, that Practitioners in this way have miserably lacerated both the Womb, and the Bladder. By a prudent Use of this Hook, whose Handle is groov'd, I myself, says *Heister*, have frequently brought dead Children into the World, with such Success, as to prevent all ill Consequences to the Mother. With respect to this Handle, 'tis to be observ'd, that because the Infant, especially when pretty large, is so firmly inclos'd in the Womb, that the Strength of one Hand is not sufficient to extract it, (for the other is suppos'd in the Womb, under the Foetus) for this Reason a strong Fillet may be ty'd about its Part *b b*, which may be call'd its Neck. This Fillet, in order to assist the Extraction, is be pull'd by the Midwife, or an Assistant, whilst the Operator, in the mean time, at once directs and draws the Handle. These commodious Circumstances are entirely wanting in the common cylindrical or angulated Handles.

Nor for this Purpose is it in some Cases improper, to use pretty large Forceps, such as those employ'd in extracting the Stone, and represented in *Tab.* XLIX. These are by *Ryff*, an old *German* Surgeon, and *Slevogtius*, a celebrated Physician of *Jena*, preferr'd to Hooks, and all other Instruments, because by them the Womb is less subject to be lacerated, and the Operator's Hand less subject to be hurt. However, no less Care and Circumspection is requisite in the Use of the Forceps, than that of Hooks, lest, by the former, the Mouth, or some other Part, of the Womb should be laid hold of, drawn forwards, or miserably lacerated.

Hoorn invented and described a new and more expeditious Method of extracting a dead Child, with its Arm sticking firmly in the Vagina; for, when the Feet could not be reach'd, he, either by means of a Knife, or a proper Hook, separated the Neck, which in Fœtuses is very tender, from the rest of the Trunk; for by this means the Fœtus is either spontaneously discharg'd from the Uterus, or may by the Arms be easily extracted. After this the Head is to be extracted by itself, either by the Hand, or by some of the Expedients beforemention'd, if the Hand should be insufficient for that Purpose; I must here observe, that *Celsus* long ago directed the same Method to be taken, when the Fœtus, without a prolaps'd Arm, is situated almost transversely with its Neck doubled, and its Head reclin'd on the Body, perhaps as in *Tab.* LIV. *Fig.* 8. for, says he, in this Case the Neck must be cut, and both Parts of the Fœtus brought away separately.

Tho' I do not absolutely reject the Use of Instruments, says *Heister*, but employ them where Necessity calls for it, yet I must here appriſe all Practitioners, that they are never to be us'd for extracting Fœtuses from the Womb, except in Cases of absolute Necessity; when, for Instance, there is no Hope left of the Possibility of performing the Operation by means of the Hands, or when Delays would expose the Mother to the Danger of losing her Life; for every one must readily perceive, that Operations of this Kind must be far more safely perform'd by the Hands, than by means of Instruments. Surgeons are, also, to be carefully exhorted, not to use Instruments of any Kind, till they are absolutely certain of the Death of the Child; for that Surgeon cannot be acquitted from the Charge of Imprudence, Negligence, and Cruelty, who extracts a Fœtus alive, but torn and mangled, at the same time, by his Instruments, unless particular Cases, and especially a great Weakness of the Mother, or a Dread of her Death, if the Fœtus remains longer in the Womb, should require the Operation; for, tho', in this Case, the Popish Casuists will not admit the Operation to be lawful, yet lest two, one of whom may be preserv'd, should be destroy'd together, the most learned Divines of the Reformed Churches have declar'd it lawful, for the Mother's Preservation, to extract the Fœtus by means of Instruments. The most skilful and sagacious Surgeons have, however, been touch'd with the most lively Compassion, when they have extracted a Child alive, or at least half-dead, which they themselves, the Mother, and the Assistants, took for dead. 'Tis not, for this Reason, to be wondered at, that *Celsus*, in the twenty-ninth Chapter of his seventh Book, should place the Art of extracting the Fœtus from the Womb, among those which are most dangerous and difficult, and consequently call for the greatest Prudence and Circumspection. On the contrary, so long as the Child is alive, and the Mother at the same time robust and vigorous, Instruments are never to be us'd. The *Specula Uteri*, by some us'd to enlarge the Womb, and delineated by *Albucasis*, *Scultetus*, *Mauriceau*, and others, are not, in the Opinion of many celebrated modern Surgeons and Physicians, of any considerable Use. Besides, as the Womb is very easily injur'd, the Use of them must in some Cases be attended with the worst of Consequences.

The Signs of a Child's being dead in the Womb are very deceitful; for it sometimes happens, that a Woman goes her Time, and is deliver'd of a living Child, after having all the usual Signs of a dead Child, for many Weeks, and even Months. *La Motte* gives an Instance of this.

The Hardness, Swelling, Blackness, and Coldness of an Arm protruded, is not always a Sign of the Child's being dead; nor is it a Reason, why the Arm should be taken off. *La Motte.*

La Motte says, that there is no Dependence to be had upon a Woman's Breath smelling, as a Sign of the Fœtus being dead in the Womb, as some Authors affirm, because the Fœtus itself may be dead some time without stinking; for instance, whilst kept from the external Air by the Membranes.

A Child frequently makes a strong Effort, and moves with Violence, just before it dies; and after that the Mother feels it stir no more. *La Motte.*

An intolerable Smell and a Discharge of rediſh Serosities from the Womb, are the most certain Marks of a Child's being dead in the Womb. *La Motte.*

No great Regard is to be paid to those pretended Motions, which a Woman fansies she feels, of the Child about the time of Labour, after it has not been felt for a considerable time before, especially when the Cessation of the Motion in the Child has immediately follow'd some considerable Accident, as a Fall attended with a Hæmorrhage. *La Motte.*

The Method of delivering a Woman, when the Neck of the Womb is protruded before the Head of the Child.

It is possible that Women labouring under a Descent of the Womb, or *Prolapsus Uteri*, may become pregnant, and Instances of it have often occurred. These Patients, during their Pregnancy, are exempted from their Misfortune, because the Bottom of the Womb becoming larger, in proportion as the Infant grows, cannot slip through the external Orifice, as it did before; but, if they are no longer troubled with this Descent, they have still more Reason than other Women to apprehend the several Accidents generally accompanying both their Pregnancy and Labour.

During their Pregnancy, Women subject to this Misfortune ought to take better Care of themselves than others; they must, for Instance, neither use any violent Exercise, nor undertake Journeys in Coaches, or Waggons, which might shake them too violently; nor even walk too much on Foot; because the Womb being disposed to fall down, in consequence of its not being sufficiently retained by its Ligaments, these kinds of Exercises must, in the very Nature of the thing, contribute to augment their Disorder; so that these Women are just Exceptions from that general Rule, which enjoins Exercise for pregnant Women. Patients of this kind must not lie in Bed with their Heads raised high; neither must they use emollient Clysters, which would relax the Ligaments still more; nor those of an acrid and purgative kind, since these, by the Effects they produce, would oblige them to bear down. But if their Circumstances indicate the absolute Necessity of Clysters, they must only consist of simple Water.

During the Labour of Women subject to this Misfortune, the Neck of the Womb, protruded by the Efforts occasioned by the Pains of the Mother, falls out, and is forced into the external Orifice.

The Neck of the Womb, or Vagina, which resembles the Palate of an Ox, being thus fallen down, is full of large Wrinkles or Corrugations, which become gradually more and more tumid, by the Efforts the Infant makes with its Head, to force its Passage into the World.

In a Labour of this kind, we must neither suffer the Woman to walk, nor stand, which in natural Labour is frequently practised. On the contrary, she must be always kept in Bed, with her Body and Head on a Level with her Buttocks: Then the Operator, in the Interval between two Pains, is with his Hand to restore the Neck of the Womb to its natural Situation. And that it may not fall down again, on the Accession of the first Pain, he is to keep his Hand in the Vagina, in order to support the Weight of the Child, and hinder it from again protruding the Neck of the Womb.

In Labours of this kind, the Operator must neither use Butter nor Oil, which have a Tendency to relax the Parts still more. The Mother, also, must be advised, not to bear downwards during her Pains, in order to prevent the falling down of the Part again, which is occasioned by the smallest Impulse.

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It is, therefore, abſolutely neceſſary the Operator ſhould keep his Hand in the Vagina, not only in order gradually to dilate the internal Orifice with the Ends of his Fingers, but, alſo, to retain the Mouth of the Womb, and keep it from falling down again. It muſt, indeed, be confeſſed, that this kind of Labour is longer, than that in which the Parts are lubricated, and the Mother is at Liberty to bear down; but at the ſame time it is equally certain, that, when theſe Precautions are taken, it is conducted with more Safety, and terminates more happily, than if they were neglected.

When the Child is brought into the World, great Circumſpection muſt be uſed in bringing away the Secundines; we muſt not draw the Navel-ſtring, and, conſequently, the Placenta, to which it adheres, with too much Violence, leſt the Bottom of the Womb, which is not ſtrongly retained, in conſequence of the Relaxation of its ſuperior Ligaments, ſhould follow the Placenta, and fall out of the external Orifice. If a Misfortune of this kind ſhould happen, the Operator is immediately, with his ſhut Hand, to puſh it as far back as he poſſibly can; which will not only reſtore it to its natural Situation, but, alſo, by lengthening the Neck of the Womb, remove thoſe Wrinkles and Corrugations, which the Impulſes of the Child had made in it.

When, therefore, the Womb is fallen down, and inverted, it muſt with the greateſt Expedition be reſtored to its natural Situation, in order to prevent the fatal Conſequences which might be produced by Delay, and ſuffering the Fibres of the Womb to contract themſelves, before the Attempt is made. We have no Reaſon, in ſuch a Caſe, to be afraid of creating any uncommon Pain to the Mother, ſince the Paſſage of the Infant has already ſo dilated the Parts, that the Hand can find an eaſy Acceſs; which it cannot poſſibly do, after a very inconſiderable Delay.

After a Labour of this kind, attended with ſo uneaſy and perplexing a Train of Conſequences, the Mother muſt be far more careful of her Situation, than if ſhe had been delivered in a natural Way. For the firſt fifteen Days ſhe is not to get out of Bed; nor to quit it entirely, till a Month is expired. Before ſhe follows her uſual Buſineſs, ſhe is frequently to apply a Compreſs immerſed in ſome aſtringent Wine to the Region of her Kidneys; and, for the greater Security, ſhe muſt uſe a Peſſary for ſome Months. *Dionis.* See PROLAPSUS UTERI.

Mauriceau is of Opinion, that a Prolapſus Uteri is moſt frequently owing to a difficult Labour; but in this *La Motte* contradicts him. For he affirms, that he never ſaw the Neck of the Womb thruſt before the Head of the Child, in any one Labour he was concerned in: But, he ſays, the entire Deſcent and Inverſion of the Womb muſt be cauſed by a difficult Labour, the broad Ligaments being broken by the Violence uſed by the Midwife.

La Motte ſays, the too great Humidity of the Part is the Cauſe of Prolapſus Uteri.

THE METHOD OF TREATING A WOMAN LABOURING UNDER A RUPTURE.

In an umbilical Rupture, as ſoon as ever the Inteſtine ſuffers a Strangulation, the Patient feels a Pain, like the Colic; and the Part grows hard, and enlarges, more or leſs; though every umbilical Rupture is not painful, none being ſo till it grows hard.

The ſame holds good with reſpect to an inguinal Rupture.

If, during Pregnancy, or at any other time, any of theſe Ruptures grow hard and painful, they muſt by all means be ſoften'd, in order to a Reduction. This is to be done, by applying a ſoft Napkin to the Part, folded in many Doubles, and ſoaked in new Milk, as hot as the Patient can bear it; and, when it is ſoftened, the Part of the Inteſtine, which deſcended laſt, is to be reduced, Care being taken to act as gently as poſſible, for fear of an Inflammation and Gangrene, which this Part is very ſubject to, if handled too roughly.

If this will not anſwer the End propoſed, *La Motte* recommends a Cataplaſm of the Pulp of the Leaves and Roots of Mallows and Marſhmallows, Mucilage of Linſeed and Fenugreek, Flowers of Chamomile and Melilot, Bran of Wheat, and Meal of Rye, Oil of Chamomile and Lilies, as much as is ſufficient.

If this is not ſufficient to anſwer the End of mollifying, Baths are of great Service; and, if Baths do not ſucceed, the laſt Remedy is the Operation.

La Motte ſays, that, when a Rupture of either kind happens to be attended with theſe Circumſtances of Hardneſs, and Pain, and Swelling during Labour, it is of very ill Conſequences. But a ſimple Rupture, without Pain or Hardneſs, cauſes more Fear than Inconvenience.

All Parts of the Belly are ſubject to Ruptures, but the Navel, and Groin, more than the reſt. When it happens in any other Part but the two laſt-mentioned, it is called a ventral Rupture.

An umbilical Rupture is generally leſs in Pregnancy, than at any other time, diminiſhes as the Belly enlarges, and ſeldom appears during Childbed, till the Woman riſes again.

La Motte recommends a Plate of Steel to be worn upon the Part, with a kind of Girdle, made ſo as to be as tight, or as looſe, as the Patient pleaſes. But this is inconvenient, and not neceſſary, in the latter Months of Geſtation.

La Motte ſeems to think theſe umbilical Ruptures of no manner of ill conſequence in Labour, and to eſteem them very little worth Notice: He thinks it even unneceſſary to keep a Perſon's Hand upon them during the Pains, becauſe, he ſays, let them be never ſo large, they will diſappear, as ſoon as the Woman is laid in Bed, unleſs they ſuffer a Strangulation.

Children are very ſubject to an Exomphalos, becauſe of the Laxity of the Part, but are eaſily cured by binding a Plate of Wax upon the Part, made with a Protuberance towards the Navel.

La Motte will not allow, that an Exomphalos is cauſed by tying the Navel-ſtring too long.

When a Woman has a Bubonocele, it is not leſs during Pregnancy, like an Exomphalos, but generally grows larger.

La Motte endeavours to reduce a Bubonocele, before he delivers the Woman, by laying the Woman on her Back, with the Buttocks a little more elevated than the reſt of the Body, and inclined a little to the Side oppoſite to the Rupture; then, as ſoon as a Pain is ended, he reduces the Inteſtine gently, and by degrees: Then he applies a warm Linen Cloth, made up into four Folds, to the Part; and makes a Woman keep an Hand flat upon it, to prevent a Deſcent during the Pains. And by theſe means a Woman is delivered with Eaſe.

A Bubonocele is ſometimes ſo exceſſively large, as to occupy not the Groin only, but, alſo, the Space betwixt the Thighs, which muſt embarraſs a Midwife a good deal, unleſs the Inteſtine is reduced before Delivery. But ſometimes it is ſo hard and tender, that the Woman cannot bear to have it handled enough to reduce it; and then the Woman muſt be delivered without reducing it.

La Motte gives a Caſe, where a Bubonocele was attended with theſe Circumſtances, and great Pain after Delivery: He gave the Patient freſh expreſſed Oil of ſweet Almonds, with Syrup of Maidenhair, and a little Wine, in order to diſſipate the Wind contained in the Inteſtine; and anointed her Belly with Oil of ſweet Almonds, eſpecially the Bubonocele; and by theſe means, in a little time, the Tumor diſappeared.

He adviſes, when breeding Women are troubled with theſe Bubonoceles, to keep the Inteſtine always up; and if, when fallen down, it makes a Reſiſtance, and cannot be reduced, he directs to ſofren it by means of a Cloth folded in many Doubles, dipped in Milk, and applied upon the Part. But, in caſe it is not poſſible to keep it always reduced, it muſt, at leaſt, be kept ſoft, and in a Condition to be reduced.

Women with Child, eſpecially when their Labour is at no great Diſtance, diſcharge ſometimes a ſmaller, and ſometimes a larger Quantity of Blood from the Pudenda; they are then ſaid to labour under an Hæmorrhage of the Womb, or Flooding, in the common Phraſe; which, as it happens in a State of Pregnancy, muſt be very different from the common menſtrual Flux. In ſome Women, eſpecially in the firſt Months, it proceeds from a Redundance of Blood, by which the Blood-veſſels of the Vagina, or of the Womb itſelf, are opened, and pour forth a large Quantity of Blood, which is ſometimes preternaturally hot. But this Diſorder happens more generally in the laſt Months, and ariſes either from a total or partial Separation of the Placenta from the Womb; which may be produced either by an external Injury, ſuch as a Fall, violent Exerciſe, a Blow, a Fright, and many other Cauſes; or by a Redundance or fervid State of the Blood; or, as ſome of the Moderns maintain, from an Adheſion of the Placenta to the Mouth of the Womb, of which *Giffard* gives a remarkable Hiſtory in *Caſe* 224. On this Occaſion, towards the End of Pregnancy, the Placenta is torn from the Mouth of the Womb, in proportion as it dilates itſelf. The more, therefore, the Mouth of the Womb is dilated by the Pains, the more the Placenta is ſeparated from it, and conſequently the greater the Hæmorrhage; which is ſometimes ſo violent as quickly to weaken the Mother, and even to endanger the Life of her and the Child, unleſs the latter is, by the Hands, extracted, before the former is too much weaken'd, of which fainting Fits are a certain Sign. *Hoorn*, *Brunner*, and *Stuart*, agree with *Giffard*, in acknowledging the Poſſibility of an Hæmorrhage from this Cauſe; and bring Inſtances to ſupport their Sentiments.

An Hæmorrhage may be diſcovered, both by the Relation of the Patient, and the large Quantity of Blood diſcharged: But, whether this Blood comes only from the Vagina, or the Womb, is a Circumſtance which cannot be known, except from a diligent Examination of the Mouth of the Womb by the Fingers; for that this Diſcharge of Blood proceeds only from the Vagina, may be known, when, upon paſſing the Fingers into it, the Mouth of the Womb is found to be cloſed, and the Hæmorrhage is only ſmall: If, on the contrary, the Hæmorrhage is large, and the Mouth of the Womb dilated, or if, in it, not the Head of the Child, but a certain ſpongious Body, which is generally the Placenta, is perceived by the Fingers, we may conclude, that the Hæmorrhage proceeds from the Womb itſelf, in conſequence either of a partial, or total Separation of the Placenta from it. And this Caſe is far more dangerous, than when

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the Hæmorrhage proceeds from the Vagina only. Beſides, the Danger is increaſed in proportion to the Largeneſs of the Hæmorrhage; and, when Faintings happen, unleſs ſpeedy Relief is afforded, the Lives both of the Mother and Fœtus are expoſed to the moſt imminent Danger. When the Hands of a Woman in this Situation become cold, her Eyes dim, her Pulſe weak, and when ſhe is ſeized with a cold Sweat and Convulſions, which in this Diſorder generally happen ſooner or later, the Caſe is deſperate, and the Death of the Patient at no great Diſtance. In this Caſe it is not prudent to attempt the Delivery, leſt we ſhould be thought to have killed a Patient, already deſtroyed by the Diſorder.

If ſuch an Hæmorrhage ariſes from the Redundance, Commotion, or preternatural Heat of the Blood, it may be moſt properly checked by Veneſection in the Arm, a due Regimen, Reſt both of Body and Mind, and the Exhibition of gentle Aſtringents, together with ſuch Medicines as correct the exorbitant Heat of the Blood. But, if a very large and copious Hæmorrhage from the Womb itſelf ſhould not yield to the Force of theſe Medicines, it generally proceeds from the Placenta being ſeparated from the Womb; and, in this Caſe, it cannot be ſtopped, till the Child and Placenta are extracted by the Hand; becauſe the open Blood-veſſels, diſtended by the Fœtus, cannot conſtrict themſelves, till it is removed. When, therefore, we find, that Medicines are of little Advantage, that the Hæmorrhage, inſtead of being leſſen'd, becomes larger, and that the Mother is ſeized with Faintings, no means of Relief are left, except the Extraction of the Child by manual Operation, which may be performed in the following manner.

Let the Mother be laid on her Back, either on a Table, or Bed, with her Heels retracted, her Legs ſeparated, and her Buttocks raiſed: After this the Operator is to paſs his Hand, well anointed with Oil or Fat, into the Vagina, as far as the Mouth of the Womb, into which, if it is not already ſufficiently dilated, as it ſometimes is not, he is with great Caution to introduce one, then two, then the reſt of his Fingers, and thus gradually his whole Hand, into the Womb. It is ſcarce poſſible to believe with what Difficulty this is ſometimes done, eſpecially when the Placenta, which frequently happens in Caſes of this Nature, is ſituated about the Mouth of the Womb, and has a great Part of it ſtill adhering to it: This, however, is to be attempted with the greateſt Care and Diligence. And the Placenta, when it adheres but ſlightly, is firſt with the Fingers, and then with the Hand, to be gently removed ſo far as is neceſſary for introducing the whole Hand, taking care that, in this Attempt, a greater Separation of the Placenta from the Womb may not be made, than is abſolutely requiſite for the Introduction of the Hand, ſince by theſe means a greater Hæmorrhage, which might poſſibly prove mortal, might be excited. When the Placenta is diſengaged, and lodged about the Mouth of the Womb, in ſuch a manner, as to prevent the Operator's having Acceſs to the Child, *Hoorn* orders it to be firſt extracted, and then the Child. When the Placenta adheres ſo ſtrongly to the Mouth of the Womb, that the Operator cannot introduce his Hand, it is to be broken with the Fingers, till the Hand can have free Acceſs; for, as in Caſes of this Nature it is dangerous to wait too long, or commit the Buſineſs to Nature, ſuch a Practice is by no means to be recommended. Introducing the Hand, therefore, into the Womb, the Feet of the Infant, though as yet not entirely mature, muſt be immediately ſearched for, by which, for the Preſervation of the Mother, it is to be extracted. But if it ſhould happen, as it often does, that the Membranes are not broken, they are either to be pierced with the Nails of the Fingers, or, if they are very ſtrong, with an Hook, that the Feet may be more eaſily found, which they generally are without any great Trouble, becauſe in this Caſe they, for the moſt part, lie pretty near the Mouth of the Womb. But if the Membranes are broken, as they ſometimes are, and which may be known from the bare or uncover'd Parts of the Infant, there is no Occaſion for breaking them, but the Fœtus is forthwith to be laid hold of by the Feet, and by them extracted. This is generally done with the greater Eaſe, if the Feet are directly oppoſite to the Mouth of the Womb. But this Operation is far more difficult, when the Child is turned on its Head, and ready, as it were, to be brought into the World; becauſe, in this Caſe, the ſlippery Head cannot be firmly enough laid hold of; nor can the Feet, becauſe they are turned upwards, be ſo eaſily found; they are, however, carefully to be ſearched for, and the Fœtus is by them to be extracted. When the Child is thus brought into the World, the Secundines generally ſoon follow it ſpontaneouſly; but, if they ſhould happen as yet to adhere to the Womb, they are with the Hand to be gently diſengaged, and extracted. When the Secundines are thus extracted, and the concreted Blood evacuated by the Hand, in order to prevent After-pains, the Hæmorrhage gradually ceaſes, till at laſt after due Reſt, and a careful Uſe of proper internal and external Medicines, it generally diſappears entirely, becauſe the Womb now contracts itſelf, and with it the Blood-veſſels, which were before open. In order to reſtore at once the Blood and Strength of the Patient, we are to take all thoſe Meaſures generally preſcribed after large and exceſſive Hæmorrhages. Thus, for Inſtance, hot Sorbitions are frequently to be exhibited; ſuch as Broths, warm Milk, Emulſions of Almonds, Jellies, or corroborating Draughts, prepared of hot Ale, and proper Waters. I muſt here, alſo, obſerve, that, unleſs Patients of this Kind die within ſix Hours, they generally recover, becauſe the Hæmorrhage ceaſes, and the Patient receives freſh Supplies of Strength from the Exhibition of eaſily digeſted Aliments: Whereas thoſe who are deſtroyed by exceſſive Hæmorrhages, and their conſequent Weakneſs, may have their Deaths aſcribed to too late an Extraction of the Fœtus, which, as we have already obſerved, ought not to be delay'd too long, that is, till the Mother is ſeized with Faintings. I myſelf, ſays *Heiſter*, have known ſeveral Women, who by refuſing to ſubmit to this Operation, or by ſubmitting to it when it was too late, have been cut off in the Flower of their Age. The Reader who deſires Inſtances of this Kind, may conſult *Mauriceau*, *La Motte*, *Giffard*, and *Chapman*. *Heiſter*.

Maids are ſubject to conſiderable Hæmorrhages, as well as married Women, and ſometimes very young, as at nine Years old, or ſooner.

In ſuch Caſes Bleeding, Purging, and a cooling Regimen, are proper. Or, if the Hæmorrhage is violent, half a Dram of Roch-alum, a Dram of Dragons-blood, with ſome Conſerve of Roſes, is an excellent Remedy. *La Motte.*

Melt in a Crucible any Quantity of Roch-alum: Add to it an equal Quantity of Dragons-blood: Then let it be powder'd.

The Doſe of this, in violent uterine Hæmorrhages of any kind, is half a Dram every Half-hour.

Alum was firſt uſed in Hæmorrhages of the female Sex by *Scribonius Largus*. *Helvetius* added to it Dragons-blood.

The above-mention'd Preparation of it was *Pitcairn's*, and what he recommended.

This is an excellent Remedy in all uterine Hæmorrhages, whether of the Menſes in too great Abundance; or Floodings of Women with Child. *Edinburgh Medical Eſſays.*

Mauriceau thinks a Virgin can ſcarce have an Hæmorrhage, attended with a Diſcharge of Clots of Blood: But *La Motte* is of quite another Opinion. It is difficult to determine which is right.

Women are ſubject to theſe Hæmorrhages at any time of their Pregnancy, during their Labour, or afterwards. *La Motte.*

Hæmorrhages, if conſiderable, are almoſt always follow'd with the Expulſion of the Fœtus.

The moſt common Cauſes of Floodings are, Falls, Blows, Frights, falſe Steps, Efforts in lifting any thing heavy, extending too much the Legs or Arms, preſſing the Belly againſt ſomething hard, Grief, Anger, and any violent Paſſions of the Mind. *La Motte.*

When Floodings happen with any Violence, the only Cure is to deliver the Women immediately, in whatever time of Pregnancy it happens.

If the Woman is gone leſs than five Months, it is no matter what Part of the Child comes firſt; but, after that Time, the Membranes muſt be broke, and the Child fetched by the Feet.

Women are ſometimes ſo weaken'd by Flooding, that they are a long time before they recover their Strength, and that not without the Help of a good Regimen, and long Reſt. Some are afterwards troubled for a long time with a violent Head-ach, and never after recover a freſh Colour.

However, we are not to be too haſty in delivering a Woman as ſoon as any Blood appears; for ſome have a ſmall Loſs of it, without any Diſadvantage; but, when it grows exceſſive, and the Woman begins to be weak, then is the time to haſten Delivery.

Flooding ſometimes proceeds from the Blood-veſſels at the Bottom of the Vagina, or external Part of the Mouth of the Womb. *La Motte.*

La Motte gives the Hiſtory of a Woman, who, being gone about ſix Weeks with Child, was ſeized with a violent Flooding; upon which he introduced one Finger into the Mouth of the Womb, which was all he could do; and, thruſting it as far as he could into the Womb, he rounded a little Body he found therein, which was like an Hen's Egg, without a Shell, and detached it from the Womb, and then brought it whole; which, he ſays, ſhould always be done, if poſſible, for fear the Membranes, at that time ſo very little, ſhould not be readily found, in caſe they were broken, and their Contents gone off; and, then, if they ſtayed behind, the Flooding would not ceaſe.

In caſe of a Flooding, when a Woman is far advanced in her Pregnancy, if her Pains are ſtrong and redoubled, and the Child ſo far ſunk in the Paſſage, as to hinder the Introduction of the Hand into the Womb, in order to bring away the Child by the Feet, then the Expulſion of the Fœtus muſt be left to Nature.

It is not always poſſible to deliver a Woman of an abortive Fœtus, when ſhe is ſeized with Flooding. *La Motte.*

Sometimes the Mouth of the Womb is too rigid and ſtrong to be open'd ſufficiently by the Fingers. And in this Caſe *La Motte*

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Motte affirms, that all the emollient Applications ſo much recommended are of no manner of Service, Reſt and Patience being the beſt Remedies; for after Reſt it will often be dilated of its own Accord.

Floodings, which happen to Women in Labour at their full Term, are of no great Conſequence, if the Labour is very quick, and the Diſcharge not very conſiderable; but if the Labour is ſlow, and the Flooding violent, both the Mother and Child are in great Danger, eſpecially if the Child preſents right, and is advanced far into the Paſſage. But if the Child preſents wrong, and is not far advanced, it is leſs dangerous, provided the Hand can be introduced, and the Child brought away by the Feet; which muſt, upon theſe Occaſions, always be done. Or, if the Child preſent right, the Head muſt be put back, and the Child muſt be brought away by the Feet, if poſſible.

In caſe of Flooding in a Labour of the full Term, the general Rule is, to haſten Delivery as much as poſſible.

The weaker the Labour-pains, the more eaſy it is to introduce the Hand, and bring the Child away by the Feet.

Floodings are not always cauſed by a Separation of the Placenta from the Womb, but ſometimes from a Rupture of ſome of the Veſſels, which form the Navel ſtring. *La Motte.*

There is a ſort of Hæmorrhage which Women of all Ages are ſubject to, whether married or unmarried, which it is very difficult to diſtinguiſh from that which happens during Pregnancy; becauſe it is attended with all thoſe Symptoms that accompany Pregnancy, without excepting one, as forcing Pains like thoſe of Labour, Vomitings, *&c.* inſomuch that *La Motte* ſays, he has often been called to deliver Women in this Condition, who have thought themſelves with Child; and whom he cured by a cooling Regimen, forbidding the Uſe of any ſpirituous Liquors, and adviſing Reſt.

This is cauſed by a long Suppreſſion of the Menſes.

Young married Women generally breed ſoon after an Hæmorrhage of this kind.

In this Caſe the Belly grows leſs for the firſt two or three Months, as in true Pregnancy; and at the time of the Hæmorrhage, when the Woman has the Symptoms of Labour, no Waters are diſcharged, contrary to what happens in a Miſcarriage, or true Labour at the full Period. *La Motte.*

An Hæmorrhage from the Noſe, during Pregnancy, very often is the Cauſe of the Child's Death, if it proves exceſſive.

La Motte adviſes, in this Caſe, Reſt, lying upon the Bed, with the Head a little elevated, taking care to excite no extraordinary Heat by too much Covering. He, alſo, gives the Woman cold Water to drink, and cautions particularly againſt giving any thing ſpirituous, and againſt blowing the Noſe.

The following Decoction is much recommended by *Hamilton*, in an immoderate Flux of the Menſes; eſpecially when it is not cauſed by a Portion of the Placenta left behind after a natural Birth, or Miſcarriage.

Take ſeven Orange-rinds, boil them in three Pints of Spring-water, till the Water is reduced to two Pints; and let the Liquor, when ſtrained off, be ſweeten'd with white Sugar. The Doſe is ten Spoonfuls, three or four times a Day.

Riverius, Lib. 15. *Cap.* 3. quotes a Medicine much like this, from *Ludovicus Septalius's Animadvers Medic. Art.* 144. which the laſt-mention'd Author recommends as almoſt infallible, as follows:

Take three Orange-rinds, as yet ſomewhat green; boil them in ſeven Pints of Spring-water to the Conſumption of two Parts of the Liquor; of which eight or ten Ounces may be drank every Morning.

Septalius ſays farther, that, if you would make the Medicine yet more effectual, add, at the End of the Boiling, one Handful of Mouſe-ear: Or elſe make the Decoction in a Gallon of Water, and boil to the Conſumption of two Thirds; then quench frequently in the ſtrained Liquor an Iron heated red-hot. *Riverius.*

This ſeems very proper to be given with the ſtyptic Powder, as above deſcribed.

La Motte ſays, that, after any great Loſs of Blood, it is very common for Women to be troubled for a long time with a violent Head-ach, and a troubleſome Buzzing in the Ears.

Women generally loſe a large Quantity of Blood, when the Child is born; which ought not to be eſteem'd a Flooding, and is attended with no Danger.

When the Navel ſtring is cut, the Part remaining with the Placenta ſhould be tied up, as well as that remaining with the Child; otherwiſe a great Quantity of Blood will be diſcharged from it, which may prove fatal to the Mother.

Care muſt be taken, that all the Membranes are brought away with the Placenta.

When a rediſh Seroſity, inclining to black, is diſchargedfrom the Womb, accompanied with violent After-pains, it is a certain Sign, that a Portion of the Placenta, or Membranes, remain in the Womb; and then a Finger or two, or more, muſt be introduced, as it ſeems neceſſary, and the remaining Part muſt be brought away. *La Motte.*

Fatal Hæmorrhages will ſometimes enſue, after a Woman has been ſafely deliver'd, and no Part of the Placenta, or Membrane, is left behind. In this Caſe the Woman's Voice ſinks by little and little; ſhe gapes, grows pale, loſes her Pulſe, and finds herſelf weak.

La Motte's Method of Cure is as follows: He rubs the Woman's Hands and Face with Vinegar, and Water, or Oxycrate; and applies doubled Linen Cloths dipt in the ſame to the Belly, and Region of the Kidneys. Mean time he keeps her as cool as is poſſible, and ſuffers her to be covered with very few Cloths: He gives her Broth without any Salt, but in very ſmall Quantities at a time, with a little Water, and ſome Wine, in order to abate the Thirſt, and to be of ſome little Refreſhment. But he cautions particularly againſt giving any thing ſpirituous.

If the Woman has an Inclination to ſleep, he keeps her awake, till the Hæmorrhage in ſome meaſure ceaſes.

In *Obſ.* 402. he gives the Hiſtory of a Woman, who, immediately after the Extraction of the Placenta, was ſuddenly ſeized with ſo violent an Hæmorrhage, that ſhe remained, in Appearance, without either Pulſe or Reſpiration: But he brought her to herſelf, and at laſt cured her, by throwing great Quantities of Water upon her Face, Hands, into her Mouth, and almoſt all over her, and by applying Linen dipt in the ſame. He then took away every thing that might keep her warm, and laid her upon Straw only.

Chapman has probably taken this Method from *La Motte;* he ſays, as follows: "When the Diſcharge is very great, it requires the moſt immediate Aſſiſtance; or the unhappy Woman, "now juſt deliver'd, freed from her Pains and Tears, and fluſh'd, "as it were, with new Life, will be infallibly loſt. In this Caſe "I never bleed, but lay the Patient very cool, almoſt naked, and "cover her Body with Cloths dipped in Water, or Vinegar and "Water mixt. This muſt be done when the Flux is extremely "violent, and without which the Woman's Life would be loſt "in a few Minutes: It at once conſtringes and reſtores the "Tones of the Fibres and Veſſels of the Womb, at the ſame "time that it abates the too violent Motion of the over-heated "Blood. I beg Leave to recommend this Method as what I am "confident has ſaved the Lives of great Numbers, in the Courſe "of my Practice."

The ſame Author, *Caſe* 12. after having given the Hiſtory of a Delivery, goes on in this manner.

"This Lady was of a plethoric Habit, and, having been much "heated by a long Labour, and great Pain, together with ſeveral "warm and cardiac Medicines, (which, as the Poſture of the "Child was right, were given her, in hopes that Nature might "have done the Work herſelf) in about an Hour after, when "we thought all was well, and I juſt about to take my Leave, "ſhe fell into the moſt violent Flooding I ever ſaw. I was ob"liged immediately to cover her Body with Cloths dipt in Oxy"crate, changing them as they grew warm, and this for above "half an Hour together; by which means the Flux at firſt was "a little abated, and at length ſtopped, whilſt we gave her ſeveral "Draughts of cool and acid Liquors to drink. She was ſo "exceſſively cold, and her Pulſe ſo low, from the vaſt Loſs of "Blood, that we thought ſhe was dying. But, forcing down ſome "warm Sorbitions, as well as cordial Medicines, ſhe was quickly "able to bear warming, without a Return of the Hæmorrhage: "By this Method ſhe ſoon revived, and is ſtill living."

Hippocrates recommends an Infuſion of the Leaves of Vitex, or Agnus Caſtus, in an uterine Hæmorrhage, made in Black-wine. *De Natura Muliebri.*

Laceration of the Perinæum.

That the Perinæum, or fleſhy Partition between the Pudenda and the Anus, may be lacerated, is a Circumſtance well known to every one who is in the leaſt converſant in Surgery. But this Misfortune is principally incident to Women ſubjected to a difficult Labour, in conſequence of the Largeneſs of the Child, its monſtrous and unnatural Conformation, or its being doubled, as it were, and preſenting with the Buttocks. In order, therefore, to prevent the many terrible Conſequences which may poſſibly be produced by a Misfortune of this kind, the following Meaſures are to be taken with all Expedition: Firſt of all, the Wound is to be waſhed and cleanſed with warm Wine, or Brine: Then it is to be carefully anointed with ſome vulnerary Balſam, or, which is ſtill better, the Powder of Sarcocolla, or Maſtich, may be ſprinkled upon it. After this, if the Wound ſhould happen to be but ſmall, its Lips are to be brought into Contact, by means of adheſive Plaiſters: But if, in conſequence of the Largeneſs of the Wound, theſe ſhould not be ſufficient for that Purpoſe, the knotted Suture, uſual in other deep Wounds, is to be made with a crooked Needle, and a double-waxed Thread. After this the Wound is to be treated in the ſame manner with other Wounds in a like Situation. Only, in this Caſe, it is highly expedient, that the Woman ſhould remain in Bed, with her Thighs cloſe together, and have her Wound cleanſed twice or thrice each Day, till it is healed. According to the eighty-ſecond Obſervation of

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Solingen, Wounds of this kind, when neglected at the Beginning, often become incurable, and are accompanied with a very troublesome Ulcer.

Whilſt the Patient is under Cure, ſhe ſhould never be ſuffer'd to have a coſtive Stool, becauſe it would be likely to diſſolve the Union of the Parts, brought into mutual Contact by adheſive Plaiſters; or to tear out the Stitches, if a Suture has been made.

Contusions of the Pudenda.

It often happens after a very difficult Labour, that the Paſſages are ſo torn and contuſed, that a Mortification, and Loſs of Subſtance, enſue, more or leſs: And then, if Care is not taken to keep the Sides from uniting together, the Paſſage will be entirely ſtopped up, or in part. If entirely, there will be no room for the Diſcharge of the menſtrual Flux; and then the Woman may be ſeized afterwards with Convulſions, attended with great Pain in the lower Parts of the Belly. If in part, the Woman may be again with Child; and then this Union may render the Labour extremely difficult, or Delivery impoſſible.

La Motte introduces the middle Finger into the Anus, and a Catheter into the Bladder; and cuts an Opening, as near as he can, betwixt them.

La Motte, *Obſ.* 419. gives the Hiſtory of a young Girl of Seventeen, who was ſeized with a violent Pain in the Loins, and lower Part of the Belly, which the third Day were communicated to the Vagina, and would not yield to Baths, Clyſters, Bleeding in the Arm and Foot. Upon examining the Vagina, he found the Caruncułæ Myrtiformes were wanting; and about two Fingers-breadth within the Vagina he found a Membrane diſtended and full, much like that which contains the Waters of a very little Child. As he could not break it with his Fingers, he was forced to cut it with a Lancet; upon which a Quantity of very black Blood was diſcharged without any Smell, and the Girl was immediately eaſed. She was afterwards married, and has ſince had many Children.

La Motte ſays, a Surgeon of his Acquaintance had Occaſion to perform the ſame Operation.

Cooper gives us a parallel Inſtance.

La Motte, *Obſ.* 453. tells us of a Woman, whoſe Vagina was entirely cloſed up, as well as the urinary Paſſages, by a ſpongy Fleſh, which join'd the Sides together, inſomuch that ſhe was an Hour in making Water, and that with great Pain. This was cauſed by a Contuſion which the Woman received in a Labour, from the too rough and frequent Handling of the Midwife. Upon Inſpection he found there was no Paſſage for the Urine, but that it tranſuded through the ſpongy Fleſh above-mentioned. This Woman he cured by an Inciſion, and dreſſing the Wounds with Pledgets of Lint dipt in Brandy.

When the Parts are ſo contuſed, as to endanger a Mortification, Fomentations, and antiſeptic Topics, ſeem neceſſary.

In order to prevent an Union of the Sides, proper Doſſils of Lint kept betwixt the Parts ſeem the beſt Precaution.

Sometimes there is ſo great a Loſs of Subſtance, on account of a Mortification of the Parts contuſed, by the Head of the Child ſticking a long time in the Paſſage, that the Woman ſuffers an involuntary Diſcharge of the Urine and Fæces for ever after. And ſometimes there is a Mortification, even before the Woman is deliver'd; which manifeſts itſelf by an intolerable Stench.

La Motte recommends deterſive Fomentations, and Injections.

In natural or unnatural Labours, more particularly the latter, the Vagina and external Parts are ſubject to Contuſions, Dilacerations, Inflammations, Impoſtumes, and Mortifications; and to theſe Accidents Women that have the Lips of the Pudenda thick and hard, are more ſubject, than thoſe who have them thin and tender.

When the Bones which form the Head of the Child are very hard, the Lips of the Pudenda large and thick, and the Labour very quick, a Woman is moſt liable to theſe Misfortunes, becauſe there is no time for a gradual Dilatation of the Parts, and the Bones of the Head cannot yield ſo as to accommodate themſelves to the Paſſages.

When the Child comes with the Breech firſt, or if the Head lies a long while in the Paſſages, theſe Misfortunes are ſtill more to be apprehended. *La Motte.*

In caſe of Contuſion *La Motte* recommends only Embrocations with Wine warmed with a little Chervil in it.

This Remedy, he ſays, is the beſt of all others, and the only one neceſſary; and finds fault with all thoſe recommended by *Peu* and *Mauriceau*, as uſeleſs, and even pernicious.

In caſe of a Laceration of the Perinæum, and Vagina, the ſame Author adviſes a Reunion, by a few Stitches, whilſt the Wound is recent; for, after the Sides thereof are healed, and grown hard, they will not unite without being made raw again.

Contuſions, Inflammations, and even Mortifications, are often cauſed by a Midwife's too rudely handling the Parts; of which *La Motte* gives an Inſtance, *Obſ.* 408. where the Parts were ſo roughly handled, that an Inflammation came on, attended with violent Pain, which was ſucceeded by a Mortification; inſomuch that he was obliged to ſcarify, not only the external Parts, but even high up in the Vagina, and to waſh the Part with Sea-water, and then to uſe a Lotion made with Birthwort, Myrrh, Aloes, and Sugar, in White-wine, with an Addition of a little Brandy; mean time the Lochia never ceaſed, and the Patient had but very little Fever, and that only for a Day or two: By theſe means ſhe recovered, and had many Children afterwards, without any of the like Accidents.

La Motte ſays, Oil does Prejudice in thoſe Excoriations which happen during Delivery, and are felt immediately after it. His Method is, to bathe the Parts with warm Milk, Barley-water, and a Decoction of Liquorice and Chervil, and afterwards to embrocate with Wine and Chervil.

La Motte, *Caſe* 452. tells us of a Woman who had the Lips of her Pudenda and Womb exceſſively hard, and ſwelled, occaſion'd by the Midwife's frequent handling the Parts: After the Woman was deliver'd, he injected into the Vagina an Infuſion of a very ſmall Quantity of Birthwort, Myrrh, and Aloes, in White-wine; and applied a Compreſs to the Lips, dipped in the ſame: By theſe means a Separation of the contuſed Parts was procured, which fell off; mean time he took care to keep the Parts aſunder, for fear of a Reunion.

Laceration of the Womb.

If violent and ſtrong Labour-pains ceaſe all on a ſudden, and Vomiting ſucceeds, a Laceration of the Womb is to be apprehended.

La Motte gives two Inſtances of Women, who had the Womb burſt, and the Child extended lengthways, with the Feet towards the Diaphragm of the Mother, out of the Womb. Both theſe Children preſented with the Head; and there ſeem'd to be no other Cauſe of this Laceration, but the Violence of the Pains, and Force of the Child.

The Symptoms were, extreme Weakneſs, perpetual Vomiting, the Belly hard, diſtended, and painful, a very ſmall Pulſe, and an entire Ceſſation of Pains or Throes.

The Placenta was torn through in both theſe Caſes; and, in the firſt Caſe, the Woman felt a violent Motion of the Child, when the Laceration was made.

La Motte ſays, that an Hiccough, and cold Sweats, are generally Attendants upon ſuch a Laceration.

This Caſe is always fatal.

Inflammation of the Womb.

In inflammatory Pains of the Belly, *La Motte* directs an anodyne Clyſter, and emollient Fomentations of new Milk, applied by means of a fourfold Napkin dipped therein, whilſt warm, and renewed from time to time, as it cools.

The uſual Cauſes of an Inflammation of the Womb are, long and difficult Labour, the Adheſion or bad Conſiſtence of the Placenta, Falls, Blows, and Swathing the Womb too tight: Theſe Inflammations uſually cauſe a total, or partial, Suppreſſion of the Lochia, a Retention of Urine, frequent Inclinations to make Water, Diarrhœa, Vomiting, Oppreſſion, Fever, Deliriums, Convulſions, and Death.

An Inflammation of the Womb is very eaſily known by a great Pain in the lower Part of the Belly, which makes it very difficult for the Woman to lie in any other Situation than upon her Back; and, if ſhe turns never ſo little on either Side, ſhe feels an painful and heavy Maſs fall on that Side, and at the ſame time an exceſſive Pain in the Loins, Kidneys, and Groin of the oppoſite Side; and it is for this Reaſon, that ſhe can lie in no other Situation than upon her Back.

As ſoon as ever an Inflammation is perceived, there is no room for Delay; and, though the Lochia flow in abundance, Fomentations muſt be applied to the Part in Pain, which is generally hard; for, if this is neglected, the Pain and Hardneſs quickly increaſe conſiderably. Mean time Clyſters of an emollient Decoction only, in half the uſual Quantity, muſt be made uſe of; or, if the Woman is coſtive, a Clyſter of Whey with two Ounces of Honey of Violets may be uſed, firſt in order to diſcharge the harden'd Excrements, and after that the half Clyſters above-mention'd, which will be the more effectual, the longer they are retain'd.

If theſe are not ſufficient to prevent the Increaſe of the Pain and Hardneſs, recourſe muſt immediately be had to Bleeding in ſmall Quantities, but often repeated, ſo long as the Symptoms either increaſe or continue.

The Regimen muſt be of Veal and Chicken-broth, avoiding every thing ſolid. Her Drink ſhould be Water, impregnated a very little with Cinnamon; and, if the Fever is but ſlight, one eighth Part of Wine: All other ſpirituous Liquors muſt be avoided.

The Pains above-mention'd, attending an Inflammation of the Womb, ſometimes extend themſelves to the Inſide of the Thighs, when a Woman turns on one Side.

La Motte uſes a fourfold Napkin dipped in new Milk warmed, as a Fomentation, whilſt more powerful Fomentations are preparing. He, alſo, generally bleeds once in twelve Hours.

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He diſapproves of uterine Injections, becauſe, he ſays, if the Pipe of the Syringe ſhould be introduced into the Womb, it would irritate the Part, and increaſe the Inflammation; and becauſe, in this inflamed State of the Womb, the Mouth is entirely cloſed, and therefore an Injection could reach no farther than the Vagina.

He, alſo, diſapproves of Bleeding in the Foot, becauſe that muſt bring a greater Flux of Blood to the Part already inflam'd; he therefore prefers Bleeding in the Arm.

Convulsions.

Women are ſometimes ſeized with Convulſions, before, during, and after Labour. The Prognoſtic to be made upon this Occaſion, is according to the Violence of the Convulſions, and their Cauſes.

A long Suppreſſion of Urine will ſometimes cauſe Convulſions.

When Convulſions, during Labour, begin to be violent, and the Woman weak, Delivery muſt by all means be haſten'd; as it muſt be at all times of Pregnancy, Convulſions generally ceaſing ſoon after Delivery. But, when the Caſe will permit, we ſhould wait to ſee what proper Medicines can do, and how far Nature is able to relieve herſelf.

Women will frequently be ſeized with Convulſions, without any manifeſt Cauſe, and very ſuddenly.

When a Woman is in Convulſions, it may ſometimes be perceived, that ſhe is in Labour, by a ſmall Motion of her Lips, and an uneaſy Movement of the lower Parts; and then Delivery is to be haſten'd. *La Motte.*

If a Retention of Urine is the Cauſe of Convulſions, the Catheter muſt be uſed; but the Neck of the Bladder is ſometimes ſo compreſſed betwixt the Os Pubis and Head of the Child, that the Catheter will not paſs: In this Caſe, the Head of the Child muſt be thruſt back, with one or more Fingers, the Woman being placed in the ſame Situation as if ſhe was in Labour; and then the Catheter will paſs; and perhaps the Woman may make Water, without the Catheter.

Convulſions are ſometimes cauſed by a Plethora; and then Bleeding judiciouſly repeated, Clyſters, and Purges, are the proper Remedies. *La Motte, Obſ.* 222. gives an Inſtance of a Woman, whom he was obliged to bleed fourſcore and ſix or ſeven times, during the five laſt Months of her Pregnancy, taking away but a ſmall Quantity at a time; and notwithſtanding this prodigious Loſs of Blood, ſhe was at laſt delivered of an hearty Child, and did very well herſelf. This Woman had uſed herſelf to eat great Quantities of improper Food.

Convulſions which happen after Delivery, are always dangerous.

If they are cauſed by the Suppreſſion of the Lochia, Care muſt be taken to procure their Return, if poſſible.

If Convulſions proceed from an Hæmorrhage, it muſt be ſtopped or diminiſhed by all proper Methods.

La Motte tells us of two Women who were ſeized with violent Convulſions after Delivery; and this happen'd every time they lay-in: Theſe he cured by giving them Broths, a little at a time, and often repeated, in order to repair the Loſs of Blood, and Clyſters in very ſmall Quantities.

He adviſed them, as ſoon as they perceived themſelves with Child the next time, to bleed, and repeat it frequently during their Pregnancy; and to take once every Month, for the three firſt Months, an emollient Purge, of

> One Dram of Rhubarb, infuſed for ten or twelve Hours, in a large Glaſs of Water: Add to this an Ounce and an half of Caſſia Fiſtula: Pour upon this ſome Broth, and diſſolve in the ſtrained Liquor one Ounce of Manna: Strain it again, and let the Woman take it early in the Morning; and, two Hours after, let her take a little Broth.

If a Woman is attacked with Convulſions, and a Suppreſſion of the Lochia, *La Motte* adviſes Bleeding, and anodyne cooling Clyſters.

Diarrhoea.

La Motte gives the Hiſtory of a Caſe, where a young Lady, at her full Term, was ſeiz'd with ſlow Pains, which increas'd in a little time, inſomuch that they thought ſhe would be ſoon deliver'd; but they went off again, and return'd the next Day; and ſo continu'd ſometimes more, and ſometimes leſs ſtrong, by Intervals, till the eighth Day, when they increas'd ſo much, that the Lady was deliver'd. She continu'd very well for the ſix firſt Days, without, however, having any Sleep ſince the time ſhe was firſt ſeiz'd with Pains, which was fourteen Days. At this time ſhe was ſeiz'd with a violent Shivering, which was follow'd by as violent a Fever, accompanied with a Delirium, Diarrhœa and Vomiting, her Belly being diſtended, hard, and painful, and ſhe herſelf extremely weak. The Lochia, however, continued in Plenty, which was the only encouraging Circumſtance.

In order to appeaſe the Gripings, with which ſhe was much afflicted, he gave her four times a Day half the uſual Quantity of a Clyſter, made with a Decoction of waſh'd Bran, Verbaſcum album (a Species of Mullein), Flowers of Chamomile and Melilot, with Linſeed, and an equal Quantity of Broth. At the ſame time, he applied to her Belly a Napkin doubled, and ſoak'd in new Milk, as hot as ſhe could bear it. Her common Drink was a Decoction of the Roots of Marſhmallows, Shavings of Hartſhorn and Ivory, with a little Quince Marmalade; at Night, ſhe took two Spoonfuls of Syrup of Maiden-hair, with an Ounce of Oil of ſweet Almonds, and a few Spoonfuls of *Spaniſh*, or other Wine; her ordinary Food was Broths, or Soups in ſmall Quantities, and a little *Bouillie de Froment*, I ſuppoſe he means haſty Pudding; and by theſe means the Symptoms were reliev'd, and ſhe recover'd by degrees.

La Motte, remarks upon this Occaſion, that *Laudanum* is a Specific for theſe Diſorders, at any other time but in Childbed; but then particular Care muſt be taken, that neither Laudanum, nor any other Narcotic, is given, of any ſort whatever; for they never fail to ſuppreſs the Lochia, and for that Reaſon to be fatal: Of which he gave an Inſtance in a Lady who died four Days after taking a Julap of Syrup of white Poppies, and Oil of ſweet Almonds, as a Cure for violent Gripes, and to ſtop a Diarrhœa, which it effectually did, as well as the Lochia, which could never afterwards be recall'd by any Remedies whatever.

He, alſo, tells us of another Lady, whoſe Lochia were ſuppreſs'd by taking a Grain of Laudanum upon the ſame Occaſion; which brought on a Dropſy, of which ſhe died ſome Months after.

Tumors of the Breasts.

If a Woman takes Cold at her Breaſt, or any-where elſe, during her Lying-in, her Breaſts are very ſubject to Inflammations, which generally terminate in an Abſceſs, if not prevented.

La Motte's Method of treating theſe Caſes, as appears by *Obſ.* 434. is to endeavour, firſt, to reſolve the Tumor by Bleeding, emollient Clyſters, and a low Regimen, by Applications of warm Milk and Brandy, and an Ointment of the Oils of Roſes, Lilies, and Chamomile.

But if the Reſolution is impoſſible, and an Abſceſs muſt neceſſarily be produc'd, he makes uſe of an anodyne Cataplaſm of the Crums of wheaten Bread, Milk, the Yolks of Eggs, Saffron, and Oil of Chamomile; and afterwards changes this Form for one more emollient, and conſiſting of a Mucilage of Linſeed, Mallows, Marſhmallows, Rye, Meal, Bran of Wheat, Chamomile-flowers, and Melilot, together with the Oils of Lilies, and Chamomile; and again changes this for one more maturative, and which conſiſts of Onions roaſted under the Aſhes, old Leaven, and Ointment of Marſhmallows. When Matter is perfectly form'd, he lets it out with a Lancet, deterges, incarns, and cicatrizes.

Theſe Accidents will ſometimes be caus'd by Cold taken during Labour.

La Motte ſays, he has known ſeveral Women have an Apoſtemation in the Breaſts, only for having laid their Hands and Arms out of Bed.

After-pains.

After-pains are very uſeful to a Woman; for theſe promote the Diſcharge of the Lochia, and expel Clots of Blood, or any thing which is left behind, and ought to come away.

After-pains are eaſily diſtinguiſh'd from Pains of any other kind; for they come by Fits, and laſt but a little while; and the Lochia flow abundantly, eſpecially juſt after the Pain ceaſes, which does not happen after Colic-pains.

In Pains which proceed from an Inflammation of the Womb, or Suppreſſion of the Lochia, the Belly is hard, diſtended, and painful, which never happens in the Caſe of After-pains.

As moſt Women are ſubject to theſe After-pains, and as they are of real Service, nothing more is neceſſary than to apply a ſoft and warm Napkin to the Belly, and to keep the Woman very warm.

Sweating often relieves a Woman from theſe Pains, provided it be ſpontaneous.

Sometimes After-pains are more violent than Labour-pains, and become almoſt inſupportable, but ceaſe generally in two or three Days, but ſometimes continue ſeven or eight. *La Motte*, however, in this Caſe leaves the Cure to Nature, unleſs the Woman is coſtive, and then he adviſes an emollient Clyſter.

The Colic.

The Colic is eaſily diſtinguiſh'd from After-pains, becauſe a Colic does not increaſe the Diſcharge of the Lochia, which After-pains do, eſpecially juſt after they ceaſe.

For the Cure of the Colic, *La Motte* recommends emollient Clyſters, and Fomentations with new Milk.

This

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This Author recommends an Ounce of Oil of ſweet Almonds in half a Glaſs of Wine, and a little Sugar, or Syrup of Maidenhair, to be taken at once, as very proper in the Colic.

Vapours.

Some Women in Child-bed are ſo ſubject to Vapours, that the leaſt Surprize give Occaſion to them; or a good or bad Smell of any thing, particularly Musk. They are attended with a ſudden Heat and Redneſs all over the Face and Body, violent Agitations, Trembling, Inquietude, Reſpiration either high and frequent, or weak and ſlow; Tears, and an Inaction of all the Parts of the Body, almoſt as much as in a Lethargy.

La Motte ſays, he has known Women ſeiz'd with Vapours upon being oblig'd to keep their Hands in Bed, which have ceas'd immediately after taking them out again.

Sometimes Vapours are ſo violent, as to make a Woman delirious; and ſometimes the Pulſe is ſo weak and languiſhing, that the Woman ſeems expiring; however, *La Motte* ſays, he never knew any one die of them.

The Remedies recommended by the ſame Author, in this Caſe, are Spirit of Sal Ammoniac, and Oil of Amber, to ſmell to; the Confection of the Hyacinth, in Water of Mugwort: Clyſters of Whey, Mugwort, Feverfew, Rue, Camphire and Caſtor, he, alſo, ſays, are good Medicines in this Caſe.

A Senſe of Suffocation and continual Efforts to ſwallow, are ſometimes Symptoms of the Vapours. *La Motte.*

Miscellaneous Observations.

A Woman has ſometimes all the Signs of Pregnancy, without being with Child, the Symptoms of Impregnation being cauſed by a great Collection of Water in the Womb. In this Caſe, the Belly is much bigger than in that of a Mole; when the Woman lies on her Back, with her Knees elevated, her Belly is found ſoft and equal all over, without any Difference betwixt the inferior and ſuperior Part, which is contrary to what happens in Pregnancy; beſides, the Woman does not perceive the Child to move at the uſual time; the Woman's Face is moreover generally pale and emaciated.

In an Aſcites, when a Woman lies upon her Back, and an Hand is placed on each Side the Belly, when the Belly is preſs'd with one Hand, a Fluctuation is perceiv'd by the other; but, in the Caſe before us, no ſuch Fluctuation can be perceiv'd.

Theſe Waters are frequently diſcharg'd, at different Periods of Time, without any conſiderable Accidents.

Theſe Waters are ſometimes contain'd in a Membrane, which is attach'd to the Womb by ſome Blood-veſſels; and in this Caſe there will be a Flooding, till the Membranes are excluded; but if the Membranes happen to ſtay long enough to putrefy, beſides the Accident of Flooding, and Pains like thoſe of Labour, the Woman will be ſeiz'd with violent Pains in her Head, and Shiverings, tho' at the ſame time extremely hot and burning to the Touch, and ſometimes a Delirium.

Sometimes the Womb is ſo diſtended with Wind, as to give all the Appearances of Impregnation, notwithſtanding which the Menſtrual Flux continues often. In this Caſe, at the End of eight or nine Months, or ſooner, the Womb diſcharges itſelf involuntarily of theſe Flatulencies with a Noiſe, as if it came from the Anus, and the Woman recovers without any farther ill Conſequence. *La Motte* gives us an Example of this kind.

It muſt be obſerved, that the Woman mention'd by *La Motte* had a true Conception immediately after the Diſcharge of theſe Flatulencies.

When a Woman takes Cold during a Lying-in, 'tis a good Symptom not to have the Lochia ſtopt, and to have the Belly ſoft and even.

La Motte gives an Inſtance of a Woman under theſe Circumſtances, who was ſeiz'd with a violent Looſeneſs, attended with a Shivering, and Pains all over, and want of Reſt, whom he cured, by giving her an half Clyſter of Broth; two Hours after that, an Ounce of Oil of ſweet Almonds; and an Hour after that, a Draught of Broth: And then adding a few more Cloths on the Bed, ſhe ſweat, plentifully, and recover'd of all theſe Symptoms by the next Day.

In order to examine whether the Belly is ſwell'd or not, the Woman muſt be put in the ſame Poſture, as is directed by *La Motte* for Delivery; that is, upon her Back, with her Knees elevated, and Heels placed near the Buttocks. *La Motte.*

When a Woman is in Labour, there ſhou'd be a Fire in the ſame Room, or one very near it, let the Seaſon be never ſo hot. For the Water flowing away at every Pain, will make her take Cold, if ſhe is not conſtantly ſupplied with warm Cloths.

Hippocrates mentions Cold, as condenſing the Lochia, and directs Patients under theſe Circumſtances to be made warm.

When a Woman has ſweated profuſely for the eight or ten firſt Days of her Lying-in, it often hardening upon the Skin, cauſes a troubleſome Itching. In this Caſe *La Motte* approves of *Mauriceau's* Advice, who directs a Bath of warm Water. But, in cold Weather, this muſt be done with Care and Caution, for fear of opening the Pores too much.

Nothing is more ſerviceable to Women in Child-bed, than plentiful Sweats; for they prevent Fevers, and all other bad Conſequences; and cure them when they happen. Inſomuch that 'tis common to ſee a Woman ſeiz'd with Shiverings, and Pains in the Breaſts, Hips, and other Parts, attended with a violent Fever, and recover very ſoon by plentiful continu'd Sweats. *La Motte.*

La Motte's Method of Regimen for Women in Child-bed, is to give them, from time to time, a little Broth; and ſometimes a little Toaſt and Wine, if there is no Reaſon to apprehend a Fever.

He recommends the following Mixtures, as a proper Drink for Lying-in Women.

Two Quarts of Water, Cinnamon a Dram, Sugar two Ounces.

Let theſe boil a quarter of an Hour, and then let it be drank always warm. If no Fever is apprehended, a little Wine may be added.

If the Woman continues coſtive till the third Day, he ſays, he never fails giving an emollient, or gently purging Clyſter.

And the fifth Day he allows Fowl, either roaſted or boil'd.

The Meconium is the Excrement of the Child, of the Conſiſtence of Honey, and of a browniſh Colour.

If this is diſcharg'd from the Womb, when the Child is well ſituated, 'tis a Sign the Child is dead, eſpecially if the Labour is long, and particularly if the Navel-ſtring preſents before the Head. But when the Child preſents in any conſtrain'd Situation, eſpecially with the Buttocks, no Notice is to be taken of it, nor any Concluſion to be drawn from it with reſpect to the Child's Death. *La Motte.*

Women in Child-bed, upon expoſing themſelves to the Cold, whilſt they ſweat eſpecially, are ſometimes ſeized with violent Pains in the Side, attended with a Cough, and Fever, and Difficulty of Reſpiration, tho' at the ſame time the Lochia proceed well.

La Motte ſeems in this Caſe to treat a Woman with great Judgment, his Intention being to relax by all poſſible means. He, therefore, directs Bleeding in ſmall Quantities, and repeats it at ſhort Intervals, if neceſſary; and gives emollient Clyſters of Whey only; making the Patient drink large Quantities of diluting Liquors. He bleeds in the Arm, and repeats it, till the Pain ceaſes, and affirms that Bleeding is the only Remedy to be depended on in theſe Caſes.

Vomiting is generally a Sign of a ſpeedy Delivery; but, when it continues long, it becomes a very pernicious Symptom, becauſe it prevents the Woman from taking any proper Nouriſhment to keep up her Strength.

If a Woman in Labour vomits a black Matter, or Subſtance like Hogs-blood boil'd and coagulated, 'tis a fatal Symptom, eſpecially if it ſmells offenſively. *La Motte.*

OBSTRUCTIO. An Obſtruction. See Inflammatio.

An Obſtruction is ſuch an Obturation of the Veſſels, as prevents the Circulation of the Fluids, whether of the ſound and vital, or of the morbid and peccant Kind, through them; ariſing from an Exceſs of the Bulk of the Fluid to be tranſmitted above the Capacity of the Veſſel which ought to tranſmit it.

Such an Obſtruction proceeds either from the Narrowneſs of the Veſſels, or the exceſſive Bulk of the Fluids to be tranſmitted thro' them, or from a Concurrence of both theſe Circumſtances.

The Narrowneſs of the Veſſels is produced, either by external Compreſſion, the proper Contraction of the Veſſels themſelves, or an increaſed Thickneſs in their Membranes.

The Bulk of the Molecules of the Blood is increaſed by the Viſcidity of the Fluids, or by means of an *Error Loci.*

An Obſtruction may, alſo, proceed from a Narrowneſs of the Veſſels, in Conjunction with a preternatural Bulk of the Molecules of the Fluids.

The Veſſels may be externally compreſſed,

Firſt, By an adjacent Tumor, either of the plethoric, inflam'd, purulent, ſcirrhous, cancerous, œdematous, encyſted, ſteatomatous, atheromatous, melicerous, hydatidic, aneuriſmatic, varicoſe, tophous, pituitous, calculous, or callous Kind.

Secondly, By Fractures, Luxations, Diſtortions, or Diſtractions of the harder Parts of the Body, compreſſing the flexible and pliant Veſſels.

Thirdly, By every Cauſe which preternaturally ſtretches and lengthens the Veſſels, whether by a Tumor, or the Preſſure of a Part when out of its natural Situation, or by an external ſtretching Force.

Fourthly, By external compreſſing Cauſes, ſuch as too tight Cloths, Bandages, the Weight of an incumbent Body preſſing upon one particular Part, and Ligatures. This Effect may, alſo, be produced by Motion, Attrition, and embracing other Bodies; for, when any Part of the human Body is moved againſt an hard Obſtacle, the flexible Veſſels are neceſſarily compreſſed: Thoſe who

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who are not accuſtomed to travelling, have their Feet inflamed by long Journeys; and thoſe who tug ſeverely at the Oar, have their Hands inflamed; and, if that Exerciſe is long-protracted, Veſicles of an almoſt gangrenous Nature are raiſed.

An increaſed Contraction, eſpecially of the ſpiral Fibres, and, alſo, of the longitudinal, leſſens the Cavities of the Veſſels; and this Contraction ariſes, firſt, from every Cauſe which increaſes the elaſtic Force of the Fibres, Veſſels, and Viſcera. Secondly, from the Tumor, and preternatural Diſtention, of thoſe minute Veſſels, by a Contexture of which, the Sides of the larger Veſſels are formed. And, thirdly, by a Diminution of that Cauſe which dilates the Veſſels, whether, for Inſtance, Inanition, or a languid State of the Veſſels: Hence Veſſels, when divided, ſoon confine and reſtrain the Diſcharge of their contained Fluids; and the Reaſon of this is ſufficiently obvious: For whilſt the Blood is, by the Force of the Heart, propelled into the Arteries, the greater Reſiſtance there is about their Extremities, the more they are dilated. But, when an Artery is divided, there is ſcarcely any Reſiſtance, and the Blood flows freely from the Wound. In conſequence of this, the Artery is not diſtended, but by its own Contractility is gradually more contracted, till at laſt it totally hinders the Effuſion of the Fluid, which would otherwiſe be diſcharged. Hence it is, that ſo violent Hæmorrhages happen from half-divided Veſſels, which cannot be ſucceſsfully ſtopt, till the Veſſels are totally divided.

The Thickneſs of the Membranes of the Veſſels is increaſed, firſt, by every Tumor happening in thoſe Veſſels, by the Union and Contexture of which the Membranes are formed: And, ſecondly, by Calluſes either of a cartilaginous, membranous, or bony Nature, formed there.

The Bulk of the Fluids is ſo increaſed, as to become incapable of circulating either, firſt, by a Change of the ſpherical Figure of their Parts, into any other; and thus entering the Cavities of the Veſſels under a larger Surface: Or, ſecondly, by the Union of ſeveral Molecules before ſeparated.

The Figure of theſe Molecules is principally changed by a Ceſſation of the equable and uniform Preſſure upon them, ſo that they are left to their own Elaſticity; and this happens, when the Motion of the Blood is languid, the Veſſels relaxed, or the Quantity of the Fluids diminiſhed.

The Molecules of the Fluids are united by Reſt, Cold, Froſt, Exſiccation, Heat, a violent Circulation of the Blood, a ſtrong Compreſſion of the Veſſels, as, alſo, by acid, coagulating Things; by auſtere, ſpirituous, and abſorbent Subſtances; and by the Viſcidity and oleous Quality of the Fluids.

By an *Error Loci*, the Fluids become incapable of circulating, if Corpuſcles enter the dilated Baſes of conical Veſſels, and are, at the ſame time, incapable of paſſing through the narrower Parts of theſe Veſſels. A Plethora, an increaſed Motion of the Fluids, their Rarefaction, or a Relaxation of the Veſſels, principally produce this Dilatation; eſpecially, if theſe are immediately ſucceeded by their Contraries.

Hence the Cauſes and Nature of every Kind of Obſtruction may be underſtood.

An Obſtruction, happening in a live Body, hinders the Circulation of the Fluids, which ought to paſs through the Veſſels; ſtops the other Particles of the Blood convey'd to it, and receives their Action; expreſſes the more ſubtile, and unites the groſſer Parts of the Fluids; extends, dilates, attenuates, and reſolves the Veſſels; condenſes the ſtagnant Fluids; deſtroys the Functions ariſing from an uninterrupted Circulation; empties and dries the Veſſels, which ought to have the circulating Fluids convey'd into them; leſſens the Capacities of the Veſſels, which ought to tranſmit the Fluids; augments both the Quantity and Velocity of the Fluids in the unobſtructed Veſſels; and, conſequently, produces all the Evils which can ariſe from thence.

For this Reaſon, the Effects of an Obſtruction are various, according to the Diverſity of the obſtructed Veſſel, and the obſtructing Matter.

In the ſanguiferous arterial Veſſels, an Inflammation of the firſt Kind happens; in the dilated, lymphatic, arterial Veſſels, an Inflammation of the ſecond Kind; in the larger lymphatic Veſſels, an Oedema; in the ſmaller, Pains without any apparent Tumor; but in the pinguiferous, oſſeous, medullary, and biliary Veſſels, other Diſorders ariſe from an Obſtruction.

The Phyſician, who knows the Seat, the Nature, the Matter, the Cauſes, and the Effects of Obſtructions already mentioned, will eaſily diſcover the Signs of a future and preſent Obſtruction, together with their Effects.

When the different Kinds of Obſtructions are diſtinctly known, 'tis no difficult Matter to find a Cure adapted to each.

For that Species of Obſtruction which ariſes from external Compreſſion, indicates the Removal of the compreſſing Cauſe, if poſſible.

That Species of Obſtruction, which ariſes from an increaſed Contraction of the Fibres, may be known by thoſe Signs which diſcover a Contraction of the Viſcera, Veſſels, and Fibres. That Kind of Obſtruction in which the Contraction ariſes from a Tumor of the minute Veſſels, which conſtitute the Sides and Cavities of the larger Veſſels, may be diſcovered by the manifeſt Signs of its Cauſe; as, alſo, that Species of Obſtruction which ariſes from Inanition, or a Diminution of the Cauſe which dilated the Veſſels.

This Species of Obſtruction is removed, firſt, by ſuch Medicines as correct the too great Contraction of the Fibres, Veſſels, and Viſcera; ſecondly, and more eſpecially, if their Virtues have immediate Acceſs to the Part affected, which Advantage is principally obtained by Fomentations, Fumigations, Baths, and Ointments; thirdly, by ſuch Remedies as empty the too full Veſſels compoſing the Membranes. This Intention is anſwered by Evacuants in general, but eſpecially by laxative, diluting, reſolvent, attenuating, deterſive, and evacuant Medicines apply'd to the Veſſels themſelves; and, fourthly, by ſuch Medicines as reſolve Calloſities, when formed.

But the Species of Obſtruction, which ariſes from this Cauſe, is rarely or never to be cured: Emollient and relaxing Medicines are, however, moſt efficacious. Hence appears the inevitable Neceſſity of Death, and the great Difficulty of procuring a long Life, by means of Medicines.

That Unfitneſs of the Fluids for paſſing through the Veſſels, which depends upon their loſing their ſpherical Figure, may be known from an Inveſtigation of its Cauſes, which are, for the moſt part, ſubjected to the Senſes.

It is cured by ſuch Remedies as reſtore the ſpherical Figure of the Globules of the Blood. Of this Kind are all thoſe Things which increaſe the Motion of the Fluids through the Veſſels and Viſcera, ſuch as all ſtimulating and corroborating Medicines, as, alſo, brisk Motion.

As the Concretion and Inſpiſſation of the Fluids ariſes from ſo various and different Cauſes, ſo it requires different Methods of Treatment, and different Medicines, according to the different Conditions of the Patient. And this Diverſity of Cauſes, when inveſtigated, will diſcover the moſt proper Medicines, and the beſt Method of uſing them.

The Concretion of the Humours, in general, is removed, firſt, by the reciprocal Motion of the Veſſels; ſecondly, by Dilution; thirdly, by an attenuating Fluid convey'd to the Maſs of Blood, mixed with it, and circulating along with it; and, fourthly, by removing the coagulating Cauſe.

The reciprocal Motion of the Veſſels is procured, firſt, by ſuch Remedies as diminiſh the diſtending Cauſes, ſuch as Veneſection; ſecondly, by ſuch Medicines as corroborate the Veſſels; thirdly, by Friction, and muſcular Motion; and, fourthly, by ſtimulating Medicines.

Water, eſpecially when warm, is a powerful Diluent, when drank, injected, received by Exhalations, or apply'd in any other manner; provided it is propelled from the Parts to which it is apply'd, to thoſe where the Matter, to be reſolved, is lodged. This Intention is anſwered by deriving, attracting, and propellent Remedies.

The Fluids are attenuated, firſt, by Water; ſecondly, by Seaſalt, Sal Gemmæ, Sal Ammoniac, Nitre, Borax, fixed and volatile alcaline Salts; thirdly, by native Soaps, conſiſting of an Alcali, and an Oil; by compound Soaps, whether fuliginous, volatile, or fixed; as, alſo, by Bile.

Native Soaps, conſiſting of an Oil, and an Alcali, are, recent and mature Juices, expreſſed from all Herbs abounding with an alcaline Acrimony, or ſuch as are of an highly aromatic Quality. Artificial Soaps, conſiſting of an Alcali and Oil, are black Soap, and *Venice* Soap, one or two Drams of which may be uſed; and *Starkey's*, or *Helmont's* Soap, four Grains, or one Scruple, of which may be uſed. Fuliginous volatile Soaps are, oleous and alcaline Spirits prepared of alcaleſcent Aromatics, fifteen Drops of which may be exhibited; oleous alcaline Spirits prepared of Soot, fifteen Drops of which may be given; the oleous alcaline Spirits prepared from all the Humours or ſolid Parts of Animals, eighteen Drops of which may be exhibited. To this Claſs, alſo, belongs Soot itſelf.

And, fourthly, the Attenuation of the Humours is promoted by Preparations of Mercury. All theſe are convey'd to the Parts obſtructed, by Derivation, Attraction, and Propulſion. Proper Mercurials are Mercurius dulcis, ten Grains of which may be uſed for a Doſe. Corroſive Sublimate, one eighth Part of a Grain may be exhibited, diluted in ſome proper Liquor; red Precipitate, two Grains for a Doſe; white Precipitate, four Grains; Turbith Mineral, two Grains; and Æthiops Mineral, ſixteen Grains.

Attracting Medicines are ſuch as relax the Place to which the Matter is to be convey'd; and ſtraiten that from which it is to be drawn. Theſe are ſpecified under the Article FIBRA.

Deriving Medicines are thoſe which invite the Fluids into any given Part; and ſuch are the Remedies which produce an Evacuation in the Part affected; and artificial Frictions of the adjacent Parts.

Propellent Medicines are thoſe of the ſtimulating Kind, which are ſpecified under the Article GLUTEN.

The Cauſe which coagulates the Fluids, is removed by the Influence of ſtrongly-attracting Medicines: Thus Acids and Oils are attracted into Alcalis, as is obvious from chymical Experiments.

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But when the Fluids, propelled into improper Places, become incapable of circulating, and by that means generate Obſtructions, many and violent Diſorders are produced; for which Reaſon the Source and Cauſe from which they proceed, ought to be carefully attended to.

We may know, that the Fluids are propelled into improper Places, firſt, if we know, that the Cauſes of ſuch a Diſorder, which are generally ſufficiently obvious, have preceded; ſecondly, if contrary Cauſes have ſucceeded theſe; and, thirdly, if the Effects are evidently perceived.

From what has been before ſaid, we may eaſily foreſee what the Conſequences of ſuch a Diſorder muſt be.

The Cure is obtained, firſt, by repelling the impacted Matter, with a retrograde Motion, into larger Veſſels; ſecondly, by reſolving it; thirdly, by relaxing the Veſſels; and, fourthly, by Suppuration.

The impacted Matter is repelled with a retrograde Motion, firſt, by evacuating the Fluid which acts upon the impacted Matter, by a liberal and ſudden Veneſection, by which means the obſtructing Matter is forced back by the Effort of the contracted Veſſel; and, ſecondly, by Friction, performed from the Extremities to the Baſes of the Veſſels.

The impacted Matter is reſolved, and the Veſſels relaxed, by the Medicines already mentioned. *Boerhaave's Aphoriſms.*

I have been the leſs particular in explaining theſe Aphoriſms, becauſe they will be readily underſtood, by what is ſaid under the Articles FIBRA, and INFLAMMATIO.

OBTUNDENTIA. Medicines which obtund, or correct the Acrimony of the Humours.

OBTURATIO. Obturation, or Obſtruction. See OBSTRUCTIO.

OBTURATOR. A Name for two Muſcles of the Thigh; one of which is the MARSUPIALIS, and is called, *Obturator Internus.* See MARSUPIALIS. The other is the

OBTURATOR EXTERNUS. This is a ſmall flat Muſcle, which fills up the Foramen Ovale of the Os Innominatum exteriorly, and reaches from thence to the great Trochanter of the Os Femoris, behind the Neck of that Bone.

It is fixed by fleſhy Fibres to the outer or anterior Side of the Os Pubis, all the Way to the Foramen Ovale, to the Edge of that Hole, next the ſmall Branch of the Iſchium, and a little to the neighbouring Parts of the Obturator Ligament.

From thence its Fibres, contracting in Breadth, paſs on the fore Side of the great Branch of the Iſchium, under the Acetabulum, where a Tendon is formed, which continues its Courſe behind the Neck of the Os Femoris towards the great Trochanter, and is inſerted between the Gemelli and Quadratus, into ſmall Foſſulæ, between the Apex of the great Trochanter and the Baſis of the Collum Femoris.

The Obturator Externus concurs with the Internus in the ſame Uſes, tho' in a more ſimple, and in a more uniform Direction. It acts chiefly when the Thigh is extended more or leſs; for, when the Thigh is bent, it only ſeems to cooperate with the Obturator Internus, in its Action on the Orbicular Ligament; becauſe, in other reſpects, it is rather an Aſſiſtant to the Triceps, and performs the Motion of Rotation the other Way. *Winſlow's Anatomy.*

OCCASIO, in Medicine, imports either Opportunity, a due Regard to which is of very great Importance to a Phyſician; or ſometimes it ſignifies a Cauſe.

OCCIDENS. Vinegar. *Rulandus.*

OCCIDENS STELLA. Sal Ammoniac. *Rulandus.*

OCCIPITALIS MUSCULUS. The Occipital Muſcle. See CAPUT.

OCCIPITO-FRONTALIS, according to *Douglas*, is a Muſcle of the Head; which he thus deſcribes.

It ariſes fleſhy from the tranſverſe Line of the Occiput, oppoſite to Part of the ſuperior Termination of the *Maſtoidæus*, and Part of the Beginning of the *Trapezius* next it, and then tendinous from the reſt of that Line backwards, ariſing after the ſame manner, on the other Side; from thence it grows ſtrait up, and ſoon becoming all tendinous, it covers the two parietal Bones, and the *Oſſa Squamoſa*, above the Temporal Muſcles, its outer Edge being faſtened to the *Os Jugale*, on each Side. This broad Tendon near the Coronal Suture grows fleſhy, and deſcends with ſtrait Fibres as low as the *Muſculi Orbiculares.*

It is inſerted into the Skin at the Eye-brows, having ſent down, between them, a narrow fleſhy Slip, or Elongation, which is continued over the Oſſa Naſi, as far as its cartilaginous Part, where its Fibres run off on each Side, and terminate in the Skin above the *Muſculus Naſi Proprius.*

When this digaſtric Muſcle, which covers all the upper Part of the Skull, like a Cap, acts, it pulls the Skin of the Head backwards, and at the ſame time it draws up and wrinkles that of the Forehead, being antagonized by the Corrugator. *Douglas's Myograph. Comp.*

OCCULTUS. Occult. Cancers not exulcerated, are called occult Cancers.

OCHEMA, ὄχημα. The fineſt and moſt fluid Part of the Blood and Chyle. *Galen.* It ſeems to be what the Moderns call Lymph.

OCHETEUMATA, ὀχετεύματα. The Foramina of the Noſe.

OCHETOS, ὀχετός. A Paſſage, Duct, or Canal, in any Part of the Body. It is principally uſed, by *Hippocrates*, with reſpect to the Paſſages for Urine, Stools, and Sweat.

OCHEUS, ὀχεύς. The Scrotum.

OCHRA, Offic. Mer. Pin. 218. Charlt. Foſſ. 2. Schrod. 320. *Ochra Anglica.* Worm. 17. *Ochra.* Aldrov. Muſ. Metall. 254. *Ochra nativa.* Calc. Muſ. 137. *Ochra nativa ſive Sil Goſſarienſis.* Kentm. 8. *Ochra foſſilis ſeu nativa crocei coloris.* Dougl. Ind. 64. *Vitriolum abortivum.* Lillar. de Font. *Sil.* Plin. YELLOW OKER.

It is an argillaceous Subſtance, of a yellow or luteous Colour, and an aſtringent Taſte. As to its Virtues; it is drying, aſtringent, diſcutient, and repreſſes Excreſcences. It is very ſeldom uſed, and never but externally, and that principally in Marks by Blows or Stripes, and in Colliſions, and for diſcuſſing hard Tumors. *Dale.*

OCHREA. The fore Part of the *Tibia.*

OCHRUS.

The Characters are;

It has a round, ſmooth, cylindrical Pod, which is full of round Seeds; and the Leaves are articulated, ſometimes ſimple, ſometimes conjugated, and terminate in Tendrils.

Boerhaave mentions but one Sort of this; which is,

Ochrus folio integro Capreolos emittente. *C. B. P.* 313. *Lathyrus folio integro, producente bina foliola, Capreolos emittentia.* M. H. 2. 58. *Lathyri Species, quæ Ervilia Dodonæi ſylveſtris.* J. B. 2. 17. 305. *Ervilia ſylveſtris.* Dod. p. 522. Boerh. Ind. alt. Plant. Vol. 2. p. 43.

The Seeds, which are cylindrical, of the Size of a ſmall Pea, and of a dark-yellow Colour, are eatable, but generate a viſcid Chyle, ſubject to cauſe Obſtructions. *Hiſt. Plant. adſcript. Boerhaav.*

OCHTHODES, ὀχθώδης, from ὄχθος, importing the tumid Lips of Ulcers. Callous, tumid. It is alſo an Epithet for Ulcers which are difficult to heal.

OCIMASTRUM. See OCYMASTRUM.

OCIMUM. See OCYMUM.

OCLASIS, ὄκλασις. That Poſture which is called Couring; which is, when a Perſon, ſtanding, brings his Knees forwards, towards which the Abdomen approaches, whilſt the Buttocks deſcend, and come near to the Ground, or the Heels.

OCOB. Sal Ammoniac. *Rulandus.*

OCOLOXOCHITL, *ſeu Flos Tigris.* Hernandez. *Tigridis Flos.* C. B. Dod. Lob. Ger. *Tigridis Flos Dracunculi Species putata.* J. B.

It is deſcribed by *C. Bauhine*, and *F. Hernandez*, as having a Root like a Leek, Leaves like the *Gladiolus*, a Flower of a very beautiful red Colour, but white in the Middle, and ſpotted like a Tyger's Skin; whence it took its Name.

An Ounce of the Root, taken in Water, cools the Body, and extinguiſhes a Fever, and prevents thoſe minute Eruptions [*Punctis adverſatur*], which are uſually conſequent upon Burning Fevers. Some ſay, the Root, eaten, cauſes Fecundity; for it is eſculent, and a cold, tho' not altogether unpleaſant Food, lubricous, and good for the Breaſt.

It delights in a temperate Climate, like that of the City of *Mexico*; and thrives beſt in Gardens, and moiſt and cultivated Places. *Raii H. P. p.* 1165.

OCRIS, ὄκρις, is expounded by *Galen*, in his *Exegeſis*, an oblong Prominence, or Eminence. Hence ὀκρεώδης, and ὀκρώδεις, Adjectives which import, having an oblong Eminence, or Protuberance.

OCTUNX. Eight Ounces.

OCULARIA. A Name for the *Euphraſia*, Eyebright.

OCULI CANCRORUM. Crabs-eyes. See CANCER.

OCULISTA. An Oculiſt.

OCULUS. The Eye.

The Eyes are commonly two in Number, ſituated at the lower Part of the Forehead, one at each Side of the Root of the Noſe; and they are made up of hard and ſoft Parts. The hard Parts are the Bones of the Cranium and Face, which form two pyramidal or conical Cavities, like Funnels, to which we give the Name of Orbits. The ſoft Parts are of ſeveral kinds. The principal and moſt eſſential ſoft Part in each Organ, is the Globe or Ball of the Eye; the others are partly external, and partly internal: The external Parts are the Supercilia, or Eye-brows, the Palpebræ, or Eye-lids, the Caruncula lachrymalis, and the Puncta lachrymalia; and the internal Parts are the Muſcles, Fat, lachrymal Gland, Nerves, and Blood-veſſels.

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The Orbits.

Seven Bones are concerned in the Compoſition of each Orbit, the Os Frontis, Os Sphenoidale, Os Ethmoides, Os Maxillare, Os Malæ, Os Unguis, and Os Palati. In each Orbit we are to conſider the Edge, Sides, and Bottoms: The Edge is formed by the Os Frontis, Os Maxillare, and Os Malæ; the Bottom by the Os Sphenoides, and Os Palati; and all theſe Bones, except the Os Palati, contribute to form the Sides.

The Bottom is perforated by the Foramen Opticum of the Os Sphenoides; and the external Side near this Foramen, by two orbitary Fiſſures; one ſuperior, called *Sphenoidales*, the other inferior, called *Spheno-maxillaris*.

All the Cavity of the Orbit is lined by a Membrane, which is an Elongation or Production of the Dura Mater; and it comes partly through the Foramen Opticum of the Os Sphenoides, and partly through the ſphenoidal or ſuperior Orbit of the Fiſſure. This Membrane, which may be looked upon as the Perioſteum of the Orbit, communicates with the Perioſteum of the Baſis Cranii, by the inferior Orbitary Fiſſure, and with the Perioſteum of the Face at the Edge of the Orbit. At the upper Part of the Edge of the Orbits, the two Perioſtea form a kind of broad Ligament, and a narrow one at the lower Part of this Edge, which I ſhall call Ligaments of the Palpebræ.

The particular Situation of the Orbits repreſents nearly two Funnels, placed laterally at a ſmall Diſtance from each other, in ſuch a manner as that their Apices are almoſt joined, their neareſt Sides almoſt parallel, and the other Sides turned obliquely backward; and, for this Reaſon, the Middle of the great Circumference or Edge of each Orbit is at a much greater Diſtance from the Septum Narium, than the Bottom, or Apex; and the Edge, or great Circumference, is very oblique; the temporal or external Angle of the Orbit lying more backward than the naſal or internal Angle.

The Globe or Ball of the Eye.

The Globe of the Eye, being the moſt eſſential of all the ſoft Parts belonging to the Organ of Sight, and being likewiſe a Part which we are obliged to mention as often as we ſpeak of the other ſoft Parts, muſt be firſt deſcribed. It is made up of ſeveral proper Parts, ſome of which, being more or leſs ſolid, repreſent a kind of Shell, formed by the Union of ſeveral membranous Strata, called the Coats of the Globe of the Eye; and the other Parts, being more or leſs fluid, and contained in particular membranous Capſulæ, or in the Interſtices between the Coats, are termed the Humours of the Globe of the Eye. Theſe Capſulæ are likewiſe termed Coats.

The Coats of the Globe of the Eye are of three kinds: Some form principally the Shell of the Globe; ſome are additional, being fixed only to a Part of the Globe; and ſome are capſular, which contain the Humours. The Coats which form the Shell, are three in Number: The external, whence the Convexity of the Globe proceeds, is termed Tunica Sclerotica, or Cornea; the middle Coat is named Choroides; and the third or innermoſt, Retina. The additional Coats are two, one called Tendinoſa, or Albuginea, which forms the White of the Eye, and the other Conjunctiva. The capſular Tunicæ are, alſo two, the Vitrea and Cryſtallina.

The Globe of the Eye, thus formed, ſends out backward a pretty large Pedicle, which is the Continuation of the Optic Nerve: It is ſituated about the middle of the Orbit, in the manner which we ſhall afterwards ſee; and it is tied to it by the Optic Nerve, by ſix Muſcles, by the Tunica Conjunctiva, and by the Palpebræ. The back Part of the Globe, the Optic Nerve, and Muſcles, are ſurrounded by a ſoft fatty Subſtance, which fills the reſt of the Bottom of the Orbit.

The Humours are three in Number, the Aqueous, Vitreous, and Cryſtalline: The firſt may properly be called an Humour, and is contained in a Space formed in the Interſtices of the anterior Portion of the Coats. The ſecond, or Vitreous Humour, is contained in a particular membranous Capſula, and fills above three Fourths of the Shell, or Cavity of the Globe of the Eye. It has been named Vitreous, from its ſuppoſed Reſemblance to melted Glaſs, but it is really more like the White of a new-laid Egg.

The Cryſtalline Humour is ſo called, from its Reſemblance to Cryſtal; and is often named, ſimply, the Cryſtalline. It is rather a gummy Maſs, than an Humour, of a lenticular Form, more convex on the back than on the fore Side, and contained in a fine Membrane, called Membrana, or Capſula Cryſtallina.

The Coats of the Eye in particular.

The moſt external, thickeſt, and ſtrongeſt Coat of the Eye, is the Sclerotica, or Cornea; and it inveſts all the other Parts of which the Globe is compoſed: It is divided into two Portions, one called Cornea Opaca, the other Cornea Lucida, which is only a ſmall Segment of a Sphere, ſituated anteriorly.

The Cornea Opaca is made up of ſeveral Strata, cloſely connected together; and is of an hard compact Texture, reſembling Parchment. About the Middle of its poſterior convex Portion, where it ſuſtains the Optic Nerves, it is in a manner perforated, and thicker than any-where elſe, its Thickneſs diminiſhing gradually toward the oppoſite Side; and its Subſtance is penetrated obliquely in ſeveral Places by ſmall Blood-veſſels. The Courſe of the nervous Filaments through this Coat is very ſingular; they enter the convex Side at ſome Diſtance from the Optic Nerve, and, running thence through its Subſtance, they pierce the concave Side, near the Cornea Lucida.

The Cornea Lucida, called, likewiſe, ſimply, Cornea, the opaque Portion being named Sclerotica, is made up, in the like manner, of ſeveral Strata, or Laminæ, cloſely united; and appears to be a Continuation of the opaque Portion, or Sclerotica, though of a different Texture. When macerated in cold Water, it ſwells.

This Portion is ſomething more convex than the Cornea Opaca, ſo that it repreſents the Segment of a ſmall Sphere, added to the Segment of a greater; but this Difference is not equally great in all Perſons. The Circumference of the convex Side is not circular, as that of the concave Side, but tranſverſely oval; for the ſuperior and inferior Portions of the Circumference terminate obliquely; but this Obliquity is more apparent in Oxen and Sheep, than in Man.

The Cornea Lucida is perforated by a great Number of imperceptible Pores, through which a very fine Fluid is continually diſcharged, which ſoon afterwards evaporates; but we diſcover it evidently, by preſſing the Eye ſoon after Death, having firſt wiped it very clean; for we then ſee a gradual Collection of a very ſubtile Liquor, which forms itſelf into little Drops; and this Experiment may be ſeveral times repeated on the ſame Subject. It is this Dew that forms a kind of Pellicle on the Eyes of dying Perſons, which ſometimes cracks ſoon after.

The ſecond Coat of the Globe of the Eye is the Choroides; which is of a blackiſh Colour, more or leſs inclined to red, and adheres, by reaſon of a great Number of ſmall Veſſels, to the Cornea Opaca from the Inſertion of the Optic Nerve, all the Way to the Union of the two Corneæ, where it leaves the Circumference of the Globe, and forms a perforated Septum, by which the ſmall Segment of the Globe is ſeparated from the greater. This Portion goes commonly by the particular Name of Uvea, which was formerly given to the whole ſecond Coat; and as it is of different Colours in ſeveral Subjects, it has likewiſe got the Name of Iris; which Term, however, agrees more preciſely to the coloured Surface of this Portion, and, would even be very improper for this Surface, in Perſons where it is uniformly brown, black, or blackiſh.

The external Lamina of the Choroides is ſtronger than the internal, and both appear blackiſh, becauſe of their Tranſparency. At a very ſmall Diſtance from the Union of the two Corneæ, this Lamina is moſt cloſely united to the Cornea Opaca. Round this Adheſion it changes Colour, and forms a whitiſh Ring of the ſame Breadth with the Adheſion; and near the Edge of the Sclerotica, this Ring is ſtronger, and of different Texture from what it is any-where elſe. It adheres ſo cloſely to the Sclerotica, that if we blow through a ſmall Hole made therein, without touching the Choroides, the Air will penetrate every-where between the two Coats, but cannot deſtroy this Adheſion, or paſs to the Cornea Lucida. This Adheſion has been improperly named Ligamentum Ciliare. On the inner Surface of this Lamina, we diſcover a great Number of flat Lines in a vortical Diſpoſition, which are the Veſſels named by *Steno* Vaſa Vorticoſa, or Vortices Vaſculoſi, of which hereafter.

The internal Lamina of the Choroides is thinner than the external, and its Surface, together with the correſponding Surface of the other Lamina, is covered by a blackiſh Subſtance with ſome Mixture of Red, which eaſily ſeparates when touched, and immediately tinges the Water in which the Choroides is dipt. The Origin of this Subſtance has not as yet been diſcovered; but, after a nice anatomical Injection, I have obſerved a great Number of vaſcular Stars on the inner Surface of this Lamina. In M. *Ruyſch*'s Works, it is termed *Membrana Ruyſchiana*.

The anterior Portion, or perforated Septum of the Choroides, has the Name of Uvea; and the Hole near the Centre of this Septum is called Pupilla. The anterior Lamina of the ſame Septum is termed Iris, and the radiated Plicæ of the poſterior Lamina, Proceſſus Ciliares. Between the two Laminæ of the Uvea, we find two very thin Planes of Fibres, which appear to be fleſhy; the Fibres of one Plane being orbicular, and lying round the Circumference of the Pupilla, and thoſe of the other being radiated, one Extremity of which is fixed to the orbicular Plane, the other to the great Edge of the Uvea.

The

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The Plicæ, or Proceſſus Ciliares, are ſmall radiated and prominent Duplicatures of the poſterior Lamina of the Uvea; and their Circumference anſwers partly to that of the white Ring of the external Lamina. They are oblong thin Plates; their poſterior Extremities, or thoſe next the Choroides, being very fine and pointed; the others, or thoſe next the Pupilla, broad, prominent, and ending in acute Angles. In the Duplicature of each Ciliary Fold, we find a fine reticular Texture of Veſſels; and ſome pretend to have ſeen fleſhy Fibres in the ſame Place, lying in ſmall Grooves of the Membrana Vitrea, as we ſhall ſee hereafter.

The Space between the Cornea Lucida and Uvea contains the greateſt Part of the aqueous Humour, and communicates by the Pupilla with a very narrow Space behind the Uvea, or between that and the Cryſtalline. Theſe two Spaces have been termed, *The Two Chambers of the aqueous Humour*, one anterior, the other poſterior, as I ſhall obſerve in deſcribing this Humour in particular.

The third Coat of the Eye is of a very different Texture from that of the other two Coats. It is white, ſoft, and tender, and, in a manner, medullary, or like a kind of Paſte ſpread upon a fine reticular Web. It appears to be thicker than the Choroides, and reaches from the Inſertion of the Optic Nerve to the Extremities of the Ciliary Radii, being equally fixed to the Choroides through its whole Extent. At the Place which anſwers to the Inſertion of the Optic Nerve, we obſerve a ſmall Depreſſion, in which lies a ſort of medullary Button terminating in a Point; and from this Depreſſion Blood-veſſels go out, which are ramify'd on all Sides through the Subſtance of the Retina.

It is commonly ſaid, that the Retina is a Production, or Expanſion, of the medullary Subſtance of the Optic Nerve, the Sclerotica of the Dura Mater, and the Choroides of the Pia Mater, which accompanies this Nerve. But this Opinion is not agreeable to what we obſerve in examining the Optic Nerve, and its Inſertion in the Globe of the Eye. If we take a very ſharp Inſtrument, and divide this Nerve through its whole Length, between where it enters the Orbit, and where it enters the Globe, into two equal lateral Parts, and then continue this Section through the Middle or Centre of its Inſertion, the following Phenomena will appear:

That the Nerve contracts a little at its Inſertion into the Globe; that its outer Covering is a true Continuation of the Dura Mater; that this Vagina is very different from the Sclerotica, both in Thickneſs and Texture, the Sclerotica being thicker than the Vagina, and of another Structure; that the Vagina from the Pia Mater forms, through the whole medullary Subſtance of the Nerve, ſeveral very fine cellular Septa; and that, where it enters the Globe of the Eye, the Pia Mater does not directly anſwer to the Choroides:

Laſtly, that, as the medullary Subſtance of the Nerve enters the Globe, it is very much contracted, and ſeems to terminate only in the ſmall Tubercle, or Button, already mentioned; and that the Retina is too thick to be taken for an Expanſion of the medullary Subſtance at this Place.

The Inſertion of the Optic Nerve in the Globe of the Eye, is moſt commonly not directly oppoſite to the Pupilla; ſo that the Diſtance between theſe two Parts is not the ſame, when meaſured, on all Parts of the Globe. The greateſt Diſtance is often on the Side next the Temples, and the ſmalleſt next the Noſe. I have obſerved an Inequality of the ſame Kind in the Breadth of the Uvea, which, in many Subjects, is leſs near the Noſe than the Temples; ſo that the Centre of the Pupilla is not the ſame with that of the great Circumference of the Iris; and I have ſeen the ſame Difference in the Breadth of the Corona Ciliaris.

The Humours of the Eye, and their Capsulæ.

The vitreous Humour is a clear and very liquid gelatinous Fluid, contained in a fine tranſparent Capſula, called *Tunica Vitrea*, together with which it forms a Maſs nearly of the Conſiſtence of the White of an Egg. It fills the greateſt Part of the Globe of the Eye, that is, almoſt all that Space which anſwers to the Extent of the Retina, except a ſmall Portion behind the Uvea, where it forms a Foſſula, in which the Cryſtalline is lodged. This Humour, being dexterouſly taken out of the Globe, preſerves its Conſiſtence for ſome time in the Capſula, almoſt like the White of an Egg; and then runs off, by little and little, till it quite diſappears.

The Tunica Vitrea is compoſed exteriorly of two Laminæ very cloſely connected, which quite ſurround the Maſs of Humour, and are immediately apply'd to the Retina all the Way to the great Circumference of the Corona Ciliaris; but from thence to the circular Edge of the Foſſula of the Cryſtalline, this Coat is full of radiated Sulci, which contain the Proceſſus Ciliares of the Uvea. At the Edge of the Foſſula, the two Laminæ ſeparate, and form a particular Capſula, which belongs to the Cryſtalline, as we ſhall ſee hereafter.

The internal Lamina of the Tunica Vitrea gives off, through the whole Subſtance of this Humour, a great Number of cellular Elongations, or Septa, ſo extremely fine, as not at all to be viſible in the natural State, the whole Maſs appearing then to be uniform, and equally tranſparent through its whole Subſtance; but they are diſcovered by putting the Whole, ſoon after it is taken out of the Body, into ſome aceſcent and gently coagulating Liquor.

The radiated Sulci of the Tunica Vitrea, which may be termed *Sulci Ciliares*, are perfectly black, when the Coat is taken out of the Body: This proceeds from the black Subſtance with which the Laminæ, or Proceſſus Ciliares, are naturally covered, as well as all the reſt of the Choroides, and which remains in the Bottom of the Sulci, after the Laminæ have been taken out. We obſerve very fine Veſſels in this Humour, which ſhall be ſpoken to hereafter.

The Cryſtalline is a ſmall lenticular Body, of a pretty firm Conſiſtence, and tranſparent like Cryſtal. It is contained in a tranſparent membranous Capſula, and lodged in the anterior Foſſula of the vitreous Humour. It is very improperly called an *Humour*, becauſe it may be handled and moulded into different Shapes by the Fingers, and ſometimes almoſt diſſolved by different reiterated Compreſſions, eſpecially when taken out of the Capſula.

The Figure of the Cryſtalline is lenticular; but its poſterior Side is more convex than the anterior, the Convexity of both Sides being very rarely equal. The internal Structure of this Maſs has not been hitherto ſufficiently diſcovered, to be deſcribed with Certainty, eſpecially in Man; where I could never find that contorted Diſpoſition of cryſtalline Tubes, which ſome pretend to have ſeen in the Eyes of large Animals.

The Colour and Conſiſtence of the Cryſtalline varies in different Ages, as was diſcovered by Mr. *Petit*, and demonſtrated by him, in the *Academy of Sciences*, from a great Number of human Eyes; and his Obſervations are inſerted in the Memoirs for 1726. Till the Age of Thirty it is very tranſparent, and almoſt without any Colour. It afterwards becomes yellowiſh, and that Yellowneſs gradually increaſes. The Conſiſtence varies almoſt in the ſame Manner, being of an uniform Softneſs till the Age of Twenty, and afterwards growing gradually more ſolid in the Middle of the Maſs; but in this there are Varieties explain'd in the Memoirs for 1727.

The Cryſtalline Capſula, or Coat, is formed by a Duplicature of the Tunica Vitrea, as I have already ſaid. The external Lamina covers the anterior Side of the cryſtalline Maſs; the internal Lamina covers the back Side, and likewiſe the Foſſula Vitrea, in which the Cryſtalline is lodged. The anterior Portion of the Cryſtalline Capſula is thicker than the poſterior, and, in a manner, elaſtic; and both its Thickneſs and Elaſticity may be diſcovered in Diſſection, without any other Artifice.

The anterior Portion ſwells when macerated in Water; and then appears to be made up of two Pellicles, united by a fine ſpongy Subſtance. I demonſtrated this Duplicature very plainly in the Eye of an Horſe, by the Knife alone; and I even carried the Separation of the two Laminæ as far as the vitreous Coat. Having made a ſmall Hole in the Middle of the Capſula of an Ox's Eye, and blown into it through a Pipe, ſome Part of the Air remained between the Edge of the Cryſtalline Maſs, and that of the Capſula, in the Form of a tranſparent Circle.

In examining the human Eye, I have found, that the Retina, having reached the great Circumference of the Corona Ciliaris, becomes very thin, and is continued between the Laminæ, or Proceſſus Ciliares of the Uvea, and the Ciliary Sulci of the Tunica Vitrea, all the Way to the Circumference of the Cryſtalline. It is, perhaps, this Continuation which makes the Proceſſus Ciliares to be covered by a whitiſh Pellicle, and likewiſe increaſes the Thickneſs of the anterior Portion of the Capſula Cryſtallina.

The aqueous Humour is a very limpid Fluid reſembling a kind of Lymph or Serum, with a very ſmall Degree of Viſcidity; and it has no particular Capſula like the Cryſtalline and vitreous Humours. It fills the Space between the Cornea Lucida and Uvea, that between the Uvea and the Cryſtalline, and the Hole of the Pupilla. Theſe two Spaces are called *The Chambers of the aqueous Humour*, and they are diſtinguiſhed into the anterior and poſterior.

Theſe two Chambers are not of the ſame Extent. The anterior, which is viſible to every body, between the Cornea Lucida and Uvea, is the largeſt; the other, between the Uvea and Cryſtalline, is very narrow, eſpecially near the Pupilla, where the Uvea almoſt touches the Cryſtalline. This Proportion between the two Chambers has been ſufficiently proved, contrary to the Opinion of many antient Writers, by *Heiſter*, *Morgagni*, and ſeveral Members of the *Royal Academy*; but none has treated theſe Matters at ſo great a Length as Mr. *Petit*, in the Memoirs of that Society.

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The Tunica Albuginea, and Muscles of the Globe of the Eye.

The Tunica Albuginea, called commonly *The White of the Eye*, and which appears on all the anterior convex Side of the Globe, from the Cornea Lucida to the Beginning of the posterior Side, is formed chiefly by the tendinous Expansion of four Muscles, in the manner presently to be described. This Expansion adheres very close to the Sclerotica, and makes it appear very white and shining, whereas the rest of it is of a dull-whitish Colour. It is very thin near the Edge of the Cornea, in which it seems to be lost, terminating very uniformly.

There are commonly six Muscles inserted in the Globe of the Eye, and they are divided, on account of their Direction, into four Recti, and two Obliqui. The Recti are again divided from their Situation into superior, inferior, internal, and external; and, from their Functions, into a Levator, Depressor, Adductor, and Abductor. The two oblique Muscles are denominated from their Situation and Size, one being named *Obliquus Superior*, or *Major*; the other, *Obliquus Inferior*, or *Minor*. The Obliquus Major is likewise called *Trochlearius*, because it passes through a small cartilaginous Ring, as over a Trochlea, or Pulley.

The Musculi Recti do not altogether answer to that Name; for, in their natural Situation, they do not all lie in a strait Direction, as they are commonly represented in an Eye taken out of the Body. To understand this, we ought to have a just Idea of the Situation of the Globe in the Orbit, and at the same time to remember the Obliquity of the Orbits, as already explain'd. The Globe is naturally placed in such a manner, as that, during the Inaction or Equilibrium of all the Muscles, the Pupilla is turned directly forward; the inner Edge of the Orbit is opposite to the Middle of the Inside of the Globe; the outer Edge of the Orbit, because of its Obliquity, is behind the Middle of the Outside of the Globe; and, lastly, the greatest Circumference of the Convexity of the Globe, between the Pupilla and the Optic Nerve, runs directly inwards and outwards, upwards and downwards.

In this Situation, the internal Rectus alone is in a strait Direction, the other three being oblique; and the external Rectus is the longest; the internal is the shortest; and, between these two, the superior and inferior are of a middle Length, and equal. The external Rectus is likewise bent round the outer convex Side of the Globe; the superior and inferior are, also, incurvated, but in a less Degree, whereas the whole Internus is almost strait. Notwithstanding all this, I shall continue to give them all the common Name of *Musculi Oculi Recti*.

These Muscles are fixed by their posterior Extremities at the Bottom of the Orbit near the Foramen Opticum, in the Elongation of the Dura Mater, by short narrow Tendons, in the same Order in which I have already named them. From thence they run wholly fleshy, toward the great Circumference of the Convexity of the Globe, between the Optic Nerve and Cornea Lucida, where they are expanded into flat broad Tendons, which touch each other, and afterwards unite. These Tendons are fixed, first of all, by a particular Insertion, in the Circumference just mentioned, and afterwards continue their Adhesion all the Way to the Cornea, forming the Tunica Albuginea, as has been already said.

The superior oblique Muscle is fixed to the Bottom of the Orbit, by a narrow Tendon, in the same manner as the Recti, between the Rectus superior and Internus. From thence it runs on the Orbit opposite to the Interstice between these two Muscles, toward the internal angular Apophysis of the Os Frontis, where it terminates in a thin Tendon, which, having passed through a kind of Ring as over a Pulley, runs afterwards in a Vagina obliquely backward under the Rectus Superior, that is, between that Muscle and the Globe; and, increasing in Breadth, it is inserted posteriorly and laterally in the Globe, near the Rectus Externus.

The Ring through which this Muscle passes, is partly cartilaginous, and partly ligamentary. The cartilaginous Portion is flat, of a considerable Breadth, and like half a Ring. The ligamentary Portion adheres strongly to the two Ends of the Cartilage, and is fixed in the small Fossula which lies in the Orbit, on the angular Apophysis of the Os Frontis. By means of this Ligament, the Ring is in some measure moveable, and yields to the Motions of the Muscle. To the anterior Edge of the Ring a ligamentary Vagina is fixed, which invests the Tendon all the Way to its Insertion in the Globe.

The Obliquus Inferior is situated obliquely at the lower Side of the Orbit, under the Rectus Inferior, which consequently lies between this Muscle and the Globe. It is fixed by one Extremity a little tendinous, to the Root of the nasal Apophysis of the Os Maxillare near the Edge of the Orbit, between the Opening of the Ductus Nasalis, and the inferior orbitary Fissure.

Thence it passes obliquely, and a little transversly, backward, under the Rectus Inferior; and is fixed in the posterior lateral Part of the Globe by a flat Tendon, opposite to, and at a small Distance from, the Tendon of the Obliquus Superior; so that these two Muscles, in some measure, surround the outer posterior Part of the Globe.

The Rectus Superior moves the anterior Portion of the Globe upward, when we lift up the Eyes; the Rectus Inferior carries this Portion downward; the Internus toward the Nose; and the Externus toward the Temples.

When two neighbouring Recti act at the same time, they carry the anterior Portion of the Globe obliquely toward that Side, which answers to the Distance between these two Muscles; and, when all the four Muscles act successively, they turn the Globe of the Eye round, which is what is called *rolling the Eyes*.

It is to be observed, that all these Motions of the Globe of the Eye are made round its Centre, so that, in moving the anterior Portion, all the other Parts are likewise in Motion. Thus, when the Pupilla is turned toward the Nose, or upward, the Insertion of the Optic Nerve is at the same time turned toward the Temple, or downward.

The Use of the oblique Muscles is principally to counterbalance the Action of the Recti, and to support the Globe in all the Motions already mentioned. This is evident from their Insertions, which are in a contrary Direction to those of the Recti, their fixed Points, with relation to the Motions of the Globe, being placed forward, and those of the Recti backward, at the Bottom of the Orbit. The soft Fat, which lies behind the Globe, is altogether insufficient to support it; neither is the Optic Nerve more fit for this Purpose; for I have shewn, that this Nerve follows all the Motions of the Globe, which would be impossible, were not the Fat very pliable, and without Resistance. And to this we must add, that the Optic Nerve, at its Insertion in the Globe, has a particular Curvature, which allows it to be elongated, and consequently prevents it from suffering any Violence in the different Motions of the Eyes.

The Obliquity of these two Muscles does not hinder them from doing the Office of a Fulcrum, because this is not a Fulcrum distinct from the Part moved, or on which the Globe of the Eye slides like the Head of one Bone in the articular Cavity of another; but, being fixed to the Part, it easily accommodates itself to all the Degrees of Motion thereof. Had these Muscles lain in a strait Direction, they would have incommoded the Recti; but their Obliquity may be, in some measure, rectified by the inner Surface of the Orbit, and by the Rectus Externus.

The inner Surface of the Orbit serves for a kind of collateral Fulcrum, which hinders the Globe from falling too far inward; as the joint Action of the two Obliqui prevents it in part from falling too far outward. The Rectus Externus, by being bent on the Globe, not only hinders it from being carried outward, but, also, prevents the indirect Motions of the Obliqui from thrusting it out of the Orbit toward the Temples. The other Uses attributed to these Muscles seem to me to be without Foundation, from the Consideration of their Insertion, and of the Structure of the Parts with which they are concerned; both which Reasons are explained in the Memoirs of the Academy for 1721.

The Supercilia, and Musculi Frontales, Occipitales, and Superciliares.

The Supercilia, or Eye-brows, are the two hairy Arches situated at the lower Part of the Forehead, between the Top of the Nose and Temples, in the same Direction with the bony Arches, which form the superior Edges of the Orbits. The Skin in which they are fixed, does not seem to be much thicker than that of the rest of the Forehead; but the Membrana Adiposa is thicker than on the neighbouring Parts. The Extremity of the Eye-brows next the Nose, is called the *Head*, as being larger than the other Extremity, which is named their *Tail*. The Colour is different in different Persons, and often in the same Person different from that of the Hair of the Head; neither is the Size of them always alike. The Hairs of which they consist are strong and pretty stiff, and they lie obliquely, their Roots being turned to the Nose, and their Points to the Temples.

The Supercilia have Motions common to them with those of the Skin of the Forehead, and of the hairy Scalp. By these Motions the Eye-brows are lifted up, the Skin of the Forehead is wrinkled more or less regularly and transversly; and the Hair, and almost the whole Scalp, is moved, but not in the same Degree in all Persons; for some, by this Motion alone, can move the Hat, and even throw it from their Head. The Eye-brows have likewise particular Motions, which contract the Skin

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above the Noſe; and all theſe different Motions are performed by the following Muſcles.

The Frontal Muſcles are two thin, broad, fleſhy Planes, of unequal Lengths, lying immediately behind the Skin and the Membrana Adipoſa on the anterior Parts of the Forehead, which Parts they cover from the Root of the Noſe, and through about Two-thirds of the Arch of the Eye-brows on each Side, all the Way to the lateral Parts of the Hair on the Forehead. At the Root of the Noſe they touch each other, as if they were but one Muſcle; and at this Place their Fibres are ſhort and longitudinal, or vertical.

The next Fibres on each Side become gradually longer, and more oblique, the moſt anterior being always the ſhorteſt and ſtraiteſt; and the lateral, the longeſt, and turned moſt obliquely towards the Temples at their upper Extremities. By this Diſpoſition an angular Interſtice is formed between the Place where the two Muſcles join, and the Hair on the Middle of the Forehead; but this Diſpoſition is not the ſame in all Subjects, no more than the Wrinkles and Bounds of the Hair on the Forehead.

Theſe Muſcles are fixed by the inferior Extremities of their fleſhy Fibres immediately in the Skin, running through the Membrana Adipoſa. They cover the Muſculi Superciliares, and adhere cloſely to them by a kind of Intertexture. By the ſame Fibres they ſeem to be inſerted in the angular Apophyſes of the Os Frontis, and to be blended a little with the Muſcles of the Palpebræ and Noſe. The upper Extremities of their fleſhy Fibres are fixed in the external, or convex Surface of the Pericranium. Each of their lateral Portions covers a Portion of the Temporal Muſcle on the ſame Side, and adheres very cloſely to it. The ſuperior and inferior Inſertions are graduated.

The occipital Muſcles are two ſmall, thin, broad, and very ſhort fleſhy Planes, ſituated on the lateral Parts of the Occiput at ſome Diſtance from each other. They are inſerted by the inferior Extremities of their fleſhy Fibres in the ſuperior tranſverſe Line of the Os Occipitis, and, alſo, a little above it. Thence they run up obliquely from behind forward, and are fixed in the inner or concave Surface of the Pericranium.

The Breadth of theſe Muſcles reaches from the poſterior middle Part of the Occiput, toward the Maſtoide Apophyſis, and they diminiſh unequally in Length as they approach theſe Apophyſes. From this Inequality in Length, each of them appears as if it were double in ſome Subjects; and, in others, they are ſo thin and pale, that they ſeem to be wanting. They are ſometimes covered by an aponeurotic Expanſion of the Trapezii.

The Occipital and Frontal Muſcles appear to be true Digaſtrici, both with regard to their Inſertions in the Pericranium, and in regard to their Action. Their Inſertions in the Pericranium are oppoſite, one being on the Outſide, the other on the Inſide; ſo that this Membrane, or Aponeuroſis, may be conſidered as a middle Tendon of four ſingle Muſcles, that is, which have their fleſhy Fibres fixed only to one Side of their Tendons. The fixed Inſertions of the Occipitales at the lower Part of the Occiput, and the moveable Inſertions of the Frontales in the Skin of the Forehead, and of the Supercilia, being well conſidered, together with their reciprocal Inſertions in the ſame Aponeuroſis, ſeem to be a very convincing Proof, that they are Digaſtric Muſcles.

Theſe four Muſcles ſeem always to act in Concert, the Occipitales being only Auxiliaries, or Aſſiſtants to the Frontales, the Office of which is to raiſe the Supercilia, by wrinkling the Skin of the Forehead; theſe Wrinkles follow the Direction of the Eye-brows pretty regularly in ſome Subjects, and very irregularly in others.

To be convinced of the Co-operation of theſe four Muſcles, we need only hold the Hand on the Occipitales, while we raiſe the Eye-brows, and wrinkle the Forehead ſeveral times; and we ſhall perceive the Occipitales to move each time, though not in the ſame Degree in all Subjects. In ſome Perſons the Occipitales ſeem to be relaxed, while the Frontales, being in Contraction, move the whole Scalp and Pericranium forward, and then contract to bring them back to their natural Situation.

The Muſculi Superciliares are fleſhy Faſciculi, ſituated behind the Supercilia, and behind the inferior Portion of the Muſculi Frontales, from the Root of the Noſe to above one half of each ſuperciliary Arch. They are ſtrongly inſerted partly in the Synarthroſis of the Oſſa Naſi with the Os Frontis, where they come very near the proper Muſcles of the Noſe, and partly in a ſmall neighbouring Portion of the Orbit. From thence they firſt run up a little, and afterwards more or leſs in the Direction of the Eye-brows. They are made up of ſeveral ſmall Faſciculi of oblique Fibres, all fixed by one End in the manner already ſaid, and by the other partly in the lower Extremity of the Muſcles, by which they are covered, and partly in the Skin of the Supercilia. This laſt Portion is eaſily confounded with a Portion of the Muſculus Orbicularis Palpebrarum.

The Action of theſe Muſcles is to depreſs the Eye-brows, to bring them cloſe together, and to contract the Skin of the Forehead immediately above the Noſe, into longitudinal and oblique Wrinkles, and the Skin which covers the Root of the Noſe into irregular tranſverſe Wrinkles. This Action, as well as that of the Frontales, and of the Muſcles of the Noſe and Lips, is not always arbitrary, but ſometimes mechanical and involuntary. Theſe Muſcles may, perhaps, likewiſe ſerve to keep the Muſculi Frontales in Equilibrio during their Inaction, they being moveable by both Extremities.

The Palpebræ, and Membrana Conjunctiva.

The Palpebræ are a kind of Veils or Curtains placed tranſverſly above and below the anterior Portion of the Globe of the Eye; and accordingly there are two Eye-lids to each Eye, one ſuperior, the other inferior. The ſuperior is the largeſt and moſt moveable in Man, the inferior the ſmalleſt and leaſt moveable. They both unite at each Side of the Globe, and the Places of their Union are termed *Angles*, one large, and internal, which is next the Noſe; the other ſmall, or external, which is next the Temples.

The Palpebræ are made up of common and proper Parts. The common Parts are the Skin, Epidermis, and Membrana Adipoſa. The proper Parts are the Muſcles, the Tarſi, the Puncta or Foramina Lachrymalia, the Membrana Conjunctiva, the Glandula Lachrymalis, and the particular Ligaments which ſuſtain the Tarſi. The Tarſi, and their Ligaments, are, in ſome meaſure, the Baſis of all theſe Parts.

The Tarſi are thin Cartilages forming the principal Part of the Edge of each Palpebra; and they are broader at the Middle, than at the Extremities. Thoſe of the ſuperior Palpebræ are ſomething leſs than half an Inch in Breadth; but in the lower Palpebræ they are not above the ſixth Part of an Inch; and their Extremities next the Temples are more ſlender than thoſe next the Noſe.

Theſe Cartilages are ſuited to the Borders and Curvature of the Eye-lids. The lower Edge of the ſuperior Cartilage, and the upper Edge of the inferior, terminate equally, and both may be termed the *Ciliary Edges*. The oppoſite Edge of the upper Tarſus is ſomething ſemicircular between its two Extremities; but that of the inferior Tarſus is more uniform, and both are thinner than the Ciliary Edges. Their inner Sides, or thoſe next, are grooved by ſeveral ſmall tranſverſe Chanels, of which hereafter; and the Extremities of both Cartilages are connected by a kind of ſmall Ligaments.

The broad Ligaments of the Tarſi are membranous Elongations formed by the Union of the Perioſteum of the Orbits, and Pericranium, along both Edges of each Orbit. The ſuperior Ligament is broader than the inferior, and fix'd to the ſuperior Edge of the upper Cartilage, as the inferior is to the lower Edge of the lower Cartilage; ſo that theſe Ligaments, and the Tarſi, taken alone, or without, the other Parts, repreſent Palpebræ.

The Membrana Conjunctiva is generally deſcribed among the Coats of the Globe of the Eye; and I, alſo, mentioned it there. It is a thin Membrane, one Portion of which lines the inner Surface of the Palpebræ, that is, of the Tarſi, and their broad Ligaments. At the Edge of the Orbit it has a Fold, and is continued from hence on the anterior Half of the Globe of the Eye, adhering to the Tunica Albuginea; ſo that the Palpebræ, and the fore Part of the Globe of the Eye, are covered by one and the ſame Membrane, which does not appear to be a Continuation of the Pericranium, but has ſome Connection with the broad Ligaments of the Tarſi.

The Name of *Conjunctiva* is commonly given only to that Part which covers the Globe, the other being called ſimply, *The Internal Membrane of the Palpebræ*; but we may very well name the one *Membrana Oculi Conjunctiva*, and the other *Membrana Palpebrarum Conjunctiva*. That of the Palpebræ is a very fine Membrane, adhering very cloſe, and full of ſmall capillary Blood-veſſels. It is perforated by numerous imperceptible Pores, through which a kind of Serum is continually diſcharged; and it has ſeveral very evident Folds, which ſhall be ſpoken to hereafter.

The Conjunctiva of the Eye adheres by the Intervention of a cellular Subſtance, and is conſequently looſe, and, as it were, moveable; and it may be taken hold of, and ſeparated, in ſeveral Places, from the tendinous Coat. It is of a whitiſh Colour, and, being tranſparent, the Albuginea makes it appear perfectly white; theſe two Coats together forming what is called *The White of the Eye*. The greateſt Part of the numerous Veſſels which run upon it, contain naturally only the ſerous Part of the Blood, and conſequently are not diſcoverable, except

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except by anatomical Injections, Inflammations, Obſtructions, and the like. With the Point of a good Knife we continue the Separation of this Membrane over the Cornea Lucida.

The Lachrymal Gland is white, and of the Number of thoſe called Conglomerate Glands. It lies under that Depreſſion obſervable in the Arch of the Orbit, near the Temples, and laterally above the Globe of the Eye.

It is a little flatted, and divided, as it were, into two Lobes, one of which lies toward the Inſertion of the Muſculus Rectus ſuperior; the other toward the Rectus externus. It adheres very cloſely to the Fat which ſurrounds the Muſcles, and poſterior Convexity of the Eye; and it was formerly named Glandula Innominata.

From this Gland ſeveral ſmall Ducts go out, which run down almoſt parallel to each other, through the Subſtance of the Tunica Interna, or Conjunctiva of the ſuperior Palpebra, and afterwards pierce it inwardly, near the ſuperior Edge of the Tarſus. Theſe Ducts are very difficult to be found; but the beſt way to diſcover them is to let the ſuperior Palpebra lie a little while in cold Water, and then, without wiping it, to blow on ſeveral Places of the Surface of the Membrane, through a ſmall Tube held very near, but ſo as not to touch it, that the Air may fill ſome of the Orifices of the Ducts, and ſo diſcover them.

The Borders of each Palpebra, taken all together, are formed by the Edge of the Tarſus, and by the Union of the internal Membrane with the Skin and Epidermis. This Border is flat, and of ſome ſenſible Breadth from within about a Quarter of an Inch of the internal Angle all the Way to the external Angle, near which the Breadth diminiſhes. This Breadth is owing only to the Thickneſs of the Palpebræ, which at this Place have their Edges oblique or ſlanting, in ſuch a manner as, when the two Palpebræ touch each other ſlightly, a triangular Space or Canal is formed between them and the Globe of the Eye.

The flat Edge of each Palpebra is adorned with a Row of Hairs, called Cilia, or Eye-laſhes. Thoſe belonging to the ſuperior Palpebra are bent upward, and longer than thoſe of the lower Palpebra, which are bent downward. Theſe Rows are placed next the Skin, and are not ſingle, but irregularly double or triple. The Hairs are longer near the Middle of the Palpebra than toward the Extremities, and for about a Quarter of an Inch from the inner Angle, they are quite wanting.

Along the ſame Border of the Palpebræ near the internal Membrane, or toward the Eye, we ſee a Row of ſmall Holes, which may be named Foramina, or Puncta Ciliaria. They are the Orifice of the ſame Number of ſmall oblong Glands, which lie in the Sulci, Chanels, or Grooves, on the inner Surface of the Tarſus. Theſe little Glands are of a whitiſh Colour, and, when examined through a ſingle Microſcope, they appear like Bunches of Grapes, thoſe of each Bunch communicating together. When they are ſqueezed between two Nails, a ſebaceous Matter, like ſoft Wax, is diſcharged through the Puncta Ciliaria.

Near the great or internal Angle of the Palpebræ, the flat Portion of their Edges terminates in another, which is rounder and thinner. By the Union of theſe two Edges an Angle is formed, which is not perfectly pointed like a true Angle, but rounded; yet it ought not to be termed an obtuſe Angle, becauſe that Expreſſion in the mathematical Style means ſomething different. For the ſame Reaſon the Name of great Angle is improper; and we had better call it the internal or naſal Angle.

At this Place, the Extremity of the flat Portion is diſtinguiſhed from the round Portion by a ſmall Protuberance or Papilla, which is obliquely perforated by a ſmall Hole in the Edge of each Palpebra. Theſe two ſmall Holes are very viſible, and often more ſo in living than in dead Bodies; and they are commonly named Puncta Lachrymalia, being the Orifices of two ſmall Ducts, which open beyond the Angle of the Eye into a particular Reſervoir, termed Sacculus Lachrymalis, which is deſcribed under the Article NASUS.

The Puncta Lachrymalia are oppoſite to each other, and ſo they meet when the Eye is ſhut. Round the Orifice of each of theſe Points, we obſerve a whitiſh Circle, which ſeems to be a cartilaginous Appendix of the Tarſus, and which keeps the Orifice always open. Theſe two oblique Circles are ſo diſpoſed, that, when the Eye is but ſlightly ſhut, they touch each other only toward the Skin, and not toward the Globe of the Eye. The fine Membrane which covers theſe Circles, and paſſes through the Puncta into the Ducts, ſeems ſometimes to run into Gathers, when it is touched with a Stilet.

The Caruncula Lachrymalis is a ſmall, rediſh, granulated, oblong Body, ſituated preciſely between the internal Angle of the Palpebræ, and Globe of the Eye; but it is not fleſhy, as its Name would inſinuate. The Subſtance of it ſeems to be wholly glandular; and it appears through a ſingle Microſcope, in the ſame manner as the other Conglomerate Glands. We diſcover upon it a great Number of fine Hairs, covered by an oily yellowiſh Matter; and on the Globe of the Eye, near this glandular Body, we ſee a ſemilunar Fold formed by the Conjunctiva, the concave Side of which is turned to the Uvea, and the Convex Side to the Noſe. This Fold appears moſt when the Eye is turned toward the Noſe.

The Muſcles of the Palpebræ are commonly reckoned to be two, one peculiar to the upper Eye-lid, named Levator Palpebræ Superioris; the other common to both, called Muſculus Orbicularis Palpebrarum, which has been ſubdivided in different manners.

The Levator Palpebræ ſuperioris is a very thin Muſcle ſituated in the Orbit above and along the Rectus ſuperior Oculi. It is fixed to the Bottom of the Orbit, by a ſmall narrow Tendon, near the Foramen opticum, between the poſterior Inſertions of the Rectus ſuperior, and Obliquus ſuperior. Thence its fleſhy Fibres run forward on the Rectus, increaſing gradually in Breadth; and terminate by a very broad Aponeuroſis, in the Tarſus of the ſuperior Palpebra.

By the Muſculus Palpebrarum obliquus, we underſtand all that Extent of fleſhy Fibres, which by a thin Stratum ſurrounds the Edge of each Orbit, and from thence, without any Interruption, covers the two Palpebræ all the Way to the Cilia. The Fibres which run upon the Edge of the Orbit are nearly orbicular; but moſt of thoſe which cover the Palpebræ are tranſverſely oval. Almoſt all of them have a common Tendon ſituated tranſverſly between the internal Angle of the Eye, and the naſal Apophyſis of the Os Maxillare. This is a ſlender ligamentary Tendon, ſtrongeſt where it is fixed in the Bone, and diminiſhing gradually as it approaches the Angle of the Palpebræ, where it terminates at the Union of the Points, or at the Extremities of the two Tarſi. The fleſhy Fibres are fixed to it anteriorly, ſo that at firſt Sight it appears to be no more than a Linea Alba.

From thence one Portion of the Fibres is turned upward, the other downward; and both meet again at the external Angle, being united by a particular kind of Intertexture, very difficult to be explained; when, having inverted this Portion of the Muſcle, we examine its poſterior Surface, we obſerve a ſmall, thin, tendinous Rope, which runs through the fleſhy Fibres, and divides them all the Way from the Union of the two Tarſi to the Temporal Edge of the Orbit, where it diſappears; the Fibres which lie beyond it appearing to continue the main Circuit of the Muſcle.

I divide this Muſcle into four Portions, whereof the firſt is that which ſurrounds the Orbit, and which does not appear to be interrupted towards the Temples, the upper Part of it lying between the Supercilia, and the lower Part of the Muſculi Frontales. The ſecond Portion is that which lies between the upper Edge of the Orbit, and the Globe of the Eye, and which covers the inferior Edge of the Orbit below, ſome of its Fibres being fixed to both Edges of the Orbit. *Riolanus* divided this into two ſemicircular Portions, one ſuperior, the other inferior; the firſt lying between the Muſculus Superciliaris and the lower Part of the Muſculus Frontalis, to both which it adheres very much.

The third Portion ſeems to belong more particularly to the Palpebræ, and the greateſt Part of it is ſpent in the Palpebra ſuperior. The Fibres of this Portion meet at the two Angles of the Eye, where they appear to make very acute Inflections without any Diſcontinuation; but when examined on the other Side next the Globe of the Eye, they have in ſome Subjects appeared to me to be diſtinguiſhed into ſuperior and inferior. The greateſt Part of theſe Fibres form a tranverſely oval Circumference, the ſhorteſt Diameter of which is longer when the Eyes are open, than when ſhut.

The fourth Portion is an Appendix to the third, from which it differs principally in this, that its Fibres do not reach to the Angles, and form only ſmall Arches, the Extremities of which terminate in each Palpebra. This Portion is really divided into two, one for the Edge of the upper Eye-lid, the other for that of the lower. *Riolanus* names this Portion Muſculus Ciliaris.

All theſe different Portions of the Orbicular Muſcle adhere to the Skin, which covers it from the upper Part of the Noſe to the Temples, and from the Supercilium to the upper Part of the Cheek. When they contract, ſeveral Wrinkles are formed in the Skin, which vary according to the different Direction of the Fibres; thoſe under the lower Palpebra are very numerous, and run down very obliquely from before backward.

The Skin of the ſuperior Palpebra is folded Arch-wiſe, almoſt in a parallel Direction to that of the ſemi-oval Fibres, the Plicæ interſecting the Levator; whereas the other Folds only interſect the Orbicularis. The radiated and oblique Plicæ ſeldom appear in young Perſons, except when the firſt and ſecond Portions of the Orbicularis are in Action; but in aged Perſons the Marks thereof are viſible at all times.

In Man, the ſuperior Palpebra has much more Motion than the inferior. The ſmall ſimple Motions called Twinkling, which frequently happen, though not equally often, in all Subjects, are performed in the upper Palpebra, by the alternate

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Contraction of the Levator and ſuperior Palpebral Portion of the Muſculus Orbicularis; and in the lower Palpebra, at the ſame time, or alternately, by the inferior palpebral Portion of the Orbicularis; but, as there is but a ſmall Number of Fibres in this Portion, theſe Fibres are but very inconſiderable in this Eye-lid.

Theſe ſlight Motions, eſpecially thoſe of the upper Palpebra, are not very eaſy to be explained, according to the true Structure of the Part. The Motions which wrinkle the Palpebræ, and which are commonly performed to keep one Eye very cloſe ſhut, while we look ſtedfaſtly with the other, are explicable by the ſimple Contraction of all the Portions of the Orbicularis. Theſe Motions, likewiſe, depreſs the Supercilia, which conſequently may be moved in three different manners, upward by the Muſculi Frontales, downward by the Orbiculares, and forward by the Superciliares.

The Vessels of the Eye, and of its Appendages.

The external Carotid Artery, by means of the Arteria Maxillaris externa, and the Temporal and Frontal Arteries, give ſeveral Ramifications to the Integuments, which ſurround the Eye, and to all the Portions of the Muſculus Orbicularis; and theſe Ramifications communicate with thoſe which are diſtributed to the Membrana Conjunctiva Palpebrarum, and to the Caruncula.

The ſame external Carotid, by means of the Arteria Maxillaris interna, ſends a conſiderable Branch into the Orbit thro' the inferior Orbitary or Spheno-maxillary Fiſſure; which is diſtributed to the Perioſteum of the Orbit, to the Muſcles of the Globe of the Eye, to the Levator Palpebræ ſuperioris, to the Fat, Glandula Lachrymalis, Membrana Conjunctiva, both of the Eye and Palpebræ, the Caruncle, *&c.* It communicates with the internal Carotid, and ſends a ſmall Artery to the Ethmoidal Cells of the Noſe, through the ſmall internal poſterior orbitary Hole.

The internal Carotid Artery, having entered the Cranium, ſends off ſmall Branches which accompany the Optic Nerve, and thoſe which paſs thro' the Fiſſura Spheno-maxillaris. One of theſe ſmall arterial Branches runs into the Subſtance of the Optic Nerve, and produces, on the *Retina*, the ſmall Arteries which appear very plainly on the inner Sides of that Membrane. The reſt join the Ramifications of the external Carotid already mention'd, and, having penetrated into the Subſtance of the Tunica Sclerotica on the back Side, and run for a little Way through that Subſtance, they perforate this Coat inwardly in five or ſix Places at an equal Diſtance from the Optic Nerve, and the Pupilla.

Afterwards they perforate the external Lamina of the Choroides in the ſame Number of Places, and form between that, and the internal Lamina, the Vaſa Vorticoſa of Steno, and the Vaſcula Stellæ, mentioned in the Deſcription of this internal Lamina. Some ſmall vaſcular Filaments from theſe Ramifications are, alſo, obſerved to adhere very cloſely to the Tunica Vitrea; and, before they form the Vaſa Vorticoſa, they ſend ſmall Arteries in a direct Courſe to the Circumference of the Uvea, where they form a vaſcular Circle, which ſends out Capillaries as far as the Membrana Cryſtallina, which are very eaſily injected in new-born Children.

The Veins of all theſe Parts anſwer nearly to the Arteries. The internal Veins unload themſelves, partly into the internal Jugular Vein by the Sinus Orbitarii, Cavernoſi, and Petroſi, and partly into the external Jugular Vein by the Vena Angularis, or Maxillaris Externa, the Maxillaris Interna, Temporalis, *&c.*

Beſides the Capillary Veſſels, eaſily diſtinguiſhable by the red Colour of the Blood, there are great Numbers of thoſe which admit nothing but the ſerous and lymphatic Parts of the Blood, and conſequently do not appear in the natural State. They become viſible in ſome Places by Inflammations and Injections, as on the Membrana Conjunctiva of the Eye; but theſe Contrivances do not diſcover them every-where in aged Perſons. In a Fœtus, and in new-born Children, a fine Injection has ſucceeded ſo well, as to diſcover the Veſſels of the Membrana Cryſtallina and Vitrea; and, in a Fœtus of about ſix Months, the injected Liquor ſeemed to me to have penetrated a Part of the Cryſtalline and Vitreous Humour.

The Nerves of the Eye, and of its Appendages.

Beſides the Optic Nerve, deſcribed under the Article Nervus, the Globe of the Eye receives ſeveral ſmall ones, which run on each Side, along and about the Optic Nerve, from its Entry into the Orbit to its Inſertion in the Globe. Theſe Filaments come chiefly from a ſmall lenticular Ganglion, formed by very ſhort Branches of the Orbitary or Ophthalmic Branch of the fifth Pair, and a Branch of the third Pair, or Motores Oculi.

Theſe nervous Filaments of the Lenticular Ganglion, having reached the Globe of the Eye, are divided into five or ſix Faſciculi, which, having ſurrounded the Optic Nerve, and penetrated and perforated the Cornea Opaca or Sclerotica, run at Diſtances more or leſs equal between the Sclerotica and Choroides, towards the Uvea. There each of them is divided into ſeveral ſhort Filaments, which terminate in the Subſtance of the Uvea. Theſe ſmall Nerves, which run from behind forward, between the Sclerotica and the Choroides, have formerly been taken for particular Ligaments, by very great Anatomiſts.

The Nerves which go to the other Parts belonging to the Eye, come from the third, fourth, ſixth, and firſt two Branches of the fifth Pair of Nerves of the Medulla oblongata, and, likewiſe, from the Portio Dura of the ſeventh Pair. The third, fourth, and ſixth Pairs give Nerves to the Muſcles of the Globe of the Eye. The two Branches of the fifth Pair, and the Portio Dura of the ſeventh, give Nerves, not only to the other Parts, which ſurround the Globe, but, alſo, to the Muſculi Frontales, and internal Parts of the Noſe.

The Trunk of the third Pair, or Motores Oculi, having entered the Orbit through the ſuperior Orbitary, or Sphenoidal Fiſſure, produces four Branches. The firſt runs upward, and divides into two, one for the Muſculus Rectus ſuperior, and the other for the Levator Palpebræ ſuperioris. The Trunk, continuing its Courſe, gives off the ſecond ſhort Branch to the Rectus inferior. The third Branch is long, and goes to the Obliquus inferior, contributing likewiſe to the Formation of the lenticular Ganglion already mentioned. The fourth Branch is large, and ſupplies the Rectus internus.

The firſt Branch of the fifth Pair, commonly termed Nervus Ophthalmicus, divides into three Branches as it enters the Orbit; and, ſometimes, only in two, one of which is afterwards ſubdivided. Of theſe three Branches, one is ſuperior, which I term Nervus Superciliaris; one internal, named Naſalis; and one external, to which the Name of Temporalis agrees better than that of Lachrymalis, which may occaſion a Miſtake.

The ſuperior or Superciliary Branch runs along the whole Perioſteum of the Orbit, and, having paſſed through the ſuperciliary Notch or Foramen of the Os Frontis, is diſtributed to the Muſculus Frontalis, Superciliaris, and ſuperior Portion of the Orbicularis Palpebrarum; and it communicates with a ſmall Branch of the Portio Dura of the ſeventh Pair.

The internal or Naſal Branch paſſes under the Ramification of the Nerve of the third Pair, and, running toward the Noſe, is diſtributed thereto, and to the neighbouring Parts of the Orbicularis and Caruncula. This Branch ſends off a Filament, which, paſſing through the internal, anterior, orbitary Hole, enters the Cranium, and preſently returns again through one of the Ethmoidal Holes to the internal Parts of the Noſe. I have ſometimes obſerved this Naſal Branch to communicate with the ſperciliary Branch, by a particular Arch, before it enters the Orbitary Hole.

The external or Temporal Branch, which is, ſometimes, a Subdiviſion of the Superciliaris, is diſtributed to the Glandula Lachrymalis, and ſends off a Filament, which pierces the Orbitary Apophyſis of the Os Malæ.

The ſecond Branch of the fifth Pair, called Nervus Maxillaris ſuperior, ſends off a Branch through the bony Canal of the lower Part of the Orbit, which, going out at the anterior inferior orbitary Hole, is diſtributed to the neighbouring Portion of the Muſculus Orbicularis, and communicates with a Branch of the Portio Dura.

The Portio Dura of the ſeventh Pair, or auditory Nerve, which I call Nervus Sympatheticus minor, gives Branches to the ſuperior, inferior, and external lateral Parts of the Orbicularis Palpebrarum, one of which communicates with the Nervus Superciliaris, and another with the Suborbitarius.

The Uses of the Eye, and its Appendages.

Every body knows, that the Eye is the Organ of Viſion. The tranſparent Parts of the Globe modify the Rays of Light, by different Refractions; the Retina and Choroides receive the different Impreſſions of theſe Rays, and the Optic Nerve carries theſe Impreſſions to the Brain. When Objects are at a greater Diſtance, or obſcure, the Papilla is dilated; and it is contracted, when Objects are near, or placed in a great Light. The Muſcles of the Globe of the Eye, and of the Palpebræ, perform the Motions already deſcribed.

The Glandula Lachrymalis continually moiſtens the fore Part of the Globe of the Eye; and the lachrymal Serum is equally ſpread over that Globe by the Motions of the ſuperior Palpebra, the inner Surface of which is in a ſmall meaſure villous. The Union of the two Palpebræ directs this Serum towards the Puncta Lachrymalia; and the unctuous Matter diſcharged through the Foramina Ciliaria, hinders it from running out between the Palpebræ. The large Size and viſcid Surface of the Caruncula prevents it from running beyond the Puncta, and thus forces it into them. The Supercilia may hinder Sweat from falling on the Eyes. The ſuperior Cilia, which are longer than the inferior, may have the ſame Uſe, and they both ſerve to prevent Duſt, In-

ſects,

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and the like, from entering the Eyes, when they are only a little open. *Winslow.*

The Method of extracting Bodies fallen into the Eyes.

It is no uncommon Accident for the Eyes to be tormented by the Admiſſion of a ſmall Particle of Wood, Stone, Sand, of a Quill, of the Nails of the Hands or Feet, of Quick-lime, acrid Salts, and the like: which, if they are not quickly extracted, frequently occaſion Inflammations, and other dangerous Conſequences.

The eaſieſt Remedy, in ſuch a Caſe, is, to ſtroke the Eye-lid gently with the Finger, holding the Head down; by which means the increaſed Flux of Tears, excited by the adhering Particle, will often waſh it out, without much Difficulty. If this Method fails, convey under the Eye-lid a little levigated Pearl, or Crabs-claws, that, when theſe are waſhed out by the Tears, the extraneous Subſtance may be brought with them. If this Remedy proves effectual, take the ſmall round Head of a ſlender Probe, or a little Pair of Pliers, or the End of a Tooth-pick, and, gently elevating the Eye-lids from the Eye, carefully ſearch for, and tenderly extract, the foreign Particle; or dip a Pencil-bruſh of ſoft Feathers, or a Bit of Sponge faſtened to a Quill, in warm Water, which, being introduced under the Eye-lid, may bruſh it out. Lime, or any acrid Subſtance, may be waſhed out with Water, or Milk warmed, either by Injection, with a Feather, or Sponge. To remove the Redneſs and Inflammation, which may continue after the Subſtance is extracted, let the Patient frequently waſh his Eye with a cooling and lenient Collyrium made of Roſe-water, thoroughly mixed with the White of an Egg, a little Alum, and Sugar of Lead, or Tutty. If the Inflammation be violent, Bleeding muſt not be neglected.

Of Tubercles and Excreſcences on the Eye-lids.

Theſe Tubercles are of different Sorts and Sizes. If the Excreſcence be ſmall, red, hard, immoveable, and ſeated above the Eye-laſhes, it is denominated *Crithe*, or *Hordeolum*, from its Reſemblance of a Barley-corn. This is an encyſted Tumor, which, by Inflammation, generates a thick Matter, whence proceed intenſe Pain, and various Diſorders of the Sight: Sometimes it is ſeated outwardly next the Skin, and ſometimes on the Inſide of the Eye-lid. If the Tubercle be moveable, it is named *Chalazium*. Some, being like Hail, aſſume the Appellation of *Grandines*; others, being Veſicles filled with an aqueous Humour, are termed *Hydatides*. Some are of the Nature of Atheroma, Steatoma, and Meliceris, which are deſcribed under the Article Tumor. But almoſt all theſe Tubercles are of the encyſted Kind, ſome hanging from a ſlender Root, and others ſeated on a broad Baſis, as they are repreſented in *Tab.* XXXVI. *Fig.* 16, 17, 18.

Though ſuch Tubercles, in other Parts of the Body, might be ſafely diſregarded, yet, when they affect this Part, the Delicacy of the Organ requires particular Caution. If they are not very troubleſome, they produce little or no Danger, though they ſomewhat diſfigure the Part. Theſe Tubercles ſeldom yield to Medicine, and by emollient Cataplaſms, which are recommended by ſome, the Eye itſelf may be injured; therefore they require a chirurgical Operation.

All theſe Tubercles, thoſe which hang from a ſmall Root excepted, are removed by making an Inciſion in the Integuments, carefully avoiding wounding the *Cyſtis*, ſo that the *Cyſtis*, with the Tubercle, may, if poſſible, be extracted entire; as is directed under the Article Tumor. But if the Coat of the Tubercle be wounded, or if it firmly adheres to the Fleſh, ſo that it cannot be wholly ſeparated from it by the Knife, cut out as much as you ſafely can, with a ſmall Pair of Sciſſars, and immediately apply a digeſtive Ointment mixed with red Precipitate, or Unguentum Ægyptiacum, or with Lapis Infernalis, for eroding the Remains, and the Cure may be completed by a vulnerary Balſam. Sometimes, when I judge, that the Tumor cannot be entirely extracted, I make the Inciſion directly through the Cyſtis, and after having expreſſed the contained Matter, I apply Cauſtics for deſtroying the Remainder, as is directed for encyſted Tumors. But here particular Care is required to prevent any of the Cauſtic from falling into the Eye, which might greatly injure the Sight. Pendent Tubercles may be eaſily removed either by cutting them off gradually with a Ligature of Silk-thread, or inſtantly with the Sciſſars. But the Hordeola require a different Method; for they, unlike other encyſted Tumors, are attended with Pain and Inflammations; and, therefore, as in Inflammations, we muſt firſt endeavour to diſperſe them; but, if that Attempt fails, we muſt bring them to Suppuration, before we proceed to Inciſion. To promote the Diſcuſſion, and alleviate the Pain of a recent Hordeolum, frequently foment the Part with faſting Spittle, or apply Mucilage of Quince-ſeeds, or the warm Pulp of a roaſted Apple, mixed with a little Saffron and Camphire. If all theſe prove ineffectual, and the Tumor, beginning to turn yellow, tends to Suppuration, it may be promoted by a Plaiſter of Honey and Meal, or of Diachylum with the Gums. But if we would ſooner complete the Cure, we muſt have recourſe to the Knife; for which Purpoſe, after drawing back and inverting the Eye-lids, we muſt, with a ſlender Knife, make a rectilineal Inciſion, in ſuch a manner, that, if the Tubercle is as yet hard, the Bag or Veſicle, in which it is contained, may be commodiouſly ſeparated and extracted. But, if the Tubercle is already ripe, it is to be laid open, the Pus to be ejected, and the Veſicle conſumed by corroſive Medicines; by which means an unſeemly Scar will be prevented, and the Wound conglutinated without the Aſſiſtance of other Medicines.

Of Warts on the Eye-lids.

The Eye-lids are often affected with Warts, not unlike the above-mentioned Tumors, which not only diſfigure the Part, but often injure the Sight. Theſe Warts have either a large or ſmall Root, and may be extirpated either by the Ligature, the Knife, or corroding Medicines, like other Warts. The actual Cautery, which may be uſed in other Parts, muſt never be applied in this Caſe; and even Corroſives muſt be uſed with extreme Caution, leſt, by ſlipping into the Eye, they might deſtroy, or at leaſt greatly injure, the Sight. If theſe Warts appear blackiſh or livid, a Gangrene is to be apprehended, which will enſue, if they are irritated by the Application of Inſtruments or Medicines; and for this Reaſon they have been named *Noli me tangere*; and ſhould, therefore, be let alone. I happily removed, by Ligature, a large Wart on the upper Eye-lid, (ſee *Tab.* XXXVI. *Fig.* 17.) which impeded the Opening of the Eye, but had no very broad Root.

Of the Relaxations and Tumors of the Eye-lids, called Phalangosis and Ptosis.

We often find the Eye-lids ſo much tumefied or relaxed, as greatly to deform the Part, and impede the Sight. (See *Tab.* XXXVI. *Fig.* 19.) This Diſorder always proceeds either from a paralytic Diſtemper of the Muſculus Elevator Palpebræ, or from a Relaxation of the Skin above. Sometimes an œdematous, or watery Tumor is formed in the Eye-lids, ſo as to keep the Eye almoſt entirely cloſed; this Caſe ſhould be accurately diſtinguiſhed from the other, and eaſily yields to Medicine, by adminiſtring Cathartics, Diuretics, and Sudorifics, and by fomenting the Part with a Compreſs dipt in warm camphorated Spirit of Wine, or in Lime-water. But, when it proceeds from a Relaxation of the Skin, ſtrengthening Medicines are proper, as a Plaiſter of the black Oil of Tartar, mixed with Wax, or *Peruvian* Balſam, *Hungary* Water, Spirit of Worms, and the like. If theſe Medicines fail, the beſt Method is, carefully, to cut off a ſufficient Quantity of the relaxed Skin; which renders it ſhorter, and reduces it to its natural State.

The Antients uſed the following Method of curing this Diſorder. The relaxed Skin being raiſed, they paſſed a Needle, with a Thread, through it; then, artfully twiſting the Thread about the raiſed Skin, they ſeparated it, by making a tight Ligature; and this Operation frequently ſucceeds. Or with the Sciſſars or Knife, they amputated the ſuperfluous Part of the Skin, and, bringing the Lips of the Wound into Contact, they ſecured them by a few ſimple Stitches; as we read in *Hippocrates*, (*Lib. de Vict. Ratione in Acutis*) *Celſus*, (*Lib.* 7. *Cap.* 7.) and *Paulus Ægineta* (*Lib.* 6. *Cap.* 8.). But, in the laſt Method, the Hæmorrhage frequently proves ſo large, as to obſcure the Wound, ſo that a neat Suture cannot be made, which is conſequently followed by an unſeemly Cicatrix. To prevent theſe Inconveniences, *Bartiſcius*, a celebrated *German* Oculiſt, contrived a wooden Inſtrument, repreſented in *Tab.* XXXVI. *Fig.* 19. B B, to intercept the redundant Skin, *Fig.* 19. C. and, compreſſing it by turning the Screw D D, ſo as to obſtruct the Circulation, the intercepted Part mortified in a few Days, and caſt itſelf off.

But as this Method of *Bartiſcius* was attended with great Pain, Inflammation, and other Inconveniences, *Verduin*, of *Amſterdam*, made a Braſs Inſtrument almoſt ſimilar, but perforated in its upper and lower Parts (as in *Tab.* XXXVI. *Fig* 21.): By this Inſtrument, he compreſſed the ſuperfluous Skin, and paſs'd a Needle with a Thread through the Perforations, as often as might be neceſſary, leaving four or five Inches of the Thread hanging down on each Side; then with the Knife, or Sciſſars, he cut off the prominent Skin, cloſe to the Edge of the Inſtrument; after which he removed the Inſtrument, taking care not to draw out the Threads, which he immediately ty'd as in a common Suture. The Wound muſt be dreſs'd, the firſt time, with ſome vulnerary Balſam, and ſcrap'd Lint; and, in the ſubſequent Dreſſings, you ſpread your Lint either with a vulnerary Balſam, or ſome digeſtive Ointment, to be ſecured with Compreſs and Bandage. After three or four Days, the Bandage being always removed with the greateſt Caution, and the Lips of the Wound being cloſed, cut the middle Knot, and gently extract the Thread. The reſt of the Threads may be treated by one at a time, in the ſame manner, completing the Cure with ſome vulnerary Balſam and Plaiſter. The Wound may be cauterized before the Removal of the Inſtrument, which will not only ſuppreſs the Hæmorrhage, and render the Diſorder leſs ſubject to return, but may perhaps make a Suture unneceſſary. Sometimes this Diſorder is of ſo long Continuance, and the Tumor ſo large, that the Eye loſes its natural Figure; and ſometimes Relapſes happen after repeated Operations; which ren-

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ders the Caſe incurable. Laſtly, we may obſerve, that *Rau* invented an Inſtrument for this Purpoſe, little differing from the former in its Shape and Uſes, *Fig.* 22. But the Invention of this Inſtrument was highly controverted between him and *Ruyſch*, who attributed it to *Adrianſonius*.

Of the Eyes irritated by the Eye-lashes.

The Eye-lids are ſometimes turn'd inwards, ſo that the Eye becomes extremely irritated by the Hairs or Eye-laſhes: Hence proceed intenſe Pains and Inflammation, which, without timely Aſſiſtance, may greatly injure, if not totally deſtroy, the Sight. This Diſorder was, by the *Greeks*, named *Trichiaſis*, *Diſtichiaſis*, or *Diſtrichiaſis*, *hairy*, and ſometimes *Entropium*. It generally ariſes from an irregular Cicatrix formed after a Wound, the Small-pox, or a Burn; and ſometimes it is occaſioned by a Relaxation of the Eye-lids, and then it is attended with the other Miſchiefs above-mentioned.

To remedy this Diſorder, and prevent a Relapſe, the Hairs muſt be entirely extirpated, an Operation very difficult to be performed. If the Hairs are cut cloſe, it will be to no Purpoſe; for the rigid, ſharp-pointed Stumps will again ſhoot up, and irritate the Eye worſe than the Hairs did before. Some endeavour to bend the Hairs outwards, by keeping them agglutinated on the Outſide of the upper and lower Eye-lids by ſome ſticking Plaiſter; but the continual Motion of the Eye-lids ſoon looſens the Hair, and they become again inverted. *Celſus*, therefore, directs to burn the Roots of the Hair, one by one, with a ſlender, but broad-pointed Needle, ſhaped like a Spatula, heated red-hot. But *Ægineta* adviſes to pull out the Hairs, one by one, before the Cauterization of their Roots, an Operation which cannot be performed without exquiſite Pain; and, therefore, ſome chuſe to fill up the Cavities at the Roots of the Hairs, after their Extraction, with ſome corroſive Medicine, ſuch as Lapis infernalis, taking care, that no Part of it gets in o the Eye; or it will be better to touch the Cavities with a ſmall Pledget dipt in the Spirit of Sal Ammoniac, or the highly-rectified Spirit of Wine; by which means they will cloſe up, without producing any more Hairs. When there are many inverted Hairs to be thus extracted, let them be pulled out at different times, and not all at once, which would induce violent Pain and Inflammation. The *Cornea* ſhould, alſo, be defended from the Cauſtic, or the actual Cautery, by ſcraped Lint, or a ſmooth hollow Plate of Lead, Wax, or Horn, adapted as in artificial Eyes. If the Diſorder ſhould ariſe from a Relaxation of the Eye-lids, it will be neceſſary to treat it, like the Relaxation only, as was before directed.

But if all the Hairs of the Eye-lids are thus inverted, and the Patient will not permit them to be extracted by the Roots, and treated with Cauſtics, there is but one cruel Remedy left, by amputating the Cilia, or cartilaginous Margins of the Eye-lids themſelves; a Remedy, which, tho' it deforms the Eye, had better be ſuffered, than an entire Privation of Sight. After the Operation, a Collyrium ſhould be made and apply'd, of the White of Eggs, Roſe-water, and Sugar of Lead, or with Water, and Spirit of Wine, mixed in equal Quantities; and the Wound muſt be treated, in the ſubſequent Dreſſings, with ſome Oil, or vulnerary Balſam, till it be healed. But *Cortumius*, in a Diſſertation *de Trichiaſi*, has propoſed to remove the Cilia, rather with Lapis Infernalis, than by Amputation, in the following Manner: When the Patient is laid on his Back, defend the Eye with Lint or Leather, and rub the Edges of the Eye-lids with ſtrong Lapis Infernalis, till they and their Hairs are quite conſumed. The Operation being completed, dreſs firſt with dry Lint; and, about an Hour after, apply upon the Lint the White of an Egg, ſoak'd in Roſe-water, which muſt be often renewed. Next Day, Part of the Lint ſhould be removed, to prevent an Inflammation from it. If any ſmall Eſchar is formed, it may be removed by ſome digeſtive Ointment, after all the Lint is taken away; and thus he aſſerts, that the Wound will generally be conglutinated in ſix or eight Days time.

For Ancyloblepharon, or Concretions of the Eye-lids, ſee Ancyloblepharon.

For Ectropium, and Lagophthalmia, or Everſion and Retraction of the Eye-lids, ſee Ectropium.

For the Encanthis, or Tubercle in the Corner of the Eye, ſee Encanthis.

Of the Sarcoma and Hypersarcosis, or Excrescences between the Eye and its Lids.

Thoſe Tubercles, which grow between the Eye and its Lids, as repreſented in *Tab.* XXXVI. *Fig.* 28. 29. called by the *Greeks*, *Hyperſarcoſes*, and *Sarcomata*, are nearly of the ſame Nature with thoſe Diſorders already mentioned. In the Beginning they are very ſmall, but increaſe by degrees, and ſometimes to a conſiderable Magnitude. Some of them are ſmooth, and even-ſurfaced; and ſome are rough and unequal like the Raſpberry, or Mulberry; ſeveral of which Excreſcences I have cured, in the following Manner.

I carefully pulled them out with a ſmall Hook, and then cut down to the Root, with a ſmall Pair of Sciſſars. After ſuffering it to bleed, I ordered the Patient to waſh his Eye frequently with a Solution of Tutty, Aloes, and Sugar of Lead, till the Wound conglutinated. Inſtead of an Hook, the Tubercle may be drawn out by paſſing a Needle and Thread through it. Some uſe the Lapis Infernalis, in extirpating theſe fleſhy Excreſcences; but I think Inciſion much ſafer.

Of Bleeding in the Eyes.

Blood-letting in the Eyes was, a few Years ago, claimed, by *Woolhouſe*, an *Engliſh* Oculiſt, as an Invention of his own. But it evidently appears, that the Operation was known, deſcribed, and practiſed, in *Germany* above an hundred Years before. This Operation is, however, extolled by *Woolhouſe*, as preferable to all other Diſcoveries in Phyſic, and even to the celebrated Philoſophers Stone.

Blood-letting may be ſucceſsfully uſed in the Eyes, 1. When they are violently inflamed; that is, when the Blood-veſſels of the White of the Eye appear larger and redder than uſual. This Operation, in this Caſe, has often had excellent Effects, when other Remedies, and even Phlebotomy, in other Parts of the Body, have failed, and when the Inflammation increaſes ſo as to endanger the Sight. 2. It may be ſerviceable, when the Cornea is affected with Specks, or Abſceſſes; for, after dividing the Veſſels, which nouriſh the Diſorder, it may be much more eaſily removed. 3. When a red Coat, or Film, grows upon the Eye; for the oftener the Veſſels are cut, which nouriſh the Film, the ſooner will it decreaſe and diſappear. 4. When, after the Extirpation of ſuch Films, a Relapſe is threatened, by the Intumeſcence of the Veins in the White of the Eye, or thoſe of the Cornea, the turgid Veins ought to be opened, and fomented with drying Medicines.

As the Methods of Operation are numerous, we ſhall only give the principal: 1. The Patient muſt be conveniently placed on the Bed-ſide, or on a Chair, and his Head muſt be ſteadily held by an Aſſiſtant; then make a tranſverſe Inciſion with a Lancet upon the turgid ſmall Veins in the Corners of the Eye, ſo as to open them, or cut them through. 2. Sometimes a ſmall Pair of Sciſſars, inſtead of a Lancet, may be conveniently uſed to divide the Veſſels. In both theſe Methods, the Operator muſt retract the Eye-lids with the Fingers of one Hand, and make the Inciſion with the other. 3. Some elevate the ſmall turgid Veins with a crooked Needle before they divide them, the Eye-lids being diſtended by an Aſſiſtant. 4. But it would not be improper to have theſe Needles made thin and double-edged, ſo that they may divide the Veſſels of themſelves in the Elevation, without the Uſe of Lancet, or Sciſſars. 5. This Operation may be almoſt as advantageouſly performed by the ſcarifying Inſtrument, which ſhall be preſently deſcribed.

The Veins being thus opened or divided, the Diſcharge of Blood ſhould be promoted by Fomentations of warm Water, or the Decoctions of Eyebright, Hyſſop, Male Speedwell, and the like digeſtive Herbs, frequently applied with a Sponge, or a ſoft Piece of Linen; for the more copious the Diſcharge is, the better will be the Effects. But, if one Operation is not ſufficient to leſſen the Diſorder, it may be ſafely repeated two or three times, aſſiſting it with proper Medicines both externally and internally. I muſt, indeed, confeſs, that after having tried this Operation on ſeveral Patients, firſt at *Altorf*, and afterwards at *Helmſtadt*, I could hardly perſuade them to ſuffer it at all, much leſs to ſubmit to a Repetition of it; ſome being deterred from it through Fear of loſing their Sight, and others on account of the great Pain which muſt attend it, eſpecially as the Tenderneſs of the Eye muſt be increaſed by the Diſorder. This Operation is ſeldom performed upon Infants, becauſe of the Difficulty of perſuading them to keep their Head and Eyes ſteady; and the Danger of applying a Lancet, or other ſharp Inſtrument, when thoſe Parts are in Agitation, is evident.

That Inciſion propoſed in a Diſſertation under *Camerarius* at *Tubingen*, in 1734. for a Venereal Ophthalmia, is nearly allied to this Operation; in the moſt violent Symptoms of which Diſorder, it is adviſed to make a circular Inciſion in the White of the Eye round the Cornea, to diſcharge the ſtagnating Blood, or other Matter diſtending that Membrane. But whether this be a ſafe or efficacious Practice, or whether it may not be ſucceſsfully uſed in other violent Ophthalmias, as well as the Venereal, can be only aſcertained by the beſt of Teachers, Time, and Experience.

Of the Scarification of the Eyes.

Scarification and Bleeding of the Eyes agree in many reſpects; ſo that it is no great wonder, that *Woolhouſe*, though a famous Oculiſt, ſhould confound them. But, I think, there is a manifeſt Difference; becauſe, 1. Bleeding is confined to the White of the Eye: But Scarification is likewiſe extended to the interior Surface of the Eye-lids, where it is principally performed. 2. Each Operation requires different Inſtruments, as will preſently appear.

That

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That Scarification of the Eye is no modern Invention, is apparent from its having been deſcribed by *Hippocrates*, *Celſus Ægineta*, and other eminent Phyſicians. But it was neglected by the Phyſicians in the ſucceeding Ages, partly, becauſe it was difficult to perform, and attended with intenſe Pain; partly, as it was extremely dangerous; and partly, as they judged it to be of little or no Efficacy. *Woolhouſe* was the firſt who revived the Practice among the Moderns.

The Operation is thus performed: Let the Patient be ſeated on a Bed or Chair, oppoſite to the Light, and his Head be held ſteady by an Aſſiſtant. Let the Operator, with his fore Finger and Thumb, gently preſs back the Lids of the cloſed Eye, ſo as to bring the interior red Surface into View, which may be done with moſt Eaſe in the lower Eye-lid. With his ſcarifying Inſtrument in the other Hand, let him diligently and ſwiftly rub backwards and forwards, upon the internal Surface of the Lid, or the White of the Eye, if neceſſary, and ſometimes even the Cornea, and Caruncle of the greater *Canthus*, ſo as to lacerate the ſmall turgid Veins, and make them bleed plentifully. But this Operation cannot eaſily be explained by Words, and none ſhould attempt it before they have ſeen it performed.

The Scarification being completed, the Diſcharge of Blood muſt be promoted, as directed in the preceding Operation. The oftener the affected Eye is for the firſt Day moiſten'd with Fomentations, or digerent Injections, it will be the better cleanſed, and the Inflammation will the ſooner abate. But, in order to prevent the ſcarified Parts from coaleſcing, they ſhould not be bound up, at leaſt in the Day-time; and the Lids ſhould be frequently moved by the Patient. If they are bound up at Night, *Woolhouſe* recommends the Interpoſition of three or four Seeds of Clary, or rather a Bit of Gold-beaters Skin, anointed with ſome Eye-ſalve, between the Eye and Lids, to prevent the Adheſion of the Parts. How often the Scarification ſhould be repeated, and what Intervals allowed, muſt be left to the Judgment of the Phyſician. Meantime it will be abſolutely neceſſary to preſcribe a proper Diet, and to exhibit both external and internal Medicines. See *Platneri Diſſ. de Scarificat. Oculor.*

Different Authors have uſed different Inſtruments for this Operation. *Hippocrates* ſeems to have uſed a ſort of prickly Thiſtle, like the Atractylis Some antient Phyſicians uſed a ſmall Steel Raſp, in the Shape of a Spoon; ſee *Tab.* XXXVII. *Fig.* 5. with which they rub'd the internal Surface of the Eye-lid, till it bled, as we ſee in *Celſus*, *Lib 6. Cap 6. Num.* 26. who called this Inſtrument Specillum Aſperatum; and in *Ægineta*, *Lib.* 3. *Cap.* 22. who named it Blepharoxyſton. Others uſe the rough Herb, termed Equiſetum majus nudum, (a Species of Horſe-tail) which ſeems well adapted to the Intention; others, and among them *Celſus*, uſed the Fig-leaf; others recommend the Pumice-ſtone or Cuttle-bone.

But the lateſt and beſt Inſtrument for this Operation, is found to be Beards of Barley or Rye, which are furniſhed with Rows of ſmall Teeth, or Hooks, repreſented in *Tab.* XXXVII. *Fig.* 3. A. Ten, twelve, or fifteen of theſe Beards are to be cut, and tied together with a String, ſo as to reſemble a ſort of Bruſh for Cloths, as in *Tab.* XXXVII. *Fig.* 4. The Teeth of each Beard, or Spike, being turned outward all round, their ſlender Ends form a ſort of Handle A; and the bruſhy Part B, being quickly drawn over the Eye or Eye-lids, draws the Blood. This Scarification has been, by the Moderns, named *Ophthalmoxyſis* or *Blepharoxyſis*.

The firſt Contriver of this Eye-bruſh appears to be Mr. *Woolhouſe*, who, though he highly extol'd the Uſefulneſs of his Inſtrument to his Students, yet he ſtudiouſly endeavoured to conceal it, till in 1726. *Mauchart*, preſent Profeſſor at *Tubingen*, who had ſtudied under *Woolhouſe*, not only publiſhed the Inſtrument, but its Uſes, and Method of Application, in his Treatiſe *de Ophthalmoxyſi*. About two Years after *Platnerus* of *Leipſic* explained the Subject at large in his Treatiſe *de Scarificatione Oculorum*.

This Ophthalmoxyſtrum or Eye-bruſh, is ſaid by Mr. *Woolhouſe* to be very ſerviceable in all Diſorders of the Eyes, which require Bleeding: As, 1. In a Stagnation of the Blood, or violent Inflammation in the Eyes, whether it proceeds from external or internal Cauſes, as a Blow, Wound, Cataract, Pterygium, Hypopion, Staphyloma, and the like; in which Caſes the internal Surface of the Eye-lid ſhould be firſt ſcarified, in order to diſcharge the ſtagnating Blood. And if we may believe *Woolhouſe*, and his Followers, this Practice is more effectual in removing Inflammations induced by external Cauſes, or a Chirurgical Operation, than in ſpontaneous Ophthalmias. But in the *Chemoſis*, or moſt violent Inflammation of the Eye, it will be neceſſary, beſides the Eye-lids, to ſcarify the Eye itſelf with this Bruſh. 2. He likewiſe recommends this Method of Scarification, when the Eye is affected with a *Pterygium*, or with Abſceſſes, and whitiſh Specks; for by ſcarifying the Albuginea, or, if neceſſary, the Cornea itſelf, or rather the *Pterygium* upon the Cornea, the Veſſels which nouriſh theſe Maladies are lacerated; ſo that, by the Application of proper Medicines, the Diſorder may be removed with greater Eaſe and Expedition. 3. This Operation, he ſays, is of great Efficacy in ſtrengthening a decay'd Sight; or even to remove an Amauroſis and Cataract, which have not reached to a Degree of Inveteracy; for, by the ſtrong Stimulus of the Scarification, the ſtagnating Humours are put in Motion, the obſtructed Nerves, and ſtraitened Blood-veſſels, are again opened, and the Eye is by degrees reſtored to its former Vigour. 4. He us'd the *Ophthalmoxyſis*, when the Eye was attacked with an Atrophy or Tabes. For the Extraction of the Blood occaſions a larger Influx of the nutritious Juices into the tabid Part, by which means its due Nouriſhment is reſtored. 5. This Method he uſed in an *Hypohæma*, or Hypopion, that is, a Collection of Blood, or Matter under the Cornea, proceeding from a Blow, or other external Violence, which muſt be diſperſed, in order to clear the Sight. 6. This, he ſays, is no deſpicable Remedy in relieving intenſe Pains of the Eyes, (called by the Antients *Ophthalmoponia*) when the Light itſelf is become intolerable. For, as theſe Pains proceed from an extraordinary Diſtenſion of the Blood-veſſels, or from a Stagnation and Inſpiſſation of acrid Humours, or from an internal Inflammation of the Eye, upon the Diſcharge of the ſuperfluous Blood, the Pains muſt remit. 7. Laſtly, the Ophthalmoxyſis will likewiſe have excellent Effects in Palſies, Mortifications, and many other like Diſeaſes, both of the Eye, and its Lids. See *Mauchart* and *Platnerus*, already quoted.

But *Platnerus* obſerves, that this Operation is not ſerviceable in every Diſorder of the Eyes, for it will be improper, 1. In a Xerophthalmia, or dry Lippitude; that is, where the Eye is dry, itchy, hot, rough, the Eye-lids covered with dry Scales, and the Patient cannot behold the Light without Pain and Trouble. 2. When the Diſorder proceeds from a venereal or ſcorbutic Cauſe. For unleſs the vitiated Juices be firſt corrected, as this Operation augments their Influx upon the Parts, it may increaſe, rather than relieve, the Diſorder. 3. In a Cataract, Gutta Serena, or Hypopion, of an inveterate Nature. 4. Laſtly, in an Ectropium, Trichiaſis, Anchyloſis, and other Diſeaſes of that kind.

With regard to the Eye-bruſh, it is to be obſerved, that a ſmall Force will blunt it, and therefore it cannot be uſed more than once; ſo that every Operation requires a new Bruſh. The Beards of old Barley are not ſo proper as thoſe of what is new, or, at leaſt, not above a Year old; becauſe the firſt, being very brittle, will be ſubject to break, and leave ſome of its Teeth behind in the Eye and Lids, which might produce very diſmal Conſequences. For the ſame Reaſons, it ſhould not be the Product of a Soil too rich; nor ſhould it be kept in a Place too dry, or too moiſt; nor have undergone Threſhing.

After all, I muſt confeſs, that though I have performed this Operation in various Diſeaſes of the Eyes, I never could perceive any remarkable Advantages in conſequence of it. What is more, I have known many afflicted with various Diſorders of the Eyes, who have been reported by *Woolhouſe*, and his Followers, to be cured by this Practice, when the only real Benefit they have received by it, was an Abatement of their Pain; which I mention, leſt it ſhould be imagined I did not ſucceed, by not rightly performing the Operation. I muſt however own, that I have ſometimes known it ſerviceable, eſpecially in Inflammations of the Eyes: And I am perſuaded, that it was in ſuch Caſes that *Woolhouſe*, and his Followers, obſerved its good Effects, eſpecially when it was aſſiſted with proper Remedies, particularly Phlebotomy and Veſicatories. But, as the like Diſorders of the Eyes have been frequently cured by the Uſe of proper Medicines only, without any Scarification of the Part affected, it may in general be queſtioned, whether thoſe Diſorders would not have been as eaſily removed by Bleeding, Purging, Bliſters, and Scarification in other Parts, as by this Practice. We know that Diſeaſes of the Eyes have been effectually cured, before *Woolhouſe* introduced the Ophthalmoxyſis; and perhaps are better removed at this Day, by ſome who have never known nor practiſed his Method. Beſides, if the Pains produced by ſuch rigid Treatment and Laceration of ſo tender an Organ, are ſo intolerable, that few would ever once undergo the Operation, much ſmaller is the Number that would ever ſubmit to it a ſecond time. Beſides, though the greateſt Caution is required in the Operator, yet, as the excruciating Torment will hardly permit the Patient to keep his Eye fixed, great muſt be the Danger, either of touching and even ſeverely wounding the Cornea, or of breaking the Teeth of the Inſtrument, and leaving them in the Eye; whence would ariſe a more violent Inflammation than that intended to be cured, and many like dreadful Conſequences. Hence then, in my Opinion, every prudent Phyſician will acknowledge, that this Scarification of the Eyes is ſurrounded with Difficulties, even in thoſe Diſorders, for the Remedy of which it is moſt peculiarly calculated. Nor are the Advantages uſually expected from it ſo remarkable, nor the Examples of its good Effects ſo evident, as to counterbalance the extreme Danger, and exquiſite Torment, with which it is attended. I would, therefore, adviſe this Method never to be uſed, but in Caſes of the laſt Neceſſity, and when all other Means have failed. It is, alſo, remarkable, that, among the modern

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dern *French* Surgeons, *St. Yves* excepted, as they say little or nothing of most other Methods of removing the Diseases of the Eyes, so they have taken no notice of this Operation, though it at first made so much Noise in the World.

For the EPIPHORA or watery Eye, see EPIPHORA.

For the FISTULA LACHRYMALIS, see FISTULA.

For Suffusions or CATARACTS, see CATARACTA.

For the Method of dilating the Contractions of the Pupil, see IRIS.

OF THE UNGULA, UNGUIS, PANNUS, OR PTERYGIUM OF THE EYES.

When a small Membrane is formed on the external Part of the Eye, extending itself over the Tunica Cornea and Pupil, and greatly obstructing the Sight, it is called Ungula or Unguis, from its Similitude to the Nails of the Fingers: For the same Reason the *Greeks* named it *Onyx*, and, also, *Pterygium*, a Wing, because it sometimes resembled the Wing of a Bat; sometimes it appear'd soft and red, when abounding with Blood-vessels, and then it usually assumes the Name of *Pannus*. It frequently arises from the Angle of the Eye next the Nose, and sometimes it comes from the upper or lower Side of the Eye, stretching itself gradually over the Cornea, as in *Tab.* XXXIX. *Fig.* 1. and 2. *a a*. Sometimes it is only slightly connected with the Cornea, by a few slender Fibres; at other times it overspreads the whole Eye, and firmly adheres to it; and difficult indeed is then the Cure.

Whilst the *Unguis*, or *Pannus*, is yet recent, small, and soft, it may be gently discussed by Escharotics, such as a Dram of the Powder of double-refin'd Sugar, mixed with four or six Grains of white Vitriol, or burnt Alum, or a small Quantity of Verdegrise, carefully sprinkled at Intervals upon the Excrescence. To the same Purpose may a Powder be prepared of old *Scissilis Lapis*, Cuttle-bone, and Sugar. As it will be difficult to apply such a Powder to Infants, they may be treated with *Quercetan's* Eye-water, or the Fat of Vipers, or the Fat of the Grayling, or the Gall of the Eel-pout, or liquid Sperma Ceti, or the Oil of burnt Linen, or, lastly, with fresh Butter mixt with a little white Vitriol, with which the Membrane should be carefully anointed: These Remedies may, also, be advantageously applied to Adults. If the Unguis is attended with an Inflammation, begin with bleeding, blistering, and cooling Medicines to remove the Inflammation. *St. Yves* highly recommends in this Disorder, the Lapis Divinus or Medicamentosus of *Crollius*, dissolved in Water, and frequently instilled into the Eye; and of equal Efficacy is half a Scruple of white Vitriol dissolved in two Ounces of the Water of the greater Celandine.

When these Remedies are not effectual for destroying the Pellicle, it must be removed by Incision. For this Purpose, the Patient must be placed with his Back towards the Surgeon, and his Head reclin'd upon the Surgeon's Lap. The Patient must rest upon the Operator's Left Knee, if the Disorder is in the Right Eye, and *vice versa*. Then, the Eye-lids being sufficiently drawn asunder by an Assistant, let the Operator take a small Hook, as in *Tab.* XXXIX. *Fig.* 3. or *Tab.* XXXVI. *Fig.* 30. and endeavour to introduce its Point under the looset Part of the Pellicle, thus attempting to elevate it a little. Then, passing a threaded Needle under the Pellicle, *Tab.* XXXIX. *Fig.* 1. *b b*, he may tie it with a double Knot, *Fig.* II. *a a*; and then, fastening the two Ends in a Loop *b c*, let him raise the Unguis by gently drawing the Thread to him; then let him separate the upper and lower Parts of the Membrane, that, with a small straight Pair of Scissars, he may expeditiously cut it near the Lachrymal Caruncle. He then draws back the Thread with the Membrane towards the Cornea; and, if it adheres any-where to the Eye, he gradually frees it, by degrees, with the Knife, or Scissars. Two Circumstances are here to be principally regarded by the Operator: 1. That he neither injures the Eye, nor its Cornea. 2. That he leaves none of the Unguis adhering to the Eye, which might occasion a Return of the Disorder. Yet it is better to leave some Part of the Unguis behind, when it obstinately adheres to the Cornea, than, by endeavouring to separate it, to wound the Cornea, and produce irremediable Scars; and this the rather, because any small Remains of the Membrane may be removed, by applying to the Eye the gentle Escharotics already named, two or three times a Day; though some prefer for this Purpose the following Collyrium.

> Take of Rose-water, and Plantain-water, each an Ounce; prepared Mother of Pearl, a Scruple; Sugar of Lead, six Grains; white Vitriol, three Grains: Mix them for a Collyrium.

St. Yves advises the Patient's Eye to be washed, for four Days after the Operation, with Spirit of Wine diluted in Water; and then, to complete the Cure, a Solution of *Lapis Divinus* in common Water may be exhibited. But, in cutting the Pellicle near the Caruncle, particular Care must be observed, that no Part of the Caruncle, much less the Whole of it, be amputated. For, if this Caruncle should be removed from the *Canthus*, a new Passage for the Tears would be made, and hence would arise the Disorder called *Oculus Lachrymans*, or the weeping Eye.

Some of those Pellicles, which assume a red Colour, because of the Blood-vessels communicated to them from the greater Angle of the Eye, may be removed by dividing these Blood-vessels near the Caruncle; for by this means the Pellicle, having its Nourishment withdrawn, will of itself gradually wither and decay; or will, at least, more easily yield to Medicine. Sometimes a glutinous Matter, resembling a thin Membrane, or Fat, overspreads the Cornea; which may be easily removed by applying the Bile of the Eel, Eel-pout, or the like, to the Eye; and it is not improbable, that this was the Case of *Tobias*, mentioned in the Apocryphal Writings. Sometimes these Membranes adhere so obstinately to the Eye, as to be absolutely inseparable from the Cornea; but, as we cannot be ascertained of this Obstinacy before Trial, it is better to attempt a Cure, though it should prove ineffectual, than to neglect it as irremediable. Some Pellicles on the Eye are extremely painful, inclining to a cancerous Disposition, which ought to be left as incurable.

If the Unguis be extended over the whole Eye, it will be proper to divide it into four Parts, as *St. Yves* directs, each of which may be removed, and the Dressings ordered in the manner already prescribed.

When the Operation is so performed on the Left Eye, after the Needle has been passed through the Membrane, the Patient should rise from the Ground, and place himself in a convenient Seat; by which the Operation may more speedily be completed, unless the Operator be as expert with his Left Hand as his Right.

OF THE ALBUGO, LEUCOMA, NEBULA, NUBECULA, AND SPOTS IN THE CORNEA.

As in several other Classes of Disorders belonging to the Eye, so in this, we meet with much Confusion, by a Misapplication and Multiplicity of Names. Hence proceed Difficulties, Mistakes, and Differences among Physicians in the Method of Cure; and much Trouble and Perplexity is created to the Student.

We find, however, that the most eminent Physicians have all agreed to ascribe the above-mentioned Names to whitish Spots on the Cornea; though they are not all of the same Nature: For they may be larger or smaller, thicker or thinner, and more pellucid; or they may be more or less prominent. Thus they may more or less impede the Sight, and sometimes entirely extinguish it, as these Spots sometimes over-run the whole Cornea. Hence this Disorder was named in *Greek Leucoma*, and in *Latin Albugo*, *Nebula*, and *Nubecula*, from its different Appearances.

These Blemishes may proceed, 1. From an Obstruction of the pellucid Vessels in the Tunica Cornea, and an Inspissation of their contained Juices, proceeding from a violent Inflammation of the Eye. 2. From an Abscess generated by a Stagnation of these Juices, after an Inflammation of the Cornea, while the peccant, opake Matter, hardens by degrees, and stretches a whitish Cloud over the Cornea. This Disorder has been by some called the *Unguis*, or *Onyx*, and esteemed a peculiar Species of Disorder. 3. From an Erosion, or external Abscess, of the Tunica Cornea. 4. From inflammatory Pustules, which, from different Causes arise in the Cornea; especially, 5. From those which are occasion'd by the Small-pox. 6. From the Scar after a Wound with a Sword, Knife, Fork, Splinter, Glass, Thorn, or the like. 7. From a Burn. 8. From the accidental Slipping of acrid or corrosive Medicines into the Eye, or the injudicious Application of them. 9. Lastly, from the Agglutination of a peculiar Coat to the Eye.

Though these Spots are, for the most part, very obstinate, yet they are not always equally dangerous, nor equally difficult to disperse; as the Cure depends upon the Habit of Body, their particular Causes, their Duration, and the Age of the Patient. Children are more easily freed from them than Adults; but when it is produced by a Scar from Wounds, Burns, Punctures, or the like, hardly any Remedy can be expected.

The Method of Cure must be adapted to the Cause of the Disorder. Those Spots which proceed from inspissated Humours stagnating between the Laminæ of the Cornea, and have been of no long Continuance, may be best cured by carefully observing a proper Regimen, by taking internal digestive Medicines, and the copious Use of sudorific Infusions and Decoctions: The necessary external Remedies are Bleeding, Scarifications, Vesicatories, and frequent washing of the Feet: To the Eye itself should be often applied discutient Bags made of Hyssop, Rosemary, Chamomile-flowers, Fennel-seed, and the like, boiled either in Wine or Water; or a Collyrium of the Water of Fennel, or Valerian, mixed with a small Quantity of camphorated Spirit of Wine. Lastly, it may not be improper for the Patient to fumigate his Eye, after the Dressings are taken off, with the warm Vapours of Coffee, or a Decoction of the Woods. Cold and astringent Collyriums, especially those of

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of Vitriol, however they may have been extolled, are certainly very pernicious in this Case; whereas I have found warm Applications extremely serviceable. When the Inflammation is carried off, let the Patient every Day instil into his Eye a little of *Quercetan*'s Eye-water, prepared with Tutty, or some other Digestive, and warmed, till he finds the Disorder almost removed. But if any of the Veins proceeding to the Spot appear turgid in the White of the Eye, recourse must be had to cutting them with the small double-edged, crooked Needle (*Tab.* XXII. *Fig.* 5. or *Tab.* XXXVII. *Fig.* 2.) or with a Lancet, or Scissars. If the Disorder has been of long Duration, no Remedy can be expected.

When Spots are produced by an Abscess between the Laminæ of the Cornea, after an Inflammation, and the contain'd Matter makes the exterior Part of the Cornea project like a Lentil or Pearl, whence this Disorder is called a Pearl, the Matter should be immediately discharged by Incision, lest, by its long Continuance there, it should by degrees affect the whole Cornea, and induce incurable Blindness. This may be most conveniently effected by a Lancet, or Couching-needle, *Tab.* XXXVIII. and the Operation must be repeated till the whole Matter is evacuated, afterwards exhibiting the digestive Medicines already proposed. Nor is it improper to instil into the Eye Vipers Fat, for cleansing and conglutinating the Wound or Puncture. But when the Matter is lodged deep, and not near the Outside of the Cornea, the Sight is generally lost.

When an external Erosion of the Eye proceeds from an Abscess or Inflammation, *St. Yves* directs, first to remove the Inflammation, and then to drop frequently into the Eye *Hartmann*'s green Eye-water, which may be made stronger or weaker, as the Patient can bear it. The Virtues of this Water in removing Spots of the Cornea are strongly recommended by that Author.

If those inflammatory Pustules, which are called Uritides, project upon the Cornea like a Pearl or Grain of Millet, the inclosed Matter should be immediately discharged by perforating them with a small Needle. When the Eye is affected with Pustules in the Small-pox, they ought to be opened immediately, and the remaining Pellicle being taken away, with a small Needle, Lancet, or other Instrument, a small Quantity, about the Size of a Lentil, of a Powder prepared with Alum, Sugar-candy and Egg-shells, must be every Day put into the Eye; or it must be daily anointed with the Oil of burnt Linen. By which means the Remains of the Spots will, according to *St. Yves*, gradually decay. This Method must be observed in Pustules generated upon the Cornea by a Burn. If, at last, after the Pellicle is removed, some Spots should still remain, they may be treated with the Medicines prescribed in the Case of an Onyx or Unguis.

Those Spots which arise from Wounds and Scars, or the Abuse of vitriolic Collyriums, those which, by their long Continuance, have rendered the Cornea entirely opaque, and those which have altered the natural Shape of the Eye, or of the Cornea, seldom admit of a Cure. In these Cases, therefore, it is better to attempt nothing, than to torment the Patient with a tedious, but inefficacious Course of Remedies and Operations.

Of the Staphyloma.

The Term *Staphyloma* comprehends two Disorders of the Eyes: One is when the Tunica Cornea is gradually rendered more protuberant than in its natural State, as in *Tab.* XXXIX. *Fig.* 4. 5. 6. 7. The other happens, when either from an internal Cause, or an external Wound, the Uvea or Pupilla breaks forth upon the Tunica Cornea, and deforms the Eye with a Tumor, by which the Sight is generally destroy'd. See *Fig.* 8. *a a.*

These Tumors from their different Forms and Sizes assume different Names. Thus they are called *Margarita*, *Myocephalon*, *Clavus*, *Mylon*, or *Pomum*; and, lastly, *Staphyloma*, *Uva*, or *Acinus*, according to the Resemblance they bear to the Things, whence they are named. The largest is the Mylon. I have not only observed the Cornea, but sometimes the Sclerotica, preternaturally swelled and distended; and even then the Disorder may be denominated *Staphyloma*; because these two Coats properly consist but of one. However, for Distinction, one of these Tumors may be called Staphyloma Scleroticæ, the other Staphyloma Corneæ.

These Staphylomas not only deform the Eye, and destroy the Sight, but occasion most violent Inflammations, Pains of the Head, Watchings, and Suppurations, and frequently induce a Cancer. Their Cure, therefore, is undertaken not so much with a Design to restore or preserve the Sight, which is by them almost always extinguish'd; but to remove the Deformity of the Eye, and those malignant Symptoms already enumerated.

In the Cure of this Disorder, apply to the Tumor a Compress dipt in Water, impregnated with Alum, together with a Plate of Lead and Bandage, or some proper compressing Instrument. When the Uvea protrudes through a Wound, it must be immediately replaced by a small Probe, in the mean time the Patient should continue to lie on his Back, and the Wound must be carefully dressed with the White of an Egg, and a Mucilage of Quince-seeds, till it conglutinates: By this Method the Sight has been sometimes restored.

If the Disorder is become so inveterate, as not to yield to Remedies, pass a double threaded Needle, through the middle of the Tumor, towards its Bottom (see *Tab.* XXXIX. *Fig.* 8.); then, removing the Needle, tie together the two Ends of the Thread on the Right Side; and, next, the two Ends of that on the Left Side: Thus the Tumor will gradually decay, and at last fall off with the Threads.

But as this Ligature frequently occasions violent Pains, Inflammations, and Suppurations in the Eye, it may be safer to remove the Tumor by Incision. Thus, I took hold of a Protuberance of this Kind, which projected from the Eye, about the Length of a Joint of the Finger, with two Fingers of my Left Hand, and happily cut it off with a Pair of Scissars.

St. Yves proposes the following Method: When the Tumor has not overspread the whole Cornea, he passes a sharp crooked Needle, with a Silk Thread, through the middle of the Staphyloma. Then, having removed the Needle, and twisted the two Ends of the Thread together, he takes them in his Left Hand, and with a Knife, or Lancet, gradually frees the Tumor under the Thread, till he can conveniently with the Scissars cut it entirely off. He then applies Spirit of Wine diluted in Water to the Eye, as is done for the Cataract. By this Method the Staphyloma is not only removed, but the Cornea is almost entirely heal'd, or else leaves but a very small Aperture in the middle of the Wound; whence indeed the aqueous Humour is continually discharged, as fast as it is secreted in the Eye, but without any Trouble to the Patient, because it flows gently with the Tears, through the Lachrymal Passages, into the Nose.

When the Staphyloma affects the whole Cornea, as in *Fig.* 4. 5. 6. 7. *St. Yves's* Method is certainly the most expeditious, by which not only the Cornea, but, also, the Iris and Uvea, and about a Line's-breadth beyond the Ring, where it joins the Albuginea, are entirely cut out circularly. Then all the Humours of the Eye being discharged, the remaining Coats are contracted into a smaller Compass, and the Wound itself at last closes. An artificial Eye may now be used, nearly resembling the other Eye, and nicely adapted to the Part. Thus, the artificial Eye may be moved by the Muscles like a natural Eye, and the Difference be scarcely perceivable. A Cure of this kind I perform'd myself.

The Method of discharging extravasated Blood by an Incision in the Cornea.

When by external Violence a small Quantity of Blood is extravasated within the Eye, it may generally be dissipated by applying the Resolvents already prescrib'd. But when the Quantity is so large, as not to yield to this Method, it ought to be discharged by opening the Cornea, in the manner directed under the Article Hypopion, to prevent the stagnating Blood from destroying the Sight.

We see, in the History of the Royal Academy of Sciences for *An.* 1709. an Operation of this kind performed by *Gandolphus*. He immediately made a transverse Incision through the Cornea, and discharged the extravasated Blood, not only without Pain to the Patient, or any deforming Cicatrix, but the Sight was entirely restored; altho' he was obliged to open the Wound three times, because of the great Quantity and strong Adhesion of the Blood. In order to conglutinate the Wound, he applied Compresses dipt in four Ounces of Plantain-water, mixed with two Ounces of the Aqua Sclopetaria; so that in about eight Days the Cure was completed; nor could the wounded Eye be distinguished, except that its Pupil appeared a little broader, which seemed rather the Effect of a Blow, than of the Operation.

Of the Distension, Prolapsus, Fungus, and Cancer of the Eye.

Sometimes the Eye is so violently inflamed and swelled, that the Lids cannot contain it, but it becomes projected from its Orbit. This Disorder not only occasions a prodigious Deformity, Pain, and Trouble, but is almost always attended with Danger of Blindness, or a Cancer. The monstrous Deformity produced by it may appear from its Representation in *Tab.* XXXIX. *Fig.* 14. 15. *Paré* relates a Case in which the Eye was so vehemently distended, that it burst its Coats. This is termed by the *Greeks* a *Proptosis*; and sometimes, when the Eye is distended with an aqueous Humour, an *Hydrophthalmia*. Some call it *Oculus Bubulus*, or *Bovinus*, or *Elephantinus*, from its Resemblance to the Eye of an Ox or Elephant. Various are the Causes of this Disorder. Sometimes it proceeds from a violent Inflammation, or an Obstruction, of the Vessels from a Redundancy of peccant Humours; sometimes from external Violence; and sometimes from a scirrhous or cancerous Disposition of the Eye; to which last Causes may be imputed those Instances given by *Hildanus*, *Cent.* 1. *Obs.* 1. and *Muys*, *Dec.* 12. *Obs.* 1. and, lastly, the Case which I have represented in *Tab.* XXXIX. *Fig.* 14. 15. Some Physicians have likewise named this Disease *Fungus*, or *Ficus*, from its Figure, which however are really different Diseases.

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If the Diſeaſe is recent, and the Eye not altogether deformed, the Hydrophthalmia may generally be reſolved by Bleeding, Purging, Sudorifics, Veſicatories, and diſcutient Fomentations. But, if the Diſorder be too ſtubborn to yield to Reſolvents, the Matter muſt be diſcharged by the Operation of the Paracenteſis, or Tapping, as in other dropſical Caſes, which muſt be performed by the Trocar, and repeated every Day, or every other Day, ſo long as may be neceſſary. At every Dreſſing a concave Plate of Lead ſhould be firmly ſecured upon the Eye, till it be reduced to its natural Figure. By this Method *Nuck* tells us he completed a Cure, though he always made the Wound in the Cornea itſelf. But as that may leave an unſeemly Cicatrix, I rather make my Perforation with a Lancet in the Sclerotica; and, after diſcharging the Matter, I dreſs the Eye with Lint dipt in Roſe-water, mixed with the White of an Egg, and lay a leaden Plate above it, over which I put a thick Compreſs, thoroughly ſoak'd in warm Spirit of Wine, and ſecure the Whole with a Bandage; not neglecting to continue the internal Medicines, Purges, and Sudorifics, till the Eye be reduced to its natural State.

When the Sight and natural Figure of the Eye are deſtroyed, and the Symptoms and Pains increaſe, there remains but one, and that a deplorable Remedy, by making a tranſverſe Inciſion in the Coats of the Eye, and diſcharging the contained Matter. The Eye muſt be deterged, as in other Ulcers, and covered with a Compreſs, and tight Bandage, the ſooner to reduce its Size, that the Eye-lids may cover it. But if the Eye ſtill continues ſo large as not to be contained within the Lids, there will be a Neceſſity of cutting off, with the Knife or Sciſſars, the ſuperabundant Part; by which means the Deformity may be afterwards the better concealed by an artificial Eye. Sometimes the Surgeons may cut out the Cornea by a circular Inciſion, as was directed in the Staphyloma.

Bartiſchius, *Hildanus*, and *Muyſius*, have contrived a crooked Knife, hollowed like a Spoon, for extirpating the Eye in this Diſeaſe. But, beſides the Difficulty of ſharpening this Inſtrument, it will be found ſufficient to cut off only that Part of the tumefied Eye, which prevents the Lids from cloſing. Moreover, there is Danger of ſeverely wounding ſome of the ſlender Bones of the Orbit of the Eye by this crooked hollow Inſtrument. But, when, becauſe of a ſcirrhous or cancerous Affection, it is neceſſary to extirpate the whole Eye, the Operation may be performed, with equal Conveniency, with the ſtrait Knife, (ſee *Tab.* XXXIII. *Fig.* 14.) which was all I uſed in extirpating thoſe monſtrous Tumors repreſented in *Tab.* XXXIX. *Fig.* 14. 15 There are ſome who think it the mildeſt Practice to free the Eye ſo far from its Orbit by a Knife, till a Ligature can be made about the protuberant Part, in order to remove it by that means, like other Excreſcences. But the violent Inflammations, Pains, and Convulſions, which this Method occaſions, either kill the Patient, or put him into extreme Danger. When therefore the Eye is affected with a Scirrhus, or Cancer, even when it penetrates to the very Root, there is ſcarcely any other Way of relieving the Patient, than by carefully freeing the Eye from its Orbit, and entirely extirpating it. The Wound may be afterwards deterged, and healed with a vulnerary Balſam.

Sometimes it happens, after the Operation is performed, that a new fleſhy Excreſcence, growing over the Eye, threatens a freſh Tumor: To prevent which, dreſs with Lint dipt in Aqua Phagedænica, over which put a Leaden Plate, and depreſs the Eye with a very tight Bandage. It is, alſo, to be obſerved, that Cancers in the Eye, like thoſe in other Parts, will very often return after they have been ſeemingly cured, by the Treatment here propoſed; and muſt be again removed by the ſame Practice; as may appear from the fore-cited Caſe, given us by *Muyſius*. When theſe Diſorders ariſe from a Caries or Spina Ventoſa of the Bones of the Orbit of the Eye, if they will not yield to Mercury, as is ſometimes the Caſe, the Phyſician muſt then be content to palliate the Diſorder, and relieve the Pains, ſince a total Removal is frequently altogether impracticable.

Of artificial Eyes.

Artificial Eyes are contrived for concealing the Deformity produced by the Loſs of an Eye. They are now made of concave Plates of Gold, Silver, or Glaſs, ſtained ſo as to reſemble the natural Eye. The nearer it approaches the ſound Eye in Size, the more firmly will it ſtay within the Eye-lids. It will be neceſſary frequently to clean the artificial Eye, leſt, by Sordes gathering upon it, the Fallacy may be diſcovered; and, leſt one ſhould be loſt, broken, or diſfigured, ſeveral ſhould be provided, immediately to ſupply its Place. When the Patient goes to Bed, let him take out the Eye, and clean it, and replace it in the Morning. But, that it may be taken out, and put in, with Neatneſs and Conveniency, the Surgeon, in the Operation, muſt take care to remove ſo much of the diſorder'd Eye, as will make room for receiving the artificial.

The more exactly the artificial Eye is fitted to the Eye-lids, the more perfectly will it perform the Motions of the natural Eye, which it will receive from the remaining Muſcles. For this Reaſon we adviſed no more of the diſeaſed Eye to be removed, but what was preternaturally projected, except when a Scirrhus, or Cancer, requires a total Extirpation; and then the artificial Eye can have no other Motion, than what it receives from the Lids.

Sometimes I have obſerved theſe artificial Eyes irritate the Parts, and produce Inflammations and Defluxions, and the like Diſorders, eſpecially if they are not made to fit exactly, ſo that they will often inflame and weaken the ſound Eye. In theſe Caſes, the Patient ſhould either provide himſelf with an Eye which is better adapted, or elſe totally lay them aſide, rather than loſe the Uſe of his ſound Eye.

Of the Strabismus, or Squinting.

We frequently meet with Perſons whoſe Eyes, inſtead of being directed to an Object, are turned towards the Corners of the Eye-lids: This Diſorder is called *Strabiſmus*, or *Squinting*. Sometimes one Eye, but oftener both are thus affected. This Misfortune is frequently produced in Children, by letting them conſtantly ſuck one Breaſt, or by placing them in the Cradle, ſo that they always look the ſame Way to the Light. But this Diſorder is more frequently cauſed in Children by convulſive or epileptic Motions, to which the Muſcles of their Eyes, as well as of their other Limbs, are extremely ſubject. Laſtly, It may proceed from a Spaſm and Rigor, or from a Palſy in ſome of the Muſcles of the Eye, or from ſome Defect in the Retina; for, when that Part of the Retina which is oppoſite to the Pupil, and receives the Impreſſion of the Object, is from any Cauſe render'd inſenſible, the Patient is then obliged to turn his Eye obliquely, till the Pupil directs the Rays, from the Object, upon ſome other ſound Part of the Retina.

Squinting is a Diſorder which is hardly ever cured without Difficulty, more eſpecially in Adults, and when cauſed by ſome Defect in the Muſcles or Retina of the Eye. In young Infants it may be remedied, according to the Directions of *St. Yves*, by frequently placing them before a Looking-glaſs, that their Eyes may be directed towards the Image of their own Face. Thoſe more advanced in Years may be aſſiſted by reading very ſmall Writing, or inſpecting very minute Objects, provided you obſerve and direct them to turn their Eyes even; they ſhould likewiſe bathe their Eyes with *Hungary* Water, or anoint them with the Balſam of *Fioravanti*. Some have not unſucceſsfully attempted to cure this Diſorder by a ſort of Mask Eye-ſwath, as repreſented in *Tab.* XXXIX. *Fig.* 16. taken from *Solingen*. This Method is, alſo, recommended by *Bartiſchius*, in his *Ophthalmoduleia*. But leſt Children ſhould look ſtrait through the Aperture, only with one, and ſquint in the mean time with the other, it will be beſt to bind up one Eye till the other is rectified, and then to remedy the other in the ſame manner; which is ſeldom practicable, through the Fretfulneſs of Infants, and other Impediments. *Heiſter. Chir.*

Authors differ in their Opinions, as to ſquint-eyed People: Some pretend, this Deformity is a Defect of the tranſparent Part of the Cornea, which is too convex, or placed obliquely. Others ſay, the Fault is in the Cryſtalline. But they are both miſtaken; for the Defect is in the Muſcles, as I ſhall make appear.

When a Perſon looks at an Object, and does not turn his Eye towards it, he is ſaid to ſquint. Perſons thus affected ſquint ſometimes with one Eye, and ſometimes with the other; ſometimes both Eyes ſeem to ſquint together: Some ſquint very little, when the Object is near; and more, when it is at a great Diſtance: Some ſquint with one Eye, when near the Object; and with the other, when farther from the Object. When the Eye, that does not ſquint, is ſhut, the Eye, that ſquinted, looks ſtrait; then, if the Eye-lid be opened, the Eye, that looked ſtrait before, is found to ſquint.

This different Inſpection of ſquint Eyes demonſtrates a Diſparity of Movement in one of the ſtrait Muſcles of the Eye, which is produced by the unequal Influx of the animal Spirits in all theſe Muſcles: This regards only thoſe who ſquint from their Childhood. This Diſeaſe may happen to Perſons of any Age; but, in this Caſe, it commonly proceeds from a Palſy in one of the ſtrait Muſcles of the Eye. Perſons thus affected ſee two or three Objects, and ſometimes more, when they look but at one; theſe People are generally ſaid to ſee double. This Accident happens for this Reaſon, becauſe the two Pupils are not in a parallel Line; ſo that the Rays of Light, reflected from an Object, fall, in one Eye, on a Fibre, and, in the other Eye, on another Fibre, which does not meet in the ſame Point, from whence the firſt takes its Riſe. As the Impreſſion made by the Light in both Eyes affects different Fibres, which do not flow from the ſame Point, a double or triple Senſation is tranſmitted to the common Senſory; for which Reaſon a Multiplicity of Objects is ſeen.

To explain this more amply: Viſion is performed by means of the nervous Fibres, which are diſtributed to all the Parts of the inner Cavity of the two Globes of the Eyes; and theſe Fibres coincide in the ſame Point of the Brain whence they riſe; the Fibres on the Side of the great Angle in one Eye correſpond with theſe on the Side of the great Angle in the other Eye. When they equally receive the Light reflected from an Object, a ſingle Senſation only follows, in the Place of their Origin, for which

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which Reaſon there is but one Object ſeen; but, as the Pupil of the Eye, which ſquints, is not in a parallel Line with the other, it happens, as I juſt obſerved, that ſome Fibres in one Eye are moved by the Light, whilſt in the other Eye the Light makes its Impreſſion on Fibres which do not correſpond with the former: Hence follows a Confuſion in Viſion. To make an Experiment of it, let a Perſon preſs, with his Finger, one of his Eye-lids, and force down the Globe of that Eye ſomewhat lower than the other; then, the Pupils not lying in a parallel Line, or of an equal Height, the Perſon ſees double, for the foregoing Reaſon. All the Difference between Perſons who ſquint from their Childhood, and thoſe who ſquint in a more advanced Age, conſiſts in this; the firſt do not ſee double, as the latter do. In the firſt, when the well Eye is ſhut, the Eye that ſquints, turns equally of all Sides: But, in the latter, when the good Eye is ſhut, the other Eye cannot be brought to the Side oppoſite to that, towards which the Pupil is turned: This ſhews that this Defect, in Children, is cauſed by an unequal Influx of the animal Spirits, either in the adducent or abducent Muſcles of the Eyes, which makes the Globe turn of one Side: But in grown Perſons, when one of the Muſcles becomes paralytic, the Eye remains as immoveable towards one Side, by the Contraction of the antagoniſt Muſcle, neither can the Eye move itſelf towards the Part oppoſite to that which is relaxed. Having thus diſtinguiſhed the Difference that occurs in this Diſeaſe, when from the Infancy, and of the ſame when it happens in a more mature Age, we muſt now propoſe its proper Remedies: I ſhall begin by the Cure of Children; it conſiſts in ſetting the regular Courſe of the animal Spirits in thoſe Muſcles: To which the following Method is highly conducive.

Let the Child ſit before a Looking-glaſs, and, when he is thus ſeated, make him look directly at his Face in the Glaſs, ſo that each of his Eyes may look preciſely at the Pupil of that Eye which correſponds with it in the Glaſs: By making him perform this viſual Exerciſe, Morning and Evening, for a Quarter of an Hour, the Sight, at length, becomes ſtrait: Beſides this, get him to read very ſmall Writing, or to work at fine Work, which requires a great Application of the Sight. Care muſt be had, when Children look at any Object, that they do not lay it ſideways; for whilſt the Organs are tender, they muſt be accuſtomed to look ſtrait. Whilſt theſe Exerciſes are performing, ſpirituous Remedies muſt be applied to the Eye, that they may animate the Spirits in the nervous Fibres, and invigorate the relaxed Muſcle to perform its proper Action. The Queen of *Hungary*'s Water, *Fioraventini*'s Balſam, and ſuch Remedies, may be applied with Succeſs; the Forehead, the Temples, and upper Part of the Eye-lids, muſt be rubbed with them three times a Day.

As to Barnicles, which have been long in Uſe; when they are put on Children, it commonly happens, that they only look thro' the Hole of one of theſe Barnicles, while the other Eye remains askew; for which Reaſon I have invented a kind of Noſe, like that of a Mask: It covers Part of the Eye that ſquints, or of both Eyes, when they both ſquint; it muſt reach no farther than the Pupils, which muſt be left quite uncovered: We are ſometimes obliged to cover entirely the ſtrait-looking Eye, ſo that, by looking ſingly, it may be habituated to look ſtrait.

In Perſons advanced in Years, this Indiſpoſition may be cauſed by getting Cold in the Eyes, or in the Head, or by a Diſtillation of Humours, which are diſcharged on the Muſcles of the Eye: Sometimes the Rheumatiſm in theſe Parts produces the ſame Effect.

This Diſeaſe is cured by Bleedings, Purges, and ſometimes by an Emetic; the Steam of hot Coffee, and of the Spirit of Wine, muſt be applied to the Eye; a Decoction of Eye-bright and Saſſafras muſt likewiſe be drunk. All Remedies proper for the Palſy are ſerviceable in this Caſe: Such are the hot mineral Waters, *&c.*

This Indiſpoſition is ſometimes owing to an Heat of the Viſcera, or to Vapours conveyed to the Head: Then we are obliged to bleed in the Foot; to preſcribe cooling Drinks, the Houſe-baths, and ſometimes the cooling mineral Waters. In this Caſe, the Advice of a Phyſician is requiſite.

Of weak Vision.

St. Yves divides Viſion into three Species; the good Viſion, that of the Presbytæ, and that of the Myopes; all which Species may be variouſly weaken'd.

I mean, ſays he, by Weakneſs of Sight, when Objects are not ſeen as diſtinctly as uſual; for Inſtance, when a Perſon cannot ſee to read. All the three Sorts of Sight are liable to this Indiſpoſition: The good Sight is impaired, when the Eyes become moiſt and weeping; the Seroſity, which conſtantly moiſtens them, injures the Sight very much. Perſons afflicted with this Infirmity muſt have recourſe to convex Spectacles, which muſt be ſo proportioned to their Sight, that they may be able to read or work; which they cannot well do, without this Sort of Spectacles.

The Presbytæ cannot diſtinguiſh ſmall Objects, or minute Characters, without ſtraining their Eyes, and diſcompoſing their Head; yet they can ſee diſtinctly larger Objects, at a conſiderable Diſtance. This proceeds from the too great Convexity of the Cryſtalline, which occaſions Rays, reflected from Objects near the Eye, to diverge from the Place where they ſhould unite, when Viſion is perfect: The ſame does not happen, when the Objects are diſtant, becauſe the Rays, reflected from them, converge more; and thus they have a Focus, in juſt Proportion. In order to remedy this Infirmity, let the Patient, at firſt, uſe Glaſſes which do not magnify; and from them he muſt paſs gradually to more convex Spectacles, which ſhorten the Focus.

The Sight of the Myopes is ſo ſhort, that they can neither read, nor diſtinguiſh Objects, without concave Glaſſes: This is owing to the too great Convexity of the Cryſtalline. The Concavity of their Spectacles muſt be proportioned to the Shortneſs of their Sight.

It often happens, after the Uſe of Spectacles for many Years, that the Cryſtalline re-aſſumes its proper Form, ſo that they are no more required. It has been, alſo, obſerved, that ſeveral Perſons, neither Myopes nor Presbytæ, have been neceſſitated, on account of a Weeping, to wear Spectacles; and, when this Diſeaſe ceaſed, they have laid them aſide.

For the moſt part, Spectacles are either convex, or concave; they both have different Degrees, or Focuſes: There are, alſo, ſome flat and even in their Surface; they are called Conſerves, and are made either of green, or of white Glaſs. Convex Spectacles, of the firſt Degree, magnify but very little, and may be uſed as Conſerves; the reſt magnify, in proportion to their Convexity.

That Place in Spectacles is called the Focus, where the Rays of Light, which paſs through the Spectacles, are united in a Body that is placed oppoſite to the Light; and the Degrees of Spectacles are meaſured by the different Diſtance of their Focus.

It is a Caution of great Importance, not to uſe Spectacles too ſoon; and, when a Perſon has once begun to uſe them, not to change them too often; for, at length, he cannot get any proper for his Sight.

Thoſe Perſons called *Myopes* ought to uſe concave Spectacles, when they read, as little as they can: They muſt, alſo, begin with the leaſt concave.

I think it neceſſary to ſay ſomething of the Means to preſerve the Sight, and to lay aſide the Uſe of Spectacles: Though, perhaps, this Method may not ſucceed to all Perſons, yet ſeveral, by following it, will be freed from the Trouble of Spectacles. I ſhall exclude the Myopes, for no Remedy can lengthen their Sight; the good Sight, and that of the Presbytæ, can only receive Benefit from this Method.

The good Sight, as we have already obſerved, is often weaken'd by a redundant Seroſity, which perpetually fills ſome Peoples Eyes. In this Caſe, I uſe an ophthalmic Water, which, applied three times a Day, dries up the Moiſture, and ſtrengthens the Parts. Remedies that will evacuate the Pituita of the Brain, ſuch as Purges, and ſmoking Tobacco, are ſerviceable in this Diſorder of the Sight.

The Presbytæ may be freed from the Uſe of Spectacles, by reſtoring their Cryſtalline to its natural State; the following Tincture will be very ſerviceable in this Caſe:

It is compoſed of Sage, Roſemary, Lavender, and Thyme, when they are in Flower, of Wormwood, and Origany, of each an equal Quantity: Let them infuſe in Brandy, the Space of four Days; then let the Brandy be cleared off, and uſed in the following manner: Let one Part of this Brandy be mixed with four Parts of the diſtilled Water of Blue-bottle, or *Cyanus ſegetum*, or with Eyebright-water: Then put it into a Spoon, which you muſt heat warm, to the Brandy. Let the Inſide of the Eye be bathed with this Mixture, twinkling the Eye-lids, that they may imbibe the Water, and convey it round the Eye: This muſt be done four or five times ſucceſſively, Morning and Evening.

When this Mixture has been uſed in the foreſaid manner, and Degrees of Strength, for a Fortnight, then let only three Parts of the fore-named Waters be mixed with one of the Brandy. When the Eye is accuſtom'd, for ſome time, to this Degree; then let Brandy, and the ſaid Waters, of each one half, be mixed: Let this be the Standard. Theſe Degrees are increaſed for this Reaſon, that the Brandy, by its Pungency, may ſtimulate and vellicate the Eye; by which the nutritious Juices of the Eye will be more inſpirited and attenuated, and their Quantity, as well as Fineneſs, will be increaſed; ſo that by the Help of one and the other the Cryſtalline may be reſtored to its natural State.

Presages from the Eyes.

Prognoſtics from the Eyes are the more conſiderable, in that theſe, above all other Parts of the Body, furniſh the judicious Obſerver with the ſureſt Marks for predicting the Events of Diſeaſes, according to that Sentence of the divine *Hippocrates*, 6 *Epid. Sect.* 4. *Aph.* 26. *According to the State of the Eyes, ſo is that of the Body; and ſo their Colours change together for the better or the worſe.* If the Eyes be clear and lively, the Body may be judged to be in a good Condition; for, as *Galen* rightly ſays, in his Comment on the forequoted Place, a good Colour of the Eyes ſhews the Body to be in good Health. But we ſhall treat of ſuch Signs

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Signs as are afforded by the Eyes for predicting the Death or Recovery of the Patient; and, first, we shall insist on those which are hopeful and salutary; and, afterwards, on those which are pernicious and fatal.

First, then, the Eyes of the Patient have a promising Appearance, and give no small Hopes of Recovery, when in Magnitude, Figure, Situation, Motion, Colour, Vision, and Splendor, they resemble the Eyes of Persons in Health; for sound and robust Eyes are always a good Indication; and such are those Eyes, as *Galen* observes, in his forecited Comment, which are of a lively Colour, full Bulk, and contain a splendid Humour: Eyes so qualify'd *Galen* calls sound and robust, because such an Appearance must be owing to the great Plenty of luminous animal Spirit, proceeding from the Brain to the Eyes; but, on the contrary, in Bodies weaken'd by Diseases, Indications of this Nature are not so much to be regarded, nor much Danger to be apprehended from them. Good Eyes, then, are like those of Persons in Health, of a florid Colour, full, splendid, seeing forward, at a Distance, through a luminous Air, without Molestation, free from Redness, Lividness, or Blackness, and without Tears, or Excrements, called by *Hippocrates*, λῆμαι, *Lemæ*, adhering to their Angles: These we may always call *good Eyes*, as indicating a good State of the Body, and of the Head in particular.

But for our more secure Prognostication from the Eyes, we are to consult and consider other Signs appearing at the same time, which if they happen, also, to be good, we may with Confidence predict the Patient's Recovery. For the Eyes by themselves are incapable of determining our Judgment; nor have they any thing of Certainty, to which we may safely trust in forming a Prognostic; since, in some continual Fevers, the Eyes sometimes make a good Appearance, when the Fever is taking a fatal Turn, though indeed it rarely happens for the Eyes to be in a good State, when the Patient's Affairs tend to a fatal Issue; and therefore good Eyes generally afford no small Hopes of a Recovery. But not only those Eyes which are supposed to be good, but sometimes bad Eyes, may, by Accident, prove salutary Indications; for Instance, Eyes avoiding the Light, as incapable of bearing it, weeping Eyes, intensely red, shining, dark, dim, dull, distorted, tumid, hollow, closed Eyes; provided they put on such an Appearance against an approaching Crisis: I except from those before-mentioned such Eyes as are not render'd so by the Disease, but from some extrinsic Cause; these afford nothing of Certainty, because they appear thus changed immediately at the Beginning, at a time when they are quite incapable of suffering a critical Alteration, as is implied in what *Hippocrates* says, *Lib. Prognost.* "That in the Space of three or four Days the Eyes "become and appear bad, through the Force of the Disease." External Causes are easily understood from the Patients themselves; and of these we find *Galen* speaking, *Com.* 1. *in Prognost. Text.* 10. where he says, that "Sometimes in the Beginning of a Dis-"ease, through much Drinking of Wine, or violent Vomiting, "the Eyes avoid the Light, shed Tears, are distorted, or sus-"pended, swell, or appear with red Veins." But at the Approach of a Crisis, when Nature is contending with the Disease, these bad Symptoms appear in the Eyes.

Some Eyes, for Instance, flow with Tears, at the Approach of a critical Hæmorrhage from the Nose, according to *Hippocrates*, 1 *Epid. Stat.* 3. "From those who under acute Fevers, and espe-"cially those of the burning Kind, are affected with a spontaneous "or involuntary Flux of Tears, you are to expect an Hæmor-"rhage from the Nose, if there be no concomitant destructive "Signs; otherwise Weeping prognosticates not an Hæmorrhage, "but Death." We are to make a Distinction of Tears into voluntary, and involuntary or spontaneous: These last with critical Signs indicate a critical Eruption of Blood; but voluntary Tears never afford us any solid Foundation for grounding a Prognostic. Agreeable hereto is that of *Hippocrates*, 4 *Aph.* 52. "In a Fever, "or any other Distemper, Tears flowing voluntary have no-"thing improper or unusual [οὐδὲν ἄτοπον]; but involuntary "Tears are more unaccountable, [ἀπιστότερον]," or as *Galen*, in his Comment, reads it in the positive Degree, "ἄπιστον, unac-"countable." But, in order to explain the Sentiments of *Hippocrates*, as deliver'd in this Aphorism, that they who weep voluntarily do nothing absurd, or that argues a Diminution of Reason, but Tears falling involuntarily from the Eyes are more unaccountable, or import a greater Defect, and are more to be suspected than the other; and in the Passage above quoted, that involuntary Tears, where they are no Signs of a Crisis, portend Death; and, also, 6 *Epid. Sect.* 1. *Aph.* 16. "That in acute "Diseases, where the Patient is much oppressed by the Violence "of the Disorder, voluntary Tears are a good Sign, but invo-"luntary, the contrary." We shall endeavour to obviate all Difficulties by observing, that Tears are said to be spontaneous on two Accounts: First, When they flow without any Desire of the Patient, being such as *Hippocrates* means by ἀκλαύτων, and ἀκλαυσία, in the Passages above render'd, that is, flowing spontaneously, or of themselves, without the Concurrence of the Will or Desire of the Patient. In the second Place, Tears are said, in another Sense, to be spontaneous, or to flow spontaneously, when they flow at the Desire, or with the Will, of the Patient; and therefore *Galen*, *Com.* 1. *in* 1 *Epid.* to avoid all Ambiguity, and for the better Illustration of the Sentence, and the Truth, chose to express himself by a Word which signified not *spontaneous*, but *involuntary*; for *spontaneous* is spoken with reference sometimes to the Patient, sometimes to the Disease. But, to remove all Possibility of Mistake, let us distinguish Tears into voluntary and involuntary, which latter were sometimes called by *Hippocrates*, *spontaneous*, because, as was said, they flowed spontaneously, or without the Concurrence of the Will, and those *non-spontaneous*, which flowed in some measure at the Desire of the Sick. But, to prosecute our Design, we say, that voluntary Tears are of no important Signification towards a future Event; and therefore we are told by *Hippocrates*, in the above cited Aphorism, that such Tears portend nothing irregular, or bad; and justly he might say so, since they proceed not from the Disease, but the Will, of the Patient; whereas involuntary Tears, which flow without the Will of the Sick, are always bad, except they precede and portend a Crisis, agreeably to that Passage of *Hippocrates*, 1 *Epid. Stat.* 3. above quoted. But, that Tears may be judged critical, it will be necessary, in order to a good Crisis, that Signs of Concoction should have preceded them; in which Case, they portend a Crisis, and very well deserve our Regard.

The same Event may often be predicted, from Light passing before the Eyes, Dimness, and Rednesses in the Eyes; which Signs, together with Tears, *Galen*, in his third Book of *Crises*, reckons among Prognostics of an impending Hæmorrhage. Sometimes, before such an Event, there is a Redness of the Eyes, attended now-and-then with a Redness of the Cheeks and Nose: A Dulness of Sight, also, if attended with a Pain of the Head, is sometimes succeeded by an Hæmorrhage from the Nose: This is the Sentiment of *Hippocrates*, *Lib. Prognost.* where he says, "Some, in the first Period, [ἐν τῇ πρώτῃ "περιόδῳ] are affected with an Hæmorrhage from the Nose, "and are much relieved by it; but we are to examine whether "there be any Pain of the Head, or Dimness of Sight; for, if "there be any thing of that Nature, it tends to such an Event." Such an Hæmorrhage may, also, be predicted from the Patient's being disorder'd at Flashes of Light striking the Eye, attended with Deafness, Heaviness of the Head, and a Distention of the Hypochondria, as we read *Coac.* 195.

That a Redness of the Eyes prognosticates the like, we are taught by the Author of the *Prorrhet. Lib.* 1. *T.* 137. where he says, that "Pains of the Neck, with intensely red Eyes, fore-"shew an Hæmorrhage." And to the same Purpose, *Coac.* 166. we read, that "They who are affected with a Cephalalgia, and a "Catochus, attended with Pain, and a great Redness of the "Eyes, are relieved by an Hæmorrhage from the Nose." But this Symptom must be presumed of true Signification only when preceded by Signs of Concoction; for, in the Beginning or crude State of a Disease, red Eyes are never a good Prognostic.

Sometimes, at the Approach of a Crisis, there is a Perversion and Distortion of the Eyes, as it happened to the Patient in the Garden of *Dealces*, 3 *Epid. Ægr.* 3. of whom it is said, that "On the ninth Day he was seized with a Rigor, and had an "high Fever; sweated, and was cold; fell into a Delirium, had "his Right Eye distorted, with a Dryness of the Tongue, Thirst, "and Want of Sleep." *Galen*, commenting on this Place, says that "A Delirium and Distortion of the Right Eye, on the ninth "Day, as there described, are Symptoms which usually happen "in Crises."

Closed, and now-and-then twinkling, Eyes sometimes foreshew an Hæmorrhage, according to *Coac.* 77. where we read, that "They, who, under a continual Fever, lie speechless, with their "Eyes shut, and now-and-then twinkling, if seized with Vomit-"ing, and an Hæmorrhage from the Nose, succeeded by a Re-"covery of their Speech and Senses, escape; otherwise they "fall into a Dyspnœa, and die in a short time." For Eyes thus affected indicate the Head to be oppressed with a Redundance of Humours; and if the Patient, in this Case, be favoured with a considerable Evacuation, he escapes by a Crisis; Nature, by a copious Excretion, freeing itself from that Load of Humours under which she lay oppressed.

A Change therefore in the Eyes, or their Motions, or some remarkable Disorder or Defect therein, often proceed from a Crisis, and therefore are no bad Signs, but Prognostics of a good Crisis; and this Judgment will be confirmed, if no bad Sign appears in Conjunction with them, and Signs of Concoction have preceded them; but if the Case be the reverse, they are not only bad, but generally mortal Signs.

Now there are three Things requisite to a good critical Sign: First, That it be consequent to Signs of Concoction. Secondly, That it be not attended with any bad Sign. And, lastly, That it be succeeded by some Evacuation in which the Patient shall find considerable Relief. To this Purpose is that of *Hippocrates*, before quoted, 1 *Epid. Stat.* 3. that "Involuntary Tears, in acute "Diseases, signify an Eruption of Blood, if unattended with "other destructive Signs; but if these, also, appear, they jointly "signify not a Crisis, but Death."

But we have said enough of salutary Signs observable in the Eyes: We shall now treat of such as are of pernicious or fatal Signification; and here, in general, it is bad and pernicious, under

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der acute Diſeaſes, for the Eyes to appear bad or diſorder'd; as when they ſhun the Light; ſhed Tears; appear red or inflamed, or with intenſely red Veins in the White; are livid, or black; have a fierce, grim, or fixed Aſpect; are dull, heavy, weak, or not robuſt, hollow, tumid, prominent, tabid, dry, ſqualid, duſty, cloſed, or with the Eye-lid half-ſhut, half-open; are ſuſpended, unſtable, concreted, have too much or too little Splendor, or are cloudy and obſcure, void of Splendor, and infeſted with pituitous Excrements. Such Eyes as theſe, conſider'd in themſelves, are never good, and are only ſo by Accident, when, Nature ſtruggling with the Diſeaſe, they foreſhew a Criſis, and are reckon'd among critical Signs.

All theſe Signs juſt mentioned, which, in acute Diſeaſes, are obſervable in the Eyes, ſhew the Condition of the Patient to be at leaſt very doubtful. But ſome Signs are plainly fatal, as when the ſmall Veins in the Eye appear livid and black, and the Patient has loſt his Sight, as well as Hearing; when the Eyes are deſtitute of all Splendor; and when all the above-mentioned Signs concur with ſome fatal one; and moſt of all, when they appear on a critical Day, attended with critical Signs, which determine nothing, or leave us ſhort of a Criſis.

But for more Perſpicuity we ſhall treat particularly of theſe Signs; and we ſhall begin with thoſe which *Hippocrates* mentions, *Lib. Prognoſt.* " If the Eyes, *he ſays*, avoid the Light, or ſhed " Tears involuntarily, or are diſtorted, or become one leſs than " the other; if the White of the Eye be red, or a ſmall Vein " thereof appear livid or black; if pituitous Sordes [λῦμαι] in- " feſt the Pupil; if the Eyes are ſuſpended [ἐναυωρεύμενοι. See " ENÆOREMA], protuberant, or remarkably hollow; or the " Pupil appears ſqualid, and void of Splendor; or the Colour of " the Face be quite altered; all theſe are to be eſteemed bad " and pernicious Signs." But to theſe we may add the Limitations of the ſame Author, in the Caſe of the *Facies Hippocratica*; which are, " Provided theſe Symptoms proceed not from ſome " external Cauſe, as Want of Sleep, Faſting, an immoderate " Looſeneſs, Drunkenneſs, or ſome ſuch Circumſtance."

But we ſhall proceed, as we ſaid, to conſider each Symptom more accurately under its proper Head, beginning with Sight, or Viſion. And when it happens in acute Diſeaſes, that the Eyes avoid the Light, and can by no means endure to behold the Splendor of the Air, which was an uſual Symptom of the Peſtilence at *Padua* ſome time ago, and generally mortal, it is pronounced by *Hippocrates*, as we juſt now obſerved, a pernicious Sign, and very juſtly; for, as *Galen* obſerves, Eyes avoid the Light, on account of the Weakneſs of the viſive Faculty, which ſometimes labours under an Affection of the Orifices, as in a Lippitude, and ſometimes is itſelf affected, which is a mortal Sign; and this latter Caſe is diſtinguiſhed from the other, in that the Orifices of the Eyes are not at all affected.

For a ſick Perſon under an acute Diſeaſe not to ſee, is fatal, and moſt of all when the Strength is exhauſted, according to that of *Hippocrates*, 4 *Aph.* 49. " In a continual Fever, if the Pa- " tient cannot hear, or cannot ſee, the Strength being, alſo, ex- " hauſted, Death is near at hand."

Obſcurations of the Eyes, or Dimneſs of Sight, are, alſo, condemned by *Hippocrates*, 6 *Epid. Sect.* 1. *Aph.* 16. " For in " acute Diſeaſes, ſays *Galen*, an Obſcuration of the Pupil indi- " cates a Weakneſs and Decay of the viſive Faculty, unleſs it " happens critically, as when it is attended with Signs of Con- " coction, and other Signs indicating a Criſis. But when it is " accompanied with other bad Signs, particularly critical ones " which fall ſhort of a Criſis, of which Nature are all Evacua- " tions by which the Patient is not relieved, or if it ſucceeds " ſuch Evacuations, it is a mortal Prognoſtic." In this Senſe, perhaps, we are to underſtand the Author of the *Coac.* 105. when he ſays, " In long Diſeaſes, ſmall Tumors about the Ears, at- " tended with repeated Eruptions of Blood from the Noſtrils, " and a Scotomia, are mortal."

For the Eyes to look dull, or the Pupil and interior Parts of the Eye to appear to a Spectator like thoſe of dead Perſons, is accounted by *Galen*, *Com. in Prorrhet.* a moſt mortal Sign; which perhaps was meant by *Hippocrates*, 2 *Epid. Sect.* 6. in ſaying, that " They whoſe Eyes have loſt their Strength are near to " Death." This was the Caſe of the Wife of *Theodorus*, 7 *Epid. T.* 27.

It is a pernicious Sign, alſo, for the Eyes to be deſtitute of Splendor, as we are taught *Lib. Prognoſt.* But for them to appear blind in a mortal Diſeaſe, ſhews Death to be very near, as it was in the Caſe of the Son of *Antiphanes*, 7 *Epid. T.* 28. " Whoſe Left Eye was firſt affected with Blindneſs, and a Tu- " mor, without Pain; and not long after he was taken blind, " alſo, in his Right Eye, and the Pupils of his Eyes became very " white and dry, and he died ſoon after his Blindneſs." They who attend on dying Perſons, obſerve the Decay of Splendor in their Eyes, with the utter Loſs of which the Sight is extinguiſhed.

To Eyes obtuſe, or dull, ſqualid, and without Splendor, as deſcribed in *Lib. Prænot.* are oppoſed Eyes which have a fierce, bold, or grim Aſpect, as mentioned 6 *Epid. Text.* 1. *Aph.* 19. Eyes thus affected are peculiar to Perſons in a Phrenſy or Delirium; and generally portend Convulſions, or, with other bad Signs, Death; agreeably to that Aphoriſm of *Hippocrates* juſt mentioned, which ſays, that " A Fierceneſs of the Eyes portends " a Delirium; and a Diſtortion [κατάκλασις] or Sinking [ἔρρισις] " of the Eye-lids are pernicious." Eyes thus affected in Phrenſies ſignify Convulſions ſucceeded by Death; for Convulſions, coming upon a Phrenſy, are moſt pernicious; and mortal Phrenſies terminate in Convulſions. Upon this Conſideration the Author of the *Prorrhet. Lib.* 1. *T.* 71. if we may believe *Galen*, would have ſuch Patients left to Nature, and treated them not with Medicines, when he ſays, " They who are moleſted with black " Vomitings, have loſt their Appetite, are delirious, have a fierce " Caſt of the Eyes, or have them cloſed, are not to be purged; " for it would be deſtructive." In Conformity to this Precept, ſeveral of our moſt learned Phyſicians have made it a Rule to themſelves, never to preſcribe Cathartics for Patients in ſuch mortal Circumſtances, that the Art of Medicine might incur no Diſgrace by ſuch Practice.

The Fate of the Patient may, alſo, be predicted from the Magnitude of the Eyes, as when one appears bigger than the other; for, among other pernicious Signs mentioned by *Hippocrates*, *Lib. Prognoſt.* one, we find, is for the Eyes to appear one greater than the other.

It is no leſs fatal, in a dangerous Diſorder, for the Eyes to appear greater than ordinary, as indicating the Head to be oppreſſed with a Redundance of Humours, and an Extinction of the Faculty; ſo that nothing reſiſts the Flux of the Humours to the Eyes. This Sign was obſerved by *Hippocrates*, 7 *Epid. T.* 100. in the Son of *Nicolaus*, whoſe Right Eye, on the ſixth Day of his Illneſs, appeared bigger than ordinary, and the next Day he died: And the ſame Sign was obſerved by him in the Wife of *Hermoptolemus*, as ſhe lay dying, 7 *Epid. T.* 13.

Prominent or tumid Eyes are, alſo, enumerated by *Hippocrates*, *Lib. Prognoſtic.* among thoſe fatal Signs which appear in thoſe Parts. The Eyes are uſually thus affected from violent and inflammatory Pains of the Head, when, becoming replete with a Redundance of Heat and Spirits, they ſwell out, and appear prominent.

Hollowneſs of the Eyes, alſo, in acute Diſorders, unleſs it proceeds from ſome external Cauſe, within the Space of three or four Days, from the Time when the Patient was ſeized, is accounted, *Lib. Prognoſt.* a pernicious Sign. For ſuch a Symptom, as *Galen* teaches, in his Commentary on the Place, proceeds from an extreme Imbecillity, by which the Eye is deprived of all manner of Nutrition; and this indicates the Violence of the Diſeaſe to be ſo extraordinary, that Nature muſt of Neceſſity ſink under it.

When the Eyes appear ſhrunk, and quite wither'd, as if they were deſtitute of Aliment, it proceeds from an Imbecillity of the natural Heat, the ſmall Remains of which reſide only in the internal Parts, and are incapable of diffuſing themſelves to the external Parts, in order to concoct Aliments for the Nutrition of the Eye: To which it may be added, by the ſame way of Reaſoning, that the few Spirits which remain in the Heart, and internal Parts, ceaſe to flow to the Eyes; whence thoſe Parts muſt of Neceſſity wither, dry up, and appear hollow; for *Hippocrates*, 7 *Epid. T.* 33. obſerved an Hollowneſs of the Eyes immediately conſequent upon a Wound in the Liver; and in many dying Perſons, ſometimes the Right, ſometimes the Left Eye, have been obſerved to fade and wither.

There are, alſo, certain Motions of the Eyes which are of fatal Prognoſtication. Thus, for Inſtance, firſt, for the Eyes to be erect, or ſuſpended [ἐναυωρεύμενοι], which *Galen* interprets *unſtable*, or wavering, is accounted by *Hippocrates*, *Lib. Prognoſt.* a pernicious Sign, as portending, according to *Galen*, a Delirium or Trembling, either of which is fatal: But that the Phyſician may ſafely venture to paſs his Judgment, other Signs are, alſo, carefully to be conſulted; for, in order to pronounce an Inſtability of the Eyes a mortal Prognoſtic, it is neceſſary, that it ſhould be attended with ſome other deadly Sign. *Galen*, *Com.* 2. *in* 1 *Prorrhet.* more clearly explains this Property of Inſtability, by ſaying that unſtable Eyes are like an unſtable, unmanageable Horſe, always in Motion; whereas, on the contrary, concrete Eyes are fixed and immoveable. Hence the Author of the *Coac.* 227. juſtly concludes, that quick Motions and Twinklings of the Eyes are of as bad Signification, as a Fixedneſs thereof; whence they are denominated concrete, firm, ſtable, and immoveable.

That fixed Eyes are always a bad Sign, we are taught by the Author of the *Prorrhet. Lib.* 1. *T.* 46. where he ſays, ὄμματα ἀμαυρούμενον, φλαῦρον, καὶ τὸ πεπηγὸς καὶ ἀκλινὲς, κακόν. " For " the Eye to be dulled, vitiated, concrete, or confuſed, (as *Ga- " len* explains the Word) is a bad Sign." He might more juſtly have ſaid, a mortal Sign, becauſe they are almoſt conſtantly fatal in acute Diſeaſes, unleſs they happen to be ſo from ſome critical Cauſe. *Galen*, in his Commentary, writes, that a Concretion of the Eyes proceeds from an Immobility of the Muſcles which move the Eyes; which Immobility is owing either to a Reſolution of all the Muſcles, or to their equal Tenſion, whereby they are attracted to all Parts alike; or, laſtly, to an extreme

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Imbecillity of the Muſcles, which is certainly of moſt fatal Conſequence; as are, alſo, the other Caſes, as proceeding from a Convulſion of the Muſcles, when the Original of the Nerves is affected by the Violence of an acute Diſeaſe.

Galen, Com. 1. *in 6 Epid. T.* 27. writes, that concrete, or immoveable Eyes, which *Hippocrates* very much condemns in the Text, (6 *Epid. Sect.* 1. *T.* 16.) indicate a perfect Extinction of that Faculty by which the Muſcles, in their natural State, were moved. *Hippocrates*, 5 *Epid. Text.* 50. in the Caſe of the fair Daughter of *Nerios*, who died of a Stroke on the Crown of the Head, given her by a Wench, her Playfellow, with the Flat of the Hand, ſays, that, before her Death, one of her Eyes was affected with a Cataplexy, or Stupefaction [κατάπληξ].

With reſpect to the Poſture of the Eyes, Diſtortions are of very fatal Prognoſtication, unleſs they happen to be critical, as in the Caſe of the Patient in the Garden of *Dealces*, 3 *Epid. Sect.* 1. *Ægr.* 2. who, in the ninth Day of his Illneſs, was affected with a Diſtortion of the Right Eye. *Hippocrates, Lib. Prognoſt.* reckons Diſtortions among other pernicious Signs belonging to the Eye. But it is neceſſary to make a Diſtinction here; for ſometimes, as *Galen* ſays, *Com.* 1. *in Prognoſt.* the Eyes are diſtorted through a Convulſion of the Muſcles which move them, as it often happens in Fevers, on account of the Multitude of Humours; and, if no more than ſuch Redundance be indicated, nothing can with Certainty be predicted from the like Diſtortions of the Eyes. Generally, however, in acute Diſtempers, the Eyes are perverted and diſtorted, not from ſuch a Cauſe, but from the Diſeaſe affecting the Original of the Nerves, which is the Brain, and therefore highly pernicious. We conclude, then, that Perverſions and Diſtortions of the Eyes are conſtantly bad, when proceeding from the Multitude or Redundance of the Humour, which is leaſt to be dreaded; or from a Drineſs of the Muſcles: But if they happen in burning Fevers, or Phrenſies, they prognoſticate nothing but Death; and that moſt of all, when they appear with Signs of the Extinction of the Faculty, indicating an extreme Imbecillity, or a Diminution or Deprivation of ſome Senſe.

There is a celebrated Aphoriſm of *Hippocrates*, to this Purpoſe, 4 *Aph.* 49. *In a continual Fever*, ſays he, *if the Lip, or Eyebrow, or Eye, or Noſe, be diſtorted; if the Patient cannot ſee, or hear, and is at the ſame time very weak; whatever of theſe Signs appears, Death is near at Hand.* And this is expreſſed more clearly, *Lib. Prognoſt.* where it is ſaid, *If the Eye-lid, or Lip, or Noſe, be diſtorted, or corrugated, or livid, or pale, attended with ſome other Sign, you are to know, that Death approaches.* Diſtortions of the Eyes, therefore, are always a bad Sign, unleſs they happen critically, as was ſaid: They are not, however, neceſſarily mortal, which the divine *Hippocrates* ſeems to have well underſtood, 6 *Epid. Sect.* 1. *Aph.* 16. where he ſays, *A Circumtenſion* (or Tenſion of the Circumference) *of the Eye-lid is bad.* But a certain Judgment may be made from preceding, concomitant, and much better from ſucceeding Signs. Perverſions or Diſtortions of the Eyes are, alſo, bad, when they happen while the lower and weaker Parts are oppreſſed by the Force of the Diſeaſe, becauſe it indicates a Tranſlation of the Humours to the Brain, and nobler Parts; which ſeems to be the Sentiment of the Author of the 1 *Prorrhet.* 69. when he ſays, that "A Diſtortion of the Eye, which is owing to a Recourſe "of the Humours from the Loins, is a bad Sign." But ſuch Diſtortions, accompanied with other bad Signs, may be pronounced mortal: To which Purpoſe we read in the ſame Book, *Text.* 81. that "In burning Fevers, accompanied with ſuperfi- "cial and general Refrigerations, and frequent watry and bilious "Stools, a Diſtortion of the Eye is a bad Sign; and the worſe, "if the Patient labours, alſo, under a Catochus." He might more juſtly have called it a mortal Sign; for general Refrigerations in burning Fevers, accompanied with Evacuations, by which the Patient is not at all relieved, but rather injured, are critical Signs, which determine nothing, and conſequently mortal, according to *Hippocrates* and *Galen*, who frequently tell us, that if the Patient finds no Relief from ſuch things as might with Reaſon be expected to afford it, but is rather injured by them, and reduced to a worſe State than before, nothing but Death can be the Conſequence; for ſuch Symptoms are to be eſteemed critical Signs, which prove abortive, and anſwer no End, and are, of Conſequence, mortal: Whence, if Diſtortions of the Eyes are accompanied with theſe bad Symptoms before-mentioned, it is not enough to call it a bad, but a fatal and deſtructive Sign. To this Purpoſe the Author of the *Prorrhet. Lib.* 1. *Text.* 89. tells us, that "In a Diſtortion of the Eyes, accompanied with a "Fever and Laſſitude, a Rigor is pernicious; and a Coma, at- "tended with the ſame Circumſtances, is bad." Diſtortions of the Eyes, therefore, attended with bad Signs, and eſpecially bad critical Signs, are juſtly eſteemed mortal; but, if accompanied with mortal Signs, they ſignify the near Approach of Death. Of this Nature was the diſtorted Eye, obſerved by *Hippocrates*, in a Woman who died of an Abortion, 3 *Epid. Sect.* 1. *Ægr.* 11. *On the fourth Day*, he ſays, *ſhe was taken with a Delirium, attended with Fear and Sadneſs; her Right Eye was diſtorted; ſhe had ſomewhat of a cold Sweat about her Head, and her Extremities were cold.* Theſe Circumſtances, in acute Diſeaſes, are mortal Signs.

To examine, next, what are the bad Prognoſtics which may be drawn from a Cloſure, or Shutting of the Eyes: When the Eyes, in acute Diſorders, continue cloſed, and cannot be open'd, either from the Redundance of the Humours, pulling together and conglutinating the Muſcles of the Eyes and Eye-lids, or from a Dryneſs and Reſolution of thoſe Muſcles, through Imbecillity, in acute Diſorders, it is always a mortal Sign: And, if at any time it be not ſo, it is when it is critical, and followed by ſome good and remarkable Evacuations; otherwiſe it portends nothing but Death. To this Purpoſe the Author of the *Coac.* 77. very finely expreſſes himſelf, where he ſays, that *They who lie ſpeechleſs under a continual Fever, with their Eyes cloſed, and now-and-then twinkling, if they happen to be ſeized with an Eruption of Blood from the Noſe, and Vomiting, ſucceeded by a Reſtoration of their Speech and Senſes, recover their Health; but, if no ſuch thing happens, they fall into a Dyſpnœa, and die in a ſhort time.* But it ſeldom happens, that a Cloſure of the Eyes is critically attended with the forementioned Symptoms, and never but in very robuſt Bodies; and therefore it is, for the moſt part, a mortal Sign. A Cloſure of the Eyes, accompanied with other bad Signs, is always fatal, agreeable to 1 *Prorrhet.* 71. above-quoted. Here the Phyſician is adviſed, as ſome underſtand the Paſſage, to preſcribe nothing to his Patient, but attend the Event of the Prognoſtic; for ſuch a Cloſure of the Eyes, as *Galen* ſays, in his Comment on the Place, proceeds either from a Tenſion of the Muſcles which cloſe the Eyes, or the Imbecillity of thoſe which open them; both which are pernicious Symptoms.

To lie with the Eye-lids half-cloſed, in acute Diſtempers, is a bad and moſt fatal Prognoſtic. Of theſe ſpeaks *Hippocrates, Lib. Prognoſt.* where he ſays, *We ought to conſider whether the Patient lies with his Eyes half-cloſed in Sleep; for if any Part of the White appears between the uncloſed Eye-lids, without a preceding Flux of the Belly, or Cathartic adminiſter'd, and the Patient is not wont to ſleep in that manner, it is an highly pernicious and mortal Sign.* This Sign, ſays *Proſper Alpinus*, I obſerved in my deareſt Wife, before ſhe died; and it proved fatal, though ſometimes ſhe uſed to ſleep in that manner; but now it was attended with a Coma, Coldneſs of the Extremities, Reſtleſſneſs, with Roughneſs and Blackneſs of the Tongue, unattended with Thirſt: This Symptom therefore, in acute Diſtempers, is always to be dreaded, according to the Author of *Coac.* 218. where he ſays, that *An Incurvation of the Margin of the Eye-lids, with a Fixedneſs, or continual Twinkling, of the Eyes, or a Change in their Colour, or the Eye-lids not cloſed, is a pernicious Sign.*

The Colour of the Eyes is, alſo, to be regarded, in forming Prognoſtics of a bad Event: Thus, for the White of the Eye to appear red, unleſs it critically indicates an Hæmorrhage, is pernicious; but, when it is far from being critical, ſuch a Symptom, in acute Diſeaſes, is conſtantly bad. This Circumſtance, alſo, is reckoned by *Hippocrates, Lib. Prognoſt.* among pernicious Signs, becauſe, as *Galen* ſays in his Commentary, it proceeds either from a Redundance of Blood ſtagnating in the Brain, and its Membranes, or a conſiderable Inflammation in thoſe Parts, both which, in continual Fevers, are conſtantly pernicious; and not the leſs ſo, if this Redneſs appears attended with other bad Signs, on critical Days, or after what manner ſoever, but worſt of all in high Phrenſies. Of this Symptom, among others, the Author of the *Coac.* 163. thus ſpeaks: *Concuſſions, or Shakings, of the Head, with intenſe Redneſs of the Eyes, and a manifeſt Deliriouſneſs, are pernicious.* That this Redneſs is a bad Sign, and to be dreaded, we are taught 7 *Aph.* 3. becauſe, ſays *Galen* on the Place, a Redneſs of the Eyes indicates a conſiderable Inflammation of the Brain, or Stomach, both which are deſtructive, as the ſame Author teaches expreſly, in his Comment on 1 *Prorrhet.* where he ſays, that *A Redneſs of the Eyes, coming on a continual Fever, ſhews either a Redundance of Blood in the Head, which is the Cauſe of this Redneſs, as in Lippitudes, or from an Inflammation of the Brain, or Stomach; which are diſtinguiſhed, in that, under the former, the Veins only in the White of the Eye appear red, whereas an Inflammation of the Stomach is attended, alſo, with Hiccups, or Vomiting.* Hence *Hippocrates, Lib. Prognoſt.* did not ſay ſimply, that a Redneſs of the Eyes, but of the Veins in the Whites of the Eyes, was of fatal Signification.

But the moſt pernicious and mortal Sign, according to the above-cited Place of *Hippocrates*, is when theſe Veins appear livid, or black; for, as *Galen* on the Place has it, this Lividneſs, or Blackneſs, proceeds from Refrigeration, which indicates an Extinction of the natural Heat.

In the laſt Place, the bad Fate of the Patient may be predicted from the Excrements which appear in the Eyes. *Hippocrates, Lib. Prognoſt.* and 1 *Epid. Sect.* 2. among other fatal Signs belonging to the Eyes, in acute Diſeaſes, reckons involuntary Tears. The Cauſe of ſuch Tears *Galen* refers either to ſome Lippitude, or to a Defluxion from the Head upon the Eyes; but, in acute Fevers, it muſt be imputed to the Imbecillity of the retentive Faculty, which is of moſt fatal Conſequence. Involuntary Tears, therefore,

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therefore, in acute Diſeaſes, where they are not a Sign of a future Criſis, by an Hæmorrhage, eſpecially from the Noſe, portend inevitable Death, according to *Hippocrates*, 1 *Epid. Sect.* 2. Pituitous Excrements in the Eyes are, alſo, reckon'd, *Lib. Prognoſt.* among bad Signs. *Galen*, in his Comment, tells us, that though this Humour, or Excrement, proceeds from a Defluxion, as is ſometimes the Caſe in a Lippitude, yet in acute Diſeaſes it indicates an Imbecillity of the natural Faculty, which is too weak to concoct the Aliment neceſſary for the Eye. Sometimes there appears a ſort of hard and dry Excrement, which the Author of the 1 *Prorrhet.* 17. pronounces a Sign of a Phrenſy; and *Galen*, in his Comments, writes, is ſometimes obſerved in Perſons under a Conſumption, when all the fleſhy Subſtance both in the Face, and on the Temples, is colliquated by an immoderate Heat, which Circumſtances are attended with an Hollowneſs of the Eyes; but, in a Phrenſy, this dry and duſty Excrement appears without this Hollowneſs. Hence *Hippocrates*, 6 *Epid. Sect.* 1. *Text.* 16. among other bad Signs of the Eyes, reckons a ſort of Excrement like Chaff, or dried Spume, which, as *Galen* ſays, happens in acute Diſeaſes, from an extraordinary Drineſs and Imbecillity, very ſmall Tears falling from the Eyes, which, thro' the Imbecillity of the retentive Faculty, were unable to retain them; and theſe minute Drops, or Tears, being dried by the intenſe Heat of an inflamed Brain, are changed into thoſe duſty Sorts of Excrements, which the *Greeks* call *Lemæ*, and are for the forementioned Reaſons accounted mortal Signs. *Proſper Alpinus de Præſag. Vit. & Mort.*

TABLE XIX.

Fig. 1. A, the Cilia, or Eye-laſhes, of the ſuperior Eye-lid.

B, the Cartilage of the ſuperior Eye-lid.

C, the Muſculus Attollens, or Aperiens Palpebræ Superioris, or Muſcle that elevates the ſuperior Eye-lid.

D, in *Fig.* 2. exhibits the Muſculus Superbus, or Elevator Oculi.

E, the Tendon of the preceding Muſcle.

F, in *Fig.* 4. repreſents the Depreſſor Oculi, or Muſculus Humilis.

G, in *Fig.* 1. 2. and 3. repreſents the Adductor Oculi, otherwiſe called *Bibitorius*.

H, in *Fig.* 3. and 4. repreſents the Abductor, or Muſculus Indignatorius.

I, in *Fig.* 1. 2. and 3. the Obliquus Superior, or Trochlearis.

K, in *Fig.* 4. the Obliquus Inferior.

L, in *Fig.* 1. 2. and 3. the Tendon of the Obliquus Superior paſſing over the Trochlea.

M, in *Fig.* 1. 2. 3. and 4. the Optic Nerve.

N, in *Fig.* 3. the Optic Nerve in its Progreſs to the Globe of the Eye.

O, in *Fig.* 1. the Union of the Optic Nerves.

P, in *Fig.* 2. 3. and 4. the tranſparent Part of the Cornea.

Fig. 5. A, the Tunica Sclerotica.

B, that Part which is covered by the Tunica Adnata, or Albuginea.

C, the tranſparent Part of the Cornea.

Fig. 6. repreſents a poſterior View of the Eye, where the Tunica Sclerotica is removed in four Segments A A A A, in order to ſhew the ſubjacent Uvea furniſhed with innumerable Veſſels.

Fig. 7. exhibits the ſame poſterior View of the Eye, in order to ſhew the Retina, being an Expanſion of the Optic Nerve.

Fig. 8. exhibits a View of the Eye, wherein all the Tunics are removed, in order to ſhew the Vitreous Humour, incloſed in its proper Membrane.

Fig. 9. repreſents the Vitreous Humour A A A A, in the Midſt of which is placed the Cryſtalline Humour B.

This is an anterior View of the Eye.

Fig. 10. repreſents the Pupil of the Eye, with the Cryſtalline Humour, and Ciliary Ligaments.

Fig. 11. repreſents the three Rugæ of the Proceſſus Ciliares, as viewed through a Microſcope: That in the Middle is venous, and the other two arterial. The other Rugæ are neglected, and removed as much as poſſible.

A exhibits the expanded Portion of the Tunica Uvea, and Choroidea, viewed in its interior Part through a Microſcope, together with the three Striæ of the Proceſſus Ciliares.

B B repreſent two *Chori*, as *Hovius* calls them, of the Proceſſus Ciliares, conſiſting of arterial Veſſels only, together with their Vermiculations; other Subſtances being removed, that the Order of the Veſſels may appear the more diſtinctly.

C C, ſome vermicular ſmall Veſſels, aſcending from the inferior Part to the Proceſſus Ciliares.

D D, the Union of the Veſſels aſcending from the inferior Part.

E E, the vermicular ſmall Veſſels, both long and ſhort, together with the nerveo-lymphatic Ducts.

F F, the ſame Veſſels, but ariſing from the Circulus Arterioſus, together with their Nerveo-lymphatics.

G repreſents the refluent, ſmall, nerveo-lymphatic Veſſels, together with the venous ſmall Veſſels.

H, the vermicular ſmall Veſſels, mark'd as well as the arterial ones.

I, the venous Veſſel, formed of the vermicular ſmall Veſſels, which, when it has arrived at the End of the Proceſſus Ciliares, is carried almoſt in a ſtreight Courſe to the Circulus Venoſus.

Fig. 12. repreſents to the Life one Stria of the Proceſſus Ciliares, conſiſting of arterial Veſſels alone, together with the Nerveo-lymphatics, delineated by the Aſſiſtance of a good Microſcope.

A, ſome of the ſmall arterial Veſſels, ariſing from the inferior Parts, and laid ſomewhat to one Side, that the Excurſion of the vermicular Veſſels may be expoſed to the naked View.

B, the Veſſels joined in one, and aſcending.

C C repreſent the ſhort, vermicular, arterial Veſſels, ſent off before the uniting of the Veſſels.

D, the ſame Veſſels, but ſomewhat longer.

E, the Ramification of the vermicular Veſſels ariſing from the Circulus Arterioſus: Some of theſe Veſſels are turned back, as may be ſeen at F.

G G G, repreſent the ſhort lateral or nerveo-lymphatic Veſſels, ſent off from the vermicular Veſſels, and divided from the Ligamentum Ciliare.

Fig. 13. repreſents a ſmall Ramification, view'd by a Microſcope, and conſiſting of the vermicular Veſſels, of which, together with the Nerveo-lymphatics, the Circulus Arterioſus furniſhes a large Number.

A, a Part of the Branch ariſing from the Circulus Arterioſus cut off.

B, the vermicular Veſſels, ariſing from the ſaid ſmall Branch.

C C, the nerveo-lymphatic ſmall Veſſels, reaching to the Ligamenta Ciliaria.

Fig. 14. repreſents the Ciliary Proceſſes of a Dog, covered with two Coats. The former of theſe Coats repreſents, as viewed through a Microſcope, the vermicular Veſſels, together with the Nerveo-lymphatics diſperſed through the Second, which is the fifth in Order, united, and torn from the Ligamentum Ciliare.

A, a ſmall Part of the Circulus Arterioſus.

B B repreſent two Branches coming from the Circulus Arterioſus, one of which was cut off, whilſt three other Branches, in order to prevent Confuſion, were preſerved, together with their vermicular Excurſion, and a Diſtribution of the nerveo-lymphatic Veſſels, through the nerveo-lymphatic Coat; as is ſhewed at C C.

D D exhibit the nerveo-lymphatic Veſſels united in this Coat, repreſenting, as it were, ſmall Papillæ, and taken from the Ligamentum Ciliare, which they compoſe.

Fig. 15. repreſents a nerveo-lymphatic Veſſel compoſed of ſeveral others, aſcending to the Ligamentum Ciliare, and reſolving itſelf into the ſaid Number of Veſſels, when it has reached that Ligament.

Obſerve, that, in order to prevent Confuſion, all the ſmall Veſſels are not marked.

A A A, the Union of the nerveo-lymphatic Veſſels into larger Veſſels.

B B, the larger Veſſels, formed of ſmaller ones.

C, Branches cut off.

D, the Veſſels united, and aſcending to the Ligamentum Ciliare.

E, the Reſolution of this Veſſel into ſmall Branches.

Fig. 16. repreſents the Tunica Choroidea inverted, in which the Veſſels made up of the ſmalleſt Nerveo-lymphatics, filled with a reddiſh Matter, reſembling the Vitreous Humour, are torn off, and exhibit Papillæ twice as large as in the natural State; but, for preventing Confuſion, far fewer in Number.

A, the nerveo-lymphatic Veſſels ſparkling, as it were, through the Tunica Papilloſa, and forming the above-mentioned ſmall Papillæ, or, rather, the ſmall Veſſels for containing the Vitreous Humour.

B repreſents theſe Veſſels, formed of many others, as broken, and reſembling ſmall Papillæ.

C, the Part where the Optic Nerve has been cut off.

D, a Part of the Artery which was diſtributed through the Optic Nerve.

Fig. 17. repreſents the nerveo-lymphatic Veſſels of a Dog, diſperſed through the lymphatic Coat, viewed through common Spectacles, and larger than in the natural State, together with ſome ſmall Papillæ, or Veſſels, going to the Vitreous Humour, and left in the ſmalleſt Portion of the Tunica Papilloſa.

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A A are nerveo-lymphatic Veſſels running out through their proper Coat.

B, ſome Papillulæ, or ſmall Veſſels appropriated to the Vitreous Humour.

C, a ſmall Portion of the remaining Tunica Papilloſa.

Fig. 18. is the arterial ſmall Veſſel of an Ox, viewed through a Microſcope, and which is ſent to the internal Parts, from thoſe between the ſecond and third Coats expanded, that, together with the vermicular Progreſs, the nerveo-lymphatic Veſſels, in ſome meaſure deſtroy'd, might alſo be ſeen, by laying the other Parts aſide.

A is a ſmall arterial Branch running off to the vermicular Veſſels from theſe between the ſecond and third Coat.

B repreſents the vermicular Veſſels variouſly ſubdivided, and by Expanſion ſomewhat removed from their vermicular Courſe, that their nerveo-lymphatic Veſſels, repreſented by C, might be the more diſtinctly obſerv'd.

Fig. 19. exhibits the two Humours of the Eye. In this Figure, beſides the true Situation of the Ligamentum Ciliare, and ſome ſmall Mouths of the Veſſels compoſing the Vitreous Humour, is alſo exhibited the ſmall Veſſel, which ſerves to nouriſh the Tunica Arachnoidea.

A A, the Ligamentum Ciliare.

B B are the nerveo-lymphatic Veſſels broken off from the vermicular Veſſels of the Proceſſus Ciliares.

C C, a Collection of theſe Veſſels into Striæ wreathed up like Cords.

D, the nerveo-lymphatic Veſſels contorted, and running off to the Cryſtalline Humour.

E E, ſome Mouths of Veſſels which compoſe the Vitreous Humour.

F is a Ramification of the Veſſel diſpers'd thro' the Tunica Vitrea, and a Diſtribution of that which ſerves for its Nouriſhment.

OCYMASTRUM. A Name for the Circæa; Lutetiana; and, alſo, for ſeveral Species of *Lychnis*.

OCYMOIDES. A Name in *Boerhaave* for ſeveral ſorts of *Lychnis*.

OCYMUM.

The Characters are;

The Root is annual in all the Species, except that of *Ceylon*. The Galea, or Creſt, is erect, roundiſh, crenated, quadrifid, and larger than the Beard, which is ſimple, hollow, long, horizontal, and criſped, or ſlightly jagged. The Calyx is tubulous, open, quadrifid, and defective in a fifth Part; but has that Defect ſupply'd, inſtead of a Segment, with a ſmall Leaf, which covers it like a Buckler, and is eared on the hinder Part.

Boerhaave mentions twenty-four Species of *Ocymum*; which are,

1. Ocymum; caryophyllatum; monachorum; ſive Acinos; Columnæ. *J. B.* 3. 260. *Acinos Dioſcoridis.* Col. Phytob. 1. 23.

2. Ocymum; ſoliorum fimbriis ad Endiviam accedentibus; maximum.

3. Ocymum; latifolium; maculatum, vel criſpum. *C. B. P.* 225. *Baſilicum, Indicum, maculatum.* H. Eyſt. Æſt. o. 7. Fig. 1.

4. Ocymum; viride; foliis bullatis. *C. B. P.* 225.

5. Ocymum; foliis fimbriatis, viridibus. *C. B. P.* 225.

6. Ocymum; Caryophyllatum, maximum. *C. B. P.* 225.

7. Ocymum; Caryophyllatum; majus. *C. B. P.* 226.

8. Ocymum; Citri odore. *C. B. P.* 226.

9. Ocymum; Aniſi odore. *C. B. P.* 226.

10. Ocymum; Meliſſæ odore.

11. Ocymum; Styracis liquidæ odore.

12. Ocymum; Fœniculi odore.

13. Ocymum; nigrum; latifolium; laciniatum; ſpicâ nigrâ; flore albo; odore Cinnamomi.

14. Ocymum; vulgatius; ſee BASILICUM.

15. Ocymum; vulgatius; foliis ex nigro vireſcentibus; flore albo.

16. Ocymum; vulgatius; foliis ex nigro vireſcentibus; flore violaceo.

17. Ocymum; medium; criſpum; conglomeratâ breviqué ſpicâ.

18. Ocymum; minus; anguſtifolium; foliis ſerratis.

19. Ocymum; minus; anguſtifolium; foliis bullatis.

20. Ocymum; tricolor.

21. Ocymum; minimum. *C. B. P.* 226. *J. B.* 3. 247. *Raii Hiſt.* 1. 541. *Tourn. Inſt.* 204. *Boerh. Ind. a.* 170. *Ocymum Caryophyllatum.* Offic. *Ocymum vulgare minus.* Park. Theat. 18. *Ocymum minus Caryophyllatum.* Ger. 547. Emac. 673. BUSH-BASIL.

It is cultivated in Gardens, flowers in *June*, and the Seed is in Uſe.

22. Ocymum; minimum; foliis ex purpurâ nigricantibus. *M. H.* 3. 407.

23. Ocymum; minus; Chinenſe; odoratiſſimum; flore albo. *Triumfett.*

24. Ocymum; Zeylanicum, perenne; fruteſcens; folio Calaminthæ nonnihil ſimili. *M. H.* 10. 153. *Nepetæ ſeu Menthæ Catariæ affinis Indica, candido flore. Boerh. Ind. alt. Plant. Vol.* 1.

The Name *Ocymum* is from ὠκέως, *Oceos*, ſwiftly, quickly, from its ſudden Growth; for it ſhoots forth from its Seed within the Space of two Days: It is alſo called *Baſilicum* from Βασιλεύς, *Baſilus*, a King, becauſe of its incomparable Smell, and eminent Virtues.

Many ſay, that, if the Smell be received up the Noſtrils, there aſcend Seeds or Eggs of Inſects into the frontal Sinus, which are there cheriſhed by the Mucus, and hatched; and this is not ſo much to be wonder'd at, ſince Inſects are ſometimes excreted with the Mucus.

This Herb is endu'd with a balſamic Virtue, and a moſt ſweet and penetrating Smell; it is heating, and wonderfully reviving to the Spirits. An Addition of ſome Leaves of *Ocymum*, in a Preparation of *Sal Volatile*, gives it a much finer and more refreſhing Smell. What gave Occaſion to ſay, that much Smelling to the Leaves of *Ocymum* generates Scorpions in the Brain, might be, perhaps, that Scorpions, being allured by the Smell, lay their Eggs in the Leaves; which, being attracted through the Noſtrils into the frontal Sinus, are there eaſily hatched, and afterwards increaſe. *Ocymum* is good to provoke Urine, and for an Obſtruction of the Menſes, for the Colic, Aſthma, and venomous Bites: It is a Plant of a balſamic and temperate Quality, and not offenſive to the Smell, like Sage and Clary. *Hiſt. Plant. adſcript. Boerhaave.*

OCYMUM SYLVESTRE. See ACINOS.

ODALLAM. H. M. A Name for the *Mangas fructu venenato.*

ODAXISMOS, ὀδαξισμὸς, from ὀδὼς, a Tooth. A biting Senſation, Pain, or Itching. It is us'd by *Hippocrates* principally with reſpect to the Gums, when the Teeth are forcing a Paſſage thro' them.

ODIUM. Hatred. This is reckon'd among the Procatarctic Cauſes of Diſeaſes; and ſeems to produce Effects like thoſe of Anger. See IRA.

ODMALEA, ὀδμαλέα. Fetids. *Hippocrates.*

ODONTAGOGOS, ὀδονταγωγὸς. An Inſtrument for drawing Teeth.

ODONTAGRA ſignifies either the ſame as *Odantagogos*; or the Gout in the Teeth.

ODONTALGIA, ὀδονταλγία. The Tooth-ach, from ὀδὼς, a Tooth, and ἄλγος, Pain.

ODONTIASIS, ὀδοντίασις. Dentition.

ODONTICA. Remedies for Pains in the Teeth.

ODONTIS, and ODONTITIS, are Names for ſeveral Species of *Lychnis*.

ODONTOGLYPHON, ὀδοντόγλυφον, from ὀδὼς, a Tooth, and γλύφω, to ſcrape. An Inſtrument for rubbing, or ſcaling the Teeth.

ODONTOIDES, ὀδοντοειδὴς. A Name for the Tooth-like Proceſs, or the ſecond Vertebra of the Neck.

ODONTOPHYIA, ὀδοντοφυία, from ὀδὼς, a Tooth, and φύω, to grow. Dentition.

ODONTOTRIMMA, ὀδοντότριμμα, from ὀδὼς, a Tooth, and τρίβω, to wear away. A Dentifrice.

ODORATUS. The Senſe of Smell. See OLFACTUS.

OE. ὄη. The Sorbus, Service-tree. *Oribaſius, Med. Collect. L.* 15. *C.* 1.

OECONOMIA, οἰκονομία, from οἶκος, an Houſe, and νόμος, a Law, or Rule. Properly, the Management of an Houſe, or Family. But *Hippocrates* uſes it to expreſs the Management of a ſick Perſon. The Animal Oeconomy is the Conduct of Nature in preſerving Animal Bodies.

OEDEMA, οἴδημα. A Tumor in general. But it is particularly us'd to ſignify a phlegmatic, cold, and ſoft Tumor, retaining the Print of the Finger, but attended with little or no Pain. It is not confined to a particular Part of the Body; ſometimes it ſeizes the Head, ſometimes the Hands, ſometimes the Eyelids, or any other Part, and ſometimes the whole Body. In the laſt Caſe, it aſſumes the Name of a Cachexy, Leucophlegmatia, or Dropſy. This Diſorder affects the Feet moſt frequently, which are then ſaid to be tumefied, or œdematous.

The immediate Cauſe of an Oedema is doubtleſs to be aſcribed to the too great Seroſity or Viſcidity of the Blood, which ſtagnates in the minute Veſicles of the Fat, or Tunica Celluloſa, and diſtends the Skin. This Diſorder of the Blood proceeds either from a cold and phlegmatic Habit, or from old Age; and it happens moſt frequently in cold Weather, when the Inclemency of the Air increaſes the Diſeaſe, by coagulating the ſtagnating Blood. It is not, therefore, ſurpriſing, that the Tumor prodigiouſly increaſes, though it may ſeem favourable and much diminiſhed in the Morning; which is certainly to be aſcribed to the Warmth of the Bed. This Diſorder may, alſo, proceed from an Irregularity in Diet, from Exceſs in Eating and Drinking, or from the Uſe of cold, crude, and hard Meats.

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Fevers, particularly those of the intermitting Kind, frequently conduce to this Disease; especially if the Patient has indulged himself in intemperate Drinking, while the Heat and Thirst are upon him. Another Cause may be a profuse Discharge of Blood either by Wounds, by Vomiting, or from the Nose, Lungs, Hæmorrhoids, or Uterus. It may, also, arise from Obstructions of the menstrual Discharge in Women, or from a Compression of the Vena Cava by the Fœtus, or a Scirrhus in the Abdomen, by which means the Reflux of the Blood from the lower Extremities is greatly impeded. It may likewise be ascribed to a Life too sedentary, or to too great an Indulgence of lying in Bed and sleeping; or to a Phthisis, and Difficulty of Breathing; or to any other Disease or Fatigue of the Body, which weakens the natural Vigour of the Heart in propelling the Blood.

Hence it may easily appear, by what Symptoms an Oedema may be known; but it is necessary to observe, that the harder the Tumor is, and the longer it retains the Print of the Finger, the stagnating Blood, or Humour, is the thicker, and more tenacious.

An Oedema upon the Feet can scarcely be cured without removing the Distemper whence it sprung. In pregnant Women, especially those of a robust Constitution, œdematous Tumors are attended with little or no Danger; for they generally disappear spontaneously after Delivery, the Vena Cava being then freed from its Compression. In weakly Women the Danger is greater, if they continue after Delivery; as they are frequently succeeded by a Dropsy, an Asthma, and even Suffocation. The longer the Duration is of these phlegmatic Tumors, the greater is the Danger, and the Cure more uncertain; but when they are recent, and attended with no other Disease, the Cure may be readily effected. Those, also, which follow an intermitting Fever, are milder than those which proceed from a too copious Discharge of Blood, or any other Weakness. If they proceed from the Obstruction of a natural Evacuation, they are best cured by removing that Obstruction. This Disorder of the Feet is easily remedied in young Persons, but in the Aged it is often incurable. When the Feet are violently tumefied, and Remedies, especially external Applications, have little Effect upon them, the Consequence is, generally, a Difficulty of Breathing, Suffocation, and, at last, Death.

The Cure of œdematous Tumors is different, according to the different Diseases whence they proceed; and therefore it is, in the first place, necessary to inquire into their Cause. When they appear to arise from an internal Disorder, recourse must not only be had to outward Applications, but principally to internal Medicines. With regard to external Applications, 1. Use frequent Frictions, with warm Cloths every Morning and Evening, till the Feet grow red, and glow with Heat. 2. In order to defend them from the Inclemency of the Air, especially in Winter, let the Legs be wrapt in Furs, or other thick Coverings; and at Night let warm Stones, or Pieces of Oak, be laid under the Feet in Bed, for attenuating the Blood. 3. Let a proper Bandage be applied, beginning with the Foot, and proceeding gradually to the Knee, which will greatly strengthen the relaxed Limb, prevent any Collections or Stagnations of the Blood, and the Skin from being distended by the inspissated Blood. 4. Digestive and strengthening Medicines should likewise be applied outwardly; thus let the affected Leg be plac'd over burning rectified Spirit of Wine, and so cover'd with Cloths, as to receive and retain the Vapour: By this Method the stagnating Blood will either be perspired in Sweat, or returned to the Circulation, and the relaxed Leg will be wonderfully strengthened. 5. A Remedy, often used by the Vulgar, is the greater Celandine, bruised and applied with Cloths to the Feet. Others use in the same manner Water-pepper, either alone, or mixed with Celandine, and not without Success; for they are both powerful Resolvents. Others apply the Scrapings of Horse-radish, or a warm Cataplasm of Dittander, boiled in Wine. An excellent Discutient, for this Purpose, is a Cataplasm of Pigeons Dung mixed with Salt and Vinegar, which must be often applied warm. Of equal Efficacy are the following Fomentations, a Lixivium prepared from the Ashes of Oak, and the Water in which Blacksmiths cool their hot Iron, which may likewise be mixed with some Ounces of Spirit of Wine, and a small Quantity of Alum, and applied warm with Compresses; or the Feet may be bathed twice a Day in this Liquor. Lime-water applied in the same manner, either alone, or mixed with Spirit of Wine and Alum, is very beneficial in this Case; as is the following Mixture.

Take of Spirit of Wine, and Wine-vinegar, each a Pound; crude Alum, an Ounce and half; Vitriol, a Dram: Mix them together.

It is necessary to observe, that, after the Use of the Friction and Fomentations, the Leg must be carefully wrapped up with Bandages, and warm Stockings, or Coverings; and the Patient must not only be very moderate in eating and drinking, but must also use frequent Motion and Exercise, and never neglect proper internal Medicines, without which all the external Applications will nothing avail. Sometimes the mineral Waters are very efficacious in this Disorder, though they do not always succeed. Dr. *Harris* says, that he has frequently removed this Disease, by exhibiting the aperitive Crocus of Iron, mixed with the Peruvian Bark; others assert, that they have done it with the Bark alone, though some condemn these Remedies. It is, therefore, proper, in this Point, to take the Advice of a Physician. *Heister. Chirurg.*

OEDEMOSARCA. A Species of Tumor, mention'd by *Marcus Aurelius Severinus*, of a middle Nature betwixt an *Oedema* and *Sarcoma*.

OELNIZIUM. A Name for the *Thysselinum*; *Plinii*.

OENANTHARIA, οἰναν θέρια. Sweet-scented Ointments. *Paulus Ægineta* describes two of these, and informs us, that they are not called by this Name, because the *Oenanthe* enters their Composition; for many *Oenantharia* are without it; but because it is sweet-scented, and fragrant; or on account of the Wine and Lilies, which are Ingredients in it. *L. 7. C. 21.*

OENANTHE.

The Characters are;

The Root consists of great, long, carnous Tubera, resembling Spindles, the Petals of the Flower are unequal, and shaped like an Heart. The Apex of the Ovary is crowned with the Placenta, which shoots forth long Tubes, and is surrounded underneath by the upper Margin of the Ovary, which is expanded into five Pinnulæ, or small Lobes, supporting the Petals of the Flower like a Perianthium: These Pinnulæ stick to the ripe Seed like Prickles, and the Tubes themselves harden into Substances of the same Form.

Boerhaave mentions ten Species of *Oenanthe*; which are,

1 Oenanthe; Chærophylli foliis. *C. B. P.* 162. *Boerh. Ind. a.* 51. *Tourn. Inst.* 313. *Oenanthe Petroselini folio, venenosa.* Offic *Oenanthe Cicutæ facie Lobelii.* Park. Theat. 894. Raii Hist. 1. 441. Synop. 3. 210 *Oenanthe succo viroso, Cicutæ facie Lobelii.* J. B. P. 193. *Filipendula Cicutæ facie.* Ger. 901. *quoad descript.* Emac. 1059. HEMLOCK, DROPWORT.

It grows plentifully in Brooks, and in muddy and watery Places, in the Northern as well as Southern Parts of *England*.

It is an inexcusable Piece of Ignorance, says *Johnson* in *Gerard*, in those, who now in our Times sell the Roots of this Herb for Peony-roots; and he is very well assured, he says, that the Herb-women at *London* sell these Roots under the Name of *Levisticum Aquaticum*. But whether the Roots of this Plant be of a remarkably poisonous and malignant Quality, is doubted by some. *Matthiolus* affirms his third Species of *Oenanthe*, and *Tabernæmontanus* his *Oenanthe Schœnophyllos*, both which *C. Bauhine* makes to be synonymous with this Plant, to be wholsome and salutary Plants. For my Part, says *Ray*, I shall not determine the Matter, but leave it for farther Examination. *Raii H. P.*

2. Oenanthe; maxima; folio Apii; caulibus atropurpureis, flore albo.

3. Oenanthe; Apii folio; caule firmiore. *M. U.* 16. *M. H.* 3. 288.

4. Oenanthe; Staphylini foliis aliquatenus accedens. *J. B.* 3. 2. 191.

5. Oenanthe; Cretica. *Pon. Mont. Bald. Ital.* 213.

6. Oenanthe; aquatica. *C. B. P.* 162. *Raii Hist.* 1. 441. *Synop.* 3. 210. *Tourn. Inst.* 312. *Boerh. Ind. a.* 51. *Oenanthe palustris sive aquatica.* Park. Theat. 895. *Oenanthe sive Filipendula aquatica.* J. B. 3. 191. *Filipendula aquatica.* Ger. Emac. 106. WATER-DROPWORT.

It grows almost every-where in watery Meadows, and by the Sides of Brooks.

This has a bitterish Taste, with somewhat of an Astringency; is of an hot and dry Nature, and has an opening and astringent Virtue. It provokes Urine, and expels Gravel, used either inwardly or outwardly; opens Obstructions, and cleanses the urinary Passages. *Raii. H. P.*

7. Oenanthe; aquarica; minor. *Ind.* 9.

8. Oenanthe; Lusitanica; semine crassiore, globoso. *T.* 313.

9. Oenanthe; quod Bulbocastanum; folio leviter inciso; Lusitanicum.

10. Oenanthe; folio Apii rotundiori. *Boerh. Ind. alt. Plant. Vol.* 1.

The Plant takes its Name from οἶνη, *Oene*, a Vine, and ἄνθος, *Anthos*, a Flower; so that *Oenanthe*, in *English*, is *Vine-flower*; for the Antients called some Plant, which was in Flower at the same time as the Vine, or whose Flowers had the same Smell as those of the Vine, *Oenanthe*.

It is of a very poisonous Quality, and, if tasted, causes immediate Death with Convulsions, as it happen'd at the *Hague*, where two Men went out an herbing, and, finding this Plant, tasted it: One of them was immediately taken with Convulsions, and dy'd on the Spot, the other soon after. Some such Instance we have in *Stalpert vander Wiel*'s Observations, where Persons have dy'd within two Hours, after only tasting this Plant, which affects the Brain so as to cause Convulsions, and is so quick in

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Operation, as ſcarce to give Time for a Remedy. The fifth is rarely to be met with; the third, fourth, ſixth, and ninth, are ſaid to be Reſolvents, and very friendly to the human Body, tho' they are not in Uſe with us; the ſixth and ſeventh are found in the Ditches about the Suburbs of this City [*Leiden*]. The Root has an acrid and unpleaſant Taſte; it yields at firſt a milky Juice, but afterwards a yellow, virulent, poiſonous, and fetid one. The Plant, taken inwardly, immediately excites an extreme Pain in the Stomach, with ſuch violent Convulſions, that the Jaws become immoveable, and a frequent Hiccough ſucceeds, with fruitleſs Efforts to vomit, and a copious Hæmorrhage from the Ears. The only Remedy in this Caſe is for the Patient to ſwallow great Quantities of Oil, Butter, or Milk, that the acrid Particles may firſt have their Points ſheathed, and afterwards be evacuated by the upper or lower Paſſages. *Hiſt. Plant. adſcript. Boerhaav.*

OENANTHE MYCONI A Name for the *Thalictrum*; *minus*; *grumoſâ radice*; *floribus majoribus*.

THE PREPARATION OF THE OENANTHINUM.

Gather the ſweet-ſcented *Oenanthe* of the wild Vine; and, having ſuffer'd it to dry, put it into Oleum Omphacinum, (Oil made of unripe Olives) and carefully ſtir the ſame about; then let it reſt for two Days, and afterwards ſtrain it, and ſet it aſide for Uſe.

The *Oenanthinum* has an aſtringent Virtue, correſpondent to that of Oil of Roſes; only wants its looſening and opening Quality. The beſt *Oenanthinum* is what ſmells moſt of the *Oenanthe*. *Dioſcorides*, *Lib.* 1. *Cap.* 56.

THE PREPARATION OF THE VINUM OENANTHINUM.

Take of the dry'd Flowers of the wild Vine, gather'd in its flouriſhing State, two Pounds; and infuſe them in ten Gallons of Muſt; let them macerate therein for thirty Days, after which ſtrain off the Liquor, and ſet it aſide for Uſe.

It is good for a weak Stomach, reſtores loſt Appetite, and is ſerviceable in the Cœliac Paſſion and Dyſentery. *Dioſcorides*, *Lib.* 5. *Cap.* 33.

OENAREA, οἰναρέη. An Epithet of Aſhes prepar'd of the Twigs, Tendrils, and Leaves of Vines.

OENAS, οἰνὰς. A Species of Stock-dove.

OENELÆUM, οἰνέλαιον. A Mixture of Oil and Wine.

OENEROS, οἰνηρός. Vinous.

OENODES, οἰνώδης, from οἶνος, Wine. Spirituous, or ſtrong.

OENOGALA, οἰνόγαλα, from οἶνος, and γάλα, Milk. A ſort of Potion, made of Milk and Water. *Hippocrates*. Some interpret it, Wine as warm as new Milk.

OENOGARUM. The Name of a Compoſition for Sauces, mention'd by *Apicius*, *L.* 1. *C.* 31.

OENOMELI SANUM. The Name of a Compoſition, wherein Wine and Honey are Ingredients, deſcrib'd by *Nicolaus Myrepſus*, *Sect.* 37. *C.* 31.

OENOPHLYGIA, οἰνοφλυγία, from οἶνος, Wine, and φλύω, to be hot, or boil. Drunkenneſs. *Hippocrates*.

OENOPLIA. Offic. *Oenoplia ſpinoſa & non ſpinoſa*. Ger. Emac. 1605. Raii Hiſt. 2. 1534. C. B. P. 477. *Oenoplia ſpinoſa & non ſpinoſa, ſive Napeca, ſive Zizyphus alba*. Park. Theat. 1441. *Oenoplia ſive Nabca, Paliurus Africana*. Chab. 51. *Nabca folio Rhamni vel Jujubæ*. J. B. 1. 39. THE GREAT JUJUBE.

This Fruit, produc'd in *Egypt* and *Crete*, is of an aſtringent Quality, before it is ripe; for which Reaſon its Juice, either taken by the Mouth, or injected by way of Clyſter, is frequently us'd in order to remove a Relaxation of the Stomach, or Inteſtines: According to *Veſlingius*, they who allow their Patients Jujubes in putrid Fevers, indulge their Palate without doing them any manner of Service. According to *Proſper Alpinus*, the Juice of perfectly ripe Jujubes is an effectual Medicine for evacuating Bile from the Stomach.

Though Jujubes, eſpecially when ripe, are highly grateful to the Taſte; yet they nouriſh but little, and, if immoderately eaten, are like Cherries, eaſily ſubject to Corruption in the Stomach. They are, however, greatly eſteem'd, and accounted a Delicacy by the *Egyptian* and *Turkiſh* Grandees.

Alpinus, whoſe Opinion is embraced by *Cluſius*, thinks that the Tree which bears this Fruit is the Cannarus of *Athenæus*. But the Characters of the one do not agree with the other. In the Opinion of *Veſlingius*, what *Theophraſtus*, among other *Egyptian* Trees, has wrote concerning the Coccymelus, and eſpecially, that it bears a Fruit pretty much approaching to the Nature of a Medlar, ſeems to agree pretty well with this Tree. But *Pliny* calls this *Prunus Ægyptia*. Whether it is the *Lotus* of *Polybius*, mention'd by *Athenæus*, is what I ſhall not pretend to determine. *Ray Hiſt. Plant.*

OENOPUS, οἰνωπὸς, from οἶνος, Wine, and ὤψις, an Aſpect, is an Epithet for any thing reſembling Wine. Thus, οἰνωπὸν χρῶμα, *Oenopon Chroma*, is a vinous Colour, or ſuch as belongs to ripening Grapes, when from red they turn black and ſhining; for there is a ſort of Propenſity, as *Ariſtotle* ſays, in his Book of Colours, in maturating Fruits, to Blackneſs; and then they have vinous Juices; and, Chapter the fourth of the ſame Book, he ſays that the οἰνωπὸν χρῶμα reſults from tempering pure Black with the reſpiendent Light of the Air. *Gaze*, in *Theophraſtus*, *Hiſt. Plant. Lib.* 3. *Cap.* 16 & 17. renders the Word by *fulvus*, a deep Yellow; and *Lib.* 9 *Cap.* 13. by *Cæruleus*, Sky-colour'd; and joins it with red. Οἰνοπὲ Βόε *Oenope Boe*, a Yoke of Wine-colour'd Oxen, in *Homer*, *Odyſſ.* V. are expounded by πυῤῥοὶ, red, becauſe, as *Euſtathius* ſays, Wine is red; black ones are alſo called οἰνοπὲ, becauſe Wine is black: And for the ſame Reaſon we find *Homer* often beſtowing that Epithet on the Sea; and *Heſychius* expounds οἰνοπὰ by μέλανα, black, or as he ſays, οἰνώδη τῇ χρείᾳ, vinous in Colour. *Hippocrates*, 7 *Epid.* has οἰνωπὰ χρώματα, in his Deſcription of a Dyſentery, where he means by it, that the Stools were extraordinary red, and inclining to black; for he joins οἰνωπὰ with ὑφαίμα, *hyphæma*, ſomewhat bloody. But, *Lib.* περὶ γυναικ. φύσ. and *Lib.* 2. περὶ γυναικ. by οἰνωπαὶ, and οἰνωπὴ, he means ſuch Women as are of a Colour between white and black. *Calvus* renders the Word by *fuſcæ*, brown. *Foeſus*.

OENUS, οἶνος, Wine, is the Juice of the Grape, after it has undergone Fermentation: This Liquor is of an heating and drying Quality, as *Hippocrates* ſays, *Lib.* 2. περὶ διαίτης, where he gives you the various Qualities and Differences of Wine, as he does, alſo, *Lib.* περὶ παθῶν, and *Lib. de Rat. Vict. in Morb. acut.* See a Tranſlation of this laſt under our Article ALCALI.

OENUS ANDRIUS, οἶνος ἀνδρεῖος, is expounded by *Erotian*, either generous Wine, or Wine of the Iſland of *Andros*.

OENUS ANTHINOS, οἶνος ἄνθινος, flowery Wine, is expounded by *Galen* in his *Exegeſis*, to be either the ſame as the *Anthoſmias*, or a Wine impregnated with Flowers; in which Senſe he elſewhere gives the Epithet of ἄνθινος to the *Cyceon*.

OENUS ANTHOSMIAS, οἶνος ἀνθοσμίας, from ἄνθος, a Flower, and ὀσμὴ, a Smell, is *Vinum odoratum*, ſweet-ſcented Wine, ſuch as has a very fragrant Smell, or ſmells of Flowers. That this was a factitious or artificial Wine, appears from *Athenæus* and *Suidas*. *Hippocrates*, *Lib.* περὶ ἀφόρων, preſcribes it in Suffumigations.

OENUS APODÆDUS, οἶνος ὁ ἀπὸ δαιδὸς, Wine, in which the *Dais* or *Tæda* has been boiled. See DAIS.

OENUS APEZESMENUS, οἶνος ἀπεζεσμένος, a Wine heated to a great Degree, and preſcribed among other Things, as Milk, Garlick, Salt, and Vinegar, by *Hippocrates*, 6 *Epid. Sect.* 6. *Aph.* 7. for the Correction of malignant Humours.

OENUS GALACTODES, οἶνος γαλακτώδης, from γάλα, Milk, is Wine of the Warmth of Milk juſt taken from the Cow, or what has Milk mixed with it. 7 *Epid.*

OENUS DEUTERUS, οἶνος ὁ δεύτερος, ſecondary Wine, or Wine of the ſecond Preſſing. *Hippoc. Lib.* 2. *de Morbis*.

OENUS DIACHEOMENUS, &c. οἶνος διαχεόμενος, ἢ ἀποψυχόμενος, ἢ διηθεμένος, Wine diffuſed, or remov'd into larger Veſſels, refrigerated, and ſtrained, or racked off from the Lees, *Lib.* περὶ παθῶν, in order to render it the thinner and weaker. Wines, thus drawn off, are called *Saccata*, from *Saccus*, a Bag through which they were ſtrained. Hence *Pliny* complains, *Lib.* 19. *Cap.* 4. *Vina inveterari, Sacciſque luſtrari*, "that Wines "are depriv'd of their Strength and Vigour by paſſing them "through Bags;" and, *Lib.* 20. *Cap.* 7. he ſays, that Aniſeeds and bitter Almonds are put in the Bags to add Improvements to the Wine. That the thicker ſort of Wines, ſuch as the *Maſtic*, or *Matſic*, were ſtrained through a Linen Bag, we learn not only from *Lucretius*, *Horace*, and *Martial*, but from *Plutarch*, who, *Lib.* 6. *Sympoſ. Qu.* 7. treats expreſly of it. *Scribonius Largus*, *Cap.* 122. mentioning *Falernum non ſaccatum*, means by it *Falernum* of the ſtrongeſt, beſt ſort, which has not been depriv'd of its Spirits by Saccation, or paſſing through a Rag.

OENUS ISUS ISO PINOMENOS, οἶνος ἴσος ἴσῳ πινόμενος, Wine drank temper'd with an equal Portion of Water, was an uſual Phraſe with the Antients, and us'd by *Hippocrates*, *Aph.* 56. *Lib.* 7. to ſignify a moderate Temperature of theſe two Liquids. The ſame Mixture, *Lib.* 2. *de Morbis*, is expreſſed by ἰσοκρᾶτὴς οἶνος, *Oenus iſocrates*, Wine of an equal Mixture, which is exhibited in Fevers.

OENUS CEDRINUS, οἶνος κέδρινος, Cedar Wine, *Lib.* περὶ γυναικ. φύσ. and *Lib.* 2. περὶ γυναικ. This ſeems to be the ſame with CEDRITES; which ſee.

OENUS MALTHACUS, SIVE MALACUS, οἶνος μαλθακὸς ἢ μαλακὸς, ſoft Wine, in *Hippocrates*, ſometimes ſignifies weak and thin Wine, as oppos'd to ſtrong and generous; ſometimes mild, in Oppoſition to rough and auſtere Wines.

OENUS MELICHROOS, οἶνος μελιχρὼς, is ſweet Wine, or Wine wherein Honey is diſſolv'd.

OENOS OENODES, οἶνος οἰνώδης, is ſtrong generous Wine.

OENOS SRÆOS, οἶνος σιραῖος, is SAPA. See DECOCTIO.

OENOS SYCITES, οἶνος συκίτης, is Wine in which Figs have been macerated.

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OENOS STAPHIDIOS LEUCOS, οἶνος σταφίδιος λευκός. White Wine made from Raisins, or dry'd Grapes.

OENOS TETHALASMENOS, οἶνος τεθαλασμένος. Wine wherewith Sea-water is mix'd. *Hippocrates.*

OENOSTAGMA. Spirit of Wine.

OENOTHERA. A Name for the LYSIMACHIA.

OEPATA. H. M. P. 4. T. 5. *Arbor Indica fructu conoide, Cortice pulvinato Nucleum unicum, nullo aſſiculo tectum claudente.*

This is a tall and large Tree produc'd in ſandy Soils on the Brinks of ſalt Waters, eſpecially about *Cochin*. The Kernels of the Fruit are by the *Indians* us'd among a particular kind of Diſh, by them call'd Caril; but their Bitterneſs muſt be previouſly remov'd by a long Maceration, and Boiling in Water. The Fruit of this Tree, alſo, when green, and boil'd with the Leaves of *Adamboe*, and a ſufficient Quantity of Butter, makes an excellent Cataplaſm, for ſoftening and maturating Tumors, as, alſo, for maturating and diſcuſſing the Meaſles and Pox.

The Fruit of this Tree bears a great Reſemblance to the Anacardium. *Raii Hiſt. Plant.*

OESOPHAGUS. The membranous Canal, which conveys the Aliment from the Mouth to the Stomach. As the *Pharynx* is the ſuperior Part of this Duct, I ſhall firſt deſcribe that.

The *Pharynx* is a muſcular and glandular Bag, the outer Surface of which is cloſely join'd to the inner Surface of all that Space, which is at the Bottom of the Mouth, behind the poſterior Nares, Uvula, and Larynx, and which reaches from the great or anterior Apophyſis of the Os Occipitis, all the Way to the Oeſophagus, which is the Continuation of the Pharynx. This Space is bounded poſteriorly by the Muſcles, which cover the Bodies of the firſt Vertebra of the Neck; and laterally by the ſuperior Portions of both the internal Jugular Veins, and of both the internal Carotid Arteries; by the Spinal Apophyſes of the Os Sphenoides; by the Extremities of the Apophyſes Petroſæ; by the Os Sphenoides, immediately above the internal Wings of the Apophyſes Pterygoides, and by the neighbouring Portion of both Pterygoide Muſcles.

From theſe Limits and Adheſions of the Pharynx, we may pretty nearly determine its Figure. It may be compared to the wide Part of a covered Funnel, of which the Oeſophagus is the narrow Part or Tube; or it may be called the broad End of the Oeſophagus, that and the Pharynx, taken together, being compared to a Trumpet. The Pharynx may be divided into three Parts; one ſuperior, which is the Arch of the Pharynx; one middle, which is the Body, or great Cavity; and one inferior, which is the Bottom, narrow Portion, or Sphincter. We are, alſo, to obſerve in it three Openings; that of the Arch, toward the Nares; that of the Body, toward the Mouth; and that of the Bottom, toward the Oeſophagus.

The Arch is the broadeſt Part of the Pharynx, and ends on each Side in an Angle or Point, toward the Jugular Foſſulæ of the Baſis Cranii. Afterwards the great Cavity contracts a little toward the Sides, all its other Dimenſions continuing the ſame; and behind the Larynx it is again enlarged on each Side, a very ſmall Space being left between it and the Cricoide Cartilage. The Extremity of the lower Portion is very narrow, and joins the Baſis of the Cartilage juſt mention'd.

The Pharynx is made up partly of ſeveral diſtinct fleſhy Portions, which are look'd upon as ſo many different Muſcles, ſo diſpoſed as to form a large Cavity; and partly of a Membrane, which lines the inner Surface of this whole Cavity, and is a Continuation of that of the Nares and Palate.

This Membrane is wholly glandular, and it is thicker on the ſuperior and middle Portions of the Pharynx, than on the bottom or lower Portion. Immediately above the firſt Vertebræ, it forms ſeveral longitudinal Rugæ; very thick, deep, and ſhort; and we generally find therein a Collection of Mucus in dead Bodies. In the great Cavity there are no Rugæ, the Membrane adhering both there, and in the upper Part, very cloſely to the Muſcles. At the lower Part, where it is thinneſt, it covers likewiſe the poſterior Part of the Larynx, and is very looſe, and formed into irregular Folds. It runs in a little on each Side between the Edges of the Pharynx.

Though almoſt all the muſcular or fleſhy Portions, of which the Pharynx is compoſed, concur in the Formation of one continued Bag or Receptacle, they are nevertheleſs very diſtinguiſhable from each other, not only by their different Inſertions, from which they have been denominated, but, alſo, by the different Directions of their Fibres. The greateſt Part of them may be looked upon as digaſtric Muſcles, the middle Tendons of which lie backward in one longitudinal Line, which in ſome Subjects appears plainly like a Linea alba.

Theſe Muſcles may be reduced to three general Claſſes, with regard to their Inſertions. The firſt Claſs is of theſe which are inſerted in the Baſis Cranii, as,

Cephalo-pharyngæi.
Petro-pharyngæi.
Spheno-pharyngæi, ſive Spheno-ſalpingo-pharyngæi.
Pterygo-pharyngæi.
Stylo-pharyngæi.

The ſecond Claſs comprehends thoſe which are inſerted toward the Mouth; as,

Periſtaphylo-pharyngæi.
Gloſſo-pharyngæi.
Hypero-pharyngæi.
Genio-pharyngæi.

The third Claſs includes thoſe inſerted in the lateral Parts of the Larynx; as,

Syndeſmo-pharyngæi.
Thyro-pharyngæi.
Crico-pharyngæi.
Oeſophagæus.
Adeno pharyngæus.

The Cephalo-pharyngæi are inſerted in the lower Side of the Apophyſis Baſilaris, or great Apophyſis of the Os Occipitis, about the Middle of the poſterior Part. From thence they ſeparate laterally, and ſometimes they join the Stylo-pharyngæi. The Linea Alba of the Pharynx begins by the middle Adheſion of theſe Muſcles.

The Petro-pharyngæi are inſerted in the lower Part of the Extremity of the Apophyſis Petroſa; the Spheno-pharyngæi, partly in the Os Sphenoides, directly above the internal Ala of the Apophyſis Pterygoides, and partly in the neighbouring cartilaginous Portion of the Euſtachian Tube; and the Pterygo-pharyngæi, in the Edge of the ſame Ala of the Apophyſis Pterygoides. Theſe three Muſcles, on each Side, run obliquely backward, covering each other by ſome Fibres, and meet at the Linea Alba. Their Uſe may be to draw the middle Portion, or great Cavity, of the Pharynx, upward.

The Stylo-pharyngæi are inſerted interiorly by one Extremity in the Apophyſis, or Epiphyſis Styloides. From thence each Muſcle runs down obliquely along the lateral Part of the Pharynx, covering and croſſing the other Muſcles. It extends gradually in Breadth, as it deſcends; and forms two principal Portions, one ſuperior, which is narrow; and one inferior, which is broad. The narrow Portion is ſpread among the muſcular Fibres above the Thyroide Cartilage, and the broad Portion is inſerted in the Side of that Cartilage; and thus the Stylo-pharyngæus is partly a true Stylo-thyroidæus. Theſe Muſcles may draw the Pharynx laterally upward, eſpecially by their Thyroide Portions; but the Uſe commonly aſſigned to them, of dilating the Pharynx, ſeems conformable neither to their Situation, nor to their Direction.

The Periſtaphylo-pharyngæi are two ſmall Muſcles, inſerted between the Uvula and lower Extremity of the internal Ala of the Apophyſis Pterygoides, and run obliquely backward on the Sides of the Pharynx. It is difficult to find them in very lean or young Subjects, and they ſeem to be the ſame which M. *Santorini* calls *Hypero-pharyngæi*, or *Palato-pharyngæi*. The Gloſſo-pharyngæi are Fibres which run along the lateral Edges of the Tongue, from which they are parted backward, and run down on the Sides of the Pharynx, under the Stylo-pharyngæi.

The Hyo-Pharyngæi, in general, are thoſe on each Side, which are inſerted in the Os Hyoides; and they may be reckoned three Pairs, the Baſio-pharyngæi, Kerato-pharyngæi minores, and Kerato-pharyngæi majores; theſe Denominations being taken from their Inſertions in the Baſis, and in the ſmall and great Cornua of the Os Hyoides.

I have never been able to ſee diſtinctly the Mylo-Pharyngæi of Dr. *James Douglas*; all that I have hitherto found, is a muſcular Portion really diſtinct from the Genio-gloſſus, inſerted in the Side of the Pharynx; and for that Reaſon I call it Genio-pharyngæus, as being joined to the Genio-gloſſus, all the Way to the Chin.

The Syndeſmo-pharyngæi of Dr. *Douglas* are Faſciculi of muſcular Fibres very diſtinctly inſerted by one End along the Ligaments, by which the ſuperior Cornua of the Cartilago Thyroides are connected to the Extremities of the great Cornua of the Os Hyoides. From thence they run backward, and meet at the Linea Alba. To be able to ſee them diſtinct from the other Muſcles, the Pharynx muſt be filled with Cotton, to give it a proper Convexity, and to ſupport its Sides, which otherwiſe collapſe, and ſink inward, and thus prevent our ſeeing the Direction and Diſtinction of ſeveral of the Muſcles belonging to it.

The Thyro-pharyngæi are very broad, and each Muſcle is inſerted along the Outſide of the Ala of the Cartilago Thyroides, between the Edge of that Cartilage, and the oblique Line in which the Thyro hyoidæi are fixed; and they are a little confounded with the Crico-hyoidæi. From thence they run up obliquely backward, and, meeting under the Linea Alba, they ſometimes appear to be but one Muſcle, without any middle Tendon. Sometimes they have appeared to me to be diſtinguiſhed into Superior and Inferior, becauſe their upper Portion ran upward and backward, and their lower Portion more tranſverſely.

The Crico-pharyngæi are inſerted each in the lower Part of the Side of the Cricoide Cartilage. They ſeem to be Appendices of the Thyro-pharyngæi, ſhewing no other Marks of Diſtinction, but theſe Inſertions, and a ſmall Difference in Direction, becauſe, as they run backward, they deſcend a little. For this Reaſon I have

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have ſometimes looked upon theſe two Muſcles to be one, and have called it *Thyro-crico-pharyngæus*.

The loweſt of theſe muſcular Fibres make a complete Circle backward, between the two Sides of the Baſis of the Cartilago Cricoides. This Circle is the Beginning of the Oeſophagus, and has been thought by ſome to form a diſtinct Muſcle, called *Oeſophagæus*. I have found another Faſciculus of Fibres detach'd from the Thyro-pharyngæus, and inſerted laterally in the Thyroide Gland; for which Reaſon I call it *Muſculus Thyro-adenoidæus*.

The particular Uſes of all theſe Muſcles are very difficult to be determined. It is certain, that thoſe of the middle and lower Portions of the Pharynx ſerve chiefly for Deglutition. Thoſe of the upper Portion, and ſome of thoſe of the middle Portion, may, among other Functions, be uſeful in modifying the Voice, according to the Opinion of M. *Santorini*.

The Oeſophagus is a Canal partly muſcular, and partly membranous, ſituated behind the Trachea Arteria, and before the Vertebræ of the Back, from near the Middle of the Neck, down to the lower Part of the Thorax; from whence it paſſes into the Abdomen, thro' a particular Hole of the ſmall or inferior Muſcle of the Diaphragm, and ends at the upper Orifice of the Stomach.

It is made up of ſeveral Coats, almoſt in the ſame manner as the Stomach, of which it is the Continuation. The firſt Coat, while in the Thorax, is formed only by the Duplicature of the poſterior Part of the Mediaſtinum, and is wanting above the Thorax, and in the Neck, where the outer Coat of the Oeſophagus is only a Continuation of the cellular Subſtance belonging to the neighbouring Parts.

The ſecond Coat is muſcular, being made up of ſeveral Strata of fleſhy Fibres. The outermoſt are moſtly longitudinal; but they are not all continued from one End of the Canal to the other. The following Strata are obliquely tranſverſe; the next to theſe, more tranſverſe; and the innermoſt are turned a little obliquely the contrary Way. They croſs each other irregularly in many Places, but are neither ſpiral, nor annular.

The third is termed the nervous Coat, and is like that of the Stomach and Inteſtines. It is differently folded or plaited, according to its Length, being much wider than the muſcular Coat; and it is ſurrounded by a whitiſh, ſoft, fine filamentary Subſtance, like a kind of Cotton, which, when ſteep'd in Water, ſwells and grows thicker.

The fourth, or innermoſt Coat reſembles, in ſome meaſure, that of the Inteſtines; except that, inſtead of the Villi, it has ſmall and very ſhort Papillæ. It is folded lengthwiſe like the third Coat, ſo that the Oeſophagus, when cut acroſs, repreſents one Tube within another. Through the Pores of this Coat, a viſcid Lymph is continually diſcharged.

The Oeſophagus, from its very Beginning, turns a little to the Left Hand, and naturally runs along the Left Extremities of the Cartilages of the Aſpera Arteria. *Winſlow.*

Diſorders of the OESOPHAGUS.

Tho' Spaſms of the Oeſophagus are rarely mentioned in Medicinal Writings, yet they are ſo frequent, and not only the Symptoms of other violent Diſorders, but, alſo, an idiopathic Diſeaſe, that they deſerve a particular Conſideration. Spaſms of the Oeſophagus may be defined, An involuntary and preternatural Conſtriction of the Oeſophagus, or of its Beginning, called the Pharynx, or both, generally produced by an irritating Mucus.

Hence appears the Difference of theſe Spaſms; for as the whole Oeſophagus is, by Anatomiſts, divided into its Beginning, the Pharynx, and the reſt of the Canal, ſo we find from Experience, that its Spaſms differ with reſpect to Place, ſince they ſometimes ſeize the Pharynx, and at other times its inferior and remaining Parts. To theſe may be added, a third Species of Diſorder, in which the whole Canal, together with its Beginning, and the adjacent Parts, are violently convulſed.

All Spaſms of the Oeſophagus, in whatever Country they happen, have theſe Signs in common with other Diſtentions of the ſuperior Parts. There are Refrigerations of the Extremities, and eſpecially of the Feet; Tremors and Rigors of the Joints; Suppreſſion of the Excrements by Stool; Regurgitations of Flatulencies to the ſuperior Parts; Strictures of the lower Abdomen, accompany'd with Pains and Rumblings; Uneaſineſs of the Præcordia; Efforts to vomit; Cardialgias; thin, aqueous, and pale Urine; and an hard and large Pulſe.

Spaſms of the Pharynx alone diſcover themſelves by theſe Signs. The Deglutition becomes difficult, and accompany'd with ſuch Pain, that the Patient can ſometimes neither ſwallow Solids, nor Fluids. There is a Conſtriction, Rigidity, retarded Motion and Pain of the Parts adhering to the Pharynx, of the Tongue, the Larynx, and whole Neck; a ſuffocative Uneaſineſs afflicts the Patient, and a Senſation, as it were, of a Stake fix'd in the Fauces; and as if ſomething was creeping out of the Part. The Voice is loſt, and theſe Symptoms afflict the Patient by Intervals, and frequently terminate in Convulſions of the whole nervous Syſtem.

The Signs peculiar to Spaſms of the inferior Part of the Oeſophagus are theſe: A certain Stopping of the Aliments freely ſwallowed is perceived in the Gullet, eſpecially about the ſuperior Orifice of the Stomach; by cold Liquors theſe Parts ſeem to be more obſtructed and conſtricted, whereas warm Liquors are often perceived freely to paſs thro' the Oeſophagus, and to enter the Stomach; a Pain is felt in the Spine of the Back, between the Scapulæ. To theſe Symptoms is often added a great Inclination to Vomit, which is ſometimes accompany'd with an actual Vomiting. A Nauſea, and an uneaſy Exploſion of Eructations, are, alſo, frequent in this Diſorder; a limpid Mucus is, alſo, frequently diſcharged from the Mouth, and is to be diſtinguiſhed from Vomiting. If theſe Symptoms concur with thoſe enumerated in the preceding Paragraph, they ſhew that the whole Oeſophagus is ſpaſmodically contracted.

But ſince theſe Diſorders may be eaſily confounded with other Diſeaſes of the Oeſophagus, by reaſon of the Similitude of Symptoms, we muſt explain their Differences. Firſt, then, Spaſms of the Pharynx are to be diſtinguiſhed from a Palſy, or the Want of a due Tone in that Part; for, in the Want of a due Tone, there is a perpetual Difficulty of Deglutition, though Solids are more eaſily ſwallowed than Fluids (See *Foreſtus*, *Lib.* 15. *Obſerv.* 30.); for Fluids often ſlip into the Aſpera Arteria, and regurgitate through the Mouth and Noſtrils, in ſuch a manner, as to endanger a Suffocation. In a perfect Palſy of the Pharynx, ſuch as *Tulpius* mentions in *Lib.* 1. *Cap.* 44. Deglutition is totally deſtroy'd, ſo that the Patient is in Danger of dying of Hunger. The Face, alſo, and the adjacent Parts, are highly pale, ſoft, and flaccid. On the contrary, in Spaſms of the Pharynx, the Difficulty of ſwallowing Solids and Fluids is equal, and remits at Intervals; the Veſſels of the Face become tumid; the Countenance red; the Parts affected, rigid, and often painful.

Spaſms of the Pharynx are eaſily diſtinguiſhed from an Inflammation thereof, and of the Fauces in a Quinſey, in which the internal Fauces are ſwelled, red, ſcorch'd with an intenſe Heat, the Thirſt is greater, and, for the moſt part, accompanied with a violent Fever. The Phyſician may, alſo, be impoſed upon by a Tumor, an Excreſcence, or a Piece of any thing ſticking in the Pharynx, or a preternatural Conformation of the Larynx, ſo as to aſcribe the Impediment of Deglutition, ariſing from theſe Circumſtances, to Spaſms. See *Foreſtus*, *Lib.* 15. *Obſerv.* 28. In this Caſe a Wax-candle, or the Inſtrument deſcribed by *Hildanus*, in *Cent.* 1. *Obſerv.* 36. thruſt into the Fauces, will often diſcover the Truth. Beſides, in Spaſms of the Pharynx, all the Signs, taken together, will amount to a Certainty.

Beſides, Spaſms of the inferior Part of the Gullet agree with other Diſorders of the Oeſophagus, and a Stopping of the Aliments is a Symptom common to each; ſuch as an Obſtruction of the Gullet by a Piece of ſolid Aliments ſticking in it; ſee *Hoffman. Conſult. Med. Sect.* 2. *Caſ.* 63. and *Foreſtus*, *Lib.* 15. *Obſerv.* 28. And Tumors, Excreſcences, Funguſes, and Warts ariſing in the Canal of the Oeſophagus; ſee *A. N. C. Dec.* 1. *An.* 4. *Obſ.* 47. *Decur.* 2. *An.* 8. *Obſ.* 96; as, alſo, the dorſal Glands about the fifth Vertebra of the Back, adhering to the Oeſophagus, and elevated with preternatural Pain, as *Verheyn*, in *Anat. Cap.* 10. and *Heiſter*, in *Compend. Anatom.* have obſerved. In theſe Caſes ſolid Aliments ſtop, and are vomited up again, whereas Fluids, whether cold or hot, have a more or leſs eaſy Paſſage to the Stomach. But, if there is a ſpaſmodic Conſtriction of the Oeſophagus, 'tis obſervable, that warm Fluids deſcend more eaſily than ſuch as are cold, there is a Pain of the Scapulæ, and other Signs concur, which by no means happen in an Obſtruction of the Oeſophagus, produced by any foreign and preternatural Subſtance.

But that the Cauſes, and mechanical Reaſons, of theſe Symptoms may appear the more diſtinctly, we ſhall take a ſhort View of the Structure of the Oeſophagus. The Oeſophagus, then, beginning at the laſt Part of the Fauces, has, at its Beginning, a large Cavity, called by the *Greeks*, *Pharynx*, and by the *Latins*, *Infundibulum*. Its anterior Part is connected with the Root of the Tongue, the Os Hyoides, and the Larynx; and its poſterior Part cloſely adheres to the Vertebra of the Back. It is moved by various dilating Muſcles, which elevate and dilate the Pharynx, and by other conſtrictory Muſcles, which ſhut it. There is one Pair of theſe Muſcles, which, ariſing by three Origins from the Os Hyoides, the Cartilago Cricoides, and the Cartilago Thyroides, totally ſurrounds the Pharynx, and is called the Sphincter of the Oeſophagus. There are principally three Pairs of theſe Muſcles; the firſt of which is called the Cephalo-pharyngæus, which, ariſing from the loweſt Part of the Occiput, and the firſt Vertebra of the Neck, is expanded to the Coats of the Larynx: The ſecond is called the Spheno-pharyngæus, which, ariſing from the Alary Proceſſes of the Sphenoide Bone, runs to the Sides of the Pharynx; and the third is called the Stylo-Pharyngæus, which, riſing from the Styliform Apophyſis of the Temporal Bones, is inſerted in the Sides of the Pharynx.

At the End of the Pharynx begins the Oeſophagus, which firſt of all runs ſtrait between the Aſpera Arteria, and the Vertebræ of the Neck and Back, but turns to the Right about the fifth Vertebra of the Back, and to the Left, about the ninth. Then, proceeding thro' the Middle of the Thorax, and the muſcular Part of the Diaphragm, it is united with the ſuperior Orifice of the Stomach.

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Stomach. The Oesophagus, itself, consists of four Coats, the outermost of which, being membranaceous, thin, vascular, and cellular, derives its Origin from the Pleura, and joins the Gullet to the adjacent Parts. The Coat next to this is fleshy or muscular, furnished with annular, or orbicular Fibres, and, above these, with longitudinal Fibres. The third Coat is nervous, common to the Mouth and Fauces, and, reaching three Fingers-breadths within the Stomach, is thick-set with Glands, to which, on the opposite Side, are distributed some Vessels, from which they receive a certain Liquor more pinguious than the Saliva, and which drops into the Cavity of the Gullet. The fourth and innermost Coat is covered with a slippery Mucus, villous, and everywhere perforated like a Sieve, with many Emunctories. Besides, the Oesophagus is furnished with numberless Glands, partly those which, being smaller than the Eggs of Silk-worms, are lodg'd in the nervous Coat, and are easily perceived, if, upon taking off the nervous Coat, the fleshy Coat is exposed to the Sight, or the Gullet is macerated in Water; and partly with other Glands plac'd without the Oesophagus, among which the most considerable are, the Dorsal Glands about the fifth Vertebra of the Back, adhering to the Gullet, and the Thyroide Gland, situated between the Thyro-cricoide Cartilage, and the Oesophagus, see *Vercellonius in Dissert. de Glandulis conglomeratis Oesophagi*. Nor is this Canal destitute of Vessels; for its superior Part receives Arteries from the internal Carotids, its middle Part from the Aorta, and intercostal Arteries; and its inferior Part from the gastric Arteries. Its superior Part receives Veins from the Jugular Veins, its middle Part from the *Vena sine Pari*, its inferior Part from the coronary Veins of the Stomach; and it receives nervous Vessels from the Par Vagum.

The Function of the Pharynx is Deglutition, the mechanical Account of which is as follows: Whilst the Back of the Tongue is apply'd to the Palate, by means of the Mylo-glossus, the Stylo-glossus, and the Stylo-hyoidæus, the Root of the Tongue, the Os Hyoides, and the Larynx, are pressed forwards by the Muscles subservient to this Action. The posterior Part of the Pharynx is elevated by the Cephalo-pharyngæi Muscles, and its anterior Part dilated by the Stylo-pharyngæus, and the Spheno-pharyngæus.

By these Actions of these Parts, a larger Space, and a greater Cavity, are made before the Membranes surrounding the Vertebræ of the Neck and Pharynx under the Veil of the Palate, Uvula, and Tonsils, and above the Larynx and Pharynx. Then the Substances to be swallow'd are pressed between the Back of the Tongue, and Roof of the Palate; and, being thus pressed upon the Chink of the Larynx, which is shut by a cartilaginous Covering, or the Epiglottis, are propelled into the Cavity of the Fauces. Then the antagonist Muscles begin to act; for the Tongue being already elevated, and press'd forwards, the *Larynx* and *Os Hyoides* are restored to their former Figure; and especially the Cartilages of the Larynx, being extended to the Pharynx, press upon it; by which Action, the Substances to be swallowed are, when lodg'd in the Oesophagus, farther propel'd. These Substances, when the dilatatory Muscles of the Pharynx are relaxed, and the Oesophagus constricted, are more protruded; and, thus the Pharynx being again constricted, they are lodg'd in the Cavity of the Gullet, under the Pharynx.

Then this Action is succeeded by that of the Oesophagus, by means of the peristaltic Motion of which, performed by its muscular Coat, and tending downwards, the Aliments already swallowed, and lodged under the Sphincter of the Pharynx, are convey'd to the Stomach; for since this Coat, by its alternate Dilatation and Contraction, the former of which is performed by means of longitudinal Fibres, and the latter by annular Fibres, sometimes constricts, and sometimes dilates the Oesophagus, and since in Men its Situation is perpendicular, the Aliments taken are gradually press'd downwards. This Descent is render'd still more easy by the Mucus of the Glands, which continually drops into the Gullet, lubricates it, and assists in the Resolution of the Aliments. The Aliments being thus convey'd to the Stomach, the Flesh of the inferior Muscle of the Diaphragm constricts the Gullet, as it passes through it, and in that Part closes the Stomach.

From what has been said, 'tis easy to account for the Nature and Reasons of Spasms of the Oesophagus; for, first, if we consider the Pharynx, it is obvious from the Mechanism of Deglutition, that, when the Muscles of the Pharynx are constricted, it can hardly be performed; because, when the Organ is injured, the Action must of course be so too. Besides, when the dilatatory Muscles, situated in the posterior Part of the Infundibulum, are seized with Convulsions, and drawn more forwards into a conglobate Figure, there is a Sensation as if a Stake was fixed in the Fauces. But when the Musculus Oesophageus is constricted together with the adjacent Muscles of the Larynx, Tongue, and Os Hyoides, a Difficulty of Speech is produced, and a suffocative Uneasiness. But since all Spasms are sometimes violent, and sometimes mild, the Reason is, also, obvious, why Spasms of the Oesophagus are at certain Intervals augmented.

In like manner, when we suppose the Spasms of the inferior Part of the Gullet to arise from a violent Stricture of the longitudinal and orbicular Fibres of the muscular Coat, which surrounds it, we can account for all the Symptoms which accompany that Disorder; for when there is a Constriction in any Part, either near the Pharynx, or Stomach, all the Aliments swallowed stop in that Canal, and, the peristaltic Motion being inverted, are again vomited up. If cold Liquors are drank, they increase the Spasm, and, like solid Substances are hindered in their Descent, whereas tepid Liquors, by soothing the spasmodically-constricted Fibres, pass freely into the Stomach. Besides, the Oesophagus is, by various Ligaments, connected with the Vertebræ of the Neck and Back. Hence, when the Oesophagus is constricted, the Pain must necessarily be propagated to the Membranes surrounding the Vertebræ of the Back. Hence we account for the Pain, which, in this Disorder, is perceived between the Scapulæ; see *Forestus, Lib.* 15 *Obs* 31. *Schol.* where he tells us, "That all Pains of the Oesophagus affect "the Spina Dorsi, on which the Gullet reclines, and to which "it adheres."

Whatever Causes, therefore, are capable of vellicating or stimulating the Muscles of the Pharynx, or the fleshy Coat of the Oesophagus, are called the immediate Causes of the Spasms. But as these Causes act either immediately on those Parts which constitute the Seat of the Disease, or on other more remote Parts, by Consent; so these Spasms are either idiopathic, or symptomatic. If, therefore, from the Larynx, the Stomach, Intestines, or any other Parts, primarily seized with Convulsions, the Spasms are propagated to the Pharynx and Oesophagus, the Disorder is called *Symptomatic*.

Among the Causes inducing idiopathic Spasms of the Oesophagus, the most considerable are, the Passions of the Mind, especially violent Anger, particularly after liberal Drinking. That by this means the Pharynx is seized with Convulsions, and consequently Deglutition injured, is certain from Experience. Nor is it less frequently to be observed, that the same Cause, especially after Eating, constricts the inferior Part of the Gullet, whilst the swallowed Substances remain in it, and are often thrown up again by Vomit.

Spasms, especially of the inferior Part of the Gullet, are powerfully excited by a Loathing, which can by no means happen without being attended with such Spasms. But if we consider the Effects of a Loathing more attentively, Observation will inform us, that, in such a State, first, the Idea of some ungrateful Substance in the Mind; secondly, an Aversion to this Substance, happens; thirdly, this Aversion is succeeded by an impediment of Deglutition; fourthly, the Aliments stop in the Oesophagus, and a Sensation of Stricture is produced; fifthly, to these a Nausea is joined; sixthly, in this Case a Vomiting frequently happens; and, seventhly, sometimes a Deliquium: So that a Loathing may be defined, The Idea of some ungrateful Substance, accompany'd with Spasms of the Oesophagus and Stomach.

Imagination alone frequently disposes to obstinate Spasms of the Oesophagus, accompany'd with remarkable Aversions. Thus, in *A. N. C. Centur.* 7. *Obs.* 61. we have an Account of a Woman in good Health, and of a robust Make, neither subject to hysteric nor spasmodic Disorders, who could eat and drink without Difficulty; but, when she attempted to take the Host, she had not only a great Aversion to it, but, also, threw it up by Vomit, before it reach'd her Stomach; tho' she had cram'd it down her Throat, and endeavoured as much as she could to swallow it. In the same Work, *Dec.* 3. *An.* 1. *Observ.* 79. we have, also, an Instance of a Man, who, by an excessive Use of Tobacco, brought on an Impediment of Deglutition, which was sometimes greater, and sometimes less, according to the different Degrees of Force in his Imagination.

Medicines, acrid Substances, or Poisons taken, are capable of producing the same Effects, since, by vellicating the nervous and muscular Parts, they induce Strictures thereof. Thus *Hoechstetterus*, in *Obs. Dec.* 3. makes mention of a Constriction of the Gullet, by drinking Malmsey-wine, in which the Roots of the greater Consound were infused. This happens so much the more readily, if the Substances taken are of a caustic Nature; so that it is not to be wondered at, if, according to the Observation of *Forestus, Lib.* 15. *Obs.* 30. a certain Boy, by drinking Aqua-fortis, was seized with such a Constriction of the Pharynx, as to endanger a Suffocation. But especially Sublimate Mercury, when taken, produces a violent Constriction of the Fauces. See *Forestus, Loc. citat.* Insects swallowed, by Vellication, also, excite Spasms of the inferior Part of the Gullet. Thus *Rhases, Lib.* 9. *ad Almanz. Cap.* 56. and *Rhodius, Observ. Cent.* 2. *Observ.* 72. affirm this concerning Leeches drank in Water. *Gesnerus, Lib.* 2. *de Histor. Animal. Cap. de Lacert.* affirms, that the same Effect is produced by Lizards creeping into the Fauces. *Heurnius de Morb. Cap.* 7. asserts, that the same Misfortune is produced by swallowing Lice. And *Platerus*, in *Lib.* 2. gives an Instance of the same Effect, produced by swallowing a live Eel.

Besides, Spasms both of the Pharynx, and inferior Part of the Gullet, may be produced by the Blood stagnating in these Parts, and distending the Vessels, which Distentions are always accompanied with Spasms. For this Reason hypochondriac Persons are frequently subject to this Disorder, since in them, by

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the Force of the inteſtinal Spaſms and Flatulencies, the Blood is forced to the ſuperior Parts, and eaſily ſtagnates in the Oeſophagus. This Diſorder is, alſo, very readily produced by an univerſal Dyſcraſy of the Humours, eſpecially thoſe of the ſerous Kind; when, for Inſtance, that lymphatic Liquor, ſecreted from the Glands into the Gullet, is viſcid and acrid; in which Caſe a liberal Expectoration of the viſcid Mucus affords great Relief: Of this kind ſeems to have been the Caſe mentioned by *Wepfer*, in *Obſerv. Medic. Pract. Obſerv.* 117. of a Man of ſeventy Years of Age, whoſe Aliments ſtuck, as it were, in the middle of his Gullet, where they afflicted him till they were again thrown up by Vomit.

Spaſms of the Gullet may be produced by Diſorders of the Stomach and Inteſtines, in conſequence of the Conſent between it and theſe Parts. Thus this Diſorder is eaſily produced by acrid, acid, or bilious Sordes of the Stomach and Inteſtines. Accordingly *Foreſtus*, in *Lib.* 18. *Obſ.* 13. affirms, That it may be produced by Milk concreted in the Stomach. *Hercules Saxonius*, in *Præſect. Pract. Part. Cap.* 7. *Sect.* 4. *Henricus ab Heer. Obſ.* 16. and *Thonerus*, *Lib.* 2. *Obſ.* obſerve, That Worms, lodged in the Stomach or Inteſtines, contribute to the Production of this Diſorder. The Exploſion of Eructations, and Vomiting, are alſo accompanied with Spaſms of the Oeſophagus; for, unleſs the Action and periſtaltic Motion of the Oeſophagus were inverted, and aſſiſted the Ejection of the Humours out of the Stomach, it could by no means happen, that ſuch a Quantity of Humours could, with ſuch an Impetus and Quickneſs, be ſo often thrown up, not only from the Stomach, but, alſo, from the Inteſtines.

In conſequence of the Conſent of the Parts, Spaſms of the Oeſophagus are, alſo, frequently obſerved to accompany various ſpaſmodic, and convulſive Diſorders of the nervous Syſtem: Thus, in hyſteric Suffocations, we find from Experience, that there is always a violent Coarctation of the Neck and Fauces, and a Senſation reſembling that produced by a Ligature ſtopping and compreſſing the Fauces. See *Ettmuller. Oper. Pract. P.* 2. *Cap.* 3. *Sect.* 3. and *Helmont*, in *Tract. de Aſthmate & Tuſſi.* A Conſtriction of the Gullet, alſo, frequently happens to thoſe who labour under convulſive Colics. And *Hofferus*, in *Hercule Medic*, gives us a memorable Inſtance of a Colic, which brought on a violent Cephalalgia, and Madneſs accompanied with Blindneſs, and a Difficulty of Deglutition. Epileptic and convulſive Paroxyſms are, alſo, attended with this Symptom, ſince under them the Deglutition is either very difficult, or none at all, as is particularly obſervable in the Incubus, where, beſides the Senſe of Strangulation, there is an Inability of the Tongue, and an Impediment of Deglutition. The ſame Misfortune, alſo, frequently accompanies the Opiſthotonos, as may be ſeen in the Caſes related by *Foreſtus*, *Lib.* 10. *Obſ.* 12. and 13. Nor are we to omit acute Diſorders, eſpecially malignant Fevers, in which there is not only a Difficulty of Deglutition, but, alſo, ſometimes a Conſtriction of the inferior Part of the Gullet.

A Nauſea is nothing but a gentle Convulſion of the Oeſophagus, accompanied with an Inverſion of its periſtaltic Motion, and producing an Inclination to vomit, or Vomiting, or, at leaſt, a Diſcharge of a more or leſs viſcid Mucus from the Glands of the Gullet. It may be occaſionally cauſed by every thing capable of vellicating either the Oeſophagus itſelf, or its nervous Coat propagated to the Stomach, by which means this Conſtriction is, by Conſent, propagated to the Gullet. We find in general, firſt, that a Nauſea is the Forerunner of a ſubſequent Vomiting; ſecondly, that it accompanies all Inclinations to Vomits, and Cardialgias; thirdly, that without theſe it often happens with a frequent Diſcharge of a limpid Mucus, which is nothing but the Lymph of the Glands, expreſſed by the Force of the Spaſms; this Diſorder, alſo, frequently indicates, that Worms are lodged in the Primæ Viæ; fourthly, that it generally ſucceeds Crudities of the Stomach, which, as they are acrid when the Stomach is empty, they then, particularly excite a Nauſea, which is to be alleviated by taking Aliments; fifthly, that it precedes violent Diſorders of the Head, ſuch as Vertigos, Apoplexies, and Deliquiums, eſpecially when, by Conſent, they derive their Origin from the Orifice of the Stomach, whence a certain Aura, or Vapour, ſeems to aſcend from the Stomach to the Head; in which Caſe they are rendered, as it were, apoplectic, and deprived of the Exerciſe of their Senſes; ſixthly, for the ſame Reaſon, a Nauſea afflicts thoſe who labour under hypochondriac, or other Diſorders, the Fomes of which is lodged in the Primæ Viæ; and, ſeventhly, in the Beginning of malignant Fevers a Nauſea generally happens.

As for the Prognoſtic: Idiopathic Spaſms of the Pharynx are never of good Preſage, becauſe, eſpecially when prepoſterouſly treated, they prove very obſtinate. Thoſe Spaſms of the Pharynx, which proceed from taking acrid Subſtances, are never free from Danger, and lay a Foundation for dreading an Inflammation. Thoſe Spaſms of the Oeſophagus, which frequently ſeize hyſteric Women, preſage an Apoplexy. In Wounds, if an Impediment of Deglutition happens from Convulſions, 'tis a bad Sign, according to *Ettmuller*, *Oper. Pract. Part.* 1. And *Hippocrates*, in *Sect.* 4. *Aph.* 35. tells us, That "if the Neck "of a Patient labouring under a Fever is ſuddenly diſtorted, "ſo that he can hardly ſwallow any thing, and without any "Tumor, it is a mortal Sign." Spaſms of the inferior Part of the Gullet, produced by Anger excited when at Meals, readily lay a Foundation for the Cholera Morbus, and bilious Fevers. And thoſe Spaſms of the Oeſophagus, which depend upon an univerſal Dyſcraſy of the Humours, and a Weakneſs of the nervous Syſtem, conſtitute a chronical Diſeaſe, ſucceeded by a Conſumption. A Nauſea, happening in the Beginning of malignant Diſorders, is a Proof of the Strength of Nature; but is an highly pernicious Sign in a Plague, according to *Foreſtus*, in *Lib.* 18. *Obſ.* 14. *Schol.*

The Cure.

Since Spaſms of the Oeſophagus, whether in the Pharynx, or Middle of the Gullet, when neglected, not only become chronical, but, alſo, by hindering the Deglutition of the Aliments, readily bring on a Conſumption, they, therefore, deſerve to be expeditiouſly treated by proper and ſuitable Remedies: And theſe Remedies are of two kinds; the one calculated for allaying the Spaſms, and the other for removing the Cauſes contributing to their Production.

The former of theſe Intentions is obtained by Antiſpaſmodics and Anodynes, joined with Diſcutients, and uſed both internally and externally; but the more violent the Conſtriction is, the more expedient it is to begin the Cure with external Applications, becauſe internal Medicines can hardly be ſwallowed without the greateſt Difficulty. Some of theſe external Medicines, by drawing the Afflux of the Humours to the inferior Parts, and rendering the Circulation of the Blood equal, breaks the Force of the Spaſms: Of this kind are Clyſters, and Bathing the Feet. The Clyſters ought to be prepared of emollient Subſtances, with an Addition of Corroboratives, and repeated twice or thrice. The Baths for the Feet are to be pretty warm, and the Legs are to be immerſed pretty deeply in them. The Topics to be applied to the Part affected are generally paregoric and nervous Liniments, which may be prepared of the Aqua Anhaltina, Spirit of Sal Ammoniac, the Eſſences of Saffron and Nutmeg, Caſtor, and Camphire, and the Balſam of Life; which, if mixed with the Anodyne mineral Liquor, is an excellent Medicine, when the Diſeaſe is at its greateſt Height. It alſo proves beneficial, when a few Drops of it are poured upon Sugar, kept in the Mouth, and ſlowly ſwallowed. This Intention is, alſo, anſwered by a few Grains of Theriaca, kept under the Tongue, and again ſpit out. An Ox's Bladder full of ſome warm emollient Decoction, and applied to the Part affected, is, alſo, of conſiderable Service in relaxing the Spaſms.

Among internal Antiſpaſmodics the moſt valuable are the Oils of ſweet Almonds, and of Olives, mixed with Sperma Ceti; antiſpaſmodic Powders, prepared of Cinnabar; the Pulvis Marchionis, prepared Amber, and the Extracts of Saffron and Caſtor, or the nitrous Powders, with one or two Grains of Camphire; as, alſo, the anodyne Liquor, either alone, or mixed with Eſſence of Caſtor; the Spiritus Bezoardicus Buſſii, or the ſuccinated Spirit of Hartſhorn, or the Spiritus Nitri Dulcis, mixed with a few Drops of the genuine Oils of Chamomile or Mace: But, when the Diſorder becomes chronical, we may uſe alternately, every other Day, with theſe, the antiſpaſmodic Pills, which I generally prepare of the Extracts of Yarrow, Chamomile, and St. John's-wort, Mithridate, the Extracts of Saffron and Caſtor, and the diſtilled Oils of Mace or Mint.

When the Spaſms are alleviated, the Phyſician who intends to remove the material Cauſes of the Diſorder, ought carefully to inquire, which of them contribute to its Production; for, if the Diſorder is produced by acrid Subſtances, Poiſons, draſtic Purgatives, or Emetics, their Force is, with all Expedition, to be obtunded with mucilaginous and oleous Subſtances, and with Preparations of Milk. This Intention is anſwered by pretty pinguious Broths, and Draughts of warm Water continued to a Nauſea, that, thus, a gentle Vomiting being excited, the Poiſon may be again carried off.

Sometimes Acids ſubdue the Force of Poiſon: And by theſe, *Hoechſletterus*, in the Caſe before-mentioned, affirms, that he cured a Conſtriction of the Gullet produced by Malmſey Wine, in which Conſound had been boiled. And *Foreſtus*, in the Part before-mentioned, informs us, that a Conſtriction of the Gullet, produced by Aqua-fortis, was happily cured by Mucilage of Quinces.

When violent Anger, excited at Meals, brings on Spaſms of the Gullet, there generally happens, at the ſame time, an Effuſion of Bile into the Stomach. In this Caſe, beſides the Mitigation of the Commotions, the Bile is to be corrected, leſt it acquire a corroſive and virulent Quality; after which it is to be eliminated from the Body, by gentle Emetics, or Cholagogues. The

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The Bile is corrected by abſorbent and mucilaginous Subſtances, ſuch as Decoctions of Oats, or Barley. The Bile, on the other hand, is moſt commodiouſly eliminated by Preparations of Manna, join'd with thoſe of Rhubarb, or by Vomit, when theſe Preparations are heighten'd by one or two Grains of emetic Tartar, or Ipecacuanha. But we are to take care, that the Emetic, or the Purgative, be not exhibited immediately after the Fit of Anger.

But if the Spaſms of the Gullet are produced by a Dyſcraſy of the whole Maſs of Humours or, particularly, if acrid and viſcid Sordes of the Primæ Viæ lay a Foundation for a long-continued Diſorder of this Kind; theſe Sordes are to be corrected by inciding, reſolvent, digeſtive, and abſorbent Medicines; and evacuated by Preparations of Manna, Rhubarb, and the Pilulæ Balſamicæ. But as the Diſorder frequently proves obſtinate to this Treatment, there will be no Medicine found more efficacious, than medicinal Waters; among which, the beſt are thoſe of *Sedlitz*, drank for about four Days, and then ſucceeded by thoſe of *Egra*. In hypochondriacal Diſorders, alſo, where the Excretions of Blood, whether by the Uterus, or hæmorrhoidal Veins, are ſuppreſſed, beſides Veneſection and Exerciſe, the *Caroline* Baths, duly uſed, are, of all other Things, the moſt beneficial.

A Nauſea, produced by acrid, acid, and viſcid Sordes of the Primæ Viæ, requires the ſame Cure with that before mentioned. But ſingular Service is done by vinous Infuſions, prepared of reſolvent, aromatic, and evacuating Herbs and Roots. In a Nauſea, accompanied with a Bitterneſs of the Mouth, *Gabelchoverus*, in *Cent.* 1. *Cur.* 14. recommends an Infuſion of the Root of wild Radiſh in *Rheniſh* Wine, to be drank every Morning. If a Nauſea, accompanied with Loathing, is produced by uſing any fetid Subſtance, or ſordid Aliments, it is expedient either to excite a Vomiting, or to chew Lemon or Orange-peel, or to uſe generous Wines. If, whilſt malignant Fevers rage, any one is, without a manifeſt Cauſe, ſeized with a Nauſea, 'tis forthwith expedient to exhibit a gentle Vomit, conſiſting of about fifteen Grains of Ipecacuanha; by which means, the Contagion being eliminated, the Fever is either prevented, or, at leaſt, render'd more mild and benign in its Progreſs.

Chronical Spaſms of the Oeſophagus, which depend on a Weakneſs of the nervous Syſtem, and often recur, are rather to be cured by dietetic Preparations and Aliments, than by ſtrong Medicines; for, in this Caſe, we are, for ordinary Drink, to chooſe Decoctions prepared of Viper's-graſs, Succory, and Cinnamon. All Malt Liquors are to be abſtained from, and the Patient is to uſe generous Wine moderately. The Aliments are to be light, and ſmall in Quantity, but Exerciſe is to be frequently uſed. For corroborating the Stomach, balſamic Elixirs, prepared without a ſpirituous Menſtruum, are to be uſed. The Redundance of the Blood is to be diminiſhed by properly repeated Veneſections; and the Generation of Sordes in the Primæ Viæ is to be prevented by gentle Laxatives. But, above all, the Paſſions of the Mind, which ſo greatly contribute to the Production of Spaſms, are to be carefully guarded againſt; then the *Caroline* Springs, and afterwards the Baths of *Toeplitz*, are to be uſed.

Practical Cautions.

The Phyſician who, in order to ſooth Spaſms of the Oeſophagus, intends to bathe the Feet, with a View to drive the Humours from the ſuperior Parts, ought to take care, that the Feet be not too cold; for in this Caſe, the Bathing is to be defer'd for ſome time; and the Feet are to be previouſly warm'd by Frictions, and Veſſels full of warm Water placed under them. This Rule is, alſo, to be obſerved with reſpect to the Uſe of Veneſection.

If a Conſtriction of the Fauces is join'd with a Redneſs of the Face, Inflation of the Veſſels, and a Pulſation of the large Arteries of the Head, a Vein is to be open'd, for fear of an approaching Apoplexy. Where there are hyſteric, or hypochondriac Symptoms, and Suffocations, as it were, already preſent, Veneſection is, alſo, to be uſed; tho' not in the Arm, but rather in the Foot; ſince the Paroxyſms are rather heighten'd, by taking Blood from the former.

When the Spaſms ſeize the inferior Part of the Gullet, the Liniments, and other external Medicines, are not ſo much to be applied to the Breaſt and Præcordia, as to the Spine of the Back; as *Johannes Langius*, in *Epiſtol. Medic. Part* 2. *Epiſtol.* 43. ſhews from *Aetius*, and *Galen*, and, which is ſtill better, from Experience: For, as the Oeſophagus is immediately connected with the *Spina Dorſi*, the Force of Remedies applied to the latter will the more certainly penetrate to the former.

In the ſuffocative Paroxyſms of hyſteric Women, where the Patients lie half-dead, in order to rouſe them, beſides Clyſters, volatile, fetid, oleous Subſtances, and Preparations of Caſtor, are uſeful, when applied to the Noſtrils; as, alſo, the Feathers of Partridges, and other fetid Subſtances, kindled; for theſe are of ſingular Efficacy in ſoothing irregular Motions.

For exaſperating, and more effectually confirming the Spaſms, both of the Pharynx, and inferior Parts of the Gullet, nothing contributes more than the Uſe of draſtic Purgatives. 'Tis always expedient to ſubſtitute, in the room of theſe, mild Laxatives; ſuch as balſamic Preparations of Manna and Rhubarb; or, if the Diſorder is join'd with Flatulencies, oleous and carminative Clyſters.

A Conſtriction of the Fauces, ſucceeding an acute Fever, beſides a proper Regimen, is to be relieved by antiſpaſmodic and analeptic Medicines; ſuch as the *Pulvis Marchionis*, Nitre mix'd with Camphire, and the *Tinctura Bezoardica Michaelis* mix'd with the *Mixtura Simplex*; for, in Caſes of this Nature, Opiates, and the groſſer Aſtringents, are as bad as Poiſon.

Spaſms of the Oeſophagus, produced by Worms vellicating the *Primæ Viæ*, cannot be removed, till the Worms are eliminated. But, in this Caſe, we are to uſe Purgatives very cautiouſly; and, if Mercurials are exhibited, the Patient ought, immediately after, to drink Oil of ſweet Almonds, leſt the Inteſtines ſhould be too much vellicated by them.

When the Conſtriction of the Oeſophagus is ſo great, that no Aliments can paſs, and, at the ſame time, continues long; then, leſt the Patients ſhould be waſted away, it is expedient to inject milky and nutritive Clyſters: Concerning which, ſee *Langius* in *Epiſtol. Medic. Lib.* 1. *Epiſt.* 80.

Among the convulſive Motions of the Oeſophagus, we may reckon thoſe Concuſſions of the Breaſt, which happen with a Noiſe in Children, when ſeized with Epilepſies, and which are generally taken for a Species of Hiccup: But they are really nothing elſe than convulſive Concuſſions of the Oeſophagus, and adjacent Parts; and they are generally the fatal Forerunners of the Patient's Death. In this Caſe, the Phyſician is to uſe mild Antiepileptics, anodyne and analeptic Medicines; but, at the ſame time, he is to predict inſtant Death. *Frederic Hoffman.*

OESTROMANIA. The *Furor Uterinus.*

OESTRUM VENERIS, in Anatomy, is the Clitoris.

OESYPE, or Oesypos, οἰσύπη, or οἰσυπος. The Sordes of Wool. See Lana.

OFFA HELMONTIANA.

Take of the alcaline Spirit of Sal Ammoniac, ſo ſtrong as to leave much of its Salt undiſſolved at the Bottom; put into a cold and dry cylindrical Glaſs, with a narrow Mouth, ſo as to fill about one half thereof; pour to it, gradually, a Quantity of pure cold Alcohol, ſo as to run gently down the Sides of the Veſſel, till it be full; a white Coagulation will be made upon the Surface, where the lighter Alcohol reſts upon the alcaline Spirit. If the Glaſs be now inverted, there will inſtantly appear a white opake Coagulation, where the Alcohol and alcaline Spirit mix; and, when they are both well ſhaken together, the Whole becomes a white opake conſiſtent Maſs, concreted together like Stone, ſo that not a Drop will fall out of the Glaſs, while inverted. Stop the Veſſel cloſe, and ſet it by: Thus the Mixture will ſoon reſolve into a Fluid, that floats at Top, and a denſe, ſaline Concretion, that falls to the Bottom; ſo that, in a Year's time, the Salt will almoſt become ſolid below, with a Liquor floating above it. If the whole Maſs, thus produced, be diſtilled with a ſoft Fire, an alcaline, balſamic, oily, ſolid Salt, will ſublime. The colder the Seaſon, and the Place, in which the Experiment is made, the better it will ſucceed.

REMARKS.

This is one of the more difficult Experiments in Chymiſtry, as it requires both the Liquors to be perfect, and the Obſervance of ſeveral Circumſtances, any one of which being wanting, will cauſe it to miſcarry; but, if they all be obſerved, it will ſucceed. Here, then, we ſee, that pure volatile alcaline Salt will cloſely attract to itſelf the moſt ſubtile Oil that is known, that is, Alcohol; whence the Soap ſo produced is the moſt ſubtile and penetrating of all Soaps, conſiſting of an exceeding ſubtile and volatile Alcali and Oil, wonderfully united together in an Inſtant. If this Medicine be diluted with Canary, and taken upon an empty Stomach, it paſſes, perhaps, through all the Veſſels of the Body, reſolves Concretions, opens Obſtructions, excites the vital Powers; and thus ſucceſsfully cures many dangerous Diſtempers, proceeding from an obſtructing Matter, capable of being reſolved by it. But its Virtue vaniſhes too ſoon, as being ſo extremely volatile, and therefore becomes unequal to the more ſtubborn Diſtempers. It is highly commended in the Jaundice, unattended with an acute Inflammation; it does not diſſolve the Stone, or prevent the Concretion or Increaſe thereof; it ſeems to agree with Salt of Tartar rendered volatile; it diſſolves in a gentle Heat, like Ice, and returns to a ſolid Form in the Cold. If pure Alcohol be thus mixed with One-third of dry volatile Alcali, it makes a much more ſolid Soap, as being without Water, which is always double the Quantity in the ſtrongeſt alcaline Spirit, with reſpect to the pure Salt. *Helmont* needed not have apprehended the ſudden Generation of the Stone from hence; for this Matter is not the Stone, but diſſolves with Heat, diluſes with Water, and proves totally and ſpontaneouſly volatile; ſo that

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that it has nothing in common, nor like to the Stone. *Helmont* was not the Inventor of the Experiment, though the Production be called *Offa Helmontiana*; but *Raymond Lully*, long before him; and the *Engliſh* Author upon the Alcaheſt, ſuppoſed to be *George Starkey*, inconſiderately pretends, that this Soap, brought to a Liquor by repeated Diſtillation, will become the Alcaheſt of *Helmont*. *Boerhaave's Chymiſtry*.

OFFICINALIA. Officinal Medicines, that is, thoſe uſually found in the Shops.

OFFION. Opium.

OGER, OGERTINUM, and OGERTUM, in *Paracelſus*, is the ſame as OCHRA.

OLAMPI. The Name of a very ſcarce Gum, brought from *America*. *Lemery* informs us, that it is hard, yelloviſh, with a black Caſt, tranſparent, reſembling Copal, and ſweet to the Taſte, with ſome Degree of Aſtringency. It is eſteem'd deterſive, drying, and reſolvent.

OLCA. The ſame as HOLCA; which ſee.

OLDENLANDIA.

The Characters are;

It hath a Roſe-ſhaped Flower, conſiſting of one Leaf, which is divided into four Parts, almoſt to the Bottom, and reſts on the Empalement; which Empalement, afterward, becomes an almoſt globular Fruit, having two Cells, which contain many ſmall Seeds.

Miller mentions but one Sort of *Oldenlandia*; which is,

Oldenlandia humilis Hyſſopifolia. *Plum. Nov. Gen.*

This Plant was diſcover'd in *America* by Father *Plumier*, who gave this Name to it in Honour to *Henry Bernard Oldenland*, a *German*, who was a Diſciple of Dr. *Herman*, at *Leyden*, and was a very curious Botaniſt. *Miller's Dictionary*, *Vol.* 2.

OLEA.

The Characters are;

The Leaves are oblong, and always green; the Calyx is dentated, and ſwelling like a Bottle. The Flower is monopetalous, with its lower Part tubulated, and the upper multifid; the Lobes, or Segments, expanding in Form of a Star. The Ovary, in the Centre of the dentated and multifid Calyx, becomes a roundiſh, pulpy Fruit, containing one, or generally two Stones, incloſing Kernels.

Boerhaave mentions five Species of *Olea*; which are,

1. Olea; ſativa. *Ger.* 1026. *Emac.* 1392. *Park. Theat.* 1438. *C. B. P.* 472. *J. B.* 1. *Rai Hiſt.* 2. 1541. *Boerh. Ind. A.* 2. 218. *Olea.* Offic. THE OLIVE-TREE.

The Olive-tree grows to a great Bigneſs in its native Climate, being full of Branches, whoſe Twigs are of a grey or aſh Colour; having two Leaves ſet oppoſite at a Joint, of an hard firm Texture, of a long oval Shape, whitiſh underneath, and of a ſad Green above; among theſe grow Bunches of ſmall, yellow, monopetalous Flowers, cut into four Sections; and after them come oval Fruit, of different Magnitudes, ſome being as big as a large Plum, as the *Spaniſh*, and ſeveral others; and ſome, as the Luke Olive, a great deal leſs: They are green at firſt, and black when ripe, having an hard Stone in the Middle, which is ſharp-pointed at both Ends, when ripe; they are hot and burning in the Mouth.

The Olive-tree grows in *Spain*, *Italy*, and *Turkey*; from whence the Oil, and the pickled Olives, are brought to us.

The Oil is preſs'd out from the Olives, which are laid together awhile, to wither, and then ground in a Mill; and, having hot Water pour'd on them, they are preſs'd out, the Water ſubſiding, and the Oil ſwimming on the Top. What is drawn from the unripe Olives, is called *Omphacinum*, and is accounted drying and reſtringent, and fitter for ſome external Remedies: What is preſs'd out of the ripe Fruit, is called Oil of Olives, being what is generally eaten, and made uſe of in Medicines; the different Fineneſs being from the different Care and Management in the making it. The ſweeteſt, and what we eſteem moſt, comes from *Florence*.

Oil is moderately heating and mollifying, rendering the Body lax and ſoluble; it is good for Diſorders of the Breaſt and Lungs, tempering the ſharp choleric Humours in the Bowels; and ſo helps Gripings, and the Colic; and is uſeful againſt all corroſive mineral Poiſons, as Arſenic and Sublimate, *&c.* It opens the urinary Paſſages, and is good for the Stone and Gravel. The pickled Olives are grateful to the Stomach, and provoke an Appetite; the ripe ones are more eaten in the Eaſtern Countries, among the *Greeks*, being great Part of their Food, eſpecially in *Lent*. *Miller's Bot. Off.*

The *Portugueſe* Olive-trees, ſays *Cluſius*, bear a leſſer ſort of Olive, [ſuch are thoſe of *Luca*, and other Parts of *Italy*, which are moſt in Eſteem among us] which yet yields much Oil, and that of the beſt kind. So there are ſome Olive-trees in *Languedoc* and *Provence* in *France*, and in *Andaluſia* and *Granada* in *Spain*, which produce a ſmaller Olive, but what yields more and far better Oil, than the larger Olive.

They gather the Olives in *November*, *December*, *January*, and *February*, in the Kingdom of *Granada*, where they are not ripe before. Then they ſtrew them on the Floor, and let them lie till they become wrinkled; then grind them, and preſs out the Oil. Some ſtrike off the Olives with Poles; but are blamed by others, who gather them with the Hand, by Help of Ladders, that they might not fruſtrate their Hopes of the next Year's Harveſt, by ſtriking off the Buds; for an Olive-tree is very much injured by Beating. It was a very antient Law eſtabliſhed among Olive-gatherers, as *Pliny* tells us, "Never wound nor beat an Olive-tree."

In *Spain* and *France* they generally pickle them before they are ripe, tho' ſometimes they pickle thoſe which are ripe and black. Pickled Olives, with us, ſerve as Sawce to Roaſt-meat, eſpecially Mutton; and they are alſo eaten in Salads. The *Italians* ſerve them in at a ſecond Courſe, and eat them with Bread; they excite an Appetite, provoke to Stool, and dry and ſtrengthen a too humid Stomach.

The Olive-tree was conſecrated to *Minerva*; either becauſe it was the Gift of that Goddeſs, or, as *Martianus Capella* ſuppoſes, becauſe Arts and Sciences, which are under her Protection, are beſt learn'd in nocturnal Lucubrations, by the Light which Oil affords. The Olive-tree was, alſo, an Emblem of Pardon and Peace; in order to obtain which, the Supplicants uſed to carry in their Hands Branches of this Tree.

This Tree is diſtinguiſhed according to its Form, Colour, Juice, Magnitude, Place of Growth, or firſt Diſcoverers; all which Varieties it would be endleſs to enumerate. The Antients have mention'd various Species, whoſe Names it would be very difficult to accommodate to thoſe known at preſent, for which Reaſon we ſhall paſs them over. *Pliny*, *Lib.* 15. *Cap.* 3. ſeems to make the *Colymbades* a diſtinct Species; but ſome will have them to be pure Olives, preſerved and ſwimming in their own Oil, by way of Diſtinction from the *Halmades*, which are Olives pickled with Salt; others make the *Halmades* and *Colymbades* to be the ſame thing.

We obſerve not ſo many Varieties of Olive-trees, as of Apple-trees, Pear-trees, and Plum-trees; either becauſe the Olive-tree, in its own Nature, is leſs ſubject to vary, being produced from Seed, or becauſe it was not worth the Planter's while to ſpend his Pains and Induſtry in attempting to multiply Varieties: To this may be added, that the Tree, being impatient of Cold, will not come under the Care of the *French*, *German*, and *Engliſh* Gardeners, who are moſt curious and active in procuring and producing new Species of Fruits.

According to *Cherlerus*, the Antients were very ſolicitous in preſerving Olives; tho' they are, in reality, only ſuited to gratify the Palate: So unbounded was their Luxury, that they even made bitter Subſtances ſubſervient to it; for nothing has a more ungrateful Taſte than Olives, either ripe or unripe. But Art found Means of beſtowing upon them that grateful and agreeable Taſte, which Nature had denied them. Tho' *Columella* and *Palladius* furniſh us with various Methods of preſerving Olives, yet they are, at preſent, generally imported to us, preſerved in a very ſimple Manner, by means of a Brine prepared of Vinegar and Salt.

Tho' Olives, when ripe, are of a blackiſh Colour; of an acrid, bitter, and nauſeous Taſte; yet the Oil expreſſed from them is generally pellucid, of a ſomewhat yelloviſh Colour, and of a ſweet and grateful Taſte. Hence 'tis obvious, that the ungrateful Taſte and Smell only reſide in the aqueous Part, or that which remains after the Expreſſion of the Oil: But that Oil is reckon'd the beſt, which is moſt free from all Colour and Taſte.

According to the Antients, ripe Olives are moderately hot; but they ſoon become corrupted, and prove offenſive to the Stomach, Eyes, and Bladder. When roaſted and applied, they ſtop *Nomæ*, and remove the Scurf about the Edges of Carbuncles: When unripe, they are of a drying and aſtringent Quality. Preſerved Olives are ſaid to be of an aſtringent Quality, to corroborate the Stomach, and excite an Appetite. Thoſe imported to us are preſerved before they are ripe; but 'tis ſometimes uſual with the *Italians*, to preſerve ſuch as are black, and perfectly ripe.

The Leaves of the Olive-tree are of a drying and aſtringent Quality. They are only uſed externally, eſpecially in Fluxes, immoderate Diſcharges of the Menſes, an Herpes, and other Diſorders of a like Nature. According to *Dioſcorides*, they are better adapted to Medicines intended for the Eyes, than the Leaves of the wild Olive; becauſe they are of a milder and more gentle Nature. That Subſtance which is within the Kernels of Olives, if mix'd with Lard and Meal, removes ſcabrous and rough Nails.

The Juice, which drops from recent Olive-branches, when they are kindled, cures Lichens, ſcurfy Diſorders, and running Ulcers.

Pliny informs us, that when *Auguſtus*, happening to viſit *Pollio Romulus*, then above an hundred Years old, aſked him, By what means he had ſo effectually preſerved the Vigour of his Body, and the Powers of his Mind? the latter anſwer'd; By the internal Uſe of Muſtum, and the external Uſe of Oil. *Cardan*, alſo, affirms, that three Things powerfully contribute to Longevity; which are Milk, Honey, and Oil, not externally uſed, but taken inwardly, and among the Aliments. *Ariſtotle* was of Opinion, that every Man ought to be well provided in Salt and Oil, becauſe both of them greatly contribute to Longevity.

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Oil seems to be of an aereal Nature, for which Reason it floats in Water, and cannot be easily mixed with aqueous Liquors; but, though shaken along with them, soon disengages itself, and rises to the Surface. But when these aqueous and oleous Liquors are shaken together, and intimately mixed, they assume a whitish Colour, and resemble Milk.

According to *Dioscorides*, that Oil which is expressed from unripe Olives, and for that Reason called *Omphacinum*, is most conducive to Health: And that Omphacinum is best, which is recent, fragrant, and not of a biting Taste. This Kind is, also, most proper for the Composition of Ointments: It is, also, beneficial to the Stomach, in consequence of its astringent Quality. If held in the Mouth, it braces up the Gums, fixes the Teeth, and checks Sweats. It is of a refrigerating, drying, and astringent Nature; for which Reason it is used as an Ingredient in many Compositions.

The Oil expressed from ripe Olives is moderately heating and moistening; but the old is hotter than that which is recent. It is, also, of an emollient, digestive, and vulnerary Quality: If an Ounce of it is drank with warm Ale, it renders the Body soluble, removes a Driness of the Breast, allays Gripes, relaxes the urinary Passages, and cleanses and consolidates such as are corroded: Externally it is frequently used in Clysters, and for the Cure of hot Tumors: When drank with warm Water, it excites Vomiting, for which Reason it is generally exhibited against Poisons.

Schroder informs us, that in *Westphalia*, his native Country, it is customary to exhibit to wounded Patients Oil of Olives mixed with warm Ale, in so large Quantities, that the Sweat of the Patient often smells of the Oil.

In order to render the Body soluble, a Piece of toasted Bread, soaked in Oil, and eaten every Morning, is highly recommended: And this, says *Cherlerus*, is a very grateful Medicine. *Borelli Observat.*

Pliny informs us, that Oil refreshes the Limbs; and it is certain, that the Antients frequently anointed the Body with Oil, because they imagin'd, that it not only procured Strength and Vigour, but, also, preserved the Tone of the Parts. But this Custom is long ago abolished, and in my Opinion very deservedly; partly on account of its Nastiness, and partly because it obstructs the Pores of the Skin, and hinders Perspiration, which is absolutely necessary to the Preservation of Health.

According to *Pliny*, in *Histor. Natural. Lib.* 11. *Cap.* 19. not only Bees, but, also, all other Insects are killed by means of Oil; which *Malpighi* found true in Silk-worms, and other Insects: The Reason of this is obvious, since the Oil obstructs the Passages, or Pores, through which the Air enters, and returns; in consequence of which, the Animal is forthwith destroyed: Nor is Respiration less, but rather more, necessary to these Insects than to larger Animals, since, in the former, the Vessels destined for the Reception of the Air are larger in proportion, more in Number, and more dispersed through all the Parts of the Body, than in the latter.

Oil, according to *Pliny*, extracts Pitch from Cloaths, an Effect not to be obtained by Water. And *Sennertus*, in *Hypom.* 1. *Cap.* 5. informs us, that, when the Hands are stained with Pitch, they cannot be made clean by means of Water, but by Oil, or some pinguious Substance, which melts the Pitch.

In a Vessel full of Oil, the superior Part is best; for the inferior is too much contaminated by the Amurca; and the Surface is best of all, because it is at the greatest Distance from the noxious Part, and is not injured by the Air. *Plut. Sympos.* The same is, also, asserted by *Macrobius*, in *Saturnal.* who, also, affirms, that the middle Part of Wine, and the lowest Part of Honey, is the best.

Dioscorides and *Galen* inform us, that the Oil obtained from the Twigs of the Olive-tree is useful for a great many Purposes; but though the former affirms, that this Oil is made of the Twigs, yet the latter asserts, that, in the Preparation of this Oil, they only add the Buds, produced by the Olive-tree. *Raii H. P.*

With respect to the Oil of Olives, it is remarkable, that, if rubbed upon any Part wounded by a Viper, it effectually prevents all the ill Consequences. See VIPERA.

2. Olea; sylvestris; folio duro; subtus incano. *C. B. P.* 472. *Tourn. Inst.* 599. *Boerh. Ind. alt.* 2. 218. *Oleaster.* Offic. *Oleaster sive Olea sylvestris.* Park. Theat. 1438 J. B. 1. 17. *Olea sylvestris.* Ger. 1206. Emac. 1392. Raii Hist. 2. 1542. THE WILD OLIVE-TREE.

As it is agreed by Botanists, that the Garden Olive-tree differs from the wild only in Culture, and that the former, if neglected, will degenerate into the other, which, also, is produced from the Kernel of the Garden Olive, it must certainly be granted, that the Oleastrum differs from the Olea, not in Species, but in some accidental Circumstances, for which Reason we shall be the shorter in its Description.

The Oleaster, in Bigness of Trunk or Branches, is not inferior to the Olea; but has fewer Branches, and those set with Thorns. The Leaves, also, are less, though of the same Shape; the Fruit, also, is like an Olive, but less, more shrivelled, and containing an acrimonious purple Juice. To this *Clusius* adds, that the Bark is smoother than that of the Garden Olive-tree, that the Fruit has a recurved Point, and all the Parts are remarkably bitter.

In *Theophrastus* the Trunk is described as gaping, and discovering some peculiar Caverns, as in the Garden Olive-tree: This Defect in the Tree has the Name of *Gongri*.

The Victors at the *Olympic* Games were usually crowned with the Oleaster, as we are informed by *Pliny*, who, also, says, that the Oleaster of *Olympia*, with which *Hercules* was first crowned, was religiously preserved down to his Time, as was the Olea which was said to be proposed by *Minerva*, in a Trial of Skill, at *Athens*.

The Oleaster delights in an argillaceous and stony Soil, as does the Olea, and grows in the same Places. *Dioscorides* and *Pliny* say much of the Virtues of the Leaves of the Oleaster; for which the Reader is referred to those Authors: We suppose the Leaves, in this respect, are not much different from those of the Olea, only more effectual in their Operation: Nor is the Oil, which the Fruit affords, any way different from Omphacinum, except that it is hotter, more potently astringes, and, yet, at the same time, deterges. This Oil is not used in Food; but, if any one constantly uses it about his Head and Beard, he will find it to retard Greyness. *Amatus*, from *Dioscorides*, says, that it stops the Falling-off of the Hair, deterges Scurf and Achors, Itch and Leprosy.

For the Elæomeli, which, according to *Pliny*, distils from Olive-trees, according to *Dioscorides*, from a certain Trunk, see ELÆOMELI; the Account of it is very much illustrated by *Lobel* and *Pena*, who tell us, that the Olive-trees in the Vineyards of *Montpelier*, being wounded in the Trunk, discharge an Honey, or *Elæomeli*: They assure us, from their own Experience, that from their common Olea, which is a Tree of a very bitter and unpleasant Taste, in its Bark, Trunk, and Fruit, also, before it is pickled, there distils a truly melleous Liquor, resembling Honey, not only in Colour and Taste, but in keeping uncorrupted; and that, by slightly wounding the Trunk with a Penknife, through the Chinks of the Bark, they obtained enough of this Liquor, not only to gratify their own Curiosity, but to impart to their Friends. But it will be in vain to expect this Honey, unless the Olive be nearly ripe and blackish. From those Trees, also, especially from Wounds made in the larger Trunks, was discharged a glutinous Liquor, more liquid than Honey, at first; but, after it had stood a-while, becoming more dense with the Cold, resembling rather Manna than Honey, in Appearance, Taste, Relish, and Manner of Concretion, in the Opinion of all who examined it.

As for the *Ethiopian* Olive-tree, mentioned by *Strabo* and *Dioscorides*, which discharged a Tear, like Scammony, or, according to *Paulus*, like Gutta Ammoniaca, and suspected by *Cæsalpinus* to be Gum Elemi, we are not certain what Sort of Tree it is, and whether it be the same with the common Olive-tree, or not. However, we are told by *Dioscorides*, that this Tear is good for a Cicatrix and Albugo in the Eyes, and for Dimness of Sight, the Eyes being anointed therewith; that it provokes Urine, and the Menses; and, put into an hollow Tooth, eases the Pains thereof, expels the Fœtus, and cures the Impetigo and Lepra; and that, used in Medicine, it is of a deleterious Quality. *Raii Hist. Plant.*

3. Olea; Afra; folio Buxi, crasso, atroviridi, lucido; cortice albo, scabro.

4. Olea; Afra; folio longo, lato, supra atroviridi splendente, infra pallide viridi. *Slangenhout vulgo Batavis.*

5. Olea; Afra; folio longo, anguito, pallide viridi; fructu rotundo, purpurascente. *Boerh. Ind. alt. Plant.*

OLEAMEN. A thin Liniment, composed of Oils. *Scribonius Largus.*

OLEANDER. The Rose-bay. See NERIUM.

OLEASTER. See OLEA.

OLEASTER GERMANICUS. A Name for the *Rhamnoides; fructifera; foliis Salicis; baccis leviter flavescentibus.*

OLECRANON, ὠλέκρανον. The Elbow.

OLEITAS. Oiliness. *Rulandus.*

OLENE, ὠλένη. The Cubit.

OLEUM. Oil. Various Sorts of Oils are used in Medicine, prepared from Animals, Vegetables, and Minerals: Animal Oils are their Fats, which are originally vegetable Oils. All animal Substances yield these Oils, together with their volatile Salts, in Distillation: For an Account of which, see the Article CERVUS.

Vegetable Oils are principally procured by Expression, Boiling, and Distillation.

There is a certain Part in Plants, which, being either spontaneously fluid, or easily made so by a gentle Heat, is called their Oil. This Oil may become thick by long standing, as we see in the Oil of Turpentine, which, though extremely fluid at first, manifestly thickens by degrees. It may, also, grow thick with Cold, and thus appear knotty like Fish-spawn; it may even become solid, as we see in Wax; but by what means soever it thus becomes hard, it flows again upon being applied to the Fire. This Oil, therefore, whenever it becomes liquid, is, at the same time, unctuous, or exceeding soft and slippery to the Touch; though it has, at the same time, a certain Tenacity, or Viscosity,

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in its Parts, not found in Waters and Spirits. Again, these Oils are always inflammable, and feed both Fire and Flame, being themselves disposed to go into Flame; a Property not found in Air, Water, or Earth. Lastly, Oil will not intimately mix with Water, but, when shook therein, repels the Water from it, collects together, and separates into a distinct Liquor; in which respect it differs from Spirits. Vegetable Oil, therefore, is an unctuous inflammable Liquor, that does not mix with Water.

This Oil is found of many different Kinds in Plants; the volatile Sort, which is produced in the Distillation of the Waters from unctuous Vegetables, lodges the presiding Spirit, which contains the Taste and Smell of the Plants; whence in this Oil the particular sensible Properties of the Plant manifestly reside; which, being once separated, robs the Plant of its Nature: Thus, if all this Oil were totally extracted from Cinnamon, Mace, Cloves, or Nutmeg, these Bodies would remain of their pristine Form, so as to be perfectly known, though they retain nothing of their peculiar Properties: For, when all this Oil is taken away, those Spices can no longer be distinguished by the Smell or Taste; though the Body of the Oil receives not its Smell and Taste from itself, but entirely from that Spirit, which, when present, distinguishes these Oils, and, when absent, leaves them scarce distinguishable, and almost of one and the same Nature.

Sometimes, in certain Plants, and particular Parts thereof, this Oil is collected pure, in little peculiar Cells, or Receptacles; at other times, oily Particles are mixed with the Juices of Plants, and so dispersed therein as scarce to appear in the Form of Oil, but lie concealed in that of Soap. But when these latent oily Particles associate, or separate from the rest, they immediately appear in the Form of Oil. Thus the Juices of a Plant being extracted with Water, inspissated, made saponaceous, and dried, it is manifest, that they contain Oil, by their burning. On the other hand, a pure Oil distils from the Incisions made in the Fir, the Pine, and the Larch-tree. A transverse Section being made into the Root of Masterwort, newly dug up in the Winter, we may, by the Help of a Microscope, perceive little Drops of gold-coloured Oil, oozing out from certain Vessels on the Surface; and the same holds true of a Nutmeg, or Almond, cut with a warm Knife. But we find this Oil no-where more plentifully than in Cotyledons, or seminal Lobes of Plants; where it defends the tender Embryo from the pernicious Effects of unseasonable Weather, or too great Cold; for Freezing might probably prove destructive to so fine a Structure. This Oil, likewise, is in the Winter-time found driven toward the Bark, by the preceding Summer; and, being there more drained from its watery Moisture, is collected in great Abundance, especially in the Ever-greens. The Oil of Vegetables, therefore, chiefly abounds in their more durable Parts, in order to defend the other natural and more necessary ones; and is therefore found in such Parts, as are farthest removed from the absorbing Vessels of the Roots, and the nutrimental Juice there drawn in from the Earth: Thus, more Oil is found in ripe Linseed, than, perhaps, in all the other Parts of the Plant together. Sometimes, also, this Oil is collected in such Quantity as spontaneously to appear in its proper Form, burst its Cells, and run out; whence the Barks of Trees and Fruits principally afford it, as we see in Pine-apples, Juniper-berries, and the like, especially in the Ever-greens, where the outward Bark is often cased over with this Oil. The Trees in the Northern Regions, which grow upon the high Mountains, exposed to the freezing Cold, more particularly afford it; whence it should seem, that this Oil is highly requisite to defend the Life of Vegetables, against the freezing Cold of Winter. We likewise observe, that these fat Oils principally grow and collect in full-grown Plants, that soon after seem, as it were, to sleep, or become aged; for both Herbs and Trees contain little Oil in their young growing State, but are distended with a diluted thin watery Juice: Thus Flax, soon after it is first sown, rises in the Form of Grass, and is merely aqueous; but, when come to Maturity, it loses its Greenness, grows yellow, and now affords a copious Oil, especially in its Seed: And the same holds true of a young Pine, compared with one that is full-grown. It is, also, observed, that the shrubby Plants, which have lively Roots, gradually contract themselves upon the Approach of Winter, with-hold their Juices, perspire but little, receive little Nourishment from the Earth, nor throw much off into the Air; and thus they continue to do in an higher Degree, as the Winter comes on, till at length they, in a manner, rest. On the other hand, as the Spring approaches, all begins to move again; they take in Nourishment, and perspire. If these Autumnal or Winter-stations may be called Times of Sleep, and the Summer and Vernal Periods, Times of Waking, in Plants it will generally appear, that the Oils of Vegetables are increased in their Sleeping, but their Water in their Waking. Thus the Root of Masterwort, being perfectly leafless in the Winter, and lying hid and unactive in the Earth, may be called dormant; but if now dug up, and examined, it will be found rich in Oil; but, if again dug up in *May*, it appears aqueous, saline, and by no means so oily as before; and the same is observed in Trees. Lastly, We see that old Trees are oppressed with their own Oil, and thence suffocated, through the abundance of Fat, as the Pine, the Fir, and the like, where this Oil appears in the Form of a Gum; but in others, under that of Rosin, Oil, or Balsam. And hence it is, that Gardeners so frequently complain of the Death of Trees, obstructed in their Bark; which thus die, as Animals do, when choaked with their own Fat.

The Chymist, therefore, who would extract the Oils of Vegetables, should first learn from Botany, that there are certain Seasons, wherein Plants abound with Water and Salt, and then but little with Oil; and again, that there are other Seasons, wherein they principally abound with Oil, and but a little with Water and Salt; for whilst new Leaves, Flowers, and Fruit, are forming in Plants, the Motion of the aqueous Juices, pregnant with Salt, is promoted, and the sluggish Oils excluded; but, when the Leaves begin to wither and fall off, the Flowers to shed, or the Fruit to ripen, or spontaneously fall off, when perfect, then the oily Parts gradually collect together, and preside; the more subtle ones being dissipated by the Summer's Heat: Whence Builders fell their Timber in the Midst of Winter, that it may be durable, and Proof against Moisture and Rottenness. For all the hardest, most ponderous, and lasting Woods, are found to abound with a ponderous Oil: Thus Cedar and Lignum Vitæ contain an exceeding heavy, compact, and copious Oil. Chymists, therefore, must choose their Subjects for Salt, at a certain Season, and for Oil at a very different one.

The Process.

1. The ripe Seeds of most Vegetables, when they begin to fall, and grow dry, contain a copious native Oil: These Seeds therefore, being taken, and somewhat farther dried, are ground into a kind of Meal; but, if they prove too unctuous for this Purpose, let them only be bruised in a Stone Mortar; by which Action alone some of them will yield an Oil, such as Almonds, Pine-nuts, Pistachios, and the like: Let the Meal thus procured be suspended awhile in the Vapour of boiling Water; and then again be gently dried, to open it the more, and fit it the better for yielding its Oil by Expression: Put this Meal or Paste into strong hempen Bags, which are to be close tied up, and place them between two Iron Plates, heated in boiling Water; and squeeze the Bags in a strong Press; and thus, the Oil being melted by this innocent Heat, will sweat and drop through the Bags into a receiving Vessel, placed underneath, without Empyreuma, but almost as it naturally existed in the Plant. And by this means may an Oil be drawn from the Seeds of the least oleaginous Plants, such as Hemp, Flax, Lettuce, and numberless other Subjects; in which no Mortal would have expected such an Oil should lie concealed. In the same manner, a copious Oil may be expressed from Cloves, Mace, and Nutmegs; though the sharp aromatic Virtue of these Spices will not be found in their expressed Oil; for Mace and Nutmeg, when thus treated, rather afford a mild and very thick Balsam, than an hot aromatic Oil, such as they yield by Distillation. I was formerly surprised, that the expressed Oil of Mustard-seed should be ordered with Success in the raging Pain of the Stone; but my Wonder ceased, upon finding this Oil so sweet, so soft, and mild; whereas that by Distillation from the same Seed is so violently sharp and fiery, that, to this Day, I cannot sufficiently wonder at the Difference, as often as I consider it; for it seems difficult to assign the Reason, why this expressed Oil has not the pungent Taste and Odour, which are so remarkable in the distilled Oil; and why the Acrimony of the preceding Spirit, which resides in the Oil, is not here manifest; and this, whether we regard the Water, the Salt, the Spirit itself, or its Oil.

2. The Oil of our present Process contains very little Salt, tho' it has evidently much of the particular Nature of the Plant, as our Senses inform us; but, whilst fresh, it sheaths, blunts, and mollifies, what is acrimonious in the Humours; relaxes the Fibres, Membranes, Vessels, and Viscera, when applied thereto; softens the Hardness of the Flesh, and cures its Crispiness; it mollifies and moistens dead and dry Eschars, and renders them separable from the sound Flesh, by the vital Actions; it defends the naked Parts in Wounds, and prevents the dry Air from hurting them by Desiccation. It, also, prevents the thin Humours from exhaling too much through the open Mouths of the Vessels in Wounds, and thus spoiling the extreme Vessels; and hence it becomes an excellent Remedy for expeditiously healing recent Flesh-wounds. It is, also, accounted a great Anodyne, both as it is emollient, and relaxing. *Boerhaave's Chymistry.*

For a farther Account of these Oils, see Chylus.

Distilled or essential Oils, by the Alembic, from the recent Leaves of Savine.

All Plants are more or less fit for this Operation; but principally those which are rich in an aromatic Virtue; and none of them are more proper for our present Purpose, than those of an high and fragrant Odour, and a pungent, hot, and grateful Taste: But in the present Process, which opens the Subject of essential Oils,

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Oils, we are more particularly concerned with the Leaves of Plants: These Leaves are either the recent ones of Ever-greens, or the fading ones of Plants that shed their Leaves.

The aromatic Leaves of Ever-greens, such as the Arbor Vitæ, Bay, Box, Cedar, Citron, Ivy, Juniper, Lemon, Marum Syriacum, Myrtle, Orange, Pine, Rosemary, Savine, Sage, Thyme, wild Thyme, are almost always full of Oil, but principally in Autumn, and towards Winter; so that the Rule and Method of Working is nearly the same for them all.

But the annual aromatic Leaves, which die spontaneously, though, when green, prove highly odoriferous and aromatic, are to be gathered for our present Purpose, at the time of their full Growth, or just before they begin to decline from their utmost Vigour; for then the aqueous Moisture, and the Salt, being dissipated, leave a more tenacious Oil and Balsam behind; and the principal Plants of this Kind we have enumerated under the Article AQUA. Experience has shewn, that these Leaves, being gather'd at the Time above-mention'd, afford more Oil, if they are somewhat dried in the Shade, and a moderately fanning Air, before Distillation, than if they were immediately committed to the Still, with a watry Juice remaining in them; perhaps, because, the Water being carried off, the Oils unite the closer, and come over in their proper Form; whilst, being divided by the Interposition of the Water, they indeed impregnate the distilled Liquor with their Virtue, though they do not appear in the Form of Oil; but Care must be had, not to use too great an Heat in the Drying, lest the Oil, also, should fly off. Some Leaves, however, are found to contain so large a Quantity of a balsamic Oil, as to afford it copiously upon Distillation; as we see in Mint and Rosemary. There are, also, others that dry with Difficulty, and lose some of their fine Spirit, which enriches the Oil; such as Calamint and Maudlin-tansy; so that some Particulars are always to be excepted from the general Rule.

THE PROCESS.

1. Take the green Leaves, therefore, of any of these Plants, which, without bruising, spontaneously and copiously emit their Fragrance: Put them into a Still, whereof they may possess two Thirds; and pour on the distilled Water of the same Plant, to the same Height; then immediately perform the Distillation: And thus Baulm, Calamint, Dill, Dittany, Fennel, Lovage, Marum Syriacum, Marjoram, Maudlin, Tansy, Mint, Origanum, Sage, Savine, Savory, Scurvy-grass, Southernwood, Tansy, Thyme, and wild Thyme, all immediately afford their Oils. But others require to be long digested, in a Vessel exactly closed, together with Sea-salt, or the Spirit of Vitriol, in order to fit them to afford their Oil in Perfection, and in larger Quantity. Thus, if the essential Oils be required from the Leaves of Bays, Box, Calamus Aromaticus, Cedar, Chamomile, Citron, Fir, Hyssop, Juniper, Lemon, Myrtle, Orange, or Pine: Let them be first gently dried, then put into a Still, so as to fill two Thirds thereof; pour on their own distilled Water to the same Height, and for every Pint of Water add half an Ounce of Sea-salt, or a Dram of the Oil of Vitriol; lute the Still perfectly close, and continue the Heat up to ninety Degrees, for three Weeks before the Distillation. But the more tenaciously any Leaves retain their Oils, the more Acid, and the longer Digestion, they require; for Acids loosen and resolve these Oils, and, perhaps, in some measure, increase them, according to the Observation of *Boyle*, *Hoffman*, *Homberg*, and *Le Mort*. Now, therefore, proceed to Distillation, as is directed under the Article AQUA; only observing to make the Matter boil quick, and the Still to run strong; for thus the Oil required will come over with the first Water; whereas, if the Distillation be too slow, the Oil will be agitated by a great Heat; yet not being able to rise, it will be mixed in among the Water and the Leaves, and be thus attenuated, and greatly enrich the Water, to the Diminution of the Oil. Let the Distillation be continued with this Degree of Heat, so long as any Oil comes over with the Water, the Receiver being often changed, to discover how long any Oil continues to rise; for the Distillation should be continued so long as the Water has any considerable Virtues, as mentioned under the Article AQUA; for this Water is serviceable in procuring new Oil.

2. In this Operation, therefore, the Cells and Skins containing the Oil, being sofren'd by the Digestion, and burst by the boiling Heat, which sets free, moves, and rarefies the Oil; this is, consequently, liquefied, and thrown to the Surface of the Water, especially if the Plant be *European*. And, as the oily Particles are carried upwards along with the watry, they are together forced into the Worm, where being condensed, by the Cold, into Oil, they are thus transmitted into the Receiver pure, considerably natural, without any Empyreuma; and excellently retaining, in a small Compass, the Odour, Taste, and peculiar Virtues of the Plant; leaving its Remainder perfectly deprived of all the Oil, by the Distillation, and almost without any Mark of its own Nature: For the Oils of Box, Calamint, and Wormwood, are as perfectly distinguishable by their Smell and Taste, as the Plants from whence they were drawn; whilst the Plants themselves, from whence all the Oil is extracted, cannot afterwards be well distinguished from each other. These Oils long retain their Virtues, without growing rancid; and, therefore, with respect to all these Properties, the Chymists have justly termed them *essential Oils*.

REMARKS.

1. These Oils have a certain sharp heating inflammatory Property, so as to stimulate the nervous Fibres, attenuate Viscidities, prove grateful to the Smell and Taste, and quicken the Spirits: Their Acrimony appears from hence, that, if applied to the naked Membranes and Nerves in Wounds, they give an acute Pain. We learn they are heating, because, when taken inwardly, they excite a greater Heat, than almost any other simple Body; so that a free Use of them will bring on burning Fevers, keep them up, and by an increased and continued Use, raise them even to the utmost Degree of Heat and Violence. When externally applied to the Skin of an healthy Person, so that they cannot be thrown off; they cause an Heat, Burning, Pain, Redness, Shining, Pulsation, and Blisters; and, if their Action be great, even Gangrenes: Whence it is manifest how high an inflammatory Power they have, when imprudently given internally, where, coming in Contact with the Viscera and Membranes, they may produce the like Inflammations; and hence, being actuated in the Body, by the Force of Circulation, they effectually stimulate the Nerves, and may thus excellently attenuate, and intimately divide, those Viscidities, which, arising from mere Inactivity, require to be resolved by a brisker Motion. Again, the odoriferous Kind, by their Sweetness and pleasant Taste, prove highly acceptable and refreshing, in Faintness and Torpidity; and all these Effects they have not by means of their oily Tenacity, but of the subtile Spirits, which are lodged in this Oil, and contain the proper Taste and Smell of the Plant: These Oils, therefore, by a prudent medicinal Use, afford the noblest Remedies against all those Distempers, wherein the animal, natural, and viral Spirits are wanting, or torpid; for Instance, in Persons afflicted with cold watry Disorders, a simple Leucophlegmatia, or mucous Serosity, proceeding from mere Inactivity, without any inflammatory Obstruction. Hence, also, they become serviceable in Winter Fevers, that are perfectly intermittent, and attended with cold Fits; being given whilst the Fever is off, and principally before the cold Fit is expected. A moderate Use of them is, also, serviceable to aged Persons, and to the Hypochondriacal, whose Blood is sluggish, and unfit for affording of Spirits; whence such Persons become indolent, forgetful, heavy, lethargic, and subject to weep like Children. In like manner they are serviceable to hysterical Women; but where hysterical Disorders proceed from a Plethora, essential Oils, though in other Cases so excellent, prove very prejudicial: and the like is to be understood of apoplectic Cases: For though these Oils are serviceable where the Patient is old, and lethargic through a Want of Spirits and Activity; yet they prove almost mortal, when the Disorder proceeds from Blood extravasated within the Skull, or from an inflammatory Fulness, or Plethora: Whence such Persons have been often hurt by the Use of apoplectic Balsams, prepared from these Oils, tho' almost every-where indiscriminately commended. They are in no Distempers more deservedly praised, than against Flatulencies in the Stomach, Gripings, and the Colic; but here, also, they must be prudently used, because these Disorders may arise from Inflammation, Spasms occasioned by Fulness, and the like Causes, wherein such Oils are hurtful; though, on the other hand, excellent, when those Disorders proceed from mere Coldness, languid Circulation, and a cold viscid Serosity blocking up the Intestines.

2. With regard to the chymical Use of our present Process, it is hence manifest, (1.) That aromatic Plants contain an Oil, which is volatile with the Heat of boiling Water: (2.) That this Oil principally contains the presiding Spirit, which rises together with it; and, after Distillation, remains for several Years therein, provided the containing Vessel be close stopped: (3.) That Plants contain this Oil only in one certain Quantity, which being drawn out, there remains no more behind: (4.) But if the boiling Water, in this Distillation, be saturated with as much Salt as it can dissolve, it will then be hotter than mere Water; whence, by means of a large Quantity of Salt, more essential Oil may be extracted from a Vegetable, than by boiling Water alone, without it; but it is erroneous to expect, by this means, more of the Spirit, wherein the Virtue of the Oil resides; for the native Spirit is separable by the boiling Heat of mere Water; so that the Promises made upon this Head are vain. (5.) Hence we learn, also, that these Oils are more volatile, than the saline Matter, which, with a stronger Fire, rises in a volatile, oily, acid, or alcaline Salt, or that which by Calcination is changed into

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into fixed Alcali. (6.) That the proper Virtues of every Plant are found more in these Oils, than in other of their simple Parts; tho' this always with respect to the Spirit wrapped up in the Oil: For neither the Water, the fixed Oil, the saponaceous Part, nor the Salt of the Plant, contain this peculiar and proper Virtue; as, by separately examining all the rest, no one could discover from what Plant they proceed; whilst the Oil alone, by its Smell and Taste, never fails to indicate the Plant it was drawn from; or, if these Oils should correspond to two different Subjects, it is then usual to give them the same Name, as in the Oil of Roses, and *Lignum Rhodium*, or Rose-wood. So, also, the great Agreement betwixt the Oil of *Cassia Lignea*, and Cinnamon, has occasioned the true Cinnamon-tree to be called *Cassia Lignea*, and the other, *Cassia Fistula*. (7) Lastly, we hence learn what an excellent Part Plants may lose by boiling.

The distilled Oils from dry Leaves, by the Alembic, shewn in Mint.

1. We proceed to shew the same Experiment upon a dry Plant. Take Mint, therefore, that was gathered in a proper Season, dried in the Shade, and kept for six Months; digest and distil it with its own distilled Water, as in the preceding Process, observing only not to fill the Still above half, with the dry Leaves; because, being thus shrunk, they will swell very much with the Water poured upon them, and so easily burn, or boil over. By this means there will rise, thro' the whole Time of Distillation, a considerable Quantity of Oil, rich in Taste, Smell, and Virtue, and floating upon the distill'd Water.
2. If all the Liquor be expressed from the Remainder, and pour'd upon a fresh Parcel of Mint, and all the former distil'd Water be also returned after the Oil is first separated from it, with the Addition, also, of as much more distilled Mint-water, as is necessary, and the Whole be digested and distilled as before, this second Operation will afford a much larger Quantity of Oil; and, if several times repeated, the more Oil will each time be acquired; for, by numerous Cohobations, the Water will become extremely rich, and full of Oil. It is manifest, that the distilled Waters here retain the peculiar Virtues of the Plants, as is sufficiently shewn under the Article AQUA.

The distilled Oil of Flowers; by an Example in Lavender.

1. The most odoriferous Part of Plants either resides intirely, or is found in greatest Perfection, in their Flowers; but, as it is here sweetest, so it is most perishable, by reason of the Delicacy, unstable and falling Nature of the Flowers; tho', indeed, there are some, as the kinds of Lavender, which long preserve their Fragrance: But the Method of obtaining their Oil is nearly the same in all; for which Purpose they are to be gathered at that time they are sweetest, which generally happens when their Petala begin to open; let them be gathered whole, with the Morning-dew upon them, and immediately be committed to the Still, whereof they may possess Two-thirds; a sufficient Quantity of the distilled Water of the same Flower being poured thereon, and as much Oil of Vitriol as may give a grateful Acidity to the Whole: Then, immediately, distil as in the preceding Process; by which means some Oil will appear floating in the Water, which is to be collected, and kept apart. Let the Decoction be expressed from the Flowers remaining in the Still, and be returned upon a fresh Parcel along with the former distilled Water, and a little more Oil of Vitriol; and thus, by repeating the Operation, a much larger Quantity of Oil will be now obtained. Repeat the Process three times, or more; for the oftener the Work is repeated, the more Oil will each time be obtained; the Decoction, each time, growing thicker, and the cohobated Water stronger, or fuller of Oil, which is to be carefully separated after every Distillation: And thus the distilled Waters, also, so often returned, at length become extremely fragrant, like the Oils themselves, and rich in Medicinal Virtue.

2. As this Oil is highly odoriferous, and therefore exceeding valuable, so it can only be obtained in a very small Quantity, whence Chymists have used great Endeavours to find a Way of increasing it, without impairing its Virtue; and at length observed, that if the Flowers were digested in a close Vessel, for fifteen Days, or more, with the Addition of so much Oil of Vitriol as might preserve them from Putrefaction, they would afford a third Part more of an excellent Oil; as we see by an Example in the precious Oil of Roses, given in the History of the Royal Academy of Sciences at *Paris*. Some of the principal Flowers that are fit for this Purpose, are the following: The Flowers of Chamomile, Citron, Clove, Hyacinth, Gilly-flowers, Jessamy, Lavender, white Lilies, Lilies of the Valley, Lemon, Maudlin Tansy, Orange, *Philadelphus Athenæi*, Roses, and Tansy.

REMARKS.

These Oils, for their excellent Fragrance, are valued by great Personages, and sold at an high Price; whence it is worth while to study them.

The distilled Oils of Seeds; by an Example in Fennel.

It has been long observed, that the Oil of Plants is plentifully lodged in the Cotyledons, or double Placenta of their Seeds, whence their Oils have been long sought, especially in the aromatic Kinds; and it has appeared, that the more sharp, hot, and odorous they were, the more copious and excellent Oil they afforded: Yet Nature does not constantly follow this Rule alone; for tho' sometimes the Seed contains this aromatic Oil, as in Anise, Cumin, &c. yet in others the Oil is not found in the Seed, but in different Parts: Thus the curious Oil of the Rose is only found in its Flower, and none at all in the Seed, or Fruit. The Orange-tree contains an excellent odoriferous Oil in its Flower, the Rind of its Fruit, and its Leaves; but not the least Sign of any in its Seed: The Seed, indeed, leaves an Oil of its own, but nothing like that excellent one we speak of. Thus, the Seed of the Cinnamon-tree affords none of that admirable Oil which so richly abounds in its Bark, Leaves, and Wood. Hence no general Rule can with Certainty be laid down, but recourse must be had to particular Experiments, for sure Information. The best Seeds, therefore, for this Purpose, we judge to be those of Ammi, Amomum, Angelica, Anise, Bay, Cardamom both the greater and lesser, Caraway, Chervil, Coriander, Cubeb, Cumin, Dill, Fennel, Garlick, Hedge-mustard, Sweet Marjoram, Masterwort, Juniper, Lovage, Mustard, Onions, Origanum, Pepper, Rocket, Rue, Smallage, Spignel, Scurvy-grass, Tansy, and Zedoary.

These Seeds are to be gathered when perfectly ripe, and then to be dried for three Weeks, in an open airy Place, and afterwards digested in a close Vessel, with hot and salted Water, for three Days; let them afterwards be distilled in the same manner as was directed of Waters, only with a stronger Fire; otherwise the Oil will not ascend so well: And here, again, Salt Water being used instead of common, the Oil will be raised the better, on account of the greater Heat of the Liquor, and so become purer.

Some of these Seeds contain so copious an Oil, that, rising collectedly, and so running into the Worm, it is there suddenly cooled by the Water of the Worm-tub; and thus coagulates into a solid Mass, which blocks up the whole Cavity in one cold Part; so that no more Liquor being able to descend, the Vapour of the boiling Water and Oil, with a violent Force, throws off the Head of the Still, which might prove dangerous to the Operator. It is, therefore, proper to see, that the Worm here employed be sufficiently wide, and not kept too cool; but when the Water, and the Oil, are observed thus to stop their Running, let the Head of the Still be immediately taken off with Care, and boiling Water pour'd into the Worm, in order to dissolve the Oil, and drive it out, after which the Distillation may again proceed as before: The Seeds disposed to afford this coagulating Oil are principally those of Anise, Bay, Cardamom, Caraway, Fennel, and Zedoary; the Oils whereof somewhat resemble Camphire, which melts with the Heat of Distillation, and immediately grows solid in the Cold; though it still continues a pure Oil, that in Distillation generally blocks up the Vessels. And, in the hottest Countries, aromatic Plants are often so far maturated, that their Oils thus change to Camphire.

REMARKS.

Hence, again, we learn, that a copious Oil is lodged in the Lobes of Seeds, and proves rich in the peculiar Spirit of the Plant, being here safely treasured up for long preserving the tender Embryo, afterwards to shoot out in its proper Season. Hence, also, we see that the vital Principle may be long preserved by such a Balsam, which seems necessary to prevent its being destroyed by the Winter's Cold, or lest unseasonable Warmth, or Moisture, should cause it to shoot before the Time, and thus expose it to be easily killed; and hence this Oil is principally found in the Seeds and Roots of Vegetables. But as there are many Seeds, whose distilled Oil has no remarkable Smell or Taste, whilst residing in the Seed, we are hence informed, that the Spirits of many Vegetables escape the Cognizance of our Senses, whilst yet they actually distinguish the peculiar Properties of Plants from each other; whence we are taught to attribute somewhat considerable, but not too much, to the Sagacity of our Senses. Perhaps, the more volatile the spirituous Principle is in the Oil of Seeds, and of the sharper Taste, the less Time such Seeds will retain their growing Faculty; and, on the other hand, the less active

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active that ſpiritual Principle is, the longer they will remain fit to propagate their Species. Certainly the fragrant aromatic Seeds, which have an exceeding pungent Taſte, ſoon become effete and barren, as we ſee in the balſamic umbelliferous Kind, and the moſt odoriferous Seeds of the *Indies*, which commonly prove ſterile with us in *Europe*; ſuch as Cardamom, Cubeb, Zedoary, and Ginger; whilſt, on the other hand, the Seeds of Caſſia, the Humble Plant, Sena, and Tamarinds, long remain perfect: And the ſame thing is found in the Grain Kind, which will long preſerve their Embryos fit for growing. And here it is highly remarkable, that this Oil ſhould continue ſo very long unhurt in dry Seeds, under the Form of Oil, ſo as by chymical Means to be drawn from thence in full Virtue; and yet as ſoon as theſe Seeds begin to ſwell and ſprout with warm Water, they ſhould immediately begin to loſe of their Oil, and become diſpoſed to produce Spirit: Whence it ſhould ſeem poſſible, that this Oil may be ſo changed by the Moiſture of the fertilizing Earth, the Action of the warm Atmoſphere, and the ſaponaceous Virtue of the Juices, both of the Earth and Seed, as to be diſſolved, attenuated, and render'd miſcible with Water, ſo as to be driven into the tender Veſſels of the Embryo, through the Canals of the Radicula, planted in the Lobes or Placenta, and thus feed the tender Plant with theſe Spirits; and, by communicating its own particular Nature to the nutrimental Juices, impregnate the Whole, and produce the Species; for Seeds once moiſtened to ſuch a Degree, as to give Signs of vital Motion, cannot afterwards be well preſerved fit for Propagation.

For the diſtilled Oil of *Indian* Cloves, ſee CARYOPHYLLUS.

THE DISTILLED OIL of SASSAFRAS-WOOD.

(1.) The lighter odoriferous oily Woods, cut in the Winter, and brought into Shavings whilſt ſound and perfect, being ſtrongly diſtilled with twenty times their own Quantity of Water, afford a milky Liquor, and an Oil, which from the Saſſafras of *America*, is almoſt pellucid, and ſinks to the Bottom of Water, tho' the Wood that affords it is conſiderably ſoft, light, and almoſt ſpongy. Let the Diſtillation be continued ſo long as any Oil comes over, or the Water continues richly milky, and an auſtere and acid Decoction will remain at the Bottom of the Still. (2.) If a freſh Quantity of the ſame Shavings be diſtilled along with the former Decoction, and the Water that firſt came over, more Oil will now be obtained, and more again at a third or fourth Repetition, or Cohobation. (3.) And by this means we obtain the Oil from all the Woods that afford it, with Eaſe; ſuch as Fir, Pine, and Saſſafras; the two former whereof afford lighter Oils, that float in Water; but Saſſafras, an heavy one, that ſinks therein. (4.) But the hard and ponderous Woods muſt be thinner ſhaved, and long digeſted with Salt and Water, before they are diſtilled; for, by this means, theſe, alſo, will afford their Oil: Of this kind are the *Arbor Vitæ*, Benjamin, Box, Cedar, Citron, Guaiacum, Juniper, Lemon, Orange, Rhodium, Savine, Snake-wood, Storax, and other Balſam-trees; as thoſe which afford the Balſams of Capivi, Peru, Tolu, and Gum Elemi; for the longer theſe Woods are digeſted in cloſe Veſſels with Salt and Water, the eaſier they afford their eſſential Oils, by Diſtillation. (5.) Thoſe Trees are fitteſt for this Proceſs, which are fat, and yield Roſin, Balſam, Gum, or Pitch, eſpecially thoſe which are both ponderous and ſolid; but thoſe which are light, ſpongy, and grow in watery Places, as the Alder, the Elder, the Lime, the Poplar, the Willow, and the like, are unfit for this Operation, as ſcarce affording any eſſential Oil. (6.) The Trees, felled at the Time when their Juices are in their ſtrongeſt Motion, afford leſs Oil, and not ſo good; but thoſe cut down in the midſt of a froſty Winter, affordr a larger Quantity, and a better Oil. The Wood of young Trees, whilſt in the Vigour of their Growth, afford leſs than thoſe which are old, and paſt their Growth. The Evergreens afford a larger Quantity, and ſharper Oil, than thoſe Trees which ſhed their Leaves: Whence the Reaſon is manifeſt, why ponderous Woods of a ſtrong Texture are required in Building.

REMARKS.

Hence we may underſtand, that the Ponderoſity of Woods is principally owing to the ponderous compact Oil, which cloſely binds the other Principles together, tho' we do not mean their eſſential Oil alone, but principally that fixed Kind remaining after Diſtillation. Of this we have Examples in Cedar, Guaiacum, and Juniper-wood. And upon the ſame Cauſe depends their Durability; for the moſt laſting Woods are always the moſt oily, as appears in Box, Cedar, Oak, and Olive. Extreme Hardneſs alſo depends upon the ſame; for ſpongy ſoft Woods hold little Oil; but Box, Guaiacum, Ironwood, Olive and Snakewood, abound therewith. And hence we underſtand the Difference of Balſam, Turpentine, Roſin, and Pitch, as being owing to a longer or ſhorter, a greater or a leſs inſpiſſating Heat of the Sun. Laſtly, We hence underſtand the Nature of Rottenneſs in Timber, proceeding from the Worm which feeds upon the ſubtile Oil contained in the particular Cells thereof; which Oil being conſumed, the Wood afterwards falls into a kind of Duſt or Aſhes; or elſe by lying expoſed to an Air ſometimes hot, ſometimes moiſt, ſometimes dry, and ſometimes cold, the Oil is at length conſumed, and only a friable Earth left behind.

For the diſtilled Oil of Cinnamon, ſee CINNAMOMUM.

OILS DISTILLED PER DESCENSUM, SHEWN IN CLOVES.

Human Induſtry firſt diſcovered, that Plants rich in Oil, being agitated by the Fire, ſweat out their unctuous Matter, ſo that it might be collected; and hence was diſcovered the Art of procuring Pitch, by the burning of fat Trees. After this, the more unctuous Seeds, being bruiſed, and expoſed to a gentle Fire, thus ſuffered an Oil to run from them, as in the Caſe of Almonds. At length, by the ſame Methods, the aromatic Tribe of Plants were, in particular, made to ſweat out their Oil; but the Oil, thus procured, differs entirely in Smell, Taſte, and Virtues, from that which is thence expreſſed as above: But we are to give an Example of the Thing.

Take, therefore, the beſt Cloves, bruiſed to an unctuous Pulp, and ſpread it a quarter of an Inch thick upon a cloſe Linen, ſtretched, and tied over the wide Mouth of a cylindrical Glaſs Veſſel, ſo that it cannot fall into the Cavity thereof: And the deeper this Glaſs, the better it is fitted for the Purpoſe; becauſe a ſpacious Cavity ſerves beſt to cool and condenſe the oily Vapour. Then take a Diſh made of Iron-plate, ſo hollowed with a flat and round Rim, that this Rim may exactly reſt upon that of the cylindrical Glaſs, whilſt the protuberant Part of the Diſh falls exactly within the Mouth of the Glaſs, the Depth of the Diſh's Cavity in the Middle, the third of an Inch. Let this Diſh be a little ſqueezed upon the Cloves, ſo as to preſs them with its convex Part, and the Linen that ſupports them, a little within the Mouth of the Glaſs: When this is done, fill the Cavity of the Diſh with clean Aſhes, and place a few live Coals at the Top, the Heat whereof, paſſing through the Aſhes, will liquefy the Oil, and agitate the native Water of the Cloves, whereby they will both be reſolved into Vapour; which, coming into the Cavity below, will be condenſed upon the Sides of the cold Glaſs, and fall in Drops to the Bottom, in the Form of a ſharp Water and Oil. The Fire being thus prudently continued, nearly all the Oil will ſucceſſively be driven out; and the Work is then finiſhed, when no more is made to deſcend by that Degree of Heat; but beware of putting on too much Fire, becauſe this would render the Produce empyreumatic. On the other hand, if the Heat be too gentle, ſcarce any thing will be forced out: A Medium is eaſily obtained, by beginning with a ſmall Heat, and riſing by degrees; and thus, by repeating the Operation, any Quantity of Oil may be obtained.

REMARKS.

This Experiment ſhews the Nature and Appearance of a proper aromatic Oil: The Oil, ſo prepared, exactly reſembles the diſtilled eſſential Kind, both in Taſte, Smell, and Virtue, ſo as ſcarce, in any reſpect, to be diſtinguiſhed from it. It is, indeed, obtained in a leſs Quantity than by Diſtillation with Water; but the Remainder may be afterwards employed in Diſtillation, or to other Purpoſes, as retaining much of the original Virtue. And this Method is principally of Uſe, when ſuch an Oil is immediately required, or when we want, to exhibit the Experiment. In other Caſes, we rather make Choice of Diſtillation; but by the preſent Proceſs we can expeditiouſly obtain the Oil from the Rinds of Citrons, Lemons, and Oranges, and from Mace, Nutmeg, and other very unctuous Subſtances. And hence we learn, what Effect this Degree of Fire may have upon Oils, as they are naturally contained in Vegetables, by liquefying and ſeparating them, ſo as to make them ſweat out, almoſt ſpontaneouſly; but, when the Subjects are too dry to afford this Oil commodiouſly, let them be bruiſed, then put into a Linen Cloth, and expoſed, for ſome time, to the Vapour of hot Water, that thus they may be opened before they are committed to the Operation; for then they will afford more Water, and more Oil; and that leſs altered, and with greater Eaſe. Theſe Oils differ ſurpriſingly from thoſe gained by Expreſſion, as being much more aromatic, when obtained *per Deſcenſum*.

SCHOLIUM.

This experimental Hiſtory of Oils obtained by Chymiſtry from Spices, particularly in the Way of Diſtillation, contains many extraordinary and uſeful Particulars, the principal whereof

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we will here briefly enumerate, for the Service of Chymistry, Natural Philosophy, and Medicine.

1. The entire aromatic Virtue of Plants is contained in their essential Oil alone; which being perfectly extracted, the remaining Substance retains not the least Sign thereof.

2. This essential Oil, again, contains the exceeding subtile, volatile, minute, sharp, and scarce ponderable Spirit, which gives the whole Virtue to the Oil, and which, when separated therefrom, leaves nothing particular in the Oil: Therefore, in these Oils, the Sulphur is to be carefully distinguished from the Spirit, or the resinous Part from that which is sharp and fiery. The Spirit easily exhales, but the Sulphur remains sluggish behind, and gradually thickens, sooner in the Air, and slower in a close Vessel; thus becoming, from a liquid Oil, a gross one; then a Balsam; then a more thick and tenacious Substance; and, at last, a brittle Rosin; from all which State it is again recoverable, by Distillation, into a thin liquid Oil. Whence many eminent Authors have thought, that distilled Oils are only liquefied Rosins; and Rosins, again, condensed Oils. Certainly the Sun thus changes Oils in Plants; for the Cedar, the Fir, the Larch, and the Pine, weep, by Incision, a liquid and thin Oil, which, being full of Spirit, is extremely aromatic, as I have often tried to my Surprize; but, when this Oil comes upon the Bark, it begins, with the Heat, gradually to lose of its Spirit, grow thick, and become a Turpentine, not only of an higher Consistence, but less rich in Spirit, than before. Thus Turpentine, when more dried by the farther Action of the Sun, becomes resinous, losing its Spirit more and more, so as at length to prove almost inodorous and insipid. Hence, when it is said, that Rosin, by being distilled with Water, again resolves into an Oil, we must understand it of the sulphureous Part alone, but not of both the sulphureous and the spirituous; for the Spirit does not return, nor is regenerated; but only the Fluidity of Oil returns. So, also, the aromatic odoriferous Tears of Benjamin, Lacca, Mastich, Olibanum, and Sarcocol, lose much of the Spirit at first contained in their fluid Oils; whence the more liquid and recent these are employed, their medicinal Effects are always the greater; as, on the other hand, they grow perfectly effete with Age; and when, at length, all their Spirit is gone, the remaining oily Matters are scarce longer distinguishable from one another. Hence it seems probable, that the Bodies of essential Oils are greatly alike; and that the Spirits alone make the Difference between them. Whether this Spirit differs with the specific Gravity of the Oils, I leave to farther Inquiry. It must, however, be carefully observed, that a sharp Taste and Virtue may depend upon the Salt of a Plant, tho', in this Case, the peculiar Characteristic is not owing thereto, but to the Spirit of the Oil. Vegetables, therefore, lose all that is peculiar to them, when their Oil is extracted.

3. The more pungent Odour Vegetables have, the more fiery their Spirit generally proves; and the more biting, when chewed in the Mouth, the sharper the Spirit of their distilled Oil. So, also, they afford the thicker, stronger, and deeper-coloured Oils, when they are ripest, and moderately dried; but, when distilled whilst moist and recent, they afford less of a thinner, more transparent, less heating, but more odoriferous Oil: Whence, possibly, the Spirit itself may arrive gradually at its greatest Perfection in the Plant. This is certain, that the Smell and Taste, which proceed from the Spirit, are not the strongest, when the Plant is young, nor till it has arrived at complete Maturity. We must also observe, that, in certain Plants, there seems to be more Spirit contained in less Oil than in others, and *vice versa*. When a Pound of Nutmegs afford an Ounce of Oil, and twenty-five Pounds of Calamus Aromaticus afford only an Ounce; this shews that there is not here the same Proportion between the Quantity of the Oil and Spirit. There, also, predominates a certain peculiar Acrimony in the Spirits that distinguish Oils; this Acrimony, in the Oil, or Cinnamon, burns, like Fire, any Part of the Body it touches, and can scarce be washed off under a long time; and there is an exceedingly pungent Spirit in the Oils of Savory and Thyme. Hence, therefore, we find there is a strange Disposition in these Spirits; which, tho', upon exhaling from the Oil, scarce diminish the Weight thereof, yet deprive it of its Virtue, and leave it ungrateful, thick, terebinthinaceous, and at length resinous. I have search'd after the Weight of these Spirits, but could not discover it.

4. Essential Oils are found of different Colour, according to the different Plants from whence they are distilled: The Oil of Mint is brown, of Lavender yellowish, of Cinnamon Gold-coloured, of Wormwood black-green, of Chamomile and Yarrow blue, of Aniseed almost white, and of Camphire quite white. Whether this Difference depends upon the Difference of the Spirits, or the Oil, or some other third Principle, that in some Cases rises in Distillation, is not certain, and deserves to be inquired into.

5. These Oils are sometimes extremely liquid, almost spirituous, or scarce having any Tenacity, as we see in the essential Oil distilled from the Rind of *China* Oranges, this being one of the most fluid Liquors; and of this kind is the Oil of Lavender, and even the ponderous Oil of Sassafras-wood. On the contrary, the Oils of some other Plants are thick; as that of Fennel and Roses, that of Aniseed is still thicker, and the thickest of all is Camphire: But the thick dissolve with a gentle Heat, the thicker with one a little greater, and the thickest with a moderate one. Whence this proceeds, should be farther examined.

6. Again: These Oils differ remarkably in their specific Gravities, some being considerably heavier than Water; as the Oils of Cinnamon, Cloves, Sassafras, Nutmeg, and perhaps of other aromatic Plants that grow within the *Tropics*, where the violent Heat of the Sun might otherwise prove scorching to them; for these Oils, in Distillation, require a greater Fire to raise them, and a shallower Still, only one fourth whereof remains empty. Other essential Oils are extremely light; as that of Lavender: And yet this Excess of Weight does not make the Oils thicker; for the Oil of Sassafras, as we just now observed, is at once very thin and heavy, whilst Camphire is, at the same time, extremely thick and light, so that this must have some other Cause. The Oil of Aniseed will often remain floating in Water, and that distilled from Juniper-berries sometimes subside.

7. These essential aromatic Oils have an almost inimitable Virtue, entirely depending upon the Spirit so often mentioned, which is sharp, inflammatory, grateful, refreshing, heating, attenuating, and stimulating to the animal Spirits, and nervous Fibres; and by these Properties the Oils prove serviceable in cold, aged, watry, and phlegmatic Constitutions; and, again, in cold Intermittents, moist and cold hypochondriacal and hysterical Cases, or other Diseases proceeding from cold, acid, or aqueous Flatulencies in the Intestines; and, when prudently used in these Cases, they prove generally powerful and safe Medicines; but, when indiscreetly applied in Distempers attended with violent Heat, Motion, or Inflammation, they prove poisonous. The Chymists have prudently observ'd, that these Oils act by means of their Spirits, which, as lodged in the Oil, come to be apply'd to the Parts of the Body, so as there to produce their proper Actions, which would otherwise easily be lost through their extreme Volatility; and, when both the Oil and the Spirit act together, the Effect is more gentle, but more lasting. These Spirits, therefore, have, and communicate to the Oil, a certain Acrimony, which gives the Sensation of Fire to the Tongue, and presently occasions Pain; and the like Effect it shews, when apply'd to the naked Nerves: When apply'd to the external Skin, they soon occasion the whole Series of an Inflammation, and end in a gangrenous Eschar. If applied to the Lips, or the internal Parts of the Nose or Palate, where the Nerves lie bare, it occasions the same, with greater Violence; and presently brings on dangerous Inflammations. Whence we easily see what Effects they may produce upon the Mouth, Throat, Stomach, and Intestines, when imprudently exhibited. Hence these Oils may justly be called *Inflammatory*; tho' we before observed, there is no better Remedy for immediately raising the Spirits by their grateful and extraordinary Virtue; which can scarce be explained, for want of general Principles, otherwise than by direct Experiment. They have not only this Refreshing, but, also, an heating Virtue; for, if externally apply'd, or internally taken, they immediately begin to heat the Parts of the Body, and presently increase this Heat, thus once begun; but the colder and more languid the Body, the less they heat it, and *vice versâ*; so that, when rubbed upon a dead Carcase, they produce no Heat at all: Whence it is highly dangerous to give them in a burning Fever. They, also, increase the Motion of the Nerves by Irritation, propelling the Spirits, and perhaps agreeably warming to them both; and whilst they perform all this, they attenuate and dissolve Viscidities, so far as can be done, by increasing the Motion of Circulation. But we have already enumerated nearly all the Virtues, above, which these Oils have in common, excepting that they differ as to their different Degrees of Acrimony. They have, however, besides these, other Virtues no less considerable, and peculiar to each, whereof we have sufficiently spoken under the Article AQUA. Thus the Oils of the Arbor Vitæ, and of Savine, are powerful Emmenagogues, where the Stoppage of the menstrual Discharge arises from a languid Circulation. The essential Oil of Rue is of Service in the Epilepsy, from a cold relaxed State of the Nerves; and, likewise, in hysterical Disorders, from a cold Cause: That of Juniper-berries, in the cold Scurvy, and the Pains and Heaviness thence proceeding; and, also, in nephritic Complaints, from cold Obstructions: That of Mint, in an almost paralytic Weakness of the Stomach: That of Lavender, in the Palsy, Vertigo, Lethargy, and other cold Disorders of the Head: The fragrant uninflammatory Oil of Roses is a noble Reviver of the languid Spirits: That of Cinnamon, very advantageous in a great

Paucity

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Paucity of Spirits, without Inflammation, either during the Periods of Pregnancy, Delivery, or immediately afterwards, if, at the ſame time, there be no Rupture of the Veſſels: Thoſe of Wormwood, *Carduus Benedictus*, the Leſſer Centaury, Chamomile, and Tanſey, are uſeful againſt Worms; for which Purpoſe they may be formed into Pills with the Crum of Bread, and given in a ſufficient Doſe, upon an empty Stomach, the Patient refraining from all kind of Aliment, for two Hours afterwards: Thoſe of Baum and Lemon-peel, in Palpitations of the Heart, from cold phlegmatic Humours: And thoſe of Marjoram, Roſemary, and Sage, in Obſtructions, and mucous Diſcharges, of the Uterus, from a cold Cauſe.

8. If theſe Oils be ſtrongly ground, for a conſiderable time, with thrice their own Weight of pure and dry Sea-ſalt, ſo as to divide them well, and then again diſtilled with Water, they become clean, pure, and limpid, or freed from their mucilaginous or gummy Part; and fitter for keeping, if put up into Glaſs Veſſels that are not too alcaline, and having cloſe Necks well fitted with ground Glaſs Stoppels, and ſet in a dry cold Place; but they loſe of their Quantity by this Rectification; much groſs Matter remaining behind in the Still, unable to aſcend by reaſon of its Tenacity. Their Virtues, alſo, are leſſen'd, which depend upon their Spirits, becauſe theſe remain in the Water uſed in the Diſtillation, and are, alſo, diſſipated in the Water which comes over. This Mr. *Homberg* ſhews by a laborious and inſtructive, tho' dear Experiment; for, upon diſtilling ſuch an Oil with freſh Water every time, ſix-and-twenty times over, he at length obtained only a fourth Part thereof; the other Three-fourths becoming an inſipid and tenacious Subſtance, whilſt the Water, four-and-twenty times cohobated with the Oil, was rendered exceeding ſharp, aromatic, ſaline, or ſpirituous.

9. When theſe pure Oils are without Addition, diſtilled in a Glaſs Retort, with a Fire carefully and gradually increaſed, they always exhale ſome Water; and afterwards become more clear, liquid, penetrating, and light; leaving at the Bottom of the Retort, after the Diſtillation is performed, a ſtrong Heat, a black, fixed, ſpongy, terreſtrial Matter: And, if the Operation be thus ſeveral times repeated, the greateſt Part of the Oil will be converted into what the Chymiſts call *Caput Mortuum*. The excellent Mr. *Boyle*, by this means, reduced a Pound of eſſential Oil almoſt wholly to Earth.

10. They who have diſtilled theſe Oils from pure Chalk in clean Veſſels, have found that by cohobating five Ounces of Oil eight times, upon fifteen Ounces of Chalk, it afforded only two Ounces and one Dram of Oil, two Drams and forty-five Grains of Salt, and half an Ounce of a ſtrongly ſaline Water, containing the volatile Salt of the Oil; according to the Obſervation of Mr. *Bourdelin*.

11. Again, theſe Oils diſtilled from Lime ſlaked in the Air, and afterwards made exceeding dry, are ſo changed, that a Pound of Oil being ſix times diſtilled, in the way of Cohobation upon freſh Quantities of Lime, with an extreme Degree of Fire, there came over fifteen Ounces and an half of Water, and one Ounce of Oil, according to the Obſervation of Mr. *Homberg*. Hence theſe Oils are found to conſiſt principally of elementary Water and Earth, a little Oil, Spirit, and Salt; and therefore grew from the Union of thoſe different Principles by the Action of the Fire: Whence Oil is not a ſimple elementary Body, but a Compound of ſeveral others. But whether this be really the Caſe, or whether Experiments may ſhew, that theſe Oils are rather tranſmutable, I do not take upon me to determine.

12. This may be ſaid with greater Certainty, that the more excellent of theſe Oils, being diſſolved in highly rectified Spirit of Wine, digeſted and diſtilled with a gentle Fire of one hundred Degrees, give out their native Spirit to the Spirit of Wine, leaving a tenacious oily Matter behind; which, being again treated in the ſame manner with freſh Spirit of Wine, affords more; and thus at laſt remains an indolent, ſcentleſs, inſipid, thick, and tenacious Body of Oil, perfectly deprived of all its Spirit. And, if even pure Water be long ſhook with theſe Oils, it takes to itſelf their Spirit, becomes rich therewith, and thus robs the Oil of its Virtue; ſo that, if the Operation be often repeated, it at length leaves the like indolent Remainder as the Spirit of Wine. And hence we are furniſhed with excellent Preparations, and learn, that theſe Oils are ſeparable into Spirit and Oil, a little Salt, much Water, and much Earth; at leaſt, that theſe are producible from them by Diſtillation. But nothing here ſeems ſtranger, than that Water ſhould remain ſo tenaciouſly mixed with theſe Oils, as not to be ſeparated from them by Diſtillation twenty times repeated.

13. Hence, again, it is confirmed to us by this whole Hiſtory, (1.) That the peculiar Taſte and Odour of Plants wholly reſide in their native Spirit. (2.) That the Taſte and Odour of diſtilled aromatic Waters is ſolely owing to this Spirit, as peculiar to each Plant. (3.) That eſſential Oils, alſo, have their reſpective Characteriſtics from theſe Spirits alone. (4.) That the volatile Oil of Plants principally ſerves for detaining theſe Spirits, and the fixed Oil for connecting the ſolid Parts together; whence the Difference of theſe two Oils is very great. (5.) That both the expreſſed and diſtilled Oils, before explained, are tolerably natural in the Plants themſelves. And, (6.) That the Difference of Oils is principally owing to their Spirits. *Boerhaave's Chymiſtry.*

Oils drawn by Expreſſion are from Nuts and Seeds; and thoſe for internal Uſe are to be drawn cold, becauſe the Fire, or any Warmth, which facilitates the oily Parts to flow out in greater Quantities, is ſuppoſed to communicate ſomewhat to ſuch Oils, that damages their Virtues, conſider'd as Softeners; and likewiſe forces out ſomewhat that gives them much fouler Scents, than when drawn cold; though it is probable, that there may be Purpoſes, for which ſome of theſe Oils are preſcribed, which might be better anſwer'd by the common way of Expreſſion with Warmth; as where the Oleum *Lini* is given for a Detergent, which it often is, the Property making it ſo is certainly more increas'd, by being drawn by Heat; and all the Objection in this Caſe is, that it is not ſo cleanly upon the Palate.

The common way of preſcribing theſe Oils internally, hath been alone, or in Linctuſes; but a much neater way is in Emulſion. But although the College direct theſe to be drawn from many Materials, yet there are none of them in Uſe, beſides that of ſweet Almonds and Linſeeds internally, and the Oleum Macis, Laurinum, and Palmæ, externally: Tho' the laſt is not taken notice of in the Diſpenſatories, but brought much into Practice by thoſe Travellers who have learned its Uſe in the Countries where it is made.

The next Claſs of Oils are ſuch as are made by Infuſion, or Decoction, wherein ſome Herb or Flower hath its Virtues drawn out by the Oil. Of thoſe in Uſe are the Oleum Roſaceum, Chamæmelinum, Hyperici, Liliorum, and Sambucinum; and theſe require ſomewhat different in their making, on account of ſome different Qualities in the Things themſelves; as the ſcented Flowers, particularly the Roſes, do better by long Inſolation, only in ſuch a Warmth as the Sun will give; becauſe much boiling would exhale their more fragrant Parts. But Oils impregnated with green Herbs, as Chamomile, and Elder, require long boiling, before they receive that green Colour which is deſired in them. It is to be obſerv'd concerning theſe things which require boiling, that no Oils will bear ſuch Management without turning black, any longer than there remains ſome aqueous Humidity, which is herein ſupply'd from the Juice of the Herbs: When, therefore, they grow criſp for want of farther Moiſture, the Proceſs is finiſh'd.

There are, likewiſe, directed, in the Diſpenſatory, many compound Oils, to be made, after the ſame manner, by Infuſion or Decoction; and the like Rules are to be obſerv'd in them, as in the ſimple ones. *Quincy's Prælect. Pharm.*

Directions *for preparing* Oils *from the* College Diſpenſatory.

Oleum Absinthii. *Oil of Wormwood.*

Take of Wormwood, one Pound; and as much Spring-water as will ſtand above it three or four Fingers-breadth; diſtil in a large Alembic, with its Refrigeratory, or in a Copper Body, with its Head and Neck winding in a ſpiral Form, through a Veſſel of Water. Let the Oil which comes out with the Water be ſeparated by a Glaſs Funnel, called the *Separatory*; and keep the Water ſo cleared of its Oil for another Diſtillation.

After the ſame manner are procured the Oils of Marjoram, Mint, Origany, Penyroyal, Roſemary, Rue, Savine, Sage, Savory, Thyme, *&c.*

After the ſame manner is prepar'd the Oil of Damaſk Roſes, of Chamomile and Lavender-flowers; as indeed from all other warm Herbs and Flowers.

From the ſame Procedure, alſo, are procured the Oils from the dry Peels of Oranges, Citrons, and Lemons: Although Oils may, alſo, be drawn from the ſame Peels, while green and ſucculent, by bruiſing and diſtilling with a ſufficient Quantity of Water, both in a greater Quantity, and as uſeful to any medicinal Purpoſes.

Oleum Absinthites.

This is made after the ſame manner as the Oil of Roſes, by a triple Maceration of four Ounces of the Tops of common Wormwood in three Pints of ripe Oil, adding three ſeveral times four Ounces of the Juice of Wormwood, and evaporating it again over the Fire, by a ſlow Boiling.

Oleum

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OLEUM AMYGDALARUM AMARARUM. *Oil of bitter Almonds.*

It is made after the ſame manner as that of the ſweet Almonds, unleſs that there is no Occaſion for blanching; nor can there ſo much Inconveniency ariſe from any Heat made uſe of to facilitate their Preſſure.* After the ſame manner is drawn the Oil of Haſel-nuts, Ben, Acorns, and of Nutmegs, from the Nut; as that of Mace, from the ſecond reticular Coat of the ſame Fruit.

OLEUM AMYGDALARUM DULCIUM. *Oil of ſweet Almonds.*

Take of ſweet Almonds freſh and dry, as many as you pleaſe; break and throw away the hard Shells, and blanch the Kernels; then beat them in a Stone Mortar, and by degrees preſs out the Oil, without any Help of Fire.

OLEUM ANETHINUM. See ANETHUM.
OLEUM ANTIMONII. See ANTIMONIUM.

OLEUM E BACCIS JUNIPERI. *Oil of Juniper-berries.*

Take two Parts of Juniper-berries; of Sea-ſalt, one Part: Bruiſe them together; and, with a ſufficient Quantity of Spring-water, diſtil next Day in the common Veſſels.

OLEUM CARYINUM.

It is made after the ſame manner from Walnuts.
OLEUM DE CASTOREO. See CASTOR.
OLEUM DE CASTOREO COMPOSITUM. See CASTOR.

OLEUM CERÆ. *Oil of Wax.*

With yellow Wax, melted one Pound, mix three Pounds of Brick-duſt; put them into a Retort, and draw off the Oil in a Sand-heat, and rectify that with new Brick-duſt: Or to the Oil juſt drawn off put double the Quantity of freſh Wax ſliced, and again diſtil with a Retort in a Sand-heat.

After the ſame manner are diſtilled Oils from fat Subſtances; as, alſo, from Gums and Reſins, that cannot be reduced into Powder.
OLEUM CHAMÆMELINUM. See CHAMÆMELUM.

OLEUM CHAMÆMELI CHYMICI. *Chymical, or Eſſential Oil of Chamomile.*

This is prepared in the ſame manner as other chymical, or eſſential Oils. The Plant affords but a ſmall Quantity of this Oil, as all do which ſeed little; and is, therefore, dear. It is uſed principally, as the Oil of Cloves, to correct Purgers; and ſometimes, alſo, it is given as a Carminative, in Boles, a Drop or two to a Doſe; and it does often good, by ſuddenly removing thoſe Flatuſes, which occaſion Stitches and Pains of the Side.

OLEUM CHEIRINUM SEU KEIRINUM. *Oil of Wall-flowers.*

This is made of the Flowers, and Oil, in the ſame manner as that of Dill.

OLEUM CHRYSOMELINUM.

This is made by the Expreſſion of Apricock-kernels. After which manner, alſo, is procured Oil from the Kernels of Cherries, Peaches, Pine-nuts, Piſtachio-nuts, and Plums; as, alſo, from the Seeds of Oranges, Hemp, Baſtard-ſaffron, called *Cnicus*, Citrons, Cucumbers, Gourd, Citruls, Dwarf-elder, Henbane, Lettuce, Linſeed, Melons, Poppies, Parſley, Horſe-radiſh, Rape, the greater Cataputia, Nicinus, (called *Oleum Cicinum*, *Recininum*, and *de Kerva*) Seſamum, called *Oleum Seſaminum*, Muſtard, and Grape-ſtones.

OLEUM COSTINUM. *Oil of Coſtus.*

Take of the bitter Coſtus-root, two Ounces; of Caſſia-wood, one Ounce; of the Tops of Marjoram, eight Ounces: Groſly bruiſe them together, and macerate them for two Days, in twelve Ounces of aromatic White-wine; and then, with two Pints of Olive-oil waſhed with White-wine, let them be boiled in *Balneo Mariæ* to the Conſumption of the Wine.

OLEUM EUPHORBII. See EUPHORBIUM.
OLEUM DE EUPHORBIO COMPOSITUM. See EUPHORBIUM.
OLEUM EXCESTRENSE. See EXCESTRENSE OLEUM.

OLEUM SIVE BALSAMUM SIMPLEX HYPERICI. *Simple Oil, or Balſam of St. John's Wort.*

This is made from the Oil of the Seeds of St. John's-worts, ground in a Mill, and preſſed out, with the Addition of the Flowers of St. John's-wort, duly macerated together.

OLEUM HYPERICI COMPOSITUM. *Compound Oil of St. John's-wort.*

Take of fragrant White-wine, one Pint; of the Tops of St. John's-wort, with the Flowers and Seeds, four Ounces: Let them be bruiſed, and macerated in a Glaſs-veſſel well ſtopped for three Days, in one Pound of Linſeed-oil, either in the Sun, or a Bath-heat, and then preſſed out: Let a ſecond and third Infuſion be made of the Tops of St. John's-wort, after the ſame manner, without the Wine; and, after the third Infuſion is boiled to a Conſumption of almoſt all the Wine, preſs it out; and add of Turpentine, three Ounces; and Saffron, one Dram; and then give it another gentle Boil, and put it by for Uſe.

This is very near copy'd after the *Auguſtan Diſpenſatory*; for the firſt of the College hath got a very different Sort, with the Addition of many Ingredients, that are of much more Trouble than Advantage: It is there called *Oleum Hyperici Compoſitum, ſeu Balſamum Magiſtrale Florent.* And it is continued down to the laſt but one, under the Title of *Oleum Hyperici magis Compoſitum*; yet it was hardly ever uſed, being an injudicious Contrivance: It is now juſtly rejected, and this only retained, which is not ſo tedious to make, and is well eſteemed by our Surgeons, for many Intentions of Conſequence; tho' for ſome Purpoſes they blame the Turpentine and Saffron, and certainly with good Reaſon.

OLEUM IRINUM. *Oil of Orris.*

Take of *Florentine* Orris-root, three Pounds; four Ounces of white Lily-flowers, with their yellow Heels cut off; fifteen Ounces of freſh Cypreſs-root; ſix Ounces of Elecampane; three Ounces of Bugloſs-root; two Ounces of Cinnamon; Spikenard and Benjamin, one Ounce. Bruiſe all as they require, and macerate them together, in the Sun, or any warm Place, in fifteen Pounds of old Oil, and four Pints and an half of Spring-water; and, after four Days and an half ſtanding in that manner, boil them *in Balneo Mariæ*, to the Conſumption of the aqueous Humidity; then ſtrain by a ſtrong Preſſure, and put by for Uſe.

Meſue hath given a very conciſe Preſcription of this, with nothing but the Orris-roots and Flowers, which the *Auguſtan* Collection hath preſerved; it is, alſo, in the firſt Diſpenſatory of the College, amongſt the ſimple Oils; but this Preſcription, which is, alſo, there, is from *Nicolaus Alexandrinus*; and, notwithſtanding it hath been continued down to the laſt Edition of the College, it hath yet been very little called for in common Practice, and hardly, I believe, ever made.
OLEUM LATERITIUM PHILOSOPHORUM. See LATER.
OLEUM LAURINUM. See LAURUS.

OLEUM LILIORUM. *Oil of Lilies.*

This is made in the ſame manner as the Oil of Roſes.

OLEA EX LIGNIS AROMATICIS. *Oils from aromatic Woods.*

As from Saſſafras, Rhodium, *&c.* the Woods muſt firſt be raſped, and then diſtilled.
OLEUM LUMBRICORUM. See LUMBRICUS.

OLEUM MAJORANÆ. *Oil of Marjoram.*

Take of the Herb a little bruiſed, four Ounces; of good White-wine, ſix Ounces; of Oil, one Pound: Let them be mixed together, macerated, and expreſſed, and freſh Herbs put in to the third time; and then the Wine evaporated by boiling, in a double Veſſel.

OLEUM MAJORANÆ CHYMICUM. See OLEUM ABSINTHII.

OLEUM MANDRAGORÆ. *Oil of Mandrake.*

Take common Oil, two Pounds; of the Juice of Mandrake-apples, or, in their Defect, of its Leaves, four Ounces;

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Ounces; of the Juice of white Henbane, two Ounces; of the Juice of black Poppy-heads, three Ounces; of the Juice of Violets, and young Hemlock, of each one Ounce; of Opium, and Storax, of each half an Ounce. Let the Juices, with the Oil, be expoſed to the Sun; and after ten Days ſtanding, boil them leiſurely to the Conſumption of the Juices; then ſprinkle in the Opium finely powder'd; and work in the Storax, firſt diſſolved in a ſufficient Quantity of Turpentine.

This is intended againſt Inflammations, to procure Sleep; and eaſe Pains of the Head, by waſhing the Temples and Noſtrils with it; but it is rarely preſcribed, and hardly to be met with ready made.

OLEUM MENTHÆ CHYMICUM. See OLEUM ABSINTHII.

OLEUM MYRRHÆ PER DELIQUIUM.

Boil Eggs till they are hard, ſplit them in the Middle, and take out the Yolks; fill the Cavity with fine Myrrh in Powder; place them upon little Sticks about an Inch and a Quarter long, three or four of them being prick'd into the Egg; ſet them in a clean Pan in a Cellar, or ſome ſuch moiſt Place; and there will drop from them into the Pan a Liquor, which is call'd *Oil of Myrrh*.

This is uſed only externally to take off Blemiſhes and Spots on the Skin, and is commended as excellent for ſuch Purpoſes.

OLEUM NARDINUM. *Oil of Spikenard.*

Take of Spikenard, three Ounces; of ſweet Oil, one Pound and an half; of aromatic Wine, and clear Water, of each two Ounces and an half: Boil them together in a double Veſſel, over a gentle Fire, often ſtirring them, till all the aqueous Humidity is evaporated.

OLEUM NARDINUM COMPOSITUM. *Compound Oil of Spikenard.*

Take of Spikenard, three Ounces; of freſh Marjoram, two Ounces; of Aloes-wood, Calamus Aromaticus, freſh Elecampane, Cypreſs, freſh Bay-leaves, of Mace, Camels-hay, and Cardamoms, of each one Ounce and an half. Let all groſly be beat together, and macerated for a whole Day in Water, and generous Wine, of each fourteen Ounces; and Oil of Olives, four Pounds and an half: Then with a ſlow Heat, and in a double Veſſel, evaporate the Wine and Water, ſo as to have the Oil perfectly by itſelf.

This is originally aſcribed to *Meſue*, and hath hardly been omitted in any Officinal Diſpenſatory ſince his Time: Tho' where here is put Cypreſs, in the *Auguſtan*, is Mace, and, in the firſt Edition of the *London*, *Indian* Leaf: But ſuch are not Alterations of any great Conſequence. It is ſeldom uſed or made.

OLEUM NICOTIANÆ. *Oil of Tobacco.*

Take of Tobacco-juice, and common Oil, each equal Parts; and boil them in a Bath-heat, *S. A.*

OLEUM PAPAVERIS, *Oil of Poppies,*

Is made of the Flowers, Heads, and Leaves of Garden Poppies, and Oil of Olives, in the ſame manner as the OLEUM ANETHINUM.

OLEUM ROSACEUM. *Oil of Roſes.*

Take of the exungulated red Roſes not quite blown, and bruiſed in a Marble Mortar with a wooden Peſtle, four Ounces; of clean Oil of Olives, one Pound: Expoſe them to the Mid-day Sun, in a Glaſs Veſſel well ſtopped, for a whole Week, and ſhake them together every Day; then gently ſimmer in a Bath-heat, and preſs out the Oil: Put in freſh Roſes, which manage after the ſame manner; and repeat the Proceſs a third time; and then let them ſtand together for forty Days; at the Expiration of which, ſet by the Oil for Uſe, without preſſing out the Roſes.

This is much the ſame as the *Oleum Roſatum Omphacinum* of the *Auguſtan* Diſpenſatory; and the firſt of the College, and the *Oleum Roſatum Compoſitum* of the *Auguſtan*, and the *Oleum Roſatum Completum* of the firſt College Diſpenſatory, both aſcribed to *Meſue*, differ from it ſo little, that they have not been thought worth any Notice here.

OLEUM RUTACEUM, *Oil of Rue,*

Is made of the bruiſed Herb, and ripe Oil, as the Oil of Roſes.

OLEUM SABINÆ, *Oil of Savine,*

Is made after the ſame manner as the foregoing.

OLEUM SAMBUCINUM, *Oil of Elder,*

Is made from the Flowers and Oil, as the Oil of Roſes.

OLEUM E SEMINIBUS ANETHI. See ANETHUM.

Oils from the Seeds of Aniſe, Caraway, Cumin, Carrot, Fennel, Parſley, Saxifrage, and others, are prepared like the Oil of Dill.

As, alſo, the aromatic Oils, from Cinnamon, Cloves, Mace, Nutmegs, Pepper, and others, which for theſe Purpoſes are not to be powder'd, but only cut ſmall, and ſlightly bruiſed.

OLEUM SIVE SPIRITUS TEREBINTHINÆ. See TEREBINTHINA.

OLEUM SUCCINI. See AMBRA.

OLEUM SULPHURIS. See SULPHUR.

OLEUM TARTARI PER DELIQUIUM. See TARTARUS.

OLEUM VITRIOLI. See VITRIOLUM.

OF DISTILLED OILS, AND THE CAUTIONS TO BE OBSERVED IN THEIR DISTILLATION.

'Tis certain, that there is a pinguious and inflammable Principle, by the Chymiſts called Sulphur, lodged in all mixed Bodies which are eaſily changed and deſtroyed; and that this Principle is the Matter of their Inflammability, and the Cauſe of their principal Virtues. But it is ſufficiently evident from various Phenomena, and a great Number of Effects, that this Principle of mixed Bodies is not, in each, of one and the ſame, but of vaſtly different and even diſagreeing Natures; for, in ſome Bodies, this ſulphureous Principle is of a Nature ſo highly fixed, and temperate, as to act on the Body without any Heat, as we principally obſerve in the Oils expreſſed from Seeds, or in the Fat and Lard of Animals; all which, tho' inflammable, yet, becauſe they are deſtitute of that volatile and ethereal Principle, do but little heat or alter the Body. But 'tis far otherwiſe with theſe Oils, which have a ſtrong Smell and Taſte; and which, upon the Application of a ſomewhat violent Heat, are evaporated into the Air, or diſtilled; ſince theſe, when uſed in a very ſmall Quantity, exagitate the Body with a violent Heat and Motion. Oils of this kind are principally found in the Vegetable Kingdom; for from Animals, and their Parts, ſuch hot, ethereal, and ſubtile Oils of a ſtrong Smell, cannot be obtained by Heat alone, nor extracted from them when macerated in Water, by means of an Alembic, or any other chymical Inſtrument: Of the ſame kind are thoſe Bodies with which we are ſupplied from the Mineral Kingdom; for from ſuch bituminous Subſtances, Amber, for Inſtance, Jews-pitch, and common Sulphur, no ſubtile Oil can be obtained by a moiſt Diſtillation; but theſe hot, volatile, and odorous Oils, are only to be obtained from the Vegetable Kingdom, tho' all Plants and Vegetables do not yield ſuch an Oil, but only ſuch of them as have a ſtrong and permanent, and not a ſlight and ſuperficial Smell, as moſt Flowers have; for 'tis to be laid down as a Maxim in Chymiſtry, that thoſe Vegetables, which, by Attrition and Heat, diffuſe a ſtrong Smell, by a moiſt Diſtillation, afford a ſubtile Oil; ſo that the more permanent and ſtrong the Smell is, the larger Quantity of Oil is afforded; and the more ſweet and fragrant it is, the more grateful and agreeable the Oil, alſo, is. And the oppoſite of this holds true.

For this Reaſon we may, from the penetrating Smell, form an Eſtimate of the Quality of the diſtilled Oil, and from that judge of the Degree of Smell. That Maxim of the Chymiſts is therefore true, That Sulphur is, as it were, the Parent and Principle, from which Smell proceeds; but 'tis to be obſerved, that many Bodies, which affect the Tongue with a ſtrong and acrid Taſte, yet afford little or nothing by Diſtillation; becauſe they are deſtitute of Smell. This is ſufficiently evinced in the Root of Arum, Ginger, Pepper, Zedoary, Muſtard, and Water-creſſes: All which are of a very ſtrong Taſte; for theſe, when ſubjected to Diſtillation, afford little or no Oil: An infallible Proof, that the Principle of Taſte is different from that of Smell; ſince the Matter of the latter is volatile and moveable, whereas that of the former is fixed, tho', at the ſame time, penetrating. Hence it follows, that Medicines, or

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Mixtures, of a ſtrong Taſte, without any Smell, ſuch as Pepper, Ginger, and Muſtard, do not heat the Body ſo much, nor throw its Humours into ſuch ſtrong Commotions, as thoſe Subſtances, which, having a ſtrong Smell, yield a large Quantity of Oil in Diſtillation: Hence we juſtly infer, that fragrant Aromatics, ſuch as Cloves and Cinnamon, are of an hotter Nature than Ginger or Pepper, which are abſolutely deſtitute of Smell.

But in ſome Vegetables there are Oils of almoſt three different Kinds. The firſt is mild, and is that which is generally expreſs'd from their Seeds; the ſecond is that obtain'd by moiſt Diſtillation; and the third, that yielded by dry Diſtillation, or Combuſtion: For from the Seeds of ſuch Vegetables, thoſe of Baum, for Inſtance, Origanum, and Hyſſop, a temperate Oil, with little Smell, is expreſs'd. From the Leaves of theſe Herbs and Flowers there is diſtil'd with Water, from an Alembic, an Oil of an highly fragrant Smell; and what is left in the Alembic, when dried, and ſubjected to a dry Diſtillation, yields an empyreumatic Oil, of an acrid Taſte, and fetid Smell; for we are carefully to diſtinguiſh between theſe Oils, which are eaſily by a ſlight Fire, and ſtrong Heat alone, obtain'd in the Form of Exhalations only; and thoſe which, by a ſtrong and dry Heat, are extracted from mixed Bodies; ſince the former rather conſtitute the fluid Parts, which nouriſh the Plant, and circulate thro' its Veſſels; whereas the latter are obtain'd from the ſolid Parts of the Plant, the Texture of which is far more firm. Hence they require a ſtronger Degree of Heat, or a briſker Fire, for their Extraction. As for the Diſtillation of ſubtile ethereal Oils, the following Directions are to be obſerv'd.

From Flowers and Herbs gently and gradually dried in the Air, more Oil is obtain'd, than if they were humid, and as yet recent from the Earth. Thus, two Pounds of the dried Flowers of Spike yield an Ounce of diſtil'd Oil; whereas, if they are diſtil'd when recent, they hardly yield above half of that Quantity: The ſame Obſervation, alſo, holds good with reſpect to Baum, Sage, Marjoram, and Mint. The Reaſon is plainly this: By the gentle Drying, the aqueous Moiſture is only carried off, thro' which the reſinous Particles were diſpers'd; ſo that the former being remov'd, the latter are more united, and more quickly join with each other; and, becauſe from two Pounds of the moiſt Plant we obtain no more than from one of the dried Plants, and becauſe a little of the ſubtile Oil is evaporated, it follows, that more Oil muſt be obtain'd from the dry than from the moiſt Plant. But 'tis to be obſerv'd, that if the Herbs are dried by an exceſſive, or too long protracted Heat, the Oil obtain'd is not only in a ſmaller Quantity, but, alſo, of a thicker Conſiſtence, and more ſaturated Colour; becauſe, by the immoderate and long-continued Heat, the more ſubtile Parts of the Oil are too copiouſly exhal'd, and diſſipated in the Air. Beſides, there is this Difference between Oils obtain'd from recent Plants and Flowers, and ſuch as are yielded by them when dry, ſince the former are of a more mild and grateful Smell, and a fainter Colour, tho' their Quantity is leſs; whereas the Oils obtain'd from them, when dried, are more penetrating, of a deeper Colour, and a leſs grateful Smell.

Before Diſtillation, the Herbs to be diſtil'd muſt be macerated in Water. But, for this Purpoſe, we are to uſe River-water, but not Spring-water, which is too hard; nor Rain or Well-water, which is too thin; ſince the former is unfit for Solution and Extraction, whilſt the latter has a ſtrong Tendency to Putrefaction. It is, alſo, to be obſerv'd, that three Parts of Water are to be us'd for one Part of the Subſtance to be diſtil'd.

A few Handfuls of common Salt are to be added. Thus, for Inſtance, to ten Quarts of Water we may add three or four Handfuls of Salt: And this Caution is very neceſſary, becauſe the common Salt not only aſſiſts the Extraction of the oleous Parts, but prevents Putrefaction. Beſides, by this means the Water is rendered heavier, in conſequence of which it prevents the Deſcent of the Subſtance to be diſtil'd, leſt, ſubſiding to the Bottom of the Alembic, it ſhould be burn'd. In my Opinion, common Salt, alſo, contributes to the Depuration of the Oil, and lays a Foundation for its being diſtil'd clear, and not turbid. Others adviſe the Addition of an alcaline Salt, Pot-aſh, or Tartar; but I can by no means approve of this, becauſe Tartar is with Difficulty diſſolv'd; and alcaline Salts diſpoſe to Putrefaction, which in Diſtillation is to be carefully guarded againſt.

The Maceration is not to be too long, and in the Summer-time is only to be continued for twenty-four Hours, becauſe, if the Mixture ſtands longer, it approaches to Putrefaction; eſpecially if the Herbs are turgid with a penetrating Oil, ſuch as Meat and Marjoram particularly are.

In the Diſtillation of Oils, three Parts of the Alembic are to be fill'd, and only one left empty; for, when too great a Space is left, the Oil aſcends with Difficulty, and, if it is urged by too ſtrong a Fire, loſes its ſweet Smell; nor in this Caſe is the Oil ſo eaſily rais'd, as is commonly imagin'd; but, if the Alembic is too full, it readily happens, that, during the Action of a briſk Fire, the Mixture either runs over the Alembic, or the ſlimy Particles of the Herbs are, at the ſame time, elevated: Hence the Oils are turbid, as if Slime had been put into them; and, tho' in the Beginning, a conſiderable Degree of Heat is requiſite, in order to make the Water boil, ſince without this Circumſtance the Aſcent of the Oil is difficult; yet the Diſtillation is afterwards to be carried on by a moderate Heat, leſt the Oil ſhould be exhal'd like Smoke from the Beak, and diſſipated in the Air. In managing the Fires we are farther to obſerve, that a flaming Fire is at firſt neceſſary, whereas afterwards one of live Coals is ſufficient. The Diſtillation may be finiſh'd in four or five Hours, nor is it expedient to protract it longer; becauſe the Oil, which is wanted, firſt aſcends, and then a Water, which as it is not deſtitute of Virtue and Smell, is to be us'd in a freſh Diſtillation.

As the Oils to be diſtil'd differ much from each other with reſpect to their Texture, Weight, and Degrees of Subtility; ſo, in diſtilling each, particular Cautions are requiſite; for ſuch as are heavy, and ſubſide to the Bottom, ſuch as the Oils of Cloves, Cinnamon, and Saſſafras-wood, as, alſo, thoſe Oils which are condens'd in the Cold, ſuch as the Oils of Aniſe, which in Weight ſurpaſſes other Oils, thoſe, for Inſtance, of Lavender, or Marjoram, ſince our Statical Inſtrument, which deſcends in other Oils, floats in this; ſuch Oils are to be diſtil'd from a lower Alembic, and with a greater Degree of Fire, than the more light and ſubtile Oils.

Becauſe Oils differ with reſpect to their penetrating Qualities, their ſtrong Smells, and powerful Virtues, the Oils of Marjoram, and Roſemary, on account of the copious volatile and acrid Salt they contain, ought to be diſtil'd with a far more gentle Heat, than the Oil of Mint, which requires a gentler Heat, than the Oil of Spike, which, again, requires a ſtill more moderate Fire, than Oil of Lavender, which is highly ſubtile; for, if theſe Oils are urged by too intenſe an Heat, they loſe their grateful Smell, and genuine Taſte; and not only acquire an acrid Taſte, and a ſtrong Smell, but, alſo, aſſume a more yelloviſh and browniſh Colour; for it can hardly be imagin'd, how much the Texture of Oils is chang'd, only by the Degrees of Fire.

There is, alſo, a conſiderable Difference in the Diſtillation of Oils, with reſpect to their Colour, Conſiſtence, and the greater or ſmaller Quantity yielded by the Things to be diſtil'd; for, with reſpect to Colour, the Oil of Cloves is yielded very white; as, alſo, the Oils of Saſſafras, Wood, and Cinnamon, which, however gradually, and eſpecially when expoſed to the open Air, in a Glaſs which is not full, change their Colour, and generally become yelloviſh; and, at laſt, rediſh. Oil of Lavender is highly limpid; that of Spike is a greeniſh-yellow Colour; and the Oils of Mint and Marjoram are yellow; but, when diſtil'd by too intenſe an Heat, they are rediſh; the Oil of Rue is of a browniſh Colour, and that of Wormwood of a darkiſh-green Colour. The Oil obtain'd from Chamomile-flowers, without the Addition of other Subſtances, is of a beautiful bluiſh Colour; as, alſo, the Oil of Yarrow-flowers. But this grateful bluiſh Colour, eſpecially when the Oils are expoſed to the open Air, is, in Proceſs of Time, chang'd, totally deſtroy'd, and degenerates into that of a Dark-yellow.

Oils, alſo, differ with reſpect to their Conſiſtences; for ſome are yielded, not in a thin and liquid Form, but float coagulated like Butter, which holds principally in Oil of Roſes; or firmly adhere, like a thick Magma, to the Sides of the Glaſs, or the leaden Pipes, thro' which they paſs; ſo that they cannot without Difficulty, and an Infuſion of rectified Spirit of Wine, be ſeparated, as we may principally obſerve in the Oil of Wormwood, and that obtain'd from the Tops of Yarrow: And other Oils, or Spirits, diſtil'd in the ſame Veſſels, muſt have a foreign Colour, Taſte, and Smell, unleſs the Veſſels are previouſly well waſhed.

In the Diſtillation of Oils there is, alſo, a conſiderable Difference with reſpect to the Quantities yielded; for ſome Vegetables afford a large Portion, others a moderate Quantity, and others but very little. Among all the Productions of the Earth, I know no Simple, which, beſides its Turpentine, yields a larger Quantity of Oil, than Savine; ſince one Pound of it, in the Alembic, yields almoſt three Ounces of Oil. Hence, from two Pounds of it, if the Diſtillation is duly manag'd, at leaſt five Ounces of Oil may be obtain'd. Savine is ſucceeded by Nutmegs, a Pound of which yields one Ounce of Oil, which, by Diſtillation from an Alembic, is rais'd, whilſt, at the ſame time, there is left at the Bottom a large Quantity of Oil, which does not paſs over the Helm, but is generally expreſs'd from the Nutmegs. Hence 'tis obvious, that theſe Nuts abound with a large Quantity of mild and fix'd Oil, which is obtain'd by Expreſſion, as, alſo, with a ſubtile Oil procur'd by Diſtillation.

Among Flowers, thoſe of the Spike abound moſt in Oil. Hence, four Pounds of theſe Flowers, when dried, afford full three Ounces of Oil; but a ſmaller Quantity is obtain'd from the Flowers of Lavender, ſince four Pounds of them yield only one Ounce of Oil, which, however, is of a far more grateful and

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fragrant Smell, than that of Spike. Four Pounds of the Leaves of Mint, gently dried, yield an Ounce and an half of Oil; whilſt, from an equal Quantity of the Leaves of Marjoram, hardly one Ounce can be obtain'd. From fifty Pounds of Calamus Aromaticus, I only obtain'd two Ounces of Oil: There is but a very ſmall Quantity of Oil in Mother of Thyme; neither is a large Quantity of Oil afforded by Rue: And tho' this Plant is of an acrid Taſte, and penetrating Smell, yet ten Pounds of it yield only half an Ounce, or two or three Drams, of Oil. Hence 'tis certain, that in this Simple the ſaline is ſuperior to the oleous Principle.

The Flowers of common and Roman Chamomile yield but a very ſmall Quantity of Oil; for which Reaſon it muſt, when genuine, be ſold at a pretty dear Rate; for the Oils of that kind, as commonly ſold, are almoſt all adulterated: The Calamus Aromaticus, alſo, tho' of a pretty acrid Taſte, affords but little Oil

The Four carminative Seeds, which are Aniſe, Dill, Caraway, and Fennel, yield a large Quantity of Oil; but thoſe commonly ſold are generally adulterated.

We are, alſo, to advert to the ſpecific and diſtinguiſhing Taſte and Smell of ſome Oils. Thus, the Oils of Thyme and Savory are ſo acrid, as to corrode the Noſtrils. The Oil of Wormwood, which is highly bitter, fills the Head with a fetid Vapour; and 'tis to be obſerv'd, that this Oil, when diſtil'd from green Wormwood, is green; but of a browniſh-yellow Colour, when obtain'd from old Wormwood. The Oil of Chervil, in Taſte, reſembles that of Fennel; Oil of Tanſey, in Smell, greatly reſembles the Herb from which it is obtain'd.

It is in a particular manner to be obſerv'd, that Plants, and their various Parts, whether Seeds, Flowers, or Leaves, do not in all Seaſons, and at every Age, yield equal Quantities of Oil; for if Mint, Thyme, Rue, Baum, or Marjoram, when recent, tender, and young, are ſubjected to Diſtillation, they yield little or no Oil; but they muſt be arriv'd at a juſt Degree of Vigour and Perfection; when, for Inſtance, they begin to riſe into ſmall Heads, or Flowers: And, as, in old Animals, the Strength is much impair'd and diminiſh'd, ſo, alſo, old Plants loſe a great deal of their Virtues, and yield but little Oil. Hence 'tis obvious, that the perfect Strength and Maturity of Plants conſiſts in the Abundance of the Oil they contain, and, which is either large, or ſmall, according to the Period of their Age.

'Tis, alſo, to be obſerv'd, that the Seaſons and Conſtitutions of the Year contribute greatly to the obtaining a larger or ſmaller Quantity of Oil; for I have often obſerv'd, that if the Spring or Summer are too moiſt, or rainy, Herbs, and their Flowers, Spike, for Inſtance, or Lavender, do not yield ſo large a Quantity of Oil, as when theſe Seaſons are moderately warm and dry: Hence we learn, that a due Temperature, Purity, and Dryneſs of the Air and Weather, contribute greatly to bring Vegetables to their due Maturity and Perfection.

Of the Adulteration of diſtil'd Oils.

'Tis a ſhameful, tho' true Aſſertion, that the true and genuine Oils of Plants are rarely to be had in the Shops; ſince, in order to increaſe their Weight and Price, 'tis cuſtomary, in diſtilling them, to mix with them ſome pinguious or other Subſtances of little Value. As for the dear aromatic Oils exported from *Holland*, 'tis certain from Experience, that they are almoſt all adulterated, as is obvious in the Oils of Cinnamon, Cloves, Nutmegs, and Mace. But in theſe the Fraud is eaſily detected by pouring Alcohol of Wine, or highly rectified Spirit of Wine, upon them; for this Liquor immediately reſolves and imbibes the Particles of the purer Oil, leaving in the Bottom a large Quantity of expreſs'd Oil; either of Almonds, or Ben-nuts. But the more ſkilful of the Chymiſts have an artful Method of concealing this Piece of Fraud; for they diſſolve pure Oil of Cinnamon, or Cloves, by adding an equal Quantity of highly rectified Spirit of Wine, which may be ſo prepared, that one Part of the Spirit may abſorb one Part of the Oil, whilſt the Taſte remains, and the Smell continues ſufficiently ſtrong and penetrating, ſo that the Impoſition is with Difficulty diſcover'd. But this Piece of Fraud is, alſo, quickly diſcover'd, if theſe Oils are poured into common Water; for then the Water immediately becomes milky, which Effect is not produc'd by pure Oil, when put into cold Water, and left to itſelf. There is ſtill another Method of adulterating the Oils of Plants, by mixing Oil of Turpentine, or Pine, with the Herbs to be diſtil'd; and this Piece of Fraud is moſt commonly committed in preparing cephalic Oils from Plants, which abound with a balſamic Reſin, ſuch as Mint, Origanum, Sage, Roſemary, Marjoram, Savory, Thyme, Mother of Thyme, the Flowers of Spike and Lavender, and Baſilicon; from which, by the Addition of theſe Oils, they obtain a large Quantity of Oil, tho' of a bad Kind, and inconſiderable Virtues; but ſuch Oils, if the Plants are recent, retain their ſpecific and diſtinguiſhing Taſte and Smell. But this Piece of Fraud is eaſily detected; for, if ſuch Oils are kept for ſome time, they loſe their grateful Smell, and the diſagreeable Odour of the Turpentine remains. But there is ſtill a more expeditious Method of diſcovering this Fraud; for if a Piece of Cloth macerated in ſuch Oil is put in a warm Place, or expoſed to an hot Furnace, the ſubtile Fragrance is immediately exhal'd, and the Smell of Turpentine diſcovers itſelf.

Beſides, the cephalic Oils, adulterated with Turpentine, or Oil of Pines, are more limpid than the genuine Oils, which are of a deeper Colour. There is, alſo, another Method of detecting this Fraud; which is, when the Letters of the Signature put upon the Mouth of the Glaſs become ſucceſſively pale, which does not happen with the genuine Oils; for the Effluvia of the Turpentine contain a ſubtile Acid, which, in Proceſs of Time, deſtroys the Colour of the Ink. Some, in the Diſtillation of theſe Oils, inſtead of Turpentine, add Seeds which contain a large Quantity of pinguious Juice, ſuch as thoſe of Poppies; and by this means that thick Oil, which at other times is generally expreſs'd, with Difficulty paſſes the Helm, is rais'd and diſtil'd in Conjunction with a Portion of ſubtile and ethereal Oil: And this is the uſual Method of adulterating the Oil of Rue; for tho' Rue is of a ſtrong Taſte, and penetrating Smell, yet there is hardly any Plant, which affords a ſmaller Quantity of Oil: But pure Oil of Rue is eaſily diſtinguiſh'd from that which is adulterated, ſince, when genuine, it does not become thick and coagulated, when expos'd to the Cold; but is inſpiſſated, when it is adulterated with any expreſs'd Oil. The Oils of Chamomile, and the Tops of Yarrow, when pure and recent, are of a beautiful bluiſh Colour, which is afterwards chang'd into that of brown; for, if this bluiſh Colour of the Oil of Chamomile-flowers remain above a Year, *'tis* a ſure Sign, that it is adulterated; for 'tis cuſtomary to mix with it Oil of Turpentine, which is of a deep-bluiſh Colour, on account of the Tincture it receives from the Copper of the Veſſel. 'Tis of great Importance to the Phyſician, to be able to diſtinguiſh genuine from adulterated Oils; for theſe balſamic and cephalic Oils not only loſe much of their Efficacy, but, alſo, acquire a foreign Quality, by being adulterated; and 'tis ſufficiently known, that all terebinthinaceous Subſtances violently exagitate the Maſs of Blood and Humours, and create an intenſe Heat in the Body.

Of ſome rare diſtil'd Oils.

In the Shops there are a great many Oils, moſt of which may be obtain'd by Diſtillation; but ſome of them are yielded in ſo ſmall Quantities, and are ſo rare, that they are ſold at very high Prices. But this Circumſtance ought not to deter the Phyſician from preſcribing them, ſince they are of ſingular Efficacy in preſerving and reſtoring Health.

Among the rare Oils, eſpecially thoſe obtain'd from the Woods, we ſhall firſt conſider that of yellow Sanders, which, on account of its grateful Taſte and Smell, and the large Quantity of Reſin it contains, deſerves to be more us'd in Medicine, than it has hitherto been; for it not only yields a very elegant Tincture, with highly rectified Spirit of Wine; but, alſo, the Wood itſelf, when raſp'd down, and macerated in Water for a conſiderable time, with the Addition of common Salt, affords an elegant Oil, of an excellent Taſte, and admirable Virtues; ſince in Smell it reſembles the Oil of Amber; a certain Sign, that it is poſſeſs'd of a cordial Quality: It is moſt commodiouſly diſſolv'd in ſome rectified Spirit; ſuch as that of Roſes, or white Lilies, which are commodiouſly mix'd with corroborative, cephalic, and ſtomachic Medicines.

From odorous and ſweet-ſcented Aloes-wood is prepared an Oil of a thick Conſiſtence, of a whitiſh Colour like Camphire; for this Purpoſe about ten Pounds of Aloes-wood are to be raſp'd down, triturated, and, after a ſufficient Maceration in Water, ſubjected to Diſtillation in a pretty large Still: Upon which, a ſmall Quantity of a fragrant and delicate reſinous, or rather oleous Subſtance, is obtain'd; but no more than half an Ounce was obtain'd from the ten Pounds of Aloes-wood. This Oil is quickly diſſolv'd in Alcohol of Wine, and is an incomparable Medicine for reſtoring Strength, and corroborating the Stomach.

Among the rare and precious Oils, we may juſtly reckon the Oils of Scurvygraſs, and *Syrian* Marum. A ſmall Portion of the former is only obtain'd from a large Quantity of Scurvygraſs; but it is ſo highly volatile, that it is with Difficulty preſerv'd in Glaſſes, and muſt be carefully kept from evaporating in the Air; for which Purpoſe ſome cork the Glaſs well, and immerſe them in Water, partly to guard againſt the Heat, and partly to prevent the Acceſs of the Air: It is, alſo, of ſo penetrating a Taſte and Smell, that one ſmall Drop of it communicates a ſtrong Taſte to an Ounce of the Spirit of Wine; or a ſmall Drop of it diſſolv'd, and pour'd into a Quart of Wine, imparts ſo ſtrong a Taſte and Smell of Scurvygraſs to it, that it acts ſtrongly on the Noſtrils, and affects all the internal Parts of the Head. This Oil is, alſo, very heavy; for, like Oil of Cloves and Cinnamon, it ſubſides in Water. It is ſold at a great Price, ſince in *England*, where large Quantities of it are prepar'd, one Ounce of it is ſold for Eight Crowns.

The next moſt conſiderable Oil is that of true Marum, a Plant which contains an highly acrid, volatile, and oleous Salt; for which Reaſon its Oil, in Taſte and Smell, is hardly inferior to that of Scurvygraſs, neither is it ſold at a cheaper Rate.

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Rate. Among the rare and little known Oils we may, alſo, reckon that of Baſilicon, which, on account of its penetrating fragrant Smell, and its cephalic and nervous Virtues, is far ſuperior to the Oil of Marjoram, tho' much dearer by reaſon of the Scarcity of Baſilicon.

True Oil of Baum, which is at preſent often miſtaken for Oil of Camels-hay, on account of the Similitude of their Smells, may, alſo, be reckon'd among the rare and precious Oils, becauſe a large Quantity of Baum yields but a very ſmall Portion of Oil. Its Scarcity is, however, compenſated by its uncommon Efficacy in removing Diſeaſes of the Head, and corroborating the nervous Syſtem.

Among the Oils of this kind, we may, alſo, reckon that of the wild Cinnamon, which is not much known in the Shops. This Oil is, alſo dear, becauſe a large Quantity of the Bark yields but very little of it.

Among the Oils which are but little known, we may, alſo, reckon that of the *Ranunculus eſculentus*, a domeſtic and Kitchen Herb, whoſe Oil is poſſeſs'd of a ſubtile and penetrating Taſte, and a grateful Smell; and as the Water of this Herb is highly efficacious in an Aſthma, eſpecially of the moiſt kind, ſo, in this Diſorder, the Virtues of its Oil are more conſpicuous, eſpecially when mixed with Sugar, and exhibited.

From black Cumin-ſeeds there is, alſo, an Oil prepar'd, which is not much known, but which is, of all others, the moſt powerful Carminative.

The Oil of *Cretan* Origanum, inſtead of which the Oils of Thyme or Savory are generally us'd, by its acrid Taſte and Smell, ſtrikes the Noſtrils ſtrongly, operates as an Errhine, and diſſolves Phlegm: Some highly eſteem'd this Oil, as an Arcanum for curing the Tooth-ach.

There are, alſo, other rare and precious Oils brought from the *Indies*, ſuch as the Oil of the Flowers of Cananga, the aromatic Oil of Cajeputum, the Oil of Cedar, the Oil of Culilabanum, the Oil of *African* Hypericon, the Oil of Kikekunemali, the Oil of Spikenard, Oil of Camels hay, the Oil of Malabathrum, and the Oil of Camphire prepar'd with Cinnamon, each of which has its proper Uſes and Virtues.

Among the rare, precious, and uſeful Oils, we may, alſo, reckon that obtain'd by Expreſſion from recent Orange-peel; as, alſo, the Oil of Mace by Expreſſion, and that obtain'd from the Flowers of the Orange-tree duly diſtil'd.

Some Cautions to be obſerv'd in the Diſtillation and Preſervation of Oils.

It frequently happens, that Oils, in Diſtillation, are yielded either too acrid, or of too deep a Colour, eſpecially if they are urg'd by too ſtrong a Fire; and this is principally to be obſerv'd, when theſe Herbs which abound with a large Quantity of acrid Salt, ſuch as Thyme, Savory, Marjoram, and *Cretan* Origanum, are ſubjected to Diſtillation; for, if the Diſtillation is accelerated by too briſk a Fire, the Oils not only loſe their grateful Smell, but, alſo, acquire a browniſh or rediſh Colour, which by no means happens, if the Diſtillation is carried on by a moderate Fire.

Hence we learn, that exceſſive Heat is of great Efficacy in changing the Texture of Oils: And this Obſervation is applicable to the human Body, ſince we ſee, that, by the intenſe Heat in Fevers, the temperate and ſulphureous Parts of the Blood and Humours are ſurpriſingly agitated; ſo that it is not to be wonder'd at, if the oleous and temperate Principle of the Blood is converted into an highly ſaline ſulphureous Matter, which, being diſcharg'd by Stool and Urine, renders the Fæces bilious and yellow, and the Urine intenſely red.

'Tis not to be doubted, but, if right Meaſures are taken, thoſe Oils, which, by too intenſe an Heat in Diſtillation, have, in a great meaſure, loſt their grateful Taſte, their Fragrance, and their Colour, may, by Rectification, be reduc'd to a due Degree of Perfection: But if the Rectification is attempted by putting the Oils in a Glaſs Retort, and carrying on the Diſtillation by a Sand-heat, we find our ſelves deceiv'd, ſince, by this means, theſe Oils have an ungrateful empyreumatic Smell, and are ſo far from acquiring their due and grateful Sweetneſs, that they are rather rendered more acrid. The Rectification is, therefore, to be made in another manner: Thoſe Oils, for Inſtance, are to be mixed with common Salt, with which they are to be ſtrongly triturated, taking three Parts of Salt to one of Oil: Then, adding a ſufficient Quantity of Water, the Rectification is to be made from an Alembic, by which means there is yielded an Oil far clearer, and of a more grateful Colour; and what is ſurpriſing is, that in the Bottom of the Alembic there is found a thick black Maſs, which firmly adheres to the Hands, and the Quantity of which is the greater, the thicker and deeper-colour'd the Oils are: I have often obſerv'd, that Oil of Marjoram contain'd more of this reſinous Subſtance than other Oils, ſince an Ounce of it generally affords a Dram of ſuch a Subſtance: The Oils of Mint, Spike, and Lavender, thus treated, do not leave ſo great a Quantity of Reſin; but the Oils of Thyme and Savory afford a large Quantity of it: We, alſo, find that old Oils, and ſuch as are of a groſs Conſiſtence, yield a large Quantity of this Reſin.

This Experiment ſufficiently evinces, that Oils are nothing but ſubtile and liquid Reſins cloſely united with Phlegm, and ſome ethereal Spirit; as, alſo, that thoſe Oils are hotteſt, which contain the largeſt Quantity of Reſin: For which Reaſon ſuch Oils ſhould always be cautiouſly preſcrib'd internally by the Phyſician, becauſe all ſubtile oleous Subſtances induce an intenſe and long-continuing Heat on the Humours of the human Body.

'Tis, alſo, to be obſerv'd, that Oils, render'd more pure and limpid by this Rectification, are not ſo ſoon diſſolv'd by rectified Spirit of Wine, as they were before; but for this Purpoſe they require highly rectified Spirit of Wine, ſince they are form'd into ſmall Globules, and with great Difficulty incorporated with common Spirit.

'Tis, alſo, certain from Experience, that ethereal, limpid, and fragrant Oils become thicker by Age, and loſe a great deal of their Fragrance; and, if we want to reſtore this Fragrance, we muſt infuſe them with recent Herbs, and Leaves, and reiterate the Diſtillation from an Alembic; by which means they are again impregnated with that ſubtile, ſweet, and ſpirituous Principle, which they had loſt by exceſſive Age.

From this Experiment we learn, that, beſides a ſulphureous, ſaline, earthy, or aqueous Principle, there is, alſo, another in Oils, which the Antients call'd Spirit, which is highly active, of a thin ethereal Subſtance, and neceſſary to preſerve the natural Craſis and Texture of the Oil.

This Spirit is principally diſpos'd to Evaporation, by the Heat of the Air; and, when this Spirit is loſt, we find that the Oil is greatly chang'd in its Conſiſtence, Smell, Taſte, and Virtues. If, therefore, we intend to preſerve Oils, we muſt not only carefully ſtop the Veſſels which contain them; but, alſo, depoſit them in cold Places, ſo that, the Spirit being pent up in them, their Texture may remain entire.

Becauſe the Air, eſpecially when hot, induces a greater Change on the Nature of Oils, and the Quality of the oleous Mixture, than any thing elſe, whilſt, by long acting upon them, it deprives them of their grateful Taſte and Smell, and inſpiſſates them, the expreſs'd Oils tending to a rancid State, and thoſe diſtil'd to a terebinthinaceous Nature; the Colour, alſo, being in ſome greatly chang'd; hence Oils are carefully to be preſerv'd from the free Acceſs of an hot Air, which may be done by filling the Veſſels in which they are kept, allowing only a ſmall Space for Rarefaction, leſt, upon the Approach of Heat, they ſhould burſt: They are, alſo, to be carefully ſtopt, and put into cold and dry Places.

Some, in order to preſerve Oils, add ſome Water; ſuch, for Inſtance, as diſtil'd Roſe-water, which is of excellent Service, when there it not Oil enough to fill the whole Glaſs, ſince the Water, by its Exhalation, keeps the Conſiſtence of the Oil thin, and hinders it from being inſpiſſated.

'Tis, alſo, certain from Experience, that Oils can never be intimately united and incorporated with Water: But theſe Subſtances, naturally immiſcible, may by Art be ſo mix'd, as not to be ſeparated from each other. This is moſt commodiouſly done, by pouring a few Drops of any aromatic Oil on Sugar, then putting it into Water, and ſhaking it; by which means the whole Oil in a Moment enters the Pores of the Water. Thus we may, in an extemporaneous manner, prepare the Waters of Cinnamon, Cedar, Nutmeg, Mint, Baum, and Hyſſop, which are otherwiſe to be only obtain'd with conſiderable Labour by Diſtillation. Beſides, by the Addition of a ſmall Quantity of Spirit of Wine, theſe Waters become ſpirituous. The Reaſon of this is, that the Oil, by reaſon of its ramified and branchy Particles cannot enter the Pores of the Water; but becauſe the Sugar is eaſily and quickly admitted into the Pores of the Water, which, eaſily adhering to the branchy Parts of the Oil, divides and disjoins them, hence they become capable of an intimate Mixture with Water. *Hoffman. Obſ. Phyſ. Chym. Lib.* 1.

Oleum Terræ. Offic. OIL OF EARTH. *Dale.*

This Oil is of two Kinds, the red, and the black: The red is brought from the *Eaſt Indies*, and is of a pellucid red Colour, and has a ſtrong Smell like *Petroleum*, but more grateful, as *Schroder* ſays; but, as to what we know of this Oil, it is either the ſame with *Petroleum*, or elſe is unknown in our Shops.

The *Indian* Oil of Earth, deſcribed by *Nauhovius*, is ſcarcely ever brought over to us; but ingroſſed by the *Aſian* Potentates; but whether it be a Species of *Petroleum*, or *Naphtha*, I cannot certainly determine. What is brought to us from the *Indies*, and ſold for *Oil of Earth*, is prepared of expreſſed Oil of the Cocoa-nut, mixed with medicated Earths, as I have been informed by a Perſon very skilful in theſe Matters, and therefore wholly belongs to the Claſs of Vegetables. *Boerhaave.*

Theſe Kinds of *Bitumen* differ only in Degree, as ſome think, ſo as that the more ſpirituous and ſubtile Part of it is the *Naphtha*, the next to it the *Petroleum*, and the groſſer and more feculent Part *Aſphaltum*; juſt as we ſee in Amber, from which,

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which, by Diſtillation, there is obtained, firſt, a ſpirituous and limpid Oil, repreſenting *Naphtha*; ſoon after, comes off a yellow and thicker Oil, reſembling *Petroleum*; and, laſt of all, a black feculent Matter, which might paſs for *Aſphaltum*. *Dale*.

OLFACTORII NERVI. The Olfactory Nerves. See NERVI, and CEREBRUM.

OLFACTUS. The Senſe of Smelling.

The Noſtrils, which are in Number two, and run upwards from a wide Cavity, gradually becoming narrower, are excellently adapted for attracting volatile odorous Particles, and applying them to their Surface; eſpecially whilſt they are, at the ſame time, contracted by the united Action of the Muſcles, which conſtrict the Alæ of the Noſe, and which, ariſing fleſhy from the anterior and inferior Part of the fourth Bone of the upper Jaw, are inſerted in the Alæ of the Noſtrils, ſometimes in Conjunction with the Semilunar Muſcle of *Euſtachius*.

The Capacity of both Noſtrils is all that Space, into which open, firſt, the frontal Sinuſes, which are generally form'd among the ſeparated Laminæ of the *Os Frontis*, under the Eminence lying below the Eye-brow, and which, afterwards, open upwards, with a large *Foramen*, into the Cavities of the Noſtrils, next to the ſuperior Bones of the Noſe. Theſe Sinuſes receive the mucous Membrane of the Noſe, with which the whole interior Surface of their Cavities is lined, and from which the Mucus, when generated, drops into the Cavities of the Noſtrils.

Secondly, the *Antra Highmoriana Magna*, form'd in the ſuperior Jaw, and opening themſelves, with a large *Foramen*, into the Cavities of the Noſtrils, alſo, are lined with the ſame Membrane, prepare, collect, and ſecrete the Mucus into the Noſtrils.

Thirdly, the *Cellulæ* of the *Os Cuneiforme*, under the ſuperior ſpongious Bone of the Noſe, opening by *Foramina* frequently diſtinct, into the Cavities of the Noſtrils, receive the mucous Membrane of the Noſe, are cover'd with it, ſecrete the Mucus, and diſcharge it by this very Paſſage.

Beſides, there are lodged in the Cavities of the Noſtrils, and in various Places, curiouſly diſpoſed, the four ſpongious Bones of the Noſtrils; in each two. The ſuperior is anteriorly united to the ſuperior Part of the Maxillary Bone, where it is united with the *Apophyſis* of the *Os Frontis*, at the internal Angle of the Eye. The other, or inferior ſpongious Bone of the Noſtrils, is, in the inferior Part of their Cavities, join'd to the Maxillary Bone. Theſe four Bones are wonderfully form'd of bony Laminæ, thinner than Paper, and ſo wrapt up, or diſpoſed, as to form many Cavities; among which, the mucous Membrane inſinuates itſelf in ſuch a manner, as to enter, run out, accurately cover the Surfaces between the Laminæ, and leave the Cavity free and unconfined. Theſe Cavities of the ſpongious Bones, and of all the *Cellulæ*, open freely into the Cavities of the Noſtrils.

The Noſtrils are lined with a thick and ſoft Membrane, which is furniſhed not only with an incredible Number of ſmall arterial Veſſels, but, alſo, with round glandular Corpuſcles, and a Set of minute Veſſels, which diſtil a thin Lymph. This Membrane curiouſly inſinuates itſelf into the Cavities of the ſix Sinuſes, and into the *Cellulæ* of the four ſpongious Bones. Hence, by a wonderful Contrivance in this narrow Cavity of the Noſtrils, the Surface of the laſt deſcribed Membrane is greatly enlarged; but yet in ſuch a Manner, as that one Part does not incommode another.

The olfactory Nerves, without being accompanied by the *Dura Mater*, reaching to the *Os Ethmoides*, apply their tender Fibrils to the ſmall *Foramina* found in that Bone; and, penetrating the ſmall Vaginæ, which they receive from the *Dura Mater*, the Fibres are ſent out from the *Os Ethmoides*, and immediately and accurately diſtributed over all that large Surface, above deſcribed, into all the Sinuſes and *Cellulæ*.

Hence 'tis ſufficiently obvious, that theſe Nerves are widely expanded; and that in no Part of the Body are there to be found Nerves ſo ſoft, naked, and, conſequently, eaſily affected and injured, as in this.

Beſides, by means of the inconceivable Number of Glands lodged in this Membrane, and by the large Quantity of arterial Veſſels diſtributed in this Part, in the Form of *Faſciculi*, there is continually here prepared and ſecreted a mild, fluid, inodorous, and pale-colour'd Liquor, with ſcarce any ſaline Taſte, in order to moiſten, lubricate, and defend the Nerves everywhere, and in all the Cavities above deſcribed. This Liquor, when left in a State of Reſt, is always collected, becomes ſtagnant, and inſpiſſated; and, when diſcharged in whatever Diſpoſition of the Body, is called *Mucus*; by means of which, the highly tender olfactory Nerves, which would otherwiſe be eaſily diſorder'd, remain good for a great Number of Years.

But, leſt this Liquor, which is eaſily concreted when it is accumulated, ſtagnant, and inſpiſſated by too long a Continuance in its Cavities, ſhould become unfit to paſs through the narrow Orifices of theſe Receptacles, there is diſtributed to theſe Parts a Ramification of the fifth Pair of Nerves, convey'd hither from its Union with a Nerve of the ſixth Pair. By the Irritation of this Ramification, the intercoſtal Pair, the *Par Vagum*, and, conſequently, the Nerves of the Muſcles ſubſervient to Reſpiration, are put in Motion. Hence, Sternutation being produced by the Force of the Air violently propel'd, and ruſhing into theſe Cavities, the Mucus is abſterged.

The Objects of Smell are thoſe Parts of Animals, Vegetables, and Foſſils, which are lodged in their Spirit, Oil, Salt, or Soap, if they are ſo divided as to become capable of floating in the Atmoſphere. But 'tis obvious from Experiments, that the ſubtile Principle lodged in Oil, and called the Spirit, is the principal Thing which excites the Senſe of Smelling; for, when this Principle is totally ſeparated from odorous Bodies, the Reſiduum hardly retains any Smell; and a Fragrance is procured to other Subſtances, by pouring this Spirit upon them.

An Animal breathing thro' the *Aſpera Arteria*, cut, and appearing thro' the Wound without the Neck, has no Senſe of Smelling excited, even by the moſt highly odorous Subſtances.

The Perſon who expels the Air from his Lungs thro' his Noſtrils, has no Senſe of Smell excited by external Objects, during that Action.

The Perſon, in like Manner, who retains his Breath, is almoſt incapable of perceiving any Smell.

But the Perſon who attracts the Air thro' his Noſtrils, has the Idea of Smell excited.

And the more ſtrongly he attracts the Air, and expels it reciprocally, the brisker the Senſe of Smell is.

The Smell of odorous Subſtances is increaſed by Motion, Heat, Attrition, and an Admixture of various Things. And the Smell of odorous Subſtances, of an oily Nature, is augmented by a cautious Admixture of Salts.

The Senſe of Smell is, therefore, excited, when the odorous Effluvia contain'd in the Air, and, during Inſpiration, ſufficiently ſtrongly attracted thro' the Noſtrils, are, by this Force, applied to the olfactory nervous Fibrils, which, by the Structure of the Noſe, and the Poſition of its Bones, are expoſed to them. When theſe Effluvia thus act upon the olfactory nervous Fibrils, and communicate this Action to the common Senſory, they excite either an acid, alcaline, aromatic, putrid, or vinous Smell.

Hence we may underſtand, how great an Affinity there is between odorous and ſapid Subſtances; or the Objects of Taſte and Smell:

Why Smells, or Odours, often reſtore Life inſtantaneouſly, and as it were in a Moment:

For what Reaſon Odours, ſometimes, excite Diſeaſes and Death; and produce almoſt all the ſame Effects with Medicines of all Kinds, whether of a medicinal, or deleterious Quality:

Why, in different Perſons, the ſame Smell, ariſing from the ſame odorous Body, produces ſo widely different Effects:

Why Animals, who are furniſh'd with very long Beaks and Noſtrils, and the ſpongious Bones of whoſe Noſes are very large, have a quicker Senſe of Smelling than others:

Why the ſmalleſt exhaling Corpuſcles, whilſt, at the ſame time, the Maſs from which they exhale, is, upon being weighed, hardly diminiſhed, are capable of communicating ſo ſtrong and long-continued a Smell:

Why the fetid Smell, exhaling from the putrid Parts of Animals and Vegetables, when once convey'd to the Noſtrils, is ſo obſtinate, troubleſome, and laſts ſo long:

Whether the ſtrongeſt odoriferous Subſtances are not alſo poſſeſs'd of a ſternutatory Quality:

What the Uſe is of the Humour and Mucus continually generated, and diſtributed in the Noſtrils:

Why the Senſe of Smelling is dull and languid, when a Perſon firſt awakes out of his Sleep; but becomes more brisk and quick after he has ſneezed:

Whether the Diſcharge of the Mucus is not ſubſervient to the cleanſing of the Brain; and how far this Doctrine is true:

Whether the Mucus is originally thick, when generated; or whether it afterwards becomes ſo:

Whence proceeds the ſo great Communication of the interior Noſe, with the Muſcles ſubſervient to Reſpiration, and the abdominal Viſcera:

Whether Sternutation is not a kind of Convulſion, and for that Reaſon fatiguing, often productive of Pain, and ſometimes mortal:

Why, in the mean time, it excites and increaſes the Motion of the Brain, Spirits, and all the Humours: Why it is frequent in the Morning after Sleep; and what good Purpoſes it anſwers.

OLIBANUM.

Olibanum & Thus maris. Offic. *Olibanum ſive Thus*. Park. Theat. 1602. Raii Hiſt. 2. 1840. *Olibanum Officinarum*. Geoff. Tract. 362. *Olibanum ſive Thus maſculum*, Ind. Med. 75. *Thus*. J. B. 1. 302. Schrod. 4. 223. *Thus, Thus maſculinum Olibanum*. Mont. Exot. 11. *Arbor thurifera*. Ger. 1247. Emac. 1435. C B. P. 399. *Thus ſive Olibanum Officinarum*. Ejuſd. 501. FRANKINCENSE, or OLIBANUM.

Olibanum is a dry reſinous Gum, which is brought from the *Indies*, and gotten from a Tree which is ſaid to grow in *Arabia*; but of what Species it is, we are altogether ignorant; the beſt is that which is in large Drops, of an opaque, white Colour, with a little Yellowneſs, and ſometimes a Rediſhneſs, of a ſtrong, reſinous Smell, and a warm bitteriſh Taſte.

It is hot, dry, and binding; uſeful againſt Diſeaſes of the Breaſt, as Coughs, Shortneſs of Breath, catarrhous Defluxions of Rheum, and Spitting of Blood; it helps a Looſeneſs and Bloody-flux; and ſtops a Gonorrhœa, and the Whites: Outwardly uſed

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in Fumigations, it ſtops Defluxions of Rheum on the Noſtrils, and is good to cicatrize Wounds and Ulcers. *Miller's Bot. Off.*

The Tree which produces this Incenſe, grows in the Heart of *Africa*; but we know not what it is. It is a good Sudorific, and has, by ſome, been order'd in Pleuriſies, in the Quantity of a Dram, being firſt baked in an Apple, by the Fire-ſide, and then eaten. This Medicine ought to be taken in the Beginning of the Diſeaſe, after the Patient has been blooded once or twice. This Method was followed for a whole Year, at the *Hotel Dieu*, by M. *Hangard*, Phyſician of that Hoſpital, with ſurpriſing Succeſs; but the next Year it had ſcarce any Effect at all. *Olibanum* is alſo cordial, and very ſerviceable in Hæmorrhages, when mixed with proper Aſtringents. Externally, it is reſolvent, emollient, *&c.* and reſiſts Putrefaction. It may, alſo, be uſed as a Fumigation, to raiſe Sweat, in Rheumatiſms, either alone, or mix'd with Amber. *Geoffroy.*

This is a reſinous Subſtance, of a pale-yellow Colour, ſomewhat hard and pellucid, form'd into ſmall Drops, like Maſtich, of a bitteriſh reſinous Taſte, and fragrant Smell. It drops ſpontaneouſly from the Tree which produces it, and is tranſported to us from *Turkey* and the *Eaſt-Indies*. That which is in ſmall Drops, is preferable to the other Kinds. It is heating, drying, and ſubaſtringent. It is principally uſed, internally, againſt various Diſorders of the Head and Breaſt; as, alſo, againſt Fluxes, and Hæmorrhages of the Uterus, Coughs, Vomitings, Spittings of Blood, Diarrhœas, and Dyſenteries. Externally, Fumigations of it corroborate the Head. It diſcuſſes Catarrhs, incarns hollow Ulcers, and brings them to a Cicatrix. It conglutinates recent Wounds, eſpecially thoſe of the Head. It cures Chilblanes, and mitigates malignant Ulcers, not only of the Anus, but, alſo, of other Parts. It, alſo, removes Redneſs and Inflammation of the Eyes; and carries off beginning Warts and Impetigos. *Schrod.*

What we call the *Manna Thuris* of the Shops, are Fragments of the Frankincenſe, as ſmall as Meal, produced by the Colliſion of the Bags with each other, during the Carriage. But others, by the *Manna Thuris*, mean ſmall Portions of the Frankincenſe.

Nothing certain is left upon Record, with reſpect to the Tree which bears the Frankincenſe. *Theophraſtus* informs us, that it is not a very large Tree; that it is about five Cubits high, full of Branches, with Leaves reſembling thoſe of the Pear-tree, and a ſmooth Bark, like that of the Bay-tree; but, ſays he, others affirm it to be like the Maſtich-tree, bearing a ſimilar Fruit, and a rediſh-colour'd Leaf; whilſt others aſſert, that both its Leaves and Bark reſemble thoſe of the Bay-tree. *Diodorus Siculus* aſcribes the Form of the *Egyptian* Thorn to the Tree which bears the Frankincenſe, and the Leaves of the Willow. *Garcias* informs us, that this is a low Tree, whoſe Leaves reſemble thoſe of the Maſtich-tree: But *Thevetus* informs us, that it reſembles the Reſin-bearing Pines. Mr. *Ray* alſo affirms, that we are ſtill uncertain of the true Form of this Tree. *Dale.*

OLIGOPHORUS, ὀλιγοφόρος. An Epithet for Wine, in *Hippocrates*, importing it being very ſmall, weak, and watery.

OLISTHEMA, ὀλίσθημα, from ὀλισθαίνω, to fall out. A Luxation. *Hippocrates.*

OLIVA. An Olive. See OLEA.

OLIVARIA CORPORA. Two Prominences, on the *Medulla Oblongata*, are called by this Name.

OLIVITAS. Oilineſs.

OLOPHLYCTIDES, ὀλοφλυκτίδες. The ſame as PHLYCTÆNÆ. *Erotian.*

OLOR. The Swan. See CYGNUS.

OLUS ALBUM. A Name for the *Valeriana*; *arvenſis*; *præcox*; *humilior*; *ſemine depreſſo.*

OLUS ATRUM. A Name for the SMYRNIUM.

OLY. The oleous Subſtance of Metals, ſwimming on the Surface of their ſolvent *Menſtruums*. *Rulandus.*

OLYMPIACUM COLLYRIUM. The Name of a *Collyrium* deſcribed by *Paulus Ægineta*, *L.* 7. *C.* 16.

OLYMPIANUM OXYPORIUM. The Name of a Medicine deſcribed by *Marcellus Empiricus*, *C.* 20. and recommended for promoting Digeſtion.

OLYNTHOS, ὄλυνθος. An unripe Fig. *Hippocrates.*

OLYRA. Offic. Park. Theat. 1124. *Zea Amylea ſive Olyra.* C. B. Theat. *Zea Amylea vel Zeopyrum Amylæum.* C. B. P. 22: *Zea verna*, J. B. 2. 413. Raii Hiſt. 2. 1243. *Triticum Amylæum.* Ger. 63. Emac. 69. SPRAT-CORN.

This Species of Corn is ſown in *Germany*, and reaped late. The Seeds are uſed in the Kitchens of *Germany*. It agrees in Virtues with the *Spelt* Wheat, but is ſomewhat leſs nutritive.

Of the *Olyra* a coarſe Meal is, alſo, made. *Dale.*

OLYSCION. The ſeventh Part of an *Hemina*. *Marcellus Empiricus.*

OMAGRA. The Gout in the Articulation of the *Humerus* with the *Scapula.*

OMASUM. The third Ventricle of a ruminating Animal.

OMELYSIS, ὠμήλυσις, from ὠμὸς, crude, as *Galen*, in his *Exegeſis*, expounds it, is the Meal of Barley, not parched. He adds, that ſome properly apply the Term only to crude Meal, but others uſe it, improperly, to ſignify all other Sorts of Meal. *Hippocrates*, in ſeveral Places, adviſes *Omelyſis* boiled in Wine and Oil, and reduced to the Form of a Cataplaſm, to be applied warm, outwardly, to a Tumor of the Tonſils, and, alſo, in the *Hypogloſſis*; and, *Lib.* 2. περὶ γυναικ. he preſcribes ὠμήλυσιν κριθῶν, crude Meal of Barley, in a Potion, for an Hæmorrhage of the Womb, ῥύσι ἐρυθρῇ, in Women. Sometimes the Word ſignifies all Sorts of crude Meal, and wants an Epithet to diſtinguiſh it, as ὠμήλυσις κριθίνη, *Farina hordeacea*, Meal of Barley in particular. It is, by *Heſychius*, explain'd, Barley-meal, or a Cataplaſm made thereof. In *Abſyrtus*, one of the Hippiatric Writers, *Omelyſis* is a Mixture of the Meals of Fenugreek, Linſeed, and Barley, in equal Quantities. In *Cœlius Aurelianus*, it ſignifies ſometimes a Cataplaſm of Meal, or of Bread ſoak'd in Water; and ſometimes of Meals prepared in the ſame Manner. It is ſometimes wrote ὠμὴ λύσις, in two Words.

OMENTA. The Membranes of the Brain. *Caſtellus* from *Mercurialis.*

OMENTUM. See EPIPLOON.

As the Omentum is a ſoft and pinguious Part, in conſequence of its Laxity, highly ſubject to receive the Humours convey'd to it from other Parts, 'tis for this Reaſon, as well as the Omentum and Pancreas, ſubject to various Diſorders; which, however, are not deſcribed by Authors, becauſe they can hardly, if at all, be diſcover'd in live Perſons; and are only to be inveſtigated by laying open their Carcaſes, as is obvious from the Caſes recorded by various Authors. Thus *Veſalius* informs us, that in a certain Carcaſe, when laid open, he ſaw the Omentum ſo preternaturally tumid, that it weigh'd about five Pounds; whereas, in its natural State, it hardly exceeds half a Pound. *Rouſſet*, in his Treatiſe *de Partu Cæſareo*, tells us, that, upon laying open a Carcaſe at *Paris*, there was a very conſiderable Abſceſs found on the Omentum. *Riolanus*, alſo, in his *Anthropographia*, informs us, that, upon laying open the Body of a young Gentleman of nineteen Years of Age, he ſaw the Omentum full of a large Number of Glands, from which a conſiderable Quantity of ſordid Humours had been convey'd to it; whilſt, at the ſame time, the Meſentery and Pancreas were, by means of the Abſceſs, putrefied; and the Spleen ſo greatly diminiſh'd, as to be almoſt entirely conſumed. And I myſelf, upon laying open the Body of a Canon of *Montpelier*, ſaw the Omentum ſcirrhous, poſſeſſing the whole epigaſtric Region, and about four Fingers-breadth in Thickneſs. The Colour of this Tumor of the Omentum reſembled that of the Spleen: So that 'tis highly probable, that the melancholic Humour was tranſlated from the Spleen, and accumulated in that Part, ſince the Patient was of an highly melancholic Conſtitution, and ſince, thro' the ſplenic Ramifications, there is a ſufficiently potent Conveyance from the Spleen to the Omentum. According to *Hippocrates*, in a Dropſy, the Waters are alſo frequently convey'd from the Spleen to the Omentum, from which they gradually drop into the Cavity of the Abdomen.

But as the Tumors of the Omentum are not, by all the Efforts of Art, to be diſtinguiſhed from thoſe of the Meſentery, ſo their diagnoſtic or diſtinguiſhing Signs cannot poſſibly be aſcertain'd. 'Tis true, indeed, Tumors of the Omentum are more eaſily perceived by the firſt Touch, becauſe that Part lies immediately under the Peritonæum, whereas the Meſentery is ſituated deeper: But the larger Tumors of the Meſentery riſe to the Peritonæum, and even the epigaſtric Muſcles are, ſometimes, ſo united with it, that, a Suppuration happening, theſe Tumors diſcharge their ſordid Contents thro' the Navel, or ſome other Part.

But this Difficulty of aſcertaining the diagnoſtic Signs of theſe Diſorders by no means produces any Perplexity in the Method of Cure; ſince in all Tumors of the ſame Species, poſſeſſing the inferior Parts of the Abdomen, the ſame Meaſures are to be taken; which, however, are not ſo ſucceſsful in the Omentum, which is not furniſhed with ſo commodious Outlets for the Matter of theſe Tumors, as the other Parts are. *River. Prax. Med. Lib.* 13. *Cap.* 5.

OMOCOTYLE, ὠμοκοτύλη. The Cavity in the Extremity of the Neck of the *Scapula*, in which the Head of the Humerus is articulated.

OMOLINON, ὠμόλινον, ſeems to have two Significations, one of which is crude, or raw Flax; the other, coarſe, or unbleach'd Thread, or Cloth.

OMOPLATÆ, ὠμοπλάται, from ὦμος, the Shoulder, and πλατὺς, broad. The *Scapulæ.*

OMOS, ὦμος. The Shoulder. The Part of the *Uterus*, beyond the Neck, where it grows broad, is, alſo, thus call'd by *Moſchion.*

OMOTARICHOS, ὠμοτάριχος, the Fleſh of the pickled Tunny-fiſh; which *Dioſcorides* recommends, taken internally, againſt the Bites of Vipers, and mad Dogs, *L.* 2. *C.* 33.

OMOTRIBES. An Epithet for Oil, importing its being expreſs'd from unripe Olives.

OMPHACINUM OLEUM. Oil of unripe Olives.

OMPHACIUM, ὀμφάκιον. The Juice of unripe Grapes. The Antients uſed to expoſe the Grapes to the Sun ſome Days, and then preſs out their Juice into large Vats; and, in the Time of *Dioſcorides*, they uſed to let it ſtand open in them, expoſed to the Sun, till moſt of the Humidity was exhaled, and the Remainder inſpiſſated into a Rob. This *Dioſcorides*, *L.* 5. *C.* 6. recommends, with Honey and *Paſſum*, for Ulcers and Relaxations of the Tonſils, Uvula, Mouth, and Gums; and for Purulencies of the Ears; for Dyſenteries, and Uterine Fluxes; in Clyſters,

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Clysters, or Injection. He, farther, says, it clears the Sight, and cures Asperities of the Angles of the Eyes; and that it is good for a recent Spitting of Blood, from a Rupture of a Vessel; but, in this Case, it must be taken in a small Quantity, because it corrodes powerfully

OMPHACIS, ὀμφακίς. An Acorn-cup.

OMPHACITES VINUM. Wine made of Grapes not perfectly ripe. It is astringent, and friendly to the Stomach; good for a depraved Appetite, Iliac Disorders, Indigestion, Relaxations of the Stomach, and in pestilential Disorders; but must be kept many Years, before it is fit to be drank.

OMPHACITIS. A Sort of small Gall, or Excrescence of the Oak, mention'd by *Dioscorides*, *L.* 1. *C.* 146.

OMPHACOMELI. A Sort of Oxymel, made of the Juice of unripe Grapes, and Honey; the Method of preparing which is described by *Dioscorides*, *L.* 5. *C.* 31.

OMPHALOCARPOS. A Name for the APARINE. *Blancard.*

OMPHALOCELE. An Umbilical Rupture. See HERNIA.

OMPHALODES.

The Characters are;

The Calyx is monophyllous, soft, and expanded into five long slender Segments. The Flower is monopetalous, rotated, quinquefid, and expanded into large round Segments, with an Umbilicus rising in the Middle. From the lower, interior, and narrower Part of the Flower proceeds a Tube, closely surrounded by five Stamina. The Fruit consists of four hollow, umbilicated Capsules, resembling a Basket, containing one almost flat Seed, and affixed to a pyramidated, quadrilateral Placenta.

Boerhaave mentions three Species of this Plant; which are,

1. Omphalodes; pumila; verna; Symphyti folio. *T.* 140. *Symphytum minimum, repens, sive Borrago minima Herbariorum.* J. B. 3. 597. *Borrago minima.* H. Eyst. Hyem. o. 1. F. 4. Fig. 1.

2. Omphalodes; Lusitanica; Lini folio. *T.* 140. *Linum umbilicatum.* Park. Theat. 1687. *Cynoglossum, minus, album, lini foliis glaucis, semine umbilicato.* M. H. 3. 449.

3. Omphalodes; Lusitanica; elatior; Cynoglossi folio. *T.* 140. *Linum umbilicatum, folio latiori.* Ind. 78. *Boerhaav. Ind. alt. Plant.*

It has its Name, *Omphalodes*, from ὀμφαλὸς, a Navel, because the Calyx is excavated in the Middle, like the human Navel. It flowers very early in the Spring, bearing a shining Gold-colour'd Flower. Some have taken it for Borrage, but the Omphalodes is not so succulent. *Boerhaav. Hist.*

OMPHALOMANTIA. A Sort of Conjuration, or Divination, practised by Midwives, and old Women; which consists in foretelling how many more Children a Woman shall have, by observing how many Knots there are on the Umbilical Cord of one Child.

OMPHALOS, ὀμφαλὸς. The Navel.

ONAGER. Raii Synop. A. 63. Aldrov. de Quad. 332. Jonst. de Quad. 14. Charlt. Exer. 4. *Onager sive Asinus sylvestris.* Gesn. de Quad. 21. THE WILD ASS. *Dale.*

Some think there is no more Difference between the wild Ass and the tame Ass, than that the one is wild, and an Inhabitant of the Woods; and the other tamed, and broken for Service: Others take them for a different Species. It does not come within the *Materia Medica*; but their Skins are called, among Mechanics, *Chagrin.*

ONAGRA.

The Characters are;

The Calyx, Ovary, and Flower, are like those of the Chamænerion; but the Seeds are not downy: The Flower is rosaceous and tetrapetalous.

Boerhaave mentions three Species of Onagra; which are,

1. Onagra; latifolia. *T.* 302. *Lysimachia, lutea, corniculata.* C. B. P. 245.

2. Onagra; latifolia; flore dilutiore. *T.* 302. *Lysimachia, lutea, corniculata, non papposa, Virginiana, major, flore sulphureo.* H. L. 396.

3. Onagra; angustifolia. *T.* 302. *Lysimachia, lutea, corniculata, non papposa, Virginiana, minor.* M. H. 2. 271. H. L. 396. *Boerh. Ind. alt. Plant.*

We know nothing of its Virtues, nor why it is so called. *Boerhaave.*

ONBOU. *De Laet.* The Name of a *West-Indian* Tree, with Leaves like those of the Manga, and a Fruit like a Peach.

ONCOS, ὄγκος. A Tumor.

ONDA, in *Paracelsus*, is the Inventor of all Medicines, but especially of simple Medicines.

ONEIROCRITICUS, from ὄνειρος, a Dream, and κρίνω, to judge. A Person who forms a Judgment of the State of the Body, by Dreams. *Oneirocritice* is the Art of forming such a Judgment.

ONEIROGMOS, ὀνειρωγμός. *Cœlius Aurelianus* gives us the Description of a Disorder which he calls ὀνειρόγονος, by which he means Venereal Dreams. Though this Word is not found in the Writings of *Hippocrates*, yet he uses the Verb ὀνειρώσσειν, to have Venereal Dreams; from which has been formed the Word ὀνειρωγμὸς, a Word used by other Authors; which lays a Foundation for suspecting, that there is a Fault in the Text of *Cœlius Aurelianus*; and that, instead of ὀνειρόγονος, we ought to read ὀνειρωγμός. This is the Opinion of *Foesius*: But *Reinesius* asserts, without assigning any Reasons for his Belief, that they are two quite distinct and different Disorders. *Cœlius Aurelianus* gives his Sentiments of this Disorder in the following manner.

The Patients labouring under this Misfortune, being subjected to wild and delusive Dreams, are, during their Sleep, afflicted with an Emission of the seminal Fluid. It receives this Name, because it produces the same Effect with a real Venereal Stimulus. But, in general, it is neither a Distemper, nor the Symptom of a Distemper, but the Result of the unaccountable Impressions made upon the Fancy, affecting the Patient during Sleep, and arising either from an insatiable Desire of Venery, a continual Indulgence in Pleasures of that Kind, or, on the contrary, from a long Continence, and Self-denial in the Use of Venery. But this Disorder, when often recurring, not only frequently degenerates into a Distemper, but, also, becomes the antecedent Sign of some approaching Disease; such as an Epilepsy, Madness, or some other Disorder of a like Nature; because it is an effectual Proof, that the Body is preternaturally affected, and, as it were, touched with a previous Sense of its future Calamity. It is, also, sometimes the antecedent Cause of what we call a *Gonorrhœa*; from which it differs, since, in the former, the Semen is involuntarily discharged during the Day, whilst the Patient is awake, and not prompted to Venery by the Workings of his Fancy; whereas Venereal Dreams, by delusive Impressions made upon the Fancy, only produce an imaginary Sense of Copulation, during Sleep. Some affirm, that the ὀνειρόγονος is different from the ὀνειροπόλησις for the former produces a Sense of Copulation, without a real Emission; whereas the latter creates a Sense of Venery so strong and brisk, as to procure a real Emission. But *Milesius* affirms, that these two Disorders are not in the least different, since, in both, there is the same Discharge made from the seminal Vessels: And that the Semen is sometimes ejected, and sometimes retained, even though the Impressions made upon the Fancy, during Sleep, are the same, he ascribes to some accidental Causes. But there is no great Difference between these Disorders, nor are different Intentions of Cure to be pursued, since one and the same Method is found sufficient for removing both.

The *Oneirogonos* is, in different Patients to be treated in different Manners; for those in whom it prognosticates an Epilepsy, Madness, or any other Disease, are to be relieved by Medicines appropriated to the particular Natures of these Disorders: Whereas those in whom this Disorder prognosticates no other of a more formidable Nature, are to be treated in the same manner with those labouring under a mild and gentle Gonorrhœa; for an Increase of the ὀνειρόγονος, or ὀνειροπόλησις, brings on a Gonorrhœa, because the seminal Vessels are either, by this means, render'd paralytic, or oppressed with a Defluxion of Humours from other Parts. It is, therefore, in the first Place, expedient to draw off the Workings of the Patient's Fancy from Venereal, and to fix them on other external Objects; for the Impressions made upon the Mind of the Patient, whilst awake, easily exert themselves in Dreams, when he is asleep. Besides, the Body is considerably injured by a Loss of the Semen. For this Purpose, the Patient is to lie on an hard Bed, and use refrigerating Medicines; and, when he composes himself to Rest, he is to be order'd to lie on his Side, or his Belly; or a broad and thin Plate of Lead is to be laid under his Buttocks; or the Region of his Loins is to be cover'd with Sponges, immersed in a Mixture of cold Water and Vinegar, or with Substances of a cold Quality, such as Balaustines, Acacia, Hypocystis, or Fleawort, which may be either applied by themselves, or in Conjunction with Dates. Astringent Aliments, or such as are of a condensing and cooling Quality, are, also, to be used; and the Patient is to drink cold and astringent Liquors, not prepared in a delicate and luxurious manner: Then the Patient is to have his Strength restored in the common Method, and to use the cold Bath, by the *Greeks* called ψυχρολουσία. Strong Frictions of the Parts affected are, also, to be used; for these Measures are sufficient to constrict and brace up the Parts: Some affirm, that a long Retention of the Urine is proper for the Cure of this Disorder, lest, by the frequent Discharge of that Fluid, the Cause of the Misfortune should be excited: They, also, order that the Patient should compose himself to Rest, with a full Bladder, that by this means he may not fall into a profound Sleep, but, being frequently awaken'd, may lose the Impressions of Venereal Pleasures, which exert themselves in Dreams, during Sleep: They, also, maintain, that by this means the urinary Bladder, being distended, compresses the adjacent seminal Vessels, and, consequently, renders them capable of retaining the Semen: Others order the Thumb to have a tight Ligature of strong Thread apply'd to it, that thus, by the intense Pain, a profound Sleep may be prevented, and the Impressions of the Mind hindered from exerting themselves in Venereal Dreams. But both these Methods are to be rejected, since Watching is highly injurious to the Patient, and an excessive Retention of the Urine often produces a Difficulty in discharging that Fluid; and by that means proves the Cause of another Disorder, instead of removing that for which it was directed. *Cœl. Aurel. Morb. Chronic. Lib.* 5. *Cap.* 7.

ONEIROMANTES. The same as ONEIROCRITICUS.

ONEIROPOLESIS. See ONEIROGMOS.

ONIS,

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ONIS, ὄνις. Asses Dung. See ASINUS.

ONISCI. MILLEPEDES; which see.

ONISCUS. Offic. *Asellus mollis major, seu albus.* Raii Ichth. 170. Ejusd. Synop. Pisc. 55. *Asellus minor & mollis.* Charlt. de Pisc. 3. *Asellus mollis.* Jonst. Tab. 2. Mer. Pin. 184. *Merlangus altera Species Asellorum.* Bellon. de Aquat. 104. *Secunda asellorum Species.* Rondel. de Pisc. 1. 276. *Secunda asellorum Species Merlangus Rondeletii.* Gesn. de Aquat. 85. *Asellus minor alter.* Ald. de Pisc. 287. THE WHITING.

It is taken in the Sea, and the Flesh and Liver are regarded in Medicine. The Flesh is universally allow'd, and found by Experience, to be very wholsome; and the Liver is recommended in a Consumption.

The Whiting is a Sea-fish, which often comes near the Shore, and is very common in many Parts, and is valued for the Goodness of its Taste, and served to the best Tables. It feeds upon small Fishes, and any thing it can find in the Sea. It is very wholsome, and the Reason is, because that it is not burdened with viscous Juices, that its Principles are exalted enough, and that it is not very compact in its Parts; which makes it light, short, and easy of Digestion.

A Whiting is a Fish that produces no ill Effects, that we know of; and there are some who have eaten of it to Excess, and yet found no Inconveniency by it: And therefore sick Persons, and those that are recovering from Illnesses, are safely allowed to eat it. *Lemery on Foods.*

ONITIS. A Species of Origanum mentioned by *Dioscorides, Lib.* 3. *Cap.* 23.

ONOBRYCHIS.

The Characters are;

It has a cristated, or echinated Pod, full of Kidney-shaped Seed; and the Flowers are collected into close Spikes.

Boerhaave mentions five Species of *Onobrychis*; which are,

1. Onobrychis major; siliculis echinatis, cristatis, in Spica digestis. *Hist. Oxon.* 2. 131. *Boerh. Ind. A.* 2. 47. *Onobrychis.* Offic. *Onobrychis vulgaris.* Park. Theat. 1082. *Onobrychis foliis Viciæ, fructu echinato, major.* C. B. P. 350. Tourn. Inst. 390. *Onobrychis sive Caput Gallinaceum.* Ger. 1063. Emac. 1243. Raii Hist. 1. 914. Synop. 3. 327. *Polygalon Gesneri.* J. B. 2. 335. COCKSHEAD-VETCH, or SAINT FOIN.

It grows spontaneously on the Sides of *Gogmagog* Hills, near *Cambridge*, and on the Borders of the Corn-fields thereabouts, in a plain Field near *Newmarket*, on *Salisbury* Plain, and other Parts of *England*, but always in a dry, chalky Soil, and Places exposed to the Sun. This Plant has been of late Years cultivated among us, for the sake of feeding Cattle, by the Name of *Saint Foin*, that is, *Holy Hay*; the Seed being brought over from *France*. It has been of vast Profit to many, being found, by Experience, to generate Plenty of Milk in Cows, and other Animals; whence it justly deserves the Name of *Polygalon*, given it by *Gesner*: Besides, it delights in a barren and chalky, and pretty dry Soil, which will not well bear Grass nor Corn: Whence the yearly Rents of Lands of this kind have been increased manifold.

It flowers in *June* and *July*, and the Herb is in Use, which, according to *Dioscorides*, being bruised and apply'd, discusses Tumors; taken in Wine, cures the Strangury; and rubbed, on the Skin, with Oil, provokes Sweat. *Dioscorides, Lib.* 3. *Cap.* 170.

Though the Plant, says *Dale*, which, in Agreement with *Clusius, Thalius*, and others, I have presented you with, as the *Onobrychis* of *Dioscorides*, be called by *Gesner Glaux*, by *Lobel Caput Gallinaceum*, by *Cæsalpinus Lupinus*, by *Dodonæus Vicia*, and by *Lugdunensis Polygala*; yet it is described by *Dioscorides*, as having Leaves generally longer than those of the *Lens*, a Stalk nine Inches in Length, a scarlet Flower, with a small Root; and, by *Pliny*, with Leaves a little larger than those of the *Lens*, a red Flower, and a small and slender Root. And, tho' both these Descriptions are short, yet they agree better with this Plant, than with the *Campanula arvensis*, to which it is refer'd by *C. Bauhine*, in his Pinax. It is not certain, however, what Herb it is, some giving the Name of *Onobrychis* to the *Ruta sylvestris*; others to the *Galega*; others, again, to the *Hedysarum*; and others to other Plants: Besides, *Cornarius* thinks the *Onobrychis*, and *Onoperdon*, to be the same. *Dale.*

2. Onobrychis; minor; siliculis echinatis, cristatis, majoribus & crassioribus aculeis præditis, donata. *M. H.* 2. 131. *Caput Gallinaceum, minus.* C. B. Prodr. 149.

3. Onobrychis; seu Caput Gallinaceum, minus; fructu maximo insigniter echinato. *Laet. Triumfett. apud fratrem*, 65.

4. Onobrychis; saxatilis; foliis Viciæ angustioribus, & longioribus; Aquisextiensis. *T.* 390.

5. Onobrychis; Cretica; foliis Viciæ; fructu magno, aculeato, & cristato. *T. C.* 26. *Boerh. Ind. alt. Plant.*

It is called *Onobrychis*, from ὄνος, an Ass, and βρύχω (*brycho*) to bray, because the Smell of this Plant makes Asses bray, or because, when an Ass eats these Pods, he is always said to bray. *Hist. Plant. adscript. Boerhaav.*

ONOBRYCHIS is, also, a Name for several Sorts of HEDYSARUM.

ONOCHITES. See ANCHUSA.

ONOCLEA. A Species of *Anchusa*, which *Paulus Ægineta, Lib.* 7. *Cap.* 3. describes as having an astringent, and bitterish Root.

ONOCROTALUS. The Pelican, an aquatic, web-footed Fowl, as large as a Swan. The Fat is esteemed emollient, and resolvent.

ONOSOLAT, according to *Blancard*, is an *Arabic* Word, importing half a Scruple.

ONONIS. See ANONIS.

ONOPERDUM. A Name for the *Carduus; tomentosus; Oenanthi folio, angustiore.*

ONOPTERIS. See ADIANTHUM NIGRUM.

ONOS. See ASIRACUS.

ONOSMA. Offic. J. B. 3. 586. *Lycopsis.* C. B. P. 255. Raii Synop. 3. 227. *Lycopsis Anglica.* Ger. 658. Emac. 802. Park. Theat. 519. *Echium alterum.* Merc. Bot. 1. 31. Phyt. Brit. 35. *Echium alterum seu Lycopsis Anglica.* Mer. Pin. 33. *Echium ramosius annuum flore suave-rubente.* Hist. Oxon. 3. 441. STONE-BUGLOSS.

Onosma, which some call *Osmas*, others *Phlonitis*, and others *Ononis*, has Leaves like those of *Anchusa*, oblong, soft, four Digits in Length, and one in Breadth, lying on the Ground, and mightily resembling the Leaves of *Anchusa*; it has neither Stalk, Seed, nor Flower. The Root is somewhat long, weak, slender, and moderately red; it grows in rugged Places.

The Leaves, taken in Wine, expel the Fœtus; and they say, that, if a pregnant Woman only treads upon this Herb, she afterwards miscarries. *Dioscorides, Lib.* 3. *Cap.* 147.

The Herb was observed, by the learned Dr. *Sherard*, growing in the Island of *Jersey*.

The *Onosma* is one of those Plants which have caused Divisions among Authors in Botany, who are not agreed whither to refer them. *Dioscorides*, in describing the *Onosma*, as having Leaves like Anchusa, but without Stalk, Flower, or Seed, has given great Occasion for Dispute. This Error of *Dioscorides* seems to proceed from his having observed it only in the first Year, after its Appearance above Ground, when it shoots forth nothing but Leaves, after the manner of the *Cynoglossum, Buglossum, Echium*, and other Plants of that kind; to which I should have refer'd it, if *Dioscorides* had not treated of them in distinct Chapters. It is, however, a vulgar Error, which others, also, have fallen into; for how is it possible for a Plant to be produced without Fruit or Seed? I chose to reduce it to this Plant, rather than another, from the Cut which *J. Bauhine* has given us of it, and from the Likeness of its Leaves to those of *Anchusa.*

ONYX. Offic. Worm. 97. Aldrov. Mus. Metal. 915. De Laet. 62. Charlt. Foss. 34. Kentm. 49. *Onyx & Camehuia.* Boet. 241. *Onychites.* Schw. 386. *Lapis Onyx dictus sive Unguis Humani candorem referens.* Cap. Hort. Cath. Supp. 2. 50. THE ONYX-STONE.

It is an opake, or not very lucid Gem, of the Likeness, Colour, and Splendor of the human Nail, being, at least, of two Colours, white and black, which appear in two distinct Zones, and rather opake, than diaphanous. *Pliny* calls the black Part of it *Morion Indicum*, or *Pramnion*, which, perhaps, is the *Morion* of *Schwenkfeld.*

As to its Virtues, it is supposed to induce Tranquillity of Mind by composing the Passions, and to quicken the Senses.

OOEIDES. An Epithet for the aqueous Humour of the Eye.

OOGLA. A Mixture of Milk, and Eggs.

OPALUS. Offic. Boet. 190. Calc. Mus. 207. Geoff. Prælect. 83. Kentm. 47. De Laet. 52. Aldrov. Mus. Metall. 978. *Opalus olim Pederos.* Worm. 107. *Opalus seu Opalis.* Charlt. Foss. 40. THE OPAL.

Opal is a beautiful Gem, of almost all Colours: According as the Rays of Light are refracted thro' it, it appears blue, purple, green, yellow, red, milky, and black; and hence it has been, by some, called the Gem of Gems. The best Opals are found in *India*, the more ordinary Sort in *Cyprus, Egypt, Hungary*, and in some *Danish* Islands. They all grow in a soft Stone, marked with black or dark Lines. It is said to have the same Virtues with the rest, but is never used in the Shops. *Geoffroy.*

OPEREMETHIOLIM. The Spirit of Minerals. *Rulandus.*

OPHIASIS. A Species of Baldness. See ALOPECIA.

OPHIDION. A sort of short Sea-serpent, which is esteem'd aperitive, and good to purify the Blood.

OPHIGENIUM. A Name in *Oribasius, Collect. Medic. Lib.* 1. for the *Elaphoboscum*, or *Sisarum Germanorum.*

OPHIOGLOSSUM.

The Characters are;

It has but one Leaf; and the Fruit, which is lingulated, or like a Tongue, is divided into many Capsules, situated in a double Order, and full of Seed.

Boerhaave mentions but one Species of this Plant; which is the

Ophioglossum vulgarum. *C. B. P.* 354. *Tourn. Inst.* 548. *Boerh. Ind. A.* 27. *Ophioglossum.* Offic. J. B. 3. 708. Ger. 327. Emac. 404. Raii Hist. 1. 126. Synop. 44. *Ophioglossum sive Lingua Serpentina.* Park. 506. ADDERS-TONGUE.

This is a small tender Plant, about four or five Inches high, consisting of a single thick green Leaf, smooth, and without Ribs, or large Veins, of an oval Shape, but sharp-pointed at the End,

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End, from the Boſom of which ariſes a Stalk about two Inches high, bearing on the Top a ſlender crenated Tongue, about an Inch long, in which is contained the Seed, ſo ſmall, that it is hardly viſible. The Root conſiſts of ſeveral matted Strings, or Fibres; it grows in moiſt Meadows, and is in its Prime in *May*; the Leaf ſoon periſhing by the Summer Heat, and the Root remaining in the Earth.

Adders-tongue is a good vulnerary Plant, both given inwardly, either in the Juice, or Powder, for Bruiſes and Wounds; and outwardly boiled in Oil, for freſh Wounds, Ulcers, Bruiſes, and Inflammations. *Miller's Bot. Off.*

Dodonæus ſays, that *Baptiſta Sardus* pretended to cure Ruptures by the Uſe of the Powder of this Herb, and all Sorts of Wounds, by the Oil made by Infuſion. *Martyn's Tournefort.*

The freſh Leaves conglutinate Wounds, and cure an Enterocele; for inward Wounds it is exhibited in Water of *Equiſetum*. *Baptiſta Sardus* affirms, that the Powder of the Herb, exhibited for ſome Days, is of ſufficient Efficacy for the Cure of all Sorts of Herniæ. The Oil, prepared of the Leaves macerated, for a conſiderable time, in Oil of Olives, or Omphacinum, expoſed to the Sun, or, which is a ſhorter Way, boiled over the Fire, till the Leaves become dry and juiceleſs, and then expreſſed, is reckon'd one of the beſt Remedies, not only for recent Wounds, but for old Ulcers, and an Hernia; eſpecially, ſays *Parkinſon*, if a ſmall Quantity of Oil of Turpentine be diſſolved in it.

Mentzelius found a great Difference in the Size of the *Ophioglosſum*, about the Town of *Furſtenwald*. The leaſt riſes not above an Inch with its Tongue and Leaf; the middle-ſized has a Leaf of two Inches, and a Tongue above three Inches in Length; the largeſt has a Leaf four Inches in Length, and one and an half in Breadth, with a Tongue in proportion; in the ſame Place he met with *Ophioglosſa* of three Tongues, and two Tongues. The Farmers of the *Valedo* bruiſe it, and put it into boiling Butter, which, thus uſed, will keep two or three Years, as an Ointment, wherewith, after milking, they anoint their Cows Teats, which are chapt, or ſore. *Raii Hiſt. Plant.*

The Name *Ophioglosſum* is from ὄφις, *Ophis*, a Serpent, and γλῶσσα, *Gloſſa*, a Tongue, becauſe the Fruit of this Plant reſembles the Tongue of a Serpent. The Plant is vulnerary, conſolidating, and reſolvent; and is effectual for inflamed Wounds and Hæmorrhages. *Cæſalpinus* commends an Ointment prepared of this Plant, for an *Hernia* in Infants. Many ſtrange Things are reported of this Plant, as that, by virtue thereof, a Perſon ſhall be preſerved from evil Spirits, and Infection by Poiſon, with other wonderful Effects, which none is bound to believe. *Hiſt. Plant. adſcript. Boerhaav.*

OPHIOSCORODON. Viper's Garlick, or Rocambole. See ALLIUM.

OPHIOSTAPHYLON. A Name for the *Vitis Alba*, or *Bryonia Alba*. *Oribaſius, Medic. Collect. Lib.* 11.

OPHITES & SERPENTINUS. Offic. *Ophites*. Charlt. Foſſ 18. Worm. 43. Schrod. 354. Aldrov. Muſ. Metall. 752. *Ophites veterum*; *Serpentine recentiorum*. Boet. 501. *Lapis Ophites*. Matth. 1389. THE SPLEEN-STONE, or OPHITE.

It is a very hard Sort of Marble like Porphyry, of a deep-green Colour, interſperſed with ſome fainter Spots of the ſame. *Dale*. But we are told by *Dioſcorides*, that one Species of this Stone is ponderous and black, another Aſh-coloured and ſpotted, and a third diſtinguiſhed by white Lines. All of them, worn as Amulets, are effectual againſt the Bites of Serpents, and the Head-ach; that with the white Lines, in particular, is ſaid to cure the Lethargy, and Pain of the Head. *Dioſcorides, Lib.* 5. *Cap.* 162.

OPHRIS. See BIFOLIUM.

OPHRYS, ὀφρύς. The loweſt Part of the Forehead, where the Eye-brows grow; and the Hair of the Eye brows.

OPHTHALMIA, ὀφθαλμία, from ὀφθαλμὸς, an Eye. It ſometimes ſignifies any Diſorder, or Pain of the Eye; but it is uſed ſtrictly to expreſs an Inflammation of this Organ. Monſieur *de St. Yves*, a celebrated *French* Oculiſt, thus diſtinguiſhes the ſeveral Species of Ophthalmies, and directs the following Methods of Cure for each Sort.

An Ophthalmy, ſays he, is an Inflammation of the Conjunctiva, ſometimes attended with violent Heat, and a Flux of Tears, ſometimes without either Heat or Tears. This Inflammation ſometimes extends over all the Globe of the Eye, and even to the adjacent Parts. Of all Diſorders of the Eye, this is the moſt frequent, as it accompanies almoſt every Diſeaſe to which the Eye is ſubject.

Some of theſe Inflammations are without Danger, and eaſily cured; others are very dangerous, and difficult to cure. Their Cauſe is either external or internal. Internally they proceed from the Blood, whether from too great a Redundancy, or ſome acquired bad Quality of it; ſuch are the Thickneſs, Viſcoſity, Acrimony, or too great Rarefaction, of the Blood.

If the Quantity of Blood be exceſſive, it will be carried too copiouſly into the minute Veſſels of the Eye, and ſo produce an Ophthalmia.

If the Blood be too thick, as it is inceſſantly conveyed into the fine Veſſels of the Eye, its Particles being too heavy and large to paſs into theſe Veſſels, the Circulation, in theſe Parts, muſt be obſtructed, and an Inflammation generated. When the Blood is too ſharp, the Seroſity, furniſhed by the lachrymal Gland, will partake of the ſame Nature, and by irritating the Conjunctiva, which it conſtantly moiſtens, will produce an Ophthalmia. If the Blood be too much rarefied, as the Rarefaction affects the fine delicate Veſſels of the Eye, it will occaſion an Inflammation.

As to external Cauſes, it is evident, that whatever can violently irritate the Conjunctiva, and the Membrane which covers it, or can make a Separation in the Veſſels of thoſe Parts, will neceſſarily cauſe this Diſtemper.

An Ophthalmia is ſometimes attended with very dangerous Accidents; it is often exaſperated by improper Remedies, apply'd by the Patients, when firſt attacked; it is ſometimes ſo violent, that its Progreſs can hardly be ſtopped, or the Sight preſerved.

Theſe Inflammations are generally divided into the dry and humid: But I ſhall add ſome others; for I have obſerved different Symptoms in each particular Species, as will appear in the Sequel.

The DRY OPHTHALMIA.

This Species brings a Redneſs on the Eye without Tears, or any purulent Matter. It occaſions no Swelling of the Eye-lid, nor Pain in the Eye, or in the Head. It is cauſed by a thick Blood, which ſtagnates only in ſome of the Veſſels of the Conjunctiva, only Part of the White of the Eye being red.

The HUMID OPHTHALMIA.

This Sort is produced by a great Quantity of Lachrymal Lymph, which, as it paſſes continually over the Globe of the Eye, irritates the ſame by its Acrimony, inflames it, and the inner Part of the Eye-lids, which become ſwelled; it, likewiſe, often ulcerates the tranſparent Part of the Cornea. This Diſeaſe is attended with ſhooting Pains in the Eye, and the Patient cannot behold the Light without intenſe Pain. Children, and old People, are both ſubject to this Diſeaſe, in whom it becomes very obſtinate, by reaſon of the natural Moiſture of their Temperament. When it runs to a Leng h in Children, their Lips and Noſes ſwell, and are covered with Scabs and Puſtules, that ſometimes overſpread the Face.

The OPHTHALMIA, *from a* DEFLUXION *of the* BRAIN.

In this Species an Itching is excited in the Eye, a thick glutinous Matter ouſes out, and conglutinates the Eye-lids in the Night. This Kind is moſt eaſily cured.

The OPHTHALMIA, *attended with dry* FILM.

This reſembles the firſt dry Sort; the Conjunctiva is red, and the Eye-lids are ſmeared with dry Film like gritty Flour, Part of which falls on the Globe of the Eye; and the Patients think there is ſomething in it, which is very troubleſome, and makes the Conjunctiva appear red.

The OPHTHALMIA *in the* GLOBE *of the* EYE *towards the* ACANTHI.

This fifth Kind is when the Patient's Eyes are red only towards the Angles, while the upper and lower Parts of the Globe are not at all affected; when the Caruncula Lachrymalis becomes inflamed, the Veſſels which paſs under it, ſwell even to the tranſparent Part of the Cornea. This Diſeaſe often changes to the Unguis. See OCULUS.

The OPHTHALMIA, *with* PIMPLES *on the* GLOBE *of the* EYE.

In this Species there is a Swelling of the ſmall Plexus or Bundles of Veins, which are ſent from the inner Surface of the Eye-lids, and terminate where the Conjunctiva is joined with the tranſparent Part of the Cornea; a Pimple, as big as a Lentil, appears in that Place. Sometimes the Redneſs is continued to the Cornea, and, at its Extremity, whitiſh Pus may be ſeen. It is evident, that the Matter producing theſe Pimples, ouſes thro' the Ends of the aforeſaid Veſſels. This Diſeaſe can only be cured by piercing the Pimple, or diſcuſſing the contained Matter.

The OPHTHALMIA, *with* LITTLE ABSCESSES *on the* CORNEA *and* CONJUNCTIVA.

In this ſeventh Species all the Conjunctiva becomes red, with ſmall Abſceſſes, ſeated partly on the tranſparent Cornea, and partly on the Conjunctiva. Sometimes there are five or ſix of them round the Eye; they are ſometimes as big as a Pin's Head, and ſometimes as big as a Lentil.

The ERYSIPELATOUS OPHTHALMIA.

This eighth Sort reddens the Conjunctiva, ſwells the Eye-lids, and cauſes violent Pains and Heat both in the Eyes and Head. The adjacent Parts, as the Temples, the Forehead, and the Noſe, are covered with Scales and Scabs, that leave, when they fall off, Marks for Life, reſembling thoſe of the Small-pox.

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Of the Ophthalmia, *called* Chemosis.

In this ninth Kind, all the Conjunctiva is swelled to the Thickneſs of a Finger's-breadth; this makes the tranſparent Part of the Cornea appear, as it were, ſunk in a Cavity. This Inflammation is attended with violent Pains in the Head and Eye, with Heavineſs over the Orbit, and with Want of Sleep; there is, likewiſe, a Fever, Pulſation, and the like. All the tranſparent Part of the Cornea often comes away by Suppuration, which deſtroys the anterior Chamber of the Eye. The Cicatrix, ſubſequent to the Suppuration, hinders the cryſtalline and vitreous Humours from falling out; and, by that means, the entire Decay of the Globe is prevented: Sometimes both happen.

This Species of Ophthalmia is often the Conſequence of a Stroke received in the Eye, or in the adjacent Parts. At other times it comes without any external Cauſe preceding the Diſeaſe. It may be cauſed by a critical Tranſlation, after a malignant, or other Fever.

A Lady, who got a Pleuriſy by riding in the Rain, not being ordered to be let Blood by the Country Phyſicians, there enſued an Ophthalmia of this Sort, upon which the Pleuriſy abated; but the Fever, and Inflammation of the Eye, ſtill continuing, it ſoon turned to an Abſceſs. The other Eye was ſeized, about the twentieth Day, with the ſame violent Symptoms. When the Patient was in a Condition to be removed, ſhe came to *Paris* to conſult me. Having examined her Eyes, I found the firſt I mentioned, was entirely loſt, and the other was covered with a Cicatrix, which I took off by proper Remedies; ſo that ſhe can now ſee enough to find her Way.

Of the Venereal Ophthalmy.

This tenth Sort has almoſt the ſame Phenomena with the laſt, with this Difference, that the Conjunctiva, which is ſwelled, appears hard and fleſhy. It begins thus: A great Quantity of whitiſh Matter, with a yellowiſh Caſt, ouſes through the Eye. This Diſeaſe, which proceeds from a Venereal Cauſe, is very rare: Yet I have ſeen ſeveral attacked with it. In moſt of them, this Diſeaſe appeared two Days after the Beginning of a virulent Gonorrhœa; the Matter, not running off by its uſual Paſſages, was removed to the Eye; whence there flowed a like Matter, which ſtained the Linen in the ſame manner, as when it paſſed through the uſual Chanels.

The Ophthalmia *of the* Choroides.

In this eleventh Species the Choroides and Uvea are inflamed, and the Conjunctiva only lightly; it is attended with a Flux of Tears. The looking at the Light is painful to the Patient, who feels acute Pains towards the Top of the Head and the Temples.

The Ophthalmia, *from* Strokes *on the* Eye.

The Violence of the Stroke, or the Shape of the Inſtrument, makes all the Variation found in this Diſeaſe.

The Ophthalmia, *from the* Rupture *of the* Veſſels *of the* Conjunctiva.

In this thirteenth Species, the Eye grows very red, though the Patient feels no Pain, neither is the Light uneaſy to him. It is cauſed by the Rupture of ſome Blood-veſſel of the Conjunctiva, which occaſions an Effuſion of Blood between the Laminæ of that Membrane.

Of the Prognostic *of* Ophthalmias.

The Symptoms of all Ophthalmias are not alike to be fear'd, or accompanied with the ſame Danger. The humid Ophthalmia is dangerous, either on account of its Duration, or of its Returns, or of the Acrimony of the Lymph, that excoriates and ulcerates the tranſparent Part of the Cornea; it, likewiſe, deſtroys Part of the Sight, by the Cicatrices which remain after the Ulcers.

The Eryſipelatous Ophthalmia is dangerous, becauſe of the violent Pains which it cauſes, beſides the conſiderable Damage it does to the Sight.

The Chemoſis is very fatal, by reaſon of the Pains which follow it, and often the very Loſs of Sight. The Venereal Ophthalmia is equally dangerous.

The Ophthalmia of the Choroides, and the Uvea, is very dangerous; for it often deſtroys the Sight, or elſe generates a membranous Cataract.

The Ophthalmia from Strokes on the Eye is more or leſs dangerous, according to the Parts which are damaged by the Stroke.

The Ophthalmia ſubſequent to Strokes on the Head, by which the Meninges have been hurt, is a Sign of Death.

When in the Beginning of the Small-pox the Eyes are, as it were, filled with extravaſated Blood, it is, alſo, a mortal Sign; for it denotes, that the Blood is carried with Violence to the Head.

The other Species of Ophthalmias are, in general, not dangerous; being, for the moſt part, free from any fatal Symptoms. A Diarrhœa cures an Ophthalmia, according to *Hippocrates*.

Of the Cure *of* Ophthalmias.

The general Remedies are, Bleeding, to leſſen the Quantity of Blood; Purging in ſome Caſes, which would, in other Caſes, be prejudicial. The Spots, Ulcers, and certain Abſceſſes, of the tranſparent Part of the Cornea, attended with an Inflammation of the Conjunctiva, are more ſpeedily cured by Bleeding in the Eye, than by any other Means; though in ſome Caſes it is not proper. See the Methods of performing this Operation, under the Article Oculus.

The Cure *of the* dry Ophthalmia.

For ſome Days waſh the inner Part of the Eye with a Collyrium, made of twelve Grains of prepared Tutty, diſſolved in two Ounces of Roſe and Plain ain-waters, with the Addition of a Spoonful of Spirit of Wine. Take of *Paul's* Betony, Thyme, and Red Roſes, each a Pugil; two Stalks of Mullein: Boil them in a Gallon of Wine; and, at Night, apply to the Eye a Compreſs dipt in this Wine.

As this Species of Ophthalmia is not dangerous, it requires but few Remedies; and is ſometimes cured by Bleeding, repeated according to the plethoric Conſtitution of the Patient.

The Cure *of the* humid Ophthalmia.

This Species is ſometimes very difficult to cure, and requires more Medicines than the laſt, beſides ſuch Repetitions of the general Remedies, as the State of the Patient may require.

Bleeding at the Neck, and in the Foot, is often neceſſary. Apply a Collyrium, made with the diſtilled Waters of Fennel, Eye bright, and Plantain, of each two Ounces; in which diſſolve two Grains of Salt of Lead. Sometimes we are obliged to uſe a Seton, a Cautery, and Bliſters. If the Veſicatories incommode the Kidneys or Bladder, they muſt be laid aſide, and other Means employ'd. If the firſt Collyrium, which is deſign'd only as a Sweetener, after ſome Days, does not ſucceed, let another be ſubſtituted, which, by conſtringing the Pores, will hinder the great Afflux of Tears to the Eye; for which Reaſon you may omit the Salt of Lead, and diſſolve, in the ſame Waters, half a Dram of the white Troches of *Rhaſis*. When the Flux of Humours has ceaſed, if any Ulcer remains, as often happens, on the tranſparent Part of the Cornea, make uſe of a Diſſolution of the *Lapis Divinus* in common Water.

To make this Stone, put of Alum, Salt-petre, and Vitriol of *Cyprus*, each a Pound, into a glazed earthen Veſſel; then place the Veſſel in a Furnace, and ſurround it with Charcoal, till it comes half an Inch above the Bottom of the Veſſel; and ſet Fire to it. As you ſee the Materials melt, ſtir them with a long ſmall Stick; and, when they are raiſed in the Ebullition about three Fingers-breadth, let the Veſſel be taken from the Fire, and throw in two Drams of Camphire, continuing to ſtir the Whole, till the Camphire is entirely diſſolved; then cover the Pot, as quick as you can, luting its Junctures with ſome Rolls of firm Paſte, a Foot long, and half an Inch thick. Leave it ſo for twenty-four Hours; then break the Pot, and ſeparate the Stone, which put into a Glaſs Veſſel, cloſely ſtopt.

The Doſe is from twelve Grains to half a Dram, diſſolved in half a Pint of common Water: The Diſſolution of two Drams of Sugar-candy, with a Spoonful of Brandy, may be added.

When the Ulcer is cicatrized, if this Remedy does not entirely remove the Spot, make uſe of the Powder of Cuttle-bone and Sugar-candy mix'd together; drop about the Bigneſs of a Lentil of this Powder, every Morning, on the Spot. We muſt ſometimes have recourſe to more powerful Remedies; ſuch are, Oil of Linen, and Powders in which Alum is an Ingredient.

Humid Ophthalmias are often attended with ſcrophulous Tumors, as appears from the Swelling of the Glands about the Neck.

In this Caſe, we muſt uſe Remedies that can eradicate the Cauſe of this Diſeaſe, which otherwiſe will deſtroy the Eyes by the Ulcers and Spots, which ſucceed it; for which Reaſon, beſides the foreſaid Remedies, the following Ptiſan muſt be prepared.

Take of *China* and Burdock-roots, ſliced, each one Ounce; boil them in five Pints of Water, to half the Quantity; add an Handful of *French* Marigolds, and ſome Liquorice. The Patient muſt drink, every Day, about three Half-pints of this Ptiſan, two in the Morning, and one in the Afternoon, to be continued for a Month. Let him take thirty Grains of Æthiops Mineral, three Days ſucceſſively. Let him be purged, the fourth Day, with a very briſk Purge; ſtill taking care, that it be ſuited to the Diſeaſe, and the Patient's Conſtitution. Then let him reſt four Days, without taking any Æthiops; afterwards renew the Uſe of the Æthiops, for three Days; and let him be purged again, which muſt be continued, till he is perfectly cured.

The Doſe of the Æthiops muſt be increaſed, by little and little, to a Dram; for, when it is given in too ſmall a Quantity, it has not its full Effect, nor does it anſwer the End expected from it: Regard muſt ſtill be had to the Patient's Age, Temperament, and the like Circumſtances.

The Cure *of* Ophthalmias, *from a* Defluxion.

After the general Remedies, the Ointment of Tutty muſt be uſed; every Night, about the Bigneſs of a Lentil of it, when the

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the Patient goes to Reſt, muſt be put in the Corner of his Eye, towards the Noſe, ſo that it may enter into the Eye. The Eye muſt be waſhed with warm Water and Brandy, ten Parts of the firſt to one of the laſt. If the Angles of the Eye-lids, which are often ulcerated, do not cure with the Ointment of Tutty, a Diſſolution of Lapis Divinus muſt be uſed.

The CURE *of the* OPHTHALMIA, *with* FILM.

Let Sal Ammoniac, and Sugar of Lead, of each ſeven Grains, be diſſolved in Roſe and Plantain-waters, of each four Ounces; with which the Eye muſt be bathed three or four times a Day.

The CURE *of the* OPHTHALMIA *in the* GLOBE *of the* EYE, *towards the* ANGLES.

Uſe a Collyrium made of white Vitriol, and Florentine Orrice, of each one Dram; infuſed in two or three Pints of Water, according as it is required, ſtronger or weaker.

The CURE *of the* OPHTHALMIA, *attended with* PIMPLES.

Make uſe of a Diſſolution of the Lapis Divinus in common Water, when the Pimples lie only on the Conjunctiva; but if they are ſpread on the tranſparent Part of the Cornea, and Pus appears between the Pellicles of that Membrane, then Remedies, proper for Abſceſſes of the Eye, muſt be applied; which are mentioned below.

The CURE *of the* OPHTHALMIA, *with little* ABSCESSES *on the* CORNEA *and* CONJUNCTIVA.

Apply between the tranſparent Part of the Cornea and the Conjunctiva, where the Abſceſſes are formed, Remedies proper to open them, and likewiſe to cicatrize them; for the Inflammation and Violence of the Diſeaſe do not abate, till the Matter is diſcharged.

Firſt, then, apply the diſtilled Water of Camphire; as ſoon as it begins to penetrate, uſe a Diſſolution of Lapis Divinus in common Water; it will cleanſe and cicatrize the Ulcers.

The CURE *of the* ERYSIPELATOUS OPHTHALMIA.

This Species is difficult to cure. Firſt apply the diſtilled Water of Elder-flowers, with a tenth Part of Brandy; warm it, and bathe the Eye with it. You muſt likewiſe have recourſe to a Seton, to Bleeding in the Arm, in the Neck, and in the Foot; afterwards, Purging and Bliſters, if neceſſary, muſt be employ'd.

The CURE *of the* OPHTHALMIA, *called* CHEMOSIS.

The Violence of this Diſeaſe requires a ſpeedy Cure; for which Reaſon, as ſoon as the Derivation on the Eye is perceived, the Patient muſt be let Blood, the firſt Day, twice in the Arm; the next Day, let him be purged briskly; and the ſame Night, if the Symptoms continue, let him be blooded in the Foot; the Day after the Purge, let him be blooded in the Neck. This Diſeaſe, with regard to the Eye, is the ſame as the Pleuriſy, with regard to the Breaſt; for the Blood has the ſame Colour and Quality in both Caſes. Let a large Bliſter be laid to the Patient's Shoulders. In the Beginning, Poultices are generally applied; but that Method is very pernicious; for the Weight of the Cataplaſms is troubleſome, and rather tends to bring the Matter to a Suppuration, than to diſcuſs it; whereas the proper Remedies are ſuch as can mitigate the Inflammation, and carry off the Matter that cauſes it by Perſpiration; ſuch is Brandy, mixed with a great deal of warm Water. The Eye muſt be waſhed often with this Mixture. Let a Dram of Diaphoretic Mineral, freſh-made, be mix'd in two Pints of common Piſan; the Patient muſt drink this Quantity in a Day and an half. If the Purge gives Eaſe, let it be repeated again in two Days; and, if the Eye ſeems diſpoſed to a Suppuration, apply a reſolvent, diſcutient Medicine, to prevent it. Take Sage, Roſemary, Hyſſop, and red Roſes, each a Pugil; boil them, for three or four Ebullitions, in half a Pint of red Wine; dip Compreſſes in it, and lay them to the Eye, taking care not to preſs it too much with the Bandage. If a Whiteneſs appears in the tranſparent Part of the Cornea, drop ſome of this Wine into the Eye, three times a Day; wet the Compreſs, as it grows dry. If, by theſe means, the Swelling of the Eye ceaſes, and the Globe does not come to a Suppuration, or if the Matter of the Suppuration be reſolved and diſcuſſed without injuring the Eye, then make uſe of the diſtilled Water of Camphire; it muſt be dropped, from time to time, into the Eye, till all the Redneſs goes off. If the Eye, as often happens, remains weak, inſtead of this Water, I uſe a ſtrengthening Water, which reſtores the Eye to its firſt State. We are ſometimes obliged to open the Abſceſs with a Lancet, leſt the Stagnation of its Matter might deſtroy the Parts of the Eye which incloſe it. The Manner of performing that Operation we ſhall ſhew preſently in the Abſceſs of the Eye.

The CURE *of the* VENEREAL OPHTHALMIA.

This requires as ſpeedy Help as the preceding Species. The Patient muſt be blooded in the Foot, to make a Revulſion of the Humours from the Eye; he muſt likewiſe take the Panaceum Mercuriale; he muſt bathe at home Morning and Evening; he muſt be purged from the firſt Day of his Bathing, which ſometimes muſt be repeated ſeveral Days ſucceſſively; he muſt take the Panaceum every Night; his Eye muſt be waſhed every Morning, with a Mixture of Water and Brandy; Compreſſes, wetted in the Wine mention'd above, muſt be conſtantly kept to his Eyes. By this Method, the Diſeaſe, if taken in time, will ſoon be cured; otherwiſe the Eyes will periſh, or very little Sight will remain after the Cure.

The CURE *of the* OPHTHALMIA *of the* CHOROIDES.

The Cure of this Species is the ſame as that of the Chemoſis, with this Difference, that two Drops of the diſtilled Water of Camphire muſt be put into the Patient's Eyes every two Hours.

The CURE *of the* OPHTHALMIA, *from Strokes on the* EYE.

As in this Species there is always ſome extravaſated Blood, it is neceſſary to apply anodyne diſcutient Medicines; ſuch as Pigeons Blood, which muſt be dropt into the Eye twice a Day; Compreſſes ſteep'd in warm Wine, mixed with ſome Drops of the Balſamum Commendatoris, muſt be laid to the Eye-lids; Bleeding muſt be repeated once, or oftener, as the Diſeaſe ſeems to require it. The Eye muſt be waſhed, three times a Day, with a Mixture of Aqua Vulneraria, one Spoonful in five Spoonfuls of the diſtilled Water of Eye-bright. Other Remedies may be afterwards uſed; ſtill having due Regard to the State of the Eye, and to the Symptoms ſubſequent to the Stroke.

The CURE *of the* OPHTHALMIA, *from the* RUPTURE *of the* VESSELS *of the* CONJUNCTIVA.

This Species is commonly cured by dropping Pigeons Blood into the Eye, three times a Day; and afterwards applying a Compreſs, wetted in the Vulneraty Water, which muſt be taken off, when it grows dry: Then let fall ſome Drops of this Water into the Eye, to clear it of the Pigeons Blood. The White of the Eye, from red, at firſt becomes yellow, and afterwards recovers its natural Whiteneſs.

Of the OPHTHALMIA, *ſubſequent to the* SMALL-POX.

The Small-pox cauſes four Sorts of Diſeaſes in the Eyes; the Inflammation of the Conjunctiva, the Fiſtula Lachrymalis, the Abſceſs of the Cornea, and Ulcers in the Eye-lids. All theſe four are ſometimes united, and ſometimes there is only one. In the Courſe of the Small-pox, the Face and Eye-lids ſwell, the Eyes redden, and a glutinous Matter ouſes out of them; this glews the Eye-lids together, ſo that, when Care is not had to looſen them, they remain ſhut ſeveral Days. This Humour, thus confined between the Eye-lids and the Globe, becomes acrid, and, by that means, may ulcerate the tranſparent Part of the Cornea, and injure the Sight conſiderably.

When the Puſtules of the Small-pox, in the other Parts of the Body, ſuppurate, they cicatrize; but the Puſtules on the Edge of the Cartilage of the Eye-lids, between the Cilia and their internal Surface, do not cicatrize, by reaſon of the acrimonious Seroſity, which inceſſantly moiſtens the Eye. Hence follow Ulcers, which continue, ſometimes, ſeveral Years, and even during Life, if they be not remedied.

There are two Sorts of Ulcers cauſed by the Small-pox in the Eye-lids; ſome are attended with a ſort of fungous Fleſh, which retards their Cure, till it be conſumed. Others undermine the Glands that ſeparate the Film, and ſo corrupt that Humour, which, by ſticking to their Surface, contributes very much to prolong the Ulcers; in Length of Time, it makes the Eye-laſhes fall off.

The third Accident, cauſed immediately by the Small-pox, proceeds from a viſcid Humour, collected and lodged between the Globe and the Eye-lids, when they have been kept ſhut too long. This Humour enters the Lachrymal Points, paſſes into the Lachrymal Bag, creates an Obſtruction in the naſal Chanel, and ſo produces a Fiſtula Lachrymalis.

The fourth Accident commonly happens twenty Days after the Small-pox, and ſometimes in the Height of the Diſeaſe; it is cauſed by a Puſtule, which appears in the Middle of the tranſparent Part of the Cornea, between its Pellicles; the Hardneſs of the Cornea hinders the Puſtule from coming out, unleſs it be ſuperficial; then the Puſtule penetrates inwardly, and, by that means, generates an Abſceſs; or elſe the Matter is extravaſated between the Pellicles, congeals, hardens, and forms a Spot in that Part.

Beſides theſe Accidents, ſometimes a violent Defluxion ſupervenes, when the Patient, after all the Puſtules are cured, comes to take the Air. As the Pores of the Skin are expoſed to the Air, they are, as it were, cloſed by it, ſo that the Perſpiration of the Reſidue of the ſaline Humour, which paſſed through the Ulcers of the Skin, is hindered by this Obſtruction of the Pores. This Humour, thus obſtructed, returns into the Veſſels, is diſcharged on the Eyes, and generates an humid Ophthalmia, attended with an Humour ſo corroſive, that it excoriates the Skin of the Face.

Of REMEDIES *for the* OPHTHALMIA, *ſubſequent to the* SMALL-POX.

Here I muſt refer the Reader to the Cure of the humid Ophthalmia; I ſhall only add this Caution: During the Small-pox, uſe a Collyrium made of Saffron, and the diſtilled Waters of Roſes and Plantain; and the diſtilled Water of Camphire, if applied in the Beginning, prevents all theſe Diſorders. It ſuffices to put

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some Drops of it into the Eye, three or four times a Day; and, to hinder the glewing of the Eye-lids, which is of great Consequence, dip a Feather in this Liquor, and draw it between the Eye-lids several times in the Day and Night.

The Remedies for the Pustules of the Small-pox, on the transparent Part of the Cornea, are under the next Head; and those for the Fistula Lachrymalis, see under that Article.

In Ulcers on the Edges of the Eye-lids, Ophthalmic Waters are, generally, of little Service; but I have found from my own Experience, that, by touching them with the Lapis Infernalis, they cicatrize easily. The violent Heat of the Caustic must be abated, as soon as they have been touched, by washing the Eye in a small Glass full of warm Water. But, above all, Care must be taken, that the Part of the Eye-lid, which was cicatrized, may not bear against the Globe of the Eye, till the Pain is entirely gone off. They may be touched, in this Manner, once or twice a Week, till they seem to require no more Use of the Caustic; then lay on these Places, Morning and Evening, Tutty reduced to a very fine Powder; it will cicatrize them. We are to observe, that these Ulcers, which lie deep, are more difficult to cure, than those attended with fungous Flesh.

Of the Abscess *of the* Eye.

This Disorder may be seated in different Parts of the Eye; sometimes on the transparent Part of the Cornea; at other times, between the Conjunctiva, and the opaque Part of the Cornea; and often on the Uvea.

By Abscess I understand a Collection of Pus, whether it be great or small. When the Abscess is in the transparent Part of the Cornea, as often happens after the Small-pox, it is soon known from a Whiteness which attends it: But when it begins between the opaque Part of the Cornea, and the Conjunctiva, it may be known from the Swelling of the Eye, which is more tumefied at the Place of the Abscess, than in any other Part. If the Abscess be formed in the Uvea, it often lurks concealed, till the Pus is extravasated into the Aqueous Humour.

Abscesses which attack the transparent Part of the Cornea, begin, sometimes, by a little white Spot, which appears on the first Pellicle of that Membrane, which becomes a little raised. This Species is easily cured by pricking it slightly with the Point of a Lancet, without piercing the other Pellicles. But if the Abscess lies deeper, and in the Middle of the thickest Part of the Cornea, and spreads to such a Breadth as to cover almost all the transparent Part of that Membrane, it then becomes what is commonly called an Hypopion. But if this Abscess be not so large, and it breaks on the Inside of the Eye, and that the Pus falls into the anterior Chamber, between the Iris and the transparent Part of the Cornea, and there makes a Gathering in form of a Speck, shaped like an Half-moon, resembling that which appears at the Bottom of our Nails, it is then called Onyx.

[*Heister* gives a different Account of Hypopion and Onyx. See Hypopion and Oculus.]

Sometimes the transparent Part of the Cornea is clear of the Abscess, which lies between the Conjunctiva and Sclerotica, or in the Duplicature of the latter; the Pus breaks into the anterior Chamber, between the Iris and the transparent Part of the Cornea. In the first Case, the Pressure of the Eye-lids may occasion it; and, in the second, it may proceed from the Pressure of the Aponeuroses of the Muscles of the Globe.

In all these different Abscesses, there is great Danger of losing the Sight; several of them, however, are cured, without the least Damage to the Eyes. In the Cure of the Chemosis, I proposed a Remedy to resolve this Collection of Pus; and therefore, I shall here only speak of an Operation, which is sometimes necessary to discharge it. It is requisite, first, to give a Rule to know the Quality of the Pus in the Eye, which requires this Operation; for often the Matter, that escaped into the anterior Chamber, between the Iris and the transparent Part of the Cornea, is dispersed by the Help of Remedies already described; though this Matter cannot be justly said to be discussed, but is rather precipitated to the Bottom of the Eye.

When this Pus is not dispersed, but rather increases, so as to enter the Hole of the Pupil, it is then full Time to perform the following Operation.

Let the Patient be set fronting a great Light, with his Head on the Back of an easy Chair; then make an Incision in the transparent Part of the Cornea, under the Hole of the Pupil: You must take care the Point of your Lancet do not touch the Iris, which lies behind the Pus.

The Aperture must be made long enough to let the Pus out; to help the Discharge of it, inject warm Water into the Aperture; it will wash, and, as it flows out, bring away the Matter. Apply to the Eye a Compress wetted in a Collyrium, made of Rose, Fennel, and Plantain-water, mixed with the White of an Egg; the Compress must be kept moist, by sprinkling it, from time to time, with the said Collyrium; some of which must be dropt, three or four times a Day, on the Orifice in the Cornea. Some Days after this Pus is emptied, there is, for the most part, a Collection of fresh Pus, in the Place from whence the former was discharged. In this Case, introduce a fine Stilet into the Incision made to open the Abscess; and so let out this Matter, as you had done the first time. If no fresh Matter gathers, the Orifice may be closed; and, if the Eye still continues inflamed, apply the proper Remedies, which I need not repeat.

OPHTHALMIATER. An Oculist.

OPHTHALMOS, ὀφθαλμός. The Eye. See Oculus.

OPHTHALMOXYSIS, from ὀφθαλμός, the Eye, and ξέω, to scrape. A Brushing of the Eye. See Oculus. *Heister. Chirurg.*

OPHTHALMOXYSTRUM, of the same Derivation as Ophthalmoxysis. A Brush for the Eyes. See Oculus.

OPIATA. The Antients justly called those Medicines Opiates, in whose Composition there was Opium, or any other Ingredients, of a narcotic Quality; but, at present, the Name of Opiates is unjustly and abusively bestow'd upon Medicines prepared without Opium, whether of the corroborative, alterative, or purgative Kind, only on account of their Consistence, which resembles that of the Theriaca, and other Opiates of a like Nature.

These are, more properly, called Electuaries, which are, at present, divided into those of the solid Kind, otherwise called Troches; and those of a softer Consistence, by some called Opiates, both of which were, by the *Greeks*, called by the common Name of Antidote; which, however, did not comprehend purgative Medicines, as our Word *Opiate* does.

An Opiate, therefore, is a Medicine of a thicker Consistence than a Syrup, and, like the true Theriaca, prepared with Opium, scarcely fluid. It consists of various Ingredients, made up with Honey, or Syrup; and is to be used for a long time, either for purgative, alterative, or corroborative Intentions.

Hence there are Opiates of three Kinds; that is, of a purgative, or alterative, or of a corroborating Quality. *Morelli Formulæ Medicament.*

OPION. The same as Opium; which see.

OPISTHOBARES, ὀπισθοβαρὲς, the Name of a Collyrium, of Use in Asperities of the Eye-lids, and described by *Aetius*, *Tetrab.* 2. *Serm.* 3. *Cap.* 110. from *Oribasius*. It was otherwise caled Harmation, and Eutonon.

OPISTHOCHEIMON, ὀπισθοχείμων, from ὄπισθεν, behind, backwards, and χείμων, the Winter, in *Lib.* 1. *Epid.* and *Lib.* 1. *de Humor.* signifies the cold Season at the latter End of the Winter, which is, generally, then most severe.

OPISTHOCRANION, ὀπισθοκρανίον, from ὄπισθεν, behind, and κρανίον, the Cranium, in *Ægineta*, *Lib.* 6. *Cap.* 2. is the *Occiput*, or hinder Part of the Head.

OPISTHOCYPHOSIS, ὀπισθοκύφωσις, from ὄπισθεν, backwards, and κύφωσις, of κύφω, gibbous, is the same as *Cyphosis*, or an Incurvation of the Spine backwards. Gibbosity.

OPISTHOTONOS, ὀπισθότονος, of ὄπισθεν, backwards, and τόνος, from τείνω, to stretch, is a Species of Convulsion; for which see Tetanos, and Epilepsia.

OPIUM. This is an inspissated Juice, of a blackish-brown Colour; sometimes reddish, of a bitter Taste, and a very disagreeable Smell. The *Greeks* distinguished two Kinds of it; one got by wounding the *Papaver album*, Officin. the other by Expression. The Opium which we have, is of the first Kind; and as it was cultivated formerly in *Egypt*, near the City of *Thebes*, it has acquir'd the Name of *Opium Thebaicum*. If we may believe *Kempfer*, all the Opium now used in the East, is what transudes spontaneously from the Plants in *Natolia*, and other Places. But M. *Tournefort*, and several other modern Travellers, could find no such *Opium* among the *Turks*, all that they met with being the same with what is brought to us in soft Lumps. They, also, observe, that the sober People among the *Turks* seldom take above a Dram in a Day; and a few Grains of that Quantity are always mix'd in their Coffee. In the Empire of the Great *Mogul*, Opium is sold as commonly in the Shops, as Tobacco with us. The Inhabitants prepare it in different Manners, and mix it with different Ingredients, such as Rhubarb, the Extract of Rhubarb, and the like. Some add to it other narcotic Substances, such as the *Datura*. This last is generally the Artifice of the Quacks, by which they who take this, are thrown into pleasing Dreams, which they take for Ecstasies, and believe to be real. *Kempfer* relates many wonderful Effects of this Preparation, which he terms the *Indian Nepenthe*.

The Effects of Opium are always narcotic, whether taken inwardly, or applied externally; and it has been found to cause Sleep, when given in a Clyster, better than when taken by the Mouth. When applied to the Eyes and Ears, it has caused Blindness and Deafness; and *Galen* relates, that an Opium-plaister, laid on a Gladiator's Head by a Stratagem of his Enemy, killed him in a little time afterwards. This Author, also, says, that he never used Opium, except in very pressing Cases. Opium does not make the Pulse quicker, or harder, than it was before; but only greater, and heats very much; which is a sure Proof, that it dissolves and rarefies the Blood; and this appears also from its causing an Itching in the Skin, and sometimes Sweat. It is observed of the *Turks*, who are killed in Battle, that as soon as their dead Bodies are removed from the Places where they fall, they begin to bleed, their Blood being made more fluid by the

Opium

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Opium which they take. By this Rarefaction of the Blood in the Veſſels, the Nerves which lie near theſe Veſſels, are compreſs'd; and thus the Courſe of the animal Spirits is ſtopt, as is, alſo, the Secretion of many Fluids, ſuch as the Bile and Urine, which occaſion Coſtiveneſs, and the making of very little Water. Opium, in all Probability, acts by its narcotic Sulphur, which divides and rarefies, in an extraordinary Manner, the ſulphureous Parts of the Blood: And accordingly we obſerve all Vegetables, which contain an Oil of this kind, ſuch as Nutmeg, Saffron, and the like, produce in the Body an Effect of the ſame Nature with that of Opium. Neither is it at all unfeaſible, that Sulphurs ſhould be capable of a very great Degree of Rarefaction, ſince the Smell of Musk, or Ambergriſe, may extend through ſo large a Space. *Pitcairn* was of Opinion, that the Effects of Opium were owing to its volatile Salt; but it ſeems to contain that Principle in too ſmall a Quantity for ſuch Operations.

When a Perſon has taken too great a Quantity of Opium, the firſt Thing to be done is, to empty the Veſſels by copious Bleeding, if the Patient's Strength can bear it. The next Thing is to drink acid Liquors, ſuch as Vinegar, Lemonade, Syrup of Barberries, and ſuch-like, which coagulate the Blood, and thus give the Veſſels room to contract. Smelling to Vinegar, and all Aromatics, is alſo proper; and, if the Stupor be very great, Scarifications ought to be made; and Vinegar and Salt ſprinkled upon the ſcarified Parts. Bliſters and ſharp Clyſtersanſwer the ſame Effect.

The Rules to be obſerved in taking Opium, are theſe;

1. If the Patient be plethoric, he ought not to take Opium, till he has loſt ſome Blood.

2. It ought not to be given in the time of the Menſes and Lochia of Women, nor during the uſual Flux of the Hæmorrhoides in Men, becauſe it ſtops all theſe natural and healthful Evacuations. Neither ought Opium to be given in every Diarrhœa, becauſe, if it be critical, the Stoppage thereof may be very hurtful. It muſt, alſo, be very improper in a Suppreſſion of Urine; and the general Rule is, that, when the Suppreſſion of any one Evacuation by Opium is foreſeen, other Evacuations, eſpecially by Bleeding, ought to ſucceed.

3. Opium ought never to be taken on a full Stomach, becauſe it hinders Digeſtion, and proves, commonly, emetic. The Digeſtion ought, therefore, to be completed at the Time of taking it; and the ſame thing is to be ſaid of all other Narcotics, which, given unſeaſonably, and for a long Continuance of Time, quite deſtroy the Appetite, bring on Hickups, Nauſeas, and habitual Vomitings.

4. Perſons who begin to take Opium, ought to venture only on a very ſmall Quantity at firſt, becauſe the Effects of the ſame Quantity on different Perſons are very different; and there is no way to determine, but by Experience, how much any Perſon can bear. Half a Grain has been found to cauſe Sleep for twenty-four Hours together, to a Perſon who, afterwards, required half a Dram to produce half that Effect. For it is a certain Obſervation, that they who accuſtom themſelves to take Opium habitually, muſt often increaſe the Doſe, otherwiſe it gradually loſes its Effect on them; and the elder *Geoffroy* knew a Woman who took ſeventy-two Grains every Day, merely to eaſe the Pain of a cancerous Breaſt. The common Quantity among the *Turks* is a Dram in a Day; but ſome take much more.

The Antients were extremely cautious in giving Opium; but, in the Beginning of the laſt Century, *Felix Platerus*, a learned Phyſician of *Baſil* in *Switzerland*, began to bring the Uſe of it in Vogue. *Sylvius de le Boe*, Profeſſor of Phyſic at *Leyden*, perfected what *Platerus* began; and, from that Time, many of the moſt famous Phyſicians in *Europe*, ſuch as *Sydenham*, and others, found, by certain Experience, that it was one of the moſt valuable Medicines in the World, when prudently adminiſtred, in calming the too violent Motion of the Blood, and eaſing Pain.

There are, however, ſtill ſome very great Men, who continue Enemies to Opium; and among theſe M. *Stahl* has declared himſelf, in his Diſſertation *De Impoſturis Opii*. They are afraid to uſe it for the Ends juſt mentioned, for fear of ſuſpending the Criſes which commonly happen after violent Pains, ſuch as thoſe of the Gout and Rheumatiſm; and in acute Diſtempers, in which the Fluids are violently agitated, they apprehend, that by giving Opium, to diminiſh theſe Motions, they only throw a Veil over the Diſtemper; which hinders them from obſerving its true Genius, and the Tendency of Nature in the Courſe of it. Of this they cite Pleuriſies as an Example; and they are certainly in the right, not to give Opium in that Diſeaſe.

But, notwithſtanding all the Strength of theſe and other Reaſons againſt the Uſe of Opium, and the Authority of thoſe who advance them, this Medicine is undoubtedly very proper on many Occaſions; as in great want of Sleep, too great Motion of the Fluids, occaſioned by purgative, and other kinds of Medicines, in great Defluxions, and in ſtubborn Coughs. *Geoffroy*.

Preparations of Opium.

Extractum Opii: Extract of Opium.

Put four Ounces of good Opium in thin Slices, into a Glaſs Body, wherein there are two Pounds of Spring-water; ſet it in Sand, and ſtop the Mouth of the Body with another Glaſs: Make Fire under it, till by gradual Heat it is made to boil, in which State keep it two or three Hours; then let out the Fire, and, while the Diſſolution is hot, run it thro' a Flannel Bag, and preſs it ſtrongly into an earthen Veſſel; put that which remains in the Bag into a Matraſs, in which there is a Quart of rectified Spirit of Wine; make a double Veſſel of the Matraſs, and let it ſtand in Digeſtion twenty-four Hours, now-and-then ſhaking it; then take it out, and, when it is cool, run it thro' a Flannel; put the Spirit of Wine, which is charged with the gummy Part of the Opium, that the Water was not capable of diſſolving, into a Cucurbit; and in a gentle Heat draw off Two-thirds of the Spirit of Wine, which will ſerve again for the ſame Uſe. Then put both the Extractions together, and in a clean earthen Pan, with a moderate Fire, evaporate, till of a Conſiſtence fit to form into Pills, which keep in a Pot for Uſe.

This is a moſt certain Opiate yet known, and is very convenient for any Compoſitions of Laudanum; and ſome prefer it to any of the Liquid Preparations, becauſe the Doſe can more certainly be aſſigned. It is often preſcribed by the Title of *Extractum Thebaicum:* The Doſe is from half a Grain to two Grains. Some do this without any thing but common Water; and that, indeed, is a certain way to purify the Opium of all its Droſs.

Dr. Goddard's Compound Extract of Opium.

Take of Saffron, and Nutmegs ſliced thin, of each one Ounce; of Caſtor, half an Ounce; put them into a Martraſs with Tincture of Tartar, twelve Ounces; ſet them on a gentle Heat of Sand (with the Mouth of the Martraſs well ſtopt) in Digeſtion twenty-four Hours, ſhaking it often; then let it cool, and preſs it thro' a Cloth into a clean earthen Pan: What ſtays in the Bag, put into the Martraſs again; and put to it rectified Spirits of Wine, half a Pint; let it ſtand warm for twelve Hours; ſtrain it off to the other: Into theſe Tinctures put, of the Extract of Opium, five Ounces, ſet them over a gentle Fire to evaporate into an Extract.

This has the Virtues of the former, but may be ventured in ſomewhat a larger Doſe, ſo far as to three or four Grains.

Guttæ Vitæ: Drops of Life.

Diſſolve of the beſt Opium in Water, as in the *Laudanum Liquidum cum Camphora*, four Ounces, Then take of *Engliſh* Saffron, one Ounce; of *Ruſſia* Caſtor, one Ounce and an half; Cochineal and *Virginia* Snake-root, of each half an Ounce; Nutmegs, Zedoary, of each two Drams; of Camphire, one Dram: Powder theſe Ingredients, and put them into a Matraſs; pour upon them Tincture of Antimony, (made with Salt-petre, and *Antimonium Diaphoreticum*) one Pint; let them ſtand three or four Days in a gentle Heat, ſhaking the Matraſs often, till a good Tincture is produc'd, which put to one Quart of the Diſſolution of Opium: Then let all ſtand in Digeſtion forty-eight Hours, and, when ſettled, decant for Uſe.

This is the Medicine which *Salmon* made ſo much Noiſe with: It is an excellent Medicine in proper Hands, and one of the beſt Preparations of this kind, tho' it is not enough known to be much met with in Preſcription. The Opium is ſo well guarded with cordial Aromatics, that it may be ventured upon in very conſiderable Doſes, and there is no Fear of Nauſeas afterwards at the Stomach; it promotes Sweat very much, and is wonderfully carminative: A Patient may take from 10 to 40, 50 and 60 Drops.

Pilulæ Matthæi. Matthew's Pills.

Take of the Extract of Opium, of black Hellebore, of Liquorice, and the Soap of Tartar, (deſcribed under the Preparations of Tartar) of each four Ounces. Let the Hellebore and Liquorice be made into a ſubtile Powder. Beat and mix theſe four Ingredients very well; then, with two Ounces or three Ounces of this Maſs, mix of *Engliſh* Saffron, one Ounce; cut into ſmall Pieces, and beat them well together, till the Saffron is perfectly mix'd with the Maſs; ſo that no Part of it is diſcernible from the reſt; then beat and mix that with the reſt of the Maſs as well. If this Maſs be too dry, you may mix with it ſome of the Oil which comes from the Soap, which it ſpues out, when it ſtands a long time by; or, in its ſtead, ſo much rectified Oil of Turpentine, as is ſufficient to make it into a Maſs fit to form into Pills. Then put it into a wide-mouth'd Glaſs, or Gally-pot, ty'd over with a Bladder or Leather.

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There are many ways of making this Medicine: *Bates* puts in white Hellebore; but, how much ſoever it may be imagin'd to ſtand corrected here, it is much ſafer left out, and the Medicine ſtill left efficacious enough to all the Intentions it is ordered for. The Saffron in this is not in that of *Bates*; but betters the Medicine in many Caſes. It is an admirable and ſafe Opiate, and promotes the Diſcharges both by Sweat and Urine; and the Soap of Tartar is ſo aperient, that it makes it ſafe, even in Aſthmas, when no other Preparation of Opium dare be ventured upon. It may be given from three to ten Grains: When it grows dry with keeping, it muſt be again moiſtened with freſh Oil of Turpentine; but the oftener it has had thoſe Amendments, its Doſe may be enlarged; for the Turpentine will not dry away ſo much, as not to leave enough behind to give ſome Augmentation to its Bulk.

PILULÆ STARKEI. DR. STARKEY'S PILLS.

Take Extract of Opium, four Ounces; Nutmegs, and mineral Bezoar, of each two Ounces; Saffron, and *Virginia* Snake-root of each one Ounce: Beat the Nutmegs and Saffron together into a Paſte, ſo that they cannot be diſtinguiſhed from one another. Let, alſo, the Mineral Bezoar and Snake-root be an impalpable Powder. Then mix all together, with half a Pound of the Soap of Tartar; of Oil of Saſſafras, half an Ounce, and two Ounces of Tincture of Antimony: Let them be all well incorporated, by beating in a Mortar: Then keep them in a Glaſs or Gally-pot, ty'd over with a Bladder or Leather, for Uſe.

This, Mr. *George Wilſon* ſays, he had from Dr. *Starkey*'s own Mouth, in the Year 1665, a little before his Death; who then told him, he gave *Matthews* the former for a little Money, but that this was what he ſucceſsfully made uſe of himſelf. It is both more diaphoretic, and more anodyne, than the former; and they who have made uſe of it in their Practice, affirm it to be the beſt Laudanum they ever met with. And yet this is not the Sort which is kept in the Shops, and it is not in ſo conſtant Preſcription as the former. Indeed there are hardly any of the Shops that prepare this; ſo that a Phyſician may write for it in vain, while the other is ſo ready for a Succedaneum. This may be given in a good handſome Doſe, when Reſt is wanting, in Fevers; and is not ſo hazardous in its Effects as common Opium, or any other of its Preparations. The Alexipharmics, likewiſe, in its Compoſition, cauſe it ſooner to raiſe a Sweat, becauſe, at the ſame time that they warm and attenuate the Fluids for Secretion, the Opium relaxes the Fibres, and makes more Way for their Paſſage thro' the cutaneous Pores.

THE UNIVERSAL ANODYNE.

Diſſolve of the beſt Opium, four Ounces, in a ſufficient Quantity of Water; evaporate to one Pint and an half, to which put one Pint of rectify'd *French* Brandy; of Saffron, half an Ounce; of Cochineal, two Drams; and of the Tincture of the volatile Salt of Tartar, two Ounces (or, in its ſtead, two Ounces of the Soap of Tartar); of *Sal Volatile Oleoſum*, and the Spirit that was drawn from the Soap of Tartar, of each three Ounces: Digeſt theſe for four or five Days in a well-luted Matraſs in a gentle Heat; then ſtrain it for Uſe.

This Preparation has ſome time ſince been in great account amongſt ſome particular Perſons; but it never obtained to be a Shop Medicine: It is very good for all the Purpoſes of the *Pectoral Sudorific Liquid Laudanum*, (deſcribed under the Article LAUDANUM; which ſee) given from ten to fifty Drops.

Opium is the proper or milky Juice, which iſſues from Inciſions made in white Poppy-heads, thickened in the open Air into a ſolid, but ſoftiſh reſinous Gum, of a dark reddiſh-brown Colour; and of a very hot bitter Taſte; and ſtrong, heavy or ſoporiferous Smell; brought from the Levant, *and the* Eaſt Indies, *in round flat Cakes, or more irregular Loaves, of different Sizes, from four Ounces, to a Pound and upwards, in Weight; and covered with Leaves, or other vegetable Stuff, to prevent their running and ſticking together.*

So little is the Hiſtory of Opium, even at this Day, ſufficiently known, that in this ſhort Deſcription there is ſcarcely one thing aſſerted, which is not contradicted by famous Authors: And therefore I am under a Neceſſity to explain and confirm each Part of it.

1. It is well known, that a milky Juice flows from Poppy-heads, when hurt or wounded; that this bears a very ſmall Proportion to the Juices got by Expreſſion, and widely differs from them in Taſte, Smell, and Qualities; alſo, that the Opium of the Antients was made of the Milk, and their Meconium of expreſſed Juices, or of the Decoction of one and the ſame Plant; and that, in their Opinion, the Meconium was much weaker than the Opium. But it is diſputed, whether the Opium now uſed be the true Opium, or the Meconium only.

On the one hand, it is affirmed by *Garcias ab Horto*, *Bellonius*, *Mandelſlo*, *Tavernier*, and, to name no more, by Dr. *Kempfer*, that our Opium is the Milk drawn from Poppy-heads by Inciſion, or is the ſame way prepared, as was the Opium of the Antients, according to the Account *Dioſcorides* and *Pliny* have given of it. On the other hand, it is as poſitively aſſerted by *Proſper Alpinus*, *Bellonius*, *Lemery*, *Savary*, and *de la Candamine*, that the Opium of the Shops is nothing but a Meconium.

But that our Opium is neither an Extract, nor an inſpiſſated expreſſed Juice of Poppies, may be demonſtrated by Arguments, which to me appear unanſwerable. For, 1. The milky Juice drawn by Inciſion from Poppy-heads, and thickened either in the Sun, or Shade, even in this Northern Country, has all the Characters of good Opium; its Colour, Conſiſtence, Taſte, Smell, Faculties, Phenomena, are all the ſame; only, if carefully collected, it is more pure, and more free of Feculencies. To obtain this Tear, I firſt followed the Directions of *Dioſcorides*; and on a clear dry Day, before Noon, cut off the Aſterisk, as he calls it, or Crown of the Poppy-heads, ſo as to avoid penetrating into the Cavity of the Fruit; and collected the pure Milk, with a little Silver Spoon, and my Finger, into a China Tea-cup. I made Choice, for this Purpoſe, of Poppy-heads come to their full Bigneſs, and before they began to harden or dry. The Juice ſoon thickens (a ſmall Quantity in a Day or ſo) to the Conſiſtence of Opium, in the open Air. It was of a fiery-hot and very bitter Taſte, and ſoporiferous Smell; both hotter and ſtronger ſcented than the common Opium; of a dark yelloviſh-brown Colour on the Outſide, ſomewhat lighter within when broken, and not all of the ſame Colour, but, as it were, compoſed of Drops. I have of it by me, and, though now more than ten Years old, it retains both its Colour and Taſte, though it is not ſo ſtrong-ſmelled as when new. This Specimen was taken from the white Poppy: About the ſame time I gathered Opium, alſo, from the wild Poppy, which was a little lighter-coloured; but this I thought accidental only; for the Milk turns ſoon black on the Knife, and ſo may colour ſome of the Juice more than another; and in nothing elſe they differed.

I made Trial afterwards of the *Perſian* way of making Opium. I had not the five-edged Knife; but, as quickly as I could, ſuperficially ſcariſied one Side of the Poppy-heads, in four, five, or ſix Places, according to their Bigneſs. Next Day, when the Juice was as hard as Opium, I ſcraped it off, and kned it together; ſo could not diſcover any thing like Drops in it. Notwithſtanding all my Caution, I ſometimes penetrated the Head, and ſome few Drops fell to the Ground; both which would have probably been prevented, had I been furniſhed with a right *Perſian* Knife. Yet I found, that I was able to collect conſiderably more this way, in the ſame Time, than in *Dioſcorides*'s way. That I might have the true Tear, as clean, free of Duſt, and fair as poſſible, I cut off the Star of ſeveral Heads, and, bending them down, ſuffered the Milk to drop into a Tea-cup; then ſet it in a Window, being well covered with Paper; when it was as ſolid as Opium, I ſcraped it out, and preſſed it into a Lump. It is altogether of the ſame Colour, and the whiteſt I ever ſaw. I made uſe of the white Poppy for theſe Experiments alſo; and repeated them on ſeveral Varieties of the Poppy, both with the white and black Seed, without obſerving any Difference of the Juice.

2. Both the Extract, and the thickened expreſſed Juice, differ very much from Opium; and ſcarcely any way reſemble it. I ordered both to be prepared, but neither of them has ſo much of the Taſte or Smell of Opium, that any one could know thereby, that they were all got from the ſame Plant. The brown Extract is black when dried, as is, alſo, the green inſpiſſated Juice; but, when diluted, the former is brown, the other green. The Extract is pretty tough and ſticking; the Juice is rough, and more friable. Both were evaporated in a gentle Sand-heat; the Juice beginning to turn mouldy in two Days after Expreſſion, though kept in a dry Place, and a broad Baſon. I own ſome Part of either of theſe may be mixed in ſome Places with the true Opium; and perhaps the greeniſh-brown Opium, mentioned by *Condamine*, may have ſome of the expreſſed Juice in it, but it cannot be much, for the Reaſons following; and probably it is ſome other aromatic Subſtance that gives it the penetrating Smell, which it cannot derive from the Poppy.

3. The common Opium contains more Reſin, or Sulphureous, than either the expreſſed inſpiſſated Juice, or Extract, of Poppies can poſſibly do. For, as will appear below, about the third Part of the common Opium, as well as of what I made, is Roſin or Sulphur. Of the Extract, and thickened expreſſed Juice, Alcohol did not diſſolve the hundredth Part, and was even ſcarcely tinctur'd by them.

4. If Opium was not the true Tear, there needed not be ſo many large Fields ſown with Poppies, as there are in *Natolia*, *Egypt*, and *Perſia*; neither would Opium be ſo ſtrong a Medicine as it is; its Virtues, as an Anodyne, depending chiefly, if not entirely, on the proper milky Juice.

The Objection, taken from the Price of Opium, ſeems to be of no Force; becauſe I could have collected here, without the *Perſian* Knife, and that Dexterity which can be acquir'd only by

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by Uſe, notwithſtanding the Climate, and the conſequent Smalneſs of our Poppy-heads, in an Hour's Time, about a Dram of Opium. For theſe Reaſons I conclude, *That Opium is, at leaſt for the far greateſt Part, the true Tear of the Poppy.*

II. Another Controverſy is, whether Opium is got from the white Poppy, or from the black. The Antients ſeem to have believed it was from the black. But I think it of no Conſequence, whether from the black Poppy, or the white, with regard to the Medicine, though of great Conſequence with regard to the Makers of Opium. Intereſt, therefore, will direct every-where to cultivate, for Opium, only ſuch Poppies as bear the largeſt and moſt juicy Heads in the Country, and conſequently, ſo far as I know, the white. Thus we find it is from the white Poppy they procure the Opium in the Eaſtern Countries.

III. As to the Choice of Opium, I ſhall paſs it as known. But ſince *Dioſcorides* writes, that Opium is ſophiſticated ſeveral ways, and *Bellonius* tells us, that the Merchants increaſe the Quantity of Opium before it is diſtributed among the Provinces; it may be asked, whether all the Opium we uſe is from the Poppies, or whether any other Drug is mixed with it, ſuch as Glaucium-gum, Juice of wild Lettuce, and Suet or Tallow, all mentioned by *Dioſcorides:* Though I cannot anſwer this Queſtion with Certainty, yet I think it probable, that nothing is mixed with it, if it be not a ſmall Quantity of ſome innocent Liquid, or a milky Juice of the ſame Nature with that of Poppies; otherwiſe it would be weakened, and not ſo ſtrong as what we make here. I know not the Glaucium of the Antients, nor did I ever ſee any Opium, that I had Reaſon to ſuſpect to be adulterated with Gum or Suet; but the wild Lettuce abounds, more than any Poppy I know, with a Milk of the ſame Taſte and Smell: Perhaps therefore this, if it can be more eaſily collected, may ſtill, in ſome Places, be mixed with Opium, and the Medicine be nothing the worſe, the Milk even of the common Lettuces being anodyne and ſomniferous, as well as that of the Poppies.

IV. I ſaid, Opium comes to us covered with Poppy-leaves, *&c.* becauſe every Author ſays ſo; but what I have ſeen here is covered with the Flowers, Seeds, chaffy Husks, ſtripped from the Stalks of ſome of the Lapatha or Dock-kind.

Opium, or *Opion*, now the moſt common Name of this Juice, was, I believe, given it by *Pliny*, *Galen* being the firſt among the *Greeks* I have ſeen, that uſes it.

That Opium was known to the Antients, nobody denies; but whether the *Greeks* or *Egyptians* were the Inventors, is a Queſtion not yet determined: What ſeems moſt probable, is, that this Honour is due to the *Greeks*, and that its ſoporiferous Quality at leaſt was diſcovered, if not by *Hippocrates* himſelf, not long before him; and thoſe learned Men who are of Opinion, that Opium was the *Nepenthes* of *Homer*, ſeem to be miſtaken.

As for the Opium-plant, it is evident from *Homer*, that it was cultivated long before *Hippocrates* lived. The Invention of it is even attributed to *Ceres*; and ſo acceptable was it believed to be to that Goddeſs, that ſhe was named *Mecone*; that *Cereale* was a common Epithet of the *Papaver* among the Poets; that it was offered to her in her Sacred Rites; and that ſhe was repreſented holding it in her Hand. So much Honour could never have been done to a narcotic Vegetable, eſpecially by the *Romans*, had it not been otherwiſe very uſeful, and reckoned one of the Frumenta, which *Ceres* firſt taught the *Greeks* at *Attica* how to cultivate and uſe, for which ſhe was deified after Death. That the Seed of the Poppy was uſed in Food by the Antients, and particularly in Deſerts, will not be denied by any in the leaſt acquainted with their Writings: This *Le Clere* acknowledges; but he thinks thinks, it was on ſome other account than Nouriſhment, or that the Manner of dreſſing it diveſted it of the ſomniferous and noxious Qualities. But I muſt be of a contrary Opinion; for, even in *Hippocrates's* Works, it is called nouriſhing; and, without depending on the Teſtimony of the Antients, Poppy-ſeed is of a more delicious Taſte than ſweet Almonds; it is oily and farinaceous; and I have eaten large Quantities of the black Seed, as well as of the white, frequently, and never found them ſomniferous or noxious: Beſides, it is ſtill uſed in Food in ſome Places, as well as the expreſs'd Oil, which is as innocent and wholſome as Olive-oil. If this Seed was noxious, baking would not free it of its bad Qualities, the narcotic Part of Poppies being very fixed, and not at all volatile. Hence is confirmed what was ſaid above, that the anodyne and ſoporiferous Virtues of the Poppy are lodged in the Milk, and in it only: In this it is not ſingular; for the proper Juice in many Plants differs much in Nature from the common Juices; as the Milk of the common Garden Lettuces is hypnotic, while all the Plant beſides is cooling, diluent, and nouriſhing.

It is, alſo, certain, that our Garden-poppy is not ſpecifically different from the *μήκων* or *Papaver* of the Antients; for although we could not make a tolerable botanical Deſcription of this Plant, out of all they have left us concerning it, yet we find in their Works ſo many Marks of it, as are ſufficient to diſtinguiſh it from others: For Inſtance, we learn from *Theophraſtus*, that it is an Herb, which does not caſt its Leaves, contains a milky Juice, has very ſmall Seeds contained in Heads, from which the milky Juice is collected. *Dioſcorides*, alſo, gives Marks to this Effect. This may appear to ſome a mere hiſtorical Nicety; but if the Identity of the Medicine be not firſt demonſtrated, we cannot be benefited by the Experience and Obſervation of former Ages.

Opium eaſes Pain, procures Sleep, promotes Perſpiration, but checks all other Evacuations; chears the Spirits, incraſſates the Humours, and relaxes the Fibres. Hence it is recommended in intenſe Pains, Watchings, Spaſms, Spleen, Vapours, Fluxes, Hæmorrhages, Teneſmuſes, and in all Diſeaſes proceeding from Tenſion or Irritation of the Nerves, irregular Motions of the Spirits, or from Thinneſs or Acrimony of the Fluids.

It would be too tedious here to recount the various Opinions of Authors concerning Opium: Let it ſuffice to hint briefly at ſuch afterwards, as are contradicted by plain Experiment.

1. Opium is acrid, bitter, and ſtrongly odoriferous. *Dioſcorides* ſays, it is bitter in Taſte, and carotic and ſoporiferous in Smell; *Matthiolus*, that it ulcerates the Tongue and Palate, if kept for ſome time in the Mouth. Some call the Smell *viroſus*, others *gravis*, *teter*, *penetrans*, and the like. If one attentively taſtes Opium, he will perceive, firſt, a nauſeous and diffuſive Bitterneſs; then, in about half a Minute, a pungent Heat, affecting firſt and principally the Tongue, then the Palate, and, laſt of all, the Lips, in a lower Degree. The Heat continues more than fifteen Minutes, the Bitterneſs ſtill longer, provoking a plentiful Diſcharge of the Saliva. It heats and irritates, alſo, the Noſe, and creates an Inclination to ſneeze.

Hence, were we to judge of the Virtues of Opium by its Effects on the Mouth and Noſe, or by its Taſte and Smell, we would reckon it an acrid, diaphoretic, nervine and cathartic Medicine. It certainly is diaphoretic, and properly enough may be called nervine; but not Purgative, though by Accident it ſometimes has that Effect. *Eraſtus* thinks, that, if it was not for its ſtupefying Power, it would always prove cathartic. According to him, therefore, the narcotic Virtue has no Dependence upon the above ſenſible Qualities. This will appear the more probable, if we conſider, that ſome Narcotics are acrid, others mild; ſome bitter, others ſweet; ſome odoriferous, others not; ſome purge, others ſtop ſuch Evacuations; and yet all of them are anodyne, and almoſt equally narcotic and virulent, if the Doſe be proportioned to their Strength; and, alſo, that there are not a few Cathartics as acrid, bitter, and ſtrong-ſmelled, as Opium, which are no ways narcotic. Conſequently, we ought to diſtinguiſh between the ſtimulating and narcotic Qualities of Opium; at leaſt, we may at preſent conceive of them as different.

Theſe ſenſible or ſtimulating Qualities, in the Opinion of ſome, ſufficiently confute the old Notion of the refrigerating Faculty of Opium, and prove it to be a very hot Medicine; and certainly in one reſpect it is ſo. But it is as certain, that its Effects in diminiſhing preternatural Heat, obſervable in a Variety of Caſes, alſo, evince its cooling Virtues; inſomuch that it would not be difficult to prove, that Opium may more properly be ſaid to cool, than to heat.

2. Opium conſiſts of Gum, Roſin, and terreſtrial Parts, in ſuch Proportion, that in twelve Parts of Opium there are about ſix Parts of Gum, four of Roſin, and two of terreſtrial Feculencies, neither diſſolvable in watery or ſpirituous Menſtruums.

I diſſolved Opium in Water, Wine, Vinegar, Spirit of Vinegar, and Brandy; and drew a Tincture from it with Spirit of Wine rectified with Salt of Tartar, or Alcohol, keeping always the Proportion of one Part of Opium to twelve Parts of the Menſtruum; and found that Alcohol diſſolved Four-twelfths of Opium, there remaining Eight-twelfths; of which Water diſſolved Five-twelfths, and left Three-twelfths of Fæces. Water diſſolved Eight-twelfths; and, of Four-twelfths remaining, Alcohol diſſolved one, leaving of earthy Parts as above. It muſt be owned, the Proportions were not always exactly the ſame; but did not much differ. Hence Water diſſolves about Three-fourths of the Sulphur of Opium. I found, alſo, that Water diſſolves Opium as well, and as ſoon, as Wine, Vinegar, or Spirit of Vinegar; only the Solution in Water, in three or four Days, becomes turbid, and ſoon after mouldy, ſeparating from it a whitiſh Subſtance, containing Part of the diſſolved Roſin; that Brandy, or Proof Spirits, diſſolves both the gummy and reſinous Parts of Opium, that is, all that Water and Alcohol ſeparately can diſſolve, and that even without Heat, leaving nothing but the feculent Part. Hence, there being, in twelve Parts of Brandy, about eight Parts of Water, ſo much Water, Wine, or Vinegar, is a ſufficient Menſtruum for one Part of Opium. But though I tried this Proportion of eight to one, and it anſwered; yet, becauſe twelve to one completed the Solution ſooner, I kept by it. For Water, Wine, Vinegar, and Brandy, in the Proportion of twelve to one, took but four or five Days for the Solution without Heat, if frequently ſhaken; but Water, in the Proportion of eight to one, took ten or twelve Days; Alcohol requires about a Month. And the Reſiduum of a Solution of Opium in cold Water contains nothing which boiling Water can extract.

Suppoſing,

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Supposing, therefore, that the Rosin or Sulphur of Opium is as good, or as much wanted, as the Gum, or the mucilaginous Part, Brandy is certainly the best Menstruum.

3. The Gum of Opium has the same Taste and Smell with the Juice; but the Rosin has no Taste, and smells rather musty than of Opium. This is taken notice of, also, in the *Col. Chym. Leid.* C. 310. This Rosin is much condemned by Dr. *Jones*, and others. I wish they had given more convincing Evidence of the Mischiefs it does. The World is too cautious now to believe implicitly every general Assertion.

It is well known, that the Solution of Opium in Water is anodyne and soporiferous, has all the good Qualities of the Juice, and operates in as small a Dose; and yet that Opium in Substance is sometimes preferable to it; that, allowing half the Sulphur of Opium only to be Rosin, even thus one half of it is in all the aqueous Solutions and Extracts; and that a few Grains of the most tenacious, tough, and sticking Rosin, cannot do much Prejudice, if not otherwise hurtful, far less the Third or Fourth of a Grain. Common Aloes is fully as resinous as Opium, and its Rosin as sticking. This Rosin of Aloes has generally been blamed for causing the Tenesmus Hæmorrhoidalis, *&c.* by its irritating Acrimony. But a late Member of the Royal Academy (who asserted, also, that Rhubarb was not astringent) has attempted to prove it not only innocent, but very friendly to Nature, and the best Corrector of the Acrimony of the Gum. Lest this should be the Case with Opium, I made Experiment upon myself with a Tincture of the Residuum of Opium dissolved in Water, extracted by Alcohol. I took at first ten Drops, then fifteen, and last of all twenty-five; and must own, that it tasted strongly of Opium, and was somniferous; but I was not sensible of any bad Effects of it. I may add, that the Balsamum Anodynum is found to be really Anodyne internally, as well as externally, though the Tincture is extracted with rectified Spirit. But, whatever is in this, crude Opium may be preferable to the Solution, as it does not so soon dissolve in the Stomach, or as it increases the diaphoretic Quality, or on account of some Singularity in the Constitution. But, for the most part, what does not dissolve in Water may be unnecessary. Hence I infer, that the narcotic Virtue of Opium does not depend on its *vaporosum Sulphur*, according to *Fred. Hoffman*, nor on its Sulphur *crassum ad modum rarefcibile*, according to *Geoffroy*, akin to that of *Crocus*, *Castor*, &c. Few vegetable Substances have less Sulphur than Crocus. It yields all to Water, nothing to Oil. And I may add, that Castor and Aromatics are commonly reckoned Correctors of Opium.

4. Though Opium is rather alcalescent, than acescent; yet it cannot be called an Alcali. This I learned by many Experiments: For I dropt into a Solution of Opium in Water, in different Glasses, and separately, the Spirits of Vinegar, Hartshorn and Vitriol, and the Oil of Tartar *per Deliquium*. None of them caused the smallest Ebullition or Effervescence; the Acids only diluted the Solution; but the Alcali turned it milky, the Mixture soon separating into two Parts; below it was clear and transparent as before, and the milky Part gathered above, like a thick Cream, which, on shaking the Glass, subsided, leaving the upper Part clear: Yet this did not always happen; for, on repeated Concussions of the Glass, the Cream sometimes returned to the upper Part of the Solution. The Solution, with the Oil of Tartar in it, smelt somewhat urinous. The Cream separated by Filtration, and dried, melted and flamed with Heat; and dissolved in Alcohol, but not in Water; and consequently was Part of the Sulphur of Opium, which the Water had dissolved. To be more certain of this, I dropt Oil of Tartar, and Spirit of Hartshorn, into separate Portions of a Solution in Water of the Residuum, after extracting the Rosin of Opium with Alcohol; and found that neither the volatile nor fixed Alcali caused the least Separation, or Precipitation, but only diluted the Mixture, Alcohol having dissolved and extracted all this Sulphur.

I mixed the Solution of Opium in Water, with an Infusion of Violets; it did not turn red, or undergo any Change, except what necessarily follows the conjoining of two Colours so different, when the one does not destroy the other. Tincture of Saffron in Water had the same Effect. I infused, in the said Solution, a Piece of blue Paper, with which Sugar-loaves are commonly covered; and poured some of it upon another Piece of the same Paper, till both were thoroughly melted with the Solution; and though at first, when it was covered with the red Solution, the Paper appeared redder than before, yet, when dried, it was so far from being redder, that it had lost its native reddish Cast, and was become of a worn-out or faded Blue, rather greenish than reddish. I mixed, also, the Solution of Opium with the Tincture of Turnsole in Water; and it turned of a bright-red Colour. The aqueous Tincture of Saffron made the same Change. The Tincture of Turnsole, betwixt the Eye and the Light, is of a deep Crimson; but, when it dries on the Glass, is blue like the Juice. What dried on the Glass of that mixed with Opium, continued a Bright-red. A Solution of Opium in Water, also, turned a Solution of corrosive Sublimate milky, and curdled it; Spirit of Vitriol made it again clear. In a word, this Solution of Opium gave more Phenomena of an Alcali, than of an Acid: So that I cannot imagine what made Mr. *Geoffroy* assert the contrary.

All these Experiments were, also, made with the Opium I had collected here, and likewise with the Solutions of common Opium in Wine, Vinegar, Spirits, *&c.* with the same Event, except in so far as the Menstruum made a Difference. Thus Spirit of Vitriol precipitated the Tinctures; Oil of Tartar *per Deliquium* would not mix nor incorporate with them, though often well shaken together.

I poured a few Drops of the Oil of Tartar *per Deliquium* upon crude Opium, but could observe nothing like an Ebullition, or Effervescence, which some have asserted. It became, indeed, a little whitish, when dried; and smelled somewhat urinous, by reason of the Alcali's Action on the Sulphur, and essential Salt. The Occasion of this Experiment, which might otherwise seem superfluous, was because Professor *Hoffman* attributes this Change of Colour and Smell to the Congress of the Alcali with the acid Sulphurs; though he denies, that the Blood can be coagulated, or that the animal Spirits can be fixed, by it.

Blue Vitriol turned a Solution of Opium in Water whitish, and opake, or milky; but this subsiding, the upper Part was transparent, and of a beautiful green Colour. Green and white Vitriols made it black, like a dirty Ink. To see whether this was owing to the heterogeneous Substances, which the Opium was covered with, I drew a Tincture from them separately, and mixed it with a Solution of green Vitriol; but it did not in the least make it black.

From these Mixtures I may infer, 1. That the essential Salt of Opium is ammoniacal. 2. That Opium contains a very small Proportion of an Acid. 3. That it is somewhat astringent, or makes the same Change on Chalybeates, that vegetable Astringents do.

5. The most active Principles of Opium are not volatile, but very fixed; for it keeps well. I have of it forty Years old, which is still hard, solid, and retains its Taste. I kept a Dram of Opium in the Heat of boiling Water for five Hours; and, though fresh, and pretty soft, it scarcely lost one Grain and an half in Weight. I had Opium, dissolved in Water, fermented and distilled, but got no Proof Spirits from it, though eight Ounces of Opium were used. The first four Ounces of Spirit that came over, were hot to the Taste, and had a peculiar Smell and Flavour very different from that of Opium, and not bitter; the second four Ounces were much weaker, and the last four almost tasteless. The first and second Spirits, or rather Waters, were mixed and rectified by Distillation; and I got from them about three Ounces, which I thought would have been a Proof Spirit; but, on Trial, it appeared weaker than the first four Ounces. Then having filtrated what remained after the first Distillation, I dried the resinous Residuum, and had as much fully, as if no Fermentation had preceded. The filtrated Liquor I evaporated to an Extract; but, before it was cold, the Vessel in which it was, being broken by Accident, I lost Part of it; but, so far as I could guess, I should have had a Quantity of Extract and Residuum, very near equal to the Quantity of Opium I employed. The Extract had nothing of the Smell of Opium, but the Residuum still retains a little of it, though it is near five Years since the Experiment was made.

Hence, 1. Old Opium is but a little worse or weaker than new. 2. Toasting Opium on a Plate of Iron, with a Design to correct it by divesting it of its narcotic Part, which was long practised, and much commended, by Authors, may burn it, but cannot make it better. 3. Opium affords little or nothing by Distillation: If, therefore, we would have the Virtues of the Theriaca in a liquid Form, we must infuse Wine, or rather Brandy.

6. By a Chymical Analysis, Phlegm, urinous Spirit, Oil, volatile as well as fixed Salt, and Earth, may be got from Opium, Although it must be acknowledged, that some Simples, as different in Figure, Nature, and Qualities, as possibly can be, afford the very same Principles by a Chymical Distillation, such as Deadly-nightshade, and Cabbage; and consequently that, very little of the Virtues of Opium can be thus either investigated, or explained; yet, seeing some by the Analysis pretend to prove, that the Effects of Opium depend on its Sulphur; others, on its volatile Salt; others, that its Sulphur is narcotic, and Salt diaphoretic; I thought it not amiss to repeat this Process three times; and found that sixteen Ounces of Opium distilled by itself in a Glass Retort, with a Sand-heat, gradually increas'd, gave,

1. Of Phlegm, an Ounce and two Drams. This Phlegm was very fetid, and empyreumatic, like that from Mustard-seed; it made no Effervescence, either with Spirit of Vitriol, or Oil of Tartar; nor did it change the Colour of Syrup of Violets, but turned the Tincture of Turnsole into a pretty bright Red, which Oil of Tartar again changed into blue; it also whitened and precipitated a Solution of corrosive Sublimate.

2. Of

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2. Of Spirit, four Ounces two Drams; and of Oil, two Ounces. The Spirit was very fetid and acrid, and made a great Ebullition with Spirit of Vitriol; the Oil was black and light, partly thin, and partly thick.

3. Of volatile Salt, adhering to the Neck of the Retort, about four Grains.

4. Of Caput Mortuum, ſix Ounces. So I loſt in the Operation about two Ounces three Drams and fifty-ſix Grains.

The beſt Method I could deviſe to find how much volatile Salt was contained in this Spirit, was to compare its Strength with the Strength of Salt of Hartſhorn, in enervating the Spirit of Vitriol; and, finding that one Part of Salt of Hartſhorn, diſſolved in Water, ſaturated as much Spirit of Vitriol as eighteen Parts of the Spirit of Opium, I thought I might conclude, that, in thirty-four Drams of the Spirit of Opium, there was not more than 114 Grains of volatile Salt; which, with the four Grains in the Retort, made one Dram fifty-eight Grains: That is all the volatile Salt we could obtain from ſixteen Ounces of Opium, and conſequently one Grain of volatile Salt from ſixty-ſix Grains of Opium. Hence it appears, that the Virtues of Opium do not depend on its volatile Salt or Spirit, far leſs on its ſpirituous and volatile Parts, coagulating the Blood as Spirit of Urine does Spirit of Wine, which was *Cranius*'s Opinion.

The Caput Mortuum, by long and repeated Calcinations in a Crucible, was reduced to four Drams forty-nine Grains. I made a Lixivium of it with boiling Water, filtrated it, and dried the Earth, which weighed two Drams fifty-one Grains; ſo Water extracted one Dram fifty-eight Grains. This Lixivium had a ſaltiſh Taſte, made no Effervеſcence with Spirit of Vitriol, nor with Oil of Tartar *per Deliquium*; neither made any Change on Syrup of Violets, Tincture of Turnſole, or the Solution of corroſive Sublimate. I evaporated it over the Fire to a Pellicle, and to Dineſs, in a *Delft* Plate, in the Air, and had of a pretty white Salt in Powder, with numerous ſmall priſmatic Cryſtals in it, one Dram thirteen Grains, neither Alcali nor Acid by any Experiment. The Earth I again calcined for three Hours, by which it loſt about ſix Grains in Weight, and, being elixiviated and dried, it was diminiſh'd twenty Grains more; but the Remainder of the Lixivium, evaporated to Dineſs, gave only about ten Grains of a Salt like the former, though not at all alcaline, but white: So of the calcined Caput Mortuum Water extracted two Drams eighteen Grains, which, with the ſix Grains loſt in the laſt Calcination, ſubtracted from four Drams forty-nine Grains, gives two Drams twenty-five Grains, as the Quantity of Earth contained in a Pound of Opium. The Quantity of the Salt is not equal to the Subſtance diſſolved in the Water, becauſe Part of the Lixivium was employed otherwiſe.

The Proportions of Salt and Earth were much the ſame in the Caput Mortuum of all the three Analyſes; and, alſo, in the Aſhes of ſome Opium I calcined by itſelf, none of them affording any fixed Alcali: But, having by me a little fixed Salt of the ſecond Analyſis, which had been kept five Years, by evaporating the Lixivium in a Tea-cup in a Chamber-window, and was in ſmall, ſomewhat priſmatic, but irregular, and yelloviſh Cryſtals, I diſſolved it in Water, filtrated and cryſtallized it without Heat as formerly, and had a Salt like brown Sugar-candy, which is a true fixed Alcali by every Experiment. During the five Years it had loſt about an eighth Part of its Weight, and the Paper was moiſt in which I kept it; it does not run or melt *per Deliquium*, but is ſtill perfectly dry. To account for this, it requires more Experiments.

In the firſt Analyſis we increaſed the Fire ſlowly, and changed the Recipient ſo ſoon, as all the Phlegm was come over; in the ſecond, we did not change the Recipient, but raiſed the Heat to the greateſt Degree the Retort could bear, as faſt as we could, and continued it for ten Hours; in the third we firſt kept the Retort in Balneo Mariæ, or boiling Water, for the greateſt Part of a Day, and then changed the Recipient, and gave it the Sand-heat. Thus we had two Drams leſs of Water, than in the firſt Analyſis; neither of them effervеſced with Acids or Alcalies; but the Water in this third Proceſs, which was almoſt taſteleſs, ſmelled more of Opium, and was leſs empyreumatic, precipitated a Solution of corroſive Sublimate, and reddened Syrup of Violets, and Tincture of Turnſole. Hence Opium contains but little Acid, or a very weak Acid, though Mr. *Geoffroy* ſaid he found in it a powerful acid Salt.

A Pound of Opium, by a Chymical Analyſis, gave, according to Dr. *Pitcairn*, of Spirit, forty-five Drams; of Oil, ten Drams and an half; of Caput Mortuum, ſixty-two Drams; and there were loſt in the Diſtillation ten Drams and an half; according to Mr. *Geoffroy*, of Spirit, forty-nine Drams; of Oil, nine Drams and an half; Caput Mortuum, ſixty-two Drams; loſt ſeven Drams and an half; and the Caput Mortuum, calcined to eight Drams twenty-five Grains, yields of fixed mere alcaline Salt two Drams twenty-eight Grains and an half; conſequently there remained of Earth ſix Drams ſix Grains and a half: But, by our Proceſſes, of Phlegm, forty-two Drams, ſix Grains; volatile Salt, one Dram fifty-eight Grains; Oil, ſixteen Drams; fixed Salt, two Drams eighteen Grains; Earth, two Drams twenty-five Grains; and there evaporated in the Diſtillation, perhaps of Air, nineteen Drams fifty-ſix Grains, and conſumed in Calcination of Oil, *&c.* forty-three Drams ſeventeen Grains.

The Effects of Opium on other Animals are not much different from its Effects on Men; or it is, to ſome of them at leaſt, innocent, hurtful, or poiſonous, according to the Doſe.

I. I, one Evening, put a big ſtrong Frog into a Pot of Water, wherein a ſmall Quantity of Opium was diſſolved; it ſoon appear'd to be uneaſy, by making ſtrong Efforts to get out of it; but, in a ſhort time, it flag'd, or grew dull, making very little Motion; and next Morning it was dead, and much ſwell'd.

II. I convey'd, through a ſmall Glaſs Tube, a few Drops of a Solution of Opium in Water, into a Frog's Stomach; and, puting the Animal into a Glaſs Cylinder, adapted it ſo to a good Microſcope, that we had a diſtinct View of a Part of the Membrane between the Toes of its hinder Foot, where the Circulation of the Blood may eaſily be ſeen. My Deſign was, ſince I found Opium killed Frogs, to obſerve if there was any viſible Change made by it in the Blood itſelf, or in its Motion: I could not, indeed, ſee any Alteration of the Blood, as to its Conſiſtence, Colour of the Serum, Magnitude, Figure, or Colour of the red Globules; but I ſaw, very diſtinctly, a ſurpriſing Diminution of the Blood's Velocity; for it did not move half ſo ſwiftly, as it uſes to do in theſe Creatures. But, in leſs than half an Hour, I ſaw the Velocity of the Blood gradually increaſe, the uneaſy Frog recover its wonted Vigour, and the Blood its common Celerity; upon which, we put the Frog into a Baſon of clean Water, and allowed it half an Hour to refreſh itſelf; then gave it another Doſe of Opium, and viewed it as before; the Blood then moved ſlower than it did the firſt time; and, its Velocity gradually decreaſing, at length it ſtagnated, firſt in the ſmaller, then in the larger Veſſels; and, in about a Quarter of an Hour, the Animal expired. One Thing very obſervable was, that, notwithſtanding the diminiſhed Velocity of the Blood, there was no ſenſible Diminution of the Frequency of the Pulſe; when there was even no Circulation, or progreſſive Motion, of the Blood in this Part, the Pulſe was viſible by an undulatory Motion; that is, the Blood returned as far back at every Diaſtole of the Heart, as it was protruded by the preceding Syſtole; this continued till the Frog appeared to be quite dead. I then opened it, and found nothing in its Stomach but a clear Mucus, like a Gelly, a little coloured with the Opium, of which it was full; every thing elſe ſeemed perfectly natural. This Experiment we frequently repeated, and it had always the ſame Appearances and Event. The Recovery, however, of one of the Frogs, which, for a conſiderable Time, appear'd to be dead, is not to be omitted. Having, one Evening, ſeemingly killed a Couple of Frogs, as above, with Opium, I laid the ſtrongeſt half in Water on a Tile, in the Bottom of a Water-pot, that, if it recovered, it might ſit either wet or dry, as it choſe; the other I left on the Earth, dry, under an Hedge; this I found, next Morning, dead, as I left it; but the other, in the Water-pot, was alive, and appeared to be in perfect Health.

We injected into the crural Vein of an old Dog, weighing about forty-two Pounds, half an Ounce of Opium, diſſolved in four Ounces of Water filtrated, and of the ſame Warmth with the Blood of the Animal, in the following Manner. We firſt threw in, very ſlowly, about fifteen Drams. It had no obſervable Effect. About an Hour after, we injected, alſo ſlowly, eight Drams more, and immediately the Dog was ſeized with ſtrong Convulſions; the Pulſe was frequent and ſmall, and, after ſome time, he foam'd at the Mouth. But there appearing no Signs of immediate Death, after we had waited an Hour more, we threw in, as quickly as we could, the laſt nine Drams; upon which, the Pulſe became full and ſlow, and, in about a Minute, the Dog expired.

Opening his Thorax, we found the Lungs ſound, but very ſmall and white, without any Blood in them; the Heart very big, and all its great Veſſels much diſtended with Blood. In this State they continued till next Day, when, on opening them, clotted Blood ran out from the Right Ventricle, and Vena cava; the Blood in the Left Ventricle, and Aorta, being much more coagulated. But we could obſerve nothing in the Brain, or Abdomen, preternatural. Some Days before, a Solution, neither filtrated nor warmed, had been very forcibly injected into a Dog; upon which, he fell immediately into violent Convulſions, and died in three Minutes. See Dr. *Freind Emmenalog.* C. 14.

We gave, alſo, to a little Dog, of about fifteen Pounds Weight, at different Times, in the Space of a few Minutes, and wrapped up in the Crum of new Bread, two Drams of Opium. Being very hungry, he ſwallowed it greedily, without ſhewing any Inclination to vomit. We watched him about an Hour; but, obſerving no Alteration or Effect of the Opium, we left him till next Morning; when he was not ſleeping, but had loſt the Power of his Limbs, and would neither eat nor drink. In this State he continued four Days more, without taſting any thing, and then perfectly recovered. The Quantity of Opium, diſſolved in boiling Water, had more ſudden and more fatal Effects on the Dog mentioned by Dr. *Mead*.

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Opium, externally applied, is discutient, anodyne, and soporiferous; and has almost the same Effects as taken inwardly. One of the Inconveniencies following the immoderate Application of Opium, Mandragora, and Hyoscyamus, for Pains of the Eyes, taken notice of by *Galen*, (*Method. Med. L.* 3. *C.* 2.) is the Mydriasis, or a preternatural Dilatation of the Pupilla. And Mr. *Ray* was Witness to a remarkable Instance of this kind. A Woman having applied Part of a Leaf of the deadly Nightshade, to a cancerous Ulcer, a little below her Eye; in one Night's time, the Uvea lost entirely its musculous Force, and was so relaxed, that the Pupilla, in the cleerest Light, remained four times bigger than that of the other Eye. But, on removing the Leaf, the Tunica Uvea recover'd its Tone by degrees. That Opium gives Ease in Pains of the Teeth and Ears, in Colics, Inflammations, even in cancerous Ulcers, externally applied, is well known; but that it stupefies the Part to which it is applied, so as to make it insensible of any Pain, without the Intervention of Sleep, is not so evident. I applied it, by way of Plaister, round my little Finger; also to my Arm, immediately above the internal Condyle, for a whole Night; it grew soft, and stuck fast to those Parts, but neither stupefied nor inflamed them, nor had any Effect that I could observe. I have, also, several times, applied a Solution of Opium in Water, to Parts excoriated, and superficial Wounds; and found it always hot and irritating, like weak Spirits, the Pain continuing for some Minutes.

Hence, 1. Opium is not, properly speaking, narcotic externally; and there may be Pains which it cannot remove as a Topic. *Platerus* found it ineffectual in the Gout. If, therefore, the common Caustic, prepared with Opium, gives no Pain when used, it is a very extraordinary Phenomenon. I never tried it; not because I fear'd a Gangrene, but because the Fact is improbable. 2. That Narcotics, at least sometimes, impair the Tone of the Muscles, and cause, for a time, a Relaxation of the Nerves, or Palsy, about the Place to which they are applied externally.

Opium rather coagulates or thickens, than dissolves or attenuates the Blood. I mixed a Solution of Opium in Water, with Milk, Serum of the Blood, and Blood itself, drawn fresh from Arteries, as well as Veins. It made no observable Change in Milk; yet, after the Mixture stood some Days, there was a Separation; a white grumous Part subsided; it had a Cream above, and between these it was clear, and of the Colour of the Solution. It turned the Serum of the Blood more thick and whitish, and curdled it a little; it, also, had the same Effect on the Blood fresh-drawn, which always precipitated a sort of whitish Coagulum; and so left what was uppermost a little thinner. *Sydenham*'s Laudanum made the Blood from a Vein appear more crimson-colour'd; but next Day it was darker, there was a greyish Precipitation, and the upper Part was not coagulated as usual; perhaps, because shaken and diluted by an uncoagulable Liquid. These Trials agree with Dr. *Freind*'s Experiments, and seem to favour the Affirmation of some Authors, that the Blood has been found congealed and frozen about the Hearts of such as have died by Opium. There was grumous Blood in the upper Part of the Brain of the Dog, which Dr. *Mead* mentions. *Mech. Account Pois.*

Habit, or customary Use, makes that Quantity of Opium safe, and even beneficial, which would otherwise be Poison. A few Grains of Opium are Death to any Person in Health, and unaccustom'd to it; but, if one, beginning with small Doses, habituate himself to it by degrees, he will not only, in time, be able to bear a much greater Quantity, but also, at length, find it as necessary as Wine or Spirits are to Tipplers. I said, in Health; because some Diseases, as Madness, in a great measure, enervate the Force of this Medicine.

The Action of Opium is very analogous to that of Wine, or vinous Spirits, excepting only in so far as it depends on the Quantity requisite for the same Effect: For, both the good and ill Effects of Opium are very little different from the good and ill Effects of Wine. Vinegar, also, is as much an Antidote to Opium, as it is to Wine. Hence Wine cannot be said to correct Opium, nor can Opium be said to act by rarefying the Blood, since Spirits, which coagulate it, produce much the same Effects.

The Virtues of Opium, internally taken, depend, principally, on its Action, or Influence on the Stomach. I have often observed a violent Tenesmus removed in a Moment, by a few Drops of liquid Laudanum, Vomiting stopt, Pain eased, and Sleep procured the same Way, and almost as soon. There are many Instances in *Wepfer*, (*de Cicuta aquatica*) of very terrible Symptoms, and Death itself, caused by Narcotics, before they went out of the Stomach, and without so much as inflaming it, or undergoing any visible Change in it, far less vitiating the Mass of Blood; and, also, of the same Symptoms being removed, and Death prevented, by Vomiting.

Several other Præcognita may be here insisted on. 1. In Pain there is a preternatural Contraction in the sensible Fibres, and in Sleep a Relaxation, or, as it were, a Palsy, of the Organs of Sensation, and voluntary Motion. 2. The most inconsiderable or minute mechanical Impulse on the Nerves, or unusual Impression on the Mind, may be the Cause of the greatest Changes in the animal Oeconomy. 3. The Virtues of many Medicines depend solely on their Action on the Nerves, or nervous Fibres. 4. The same Force or Impression on the Nerves of one Part has very different Effects from what it has on the Nerves of another; and often at one time from what it has at another time on the same Part; as Asarabacca in the Nose, and in the Stomach; Tobacco at first, and after it is habitually used. 5. This Action of the Nerves being, many times, no otherwise discoverable than by its Consequences, the primary and secondary Effects of Medicines may be, and too often are, confounded. 6. As the primary Effects of a Medicine have frequently several secondary ones, so the same Simple sometimes differently affects the same Nerve, or at least, different Nerves of the same Part, so as to produce Effects altogether independent of one another: This our Taste, in many Instances, can discover; and the Taste of Opium, compared with that of other Narcotics, sufficiently evinces it to be the Case here; that is, that the stimulating Qualities of Opium have very different Effects from the narcotic Part; and, if we compare the Effects of wholsome Aromatics with those of the most virulent Narcotics, we may add, 7. That the stimulating or aromatic Part of Opium is so intimately united to the narcotic, as thereby to mitigate it in some measure, and render it more friendly to Nature, than the Narcotics, that want it, are; as the *Hyoscyamus major vel niger*, or *Sium Erucæ folio*.

From all that has been said, I may draw the following Inferences.

1. That the anodyne and hypnotic Virtues of Opium depend not on its Action on the Brain, or on the Blood, whether externally or internally used.

2. That it affects, first and principally, the Nerves to which it is applied; next, such as are more immediately connected to, or communicate with them; then those which serve for Sensation, and voluntary Motion; and, last of all, by Consent, the whole nervous System.

3. That this Impression, Action, or Influence on the Nerves, differently affects the Common Sensory, and the Mind, according to its Degree, and the Nature and Function of the Nerves primarily acted upon.

"Those who take a moderate Dose of Opium, especially if "not long accustomed to it, are so transported with the pleasing "Sense it induces, that they are, as they often express themselves, in Heaven; and, though they do not always sleep, yet "they enjoy so perfect an Indolence and Quiet, that no Happiness in the World can surpass the Charms of this agreeable "Ecstasy." *Mead on Poisons.* Which, therefore, *cæteris paribus*, must remarkably promote a free Circulation and Perspiration; and, by removing Impediments, dispose to Sleep. But if the Dose be immoderate, or excessive, and the Impression exceeds the Bounds prescribed by Nature, as in Drunkenness, these Transports of Joy degenerate into ridiculous Mirth, Deliriousness, or the like; or end in profound Sleep and Lethargy; or a Palsy, Apoplexy, or sudden Death, finish the Tragedy, according to Circumstances; whereas the Effect of Opium in the Mouth and Nose, on Parts sore or excoriated, are very different, as has been formerly observed. The anodyne Virtue of Opium, externally applied, cannot be the Effect of any delightful Sensation in the Part: Pleasure may well be the Consequence, but it does not appear to be the Cause, of the Removal of Pain.

4. That the primary, or first observable Effect of the mechanical Impression or Action of the narcotic Part of Opium on the Nerves, is the Relaxation of their Fibres.

Whether this Relaxation is the physical Action of Opium on the Nerves themselves, or only the Effect of the Impression made by it on the Common Sensory, that is, whether Opium is immediately, or only mediately, the Cause of it, I shall not positively determine. It may, perhaps, be as difficult to explain how the Action of Narcotics on the Nerves causes a paralytic Relaxation, as how the Images painted on the Retina cause Vision.

Neither can I say, that the stimulating, or aromatic Part of Opium does not contribute to its easing Pains; for Spirit of Wine is anodyne, but it causes no Relaxation of the Part, or near it, to which it is applied, in which it evidently differs from Narcotics.

Now, as this Relaxation of the Nerves, and consequently of the moving Fibres, demonstrates Opium to be more than a palliative Remedy, in a great many Diseases; so it is not difficult, by it, to account for its bad, as well as good Effects; for, by relaxing to certain Degrees, it may prove anodyne, cordial, diaphoretic, hypnotic; or cause Stagnations, Deliriums, Lethargies, Apoplexies, and Death.

I have hitherto, on purpose, taken little Notice of Opium's rarefying the Blood, though asserted by Authors whom I very much esteem; not only because, by the foregoing Experiments and Observations, it appears to have no such Effect; at least, that the Action or Operation of Opium cannot depend on it; but also because, were this Theory admitted, it might be of bad Consequence, and lead into dangerous Errors in Practice. Thus, if Rarefaction of the Blood be admitted as the Cause of diseased

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Symptoms, which the Abuſe of Opium ſometimes occaſions, the Remedy indicated would be Veneſection; whereas ſome Authors affirm, that it is Death to open a Vein, even the Day after a Narcotic has been taken. Beſides, if it rarefied the Blood, how could it be ſo uſeful in Hæmorrhages, Small-pox, and the like, as it is found to be?

It is by no means neceſſary now, to anſwer the Objections againſt the Uſe of this Medicine, in different Ages, ſince it has, at laſt, triumph'd over all Oppoſition; and is not only of more univerſal Uſe, but, alſo, does more Honour to Medicine, than any Remedy whatſoever.

Opium is commonly given to adult Perſons, unaccuſtom'd to it, from half a Grain to three; but to ſuch as are uſed to it, to four, five, or more Grains, till it produce the deſired Effect. The uſual Preparations are, the Extract, Tincture, *Sydenham*'s Liquid Laudanum, anodyne Balſam, and pacific Pills; and it is the Baſis of the Storax-pills, Mithridate, Theriaca, and Diaſcordium.

With relation to the Doſe, the general Rule, that it is ſafer to give too little, than too much, of efficacious Medicines, is in no Inſtance more to be obſerved, than in the Adminiſtration of Opium; eſpecially, ſeeing its Effects appear ſo ſoon, that the Defect may much more eaſily be ſupplied, than the Exceſs can be remedied. For, if too much Opium is taken, the Muſcles become ſoon paralytic, ſo that nothing can be ſwallowed; and all we can do, is to endeavour to provoke Vomiting, by tickling the Throat, or by Clyſters, and Cataplaſms of Tobacco, and ſuch emetic Applications; and, at the ſame time, to rouſe Nature by ſtrong Sinapiſms. If thus the unfortunate Patient is enabled to take Medicines, after emptying the *Primæ Viæ*, Diaphoretics mixed with Vinegar, and ſuch-like Acids, will ſeldom fail to complete the Cure.

To conclude; I am very ſenſible, that Opium is an edged Tool, and may do Hurt; but it is, alſo, a divine Remedy, and may do much Good. A Phyſician may be too timorous, as well as too bold, in Practice; and the Sick oftentimes ſuffer the one way, as well as the other. As, therefore, I ſee no Reaſon abſolutely to condemn the giving of Opium to Infants, to weak, plethoric, or aged Perſons; to pregnant Women, or in malignant Diſeaſes; ſo, on the other hand, if removing Pain, procuring Sleep, checking Evacuations, preventing a ſalutary Hæmorrhage, or the like, be dangerous or unſafe, he muſt either be ignorant of the Healing Art, or of the Nature of Opium, who, in ſuch Caſes, raſhly preſcribes it. *Edinburgh Medical Eſſays, Vol.* 5.

Among all the vegetable Subſtances uſed in the *Materia Medica*, none has had ſo various a Fate as Opium; for ſome, both of the Antients and Moderns, eſteem'd it rank Poiſon, becauſe they found, that it often induced Drowſineſs, Torpor, Sleep, and ſometimes Death; or, at leaſt, that Diſeaſes were rendered worſe by it; whilſt ſome others, eſpecially among the Moderns, extol it as the moſt efficacious of all Medicines, for alleviating Pain, procuring Sleep, and preſerving the Strength; ſo that ſome Phyſicians, and, among the reſt, *Platerus* and *Sylvius*, who brought this Medicine into Reputation, after it had long lain in Obſcurity, have not ſcrupled to affirm, that they would not be Phyſicians, if Opium was baniſh'd from the *Materia Medica*; and the incomparable *Sydenham* thanks Almighty God for having bleſs'd the World with Opium, a Medicine highly efficacious in removing a large Number of Diſorders incident to Mankind. Beſides, ſome Authors of Note and Learning have wrote on purpoſe to ſcreen Opium from the Calumnies with which others had loaded it, and ſhew that it is the ſafeſt, moſt efficacious, and univerſal Medicine, provided it is cautiouſly uſed. But though the Uſe of Opium is of vaſt Importance in Practice, yet its Abuſe is no leſs fatal and deſtructive, ſince it accidentally proves poiſonous; and 'tis, at preſent, hard to determine, whether the Good procured by its due Uſe be greater, than the Misfortunes induced by a prepoſterous Exhibition thereof. But as Phyſicians differ with reſpect to the Efficacy of Opiates, ſo their Sentiments are no leſs various about its Method of acting; ſo that 'tis hard to chooſe which Side to embrace. As none of their Hypotheſes are ſatisfactory, we ſhall now briefly inquire, whether the Influence of anodyne and narcotic Medicines on the human Body cannot be accounted for from the Motion of the Blood.

As, therefore, that Hypotheſis is certainly beſt, which is moſt eaſy, perſpicuous, and beſt calculated for accounting for Phenomena, and ſolving Difficulties; ſo 'tis incumbent on thoſe who would inveſtigate Truth in a proper Manner, and eſtabliſh a rational Hypotheſis, carefully to advert to all Effects, Phenomena, and Circumſtances; that, by comparing theſe with the Hypotheſis, their Affinity, or Incongruity, may be the more palpably diſcerned: For this Reaſon we ſhall conſider the moſt remarkable Effects produced in the human Body by Opiates, according to the different Times, Doſes, and Methods in which they are exhibited.

'Tis, therefore, certain from Experience, that all vegetable Subſtances, which for a long time diffuſe an acrimonious Smell, whether internally or externally uſed, excite Sleep, Drowſineſs, and a Stupor of the Senſes; and if they are uſed for a conſiderable Time, and in large Quantities, they produce the ſame Effects with Narcotics. 'Tis, alſo, to be obſerved, that all fragrant and volatile Subſtances induce a calm and gentle Sleep; but this Obſervation holds moſt conſpicuouſly with reſpect to the Flowers of Roſemary, Saffron, Lily of the Valley, Cowſlips, Elder, the Lime-tree, the *Egyptian* Thorn; as, alſo, the Flowers of Oranges, Jeſſamine, and white Lilies; the Waters of which, eſpecially when diſtilled with May-dew, are of ſingular Efficacy in allaying the tumultuous and irregular Motions of the Spirits in Epilepſies, and ſpaſmodic Diſorders. To the ſame Claſs, among animal Subſtances, belong Musk and Civet, and, among Sea Subſtances, Amber, which, when frequently exhibited in due Doſes, is of ſingular Efficacy in allaying the moſt violent epileptic Fits: On the contrary, 'tis certain from Experience, that thoſe Subſtances which for a long time exhale a violent, vinous, and fixed Vapour, are rather of a ſtupefactive Quality, by which the Strength, Senſes, and Operations of the Mind, are conſiderably weaken'd, and ſometimes totally deſtroyed. Of this Kind are all the Species of Poppies, Henbane, Nightſhade, and Mandrake; and fetid animal Subſtances, ſuch as Caſtor, the Shavings of Horns and Hoofs. Some Animals and Inſects dried, generally, do not produce a narcotic Effect, but only, by checking the irregular Motions, prove beneficial in alleviating painful Spaſms.

'Tis, alſo, to be obſerved, that no Subſtances are poſſeſſed of an anodyne or narcotic Effect, unleſs they conſiſt of a volatile Principle; according to the more fix'd or volatile Nature of which, they produce different Effects. Hence, an anodyne, or narcotic Quality is falſely aſcribed to Nitre, or Vitriol; though 'tis not to be denied, that theſe Subſtances, when rightly prepared, and duly uſed, are of ſingular Efficacy in alleviating Pain, ſince they both fix and weaken the bilious Acrimony in the *Primæ Viæ*. From what has been ſaid, we may eaſily aſſign a Reaſon, why unboil'd Opium produces Sleep, and alleviates Pain, far more expeditiouſly, than when it is deprived of its volatile Principle by boiling; as, alſo, why the oleous and pinguious Parts of the Seeds of Poppies and Henbane are leſs narcotic, than their Plants, Leaves, Flowers, and Roots, which conſiſt of a reſinous Volatile, though, at the ſame time, a Principle not exhaled without Difficulty; and 'tis certain, that the Vapours exhaled from a ſomewhat fix'd volatile Subſtance affect the Brain more violently, ſtop the Motion of the Blood and Spirits more effectually, and ſuſpend the Action of the animal Functions more throughly, than if the Matter diffuſing the Exhalations was of an highly ſubtle Nature. Hence, the Water and Spirit of Poppies, and the Waters obtain'd from the Flowers of the wild Poppy, and the white Lily, are far more mild, than their more fixed and reſinous Extracts.

'Tis, in like manner, certain from Experience, that Opiates, duly prepared, cautiouſly uſed, and exhibited at proper Times, eſpecially in young and full-grown Perſons, ſuch as are neither of a plethoric nor cacochymic Habit, but of ſanguine and choleric Temperaments, provided the Strength is ſufficient, and the Pulſe ſuch as indicates the Vigour of Nature, are the moſt ſafe and effectual Remedies in violent Pains, convulſive and ſpaſmodic Diſorders, exceſſive Diſcharges of Blood or Serum, and continual Watchings: On the contrary, 'tis equally certain from Experience, that Opiates, in unſkilful Hands, have often either kill'd Numbers, or render'd the Diſorders, for which they were exhibited, worſe; eſpecially if, when not corrected, they are exhibited in too large Doſes, to Perſons of weak and delicate Conſtitutions, to ſuch as labour under malignant Diſorders, to ſuch as have a weak and ſmall Pulſe, or are phlegmatic, fat, plethoric, cacochymic, or coſtive.

But 'tis principally remarkable, that Opiates, and all Narcotics, unſeaſonably exhibited, are, in a particular manner, noxious to the Brain, and animal Functions; for nothing is more frequent, than that the Uſe of Medicines of this Kind is ſucceeded by an oppreſſive Pain of the Head; a profound Sleep, accompanied with terrible Dreams; a Vertigo ſo violent, that the Head cannot be kept erect; a Torpor of the Senſes, a Redneſs and Tumor of the Face, an Inflation of the Veins of the Head, a Languor of the Strength, and an Inability to Motion. But ſtill more terrible Diſorders of the Brain have, by ſkilful Phyſicians, been obſerved to be produced by the injudicious Uſe of Opium; ſuch as profound Sleep, Stupor, and a ſurpriſing Loſs of Memory. Thus *Willis*, in his *Pharmacop. Ration. Part.* 1. obſerves, that ſome, by taking a ſmall Pill of Laudanum, have been thrown into ſo profound a Sleep, that they could never afterwards be rouſed out of it; and though from their Pulſe, Reſpiration, and Heat, they ſeem'd to be alive, and in a due State, for three or four Days, yet they could never, either by internal Remedies, or external Applications, be recall'd to Senſation and Waking. The ſame Author, in the Work laſt quoted, informs us, that by taking a ſmall Doſe of Opium, he has obſerved, that others have hardly ſlept at all, but that they immediately became worſe with reſpect to their Pulſe, Reſpiration, and Heat; ſince ſuch Patients forthwith became more breathleſs, and could not be reſtored by any Cardiacs, but gradually languiſhed, till they died. The ſame Author, in his Treatiſe *de Anima Brutorum*, gives us the Hiſtory of a Man, who, in order to alleviate a Colic, took

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took large Quantities of Opium; immediately after which, he complain'd of a violent and oppreſſive Weight in his Stomach. His Friends exhibited Wine, Cordials, and hot Spirits, which afforded him no Relief; for the Oppreſſion, ſpreading farther, excited Languors about the Præcordia, and Deliquiums; till at laſt, though he continued awake, and preſerved his Reaſon, he complain'd that his Spirits were, gradually, more and more exhauſted, and died in three Hours.

That the unskilful Uſe of Opiates greatly injures the Brain, Senſes, and mental Powers, we learn from a Caſe in *Miſcell. Nat. Curioſ. Decad.* 1. *a.* 5. where we are inform'd, that a certain Man, upon ignorantly taking a large Quantity of Opium, was firſt afflicted with terrible Dreams, and then deprived, in ſome meaſure, of the Uſe of his Tongue; an Hour after which, he was ſeized with a Vertigo, a Diſturbance, and gyratory kind of Motion in his Head. The Patient, alſo, afterwards, told, that he and the Bed ſeem'd not only to be ſuſpended in the Air, but, alſo, to fly. Thus he remain'd, as it were, in an Apoplexy, and unconſcious of his own Exiſtence. In the Beginning of his Diſorder, he ſaid, he neither perceived the Taſte of the ſtrongeſt Vinegar, nor the Smell of the Spirit of Sal Ammoniac. His Pulſe was low; and, when he ſhut his Eyes, he had the Appearance of a diſtracted Perſon. During this Condition, ſpirituous apoplectic Water was exhibited to him, by which his Spirits ſeemed to be forthwith recruited; after which, he perceived an Itching all over his Body. *Stalpart Vander Wiel*, in *Obſ.* 42. juſtly cautions, that Nurſes, and Women who have the Charge of Infants committed to them, ſhould not, when any Pain or Uneaſineſs ſeizes them, forthwith exhibit ſomniferous Medicines; ſince it often happens, that though theſe do not prove fatal, yet, if often uſed, they frequently weaken the Brain, and nervous Syſtem of Infants, and, as we find from Experience, induce a Tremor of the Joints, a Palſy, and Stupor. And *Willis*, in his *Pharmac. Rational. Part* 1. tells us, that, by means of Opium, he knew ſeveral Perſons who contracted Slowneſs of Genius and Stupidity, and others confirmed Folly. And in the ſame Work he informs us, that he knew a certain Man, who by taking a large Doſe of Laudanum, when he was feveriſh, loſt his Memory totally. *Tilingius*, in his Treatiſe *de Laudano Opiato*, gives us an Account of a Servant Maid, who, inſtead of the Theriaca, took Laudanum Opiatum, by which means ſhe was immediately ſeized with a Stupor and Drowſineſs, which laſted all her Life: Her Memory in the mean time was loſt, nor did ſhe ever recover her uſual Health. *Schneider*, alſo, in his Treatiſe *de Catarrho*, *Lib.* 4. *Cap.* 8. informs us, that by the Uſe of Opium the Son of a certain *Indian* King loſt both his Reaſon and Memory.

From what has been ſaid, we may underſtand, why Opiates are ſo prejudicial to the Head, as we obſerve in violent Diſorders of the Head, ſuch as Apoplexies, Epilepſies, Lethargies, Palſies, Diminution of Memory, and Vertigos, which, after the Uſe of Opiates, are always increaſed, and become more dangerous: Thus *Bartholin. in Act. Hafnienſ.* informs us, that a certain Woman, upon allaying an Head-ach by Narcotics, was from that time ſeized with a Vertigo, Stupor, and Weakneſs of the Head. In Diminution of Sight, and Difficulty of Hearing, Opiates are by no means to be uſed. Thus *Waldſchmid*, in *Diſſert. de Opiatorum Noxa*, informs us, that a Woman, labouring under a dangerous Hæmorrhage of the Uterus by the Uſe of Opiates, contracted a Blindneſs not to be removed by any Medicine.

Beſides, Opiates and Narcotics diſturb the Uſe of the Senſes, and of Reaſon, and often excite Folly and Deliriums; which, alſo, holds true with reſpect to the more fixed ſtupefying Medicines, ſuch as the deadly Nightſhade, the Roots and Seeds of Henbane, Mandrake, and Lolium, which, when eaten, according to the Obſervations of Authors, produce an Alienation of Mind, and drive Perſons into Madneſs; ſo that they ſeem to be poſſeſſed by Devils. In ſome they produce ſurpriſing Convulſions and Agitations of the Members, accompanied with Madneſs: Inſtances of which are to be met with in *Matthiat de Lobel's Nova Stirpium Adverſaria, Matthiolus in Dioſcorid. Wierus de Præſt. Dæm. Olearius in Itin. Perſico*, and *Timæus*. In a Mania theſe Medicines, alſo, generally increaſe the Rage; for which Reaſon *Helmont*, in his Treatiſe *de Lithiaſi*, juſtly charges thoſe with an Error, who attempt to mitigate a Mania by Opiates, ſince all the Medicines of this Kind naturally produce Diſtraction, which is nothing but a waking Dream. And in his Book, intituled *Retenta*, he confirms the ſame Doctrine, by telling us, that Narcotics, exhibited in Doſes four times as large as thoſe commonly uſed, hardly procure Sleep to mad Perſons, but rather increaſe their Madneſs. *Freitagius*, in his Treatiſe *de Opio, Cap.* 3 obſerves, from *Proſper Alpinus* and *Belonius*, that the *Egyptians* and *Turks* eat Opium, in order to render themſelves chearful, bold, and ſalacious. But theſe two Authors, at the ſame time, obſerve, that though theſe Devourers of Opium ſeem to enjoy good Health, and not to be injured by its Uſe, they yet become colder, their Functions are render'd worſe, they almoſt always appear drunk and torpid, become comatous, ſtupid, and inconſtant; ſometimes affirming, and at other times denying, the ſame thing, ſo that they are neither fit to be dealt nor converſed with; and Perſons who contradict themſelves are, by way of Reproach, ſaid to have eaten Opium, juſt as we accuſe others of being drunk.

Beſides, Opiates greatly ſtop the vital Motions of the Heart and Arteries, and render the Circulation of the Blood more faint and languid; for which Reaſon Opium generally renders the Pulſe weak, and the Reſpiration difficult, producing, at the ſame time, an Anxiety about the Præcordia, eſpecially in Perſons who abound with thick Blood. Hence we are enabled to aſſign a Reaſon, why weak Perſons, and thoſe labouring under malignant Diſorders, are eaſily deſtroyed by Opiates, ſince the Exhibition of them is ſucceeded by an extreme Loſs of Strength, Syncopes, and at laſt Death. Hence Inſtances of the fatal Events of Opium are every-where to be met with in practical Authors. Thus, we are informed by *Frederic Hoffman*, in *Metal. Morbif*, that a certain Phyſician of *Hall*, labouring under a burning Fever, in order to remove continual Watchings, took ſome Grains of Laudanum, by which means he ſoon died. *Sanctorius*, alſo, in his *Method. vitand. Errores, Lib.* 8. *Cap.* 12. tells us, that in the Confines of *Hungary* he ſaw a Soldier, who, upon taking ſeven Pills of Opium, forthwith began to breathe with a kind of Impetus, and ſoon after expired. *Foreſtus*, alſo, in *Lib.* 9. *Obſ.* 14. makes mention of a cacochymic Patient, who, upon an Exhibition of Opium, in nephritic Pains, by an unskilful Phyſician, had a Sleep procured, out of which he could never afterwards be awaked. Inſtances of the like Kind are to be found in *Willis's Pharmaceut. Rational.* and *Sennertus*, in *Prax. Lib.* 6. *Part.* 7. *Cap.* 1. It is, alſo, obſervable, that Opium, injected by way of Clyſter, has proved fatal to many; various Inſtances of which are collected by *Telingius*, in his Treatiſe *de Opio*, *Sennertus*, in *Lib.* 6. *Prax. Part.* 7. *Cap.* 1. and *Marcellus Donatus*, in his Treatiſe *de Hiſtor. Medicis Mirabilibus*, *Lib.* 4. *Cap.* 18. which, in my Opinion, happens, becauſe the Opium, by ſtopping and checking the Motion of the Blood, induces a Sphacelus of theſe Parts.

It is, alſo, to be obſerved, that Opium proves a Stimulus to Venery, Chearfulneſs, and Cruelty; for which Purpoſes it is much uſed by the *Turks* and *Indians*, who, of the pureſt Tears of Opium, prepare, by Fermentation, what they call *Maſlach*, a very intoxicating Liquor, which procures a kind of Madneſs, and which they uſe when they are either about to enter the Field of Battle, or embrace the Fair. This is confirmed by *Joh. Jac. Saar.* in his *Itiner. Ind. Orient.* who tells us, that the *Indians* of *Bantam* prepare a certain Electuary of Opium, which they call *Affion*, a Subſtance of a cineritious Colour, of a ſweetiſh and ſomewhat bitter Taſte, and by the Uſe of which they are render'd fierce. The *Chineſe*, alſo, in *Batavia*, uſe this Electuary as a Stimulus to Venery, which it excites ſo powerfully, that they continue the brutal Gratification of their Luſt for a whole Night, and often oblige their Proſtitutes to make their Eſcape, when they are able to ſuſtain the Diverſion no longer. See *B. D. D. Sachs. Tom.* 2. *Ephem. Germ. Obſ.* 69. where other Authors are, alſo, quoted; and the celebrated *Wedelius*, in his Treatiſe *de Opio*, informs us, that in hot Conſtitutions Opium excites nocturnal Pollutions and Tentigos, eſpecially if the Perſons are naturally diſpoſed to ſuch Diſorders: Hence, if it is mixed either with Amber, or the Eſſence of Amber, it proves an excellent Stimulus to Venery.

It is, alſo, neceſſary we ſhould conſider the Method of correcting Opium; for as crude Opium is rarely to be truſted to, ſo, when rightly prepared and corrected, it proves a Medicine of ſingular Efficacy. *Galen*, in his Treatiſe *de Theriaca ad Piſonem*, *Cap.* 13. convinces us, that he was very cautious in the Uſe of Opium, by telling us, that Opium uſed by itſelf was fatal; but, when prepared with other Subſtances, a ſalutary and beneficial Medicine. Hence, in my Opinion, thoſe Things correct Opium, which leſſen its Virulence, render it mild and ſalutary to the Body, and eſpecially which rouſe the languid Motion of the Fibres, brought on by the Uſe of Opium; for ſince Opium, as we find from Experience, generally ſtops all the Motions of the Blood and Spirits, it muſt of courſe be ſalutary, to mix with it ſuch Subſtances as excite and promote theſe Motions. Hence, from a Mixture of theſe two contrary and repugnant Subſtances, there reſults a kind of third and neutral Subſtance, which is at once of an aperient and ſedative Quality: And as thoſe Things which induce the moſt violent Motions in the human Body, are by all allowed to be Sudorifics, Purgatives, ſpirituous and aromatic Subſtances, ſaline and diuretic Medicines, ſo Opium is moſt commodiouſly mixed with them; by which means they are render'd ſurpriſingly efficacious, and, as it were, univerſal. Of this kind are the Theriaca of *Andromachus*, ſo highly eſteemed for ſo many Ages; the Diaſcordium of *Fracaſtorius*; the *Theriaca Cœleſtis*, the *Requies Nicolai*, and the *Theriaca de Citro*; which are highly ſafe and efficacious Medicines, in many Diſorders, Pains, Defluxions, and Spaſms. Opium is, alſo, an excellent Medicine, when mixed with Purgatives, ſuch as the Extract of Aloes in the Pilulæ Wildeganſii, the Extract or Powder of white Hellebore, in the Pilulæ Starkii, or Matthiæ: For theſe Preparations, as we often obſerve, render the Body ſoluble, powerfully excite Sweat, and generally never bring on a Torpor, turbulent Dreams, a Vertigo, and an oppreſſive Torpor of the Head, like other Opiates, left to themſelves, without any kind of

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of Correction. Opium mixed with tartarized Tincture of Antimony, or with the acrid Tincture, prepared from the Regulus of Antimony, is both a ſafe and efficacious Diuretic: Spirituous Subſtances, ſuch as Cloves, Cinnamon, and its Oil, as, alſo, Malmſey and *Spaniſh* Wines, excellently prevent the Injuries of Opium, and convert it into an innocent Medicine; for this Reaſon the Laudanum Liquidum of *Sydenham* is juſtly to be commended, becauſe we know from Experience, that it is ſafely exhibited in all Diſorders, where Sedatives are indicated as proper. *Stahlius* greatly commends the following Spirit, prepared from Opium by Diſtillation.

Take of *Spaniſh* Wine, one Quart; of the beſt Opium, half an Ounce; of the Flowers of wild Poppies and Elder, each three Pugils; of Saffron, one Dram; of Nutmegs, Cloves, Cinnamon, and Cardamoms, each two Drams.

Theſe Ingredients, when mixed, and duly diſtilled, yield a Spirit of a grateful Taſte, a pleaſant Smell, and an efficacious Virtue. This Spirit is of a nervous, antiſpaſmodic, and ſedative Quality. Its Doſe is one Spoonful.

Having thus conſider'd the principal Effects of Opium on the human Body, we now come to inveſtigate the Method in which Narcotics, and eſpecially Opium, operate. The Antients, then, univerſally imagin'd, that theſe Medicines operated by a certain occult, poiſonous, and refrigerating Quality, which extinguiſhed the innate Heat of the Conſtitution. Among the Moderns, *Willis*, in *P.* 2. *Patholog. Cap.* 3. affirms, that theſe Medicines are a Species of Poiſon, which, by its Vapour, ſurrounds, and, as it were, overwhelms the animal Spirits, whilſt the Blood, in the mean time, and ſolid Parts, are not in the leaſt injured. And in his *Pharmacop. Rational. Sect.* 7. *Cap.* 1. he tells us, that by Opiates the Spirits are affected, and, as it were, poiſon'd; ſo that by their Vapour being, as it were, confined in Chains, they forthwith become languid, and ceaſe to perform their Offices. The learned *Ettmuller*, in his *Diſput. de Virtute Opii Diaphoret. Cap.* 501. affirms, that Opiates fix the Spirits, and that, in Caſes where the animal Spirits become fierce and exorbitant, they are checked, and reduced to a due Order, by Opiates. The celebrated *Wedelius*, in his *Tractat. de Opio*, explains the Operation of Narcotics, from the Condenſation of the Spirits, and an Obſtruction of the Pores of the Brain: For, ſays he, the Operation of Opium conſiſts in a particular Kind of Evaporation, which obſtructs the Pores of the Brain, already open'd, and dilated by too long Watching; hinders the immoderate Influx of the animal Spirits; condenſes, and, as it were, coagulates them; and by that means procures a grateful Reſt to the Body. Nor can it be denied, ſays he, in the ſame Work, that the Nerves of the Stomach immediately receive this Vapour or Exhalation, eſpecially ſince Opium contains a Sulphur, which is eaſily reſolved in Vinegar, Water, and ſpirituous Liquors. *Gladbachius*, in *Prax. Med. Idea nova*, informs us, that Opium produces its Effects by its volatile Salt, and groſs Oil; which, when reſolved in the Stomach, and expanded in the Blood, by its Ramifications involves the Spirits reſolved by the Fermentation, ſo that the Blood may not be thrown into a Commotion and Fermentation. Hence the groſs and irregularly moving Spirits in the Blood, which, by obſtructing the Nerves, hinder a free Circulation, are ſuppreſſed, and depoſited in ſmaller Quantities in the Brain. Whilſt this is a carrying on, the Blood is more ſlowly propelled from the Heart, the Pulſe becomes more languid, and the Circulation is hinder'd. The *Carteſians* imagine, that Narcotics, by a certain foreign Æther, in ſome meaſure coagulate the Blood and Humours, and ſtop their Motion, notwithſtanding their volatile Salt and ſubtile Oil, which otherwiſe ſeem rather adapted to increaſe the Motion of the Blood: Hence, when the Motion of the Blood in the obſtructed Parts is no longer ſo violent as it was before, the Pain muſt be ſomewhat mitigated. And, ſay they, it is very probable, that the volatile Salt of Narcotics, being highly ſubtile, but, at the ſame time, ſufficiently acrid, is capable of ſeparating ſome of the ſlender Fibres of the Parts, which, being by that means render'd more flaccid, cannot convey ſo brisk a Motion to the Common Senſory. This Opinion is, alſo, embraced by *Cranius*, who, in his *Tractat. de Homine*, informs us, that the ſpirituous and oleous Parts of the Opium coagulate the Blood, in the ſame manner with the Spirit of Urine, and the rectified Spirit of Wine; by which means a Drowſineſs is afterwards produced, and the Pain alleviated, becauſe, by the volatile and acrid Salts of the Narcotics, the Fibres of the Nerves are ſo reſolved, as to loſe their Tenſion, and, conſequently, cannot convey the Action of Objects to the Common Senſory. Some, by various Experiments, endeavour to prove, that Opium contains an acid Sulphur; but eſpecially becauſe crude Opium, by an Affuſion of Oil of Tartar per Deliquium, produces an Ebullition. Hence they are of Opinion, that this Acid coagulates the Blood, and fixes the Spirits.

But a little Attention eaſily convinces us, that none of theſe Hypotheſes are ſufficient for accounting for the before-mention'd Effects. And, firſt, for the Opinion of thoſe Antients who took Opium for a Poiſon, becauſe, by its exceſſive Coldneſs, it extinguiſhes the native Heat, or Sulphur and Spirit of the Blood; we obſerve that, even according to *Hippocrates*, Opium is hot; conſiſts of an hot and inflammable Sulphur; and, when externally applied, ſoftens and reſolves Tumors, a Property peculiar to hot Subſtances. Much leſs can the Favourers of this Opinion aſcertain, wherein this poiſonous Quality, which extinguiſhes the vital Spirits, conſiſts. Nor do I think they could, upon their Hypotheſis, diſentangle themſelves, if one was to ask them why the Theriaca of *Andromachus*, the Theriaca Cœleſtis, Mithridate, and the Diaſcordium of *Fracaſtorius*, whoſe Baſis is Opium, have for many Ages been accounted the moſt preſent Alexipharmics, and juſtly celebrated Remedies. Beſides theſe, many Panaceas, which have longeſt ſuſtained their Character for Efficacy, have Opium in their Compoſition; ſuch as the Pilulæ Wildeganſii, ſold under the Name of *Panacea Solaris*, the Pilulæ Starkeanæ, and others. Opium is, alſo, the moſt preſent Aphrodiſiac, becauſe it produces a Turgeſcence of the Semen, and an Erection of the Penis; and the *Eaſtern* People render themſelves bold and hardy in Battle by its means. The like Effects I myſelf have, alſo, obſerved produced by it on others, when uſed moderately: But, in ſuch Caſes, it muſt produce an additional Stimulus, rather than an Extinction of the Spirits. And though we are, by various Obſervations, taught, that ſeveral Perſons have been killed by Opium, or, at leaſt, ſubjected to violent Symptoms, yet nothing elſe is proved by this, than that Opium is an highly active and powerful Body; and though all draſtic Medicines, ſuch as ethereal Oils, Sudorifics, Emetics, Purgatives, and Mercurials, when exhibited in large Doſes, not only induce terrible Symptoms, but, alſo, ſometimes Death, yet they are not, for this Reaſon, to be called Poiſons: And the ſame holds true with reſpect to Opium.

Thoſe, alſo, who affirm, that Opium coagulates and fixes the Blood and Spirits, principally on account of its acid Sulphur, are, in my Opinion, greatly miſtaken; for though I readily grant, that crude Opium, by an Admixture of alcaline Subſtances, is concreted, and undergoes a Change, with reſpect to its Smell and Texture, by means of the Acid peculiar to almoſt all the reſinous and gummy Extracts of Vegetables, yet we cannot hence conclude, that this Acid fixes and coagulates the Spirits, and much leſs the Blood; for it is known from Chymiſtry, that all Reſins, reſinous Gums, and Woods, are poſſeſſed of an acid Taſte, which, however, does not render them narcotic. And, if the Effects of Opiates proceeded from an Acid, certainly the Oil of Vitriol, which is highly acid, concentrated Spirit of Vinegar, and Spirit of Nitre, muſt produce the ſame Effects in a greater Degree, which, however, they do not. Beſides, no Traces of an Acid can be diſcover'd in the Water of wild Poppies, Opium, Saffron, and the Seeds of Poppies and Henbane. It is, alſo, to be obſerved, that Opium reſolved in Tincture of Tartar, by which means its Acid is taken away, ſtill retains its ſomniferous Quality. And, granting that the Acid of Opium is a Sulphur of a fixing Nature, uncommon to other Acids; yet it cannot be conceived how it can ſtop or coagulate the Blood or Spirits, the moſt moveable Fluid, perhaps, of any in Nature. Nor is this Hypotheſis proved by that Experiment, in which rectified Spirit of Urine is mixed with highly rectified Spirit of Wine; for this is not ſo much a Coagulation, as a Precipitation of the volatile Salt, contain'd in the Pores of the Phlegm, by means of the highly rectified Spirit of Wine, imbibing the Phlegm. Beſides, no one can conceive, that Opiates alleviate Pain, becauſe, by their highly ſaline and volatile Acrimony, the Fibres of the Nerves are ſo reſolved ſo as to loſe their Tenſion, and due Senſation; for thoſe Spicula, if there are any in Opium, are not ſo conſiderable, as to diſſolve the Texture of the Nerves, or Membranes; for by this means they would rather increaſe the Pain; and volatile Salts, and acrid Subſtances, ſuch as Things prepared with Pepper and Cantharides, would, for the ſame Reaſon, eaſe Pain, which, however, they do not. And what is advanced about a foreign Ether, is equally unſatisfactory, becauſe ſuch a Subſtance, not coming under the Cognizance of our Senſes, cannot be defined. Thoſe who derive the diaphoretic and Pain-alleviating Virtue of Opium from its volatile oleous Salt, as being an Acid, and the Principle which removes the Pain, as *Bontekoe* in his Works affirms, embrace an Hypotheſis equally ill-founded; for only a ſmall Quantity of volatile oleous Salt can be obtained by Art from Opium, Mandrake, Nightſhade, and Poppy. Beſides, it may be juſtly asked, why volatile oleous Salts, exhibited in a larger Doſe, do not produce the ſame Effect.

But thoſe who ſeem to have conſider'd this Affair with greater Accuracy, are of Opinion, that Opium, by its highly ſubtile and ſulphureous Vapour, which is of a branchy Nature, acts immediately upon the Spirits, and the Pores of the Brain and Nerves, the former of which it clogs and overclouds, whilſt it obſtructs and blocks up the latter. Hence a more languid Influx of the Spirits into the muſcular Parts, and the Heart, happening, the Organs of Senſation are deprived of their Tenſion, the Circulation of the Blood and Humours render'd ſlower, and all the Secretions and Excretions weaken'd. Though theſe are very conſiderable and important Circumſtances, yet it is juſtly to be doubted, whether they exactly quadrate and correſpond to the

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Effects of Opiates; for first it is hard to be conceived how, by the Power of the Stomach, the highly subtile Vapours of the Opium, being resolved, and passing into the Blood, should be again separated from the Blood in the Brain, and how they should obstruct the minute, medullary, and nervous Ducts; since a vaporous Substance does not enter peculiar Ducts, much less obstruct the Motion of the subtile and elastic Lymph of the animal Spirits. But granting that the vaporous Exhalation of Opium is exhaled through the Pores of the Arteries of the Brain, yet it will with Difficulty find its Way into the *Corpora Striata*, and Bottom of the Brain, where the Nerves generally arise; and, if it should by chance get Possession of these Parts, it may again be easily dissipated through their Pores. Hence it cannot, in my Opinion, be accounted for, why Opiates, and other stupefying Medicines, often leave behind them a long-protracted Torpor, a Sensation of Weight in the Head, a Stupor, a Vertigo, an Inflammation of the Head, and a Loss of Memory. It may be, also, asked, why other fragrant Substances, which diffuse a penetrating and copious Smell, do not, like Henbane or Nightshade, produce stupefactive Effects, even though these latter are less vaporous than the former. Nor can it be commodiously accounted for, why, in some Persons, Opium should be an Aphrodisiac, and sometimes produce Watchings and Madness, or disturb the Fancy and Reason; for if the Pores of the Brain are obstructed, or the Spirits condensed, by these Vapours, their due Influx into the Parts must be retarded; which, however, cannot happen in Watchings and Madness, where, by the Consent of all Physicians, the Pores are open, and the Spirits conveyed with a preternatural Fury and Impetus. That highly fetid Vapours, of the sulphureous Kind, have not a Power of extinguishing the Spirits, is obvious from this, that kindled Hairs, or Feathers, infallibly rouse hysteric Patients, and those labouring under a Syncope, and rather restore than extinguish the Motion of the Spirits. I have frequently observed, that, in burning and inflammatory Fevers, the Exhibition of a small Dose of Opium has brought on a Disorder of the Head, and a gentle Delirium, succeeded by a long Hæmorrhage, by which the Delirium was afterwards terminated. But this Phenomenon can but ill be accounted for from this Hypothesis, which supposes that Opium operates by Vapours and Effluvia; for if this Delirium, Alienation of Mind, and Stupor of the Brain, proceeded from Vapours stagnating in the Brain, undoubtedly Sudorifics, and such things as recruit the animal Spirits, would most quickly remove those Effects, which, however, does not happen.

In an Affair, therefore, of so difficult a Nature, we shall briefly propose what we think most probable: First, then, it is not to be denied, that the Principle by which Opiates, and other Narcotics, act, is a Sulphur capable of Resolution and Evaporation, that is, which, by the Addition of a sufficient Degree of Moisture and Heat, is resolved into highly subtile Vapours. Now Sulphurs may be commodiously reduced to three Classes; for some of them are pinguious and unctuous, and abound with a gross Earth, and a large Quantity of Moisture, such as all expressed Oils, Fats, or Lards, which are with Difficulty resolved into Vapours: Other Sulphurs consist of a subtle and saline Earth, which, however, is fixed by acid Particles, such as all resinous Substances, which, if they are freed from the Substances in which they are involved, become too subtle and ethereal, such as all distilled Oils: And other Sulphurs are of a temperate Kind, consisting of a Fluid, a Salt, and a subtile ethereal Earth, more or less fixed; and all such Substances exhale a certain gross and long-continuing Vapour, and are either of a fragrant or a fetid Smell. Those Bodies, therefore, which consist of such a temperate Sulphur, and not only yield to temperate, but, also, to aqueous Menstruums, are possessed of an anodyne and stupefactive Quality; for which Reason, when they are taken into the Body, they are, by a kind of fermentative and rarefactive Motion, resolved in the Stomach and Intestines; a mild Heat, the salival Menstruum, and the Fluid of the Air, concurring to the Production of the same Effect. But the sulphureous and highly subtle Particles, thus resolved, are partly conveyed immediately to the Blood, through the porous Substance, by means of the membranous and nervous Ducts; and they are, also, partly convey'd to the Blood, along with the Chyle and Lymph. But when the Blood, impregnated with an highly subtile vaporous Principle, arrives at the Lungs, it is there more expanded, attenuated, and render'd elastic, by the elastic Parts of the Air, conveyed thither by means of Inspiration. Hence the Blood is necessarily expanded, and fills a larger Space. But when a Blood too much inflated, rarefied, and turgescent, approaches the cortical Substance of the Brain, and the small arterial Ducts surrounding the Pia Mater; these Ducts, whose Coats are very slender, are preternaturally distended and expanded by this rarefied Blood, a Circumstance which renders the systaltic and contractile Motion less and slower: Hence the Circulation of the Blood through the Head and Brain is render'd slower, and more languid; since, in order to the Return of the Blood through the Veins, the Systole of the Arteries, and, consequently, the subsequent Impulse, are always necessary.

But from a slow Return of the Blood through the Veins of the Head, a Distention of the Arteries, and a Stagnation of the Blood there, all the Phenomena and Effects, produced by the Exhibition of Opium, may be commodiously explained and accounted for; for, whilst the Blood thus retarded moves through the Veins, the thin aqueous Parts are easily secreted through the Pores, and induce a profound and gentle Sleep: And if a larger Quantity of this Serum, secreted from the Blood, should overflow the adjacent Parts, an oppressive Pain of the Head, a Torpor, a Loss of Memory, and an Alienation of Mind, may be produced. But when the Blood, in consequence of its preternatural Thickness, becomes stagnant, or when it is agitated by an acrimonious Principle, or a violent, hot, and intestine Motion, then various Fancies, turbulent Dreams full of Terror, and even Madness and Watchings, are excited. Hence the Reason is obvious, why, after the Use of Opiates, the Vessels of the Head are render'd turgid and tumid, the Face becomes red, and Hæmorrhages of the Nose sometimes succeed. But, when the Blood is thus slowly conveyed through the Brain, a small Quantity of animal Spirits are secreted and generated, and whilst this happens, the due Tone and Tension of the Nerves, which depends upon a proper Influx of the Spirits, and is highly necessary to all Sensation, is destroyed in the Parts; and hence the Privation of Pain draws its Origin: Hence, also, we are enabled to assign a Reason, why those Spasms of the whole Body, which depend upon an impetuous Influx of the Spirits, are alleviated; and as excessive Spasms generally hinder the Excretions of Sweat, Urine, and Stool, it happens, that, after the Use of Anodynes, the Sweat, suppressed by such a Cause, as, also, the Evacuations by Stool and Urine, flow more freely, and are reduced to better Order. And as the Excretions of Blood, and the Evacuations by Stool, derive their Origins from an Influx of the Spirits; hence Opium generally stops immoderate Hæmorrhages and Fluxes, since it retards and lessens the Influx of the Spirits, because, by this means, the due Flux and Reflux of the Blood in the Head is intercepted: Hence the Reason is obvious, why, after the Use of Opiates, the Pulse becomes weaker and slower, since, by the Consent of all Anatomists, it is granted, that the Motion of the Heart depends upon the Influx of the animal Spirits: Hence, also, we understand why, in a Defect of Strength, proceeding from a diminished Circulation of the Humours, in malignant Fevers, as, also, in all Disorders of the Head, such as Apoplexies, Vertigos, Palsies, Weakness of the Senses, Deliriums, and Loss of Memory, which arise from a retarded Circulation of the Blood through the Head, Opiates produce present Mischief, and render these Disorders more dangerous. The same fatal Effects are produced by Opiates in all weak Persons, such as are fat, those of phlegmatic Habits, and where-ever the Strength is impaired; in which Cases an incautious Exhibition of Opiates may often produce Death. That Opium, in some, proves a Stimulus to Venery, may be easily accounted for, from this Hypothesis; for the Blood in the whole Body, being rarefied, and quickly carried through the Vessels, expands the Muscles of the Penis, by which means it is erected; for Erection is procured not only by the Influx of the Spirits, but, also, by a large Conveyance, and long Continuance, of the Blood to the Penis.

As *Pliny* and *Matthiolus* have observed, no Substances are more efficacious for removing the Symptoms brought on by Opiates, than Acids, which, especially when of the volatile Kind, by their acid Spicula, communicate a certain Motion to the Fibres, and partly stop the excessive Rarefaction of the Blood, and hinder the Effects of the sulphureous Vapours. Purgatives, also, and all Substances which produce a Commotion in the Body, have a Tendency to prevent the mischievous Effects of Opiates, because, by these, the Fibres being stimulated to a brisker Motion, the Stagnation in the Head is, by that means, generally render'd less: And in this Case the worst of Symptoms are not to be expected. This Hypothesis is greatly confirmed by a curious History, recorded in *Lentilii Miscell. Med. pract.* where we are told, that, half an Hour after a certain Person had used some Hemp-seeds, there was such an Expansion of the Cranium, that the Surgeon could take the Blood extravasated in the Wound, through the Fissures of the Cranium. Now, that Hemp-seed is possessed of a narcotic Quality, is shewn by *Simon Pauli*, in his *Quadripart. Botan.* The *Datroy* is, also, by many Authors who have wrote concerning the *Indies*, accounted a Species of Hemp, as we are informed in *Itiner. Olearii Oriental.* Hence *Lentilius* justly concludes, that the Substance of the Brain is render'd turgid, and possesses more Space, by the Fumes of Opium. Besides, that Narcotics operate by retarding the Motion of the Blood through the Brain, is obvious from dissecting the Carcases of those who have perished by the Use of Narcotics: Thus *Joach. Curæus*, *Lib.* 2. *de Sensu*, *Cap.* 17. and *Levinus Lemnius de Occ. Nat. Mir. Lib.* 2. *Cap.* 52. informs us, that, in Subjects of this Kind, the Blood has been found congealed like Ice in the Ventricles of the Brain.

Lastly, That the Effects of Anodynes may be commodiously explained and accounted for from the Rarefaction and Expansion of the Blood and Humours, is obvious from this; that those Substances

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ſtances which produce a rarefactive and expanſive Motion in the Blood and Humours, are, alſo, poſſeſſed of a remarkable Power of inducing Sleep. Thus the immoderate Uſe of Brandy is ſucceeded not only by profound Sleep, but, alſo, by a Stupor. And *Platerus*, in *Lib.* 1. *Obſerv.* informs us, that he frequently obſerved, that thoſe who drank immoderately of Brandy, or Aquavitæ, were firſt ſeized with an intolerable Heat; afterwards became ſtupefied, as if they had taken Opium, and ſnored till they died. That Amber, Musk, Saffron, Camphire, and Nutmegs, rarefy, expand, and attenuate the Blood, whilſt, at the ſame time, they produce anodyne Effects, is certain beyond Diſpute: That Baths for the Head, Feet, and whole Body, diſpoſe to mild and gentle Sleep, is well enough known; which is owing to nothing but their inducing an Expanſion of the Humours; by which means they render the Body turgid and inflated; in conſequence of which, the Blood moves ſlowly thro' the Head, and a gentle Sleep ſucceeds. The vaporous and fragrant Subſtances, which exhale from Flowers, are, alſo, poſſeſſed of a ſingular Power of inducing Sleep; for which Reaſon *Strabo*, in *Geogr. Lib.* 65. affirms, that a Carus may be produced by highly fragrant Subſtances; for the ſulphureous Vapours, being poſſeſſed of a remarkable Elaſticity, and received into the Pores thro' the Blood, by dilating and expanding it, produce the above-mentioned Effects. 'Tis, alſo, certain from Experience, that, by means of the incoercible and expanſive ſulphureous Exhalation ariſing from live Coals, many have been ſeized with a Stupor, and ſometimes with Death. Inſtances of this kind frequently occur in practical Authors. But, that, during Sleep, the Humours and whole Habit of the Body are expanded, is ſufficiently certain; ſince, in ſleeping Perſons, the Inflation of the whole Body and Head is ſufficiently conſpicuous; and 'tis obſerved, that the Shoes, Stockings, and other Cloaths of ſuch Perſons, are tighter than when theſe very Perſons are awake. Hence, alſo, the Reaſon is obvious, why in rainy, warm, and Summer-weather, as, alſo, in hot Baths, which manifeſtly rarefy the Blood, Perſons are more excited to Sleep, than when the Weather is cold, dry, and ſerene; becauſe, by this laſt-mentioned State of the Atmoſphere, the Fibres of the Body are more conſtricted, the Humours more condenſed, and the Circulation of the Blood more brisk and accelerated. From what has been ſaid, the Reaſon is, alſo, obvious, why Perſons in a deep Sleep are commodiouſly roufed by cold Water, or rather Vinegar, apply'd to the Region of the Liver, the Genitals, and the Back: As, alſo, why Acids, ſuch as Lemon-juice and Vinegar, whether internally or externally uſed, commodiouſly remove Sleep and Drunkenneſs. 'Tis to be cautiouſly obſerved, that this Expanſion of the Blood and Humours, which is neceſſary to induce Sleep, and procure a Freedom from Pain, varies much as to its Nature, according to the different Cauſes by which it is produced. Thus, 'tis a Circumſtance of great Importance, by what Anodynes, or ſomniferous Medicines, the Sleep is induced; for, if it is procured by fragrant Subſtances, or ſuch as contain a mild and gentle Sulphur, which is friendly to the Spirits, the Symptoms induced are not very dangerous, nor much to be dreaded. But if the Sleep is brought on by a ſulphureous, fetid, and foreign Vapour, which is unfriendly to Nature, and the Spirits, then a more terrible Train of Symptoms infallibly ſucceeds; for 'tis certain, that thoſe Spirits, which are ſo uſeful to the Body, and are ſubſervient to Reaſon, and the Functions of the Mind, derive their Origin from the highly ſubtile Vapour of the Blood, and the moſt fine and elaſtic Portion of the Air. Hence we may eaſily conceive, that, by Anodynes and Narcotics, our Spirits muſt be variouſly affected and changed, ſo that Opiates and Narcotics exert their Efficacy immediately, not only on the Blood, but, alſo, on the Spirits.

From what has been ſaid, I think 'tis ſufficiently obvious, that Opiates are not without the greateſt Caution to be exhibited in thoſe Diſorders, where there is a manifeſt Languor of the Spirits, a Defect of Strength, and an impaired Motion of the Blood, eſpecially in the Head. Hence, in Diſorders of the Head, Deliriums, all Fevers, and eſpecially thoſe of the inflammatory Kind, Opiates and Narcotics are either never to be uſed, or exhibited with great Caution. *Hoffman.*

The Antients, having experienced, that Opium would often kill, though taken in no large Quantity, ranked it with Poiſons; and gave it the firſt Place among thoſe, which, from their ſtupefying Quality, they called Narcotic.

True, indeed, it is, that we every Day find this to be, in a ſmall Doſe, one of the moſt noble Remedies in the World. But it is not worth the while to engage in the Controverſy warmly debated by ſome Authors, how far Poiſons are medicinal, ſince it is notorious enough, that Medicines ſometimes prove poiſonous. And, take the Matter as we pleaſe, it may ſerve to very good Purpoſes to underſtand the Manner of Operation of ſo celebrated a Drug, and help us, in a great meaſure, to aſcertain its Uſe in different Caſes, if we are beforehand rightly apprized of its Nature, and Way of acting.

In order hereunto, it is neceſſary, beſides ſome other Precognita, ſince one of the chief Virtues of this Medicine is hypnotic, to define diſtinctly what Sleep is, or rather (to avoid Confuſion and Diſputes about Words) what Difference there is in an animal Body, when aſleep, and when awake. For I ſuppoſe the Hiſtory, Manner of preparing, *&c.* of Opium, to be already ſufficiently known.

Firſt, then, there is no one but knows, that in Sleep there is a Ceſſation from Action. When waking, we walk, diſcourſe, move this or that Limb, *&c.* but, in natural and undiſturbed Reſt, there is nothing of all theſe; that is, whereas, being awake, we perform ſeveral Motions by the voluntary Contraction of our Muſcles; when aſleep, thoſe Muſcles only are contracted, whoſe Action is in a manner involuntary, or to which the Mind has always ſo conſtantly determined the Spirits, that it acts by an Habit, without the Intervention of the reaſoning Faculty; ſuch are thoſe of the Heart and Breaſt.

So that there is, at this time, a kind of Relaxation, or Looſeneſs, of the moving Fibres of the ſeveral Members, or, at leaſt, in ſuch a quiet Poſition and State of them, by which all the antagoniſt Muſcles are in an Equilibrium, and Equality of Action, not overpowering one another. For this, indeed, ſeems to be one great Deſign of Sleep, to recover, to the Parts over-ſtretched by Labour, their former Tone or Force; and, therefore, we naturally, when compoſing ourſelves to Reſt, put our Body into that Poſture, which moſt favours the particularly-wearied Limbs, and conduces to this End.

In the next place, it is very plain, that there is, in Sleep, not only a Reſt and Suſpenſion from acting of moſt of our bodily Organs, but even of our thinking Faculty too: That is, (for I would prevent Cavils) a ceaſing from ſuch Thoughts, as, when waking, we are exerciſed about, which we reflect upon, and will, to employ our Mind with. For tho' Dreams are Thoughts, yet they are but imperfect and incoherent ones, and are, indeed, either ſo faint and languid Repreſentations, as to be conſiſtent with our Sleep, as ſome may be; or elſe, if they be ſtrong and lively, they are, as every one knows, the Interruption and Diſturbance of it.

Hence it will follow, that the Motion of the arterial Fluid muſt be, *cæteris paribus*, more ſedate, even, and regular, in the Time of ſleeping than waking; for, beſides the various Alterations, which, in the latter State, this receives from the ſeveral Paſſions of the Mind, the very Contractions of the Muſcles themſelves, in Exerciſes of the Body, do differently forward its Courſe; whereas, in Sleep, the Force of the Heart, and pectoral Muſcles, being more conſtant and uniform, gives it a more calm, and equally-continued Impulſe.

Hence, alſo, it will come to paſs, that the Influx of the Liquor of the Nerves into the Organs of the Body, as, alſo, its Reflux towards the Brain, is in Sleep either none, or very inconſiderable; that is, that this Fluid has at this time but little or no Motion: For it is muſcular Action and Senſation that require it to be thus determined this Way, or that, which are now hardly any; and yet, by the Arrival of the Blood at the Brain, this Juice will ſtill be ſeparated there, fit to be derived into its Canals or Tubes: So that by theſe means there will be a kind Accumulation, or laying up in Store, of Spirits for the Offices and Requirements of Waking.

Thus we may, in ſhort, look upon the Time of Watching, as the Time of wearing out, or the Deſtruction, of the animal Fabric, and the Time of Sleep, as that in which it is repaired and recruited, not only upon the account of what we have juſt mentioned concerning the nervous Liquor, but, alſo, with reſpect to all the other Parts, as well fluid as ſolid. For Action does neceſſarily, by degrees, impair the Springs and Organs; and, in Motion, ſomething is continually abraded and ſtruck off from the diſtractile Fibres, which cannot otherwiſe be reſtored, than by their being at Reſt from Tenſion; beſides, that ſuch a regular and ſteady Courſe of the Blood, as we have obſerved to be in Sleep, is by far more fit and proper for Nutrition, or an Appoſition of Parts to the Veſſels, which an uneven Hurry of it is more liable to tear off, and waſh away.

The Caſe being thus, it is very plain, that whatſoever can induce ſuch a Diſpoſition of the Fluids, and muſcular Parts, of the Body, as this we have deſcribed, will ſo far cauſe Sleepineſs. And, in like manner, when any thing interpoſes, and hinders this Compoſedneſs and Tranquillity, the removing of the Impediment will be the cauſing of Sleep; inaſmuch as this is only reducing the animal Oeconomy to its right State, in which, by natural Order, there muſt be a Succeſſion of Sleeping and Waking.

Thus it appears, how neceſſarily continued Exerciſes make us ſleepy, ſince theſe exhauſt the Juice of the Nerves, that is, both leſſen its Influx into the Organs of Motion, and incline the Mind not to determine it any longer that Way, upon the account of the Pain and Uneaſineſs, with which too violent a Tenſion of the Parts is always attended; which, therefore, we muſt needs deſire to relax, or lay to Reſt.

That Sleepineſs which follows upon a Fulneſs of the Stomach, after Eating or Drinking, is owing to a different Cauſe; and, indeed, ſo nearly falls in with the Effects of opiate Medicines, that it requires a particular Conſideration.

As Hunger, or the Emptineſs of the Stomach, is a painful Senſation; ſo the ſatisfying or removing of this, is a pleaſing or agreeable one. Now all Pain is a Stimulus upon the Part affected;

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and this, we all know, being attended with Contractions of the pained Membranes, causes a greater Afflux than ordinary of the nervous Juice that Way. On the other hand, Pleasure, or a delightful Sensation in any Part, is accompany'd with a smooth Undulation, and easy Reflux, of the Liquor of the Nerves towards the Brain. This is, as it were, the Entertainment of the Mind, with which being taken up, it does not determine the Spirits to the Organs of Motion; that is, there is such a Relaxation of the muscular Fibres, and such a Disposition of the nervous Fluid, as we have observed to be necessary to Sleep.

This is the Reason of that Chillness of the Limbs, of which we commonly complain after a good Feast.

If it seem strange, that a Pleasure in the Stomach should so powerfully influence the Mind; let it be considered, on the other hand, how violent Effects an uneasy and disagreeable Sense of the same Part produces; what a terrible Agony two or three Grains of Crocus Metallorum throws the whole Fabric into; how readily the Fluid of the Nerves is, with a more than ordinary Impetus, determined and commanded into the Muscles of the Stomach and Abdomen, in order to throw off the Enemy, and remove the ungrateful Sensation.

Now the Consequences, which we have ascribed to a pleasing Sense in this Part, are only just the contrary of these we find the opposite Affection of Pain induces. And, indeed, Pleasure and Pain are two great Springs of Action in the animal Oeconomy; the Changes they make in the Fabric are the Causes of many Effects which seem surprising, because we do not regard the Mechanism by which they are produced; but these must be more considerable in the Stomach, than any-where else; this Part being, for very wise Purposes, of so acute a Feeling, that some Philosophers have, for this Reason, thought it to be the Seat of the Soul.

Besides this Consideration, we must take notice, that the Stomach, being distended with Food, presses upon the descending Trunk of the Aorta, and thus causes a greater Fulness of the Vessels in the upper Parts; whereupon the Brain is loaded, or the Derivation of Spirits into the Nerves diminished, and Unactivity, or Drowsiness, ensues. Hence proceed those Flushings in the Face, Redness, *&c.* after plentiful Eating or Drinking, most visible in those, whose Vessels are lax and weak, as in exhausted and hectic Persons they more especially are.

Thus we may, without the Assistance of the new Chyle entering into the Vessels, account for that Inclination to Sleep, which follows upon a full Stomach. Though we must, also, allow the Distention from this, to be a considerable Cause of the same Effect; but this does not happen immediately, nay, sometimes, perhaps, not within two or three Hours after eating; and, therefore, the sudden Drowsiness must (as well as the present Refreshment and Reviving which Meat gives) be chiefly owing to some more speedy Alteration.

We come, in the next place, to Opium itself; the chymical Analysis of which, out of one Pound, affords a volatile Spirit of the like Nature with that drawn from Hartshorn, five Ounces and five Drams; of a fetid Oil, one Ounce two Drams and an half; of Caput Mortuum, smelling like Spirit of Hartshorn, seven Ounces and six Drams.

The Virtues, therefore, of Opium are owing to a volatile alcaline Salt, intimately mixed, and combined with an oily sulphureous Substance; the Effects of which we must consider, first, of all, upon the Stomach, and afterwards, when they have passed the Primæ Viæ, upon the arterial Fluid itself.

An agreeable Sensation, produced in the Stomach, together with a Distention of its Membranes, we observed before to be the Cause of that Sleepiness to which we are so prone after Eating. The one of these engages the Mind, the other acts upon the Body. For Pleasure amuses the Soul, as it were, so that it does not think, or exercise itself, about any outward Objects; that is, is inclined to Rest. And the Fulness of the Vessels in the Brain checks and hinders, in some measure, the Derivation of the nervous Juice into the Organs, *&c.*

Now, if they who take a moderate Dose of Opium, especially, if not long accustomed to it, are so transported with the pleasing Sense it induces, that they are, as they oftentimes express themselves, in Heaven; and tho' they do not always sleep, (which proceeds from the Presentation of pleasing Images to the Mind, being so strong, that, like Dreams, they over-engage the Fancy, and so interrupt the State of Rest) yet they, however, enjoy so perfect an Indolence and Quiet, that no Happiness in the World can surpass the Charms of this agreeable Ecstasy.

Thus we have, from this Medicine, but in a far more eminent Degree, all those Effects, which we observed to follow upon that grateful Sense in the Stomach, which a moderate Fulness produces. For no Bodies are so fit and able, pleasingly to affect our sensible Membranes, as those which consist of volatile Parts, whose Activity is tempered and allayed by the Smoothness of some lubricating and oily ones; which, by lightly rarefying the Juices of the Stomach, and causing a pleasant Titillation of its nervous Coat, will induce an agreeable Plenitude, and entertain the Mind with Ideas of Satisfaction and Delight.

The Case being thus, we easily see upon what Mechanism the other Virtues of Opium depend, its easing Pains, checking Evacuations, *&c.* not only in that the Mind, being taken up with a pleasing Sense, is diverted from a disagreeable one; but, all Pain being attended with a Contraction of the Part, that Relaxation of the Fibres, which is now caused, eludes and destroys the Force of the Stimulus.

In like manner, in immoderate Secretions, there is, most commonly, an Irritation of the Organs, the Removal of which will abate the Discharge. And herein lies the incrassating Quality of this Medicine, in that the twitching Sense upon the Membranes of the Lungs, Bowels, *&c.* being now lessened, the sharp Humour is suffered to lodge there in a greater Quantity, before it is so troublesome, as to be thrown off, and expelled; it being all one, as if there were no Irritation of the Part, if the uneasy Sense thereof be not regarded by the Mind. These Effects will all be heightened by the Mixture of the opiate Particles with the Blood; which is hereupon rarefied, and distends its Vessels, especially those of the Brain; and thus still, to a greater Degree, lessens the Influx of the nervous Fluid to the Parts, by pressing upon the little Tubuli, or Canals, through which it is derived.

This is the Reason of that Difficulty of Breathing, which they for a time experience, who take this kind of Medicine; this Symptom being inseparable from the Rarefaction of the Blood in the Lungs.

Hence it appears, that the Action of Opium is very analogous to that of other volatile Spirits, only, that a small Portion of it has a Force equal to that of a greater Quantity of them.

This is very evident in those who accustom themselves to take large Doses of it; as the *Turks* and *Persians* do to that degree, that it is no uncommon thing there, to eat a Dram or two at a time; for the Effects of it, in them, are no other than downright Drunkenness; upon which account, it is a common Saying with them, and on the same Occasion, *He has eat Opium*; or, with us, *He has drank too much Wine.*

Neither do they otherwise bear such large Quantities of it, than our Tipplers will a great deal of Brandy; that is, by habituating themselves to it by degrees, beginning with small Doses, and requiring still more and more, to raise themselves to the same Pitch. Just as *Galen* tells us of a Woman, at *Athens*, who, by a gradual Use, had brought herself to take, without any Hurt, a considerable Quantity of Cicuta, or Hemlock: Which Instance is the more to our Purpose, because *Nic. Fontanus* knew one, who, being recovered of the Plague, and wanting Sleep, did, with very good Effect, eat Hemlock for some time, till, falling ill again of a Fever, and having left off the Use of this Remedy, he endeavoured to procure Rest by repeated Doses of Opium, which (Nature having been accustomed to a stronger Alterative) had no Operation, till the Help of Cicuta was again called in with desired Success.

It is a sufficient Confirmation of all this Reasoning, that *Prosper Alpinus* observed, among the *Egyptians*, those who had been accustomed to Opium, and were faint and languid thro' want of it, (as Drinkers are, if they have not their Spirits) to be recovered and put into the same State of Indolence and Pleasure, by large Doses of *Cretic* Wine, made hotter by the Infusion of Pepper, and the like strong Aromatics.

Nor is it, perhaps, amiss to remark, that in maniacal People, as is frequently observed, a quadruple Dose of Opium will scarce produce any considerable Effect. Now, in Persons so affected, the Mind is deeply engaged, and taken up with some Images or other, as Love, Anger, and the like; so that it is not to be so easily moved or diverted by those pleasing Representations which it would attend to at another time, and upon which the Virtues of this Medicine, in a great measure, depend. Beside this, those who are maniacal, to a Wonder, bear the Injuries of Cold, Hunger, and the like, and have a prodigious Degree of muscular Force, which argues the Texture of their Blood to be very strong, and the Cohesion of its Globules great; so that the spirituous Parts of the Opiate cannot make that Disjunction and Rarefaction of this Fluid in them, which it does in ordinary Bodies and Constitutions.

Many are the Improvements which might be made of this Theory, with relation to the Practice of Physic; but these will be obvious enough to one instructed in the animal Oeconomy.

To conclude, then, as to the Subject in Hand, it is very plain, that there needs no more to make Opium prove destructive, or a Poison, than to take too great a Quantity of it; for, then, it must inflame the Stomach, and rarefy the Blood to such a Degree, that the Vessels cannot again recover their Tone; whereupon apoplectic Symptoms will ensue.

To be convinced of this, I forced into the Stomach of a small Dog about half a Dram of crude Opium, dissolved in boiling Water. He quickly vomited it up, with a great Quantity of frothy Spittle; but, repeating the Trial, by holding up his Head, and beating him, I made him retain three or four Doses, intermitting between each, about a quarter of an Hour: When he had thus taken, as I could guess, near two Drams, I watched him about an Hour; then he began to sleep, but presently started up with Convulsions; fell into universal Tremblings; his Head constantly twitched and shaking; he breathed short, and with Labour; lost entirely the Use, first, of his hinder Legs, and, then,

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then, of the sore ones, which were stiff and rigid, like Sticks. As he lay snorting, to hasten his End, I was giving him more of the Solution; but, on a sudden, his Limbs grew limber, and he died.

Opening his Stomach, I found it wonderfully distended, tho' empty of every thing, but some Water and Opium; Parcels of frothy Mucus swimming in it; the Intide was as clean, as if scraped and washed from all the Slime of the Glands, with some Redness here-and there, as in a beginning Inflammation. The Pylorus was contracted. The Blood-vessels of the Brain were very full; and I took out a large Grume of concrete Blood from the upper Part of it, cutting into the Sinus Longitudinalis, as it is not uncommon in apoplectic Carcases; but found no extravasated Serum in the Ventricles, nor among any of the Membranes.

As to the Cure of such a Case, besides other Evacuations, acid Medicines, and lixivial Salts, must certainly do Service; these, by their diuretic Force, causing a Depletion of the Vessels. This is the Foundation, upon which *Starkey* compounded his *pacific Pill*. Generous Wine, which the Antients gave for an Antidote, can be no otherways useful, than as it dissolves the resinous clammy Parts of the Opium sticking to the Coats of the Stomach, and so forwards its Expulsion by other Helps, which cause a Contraction of the muscular Fibres. *Mead on Poisons.*

One *Mustapha Shatoor*, an Inhabitant of *Sedique*, a Village six Miles from *Smyrna*, by Trade a Coffee-man, about forty-five Years old, a most famous Opium-eater, told me, that his constant eating was three Drams a Day of crude Opium, one half of which was his Dose in the Morning, and the other half in the Afternoon; but that he could safely take double this Quantity. Resolving therefore to be an Eye-witness of what he could do, I provided the best Opium I could get, and weighed it nicely into Drams: He came to me, at my Desire, at Nine in the Morning; but excused his having taken half a Dram before, because he had not Strength to rise out of his Bed without it. I laid before him my Opium made up in Pills, each weighing a Dram, and desired him to eat what he pleased; he took one Dram and an half, making it up in three Pills; and, chewing it with a little Water, he commended the Opium; but was not willing to eat more at a time, and I would not press him for fear of Accidents. He staid with me about half an Hour, after he had eaten the Opium: The visible Effects it had upon him, were to make his Eyes sparkle, and to give a new Air of Life and Brightness to his Face. He told me, that he was extremely refreshed by my Entertainment; and I found him half an Hour afterwards labouring heartily at cleaving Wood to burn: At Three in the Afternoon he came to me again, and took the same Quantity as in the Morning, and the same Symptoms appeared. He says that it has always the same Effects, giving him Vigour and Spirit; and is now become as necessary to him, as any other Part of his Sustenance; and that it makes him fitter for Procreation; for he has many Wives and Children; that it never affects him with Sleep and Drowsiness, but rather hinders his reposing when he happens to take too much of it; that he entered upon this Practice twenty-five Years ago, beginning with the Bigness of a Grain, and so training up Nature gradually to larger Quantities; and that the Want of it, and the Desire of taking more, grow daily upon him.

The Alteration and Impairment, which this Custom has produced in him, are Weakness, his Legs being small; his Gums eaten away, so that the Teeth stand bare to the Roots; his Complexion very yellow, and appearing older by twenty Years, than he really is.

Opium is commonly taken by the Messengers in *Turky*, who are employed in making quick Dispatches; 'tis generally part of their Provision: They take it when they find themselves tired, and it gives them Strength and Spirit to proceed. I had the following Relation of one of them, that, coming from *Constantinople* to Mr. *Samuel Barnardiston*, a Merchant of *Smyrna*, at entring into a Gentleman's House, he fell down for dead; at which when the whole House was surprised and concerned, one of the Servants rightly judging, that this fainting away was occasion'd by the Stock of Opium laid in for his Journey being spent, forced a little of it into his Mouth; and by this means he recovered presently, and acknowledged the Servant had been his Physician.

The *Turks* use Opium made up with something that renders it palatable, at their Feast called *Biram*, to make them chearful; which may be one Reason of its prevailing so much; for, finding it then entertains with pleasing Fancies, they are tempted to continue it; and so the Use of it becomes necessary, and grows upon them. *Philosophical Transact. Abr. Vol.* 2.

Some pound the Heads and Leaves together, then subject them to the Press, afterwards bruise them in a Mortar, and so reduce them into Troches; this Preparation is called *Meconium*, and is more gentle than Opium [τὸ ὀπὸς]. The Way of preparing the Juice, or Opium, is, first, after the Dew is dry'd up, to cut out the Star [in the Head of the Poppy] with a Knife, in so clean a manner, that none of it be forced inwards, and then to make strait, but slight, Incisions at the Sides of the Head, which will be follow'd by an Eruption of the Tear, to be wiped off with the Finger into a Saucer. And, if you return after a little while, you will find more of the Tear condensed, and so again the next Day; after this pound the Whole in a Mortar, and, reducing it into Troches, lay them up for Use. By way of Caution, when you cut the Poppy, take care to retire back, that the Juice might not be wiped off in your Clothes. *Dioscorides, Lib.* 4. *Cap.* 65.

OPOBALSAMUM. See BALSAMUM.

OPOCALPASON, OPOCARPASON, ὀποκάλπασον, ὀποκάρπασον, the Juice of a Tree called *Calpasi*; this Juice resembles Myrrh; but is poisonous and deadly, inducing a Strangulation. *Galen, de Antidot. Lib.* 1. says, that in the Course of his Time he had observ'd the fatal Effects in many, who had ignorantly taken Myrrh mix'd with *Opocalpasum*. For they who prepare Antidotes, he says, purposely mix this as an Ingredient, taking it for the best Sort of Myrrh; because they had observ'd it to be a very good Medicine in Collyria, where it attenuates Sanies without Corrosiveness, and sometimes removes an incipient Cataract. And if you put, says he, this Kind of Myrrh into a Plaister, Cerate, or any attenuating Medicine, to be outwardly apply'd, you will increase its Virtue, but the Effects of it taken into the Body are deadly.

OPODELDOC. The Name of a Plaister said to be invented by *Mindererus*, tho' often mention'd by *Paracelsus*. See EMPLASTRUM.

There is a famous popular Ointment, which goes by the Name of *Opodeldoc*; which is said to be thus prepar'd.

Take of the Roots of Marshmallows, Comfrey, Gentian, Long-birthwort, Angelica, of each one Ounce and an half; of the Herbs Sanicle, Ladies-mantle, Mouse-ear, Colts-foot, Snakewood, Periwinkle, bruised, of each half an Handful; of the Leaves of Rosemary, Sage, and Lavender, of each one Handful and an half; Flower of Rosemary, Sage, and Lavender, of each one Handful; Juniper-berries, two Ounces; Cumin-seeds, one Ounce; Camphire and Castor powdered, of each one Ounce and an half; and of Spirit of Wine, three Pints and an half.

Put all into a Glass Cucurbit, well lured, and digest for ten Hours in Balneo Mariæ, that is, in hot Water, but not to boil; then strain; and, the Spirit of Wine being sufficiently impregnated with the Ingredients, then add one Pound of Castile Soap shaved thin; then digest in the same manner as before, until the Soap is dissolved.

A FARTHER EXPLANATION.

Lute the Juncture carefully, with two or three Doubles of Paper, daub'd over with the White of Eggs, and tied about with Thread; the Luting being dry'd, then digest in Balneo Mariæ for ten Hours, the Matrass being fix'd in the middle of the Kettle, with a Layer of Straw under it, to keep it at the Distance of two Inches from the Bottom: For the first eight Hours, keep the Water so hot about it, that you can scarce hold your Finger therein; and the two other Hours augment the Heat, but not so much as to make the Water boil.

After the Spirit of Wine is thoroughly impregnated with the Tincture of the Roots, Herbs, Leaves, and Powders, cool it gently; and, straining it thro' a Linen Cloth, pour it again into the Matrass, with one Pound of Castile Soap shaved thin; then fit the Vessel of Rencounter to the Matrass; lute the Junctures, and digest as before, till the Soap is entirely mix'd with the Spirit, and the Whole reduced to an Ointment; then take out the Matrass, and suffer it to cool.

If the Doses, and other Directions, are duly observed, it will be the Consistence of an Unguent, neither too thick or thin; and the Method of trying if 'tis truly prepared, is, to rub some of it on your Hand, which it will immediately penetrate, leaving only a greenish Stain; tho' the natural Colour of the Ointment is brown.

'Tis excellent in Strains, Relaxations of the Sinews in Horses, as well as human Kind; also, in all Pains, Numbness, Weakness in the Joints, or other Parts, being well rub'd in.

ITS SUCCEDANEUM.

Take of Castile Soap, two Ounces; of rectify'd Spirits of Wine, four Ounces; and of Camphire, two Drams: Mix.

OPOPANAX. C. B. P. 494. Schrod. 4. 408. Raii Hist. 1. 411. Mill. Bot. Offic. 321. Park. Theat. 1544.

This is a Gum which is brought from *Turky*, flowing, as is generally believ'd, from the wounded Root of a Species of *Panax Heracleum* call'd by *Gerard*, *Panax Heracleum majus*; and by *Boerhaave*, *Pastinaca, Olusatri folio.*

The best *Opopanax* is of a deep yellow Colour, but whiter within, in large Drops, but yet usually sticking together, of a

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very ſtrong, not unpleaſant Smell, and of a warm bitteriſh Taſte, eaſily diſſolving in Water, which it turns of a milky Colour.

This Gum is hearing, diſſolving, and evacuating tough Phlegm, from the remote Parts of the Body, and on that Account is uſeful againſt old Coughs and Aſthmas; it helps the Gout, Sciatica, and rheumatic Pains in the Limbs; and is very good to procure the Catamenia: Outwardly applied, it is good to diſſolve hard Swellings, Tumors, peſtilential Buboes; and to cure the Bitings of mad Dogs, and other venomous Creatures. *Miller's Bot. Off.*

Geoffroy ſays, the Doſe is from twenty Grains to a Dram, and it is an Ingredient in many Compoſitions. See PANAX *Heracleum.*

OPOPIA, ὀπόπια, the Plural of ὀπώπιον, *Opopion*, from ὤψ, the Eye, in *Hippocrates* περὶ ὀστέων φύσ. are the Bones of the Eyes.

OPOPYRON *Laudani.* A Name given by *Paracelſus*, *de Vita longa*, *Lib.* 2. *Cap.* 5. to a Remedy, which, he ſays, removes a Fever, and prevents its Dilatation, as he calls it. *Opopyra* is the Name of a Compoſition, *in Antid. Nicolai Operum Meſue*, againſt ſpaſmodic and paralytic Affections.

OPORE, ὀπώρη, has two Significations; for, firſt, it means a certain Seaſon of the Year, or the latter Part of the Summer, comprehending half, or but one Third of it, according to the various Diviſions of the Antients. *Galen. pluribus Locis.* Some by ὀπώρη underſtand the Autumn. Secondly, it often ſignifies the Fruits which come to Maturity in the aforeſaid Seaſon, particularly Figs and Grapes; but *Hippocrates*, as he is generally render'd by Interpreters, uſes the Word ὀπώρη to ſignify Autumnal Fruits and principally Apples.

OPORICE, ὀπωρικὴ, from the preceding Word, is a noble Remedy, as *Pliny* calls it, compoſed moſtly of Fruits of Trees. It conſiſts, he ſays, of five Quinces with their Seeds, as many Pomegranates, a Pint of Services, and a like Meaſure of what they call *Rhus Syriacon*, (Syrian Sumach) with half an Ounce of Saffron, put all together into a Congius of white Muſt, and boiled over a gentle Fire to the Conſiſtence of Honey; it is excellent for Dyſenteries, and Diſorders of the Stomach. *Pliny*, *Lib.* 24. *Cap.* 14.

OPOS, ὀπὸς, Juice, in general, but more particularly the crude Juice of Plants, whether expreſſed, or diſtilling ſpontaneouſly; *Galen. Simp. Facult. Lib.* 1. *Cap.* 36. Ὀπὸς, taken ſimply, or by way of Eminence, ſignifies, in *Hippocrates*, according to *Galen* in his *Exegeſis*, the Juice of Silphium or Laſer, as the general Word καυλὸς (*Caulos*) a Stalk, in the ſame reſtrained Senſe, ſignifies only the Stalk of that Plant; tho' *Hippocrates*, *Lib.* 7. *Epid.* and in many other Places, chuſes to expreſs the ſame by ὀπὸς σιλφίης, "the Juice of Silphium," at large. The Word has been found, alſo, to ſignify not only the Juice of the Laſer, but the very Silphium, and Laſerpitium; thus *Galen*, in his *Exegeſis*, expounds καρπὸν ὀπὸς, "the Fruit of the "*Opos*," by σιλφίης σπέρμα, the Seed of the Silphium;" which, he ſays, is, alſo, called by ſome *Phyllon* and *Magydaris*. Ὀπὸς, among the Antients, was uſually put, alſo, for the milky Juice of the *Ficus* and *Caprificus*, with which they uſed to curdle their Milk. *Caſtellus. Foeſius.*

OPPILATIO, from *oppilo*, of *pilo*, to condenſe, to compact, Oppilation, is a very cloſe kind of Obſtruction; for *oppilare* imports not only *occludere*, to ſhut up, but *implere*, to fill. *Rhodius in Lexic. Scribon.* See OBSTRUCTIO.

OPRIMECHIOLUM, a Term coined by *Paracelſus*, by which he would expreſs all ſorts of Fumes ariſing from Copper.

OPSIGONOS, ὀψίγονος, from ὀψὲ, an Adverb ſignifying Lateneſs of Time, and γίνομαι, to be generated, is an Epithet of thoſe laſt *Dentes molares*, which are lateſt in appearing, and diſcover themſelves at an adult Age. They are, alſo, called *Cranteres* and *Sophroneſteres*, σωφρονεστῆρες, or *Dentes ſapientiæ*. See CRANTERES.

OPSIS, ὄψις, from ὄπτομαι, to ſee, in *Hippocrates*, is the Pupil of the Eye, as appears from ſeveral Places in 2 *Prorrhet.* Sometimes, however, it means the whole Eye, or Viſion itſelf, as *Lib.* περὶ ὄψιος, and in *Prognoſtic.* and *Coac.* Again, it ſignifies the Aſpect, Countenance, or whatever appears to View: Thus *Lib. de R. V. I. A.* εἰσὶ δὲ ὄψιες πολλαὶ τῶν καμνόντων· "Various "are the Aſpects of the Sick:" On which *Galen* commenting ſays, ὄψιας εἶπεν ὡσανεὶ διαφορὰς, ἢ τρόπους, &c. "He ſaid "Aſpects, that is, Differences, Modes, or Forms of the Patients, "inſtead of ſaying, Various are the Forms of the Diſeaſes with "which the Patients are affected." And again he ſays, ὄψιας δὲ νῦν εἶπε καμνόντων, &c. "The Differences or Alterations which "we find in the Sick, upon a thorough View, he calls *Opſies*, "Aſpects."

OPS *Metallum.* Quickſilver. *Rulandus.*

OPSOMANES, ὀψομανὴς, from ὄψον, Food, and μαίνομαι, to be mad, one who is particularly fond of this or that ſort of Food, beyond all Reaſon. *Caſtellus.*

OPSON, ὄψον, in *Latin Opſonium*, corruptly *Obſonium*, in general ſignifies all ſorts of Food which are brought to Table, except Bread and Wine. *Athenæus*, *Lib.* 7. reſtrains it to Meats prepared by the Fire. Among the Antients, the Term *Opſon* was more peculiarly appropriated to Fiſh; whence φίλοψοι (*Philopſi*) and ὀψοφάγοι (*Opſophagi*) are Perſons who are great Lovers of Fiſh. *Foeſius. Caſtellus.*

OPULUS. *The Gelder Roſe.*

The Characters are;

The Leaves are like thoſe of the Maple-tree: The Flowers conſiſt of one Leaf, which expands in a circular Roſe-form, and is divided at the Top into five Parts; theſe are collected (for the moſt part) in form of an Umbel, the largeſt of which grows on the Outſide; and are barren; but thoſe in the middle are fruitful, producing red Berries, in each of which is contain'd one flat Heart-ſhap'd Seed.

Boerhaave mentions two Sorts of *Opulus*; which are,

1. Opulus. *Ruellii* 281. *Sambucus, aquatica, flore ſimplici.* C. B. P. 456. *Sambucus aquatica.* J. B. 1. 552.

2. Opulus; flore globoſo. *T.* 607. *Sambucus aquatica, flore globoſo pleno.* C. B. P. 456. *Sambucus roſea.* J. B. 1. 553.

Beſides the two foregoing Species of *Opulus*, *Miller* mentions a third; which is,

Opulus, flore globoſo, folio variegato.

There are no medicinal Virtues aſcrib'd to either of theſe Plants at preſent, that I know of.

OPULUS is, alſo, a Name for the ſecond Species of ACER; which ſee.

OPUNTIA.

The Characters are;

The Flower conſiſts of many Petals, which expand in form of a Roſe, having a great Number of Stamina in the Centre, which grow upon the Top of the Ovary: The Ovary afterwards becomes a fleſhy umbilicated Fruit, with a ſoft Pulp incloſing many Seeds, which are, for the moſt part, angular.

Boerhaave mentions eleven Species of *Opuntia*; which are,

1. Opuntia, maxima; folio ſpinoſo; latiſſimo, & longiſſimo. *T.* 240. *Ficus, Indica, ſeu Opuntia maxima, folio ſpinoſo, longiſſimo, & latiſſimo.* H. L.

2. Opuntia; major; validiſſimis ſpinis munita. *T.* 139. *Ficus Indica, ſeu Opuntia major, folio ſpinis longiſſimis & validiſſimis armato.* Breyn. Prod. 1. 35.

3. Opuntia; folio minori; rotundiori, & compreſſiori. *H. L. T.* 239.

4. Opuntia, folio ſpinoſo, longiſſimo & anguſto. *H. L. T.* 240.

5. Opuntia; folio oblongo media. *T.* 239. *Ficus, Indica, folio oblongo, media.* H. R. Par. 70.

6. Opuntia; vulgo; Herbariorum. *J. B.* 1. 154. *Tourn. Inſt.* 259. *Boerh. Ind. A.* 2. 82. *Opuntia.* Offic. *Ficus Indica.* Ger. 1329. Emac. 1512. *Ficus Indica, ſpinoſa, major.* Parkinſon. Theat. 1497. *Ficus Indica major.* Parad. 433. Raii Hiſt. 1464. *Ficus Indica folio ſpinoſo fructu majore.* C. B. P. 458. *Tuna Indorum.* Jonſ. Dendr. THE PRICKLY PEAR-TREE.

The only Parts of this Tree which are us'd, are the Fruit and Leaves; which are of a refrigerating and moiſtening Quality, and good for extinguiſhing burning Fevers, and allaying Thirſt. *Dale.*

7. Opuntia; minima; folio ſubrotundo. *T.* 240. *Ficus Indica, minima, folio ſubrotundo.* H. R. Par.

8. Opuntia; Curaſſavica; minima. *H. Beaum. Ficus Indica, ſeu Opuntia Curaſſavica, minima.* H. A. 1. 107.

9. Opuntia; flagelliformis, anguſtiſſimis, longiſſimis foliis.

10. Opuntia; latifolia; craſſiori folio, ſpinis albis numeroſis armato.

11. Opuntia; folio plano, glabro, Scolopendriæ. *Ficus Indica, Scolopendriæ folio, Epiphyllitis.* Par. Bat. App. 8. *Boerh. Ind. alt. Plant. Vol.* 2.

See COCHINILLAS.

OPUNTIOIDES. A marine Plant.

The Characters are;

It is brittle and hard, and in Shape like the *Opuntia.*

Boerhaave mentions two ſorts of *Opuntioides*; which are,

1. Opuntioides marina; parva, forma Trichomanis.

2. Opuntioides marina; quæ Corallina latifolia; & Opuntia marina. *Plukn. Phyſ. T.* 26. 1. *Scutellaria, ſive Opuntia marina* J. B. 3. 802. *Lichen marinus.* Cluſ. H. 2. 250. *Sertolara.* Imper. 653. *Boerh. Ind. alt. Plant. Vol.* 1.

It is eſteem'd good againſt the Worms.

OQUICHITLI. A Name for the *Tagetes*; *Indicus*; *medius*; *flore ſimplici, luteo pallido.*

ORBICULARE OS. The Name of a ſmall round Bone, in the internal Ear. See AURIS.

ORBICULARIS. A Name for the Fungus, call CREPITUS LUPI. *Blancard.*

ORBICULARIS MUSCULUS. The Name of a Muſcle of the Eye-lids. See OCULUS.

ORBIS. The Name of a large Sea-fiſh, cover'd with an hard rough Skin, but without Scales, of which there are many Species. It is thus call'd becauſe of its orbicular Form. The Teeth are recommended as aſtringent, and good to ſtop Diarrhœas and Hæmorrhages, taken in Powder.

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ORBITA. The Orbit of the Eye; or circular Cavity, in which the Eye is plac'd.

ORCA. The Name of a very large Sea-fiſh, of the cetaceous Kind, ſhaped like a Dolphin, but much larger, ſome weighing a thouſand Pounds. The Fat is ſaid to be reſolvent.

ORCHEA, ὄρχεα, is explain'd by *Galen*, in his *Exegeſis*, ὄσχεος, the *Scrotum*.

ORCHESTÆ ACOPON. The Name of an *Acopon* recommended by *Aetius Tetrabib.* 3. *Serm.* 4. *C.* 5.

ORCHESTÆ UNGUENTUM. An Ointment deſcrib'd by *Aetius*, *Tetr.* 3. *Serm.* 4. *C.* 44.

ORCHILUS. A Bird, ſaid to be a Friend to the Crocodile, and Enemy to the Eagle.

ORCHIS, ὄρχις. A Teſticle. Hence a Plant is thus call'd from the Similitude of its Root to Teſticles: Hence the following Plant.

ORCHIS.

The Characters are;

The Root is tuberous, and conſiſts ſometimes of three, ſometimes two Tubera, and ſometimes a ſingle Tuber, ſhaped like Teſticles, or fleſhy, and reſembling an Hand. The Leaves are ſimple, and like thoſe of the Lily; the End of the Pedicle paſſes into an oblong, tricapſular, trivalve Ovary, pervious in three Places, and containing duſty Seeds. The Flower, ſeated on the Apex of the Ovary, is of a ſurpriſing Contexture, irregularly hexapetalous, collected into Spikes, and hardly to be deſcribed.

Boerhaave mentions fourteen Species of *Orchis*; which are,

1. Orchis; latifolia; hiante cucullo; major. *T.* 432. *Cynoſorchis, latifolia, hiante cucullo, major.* C. B. P. 80.

2. Orchis; latifolia; hiante cucullo; altera. *Tourn. Inſt.* 432. *Boerh. Ind. A.* 2. 152. *Cynoſorchis.* Offic. *Cynoſorchis major.* Ger. 156. Emac. 205. *Cynoſorchis prior Dodonæi.* J. B. 2. 758. Raii Hiſt. 2. 1213. *Cynoſorchis latifolia hiante cucullo altera.* C. B. P. 81. *Orchis major latifolia altera.* Park. Theat. 1343. DOG-STONES.

It grows in the graſſy Places about *Baſil*; and the Root, which is the Part uſed in Medicine, agrees in Virtues with thoſe of other Species of *Orchis*.

3. Orchis; morio; mas; foliis maculatis. *C. B. P.* 81. *Park. Theat.* 1346. *Raii Hiſt.* 2. 1214. *Synop.* 3. 376. *Tourn. Inſt.* 432. *Boerh. Ind. A.* 2. 152. *Satyrium mas.* Offic. *Cynoſorchis morio mas.* Ger. 158. Emac. 208. *Orchis major, tota purpurea, maculoſa altera.* J. B. 2. 973. MALE SATYRION.

This *Orchis*, which is the common Satyrion of the Shops, has two oval Roots, about as big as a ſmall Olive, of a whitiſh Colour, full of a ſlimy Juice, which, contrary to moſt other Plants, have ſeveral white Fibres growing above them; from theſe ſprings a ſingle ſucculent Stalk, encompaſſed with three ſhining, ſmooth, Lily-like Leaves ſpotted with black. The Flowers grow on the Tops of the Stalks in a long Spike or Thyrſus, of a purple Colour; each Flower being of an irregular Form, conſiſting of ſix Leaves, ſomewhat reſembling a Galea, with a ſmall Piece of Ear ſtanding erect on each Side, and a broad Labella ſpotted with deeper Spots. The Seeds are very ſmall, included in a triangular long Capſula; it grows in moiſt Meadows, and flowers in *April*. The Roots only are uſed.

They are accounted a Provocative and a Stimulus to Venery, and a Strengthener of the genital Parts, and help Conception, and for theſe Purpoſes are a chief Ingredient in the Electuarium Diaſatyrium: Outwardly applied in form of a Cataplaſm, they diſſolve hard Tumors and Swellings.

The only officinal Preparation is the aforeſaid Electuary. *Miller's Bot. Off.*

It grows in Meadows, and Places over-run with Buſhes and Brambles. The Root, which is uſed, is heating and moiſtening, and of a ſweet Taſte. Its principal Virtue conſiſts, ſays *Schroder*, in reſtoring manly Vigour; it is believed alſo to ſtrengthen the Uterus, and diſpoſe to Conception.

4. Orchis; morio; fœmina. *C. B. P.* 82. *Park. Theat.* 1347. *Synop.* 3. 377. *Tourn. Inſt.* 433. *Boerh. Ind. A.* 2. 152. *Satyrium fœmina.* Offic. *Cynoſorchis morio fœmina.* Ger. 158. Emac. 208. *Orchis minor purpurea, & aliorum colorum cum alis virentibus.* J. B. 2. 762. FEMALE SATYRION.

This is a lower and ſomewhat leſſer Plant than the former, having no Spots on the Leaves; the Spike of Flowers is leſs, and not ſo beautiful, of a purpliſh Colour, having the Labella ſtriped with green Stripes; it grows in the like Places with the former, and flowers ſomewhat later. The Root is much alike, and it is ſuppoſed to have the ſame Virtues.

Though theſe Plants are uſed in the Shops for the Satyrion, yet they are not the Satyrion of *Dioſcorides*, and the Antients; that being, as is plainly proved by *Parkinſon*, and other skilful Botaniſts, our common Tulip, which much better anſwers the Deſcription of *Dioſcorides*, than any of the *Orchiſes*. *Miller's Bot. Off.*

It is as frequently to be met with as the former, and grows in the ſame Places, but is later in flowering.

Theſe two laſt Species are of the ſame Virtues, where it is to be obſerved, that there are a Multitude of Species of *Satyrion*, or *Orchis*, which may indeed be uſed promiſcuouſly; yet our Shops have thought fit to make choice of the laſt-mention'd or Female Satyrion before the reſt.

There are two Species of the Satyrion, mention'd by *Dioſcorides*, who deſcribes the one of them in the following manner: "Some give the Name Trefoil to Satyrion, becauſe it has three "Leaves bending to the Ground, like thoſe of the Dock or "Lily; but leſs, and of a reddiſh Colour. Its Foot-ſtalk is "about a Cubit long, naked and white, like the Flowers of "Lilies; its Root is of the bulbous Kind, as large as an Ap-"ple, of a darkiſh-brown Colour, within white, like the White "of an Egg, ſweet and grateful to the Palate." The other Species he deſcribes thus: "There is another Satyrion diſtin-"guiſh'd by the Epithet *Erithronium* or *Erythraicon*, that "is, red; whoſe Seed is larger than that of a Grain of Linſeed, "hard, ſmooth, and ſhining, and which, as well as the Skin, is "ſaid to be a Stimulus to Venery. Its Root is cover'd with a "ſlender rough Bark; but white within, and of a ſweet and "grateful Taſte." Since the Days of *Dioſcorides*, there have been great Diſputes among the learned Phyſicians and Botaniſts concerning this Plant, ſome aſcribing its Name to one, and others to another Plant; but moſt of them agree, that it belongs to ſome of the Species of *Orchis*, of which Opinion our Shops, alſo, are: For this Reaſon, in a former Work, I gave the ſame Name to the Roots of the now us'd Satyrion, tho', at the ſame time, I was not ignorant, that ſome Authors gave this Name to the Orchis Palmata, and others to the Cynoſorchis. But, having now chang'd my Sentiment, I think the Satyrions of *Dioſcorides* are ſufficiently determin'd by *Parkinſon*, and others, who took them for Species of Tulips, which come the neareſt of any to the Deſcriptions of the two Satyrions given by *Dioſcorides*. *Dale.*

5. Orchis; morio; fœmina; flore roſeo. *H. R. Par. H. L.* 460.

6. Orchis; morio; fœmina; flore niveo. *H. R. Par. H. L.* 460.

7. Orchis; morio; fœmina; flore carneo. *Commelin. Ind.* 82.

8. Orchis; alba; bifolia; minor; calcari oblongo. *C. B. P.* 83. *T.* 433. *Orchis Serapias.* 1. Dod. p. 237.

1. ORCHIS; PALMATA; pratenſis; latifolia; longis calcaribus. *C. B. P.* 85. *Tourn. Inſt.* 434. *Boerh. Ind. A.* 2. 152. *Orchis palmata.* Offic. *Orchis palmata major mas ſive Palma Chriſti mas.* Park. Theat. 1356. *Orchis palmata non maculata.* Raii Hiſt. 1223. *Palma Chriſti mas.* Ger. 169. Emac. 220. MALE SATYRION ROYAL.

It is produc'd in moiſt and marſhy Soils, and flowers in *May*. Its Root is only us'd, and ſeems in Virtues to agree with the other Species of Satyrions.

2. Eadem; flore carneo. *Palma Chriſti erecta, flore incarnato.* H. Eyſt. o. 4. F. 5. Fig. 3.

3. Eadem; flore albo.

4. Orchis; palmata; pratenſis; maculata. *C. B. P.* 85. *M. H.* 3. 498. *Palmata, ſpecioſiore thyrſo, folio maculato.* J. B. 2. 774. *Satyrium, Baſilicum, fœmina.* Dod. p. 240. *Palma Chriſti maculata.* H. Eyſt. Vern. o. 2. F. 17. Fig. 3.

5. Orchis; palmata; paluſtris; latifolia. *C. B. P.* 86. *Palmata, ſeu Serapias, paluſtris, latifolia, flore albo ſubpurpuraſcente.* J. B. 2. 775. *Satyrium Baſilicum, folioſum.* Dod. p. 241.

6. Orchis; Lilifolia; minor; ſabuletorum Zelandiæ & Bataviæ. *J. B.* 2. 770. *Chamæorchis, Lilifolia.* C. B. P. 84. *Pſeudo Orchis bulboſa, Lilifolia, paluſtris, noſtras, flore ſubviridi.* M. H. 3. 500. *Boerh. Ind. alt. Plant. Vol.* 2.

Beſides the foregoing Species of *Orchis*, *Dale* mentions the five following;

1. *Satyrium vel Orchis.* Offic. *Orchis militaris major.* Tourn. Inſt. 432. *Orchis ſtrateumatica major.* J. B. 2. 758. *Orchis ſtrateumatica.* Ger. 165. Emac. 215. Raii Hiſt. 2. 1215. *Cynoſorchis militaris major.* C. B. P. 81. *Cynoſorchis militaris ſive ſtrateumatica major.* Parkinſon. Theat. 1345. THE FRENCH SATYRION.

This Species of Satyrion is produc'd in mountainous Places, and flowers in *June*: Its Root is only us'd, and is poſſeſs'd of the ſame Virtues with the former Species of Satyrions.

2. *Orchis Hermaphroditica bifolia.* J. B. 2. 772. Raii Synop. 3. 380. Raii Hiſt. 2. 1221. *Orchis Hermaphroditica.* Ger. 162. Emac. 211. *Orchis bifolia altera.* C. B. P. 82. Tourn. Inſt. 433. *Orchis ſerapias bifolia, trifolia minor.* Park. Theat. 1350. BUTTERFLY or GERMAN SATYRION.

This Species is produc'd in Woods, and flowers in *May*. Its Root is uſed, and is poſſeſs'd of the ſame Virtues with the other Satyrions.

3. *Serapias*, Offic. *Serapias ſive Saleps.* Marl. Obſ. *Orchis fœmina procerior, majore flore.* Tourn. Herbar. Par. 508. *ex ſententia nuperi amici celeberrimi D. Gulielmi Sherardi*, LL. D. SALOP.

This is an oblong, ſomewhat clear, and pellucid Root, of a yelloviſh-white Colour, very hard and almoſt horny, ſomewhat

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what flat and wrinkled; of very little Smell, having a mucilaginous Taste. It is brought over from *Turky*, and seems to be the dried Root of some Species of Orchis.

Of these a Decoction is made, and drank hot, like Tea; being accounted analeptic and strengthening, proper to prevent Miscarriage; and, like Satyrion-root, is supposed to be a Provocative to Venery. *Miller's Bot. Off.*

This is the Root of a kind of Orchis, or Satyrion, which grows on the Mountains of *Bursia*, near *Constantinople*. The *Turks* pretend, that it is very effectual in restoring decay'd Strength, and exciting Venery. It is, also, said to prevent Abortion; and is used both in Substance, and in Infusion. *Geoffroy.*

The Taste of the Root resembles that of Gum Tragacanth, but has no Smell, and is accounted good against Sterility. It is to be prepared in the same manner with Chocolate.

The *Turks* and *Persians* call the Roots of the Orchis, *Salop*; and of it prepare a Drink with Milk and Ginger, which they also call *Salop*, which they drink hot, and esteem an excellent Medicine against Venereal Disorders.

They chiefly use the Root of the *Orchis morio fœmina*, of *Caspar Bauhine*, which is most copiously produced, and much broader than that of the Northern Countries; nor does the *Orchis fœmina procerior, majore flore*, of *Tournefort*, seem to be a different Species. *Dale.*

4. *Tragorchis.* Offic. *Tragorchis maximus.* Ger. 160. Emac. 210. *Tragorchis maxima.* Park. Theat. 1348. *Orchis barbata, odore hirci, breviore longioreque folio.* C. B. P. 82. Tourn. Inst. 433. *Orchis barbata fœtida.* J. B. 2. 756. Raii Hist. 2. 1212. Synop 3. 376. *Orchis, Cynosorchis, Satyrium.* Chab. 146. GOATS-STONES.

This is only produced in fat Soils, and flowers in *May* and *June*. Its Root is only used; and, in Virtues, agrees with the Satyrion. *Ibid.*

5. *Triorchis*, Offic. Ger. 167. Emac. 218. *Triorchis alba, odorata major & minor.* Park. Theat. 1354. *Triorchis vel Tetrorchis alba, odorata major.* C. B. P. 84. *Orchis spiralis alba, odorata.* J. B. 2. 769. Raii Hist. 2. 1217. Synop. 3. 378. Tourn. Inst 433. TRIPLE LADIES TRACES.

This is produced in dry Soils, and flowers in the Autumn. Its Root is, also, used, and agrees in Virtues with the former. *Dale.*

ORCHOS, ὄρχος, the Extremities of the Eye-lids, where the Eye-lashes grow.

ORCHOTOMIA. Castration. *Orchotomus* is the Person who performs this Operation.

OREGIOELLA. Chluisii. The Name of an *Indian* Flower, which is mix'd with Chocolate, in order to communicate to it a fragrant Smell, and agreeable Taste. It is, also, called *Xochinacaztlis*, and *Orejuelas. Raii Hist. Plant.*

ORELLANA. A Name for the *Mitella*; *Americana*; *maxima*; *tinctoria.*

OREOSELINUM.

The Characters are;

The Root is slenderer than that of the Daucus, and not lactescent; the Leaves are like those of the *Apium*, or *Cicuta*; and the Seed is oval, flat, large, striated, marginated; and sometimes casts off its *Involucrum*, or Husk.

Boerhaave mentions three Species of *Oreoselinum*; which are,

1. Oreoselinum; Apii folio, majus. *Tourn. Inst.* 318. *Boerh. Ind. A.* 67. *Gentiana nigra.* Offic. *Daucus montanus Apii folio major.* C. B. P. 150. *Daucus Selinoides major.* Park. Theat. 898. *Libanotis Theophrasti nigra.* Ger. 858. Emac. 1010. *Libanotis altera quorundam, aliis dicta Cervaria nigra.* J. B. 3. 165. Raii Hist. 1. 413. *Laserpitium minus Paludapii folio, semine cristato,* Pluk. Almag. 207. MOUNTAIN DAUKE.

It grows in the mountainous Parts of *Italy*, and flowers in *July*. The Seed is used, which is of an heating, opening, and inciding Quality; provokes Urine, and the Menses; expels the Birth, and discusses Tumors.

2. Oreoselinum; Apii folio; minus. *Tourn. Inst.* 318. *Boerh. Ind. A.* 68. *Petroselinum montanum.* Offic. *Oreoselinum.* Ger. 863. *quoad descript.* Emac. 1015. *Apium montanum vulgatius.* Park. Theat. 927. *Apium montanum nigrum.* C. B. P. 153. Raii Hist. 1. 413. *Apium montanum Dalechampii* J. B. 3. 103. MOUNTAIN PARSLEY.

It grows in the mountainous Parts of *Germany*, and is found in great Plenty on the Sides of the Mountain *Gurca*, not far from *Geneva*; the Root and Seed are used.

As to its Virtues, it is of an heating and drying Quality; and is alexipharmic, sudorific, diuretic, and discutient. Its principal Use is in the Stone of the Kidneys and Bladder; in the Pestilence, Flatulencies, and the Strangury. *Dale* from *Schroder.*

3. Oreoselinum; pratense; Cicutæ folio. *T.* 318. *Daucus, Alsaticus.* C. B. Prodr. 77. *Umbellifera, Alsatica, magna, umbellâ parvâ, subluteâ.* J. B. 3. 2. 106. *Angelica, pratensis, Apii folio, altera.* T. 313. *Boerh. Ind. alt. Plant. Vol.* 1.

Oreoselinum Africanum. A Name for the *Ferula*; *Africana*; *Galbanifera*; *folio & facie Ligustici.*

ORESTIA. This is a Plant mentioned by *Oribasius Medic. Collect. L.* 12. which must be different from the *Orestium*; for he describes it as a small Herb, shooting up three or four Digits above Ground, with Leaves and Branches like those of the *Coronopis*, or *Gramen*, of an astringent Taste, and a very slender, white, capillary Root, of a vinous Savour, and four Digits in Length; it grows on Hills.

ORESTION. A Name for the *Helenium*, in *Dioscorides*, *L.* 5. *C.* 66.

OREXIS, ὄρεξις. Properly Appetite; but it frequently signifies, in *Paracelsus* and *Helmont*, an Heat of the Stomach.

ORGASMUS, from ὀργάω, to desire vehemently, to be turgid, or, properly, to be in Heat, as certain female Animals are, at certain Seasons of the Year. An Orgasm; that is, a violent Turgescence, and Motion of the Humours.

ORIBASIUS. This Physician, though commonly reckon'd a *Sardian*, was born at *Pergamus*, and bred up, together with *Magnus* and *Ionicus*, in the School of *Zeno* the *Cyprian*, who taught then, I suppose, at *Sardis*; though afterwards he removed to *Alexandria*, where he became a famous Professor. *Eunapius*, who had good Knowledge in Physic, and is the same Person, probably, to whom the four Books *de Euporistis*, &c. are inscribed, represents *Oribasius* as the greatest Scholar and Physician of his Time, and a very engaging and agreeable Man in Conversation. He describes him as no less considerable in his Interest, than in his Learning. According to his Account, he contributed very much to the Advancement of *Julian* to the Empire, who, in Return, made him Quæstor of *Constantinople*; and who, as appears by one of his Letters, had an entire Confidence in him. In the succeeding Emperor's Time, through the Envy of his Enemies, he fell into Disgrace, had all his Estate confiscated, was banished, and delivered into the Hands of Barbarians; among whom, in a little Time, by his Courage and Skill, he gained so much Love and Reverence, that they, seeing what great Cures he perform'd, adored him as a God. At last, he was recal'd by the *Roman* Emperor, and flourished in Reputation and Riches, at the very Time when *Eunapius* wrote this Account, which must be near the Year 400; for *Eunapius* was then, as it should seem, in the first Rank of Physicians, and was but twelve Years old at the Death of *Julian*, in 363.

Oribasius wrote seventy (according to *Photius*) or (according to *Suidas*) seventy-two Books of Collections, which he compiled not only from *Galen*, but from all the preceding Physicians, and his own Experience, at the Desire of *Julian*; the fifteen first of which are only remaining, and two others, treating of Anatomy, which are called by the Translator, *Rasarius*, the twenty-fourth and twenty-fifth of that Collection. Afterwards he made an Epitome of this great Work, and reduced it into nine Books, for the Use of his Son *Eustathius*. He also wrote four Books about Medicines and Distempers, as was before observed, to his Friend *Eunapius*. Besides these, *Photius* gives an Account of two other Pieces, extant in his Time; one consisting of four, the other of seven Books, which were merely an Epitome of *Galen*'s Works, and dedicated likewise to *Julian*. *Paulus* mentions this Epitome; but it is now lost, as are some other Tracts, which *Suidas* takes notice of. There are several Receipts of *Oribasius*, quoted by *Aetius*. The Commentaries upon the Aphorisms of *Hippocrates*, put out by *Guinther* under his Name, are, without doubt, spurious.

Dr. *Freind* observes, that *Oribasius* uses a great Variety of Expression, of which we have this Advantage, that often one Place, or one Author, explains another; and this Justice ought to be done to him, that he helps us the better to understand several Passages in *Galen*, relating both to Anatomy and Medicine. He was, by all Accounts, a Man, not only of a great Genius, but of great Business and Experience: And, accordingly, if we peruse him with Attention, which, I believe, has scarce ever been done by those who have pretended to give a Character of him, we shall find very just Rules of Practice laid down in several Cases.

The Works of *Oribasius*, mentioned by *Photius* and *Suidas*, are;

1. *Four Books of Medicinal Commentaries*, contracted from the Writings of *Galen*, by the Command of the Emperor *Julian* the Apostate, and dedicated to him. These are mention'd by *Oribasius* himself, in the Preface to his *Synopsis*, but have long since been lost; at least, were never published.

2. His *Synopsis*, compiled not only from *Galen*, but other Physicians, by Command of the same Emperor, who had approved the former Work. Of this *Synopsis*, which consisted, according to *Suidas*, of seventy-two Books, there are extant the first fifteen, with the twenty-fourth and twenty-fifth, translated into *Latin* by *J. Baptista Rasarius*, a Physician of *Novara*, with *Oribasius*'s Preface to the Emperor *Julian*.

3. A *Synopsis* of the former seventy-two Books, written after the Death of the Emperor *Julian* to his Son *Eustathius*, and contracted into nine Books. This, also, is extant in the *Latin* Version of *Rasarius* above-mention'd.

4. *Euporista*, or Medicines easily prepared, in four Books, to *Eunapius*; or, as it is in some Copies, according to *Photius*, to *Eugenius*; but the Copies, made use of by both the *Latin* Translators, read *Eunapius*. For these four Books were translated into *Latin* by an *Anonymus*, and published by *J. Sichard*, together

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ther with *Cœlius Aurelianus*, of chronic Diſeaſes at *Baſil*, 1529. in Folio, (not printed in Octavo, as it is ſaid in *Merklin's Lindenius renovatus*) and afterwards printed with a new Verſion, by the above-mention'd *Raſarius*, together with the reſt of the Works of *Oribaſius*, at *Baſil*, 1557. Octavo; and alſo with the *Medici Principes* of *Henricus Stephanus*, at *Paris*, 1567. Fol. There was an old Manuſcript *Latin* Verſion of *Oribaſius*'s Works, very different from that publiſhed, both with reſpect to the Order of the Books, and the Matters treated of in them, in the Library of *René Moreau*, as we are told by *Labbeus*, *Bibl. novæ Manuſcrip. p.* 214. There is, alſo, an Epitome of the Writings of *Oribaſius*, compoſed at the Command of the Emperor *Conſtantinus Porphyrogenitus*, by one *Theophanes*, in *Greek*, which lies, ſomewhere or other, in Manuſcript, in the Emperor's Library. *Fabricii Bibl. Vol.* 9. *p.* 451.

To this Account we are to add, that the ſix firſt Chapters of the fifth Book of the *Synopſis*, and the fourteenth Chapter of the firſt Book to *Eunapius*, on Waters, in *Greek*; together with the Fragments of *Galen*, *Rufus*, *Diocles*, and *Athenæus*, on the ſame Subject, with a *Latin* Verſion of them ſeparately ſubjoined, was publiſhed at *Rome*, *An.* 1543. Quarto, by the Care of *Aug. Riccius*, a Phyſician of *Luca*. In the Catalogue of the *Bibliotheca Bigotiana*, are mentioned ſome of *Oribaſius*'s *Medicinal Collections*, printed in *Greek*, at *Paris*, 1556. in Octavo, which Book I never yet had the Fortune to ſee. *Antonius Verderius*, in his *Bibliotheca Gallica*, ſays, that he ſaw a *French* Manuſcript Verſion of *Oribaſius*'s Works, by one *Adam de la Vallée*. The two Books of Chirurgical Bandages and Machines, from *Heracles*, or *Heraclides Epheſius*, *Soranus*, and *Heliodorus*, are alſo extant in *Latin*, tranſlated by *Vietus Vidius*, in *Geſner*'s Collection of Chirurgical Treatiſes, publiſhed at *Zurich*, 1555. in Folio. The *Synopſis Medica*, to his Son *Euſtathius*, in nine Books, tranſlated by *Raſarius*, was printed at *Venice*, 1555. Octavo; and all that remains extant of the ſeventy Books of his *Synopſis*, tranſlated, alſo, by *Raſarius*, printed at *Paris*, 1555. Octavo. The Commentaries on the Aphoriſms of *Hippocrates*, printed firſt in *Latin*, by *J. Guinter Andernac*, at *Paris*, 1553. Octavo, for *Simon Colinæus*, were reprinted at *Baſil*, 1535. at *Venice*, 1553. and at *Padua*, 1658. Octavo. It is eaſier to ſay, they were not written by *Oribaſius*, than to aſſign their true Author; but they ſeem to be compoſed in *Latin*, and by ſome Chriſtian. The Fragment of *Oribaſius*, concerning Diet proper for all Seaſons of the Year, was publiſhed in *Latin*, with *Plinius Valerianus*, by *Albanus Torinus*, at *Baſil*, 1528. Folio. *Oribaſius of Simples*; with four Books of the *Euporiſta* of *Octavius Horatianus*; the Phyſics of *Hildegardes*; the Regimen of *Theodorus* the Naturaliſt; and *Æſculapius* of the Cauſes, Deſcription, and Cure of Diſeaſes, were printed at *Strasburg*, 1533, and 1544. Folio. Extracts from the Works of *Oribaſius*, on Waters and Baths, tranſlated by *Aug. Gadaldinus*, of *Modena*, were printed in a *Venetian* Work, which treated of Baths, *An.* 1553. Folio. *Fabricii Bibliotheca Græca.*

ORICHALCUM. The ſame as AURICHALCUM.

ORICIA. The Name of a ſort of Turpentine-tree, ſo call'd from *Oricus*, a City of *Epirus*, near which it grows.

ORICULARIS. The ſame as AURICULARIS, or AURICULARIUS.

ORIGANITES. Wine impregnated with *Origanum*. *Dioſcorides*, *L.* 5. *C.* 61.

ORIGANO COGNATA. A Name for the *Majorana*; *rotundifolia*, *ſcutellata*, *exotica*.

ORIGANUM.

The Characters are;

The Calyx is long, ſimple, tubulous, and cloſely ſeated among foliaceous Scales; in this is ſituated the Flower, having an erect, roundiſh, bifid Galea, or Creſt, and a Beard divided into three Parts, the middle one being hollow, like a Spoon. The Flowers are collected into ſquamous Spikes, reſembling thoſe of the Muſcari; and ſometimes form a ſort of Umbella, ſhooting forth, one on each Side of the Scales.

Boerhaave mentions eleven Species of *Origanum*; which are,

1. Origanum; ſylveſtre; humile. *C. B. P.* 223. *Prodr.* 109.
2. Origanum; ſylveſtre; humile; floribus candidioribus.
3. Origanum; humilius; latifolium; glabrum. *T.* 199.
4. Origanum; ſylveſtre; Cunila Babula Plinii. *C. B. P.* 223. *Tourn. Inſt.* 199. *Boerh. Ind. A.* 179. *Origanum.* Offic. *Origanum vulgare ſpontaneum.* J. B. 3. 236. Raii Hiſt. 1. 539. Synop. 3. 236 *Origanum Anglicum.* Gen. 541. Emac. 666. *Majorana ſylveſtris.* Park. Theat. 12. WILD MARJORAM.

This Origanum, or wild Marjoram, is a Foot, or more, high, having many hairy, brown, brittle Stalks, with two broad, round-pointed Leaves, bigger than Marjoram, ſet at a Joint on very ſhort Foot-ſtalks, and of a browniſh green Colour. The Flowers grow on the Tops of the Stalks, being ſmall, labiated, and galeated, of a purple Colour, among long Heads, compoſed of a great Number of green Scales. The Roots are woody and fibrous. It grows in Hedges and Thickets, and flowers in *July*. The Tops and Leaves are uſed.

This Origanum, though not ſo ſtrong as the Origanum Creticum, yet is very good for Obſtructions of the Breaſt, Liver, and Womb; helps the Jaundice, Shortneſs of Breath, and Stoppage of the Menſes; comforts the Head and Nerves. The diſtilled Oil helps the Tooth-ach, being put upon Lint into the aching Tooth. *Miller's Bot. Off.*

The wild Marjoram is acrid, aromatic, deterſive, and gives a very faint Tincture of red to the blue Paper; which makes us conjecture, that this Plant is filled with a volatile, aromatic, and oily Salt; not entirely deſtitute of Acid; whereas, in the artificial volatile Salt, the Acid of the Sal Ammoniac has been detain'd by the Salt of Tartar. Beſides, the wild Marjoram contains abundance of terreſtrial Parts. It is diuretic, diaphoretic, good to make one ſpit, and provoke the Terms. A Tea of it may be uſed in an Aſthma, violent Coughs, Indigeſtion, and Pleuriſy. It is uſed in the Waſhings for the Feet, and Semicupiums for the Vapours, Green-ſickneſs, and Palſy. Take wild Marjoram, dried at the Fire, and wrap it warm in a Linen Cloth, and cover the Head well with it, for a Rheum and Rheumatiſm in the Neck, commonly call'd *Torticolis*. *Martyn's Tournefort.*

It is opening, abſterſive, and aſtringent; and principally uſed in Obſtructions of the Lungs, Liver, and Womb: Whence it is of Service in a Cough, Aſthma, and Jaundice. It increaſes Milk, and expels ichorous Excrements by Sweat, being taken before Bathing. Outwardly, it is of frequent Uſe in Baths for the Head and Uterus, and for the whole Body under the Itch. *Raii H. P. p.* 539.

5. Origanum; ſylveſtre; album. *C. B. P.* 223. *M. H.* 3. 359.
6. Origanum; ſylveſtre; foliis variegatis, argenteis. *Flor.* 2. 78.
7. Origanum; ſylveſtre; foliis variegatis, aureis. *Flor.* 2. 79.
8. Origanum; Creticum. *Offic. Ger.* 541. *Emac.* 666. *Raii Hiſt.* 1. 540. *J. B* 3. 238. *C. B. P.* 223. *Boerh. Ind. A.* 179. *Origanum ſylveſtre ſive vulgare.* Park. Theat. 15. ORIGANY OF CRETE.

The Origanum, whoſe Tops are found in the Druggiſts Shops, grows taller than common ſweet Marjoram, having longer and whiter Leaves, and larger and longer ſcaly Heads, white and hoary alſo, among which grow ſmall white Flowers, like thoſe of ſweet Marjoram; of a moſt pleaſant, ſtrong, aromatic Scent. It grows in the Iſland of *Candia*, or *Crete*, and other Parts of *Greece*; and flowers in *June*.

This is what ought to be uſed, when the *Flores Origani* are, at any time, order'd to be put in a Compoſition.

This Origanum is heating and warming, and good for Diſeaſes of the Lungs; to open Obſtructions of the Womb, and bring down the Menſes, and to heal all kinds of venomous Bites. *Miller's Bot. Off.*

9. Origanum; Creticum; flore purpureo.
10. Origanum; Orientale; folio Brunellæ glauco; flore albo. *Vaill.*
11. Origanum; Dictamni Cretici facie; folio craſſo, nunc villoſo, nunc glabro. *T. C.* 13. *T. Voy.* 1. 240. *Boerh. Ind. alt. Plant.*

There is no Plant more celebrated by *Hippocrates*, than Origanum; he recommends it in Diſeaſes which require Heating, Diſſolving, and Stimulating: Whence it is of Uſe in Exulcerations of the Lungs, being boil'd in Wine, and then ſweeten'd with Honey, and ſo ſupt hot. Thus prepared, it is a very good Medicine to expectorate Phlegm; but, however, is not to be exhibited, where an Hæmoptoe is to be fear'd. It is, alſo, adapted to Diſeaſes of the Kidneys; for it is aperient, diſſolvent, and balſamic. This Herb is more heating than the *Dictamnus*, but not of ſo ſubtile Parts; it is of excellent Service in hypochondriacal Diſorders, and Tertians, and where languiſhing Nature requires Relief by inciding. The Leaves boil'd in Water, and ſweeten'd with Honey, are proper for old Perſons in a great Cough, being relaxing and ſtimulative. The Herb is heating and penetrating; the Juice thereof, ſweeten'd with Honey, is good for Impoſtumes of the Lungs, the Aſthma, and Jaundice. Origanum provokes Sweat, and is proper in ſoporous, hyſteric, and catarrhous Diſorders; and increaſes Milk. The Preparations from this Plant are, a diſtil'd Water, a Spirit, and an Oil. The Seed of Origanum is very hot, like Pepper, and of Service in putrid Fiſtulas; and the Oil, prepared of the Flowers, is good againſt the Scurvy and Colic. A Tea of the Leaves is effectual in the Aſthma, a violent Cough, and Indigeſtion; and, in Baths, the Leaves are uſed for the hyſteric Paſſion, Chloroſis, and Palſy. *Hiſt. Plant. adſcript. Boerhaav.*

Origanum is, alſo, a Name for the *Dictamnus*, *Creticus*; and for the *Dictamnus*, *montis Sypili*; *Origani foliis.*

Origanum Smyrnæum. A Name for the *Majorana*: *Cretica*; *Origani foliis*; *villoſa*; *Satureiæ odore*; *corymbis majoribus.*

Beſides the foregoing Species of *Origanum*, *Dale* mentions the following.

Origanum Heracleoticum. Offic. Ger. 541. Emac. 666. Raii Hiſt. 1. 539. *Origanum Heracleoticum verius.* Park. Theat. 15. *Origanum Heracleoticum. Matthioli, aliis forte Creticum.* J. B. 3. 237. *Origanum Heracleoticum, Cunila gallinacea Plinii.* C. B. P. 223. Tourn. Inſt. 199. BASTARD MARJORAM.

It is cultivated in Gardens, and flowers in the Summer. The Herb is in Uſe, and is proper, as *Dioſcorides* ſays, for Bites of Serpents, and exhibited in Ruptures, Convulſions, and Dropſies.

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ORIONIUS. Urinous; an Epithet for the Spirit, and Salt of Urine.

ORIZEUM. Gold. *Orizæus Color* is a yellow Colour in the Eyes, or Urine.

ORLEANA. See ACHIOTL.

ORMINUM. The ſame as HORMINUM.

ORMS. A Hen. *Rulandus.*

ORNITHIÆ, ὀρνιθίαι. In *Hippocrates*, *Epidem. L.* 7. theſe are the Vernal Winds, which bring the Swallows, and other Birds of Paſſage. *Pliny* ſays, theſe Winds blow from the Weſt; and that, by ſome, the *Eteſiæ* are thus called. Others are of Opinion, that the Winds here meant blow from the North, or North-eaſt, as the *Eteſiæ* do.

ORNITHOGALUM.

The Characters are;

The Pedicle, proceeding from the Stalk, ends in a long thin Membrane. The Flower is naked, hexapetalous; the Petals expanding into a Circle; and bears in its Centre an erect, floral, and hexapetalous Tube; each Petal having a Stamen, or Chive, growing to its upper Part, on the Inſide; the Flower, with its Tube and Ovary, cloſely embraces the Ovary, and its Tube. The Ovary is furniſh'd with a long Tube, having a ſpherical Apex, and becomes a roundiſh Fruit, full of roundiſh Seeds; the Root is bulbous, or tuberous.

Boerhaave mentions eleven Species of *Ornithogalum*, none of which have any Uſes aſcribed to them, except the ſeventh, which is thus diſtinguiſh'd.

Ornithogalum; umbellatum; medium; anguſtifolium. *C. B. P.* 70. *Tourn. Inſt.* 378. *Boerh. Ind. A.* 2. 142. *Ornithogalare.* Offic. Ger. 132. Emac. 161. *Ornithogalum vulgare & verius.* J. B. 2. 630. Raii Hiſt. 2. 1153. Synop. 3. 372. STAR OF BETHLEHEM.

It is cultivated in Gardens, and flowers in *May*, and the Root and Seed are in Uſe; the firſt of which, as *Dioſcorides* ſays, is eaten either raw or boil'd, and the other is baked in Bread.

Ornithogalo-affinis. A Name for the *Phalangium*; *Africanum*; *foliis Tricoidis*; *floribus ſpicatis, aureis.*

Ornithogalum maritimum. A Name for the *Scilla, vulgaris*; *radice rubra.*

ORNITHOGLOSSUM. Is a Name given for the Seeds of the common Aſh-tree. See FRAXINUS.

ORNITHOPODIO AFFINIS. A Name for the *Ferrum equinum*; *Germanicum*; *ſiliquis in ſummitate.*

ORNITHOPODIUM.

The Characters are;

The Leaves are conjugated, in a Series of ſeveral Pairs, and end in an odd one. The Pod is hooked, jointed, and undulated, or waved; containing, within each Joint, one round Seed. The Pods grow many together, from the ſame Origin, in ſuch a manner, as to reſemble a Bird's Foot.

Boerhaave mentions ſix Species of *Ornithopodium*; which are,

1. Ornithopodium; majus. *Ger.* 1061. *Emac.* 1241. *Tourn. Inſt.* 400. *Boerh. Ind. A.* 2. 50. *C. B. P.* 350. *Ornithopodium*, Offic. *Ornithopodium radice nodoſa.* Park. Theat. 1093. Raii Hiſt. 931. Synop. 3. 326. *Ornithopodium tuberoſum Dalechampii*, J. B. 2. 351. BIRDS-FOOT.

It grows in ſandy and gravelly Places, and flowers in Summer. The Herb, which is of Uſe in Medicine, breaks and expels the Stone in the Kidneys and Bladder, and is effectual in an Hernia.

2. Ornithopodium; minus. *C. B. P.* 350. This agrees in Virtues with the former.

3. Ornithopodium; radice tuberculis nodoſa. *C. B. P.* 350.

4. Ornithopodium; Portulacæ folio. *Tourn. Inſt.* 400. *Boerh. Ind. a.* 2. 50. *Scorpioides.* Offic. *Scorpioides Matthioli.* Ger. Emac. 337. Raii Hiſt. 1. 931. *Scorpioides Matthioli ſive Portulacæ folio.* Park. Theat. 1117. *Scorpioides Portulacæ folio.* C. B. P. 287. *Telephium Dioſcoridis ſeu Scorpioides ob ſiliquarum ſimilitudinem.* Ejuſd. *Telephium Scorpioides.* J. B. 2. 889. SCORPIONWORT.

It is cultivated in our Gardens, and flowers in Summer. The Herb is uſed, and is, according to *Galen*, of an heating and drying Quality; and, as *Dioſcorides* ſays, is a preſent Remedy againſt the Sting of the Scorpion, being apply'd to the Part.

5. Ornithopodium; minimum; διπέταλον vel ὀλιγοπέταλον. *M. H.* 2. 125.

6. Ornithopodium; Scorpioides; ſiliquâ compreſſâ. *T.* 400. *Ornithopodio affinis, hirſuta, Scorpioides.* C. B. P. 350. *Scorpioides, leguminoſa.* J. B. 2. 349. *Boerh. Ind. alt. Plant.*

ORNUS. A Name for the *Sorbus*; *Aucuparia.*

OROBANCHE.

The Characters are;

The Root is ſquamous, and the Plant appears as if it were bare of Leaves. The End of the Pedicle opens into a multifid Calyx; the Flower is monopetalous, anomalous, bilabiated, (the Galea being hollow, and the Beard trifid) collected into Spikes, and embracing an oblong Ovary, furniſhed with a long Tube, unicapſular, bivalve, opening, when ripe, into two Valves, and pregnant with very minute Seeds.

Boerhaave mentions four Species of *Orobanche*; which are,

1. Orobanche; major; garyophyllum olens. *C. B. P.* 87. *Raii Synop.* 3. 288. *Tourn. Inſt.* 175. *Boerh. Ind. A.* 240. *Orobanche.* Offic. *Orobanche flore majore.* J. B. 2. 780. *Orobanche, ſive Rapum Geniſtæ.* Ger. 1130. Emac. 1311. Park. Theat. 1362. BROOM-RAPE.

It frequently grows to the Roots of Geniſta, or Broom; whence it is called *Rapum Geniſtæ*, or *Broom-rape*; it is found alſo among Corn. The Herb preſerved, or its Syrup, is of excellent Uſe in ſplenetic and hypochondriac Diſorders; and an Ointment prepared of the ſame, with Swines Fat, is good for hard and ſcirrhous Tumors.

It grows in gravelly and dry Places, and flowers in *June* and *July*. The Herb, dry'd and pulverized, is a preſent Remedy for the Pains of the Colic. *Dale.*

2. Orobanche; ramoſa; floribus purpuraſcentibus. *C. B. P.* 88. *M. H.* 3. 502. *Orobanche minor, purpureis floribus, ſive ramoſa.* J. B. 2. 782. *Orobanche.* III. πολύκλαδος. Cluſ. H. 271.

3. Orobanche; ramoſa; floribus cœruleis. *C. B. P.* 88.

4. Orobanche; ramoſa; floribus ſubalbidis. *C. B. P.* 88. *Ind. alt. Plant.*

OROBION, ὀρόβιον, in *Hippocrates*, according to *Foeſius*, is the Meal of the *Orobus*.

OROBOEIDES HYPOSTASIS, ὀροβοειδὴς ὑπόστασις. A Sediment in the Urine, reſembling the Meal of the *Orobus*; that is, of a dark-red Colour, ſuch as is made in a Jaundice.

OROBO. Metallic Glaſs.

OROBUS.

The Characters are;

It has a ſmooth round Pod, full of oval Seeds, and two conjugated Leaves growing to a Rib, which ends in a Point.

Boerhaave mentions nine Species of the *Orobus*; which are,

1. Orobus; purpureus; ſylvaticus; vernus. *C. B. P.* 351. *Galega nemoroſa, verna.* J. B. 2. 343.

2. Orobus; ſylvaticus foliis Viciæ. *C. B. P.* 352. *Aſtragaloides.* Dod. p. 551.

3. Orobus; Pyrenaicus; foliis nervoſis; latifolius. *Sch. Bot. Par. T.*

4. Orobus; ſylvaticus; foliis oblongis, glabris. *Tourn. Inſt.* 343. *Boerh. Ind. A.* 2. 46. *Raii Synop.* 3. 324. *Orobus.* Offic. *Aſtragalus ſylvaticus.* Ger. Emac. 1237. Raii Hiſt. 1. 916. *Aſtragalus ſylvaticus foliis oblongis, glabris.* C. B. P. 351. *Aſtragaloides ſeu Aſtragalus ſylvaticus Aſtragalo magno Fuchſii, ſeu Chamæbalano leguminoſæ affinis planta.* J. B. 2. 334. WOOD-PEASE, or HEATH-PEASE.

The Plant grows in woody and buſhy Places; flowers in *April*, and the Seed is ripe in *May*. The Tubera of the Root taſte much like Liquorice, and the *Scotiſh* Highlanders make uſe of them in the ſame Diſorders of the Thorax, for which Liquorice is proper. They call the Plant *Karemyle*, and uſe thoſe Tubera, temper'd with Water, to enable them to ſupport Hunger and Thirſt the longer; for which Purpoſe, they find them very ſerviceable; for, by their ſweet and viſcid Subſtance, they correct and mitigate, and even fix and reſtrain, the acid and acrimonious Humours in the Stomach; and, by that means, are a Remedy againſt Hunger and Thirſt. If this Plant, therefore, be not the ſame with what *Theophraſtus* calls *Scythica*, (which is generally thought, by the Learned, to be Liquorice) it is certainly very much like it, being leguminous, ſiliquous, and of the ſame Qualities. And it ſeems very probable, that the Tubera of this Plant were the Food with which the *Britons* ſuſtain'd themſelves for ſome Days, when they were preſſed by the Enemy; as it is related by *Dion*, in the Life of the Emperor *Severus*. For this Plant, ſays Dr. *Sibbald*, in his Introduction to the Natural Hiſtory of *Scotland*, has the Virtues of Liquorice; and its Tubera, by our Highlanders, who, to this very Day, retain the Manners, and Way of living, of the antient *Scots*, are ſtill applied to the ſame Uſes; but, as for Liquorice, I know not, that it grows any-where in the whole Iſland, without Cultivation. *Raii H. P.* 916.

5. Orobus; anguſtifolius; Italicus; flore vario. *T.* 393.

6. Orobus, latifolius; repens; ſiliquâ parvâ. *Ind.* 162. *Galega nemorenſi ſimilis*; *multiflora*; *flore purpureo.* J. B. 2. 345.

7. Orobus; latifolius; repens; flore cœruleo; foliis & ſiliquis hirſutis. *Sherard. Ind.* 162.

8. Orobus; ſylveſtris; vernus; flore albo. *Thalii.*

9. Orobus; Creticus; folio Viciæ. *Boerh. Ind. alt. Plant.*

Orobus ſativus. A Name for the *Ervum*; *verum.*

Hippocrates recommends this Plant in the Pleuriſy, Peripneumony, and nephritic Diſorders; for which Purpoſes, let the Seeds be roaſted and bruiſed, and then have hot Water poured upon them; after this, it muſt ſtand a Night, and then be ſupe hot, with an Addition of Oxymel. This Liquor is ſaid to be lenitive, and of a penetrating Virtue, and is the ſame as our Coffee; but, whether this be the *Orobus* of the Antients, is a Queſtion. The Seed of this Plant, on account of its farinaceous and mucilaginous Quality, anſwers to Fenugreek, in mollifying and maturating Abſceſſes; and, by virtue of its diuretic Salt, which it contains in common with other leguminous Plants, it is of Service in provoking Urine, and expelling Gravel. *Hiſt. Plant. adſcript. Boerhaave*

OROGAMO. Gold. *Rulandus.*

OROS, ὄρος. The entire ſuperior Part of the Foot is ſometimes thus called.

ORRHA-

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ORRHAGOGON, ὀρραγωγὸν, from ὀρρὸς, *Serum*, and ἄγω, to bring away. An Epithet for Purges which evacuate *Serum*.

ORRHOPISSA. The ſerous, or moſt fluid Part of Tar.

ORRHOPYGION, ὀρροπύγιον. The Line, or Seam, which runs from the *Penis*, along the Middle of the *Scrotum*, to the *Anus*. It, alſo, ſignifies the Extremity of the Spine. *Gorræus*.

ORRHOS, ὀρρὸς. The Whey of Milk, or *Serum* of the Blood; ὀρρὸς πίσσης is the ſame as ORRHOPISSA. But

ORRHOS, ὀρρὸς, is the ſame as ORRHOPYGION.

ORTHOCOLON, ὀρθόκωλον, from ὀρθὸς, ſtrait, and κῶλον, a Limb. Such a Species of ſtiff Joint, as is form'd when it cannot be bended, but remains inflexible and ſtrait.

ORTHODORON, ὀρθόδωρον, a *Greek* Meaſure of Length, equal to the Space between the upper Part of the Hand, next the *Carpus*, and the Extremity of the middle Finger, containing eleven Dactyls, or Digits. *Arbuthnot*.

ORTHOPNOEA. See DYSPNOEA.

ORTHOSTADEN, ὀρθοστάδην. An Adverb, frequently uſed by *Hippocrates*, importing that a Perſon is up, and about his Affairs, and not confined to his Bed by Sickneſs.

ORVALA. A Name for ſeveral Species of SCLAREA.

ORUCORIA. The Name of a ſiliquiferous *Indian* Plant, the Juice of the Fruit of which is ſaid to conſolidate Wounds.

ORVIETANUM. The Name of a celebrated Antidote, thus call'd, according to *Lemery*, from *Orvieto*, a City of *Italy*, where it was firſt uſed; but, according to others, from *Hieronymus Ferrantes Orvietanus*, a celebrated Mountebank, who invented it.

The *Antidotum Orvietanum* is thus prepared.

Take of old Theriaca, and dry'd Vipers, with their Hearts and Livers, each four Ounces; of the Roots of Vipers-graſs, Carline-thiſtle, Maſterwort, Angelica, Biſtort, the ſmaller Birthwort, Contrayerva, white Dittany, Galangals, Gentian, Coſtus, and the true Acorus, of the Seeds of *Macedonian* Parſley, of the Leaves of Sage, Roſemary, Goats-rue, Carduus Benedictus, and Dittany of *Crete*, of Bay and Juniper-berries, each one Ounce; of Cinnamon, Cloves, and Mace, each half an Ounce; and of the beſt Honey deſpumated, eight Pounds: Make into an Antidote.

Reduce all the Ingredients into a common Powder; deſpumate the Honey, and boil it to the Conſiſtence of a thick Syrup. Suffer it to become half-cold, and then, by means of a Spatula, carefully mix with it the Theriaca, and the Powder, in order to make an Electuary, to be kept, for Uſe, in a cloſe-ſtopt Veſſel.

This Electuary, or Antidote, is highly eſteem'd, as good againſt the Plague, the Small-pox, and the Bites of poiſonous Animals. It, alſo, corroborates the Brain, the Heart, and the Stomach. The Doſe is from one Scruple, to a Dram and an half.

As the Goodneſs of the Orvietanum is principally eſtimated by its Smell, the following Preparation of it will have the due Smell, Strength, and Efficacy.

Take of Angelica-root, two Pounds; of dried Vipers, with their Hearts and Livers, of the Roots of Contrayerva, Gentian, the true Acorus, Coſtus, Galangals, Carline-thiſtle, Ginger, Spignel, white Dittany, long Birthwort, and Maſterwort, each two Ounces; of the Leaves of Sage, Roſemary, Wormwood, Calamint, Savory, Marjoram, Scordium, Dittany of *Crete*, Hyſſop, Thyme, and Poly-mountain, each two Drams; of the Flowers of *Arabian* Stœchas and Lavender, of the exterior Rinds of Citrons and Oranges, Mace, Cinnamon, Bay and Juniper-berries; of the Anthelminthic Seeds, the Seeds of Carduus Benedictus, Citrons, the leſſer Cardamoms, *Macedonian* Parſley, Caraway, together with Sal Ammoniac, and the Salt of Tartar, each one Ounce; of old Theriaca, one Pound; of *Peruvian* Balſam, two Ounces; of the Oil of Roſemary, one Ounce and an half; and of deſpumated Honey, twenty-three Pounds. Mix up into an Antidote, or Electuary; the Doſe of which is from one to four Scruples.

The *Electuarium Orvietanum* of *Frederic Hoffman* is thus prepared.

Take of the Roots of Swallow-wort, Zedoary, the Carline-thiſtle, Angelica, Butter-bur, Valerian, white Dittany, Elecampane, and Celandine, each three Ounces; of the Leaves of Dittany of *Crete*, Scordium, and Rue, each two Handfuls; of the Powder of Vipers, two Ounces; of oriental Saffron, one Ounce and ſix Drams; of Galbanum, one Ounce and an half; of the beſt Myrrh, Sulphur, and Seal'd Earth, each one Ounce; of the volatile Salt of Vipers, ſix Drams; of Cinnamon and Cloves, each half an Ounce; of corrected Opium, or the Laudanum Opiatum, three Drams; of the Oils of Amber and Citron, each one Dram and an half; and of the Honey of Juniper, ten Pounds: Mix all together into an Electuary, and allow the Preparation to ſtand in Fermentation, for ſome Months, in a cloſe Veſſel.

Reduce the Roots, the Leaves, the Cinnamon, and the Cloves, to a Powder together. Then reduce the Saffron to a Powder by itſelf, after having dried it ſlowly between two Papers. The Seal'd Earth and Sulphur are to be reduced, alſo, to a Powder by themſelves. The Galbanum, alſo, which ought to conſiſt of the pureſt Tears, is to be reduced to a Powder with the Myrrh; and all theſe Powders are to be mixed with that of the Vipers.

Then prepare, in the ordinary Manner, ten Pints of the Extract of Juniper, in the Conſiſtence of Honey, or a thick Syrup. Diſſolve in this Extract, whilſt as yet warm, the Laudanam, and, the Powders; and when the Preparation is entirely cold, mix with it, exactly, the Salt of Vipers, after having diſſolved it in two Ounces of *Spaniſh* Wine. At the ſame time, alſo, mix with it the Eſſences, or diſtil'd Oils, of Amber and Citron-peel, for an Electuary, or Opiate; to be kept for Uſe in a cloſe-ſtopt Veſſel; allowing it to ſtand in Fermentation for ſome Months, before 'tis uſed.

This is poſſeſs'd of the ſame Virtues with the former, and is to be exhibited in the ſame Doſe.

This Orvietanum, ſays *Lemery*, is one of the beſt to be found any-where. However, he is of Opinion, that ſome of the ſuperfluous Ingredients ſhould be retrench'd; ſuch as the Seal'd Earth, and the Celandine-root; and thinks, that the ſmall Quantity of Opium is not ſufficient to render the Preparation ſomniferous. *Lemery Pharmacopée*.

ORYCALUS. The Name of a cetaceous Fiſh, mention'd by *Oribaſius*, *Collect. Medic. L.* 2. *C.* 58. where he ſays, it is a large *Pelamis*, Tunny.

ORYX. A Sort of wild Goat, the Horns of which are ſaid to be ſudorific, and good againſt the Bites of venomous Animals, taken either in Powder, or by way of Decoction. It is ſaid to be found, principally, in the Woods of *Getulia*.

ORYZA.

The Characters are;

It hath its Grains diſpoſed into a Panicle, which are almoſt of an oval Figure, and are cover'd with a thick Husk, ſomewhat like Barley.

Boerhaave mentions but one Sort of *Oryza*; which is,

Oryza. *Offic. Ger.* 72. *Emac.* 79. *Park. Theat.* 1136. *Raii Hiſt.* 2. 1246. *C. B. P.* 24. *Theat.* 479. *J. B.* 2. 451. *Tourn. Inſt.* 514. *Boerh. Ind. A.* 2. 160. RICE.

This Grain, which is ſo much in Eſteem in the Eaſtern Countries, that it is the principal Corn they uſe, grows to be three or four Feet high, with Leaves broader than thoſe of Wheat; bearing looſe Spikes, much divided, and compoſed of oblong flatiſh Grains; having each a Beard, or Awn, two or three Inches long, forked at the Top, and frequently curled at Bottom. They are of a white Colour, incloſed in a brown Husk or Skin. Rice is ſown in *Italy*, *Turky*, and the *Eaſt-Indies*; and we have as large and good from *Carolina*, as from any Part of the World.

It is more uſed for Food than Phyſic; being a wholſome ſtrengthening Grain, reſtringent, and good for thoſe who have a Slipperineſs in their Bowels, or are inclinable to a Flux or Looſeneſs. *Miller's Bot. Off.*

Rice is the principal Food in all the Countries of the *Eaſt-Indies*, whence it was firſt imported into *Greece* and *Italy*. It thrives very well, alſo, and is a profitable Grain, in *Egypt*, ſome Parts of *Syria*, and the *Canary Iſlands*; as, alſo, in *Spain*, and in *Italy*, where, ſays *Ray*, we have obſerved it to grow in the marſhy Places of the Territory of *Ferrara*.

It delights in a moiſt Soil, and grows in the very Waters. In the Iſland of *Zeylan*, they have Reſervoirs of Water, for watering their Fields of Rice; in which Country, they ſay, the fat Soil is ſo moiſten'd and ſoften'd with perpetual Inundations, that the Reapers, in the Time of the Rice-harveſt, ſtand up to the Knees in Water. It ripens with the Heat of the Summer, and its lateſt Harveſt is about the Autumnal Equinox; ſo that our Northern Regions, tho' redundant in Moiſture, are too cold for bringing this Grain to Maturity.

Rice is very much uſed among Aliments, by all the Eaſtern Nations, and eſpecially the *Indians*. It is more eaſily digeſted, and more grateful to the Palate, when boil'd in Cow's Milk, Almond-cream, or pinguious Broths, prepared of Fleſh. It is commodiouſly mix'd with Aliments, intended for thoſe who labour under a Dyſentery, the Cœliac Paſſion, or a Diarrhœa; eſpecially when 'tis previouſly toaſted, and boil'd in Milk, in which ignited Stones have been extinguiſh'd. *Matth.*

Rice, among the *Indians*, is made into Bread in various Manners, deſcribed by *Caſpar Bauhine*, in his *Theat. Bot. Lib.* 1. *Sect.* 4. *Cap.* 29. The Inhabitants, alſo, of many Parts of the *Indies* prepare a kind of Drink of Rice, as the ſame Author informs us, in the Part laſt quoted. The *Turks* prepare *Panadas*, and ſeveral other Diſhes, of it. The various Methods of preparing Rice for Aliments, in *Europe*, where the Bread is made of Wheat, are to be found in *Caſpar Bauhine*, in the Part laſt quoted.

'Tis

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'Tis a common Opinion, that Rice renders those who eat of it, fat; for which Reason, in some Places, lean and slender Women frequently use it with Milk, and a large Quantity of Sugar. But this Notion is contrary to the Opinion of the antient Physicians, who reckoned it not only among the ὀλιγότεφα, or such Things as only nourish little, but, also, among the δύσπεπτα, or such Substances as are of difficult Digestion. But, says Mr. *Ray*, I am of the same Opinion with the common People, nor dare I condemn the Aliment used for so many Ages, by so many Nations: That it renders the Patient moderately costive, I grant; for which Reason I don't deny but it is beneficial in the hepatic Flux, a Discharge of bloody Urine, and a Cough, when used in Conjunction with other astringent Substances. The Meal of Rice is, also, mixed with repellent Cataplasms, and such as are intended to remove beginning Inflammations of the Breasts, with an Addition of the Flowers of Chamomile and Roses. *Helmont*, in a Spitting of Blood, recommends Rice boiled in Water, or chalybeate Milk. *Dol. Lib.* 3. *Cap.* 8. *Sect.* 16. *D. Soame.*

A thin Decoction of Rice with Water is, among the *Indians*, very frequently used as a Vehicle for many Medicines.

Some call the vinous Liquor extracted from Rice, *Arrack*. *Raii Hist. Plant.*

OS. A Bone.

The Bones are subject to the like Disorders with those incident to the softer Parts of the human Body.

It is certain, that a Knowledge of the several Diseases incident to the Bones is a Circumstance of the highest Importance, not only for understanding, but, also, for curing, a Lues Venerea, the Rickets, and the Scurvy.

That the Bones, which by *Galen*, in his Book *de Ossibus, in Proœmio Charter. Tom.* 4. are justly called the most hard, dry, and terrestrial Parts of Animals, and subservient to the Support of the others, should be subjected to the same Disorders with the softer Parts, may at first possibly seem surprising; but that they are so, will sufficiently appear from the following Considerations.

All the Bones in the human Body were once soft; for the whole Rudiment of the Embryo, some Days after Conception, unless sustained by the equable Pressure of the circumambient Fluid, is dissolved into a Species of Mucus, without either Form or Shape; as is obvious from the Observations of *Malpighi*, in the Generation of a Chicken in the Egg. In the Fœtus, also, when born, there are many Membranes, and soft Parts, which are afterwards converted into the most solid Bones: This is sufficiently obvious in the Bones of the Head, which, for a long time, retain the Nature of a Membrane, in that Part of the Vertex, called the *Fontanel*, which in some continues membranous till the eighth Year of their Age: And, which is still more surprising, the Teeth, which afterwards become incredibly hard, when latent in the Jaws of new-born Infants, resemble a soft Mucus, lubricated by an incredible Number of small Vessels. In the original State, therefore, of the Bones, that is, when they are soft, and not indurated, they may be subject to the same Disorders with those incident to the softer Parts: And even after they have acquired that Degree of Solidity, which renders them subservient to the various Purposes of the human Body, and are not entirely hard and dry as in Skeletons, but are, in some measure, succulent, they are still lubricated and moisten'd by a large Number of Vessels, which convey Fluids not only through the Substance of the Bones, but, also, through their Cavities: Hence, in consequence of these containing Vessels, and the Fluids contained in them, the same Disorders may happen to the Bones with those incident to the softer Parts. Hence it is, also, obvious, that the Bones are most obnoxious to such Diseases, when they most approach to the Nature of the softer Parts, that is, in young Persons, which is, also, confirmed by daily Experience: Hence the Spina Ventosa is almost only found in young Patients. And in decrepit Old-age, the Bones, when dry and sapless, are broken by the slightest Cause; but such Patients are generally little subject to the other Disorders of the Bones.

Besides, it is certain from undoubted Facts, that, by means of Diseases, the Bones have been so changed, as, losing their Solidity, to acquire the Softness of Flesh: An Instance of which we have in *Petit's Traité des Maladies des Os, Lib.* 1. *Cap.* 4. where that justly celebrated Author informs us, that he has often observed a similar Degeneration of the Bones into a soft and fleshy Substance. From all which Circumstances it is sufficiently obvious, that the Diseases incident to the softer Parts may, also, happen in the Bones; which is still more effectually proved from anatomical Observations, with respect to the Fabric and Structure of the Bones.

For the Interstices of the Bones are lined with a slender Membrane furnished with the same kind of Vessels, and continually moisten'd by the same Liquors, as moisten the softer Parts.

The celebrated *Clopton Havers*, in *Osteol. Nov.* and *Dominicus Gagliardus*, in *Anatom. Ossium*, have demonstrated, that the Bones of the human Body consist of Laminæ mutually applied to each other, though in such a manner that they are not always closely united, but leave between them Interstices, through which a large Number of Vessels run. But this appears most conspicuously in the larger hollow Bones, such as those of the Thigh, Humerus, and Tibia; for in that Part of the Bones which is equally distant from both their Extremities, the Laminæ appear closely united, and the Compages of the Bone is there found to be most firm; but, as the Laminæ recede from the Middle to either Extremity of the Bones, the internal Laminæ begin gradually to recede from their incumbent Laminæ, and leave considerable Interstices. The nearer these Laminæ approach to the Extremities of the Bones, the greater Number of them recede from each other, till at last there is only left, in the Extremities of the Bones, a thin bony Crust, which covers and defends that surprising cellular Substance, observable about the Extremities of the Bones; for as the Laminæ mutually recede from each other through all the Bone, its Cavity is gradually lessen'd, and at last entirely filled up at the Extremities with a bony and cellular Substance; for, between the receding Laminæ of the Bones, small bony Ramifications every-where arise, unite the separate Laminæ, retain them in their Situation, and divide the Interstices between them into smaller Cellulæ. But in the smaller Bones, which have not large Cavities, such as the Phalanges of the Fingers, this Union and mutual Concretion of the Laminæ does not appear in the middle Space of the Bones; but many of the interior Laminæ are, thro' their whole Length, distant from the incumbent Laminæ; and not only towards their Extremities, but, also, every-where, form bony Cellulæ, like those observed in the larger Bones: Hence appears the Reason why these Bones are far weaker than others, since the Strength of Bones depends upon the Union and Concretion of many bony Laminæ with each other. The like bony Laminæ, lying above each other, are observed to constitute the Cranium; and in some Craniums manifest Interstices are observable between them.

The Interstices left between these Laminæ, receding from each other, are lined with their proper Membranes, through which a large Number of Vessels are distributed: This was sufficiently evinced by the Injections made by *Ruysch*, and may be palpably perceived in the larger Bones of newly killed Animals; so that it is no Wonder, that the Bones should be subjected to the same Misfortunes with the softer Parts, since they are furnished with the same kind of Vessels, and the same Fluids.

This Structure of the Bones, consisting of Laminæ mutually applied to each other, excellently corresponds to the Phenomena sometimes observable in Diseases. If, as is observed under the Article CAPUT, the Pericranium is wounded, and the Bone remains bare for a considerable time, its Colour is gradually changed, and at last a corrupted Scale is separated from the subjacent sound Bone. And, when small Perforations are made in the Bone affected, the live subjacent Vessels spring up through them, separate the corrupted from the sound Part, restore the lost Substance of the Bone, and form a new Periosteum, in the same manner as the Substance lost by means of a Wound is restored in the muscular Parts of the Body. Under the Article CAPUT it is, also, shewn, that, in order to this Separation, it is not necessary, that the Perforation should reach the Diploe; for, that there are Vessels there, nobody can doubt; but in slight Wounds shallow Perforations are sufficient, and the live Vessels spring up through them. Hence it is obvious, that between the Laminæ of the Cranium Vessels are distributed, which, when the corrupted Part of the Bone is removed, very soon rise through the Perforations. *Celsus*, in the second Chapter of his eighth Book, when treating of the Cure of Disorders of the Bones, speaks in the following manner, *We must first*, says he, *lay open the Ulcer, and render the Bone bare; and, if the Disorder of the Bone is broader than the Ulcer, an Incision is to be made in the Flesh, sufficient to lay the affected Part of the Bone bare: Then the actual Cautery is to be once or twice applied, or the Part is to be scraped, till a Discharge of some Blood is made, which is a Sign of a sound Bone; for the Part disorder'd must necessarily be dry.*

The greater the Interstices between the Laminæ of the Bones are, the more, in these particular Parts, the Bones approach to the Nature of the soft and muscular Parts.

For, as the Interstices between these Laminæ have slender Membranes furnished with Vessels, so the larger these Interstices are, the greater will the Number of Vessels be; and the Bone must, of course, in such a Part, approach very much to the Nature and Structure of the soft Parts.

For this Reason, such Parts of the Bones are most subject to the Disorders incident to the soft Parts.

This is sufficiently obvious from what has been said; for in these Interstices there are Vessels and Humours, as well as in the soft Parts; for which Reason a too great Weakness or Strength of these Vessels, and a spontaneous Degeneracy of the Humours they contain, may happen. The Motion, also, of the Humours through

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through these Vessels, may be either too quick, or too faint and languid. In consequence of these Circumstances, there may be Obstructions, Solutions of Continuity, Inflammations, and all their Consequences, in the Bones, as well as in the soft and muscular Parts.

Of this Kind are the broader Parts of the Bones near the Joints; whereas they are more compact, and less vascular, in the Middle, or Part equidistant from their Extremities.

We have already observed, that the Laminæ which constitute the larger Bones, are, in that Part of the Bone which is equidistant from its Extremities, so closely united as to leave hardly any Interstices: Hence in such Parts the Solidity of the Bone is greatest, and none, or very few, and small Vessels are distributed between these Laminæ: But as the Laminæ gradually recede more and more from each other, in proportion as they approach to the Extremities of the Bones, and the Interstices are enlarged, so the Bones are enlarged about the Joints, but are at the same time weaker, and more easily injured, because there the external bony Crust, formed by the Union of the Laminæ, is thinest. *Clopton Havers*, in his *Osteologia Nova*, tells us, that in the Middle of a Thigh-bone, before the Laminæ began to be separated, he observed them five times thicker than at the Top of the Bone. But, says *Van Sweiten*, in a Thigh-bone curiously prepared, I observed the Laminæ in the middle Part of the Bone twenty times thicker than the thin bony Crust, with which the Head of that Bone, the Trochanter Major, and the inferior Part at the Articulation with the Tibia, are covered: Hence the Reason is obvious, why near the Joints the Bones are most generally subject to the Disorders incident to the soft and muscular Parts. Hence, also, it is that a more terrible Train of Symptoms attends Fractures happening in the large Parts of the Bones near the Joints, in consequence of the Injury done to the numerous Vessels, and the Effusion and Corruption of their contain'd Fluids. It is requisite the Bones should be more strong and firm in the Middle, than at the Extremities, because, whilst, for Instance, the whole Weight of the Body is supported by the Os Femoris, the greatest Force acts upon the Middle of the Bone, and at the same time there is here formed, in consequence of the close Union of the Laminæ, a Cavity for the Marrow, whilst, by such an Union, the Strength of the Bones is, also, increased; for it is demonstrable, from the Principles of Mechanics, that an hollow Cylinder is broken with greater Difficulty than a solid one, consisting of the same Quantity of Matter.

Hence arises the primary Distinction between the Diseases incident to the Bones.

For the sake of Distinctness, it is necessary to rank the Disorders of the Bones under certain Classes, according as the various Parts constituting their Fabric are affected; for the Effects of these Disorders are quite different, and require different Methods of Cure, according to the various Parts affected. Now the first Distinction of these Disorders, in the large articulated Bones, is taken from the Part affected, the Middle, for Instance, where they are most solid; or their Extremities, where they are indeed larger, but less firm, and of a more cellular Texture.

The Bones, besides the Vessels common to the softer Parts, have, also, in their larger Cellulæ, Vesicles full of a subtile medullary Oil, there secreted and accumulated for certain Purposes: These Vesicles, which about the Joints are pretty large, are about the Middle of the Bone gradually destroyed, and almost vanish into small Ducts, which contain a pinguious Substance.

Since, therefore, the larger Parts of the Bones, near the Joints, approach pretty much to the Structure of the soft Parts, so the Disorders incident to the latter may happen in the former. Besides, another thing often gives Birth to the most terrible Disorders of the Bones; for the thin medullary Oil is lodged in their cellular Part, secreted from the arterial Blood, and collected in Vesicles, which not only communicate with each other, but, also, with the whole medullary System, in the Cavities of the larger Bones; and through the Pores of the Cartilages, with which the Extremities of the articulated Bones are covered, discharge their Contents into the Cavities of the Joints, in order to form, in Conjunction with the glutinous Humour of the Glands of these Parts, a kind of Ointment for rendering the Joints more moveable. Besides, these medullary Vesicles, lodged between the receding bony Laminæ, seem to distribute some Part of the medullary Oil to the bony Laminæ, in order to prevent the too easy Breaking of the Bones: For, as we shall afterwards shew, in these Parts, where the Laminæ are most closely united, the medullary Oil enters their Pores, and is distributed between the Laminæ, adjoining to each other, since in the middle, or most solid Part of the Bones, there is no Space or Room left for the medullary Vesicles. This medullary Oil, therefore, lodged in these Vesicles, seems to answer two Ends, which are, first, to lubricate the Joints; and, secondly, to diffuse itself between the Laminæ of the Bones, in order to prevent their too great Dryness: Hence, when, either in consequence of decrepit Old age, or Diseases, this medullary Oil becomes defective, the Joints crackle, and move with Difficulty; the Bones, also, when deprived of this Oil, are easily broken.

How great a Quantity of this medullary Oil is lodged in this cavernous Part of the Bones, is sufficiently obvious in the Bones of Beef, when boiled: For, after all the Marrow contained in the larger Cavities of these Bones is taken out, if their Extremities are split, or struck with a Mallet, a large Quantity of this medullary Oil is discharged. We shall hereafter consider the Structure of these Vesicles, which contain the medullary Oil; since they are similar to those which constitute the Marrow lodg'd in the middle Cavities of the larger Bones, only with this Difference, that, in the cavernous Parts of the Bones, few Vesicles, or perhaps only one, are lodged in the smaller Cavities; whereas the Marrow is a Congeries of many such Vesicles, contained in a common Membrane. Now, where there is a greater Distance between the receding Laminæ, it is sufficiently obvious, that a larger Number of Vesicles may be lodged there: But in the Parts where these Laminæ are contiguous, or, at least, very little distant from each other, there are no such Vesicles, but the thin medullary Oil is either distributed between the Laminæ, by means of small Ducts propagated from these Vesicles, or it enters by the Pores of the bony Laminæ, which we shall afterwards describe.

Hence arises another Class, or Order, of Diseases incident to the Bones.

Another Origin of Diseases in the Bones is, when the Vesicles containing the medullary Oil are affected; in consequence of which, a violent Corruption of that Oil happens, and many Disorders, which shall afterwards be enumerated, will be produced.

The Bones have an external Periosteum, which not only surrounds and covers their convex Part, but, also, conveys the arterial Vessels into their Cellulæ and Marrow, and receives an incredible Number of venous Vessels, both large and small.

Clopton Havers, in his *Osteologia Nova*, has demonstrated, that all the Bones of the human Body are covered with a fine Membrane, of an acute Sensation, and which consists of various Strata of Fibres, applied to each other, tho' not interwoven: These Fibres run parallel to each other, and in the same Direction with the Length of the Bone. In some Places this Membrane is thicker than in others, and seems to consist of Fibres variously decussating each other: But this is produced by the Muscles, and their Tendons, running along the Periosteum, before they are inserted into the Bones. *Clopton Havers*, also, observ'd, that the Periosteum running along the Bones was wanting in those Place, where the Ligaments uniting the articulated Bones arise; and that the Periosteum runs upon the Ligaments, and is thus convey'd to the adjacent Bone: Hence he imagined, that the Periosteum was only a Continuation of one and the same Membrane, which, drawing its Origin from the Dura Mater, covered the Cranium, and is thence extended over the Surface of all the other Bones, and is so perfectly accommodated to all their Cavities and Eminences, that it exactly covers their whole Surface. But that Part of the articulated Bones, which is contained within the Ligaments which constitute the articular Capsulæ, are destitute of the Periosteum, which, there, is separated from them, and runs upon the Ligaments. Nothing, therefore, can be either conveyed to or from the Bones, except by means of the Periosteum: All the Vessels, then, conveyed to the Bones for their Nutrition and Growth, or which penetrate into their cellular Part, or are, through distinct Perforations, carried to the Marrow collected in their middle Cavities, previously pass through the Periosteum. In like manner, the small Veins which return the Blood, pass through that Membrane, which, in consequence of this Circumstance, is of an highly vascular Nature, as *Ruysch*, in his *Adversar. Decad.* 3. *Tab.* 2. *Fig.* 8. has beautifully demonstrated. Besides, the Periosteum is closely united to the Bone by means of the Ramifications of Vessels, convey'd from the former to the latter, and the Veins returning from the latter to the former, almost in every Point: Hence it adheres very firmly to the Bone, especially in young Persons; for in decrepit Old-age, where many of the Vessels are abolished, the Periosteum is observed to adhere but slightly to the Bone. *Clopton Havers*, before the Discoveries of *Ruysch*, being surprised at the firm Cohesion of this Membrane with the Bones, believed, that this happened principally at that Age in which the Bones are soft, and, as it were, gluinous. This Physician, also, observed, that it was united to the Bone by means of small Fibres sent out from it into the Substance of the Bone. But it was afterwards discovered, by the Injections of *Ruysch*, that these Fibres were small Vessels sent from the Periosteum to the Bone in an incredible Number. Nor are the larger Bones alone cover'd with a vascular Periosteum, but, also, the

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the ſmall Bones of the Ear, which ſome great Men have aſſerted to be without it. The internal Cavity of the Tympanum is, alſo, covered with its Perioſteum, which is furniſhed with innumerable Veſſels, as *Ruyſch*, in *Epiſt. Anatom.* 9. has ſhewn by the Figure he there gives of it.

Hence ariſes a third Series or Claſs of Diſorders incident to the Bones.

Whatever Cauſe therefore hinders the free Paſſage of the Humours through the Veſſels of the Perioſteum into the Bone, or prevents their Return from the Bone to the Perioſteum, may produce Diſorders in the Bone, though the primary and immediate Cauſe of theſe Diſorders is not lodged in the Subſtance of the Bone, properly ſo called, but in the Perioſteum only. The Reaſon of this is ſufficiently obvious, from what has been ſaid in the preceding Paragraph.

The Bones have an internal Perioſteum, which lines and covers the Cavities containing the Marrow, diſtributes the arterial Veſſels to the medullary Veſicles, and receives an incredible Number of venous Veſſels, both large and ſmall.

The internal Perioſteum is not ſo eaſily exhibited to the Senſes as the external; yet there ſeems to be ſuch a Membrane, though of an highly tender Nature, ſince it is ſafely defended by the Bone which covers it. The Dura Mater covers the Cranium, and ſerves it inſtead of a Perioſteum: But as this Membrane ſends off Vaginæ, by which the Nerves ariſing from the Medulla Oblongata and Spinalis are ſafely defended, it was neceſſary its Fabric ſhould be ſomewhat thicker and ſtronger. This Membrane, being in the large hollow Bones, defended from all external Injuries, and ſerving only to cover the internal Surface of the Bones, and receive the Veſſels, does not require ſo great Firmneſs and Strength as the external Perioſteum; and, in conſequence of its Slenderneſs, is with more Difficulty diſcovered: In thoſe Bones whoſe internal Surfaces are totally cellular, ſuch a continued Membrane is not eaſily diſcover'd, ſince the Structure and Fabric of ſuch Bones is highly intricate and perplexed. Nor is it eaſily diſcovered about the Extremities of the larger Bones, where the receding bony Laminæ form a ſurpriſingly ſpongious Subſtance. But this Membrane is principally found in that Part of the larger Bones, which, by a cloſe Union of the bony Laminæ, is moſt ſolid, and has a large Cavity in its Middle, deſtined for containing the Marrow. *Ruyſch*, in *Adverſar. Decad.* 3. informs us, that Anatomiſts often talked at random, with reſpect to the Membrane which they ſuppoſe to ſurround the Marrow; and affirms, that in thoſe Bones whoſe Cavities are full of an oſſeo-ſpongious, or an oſſeo-filamentary Subſtance, there is no common Membrane inveſting the Marrow found. Nor is this to be wonder'd at, ſince, in ſuch Bones, the Marrow is not collected into a common Cavity, but diſperſed into different Cellulæ. But *Ruyſch*, in *Theſaur.* 10. *Tab.* 3. *Fig.* 2. deſcribes the Fabric of the Os Humeri of a Child, when longitudinally divided into two, in the following manner, and has given us a Repreſentation of it. *The interior Subſtance*, ſays he, *which is of an oſſeo-ſpongious Nature, is furniſhed with a medullary Liquor, and lined with a Membrane as thin as a Spider's Web; and this Membrane is furniſhed with ſmall Arteries full of Blood, which, by that means, give a rediſh Colour to the Membrane.* In the Part, alſo, laſt quoted, the ſame Author deſcribes a Portion of the Os Femoris of an Infant, in the Cavity of which, when divided with a Saw, there appears a ſlender Membrane, like a Spider's Web, which ſurrounds the Marrow; and, alſo, the ſmall Arteries diſperſed through this Membrane: Hence it is ſufficiently obvious, that there is ſuch a ſlender Membrane in the internal Cavities of the Bones. But it may ſeem dubious, whether this Membrane belongs to the Marrow, or is the internal Perioſteum of the Bone; or whether it anſwers both theſe Purpoſes. But if we conſider what *Clopton Havers* has, in his *Oſteologia Nova*, advanced, concerning the Structure of the Marrow, it is highly probable, that this Membrane is diſtinct from it; for that Author informs us, that the entire Marrow is covered with a thin and pellucid Membrane, which, in ſome Places, is of a rediſh Colour, as if ſmall Blood-veſſels were diſtributed through its Structure: But, when he cautiouſly ſeparated this Membrane from the Marrow, which was of a pretty firm Conſiſtence, he often ſaw entire Veſſels running along the Surface of the Marrow. And he ſays, he was abſolutely certain, that theſe Veſſels did not at all belong to the incumbent Membrane then ſeparated from them. Immediately after, he ſubjoins, that this Membrane not only adheres to the Bone by ſmall Veins; but that it, alſo, inſinuates itſelf into the tranſverſe Pores, found in the internal Surface of the Bones. From this Deſcription it is ſufficiently obvious, that this tender Membrane adheres to the internal Surface of the Bones; and that, under it, Veſſels, formed into another Membrane, run along the Surface of the Marrow; and, conſequently, that the internal Perioſteum is diſtinct from the Marrow contiguous to it. The Uſe, therefore, of this internal Perioſteum is not only to diſtribute the arterial Veſſels to the medullary Veſicles, and receive the venous Veſſels returning thence, but, alſo, by means of the Veſſels ſent into the Subſtance of the Bones, and returning thence, to be ſubſervient to the Life and Nouriſhment of theſe Bones. This is, perhaps, evinced in the ſurpriſing Phenomena obſervable in ſome Diſorders of the Bones. *Ruyſch*, in *Theſaur.* 10. N° 176. not only deſcribes, but, alſo, gives us a Figure of an Os Cubiti, rendered carious and corroded; in whoſe Cavity there was a bony Pipe, entirely ſeparated from the exterior Subſtance of the Os Cubiti, and capable of being moved every Way. It is not improbable, that, by ſome Diſorder of the internal Perioſteum, the interior Part of the Bone, which is principally nouriſhed by that Perioſteum, had been affected, and that the tubular internal Part of the Bone had been ſeparated from its external Part.

Hence ariſes a fourth Diviſion of Diſorders incident to the Bones.

For ſince this internal Perioſteum, as we have already obſerved, conſiſts of Veſſels, ſo Obſtructions, Inflammations, and all their Conſequences, may happen therein. Hence the contiguous Bone will be affected, and the Misfortune be next communicated to the ſubjacent Marrow.

The Bones have in their Cavities an infinite Number of Veſicles, filled with a ſubtile medullary Oil, which they keep, diſtribute not only among each other, but, alſo, between the Interſtices of the bony Laminæ, the Cavities of the Joints, and this thro' ſtreight Pores. Theſe Veſicles are furniſhed with Arteries, Veins, Lympheducts, adipoſe Ducts, ſmall Nerves, and ſlender Membranes.

We have already conſider'd the Veſicles full of a medullary Oil, lodged in the cellular Parts of the Bones about the Joints: But here we treat of the Marrow, properly ſo called, which is lodged in the Cavities of the larger Bones, and conſiſts of an infinite Number of Veſicles, collected and united in one common Membrane. *Clopton Havers*, as he informs us in his *Oſteologia Nova*, obſerved, that the medullary Oil is not lodged in the Cavity of the Membrane ſurrounding the Marrow, but is collected into ſmall Veſicles, by the Union of which, larger Lobes, cover'd with a peculiar Membrane, are form'd; and of theſe Lobes the whole Maſs of Marrow obſervable in the Cavities of the larger Bones is compoſed. But theſe minute Veſicles, containing the medullary Oil, ſeem to communicate with each other, as do, alſo, the larger Lobes formed by them: Hence this Oil may be convey'd, not only to the Subſtance of the Bone, but, alſo, to the Cavities of the Joints, from all, and even the moſt diſtant Parts of the Marrow; for, when *Clopton Havers* wounded the Membrane of ſuch a medullary Lobe, he found that the medullary Oil was not all at once, but gradually, diſcharged; but that the Whole was, however, gradually evacuated by a gentle Compreſſion, without breaking the minute Veſicles. When he, by means of the Fire, melted the harder Parts of the Marrow, he ſaw it gradually drop away, leaving the Veſicles and Lobes empty: This is, alſo, confirmed by this, that by an Increaſe of Motion, and a Defect of Nutrition, the Quantity of the Marrow is decreaſed; but enlarged by Reſt and High-living, as *Du Verney*, in *Academ. des Sciences, Ann.* 1700. ſays, has been confirmed by various Experiments. The ſame Author, alſo, deſcribes the Fabric of the Marrow to be like what we have repreſented it. But the medullary Oil ſeems capable of being diſcharged from its containing Veſicles in three Manners; for it is either derived to the Extremities of the Bones, through the communicating Veſicles and Lobules, and there ouſes through the Pores of the Cartilages, with which the Extremities of the articulated Bones are incruſtated, into the Cavities of the Joints, that thus their Motion, as we have already obſerved, may be performed, without any Attrition and Abraſion of the Bones moved; hence, alſo, it is, that, after violent Motion, the Quantity of the Marrow is leſſen'd: Or, perhaps, this thin and highly attenuated Oil enters the ſmall abſorbent Veins, and is mixed with the Blood; for it is certain, that, in ſome acute Diſeaſes, we often obſerve the whole Fat of the Body almoſt conſumed in a few Days. And, in the laſt Place, this medullary Oil ſeems to enter the Subſtance of the Bones, and procure to them a due Degree of Coheſion and Unctuoſity. When *Clopton Havers* was inveſtigating the particular Ways, by which this medullary Oil inſinuated itſelf into the Subſtance of the Bones, he found that their internal Lamina was full of numberleſs Perforations, thro' which, however, after an exact Scrutiny, he ſaw, that no Veſſels were either conveyed to the Marrow, or returned from it. In the next ſucceeding Lamina he obſerved ſimilar Pores, though not correſponding directly to the others, but ſituated in different Parts: For which Reaſon the medullary Oil cannot, from the Pores of the internal Laminæ, directly enter thoſe of the ſucceeding Lamina, but, muſt, after it has entered the Pores of the firſt Lamina, run between that, and the ſecond, till it meets with ſimilar Pores; after which it runs between the ſecond and third Laminæ, till it enters the Pores of the latter; and is thus ſucceſſively

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ceſſively diſtri'uted between the Laminæ of the Bone, till it arrives at its Surface. Thoſe Perforations, which the medullary Oil entered, were, by that Author called tranſverſe Pores; and he called thoſe Paſſages, thro' which the medullary Oil was convey'd between the Laminæ, before its Reception into the tranſverſe Pores, longitudinal Pores, becauſe they run in the ſame Direction with the Fibres which conſtitute the Laminæ of the Bones. The ſame Author, alſo, informs us, that theſe longitudinal Pores are not to be diſcovered without the Aſſiſtance of the beſt Microſcopes, but that they are of all other Parts moſt eaſily diſcovered in the Ribs. He, alſo, adds, that he could clearly diſtinguiſh them in the thickeſt Part of the Scapula, where the bony Laminæ immediately cohere to each other; and he obſerved, that the Marrow which entered theſe longitudinal Pores, adhered to their Sides like Oil. He, alſo, affirms, that in an human Bone, conſiſting of eleven or twelve diſtinct Strata of Laminæ, he obſerved theſe Pores. The tranſverſe Pores, then, only tranſmit the medullary Oil; but thoſe of the longitudinal Kind convey it between the Laminæ of the Bone, ſo that the Interſtices between theſe Laminæ are lubricated by this Oil. But ſuch a Diſtribution of the medullary Oil thro' the Subſtance of the Bone, obtains only in thoſe Parts where the bony Laminæ are contiguous to each other. But about the Joints, where they are at a conſiderable Diſtance from each other, are found the medullary Veſicles already deſcribed, and which are eaſily capable of diſtributing ſuch an Oil.

In conſequence of this curious Structure, the medullary Oil is moſt equably diſtributed thro' the Subſtance of the Bone; and ſince the internal Lamina of the Bone muſt tranſmit the Quantity of Marrow ſubſervient to its own Uſes, and thoſe of all the incumbent Laminæ, hence there is found in it the greateſt Number of tranſverſe Pores, a ſmaller Number in the ſucceeding Lamina; and the Number gradually decreaſes, in proportion, as the Laminæ approach nearer to the Surface of the Bone, as *Clopton Havers* found upon accurate Obſervation.

Thus the Bones, the moſt dry and terreſtrial Parts of the human Body, are ſupply'd with this fine and ſubtile Oil, by means of which it, perhaps, is, that the Union of the terreſtrial Parts is maintain'd, ſince it is interpoſed between them, as a kind of Glue; for the Bones, when all the Oil is, by means of Fire, extracted from them, become friable; but when calcined in a ſtrong Fire, and immerſed in Oil, they again reſume their Coheſion, as is ſhewn under the Article FIBRA.

Hence the Reaſon is obvious, why the Bones, which are furniſhed with ſuch a large Quantity of pinguious Oil, are ſo good Fuel for the Fire; ſo that *Herodotus*, in his fourth Book, intituled *Melpomene*, informs us, that the *Scythians*, when they wanted Wood, boiled the Fleſh of their Sacrifices, by kindling their Bones; and if proper Veſſels were wanting for this Purpoſe, they threw all the Fleſh into their Bellies, with an Addition of Water, after which, they put Fire to their Bones, by which means an Ox, in ſome manner, boiled himſelf. Hence, alſo, appears the Reaſon why the beſt-prepared Skeletons, where the larger Bones are perforated, and all the Marrow diſcharged by boiling, again become not only yellow, but are often moiſt with a pinguious Oil; for the medullary Oil, diſtributed between the Laminæ of the Bones, gradually advances to their Surface.

This medullary Oil is ſeparated from the arterial Blood, collected in the medullary Veſicles, and thence diſcharged for the ſeveral Purpoſes deſtin'd for it by Nature. *Clopton Havers*, in his *Oſteologia Nova*, informs us, that he obſerved the Arteries diſtributed to the Marrow quite diſtinct from thoſe which convey the vital Humours thro' the Subſtance of the Bones; and that they were, alſo, convey'd to the Marrow thro' proper Perforations in the Bone, though in ſuch a manner as not to penetrate the Bones in a direct Courſe, but run obliquely a conſiderable Way thro' the Subſtance of the Bone, before they reach'd the Marrow. The ſame Author obſerved an Artery of this Kind to run an Inch and an half within the Subſtance of the Bone, the Thickneſs of which, in that Part, hardly exceeded the eighth Part of an Inch. But he could not diſcover, whether this Artery, thro' all its Courſe, diſtributed any ſmall Ramifications thro' the Subſtance of the Bone. After ſuch an Artery comes into the Cavity of the Bones, 'tis generally divided into two Ramifications, each of which runs to oppoſite Extremities of the Bones, and ſends off numberleſs ſmall Ramifications thro' the medullary Veſicles. But tho', by means of a Microſcope, this Author obſerved many ſmall Blood-veſſels diſperſed thro' the moſt minute medullary Veſicle, yet he ingenuouſly confeſſes, that he could not diſcover whether every Veſicle was furniſhed with ſuch Blood-veſſels: And he ſeems to be of Opinion, that this Circumſtance was by no means neceſſary, ſince theſe Veſicles communicate with each other, in conſequence of which, the medullary Oil, ſecreted by the arterial Fabric of ſome of them, may be convey'd to the others. But, by the Injections of *Ruyſch*, it is certain, that the Whole of the Marrow is furniſh'd with ſuch Veſſels, in conſequence of which, 'tis highly probable, that a ſimilar Apparatus of Veſſels is found in all the medullary Veſicles.

After the medullary Oil is ſecreted, the remaining Blood is convey'd to ſmall Veins, which, being collected into larger Trunks, at laſt terminate in one Vein, which generally goes out at the ſame Perforation at which the Artery enters. The ſame Author, alſo, obſerved, that the minute Veins ariſing from the Marrow entered the Subſtance of the Bones, and there diſappeared. Perhaps theſe Veins return the Blood convey'd to the Marrow by the Arteries for its Nutriment, which nouriſh the Blood; for, in many other Parts of the Body, there is obſerved a double Apparatus of Arteries and Veins, one of which is ſubſervient to the Secretion of a particular Fluid, and the other to the Life and Nouriſhment of the Part.

But ſince theſe Parts become red by Injections, which were before white and pellucid, 'tis obvious, that there are, in ſuch Parts, ſmall Series of Veſſels, and conſequently lymphatic Veſſels. This is, alſo, certain from this, that all the Cavities of the Body, whether large or ſmall, are moiſtened by a fine exhaling Liquor, in conſequence of which there muſt be in theſe Parts ſimilar abſorbent ſmall Veins.

But whether in theſe there are any adipoſe Ducts, by means of which the medullary Oil, collected in the Veſicles, is convey'd to particular Parts, *Havers* confeſſes, he could not diſcover. He rather thought, that the contiguous Sides of theſe Veſicles were full of Pores, by means of which they communicated with each other. But he found conſiderable adipoſe Ducts, by means of which the medullary Oil was convey'd from the cavernous Parts of the Bones to the Cavities of the Joints. *Du Verney*, in *Mem. de l'Acad. des Sciences. An.* 1700. has demonſtrated, that there are Nerves in the Marrow; for he obſerved, that, in Conjunction with the Vein and the Artery, a Nerve was convey'd thro' the Bone to the Marrow. He, alſo, obſerved, that theſe three Veſſels were incloſed in a common kind of Vagina, which was a Production of the Perioſteum. Beſides, he proved by undeniable Experiments, that the Marrow was furniſhed with a Senſe of Pain; for, in the Hoſpitals, when, after the Amputation of Limbs, the Dreſſings were renewed, he often ordered the Marrow to be ſomewhat roughly touched; upon which the Patients immediately expreſſed a Senſe of Pain. And, that this Truth might be the more effectually evinced, before the Members of the Royal Academy at *Paris*, he cut off the Thigh of a live Animal, and, waiting till the Pain of the Operation was, in ſome meaſure, abated, he thruſt a Probe into the Marrow; upon which the Animal forthwith diſcovered Marks of the moſt intenſe and exquiſite Pain.

Hence ariſes the fifth and laſt Claſs, or Diviſion, of the Diſorders incident to the Bones.

Since, in the moſt concealed and internal Marrow of the Bones, there are ſuch a Variety of Humours, and ſuch a Number of Veſſels, almoſt all the Diſorders already enumerated may, alſo, happen here; ſo that this is another, and the laſt, Diviſion of the Diſorders incident to the Bones: For, firſt, we conſidered thoſe Diſeaſes which affect the Subſtance of the Bone, properly ſo called; the Differences of which were drawn from their poſſeſſing either the broad and cellular Part near the Joints, or the middle and more ſolid Parts; ſecondly, we conſidered the Veſicles full of a medullary Oil lodged in the cellular Parts of the Bones, and ſhewed, that another Kind of Diſorders aroſe from them; thirdly, we conſidered the external Perioſteum ſurrounding the Bones, and ſhew'd, that it might prove the Origin of another Species of Diſorders; fourthly, we ſhew'd, that almoſt the ſame Misfortunes were incident to the internal Perioſteum; in the fifth and laſt Place, we have conſidered the Structure and Uſe of the Marrow in the Cavities of the larger Bones, according to the Diſcoveries of the beſt Anatomiſts, that by this means the Diſorders incident to this Part might be the better known. From theſe, duly conſidered, we are better enabled to form the Diagnoſtic and Prognoſtic of Diſeaſes of the Bones, and to make Choice of proper curative Intentions, which ought to differ according to the different Natures of the Diſorders.

If the medullary Oil ſtagnates in its proper Veſicles, Emunctories, or in the Interſtices of the Bones, and, by the vital Heat and Motion, becomes acrimonious, putrid, and ſanious, it will prevent a new Secretion, obſtruct the Veſſels which convey the Humours to the Part, and thoſe which ſecrete them, and inflame its proper Veſicles. Then it will produce a Suppuration, or, by a gangrenous Putrefaction, corrupt the Fluids and Solids. Hence the Subſtance of the Bone, not only deſtitute of Veſſels, and vital Fluids, but, alſo, corroded by acrid Humours, is changed into a kind of cineritious Calx, where it is moſt thin and ſlender, that is, in the Cellulæ of the Apophyſes. By this means violent Pain, Heat, Pulſation, Tumor, Abſceſſes, and Caries, are produced. Such a Stagnation may ariſe from every Obſtruction; but, if it ariſes from an internal Cauſe, then the Diſorder is called *Spina Ventoſa*.

In this Aphoriſm are conſidered the Diſeaſes incident to the Bones, when the medullary Oil ſecreted from the arterial Blood, collected in the Veſicles diſperſed through the cellular Parts of the Bones, or accumulated in theſe Veſicles in the Marrow, becomes ſtagnant and corrupted.

From what has been ſaid, 'tis obvious, that this Oil is collected in theſe Veſicles for certain Purpoſes; and that it, perhaps, ſtag-

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nates for some time, or, at least, moves very slowly in them; for in Animals, kept in a State of Ease, 'tis found to be accumulated in large Quantities, whereas, after violent Exercise, 'tis much diminished. By Stagnation, therefore, is meant such a Condition of the medullary Oil, or of the Parts which contain and convey it, as renders it incapable of performing those Motions, which, in a State of Health, it ought necessarily to perform. For this medullary Oil ought to be capable of discharging itself into the Cavities of the Joints, in order to lubricate them. It ought, also, to insinuate itself into the Interstices of the bony Laminæ; it ought, in like manner, to pass freely thro' these minute Vesicles into those adjacent, till, at last, it is convey'd to the Parts where it is requir'd. By every Cause, therefore, which hinders such a Motion of the medullary Oil, a Stagnation will be produced. But we observe, that the mildest pinguious Substances spontaneously assume a violent Degree of Acrimony, some sooner, and some later. Mild and recent Oil of sweet Almonds, when exposed to the Summer-heat, in a few Days, becomes so acrimonious, as to burn the Fauces, when it is swallowed. Butter is generally corrupted in the same manner, tho' not so soon. 'Tis true, this Corruption is surprisingly accelerated by the free Access of the Air; so that the Marrow, stagnating in the Cavities of the Bones, requires a longer time before it is corrupted, though, by its Continuance in that State, it will, at last, degenerate. Now, the vital Heat will soon render this stagnant Oil putrid, especially since it has a natural Tendency to Putrefaction; for, in a few Days, the Marrow of the soundest kill'd Animals is generally corrupted, and becomes intolerably fetid; and, its oleous Tenacity being destroy'd, it is dissolved into a thin, but highly putrid Sanies. It will be sufficiently obvious, what terrible Misfortunes must necessarily be the Consequences of this, if we consider the highly tender Fabric of those Parts which secrete, collect, and convey, the medullary Oil; for as soon as the Arteries, convey'd to the Marrow, have reach'd to the Cavities of the Bones, laying aside, in all Probability, their callous Coats, they become so soft and pulpous, that the Marrow of an old Ox may be easily reduced to an oleous Mass between the Fingers. When a Corruption, therefore, is once begun here, the medullary Oil, converted into an acrid Sanies, will corrode the Vesicles which contain it, and, in like manner, destroy the adjacent sound ones. Thus, such a Misfortune, happening in a small Portion of the Marrow, will be soon propagated thro' the adjacent Parts. These small Vessels may, therefore, be inflamed, and all the Consequences of an Inflammation be produced in the Marrow. But a benign Suppuration can hardly happen here, because putrid Serum is of an highly acrimonious Quality; and tho' such a Suppuration should happen, yet the Pus, collected in a close Place, and not being capable of having itself discharged, would, in like manner, become attenuated and putrid. Hence, when the vital Vessels of the Marrow are destroy'd, a gangrenous Corruption, of the worst Kind, must necessarily ensue.

Besides, the Malignity of this putrid Sanies, being daily augmented, renders the Disorder worse, acts upon the whole Surface of the internal Cavity of the Bone, and will, consequently, soon destroy the external Membrane of the Marrow, and the internal Periosteum. The Substance, therefore, of the Bones thus destitute of vital Vessels will be at once corroded and destroy'd by an acrid Sanies. But this will happen soonest in the largest Parts of the Bone, or in the Cellulæ of the Apophyses, where the bony Substance is most tender, and the medullary Vesicles are lodged between the receding Laminæ of the Bone. Hence, in such Places, the corrupted medullary Oil will act upon both Sides of the bony Laminæ, and, consequently, soon destroy them. But, about the most solid Part of the Bones, the bony Substance is more slowly destroy'd, because the Bone is there thicker, and the corrupted Sanies only touches the internal Lamina of the Bone. But, as this Sanies is attenuated in proportion as it becomes acrimonious, it will gradually insinuate itself into the Pores of the external Lamella; and thus it may be convey'd between the bony Laminæ, in the same manner with the medullary Oil. By this means a Corrosion of the Substance of the Bone will happen; so that the most solid Bones, their Cohesion being destroy'd, become a kind of Calk. Thus, under the Article FRACTURA, 'tis shewn, that the largest Bones of the Body, when become carious, are broken by a very small Force.

Since, therefore, an Inflammation, with all its Consequences, may happen in these Parts, and since the Marrow is furnished with a Sense of Pain, the Reason is obvious, why Pain, Heat, and Pulsation, are found in these Parts. Surprising Tumors of the Bones have, also, been observed to be produced by this means, since the bony Laminæ, mutually receding from each other more and more, especially near the Joints, have enlarged the Bones far beyond their natural Size. Hence 'tis obvious, that the more soft cellular Parts, about the Joints of the Bones, often degenerate in a very surprising manner; and that Inflammations and Abscesses may, sometimes, be found in them. But, when the medullary Oil is corrupted, terrible Misfortunes happen, and even a violent Caries of the Bones, which is said to be present, when the corrupted Bone, as it were, moulders into Powder, and no longer resists the Probe. Hence *Celsus*, in the second Chapter of his eighth Book, informs us, "That, in a "Caries of the Bones, we may know whether the Caries is deep, "or superficial, by the Probe's penetrating farther, or less, into it." A Caries, therefore, is the worst of all the Disorders incident to the Bones, since it generally indicates a total Corruption or Corrosion of them; for the slighter Disorders of the Bones are generally cured by an Exfoliation, or a Separation of the corrupted Laminæ; whereas a Caries can never be cured by Exfoliation, but must, by means of the Knife, or actual Cautery, be removed, till we come to the live Parts.

Since, therefore, many Causes of an Obstruction may produce such a Stagnation of the medullary Oil, so 'tis obvious, that the terrible Disorders arising from the medullary Oil may draw their Origins from Causes very various and different. But Compressions or Destructions of the Vessels, by external Causes, are rarely form'd in the Marrow, because it is pretty safely defended by the Bone. 'Tis, however, pretty certain, that the Marrow may be injured by violent Contusions, or Fractures of the Bones. But when a Corruption of the medullary Oil, without any external Injury, arises purely from an internal Disorder, the Disease is generally, by Physicians and Surgeons, called a Spina Ventosa, which, according to Doctor *Freind*, in his History of Physic, was first described by *Rhazes*, an *Arabian* Physician, and received the Name of Spina Ventosa, because it consisted in a Corrosion and Corruption of the Bone, accompany'd with a pungent Pain and Tumor. For when this Disorder, beginning with a Corruption of the Marrow, has corroded the Bone, the Teguments are surprisingly swelled, and the Substance of the Bone often greatly distended. The Name of Spina Ventosa displeased *Marcus Aurelius Severinus*, who wrote a whole Treatise on this Disorder, and would rather have it called by a compound *Greek* Word, *Pædarthrocace*, which signifies a Disorder of the Joints of Children, because this Disease is most frequently incident to Children, and most generally observed about their Joints. This Author gave the following Definition of a *Pædarthrocace*: "This Disorder, says he, in his Treatise *de recond. Abscess. Natur.* is a corrupted Abscess, or Sphacelation of the Bone, "happening about the Joints of Children, in consequence of "the primary Sordes of the Sperm, and menstruous Blood, not "being sufficiently purged off, but collected and putrefied." He did not, however, deny, but this Disorder might happen to Adults; and in the same Treatise, he gives us an Instance of a Woman, arrived at the Years of Maturity, who laboured under this Disorder. *Petrus de Marchettis*, in his *Observat. Medic. Chirurg.* affirms, that he has known both Men and Women to labour under this Disorder till the twenty-fifth Year of their Age, but no longer; unless, having before been afflicted with this Misfortune, they were not as yet recovered. But as, in rickety Children, the Tumors of the Bones, about the Joints, are frequently observed without any Corruption of them, the Name of *Pædarthrocace* seems rather to be too ambiguous. And *Severinus* himself, in another Passage, of the same Work, seems to be in a kind of Hesitation, and thinks, we ought not absolutely to assert, that the Spina Ventosa is the same thing with the *Pædarthrocace*. 'Tis, therefore, proper to retain the Name of Spina Ventosa, in order to distinguish this Disorder, since it was used by *Rhazes*, the first Physician who wrote any thing distinct upon this Disorder; and the Meaning of the Word may be sufficiently limited from what has been already said; namely, that it is a Corruption of the Bone arising from a peccant Quality of the Marrow; for which Reason the Corruption begins in the interior Part of the Bone, and is gradually propagated thro' all its Substance, till, the Periosteum being corroded or torn by the tumid Substance of the Bone, a Pain and Tumor of the superincumbent Parts are produced. But, when the Corruption begins in the exterior Parts of the Bone, it proceeds gradually to the more internal Parts; and though, at last, it affects the Marrow itself, yet still it may be called a Caries of the Bone; by which means all the Disputes of the Learned, whether the Spina Ventosa of the *Arabians* was known and described by the *Greeks*, will be cut off; for that a Caries of the Bones, and a Sphacelation of them, were known to the antient *Greeks*, is certain; but we have no Accounts, that that Species of Corruption of the Bones, which arises from a previous Disorder of the Marrow, was known among them.

'Tis obvious, that the Signs of this Disorder, when at its Height, are the same with those of a deep Inflammation, which is not exasperated by the external Touch.

'Tis to be lamented, that this Misfortune is very often not to be discovered, till too late; when, for Instance, the Bone being totally corrupted, the superincumbent Parts begin to be raised in a Tumor. Now 'tis obvious, that a Discovery of this Kind must necessarily be very difficult, if we only consider, that the Disorder is lodged in the Middle of the Bones. The following Considerations may, however, give us some Light in this Affair. If we know, for Instance, that there is such a morbid Cacochymy in the Body, as is most frequently observed to affect the Bones; such as a Lues Venerea, the Scurvy, and, in young Patients, the Rickets, which last Disorder often affords a strong Suspicion of a latent

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latent Lues Venerea. From these we know, that the Causes predisposing to this Disorder are in the Body. But the almost only Sign of the Presence of the Disorder is, when a profound, obstinate, and intense Pain affects, as the Patients say, the internal Parts of the Bone, and is accompany'd with a Sense of a slow Corrosion. Besides, this Pain is increased by the Heat of the Bed, by violent Exercise, and the immoderate Use of Aromatics and Wine. But tho' the Part affected is strongly press'd or rub'd, yet the Pain is not by this means increased. Nor is this to be wondered at, since the hard Bone hinders the external Touch from acting upon the Part affected. These are the Signs of the Disorder, when beginning; but when, after the Corrosion of the Bone, the external Periosteum begins to be affected, the Pains are increased, and greatly augmented, by being rudely touch'd; at the same time a soft Tumor of the superincumbent Parts arises, and, for the most part, the Substance of the Bone is previously raised in a Tumor; and, in this Case, the Disorder is easily discovered, but too late, because the whole Substance of the Bone, being already corrupted, admits of no Cure, but will either be spontaneously separated from the live Parts, or must be remov'd either by the Knife, or the actual Cautery.

A difficult Separation, Abstersion, and Cleansing of the Part, prognosticate many Misfortunes, and a difficult Cure.

If we carefully consider what has been hitherto said, concerning the Nature of this Disorder, it will be sufficiently obvious, that, in such a Case, the worst Symptoms are to be dreaded, and that the Cure must be highly difficult; for, in the middle Cavity of the hard Bone, is lodged the corrupted medullary Oil, which, in order to the Cure, must be removed, and washed away. But there is no way in which it can be discharged, unless the Bone is previously corroded, or a Perforation artificially made in it. This Oil, in the mean time, will by its Continuance, and the Heat of the Body, become daily more acrid, by which means all the Symptoms will be increased. Besides, if the internal Surface of the Bone should be corroded by this acrid Sanies, tho' the Parts of the corrupted Bone should be separated from the sound live Parts, yet they would remain in the middle Cavity of the Bone, and, by their Bulk and Asperity, injure the tender Marrow, and by that means produce new Misfortunes. 'Tis certain from practical Observations, that surprising Degeneracies of the Bones, intolerable Pains, and Death itself, have been produced by this Disorder.

The Cure of this Disorder is most commodiously attempted, first, by filling all the Vessels with such Decoctions as are not only of an highly penetrating and abstergent Nature, but, also, resist Putrefaction; secondly, by moving all the Humours strongly, and soliciting a Discharge of Sweat, by means of warm Vapours, properly apply'd to the Body; and, thirdly, at the time the Sweat is flowing, by determining the Motion of the Humours to the Part affected, by means of Fomentations, and warm Vapours apply'd to it in particular.

When the Tumor of the superincumbent Parts opened spontaneously, *Rhazes*, according to Doctor *Freind*, in his History of Physic, was for no other Method of Cure, than removing the corrupted Part of the Bone, either by the Knife, or the actual Cautery. *Petrus de Marchettis*, in *Observat. Medic. Chirurg. rarior. Sylloge*, as soon as a Patient complained of a pungent Pain in the Joints of his Hands or Feet, tho' there was no Tumor, yet ordered a deep Incision to be made, and the corrupted Part of the Bone to be removed by the Knife, and the actual Cautery. But, before this cruel Method is used, the following Measures, which have often been attended with Success, may be taken.

1. The Fomes of the Disease is lodged in the Cavities of the Bones, in consequence of which external Remedies cannot reach it, except in so far as, being received into the bibulous Veins, and mixed with circulating Blood, they are along with it convey'd thither. The only Method, then, remaining, seems to be, to fill the Body with a thin Fluid, which is not only penetrating and detergent, but, also, resists Putrefaction. Then let this Fluid be carry'd through the Vessels with an accelerated Motion, and its Efficacy, as much as possibly, determined to the Part affected; for in this Case 'tis highly probable, that such a Fluid being convey'd to the Part affected thro' the vital Vessels lodged in the Substance of the Bone and the Marrow, as yet not destroy'd, the Putrefaction may, by that means be stopt, the corrupted Parts separated from such as are live and sound, the medullary Oil diluted, resorbed by the bibulous Veins, and carry'd out of the Body by Urine or Sweat; for that the putrid Humours, lodged in the Cavities of the Bones, may be resorb'd by the Blood, is sufficiently obvious from a putrid hectic Fever, which, when rising to a great Degree of Malignity, often infects the Blood with a violent Cacochymy. But the liberal Use of such a penetrating, detergent, and antiseptic Fluid will hinder the absorbed putrid Humours from proving injurious. The best Ingredients for preparing a Fluid of this Kind are those Woods which are furnish'd with an aromatic Fragrance, and a large Quantity of balsamic Resin, such as Juniper-wood, Box-wood, Oak, and, what is of all others the most proper for this Purpose, Guaiacum-wood, a Decoction of which, when duly prepared, is gently acid, and highly balsamic. But as these Woods are hard, and contain a large Quantity of Resin, the Water cannot easily penetrate into them, unless they are previously shav'd down, digested for some time in a gentle Heat, and boiled for some Hours in a close Vessel. Sometimes, when these Woods stand in Digestion, a small Quantity of some alcaline Salt is added, that the Water may the more easily penetrate into their Substance; and, towards the End of the Boiling, a few Ounces of rectified Spirit of Wine are to be added, that all the resinous Portion of the Woods may be the better dissolved. Thus:

Take of green and weighty Guaiacum-wood, ten Ounces; and of the Salt of Tartar, half a Dram: After these are digested in six Pints of Water for twenty-four Hours, then boil for two Hours in a Vessel placed within another, (in Diplomate) adding towards the End four Ounces of rectified Spirit of Wine. Then let them boil a little, and keep for Use; and upon the Residuum of the Decoction pour three Pints of fresh Water, and let them boil for four Hours.

Of the former Decoction, let the Patient take four Ounces, four times a Day, in the Morning at Seven o'Clock, then at eleven, then at four in the Afternoon, and lastly at Seven in the Evening.

The weaker or second Decoction he may use for common Drink.

Decoctions of the Woods of Juniper, Sassafras, Box, and Oak, may be prepared in the same manner.

The Fomentations are to be Linen Cloths soak'd in these Decoctions.

In such a Decoction may be infus'd Shavings of the Wood of Sassafras, which, being furnish'd with a kind of volatile Fragrance, cannot bear long boiling without losing its medicinal Virtues. The Patient is to take a few Ounces of this Decoction three or four times a Day, using, at the same time, for common Drink, a weaker Decoction, prepared by an Affusion of Water to the Residuum of the former. A larger or a lesser Quantity of these Decoctions is to be us'd according to the Age, the Temperament, or Strength, of the Patient; but 'tis always beneficial to drink as much of them as he can bear; for by this means the whole Body will be fill'd with a penetrating detergent and antiseptic Liquor, which is the first Intention of Cure.

2. After the Vessels are full, and the Body begins to become tumid by a liberal Use of these Decoctions for some Days, it is expedient to accelerate the Motion of the Humours thro' the Vessels: We may at Pleasure increase the Motion of the Blood by Frictions, for which Intention they are generally us'd; but this Effect is most commodiously produc'd by a warm Vapour surrounding and acting upon all the Parts of the Body, and by that means procuring a Sweat; by which the fluid Drink is dissipated, and a fresh Opportunity afforded of filling the Body again with the same Decoctions: For this Purpose the Patient is to be stript naked, cover'd with a waxed Linen Cloth and exposed to the Steam or Vapour of warm Water, or, which is of all others the most effectual, that of Spirit of Wine. This penetrating Vapour can hardly act upon the Body for a few Minutes, before the Patient begins to become warm, and have his Body cover'd with a profuse Sweat, which is sometimes observ'd to smell of the Decoction drank. By this means so profuse Sweats are excited, that the most robust Patients often fall into Deliquiums, when expos'd for a considerable time to the Steam of kindled Spirit of Wine. For this Reason great Caution is necessary, since we know from Experience, that the Use of this Method, in a Lues Venerea, has sometimes destroy'd the Patients, whilst, by unskilful Practitioners, these Sweats have been longer continued, than the Strength of the Patient would admit. In weak Constitutions 'tis sufficient to continue the Sweating for half an Hour every Day, and the most robust and vigorous can hardly bear it for two Hours; for which Reason 'tis expedient, that the Physician should always be present, in order to judge how long the Sweat should be continued. After this the Patient is to have his Body wiped with warm Linen Cloths, and be laid in a warm Bed; by which means he will sweat gently for an Hour or two. But since, after the Sweat, the Access of the cold Air would produce the worst of Consequences, 'tis expedient the Air of the Chamber should be sufficiently warm, which End is most commodiously obtain'd by kindling proper Materials in a Stove. For this Purpose, also, some rather order, that the Patient should be in Bed, without a Shirt, and have the Steam of kindled Spirit of Wine convey'd to his Body, by means of a Funnel under the Bedclothes; for by this means the Action of the cold Air on the Body will be prevented. But whether the Patient sweats in a Bed, in a Quadrangular Box, or under what is commonly called a *Craticula*, the Head is always to be free and disengag'd for fear of a Suffocation. After the Sweating is over, Broth prepared of

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of lean Flesh, or a small Quantity of Wine, is to be exhibited, that the Strength, which is often languid after such profuse Sweats, may be recruited.

'Tis sufficiently obvious, that, by an accelerated Motion of the Humours, such a penetrating Decoction must be convey'd thro' the whole Body; but 'tis requisite, the Efficacy of the Medicine should act principally upon the Part affected. There are Means of determining the Efficacy of Medicines, at Pleasure, to any Parts of the Body. This End is obtained by such Measures as increase the Impetus and Quantity of the vital Fluids in the Part to which the Efficacy of the Remedies ought to be determin'd. This Intention is answer'd by diminishing the Resistance of the Vessels in these Parts, and increasing the Velocity of the Circulation in them. The former of these Ends is procured by the Application of warm and soft Fomentations, Cataplasms or a like Nature, or by Cupping-glasses; and the latter by Frictions, and the Applications of stimulating Substances: In Disorders of this kind, 'tis highly beneficial to foment the Part affected, with Woolen Cloths soak'd in a warm Decoction of Guaiacum, and to make the Steam of kindled Spirit of Wine act first upon it.

This Method, if persisted in for a considerable time, often produces happy Effects, especially when us'd in Conjunction with a Diet of an attenuating Nature, and such as resists an oleous Putrefaction.

When all the Circumstances mention'd in the preceding Paragraph concur, such a penetrating and antiseptic Decoction, by an accelerated Motion of the Fluids, is rapidly carried thro' the Vessels, and the corrupted Matter eliminated from the whole Body, and especially from the Part affected, in consequence of the Determination of the Decoction thither by means of Fomentations, and warm Vapours: But such an obstinate Disorder is not to be remov'd in a few Days; for which Reason such Sweats are for three or four Weeks to be daily excited, a due regard, at the same time, being always had to the Strength of the Patient. The Strength is in the mean time to be supported thro' the Whole of the Cure, by the best Aliments, but such as are of easy Digestion, and not pinguious; for, by this Method, the Patients are generally greatly emaciated, and their whole Fat not only dissolv'd, but also, carried off, by Sweat; and, as the principal Malignity of the Disorder arises from the corrupted medullary Oil, 'tis obvious, that pinguious Substances are to be abstain'd from, lest they should increase the Nature of the Disease: Broths, therefore, prepared of Flesh, and the Fat carefully remov'd, Biscuits, Decoctions of Barley, Oats, Rice, and Millet, Panadas, and ripe Summer Fruits, are most proper in this Case: For Drink, Whey, or Milk diluted with three times the Quantity of Water, may be us'd; but a weak Decoction of Guaiacum, render'd palatable by Raisins or Liquorice, is still better, and more efficacious.

All these Measures, duly taken, often produce the desir'd Effect in such Disorders, even after the Extirpation of the Parts has been judg'd necessary. The Remission of the Symptoms, and the Subsiding of the Tumor, are the Signs, by which we know, that the Cure proceeds well; but 'tis to be observ'd, that sometimes the Fabric of the Bones, by means of these Disorders, so degenerates, that thro' the whole Remainder of the Patient's Life there remains a considerable Tumor in the Part affected, tho' the whole Corruption of the medullary Oil is happily remov'd, and such a Tumor is often afterwards attended with no other Inconvenience, than the Deformity of the Part: It has, also, been sometimes observ'd, that, during the Cure, the corrupted Part of the Bone has been happily separated, and, a Suppuration of the soft incumbent Parts happening, extracted, and a successful Cure produc'd.

But, as this Disorder is frequently incident to Children, they cannot always be prevail'd upon to drink a sufficient Quantity of such Decoctions; and, as their tender Bodies are hardly able to bear this Method of exciting Sweats, it is proper once a Week to give an hydragogue Purge; and, on the intermediate Days, gentle Scorbutics. The Part affected is, in the mean time, to be continually wrapt up in penetrating Fomentations prepar'd of Vinegar, Salt, Urine of sound Persons, Rue, and *Alliaria*. Whey is, at the same time, to be us'd for Drink. Thus, says *Van Sweiten*, I have known a Cure happily produc'd by the Use of these Measures for some Months: But in such a Case there is almost always a small Perforation spontaneously made in the Integuments, a certain Quantity of Sanies is discharg'd, the Swelling of the Bone gradually subsides, and sometimes the Parts of the corrupted Bone come out, and an hollow Cicatrix remains ever after.

But when this Disorder is become so inveterate, that almost the whole Marrow is corrupted, and the vital Vessels running thro' it totally destroy'd, scarce any happy Effects are to be hoped for from the best Remedies; for the Use of Decoctions will be of no Service, since the Soundness of the Vessels is requisite, in order to convey their medicinal Virtues to these Parts. In such a Situation the worst Consequences are to be expected, since the corrupted Oil, which daily becomes more malignant, is lodg'd in the Cavity of the Bone: The only remaining Method, therefore, is, to make a Perforation in the Bone, and by that means procure a Discharge of the corrupted Matter; for by so doing we imitate Nature, which, by a Corrosion of the Bone, sometimes throws out all the corrupted Oil; and the best Surgeons furnish us with Instances, in which this Method has succeeded.

If the arterial venous or lymphatic Vessels are obstructed, either thro' a Defect of fresh Fluids, or a Stagnation of those convey'd to them, similar Disorders are produc'd in these Parts, the Order being only inverted and chang'd.

Thus, 'tis obvious from what has been said, what terrible Misfortunes are produc'd, when the medullary Oil becomes stagnant and corrupted in its Vesicles, or in the Interstices of the Bones. But that there may be a due Secretion of the Marrow, and that it may be reabsorb'd, perhaps, partly by the Veins, without being consum'd by the Motions of the Body, a quick Circulation of the vital Juices thro' these Vessels, which convey the Fluids to the Marrow, and carry them thence, is requisite. If, therefore, an Obstruction is, by any Cause, produc'd in the Texture of those Vessels, which are distributed among the Laminæ of the Bones, which near the Joints recede from each other, or in those Vessels which run thro' the Periosteum, or the Membrane which externally surrounds the Marrow, the Secretion of the medullary Oil will be disturb'd, and that Part of it, which is already secreted, will become stagnant, since the tender medullary Vesicles, and their Emunctories, are compress'd by the adjacent obstructed and tumid Vessels. The same Effect will, also, be produc'd by an Obstruction of the Vessels of the external Periosteum; for we have already observ'd, that it transmits all the Vessels, which are either convey'd to, or return from, the Cellulæ of the Bones, and the Marrow: Thus a Disorder of the external Periosteum may be propagated, not only thro' the whole Substance of the Bone, but, also, thro' the Marrow, only with this Difference, that the Order of the Symptoms is inverted; for when the medullary Oil is first corrupted, being chang'd into an acrid Sanies, it will corrode the Vesicles, in which it is contain'd, and their vascular Texture. Hence it will, in like manner, destroy the Membrane of the Marrow, the internal Periosteum, and the Substance of the Bone; and, at last, having corroded the Bone, it will affect the external Periosteum; and thus the Misfortune will be propagated from the internal to the external Parts: But, when the Disorder begins with an Inflammation of the external Periosteum, it proceeds from the external to the internal Parts; and, first affecting the Bone, at last conveys the Taint to the Substance contain'd in its Cavity; for that a Disorder of the Periosteum forthwith affects the Bone, is sufficiently obvious from what is said under the Article CAPUT, and *Aristotle* in *Histor. Animal. Lib.* 3. *Cap.* 13. observes φιλόμενα τὰ ὀστᾶ τῶν ὑμένων σφακελίζει, "that "the Bones become sphacelated when depriv'd of their Membranes." But, how soon the vital Fabric of the Bone may be destroy'd by a Disorder of the Periosteum, is sufficiently obvious in a Paronychia, in which a violent Inflammation, accompanied with intolerable Pain, happens in the Periosteum of the last Phalanx of the Fingers; for such a Disorder hardly continues for a few Hours, till the whole Phalanx is entirely sphacelated, and at last falls off.

The Diagnostics, therefore, Prognostics, and Cure, of these two Species of Disorders are the same.

For when the Texture of the Vessels of the external Periosteum of the Substance of the Bone, and of the internal Periosteum are first affected, the Disorder will at last reach the medullary Vesicles; and the same Effects will be produc'd, as if the Disorder had proceeded from a Corruption of the medullary Oil; for which Reason the Method of Cure must be the same in both Cases.

Hence 'tis, also, obvious, that there is great Danger according to the different Parts, in which the Cause of the Disorder is lodg'd; and these things premis'd render the Diseases of the Bones better understood.

Tho' the slightest Inflammation in the external Periosteum may produce those Disorders, which otherwise arise from a Corruption of the medullary Oil; yet 'tis obvious, that such an Inflammation may be more easily cur'd, than when the internal Periosteum, and the Membrane surrounding the Marrow, are inflam'd; since in the former Case happier Effects are to be expected from external Medicines; and since, in many Parts of the Body, the Surgeon's Hand may have immediate Access to the Part affected, by making an Incision in the Integuments; in consequence of which, its Separation, Abstersion, and Mundification, may be the more easily obtain'd. It is, therefore, a Consideration of great Moment, in what Part of the Body the first Cause of

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of the Diſorder is lodg'd; and, every other Circumſtance being alike, the Danger always bears a direct Proportion to the Depth of the Diſeaſe. Thus, from what has been ſaid, we are better qualified not only to know, but, alſo, to cure, the Diſorders incident to the Bones.

1. A ſlight Inflammation of the Bone is produc'd by an Inflammation of the external Perioſteum, the Cauſes of which are very numerous, as is obvious from what is ſaid under the Article INFLAMMATIO: And its Effects are ſufficiently known.

The moſt ſlight Diſorder, therefore, of the Bones is that which begins in the external Perioſteum; which, as we have already obſerv'd, conſiſts of an Intertexture of numerous Veſſels; for which Reaſon an Inflammation may happen in it from a great Number of Cauſes ſpecified under the Article INFLAMMATIO; and when an Inflammation is once produc'd, all its Effects will follow; and its various Terminations are to be expected.

2. Such an Inflammation is known by the Symptoms common to a profound or deep Inflammation, the Pain of which is increas'd by being preſs'd.

As is obſerv'd under the Article INFLAMMATIO, the principal Signs of an Inflammation are Tumor, Redneſs, Heat, Pain, and Pulſation, in the Part affected. But, if the external Perioſteum alone is inflam'd without the incumbent Parts, 'tis ſufficiently obvious, that the Tumor and Redneſs cannot be perceiv'd; in which Caſe the Pain, the Heat, and ſometimes, alſo, the Pulſation, are to be accounted the Signs of the Inflammation; but when the Part affected is ſo preſs'd, that the Effects of the Preſſure reach to the Perioſteum, the Pain is augmented; and by this means the Diſorder is diſtinguiſh'd from an Inflammation of the internal Perioſteum, the Membrane ſurrounding the Marrow, or the Marrow itſelf; for in ſuch a Caſe, as we have already obſerv'd, the Pain is not augmented by external Preſſure, becauſe all theſe Parts are ſafely defended by the hard Bone. But in thoſe Parts where the Bones are cover'd by ſtrong Muſcles, and a large Quantity of Fat, about the Os Femoris, for Inſtance, the Pain is not augmented, except by a ſtrong Preſſure.

3. Many terrible Symptoms are to be expected, unleſs this Diſorder is ſpeedily cured.

For, ſince all the Veſſels conveyed to the Subſtance of the Bone paſs thro' the external Perioſteum before their Inſertion in the Bone, 'tis obvious how dangerous an Inflammation in this Part muſt be; for all the Diſorders before enumerated may ariſe from an Inflammation of the Perioſteum; and, tho' the Injury done to the Bone is only very ſlight, yet tedious and long protracted Misfortunes often enſue; for, if the Bone is only corrupted in a ſmall Part, the Perioſteum will never grow there again, but the adjacent and incumbent Parts will be irritated by an acrid Sanies, by which means malignant and incurable Ulcers are often produc'd; eſpecially if this happens in thoſe Parts of the Body, where a large Quantity of Fleſh covers the Bone, and hinders a ſafe Inciſion to the Part affected. Thus, for Inſtance, when the Perioſteum of the Os Femoris, near its Articulation with the Coxa, is inflamed and ſuppurated; 'tis obvious how difficult the Cure muſt be, and what a Train of Misfortunes muſt ariſe from that Circumſtance. Thus, ſays *Van Sweiten*, I know a hopeful Youth, who, after neglecting a deep Inflammation of the Perioſteum of the Os Femoris in this Part, which ran between the Interſtices of the Muſcles, could never have the Part depurated, tho' various Inciſions were made in order to procure a Diſcharge of the Pus. Hence, after an intolerable Degree of Miſery protracted for ſome Years, he at laſt died of a purulent Tabes. When, therefore, from proper diagnoſtic Signs, 'tis certain that ſuch a Diſorder is preſent, the moſt efficacious Remedies are forthwith to be tried, in order to cure the Inflammation by a Reſolution. Thus, a Suppuration in theſe Caſes ſo dangerous, and, which is ſtill more ſo, a Gangrene, will be prevented.

4. This Diſorder is cured like other Inflammations, making it, at the ſame time, the principal Intention, to carry the peccant Matter from the Bone outwards; which End is obtain'd by Fomentations, and ſometimes by Inciſions.

In this Caſe, therefore, all the Meaſures mention'd under the Article INFLAMMATIO, for the Cure of a reſolvable Inflammation, are forthwith to be taken: And as, in this Caſe, the Corruption of the ſubjacent Bone is juſtly to be dreaded, we are by all means to endeavour to draw the Diſorder to the external Parts. For this Purpoſe all thoſe things are to be us'd, which are ſpecified under the Article INFLAMMATIO, as proper for preventing the ſpreading of that Diſorder; a Revulſion, for Inſtance, of the Impetus of the Blood to other Parts, by Suction, Friction, Epiſpaſtics, and Veſiatories, Fomentations, Baths, Fontanels, Setons, and ſtrong Purging. Thus the ſofteſt Fomentations and Cataplaſms are to be Day and Night applied to the Part affected; for, by this means, the external Integuments will be render'd flaccid, and the inflammatory Matter is ſometimes deriv'd to that Part, where it does far leſs Harm, than if the ſubjacent Bone was affected by it: There are many Inſtances of deep internal Inflammations thus deriv'd to the external Parts, and the Patients by that means greatly reliev'd; and *Hippocrates*, in the forty-ninth Aphoriſm of his ſeventh Section, tells us, "That a Tumor and Redneſs, appearing on the Breaſt of Pa-"tients labouring under a Quinſey, are lucky Omens, ſince "they are Signs, that the Diſorder is carried outwards." Hence, in that Diſorder, the moſt skilful Phyſicians with ſo great Succeſs foment the Parts with the ſofteſt Fomentations, and even ſometimes irritate them by Sinapiſms. In the moſt violent Iſchiatic Pains, *Hippocrates* ordered the Parts affected to be ſoften'd with Baths, Fomentations, and Liniments. And, in his Treatiſe *de Locis in Homine*, *Cap.* 9. he directed the peccant Matter to be extracted by means of Cupping-glaſſes. 'Tis, alſo, well known, that, in the ſevereſt Tooth-ach, the Patient is forthwith greatly reliev'd, when the affected Side of the Face becomes tumid and inflated.

But when, after the unſucceſsful Uſe of theſe Meaſures, no Relief is obſerv'd to be afforded, the only remaining Method is, to make an Inciſion of the Integuments all at once, as far as the Bone, if the State and Condition of the Bone admit of ſuch a Practice. In an highly acute Paronychia, which generally ariſes from an Inflammation of the Perioſteum of the laſt Phalanx of the Fingers, or of the Tendon affixed to it, unleſs an Inciſion is ſoon boldly made to the Bone, the Bone is ſphacelated, and the Phalanx falls off after intolerable Pains, and ſinuous Ulcers, which often prey upon all the adjacent Parts, and render the whole Hand rigid and immoveable. In Iſchiatic Pains, after Fomentations, Baths, and Cupping-glaſſes, had been us'd in vain, all the antient Phyſicians ordered the Part affected to be deeply cauteriz'd. The good Effects produc'd by an Inciſion of the Teguments of the Cranium, after Contuſions and Wounds, in order to hinder the Bone from being affected, are ſpecified under the Article CAPUT.

That ſuch an Inflammation is tending to an Abſceſs, is known, firſt, by the manifeſt Signs of a previous Inflammation; ſecondly, by the Pulſation, Fever, and irregular Horripilation; and thirdly, by an Abſence of the Signs of Reſolution.

So long as there are any Hopes, that the Inflammation of the external Perioſteum may be cured by Reſolution, all the Meaſures directed in the preceding Paragraph are to be tried. But, when the Diſorder tends to a Suppuration, other Methods become requiſite; and the following Signs inform us, that an Abſceſs is to be expected.

1. There is ſome Hope, that a gentle Inflammation may be cured by Reſolution; but when all the Symptoms are violent, and continually augmented, the beſt Termination of the Diſorder, which can be expected, is a Suppuration. An intenſe Pain, a Perception of a violent Heat, and an acute Fever, are the principal Signs, which inform us, that ſuch a profound Inflammation is incapable of Reſolution, and tends to an Abſceſs.

2. When an Inflammation tends to a Suppuration, all its Symptoms are generally augmented. The Pulſation then will be greater, and more diſtinctly perceiv'd, in the Part affected; a Fever, alſo, the Concomitant of every conſiderable Suppuration, will generally be preſent. But the principal Sign is the irregular Horripilation, which when preſent, always lays a Foundation for ſuſpecting a Suppuration in the internal Parts. In this Caſe the Patients are ſeiz'd with a Senſation like that produc'd by pouring cold Water on the Body, almoſt in the ſame manner as happens in the Beginning of intermittent Fevers. But ſuch an Horripilation is immediately remov'd, and afterwards returns in an irregular Manner. Now 'tis certain from practical Obſervations, that ſuch irregular Horripilations are preſent, when any conſiderable Inflammation is converted into a Suppuration.

3. The Signs of a Reſolution are explain'd under the Article INFLAMMATIO: But, in ſuch Caſes, the Recency of the Diſorder, the Slightneſs of the Pain, the Smalneſs of the Fever, and a moderate Senſe of Heat in the Part affected, lay a Foundation for the Hopes of a Reſolution. If, therefore, Symptoms contrary and oppoſite to theſe are preſent, an Abſceſs, or a Gangrene, is to be dreaded.

But, that an Abſceſs is actually preſent, may be known from the Signs of a deep-lodg'd Suppuration, ſpecified under the Articles INFLAMMATIO and ABSCESSUS.

Unleſs, from previous Signs, 'tis evident that a violent Inflammation has preceded, the Abſceſs, ſubſequent to it, is not eaſily diſcover'd. In Abſceſſes lodg'd near the Surface of the Body,

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Body, the Softneſs of the Part, the Fluctuation of the contain'd Pus, and the Whiteneſs, are ſufficiently ſhewn under the Article SUPPURATIO: But where the Diſorder is lodg'd about thoſe Bones, which are cover'd with a large Quantity of Integuments, the latent Abſceſs is not without the greateſt Difficulty to be diſcover'd; for ſometimes only a ſmall Quantity of Pus, collected between the Bone and the Perioſteum, produces no ſenſible Tumor: It, alſo, frequently happens, that, in ſuch Caſes, the Pain does not remit, tho' the Pus is form'd; becauſe, being gradually increas'd in Quantity, unleſs it corrodes the Perioſteum, it makes a Way for itſelf, between it and the ſubjacent Bone; and, thus by a ſlow Dilaceration, ſeparates the Perioſteum from the Bone, a Circumſtance productive of the moſt intenſe and intolerable Pain: 'Tis not, therefore, to be wonder'd at, if ſuch a latent Diſorder ſhould ſometimes deceive the moſt skilful, and remain undiſcover'd till too late; that is, till the Bone is corrupted, or the Pus, after corroding the Perioſteum, is diſtributed thro' the adjacent Parts, and produces malignant ſinuous Ulcers. But when an Abſceſs is formed about the Spine of the Tibia, it may be very eaſily diſcover'd, whereas in other Places we almoſt only know, that an Abſceſs is form'd, by the Signs from which we conclude, that an Abſceſs will be form'd.

Then the Pus, corroding the Perioſteum, will ſoon lay the Bone bare, deprive it of Veſſels, and corrupt it. See the Article SUPPURATIO.

In a Suppuration, as is obſerv'd under the Article INFLAMMATIO, the ſmall Veſſels, infarcted with an inflammatory Matter not capable of Reſolution, are broken. When, therefore, this happens in a Suppuration of the Perioſteum, the vital Communication is deſtroy'd in that Part of the ſubjacent Bone, which receiv'd its Juices from the Veſſels already deſtroy'd by the Suppuration, and conſequently a Diſorder muſt neceſſarily happen in the Bone itſelf. Beſides, the Pus, lodg'd in a deep Part, will become gradually more acrid, and corrode the contiguous Surface of the Bone, by which means all the Symptoms will be ſoon augmented. And the Quantity of the Pus being enlarg'd, unleſs, in conſequence of a Corroſion of the Perioſtium, it is diſpers'd thro' the adjacent Parts, it will more and more ſeparate the Perioſteum from the Bone; and conſequently a larger Portion of the Bone will be depriv'd of its Perioſteum, and corrupted. Beſides all theſe Diſorders, which happen to the ſubjacent Bone, from a Suppuration of the Perioſteum, all thoſe are alſo to be dreaded, which are produc'd by Pus, remaining long, and becoming corrupted, in a cloſe Place. See the Article SUPPURATIO.

For this Reaſon the Abſceſs is to be forthwith opened, the Pus eliminated, and the Ulcer cleans'd. Then the Bone is to be treated in the manner directed under the Article CAPUT, when the Cranium is denudated, or laid bare.

In order to prevent all theſe Misfortunes, and cure thoſe others already preſent, there is no other Method left, than boldly to make an Inciſion in all the Integuments, that thus the Pus may be diſcharg'd, and an Acceſs procur'd to the Bone affected. It is difficult, and often highly dangerous, to make ſuch a deep Inciſion. But, as *Celſus*, in *Lib. 7. Cap.* 33. when ſpeaking of the Extirpation of Members, excellently obſerves, that "'Tis a Matter of no Moment, whether the only remaining Method of Relief be ſufficiently ſafe or not;" but ſince in ſuch Caſes, not only the Reputation of the Phyſician, but alſo, the Life of the Patient, is at Stake, great Prudence and Caution are requiſite. Anatomy demonſtrates the Situation of the large Veſſels, and other Parts, which ought to be avoided. Tis however, to be obſerv'd, that, in different Perſons, the Situation of the Veſſels is often found very different; for which Reaſon, in difficult Caſes, 'tis more expedient, firſt, to make an Inciſion in the Fat and Skin, and then to conſider, whether, and in what manner, we may ſafely proceed farther, than to plunge the Knife at once to the affected Bone; for it often happens, that when an Inciſion is made in the common Integuments, the Pus, having corroded the Perioſteum, and diffuſing itſelf thro' the adjacent Parts, finds a way for its own Diſcharge, and points out a Method of making a ſafe Inciſion into the ſinuous Ulcer, and arriving at the Part affected. All the Meaſures taken in the Cure of an Abſceſs, ſpecified under the Article SUPPURATIO, are, alſo, to be taken; and ſince, in Caſes of this kind, the Pus generally makes ſinuous Paſſages for itſelf, and ſince the Parts on which it acts are ſordid, eſpecially when it has remain'd for a conſiderable time, mild Detergents are generally injected; eſpecially ſuch as are prepar'd of Aloes, Myrrh, Maſtich, and Sarcocolla, with an Addition of Honey, Turpentine, and the Yolk of an Egg: For theſe not only anſwer the Intention of cleanſing the Ulcer; but, alſo, prove beneficial to the affected Bone. Beſides, all thoſe Meaſures recommended under the Article CAPUT, in the Cure of the Cranium, when depriv'd of the Perioſteum, are to be taken in ſuch Caſes, when, after an Abſceſs, the Bone is depriv'd of the Perioſteum.

That ſuch an Inflammation is tending to a Gangrene o the Part, is known, firſt, from the Signs of the higheſt Inflammation; ſecondly, from a Freedom from Pain in the Part affected, without a ſufficient Cauſe; and thirdly, from a denſe ſlow-increaſing, and not very painful, Tumor of the incumbent Parts.

Under the Article INFLAMMATIO, when treating of the various Events of an Inflammation, 'tis obſerv'd, that a Gangrene ſometimes ſucceeds it; and the Signs are deſcrib'd, by which a future Gangrene is foreſeen, and a preſent one known; but, among theſe Signs, there are ſome, by which a Gangrene is only diſcover'd in the external Parts of the Body, which, however, are not ſufficient for diſtinguiſhing a deep-ſeated Gangrene of the Perioſteum; for the Bliſters of the Epidermis, the livid, dark, and black Colour, are not preſent, till all the Parts are corrupted. But here we treat of thoſe Signs, by which a Gangrene of the Perioſteum may be diſcover'd, tho' the incumbent Parts are not as yet affected with a Gangrene.

1. That a terrible Inflammation is preſent, may be known from the Violence, and ſudden Augmentation, of the Symptoms. Now the principal Signs of an Inflammation of the Perioſteum, as we have already obſerv'd, are Pain, Heat, and a Senſe of a deep-ſeated Pulſation; and, if all theſe are very violent, and increaſe ſuddenly, a Gangrene is juſtly to be dreaded.

2. How fallacious a Sign is the ſudden Removal of Pain in violent Inflammations, is ſhewn under the Articles INFLAMMATIO and GANGRENA, where the Reaſons are, alſo, given, why, when the Veſſels are deſtroy'd by a violent Inflammation, a Ceſſation of Pain enſues. The ſame, therefore, will happen in this Caſe; when the Inflammation is cur'd by Reſolution, the Pain is indeed diminiſh'd, but ſlowly and gradually; nor will a good Reſolution ever happen after a very violent Inflammation, as is obvious from the Article INFLAMMATIO: When, therefore, without a good and laudable Cauſe, that is, without the Signs of a Reſolution, a ſudden Removal of Pain happens after a violent Inflammation, it is a bad Sign, and always indicates, that a Gangrene has ſucceeded the Inflammation.

3. Then the Taint is propagated thro' the incumbent Parts; and, firſt, the Panniculus Adipoſus is affected; which, by very ſlight Cauſes, is often rais'd into a large Tumor. But as all the Symptoms of an Inflammation ceaſe, when a Gangrene is preſent, the Tumor will not have the Hardneſs and Reſiſtance obſervable in a Phlegmon; but will be flaccid, hardly ſenſible of any Pain, and, in this Caſe, always indicates, that the Tunica Adipoſa is, in like manner, becoming gangrenous. See the Article SUPPURATIO.

That a Gangrene is preſent, may be known, not only from the Signs enumerated in the preceding Paragraph, but, alſo, from the pale, cineritious, and livid Colour of the incumbent Parts.

For when thoſe Signs, by which we diſcover that an Inflammation of the Perioſteum tends to a Gangrene, continue, or are increas'd, we know that the latter is either already preſent, or will ſoon be ſo. The chang'd Colour of the Integuments, mention'd under the Article INFLAMMATIO, indicates, that the Gangrene, begun in the Perioſteum, is already propagated to the incumbent Parts. Thus *Hippocrates*, in the ſecond Aphoriſm of his ſeventh Section, tells us, "That 'tis a bad Sign, when the "Fleſh becomes livid, in conſequence of a Diſorder of the "Bone."

Then the Bone, being laid bare, and deprived of Veſſels, and vital Juices, is by the acrid, putrid, and gangrenous Matter, conſum'd and render'd carious; and the Contagion is quickly ſpread to the adjacent Parts.

For, when the Perioſteum is corrupted by a Gangrene, the vital Influx and Efflux of the Humours is totally deſtroy'd in that Part of the Bone, which was covered with the now corrupted Part of the Perioſteum; and conſequently the external Lamina of the Bone will become mortified: The intermediate Veſſels between this and the ſucceeding Lamina may receive the vital Juices, either from the Veſſels of the internal Perioſteum, diſtributed thro' the Subſtance of the Bone, or from the Veſſels running between the Lamina of the Bone, or thoſe riſing from the external Perioſteum, which is as yet ſound: But the mortified Part, incumbent upon theſe Veſſels, will not only ſoon ſuffocate and deſtroy their Life; but the gangrenous Gore of the mortified Parts will, alſo, corrode all around it, and by that means produce a terrible Caries of the Bone. Now when all the incumbent Parts, together with the Bone itſelf, are corrupted, a Sphacelus is preſent, which ſoon infects the adjacent Parts: Hence the Reaſon is obvious, why this Diſorder ſpreads ſo faſt.

For this Reaſon an Inciſion is forthwith to be made, in the Part affected, to the Bone; and the Wound is to be cleans'd, and

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and the Bone cur'd in the manner directed under the Article CAPUT.

The whole Hopes of a Cure conſiſt in this, that, if there is ſtill any Part of the Subſtance of the Bone alive, this live Part may be ſeparated from the incumbent mortified Parts, and regenerate the loſt Subſtance; or, if all the Veſſels diſpers'd thro' the whole Thickneſs of the Bone are already mortified, an Aperture is to be made in the Bone, thro' which the corrupted Marrow may be diſcharg'd. For 'tis impoſſible the Marrow ſhould retain a laudable Quality, when the whole Subſtance of the Bone is mortified. The latent Diſorder is, therefore, to be forthwith uncovered, by making an Inciſion to the Bone; nor is this Practice ſo barbarous and cruel, as at firſt it may ſeem, ſince all the incumbent Parts are generally gangrenous. *Celſus*, therefore, when in the ſecond Chapter of his eighth Book treating of the Cure of theſe Diſorders, juſtly adviſes. "Firſt, to lay "bare the Bone, to extirpate the Ulcer, and, if the Diſorder of "the Bone is larger than the Ulcer, to remove the Fleſh, till "the Bone appears ſound on all Hands." For if, as we have before obſerv'd, there is ſometimes a Neceſſity for making an Inciſion in the live Parts, covering the inflamed Perioſteum, in order to hinder the Diſorder from affecting the Bone, ſuch an Inciſion will be ſtill more requiſite, when a Gangrene and Corruption of the Bone are already preſent; for there can be no Depuration of the affected Bone, unleſs there is firſt a Paſſage outwards made for that Purpoſe.

After the Inciſion, therefore, is made, dry Pledges are to be put between the Lips of the Wound, which, when left till next Day, and becoming tumid with the affluent Humours, will enlarge the Orifice of the Wound, and diſcover the naked Bone to the Eye: We may, alſo, know from its chang'd Colour, its Roughneſs and other Circumſtances, what Kind and Degree of Corruption is preſent. See the Article CAPUT. *Hippocrates*, in the eighth Chapter of his firſt Book *de Morbis*, ſeems to have approved of this Method of Cure; for, when he is treating of a Sphacelus of the Brain, he deſcribes a Corruption of the Cranium in theſe Words: "If the Brain is ſphacelated, a Pain "ſeizes principally the anterior Part of the Head, which "becomes tumid and livid, the Patient being in the mean "time ſeized with a Fever and Horror. In this Caſe, an "Inciſion is to be made in the tumid Part; and the Bone, "when cleans'd, is to be ſcrap'd." Under the Article CAPUT, the Method is deſcrib'd of making ſmall Perforations in the Cranium, in order to make way for the ſubjacent ſmall Veſſels, that by this means the corrupted Part of the Bone may be the ſooner, and the more eaſily, ſeparated, and the loſt Subſtance regenerated; and 'tis ſufficiently obvious, that this Method muſt prove beneficial in the like Diſorders of other Bones. But, that an happy Effect may be expected from this Method, 'tis neceſſary the whole Subſtance of the Bone ſhould not be corrupted; but live Veſſels, lying under the mortified Parts, are requiſite. When, therefore, a Bone laid bare by Inciſion 'is found totally corrupted, *Celſus*, in the ſecond Chapter of his eighth Book, orders the mortified Part to be removed with the Knife, or the actual Cautery; and in this he has been follow'd by celebrated Surgeons: But Nature, aſſiſted with laudable Aliments, and proper Remedies, is ſometimes capable of doing a great deal in Caſes of this Nature.

An Inflammation of the internal Perioſteum proceeds from the ſame Cauſes, produces the ſame Effects with reſpect to the interior Part of the Bone, and terminates like an Inflammation of the external Perioſteum, either in an Abſceſs, or a Gangrene; but is worſe by reaſon of a want of Exhalation. Hence the whole Marrow, and then the whole Bone, are deſtroy'd by an highly fetid Putrefaction and Caries.

The internal Perioſteum is by the Bone more ſafely defended, than the external Perioſteum; for which Reaſon the former is leſs frequently ſubject to Diſorders, than the latter. But ſince the internal Perioſteum is vaſcular, there may be many Cauſes of an Inflammation in it, and conſequently various Terminations of theſe Inflammations: And as the external Perioſteum diſtributes numberleſs Veſſels thro' the Subſtance of the Bone, and receives thoſe which return from it, ſo this ſeems to hold true in the internal Perioſteum. And as the Diſorders of the external Perioſteum principally affect the Bone, becauſe, when theſe Veſſels are deſtroy'd, the Circulation of the vital Juices thro' the Subſtance of the Bone is of courſe aboliſh'd, the ſame will hold true in Diſorders of the internal Perioſteum; ſo that the internal Part of the Bone may be corrupted, whilſt its external Part is as yet ſound. This ſeems to be confirmed by the Obſervation of Mr. *Ruyſch* already mention'd; for, in the Cavity of the cubital Bone, a bony Pipe was lodg'd ſo entirely ſeparate from its exterior Subſtance, as to be diſengag'd and moveable. Hence, as, in the Bones of the Cranium, the Veſſels of the Pericranium touch the external Lamina, and thoſe of the Dura Mater the internal Lamina, ſo the ſame almoſt happens in the larger hollow Bones; and as, in the Diploe between the two Laminæ of the Cranium, theſe Veſſels of the Pericranium and Dura Mater meet, ſo likewiſe the ſame probably happens in the middle of the Bone. *Ruyſch*, as he informs us in *Theſaur.* 10. N° 176 preſerv'd an Os Humeri, in which an oſſeo-ſpongious Subſtance, like the Diploe of the Cranium, is found between two Laminæ; and he affirms, that he obſerv'd this in ſome other Bones. Hence he explains how ſuch a bony Pipe could be ſeparated from the external Part of the Bone. The ſame Author, in his *Muſeum Anatom.* and *Theſ.* 8. N° 8. *Tab.* III. *Fig.* 2, 3, and 4. has a ſimilar Inſtance for the Confirmation of this Doctrine; for from the Os Tibiæ corrupted by an inveterate Caries, by the Force of Nature, there was form'd a Piece of Bone, round and hollow, the Figure of which he has delineated in his Tables. All the Diſorders, therefore, which happen to the Bones, in conſequence of an Inflammation, Suppuration, or Gangrene of the external Perioſteum, may, in like manner, happen, if the internal Perioſteum labours under the ſame Misfortunes. But if we conſider, that all the Corruption produced by Diſorders of the internal Perioſteum is lodg'd in the Cavity of the Bone, and cannot poſſibly find a way for its Elimination, it will be ſufficiently obvious, that Diſorders of the internal Perioſteum are moſt to be dreaded; for, by this means, the Marrow will ſoon be corrupted, and all the Misfortunes before-mention'd produc'd.

Hence 'tis, alſo, obvious, that whether this Membrane is itſelf firſt inflam'd, or afterwards injur'd, by a Contagion communicated from the Marrow before corrupted, the ſame Diſorder, that is, a Caries of the Bone, will ſoon be produc'd to ſuch a Degree, as hardly ever to admit of a Cure.

For the internal Perioſteum covers the concave Surface of the Bones, and is contiguous to the common Membrane, which ſurrounds the collected medullary Follicules. Hence 'tis ſufficiently obvious, that, when the internal Perioſteum is inflamed, the Marrow muſt ſoon be affected; for, if this Inflammation terminates in an Abſceſs, or a Gangrene, 'tis evident, that the Pus or Sanies muſt corrode the highly tender Fabric of the Marrow; and conſequently that it will be ſoon corrupted; and all the Misfortunes already enumerated produc'd. The Difficulty of the Cure will, alſo, appear, from what has been hitherto ſaid. Nor do I think, that any one can readily diſtinguiſh, whether the Membrane ſurrounding the Marrow, the Marrow itſelf, or the internal Perioſteum, is inflam'd, ſince, in either Caſe, the Signs of a profound Inflammation are preſent, the Pain is not increas'd by a pretty ſtrong Compreſſion, and the Effects are the ſame, that is, a Caries of the Bone, and a violent Corruption of the Marrow; for which Reaſon the ſame Method of Cure is requiſite in either Caſe.

This Diſorder, whilſt in a State of Inflammation, may be known; firſt, from the general Signs of an Inflammation; ſecondly, from the Deepth of the Part affected; thirdly, from an obtuſe, fix'd, and continual Pain, which yields to no Medicines, and is not increas'd by Preſſure; and, fourthly, from the Increaſe of ſuch a Pain after muſcular Motion.

Since this Diſorder is generally diſcover'd too late, that is, from its bad Effects, thoſe Signs by which it may be diſcover'd in the Beginning are carefully to be inveſtigated, which, however, is not to be done without great Difficulty.

1. Since moſt of the Signs of an Inflammation can only be obſerv'd in external Parts of the Body, ſo the Heat alone, the Pain, and the Fever, the general Concomitant of conſiderable Inflammations, are to be conſider'd as Signs of this Diſorder; for the Pulſation can hardly be diſcover'd in ſo deep a Part, for this Reaſon principally, that the Veſſels of the internal Perioſteum are highly tender.

2. If theſe Signs of an Inflammation are preſent, and, at the ſame time, no Diſorder perceiv'd in the external Parts, 'tis greatly to be ſuſpected, that the Diſeaſe is lodg'd in the moſt internal Parts of the Bones.

3. Patients in this Situation generally complain of a Senſation, as if their Bones were ſplit from the internal to the external Parts. The obtuſe Pain, indeed, remains fix'd in the ſame Part; but is, at the ſame time, highly uneaſy, becauſe it can neither be mitigated by changing the Poſture of the Part affected, nor by means of any Fomentations or Cataplaſms; and is not, at the ſame time, augmented by a ſtrong Compreſſion. The Reaſon of this is obvious, from what has been before ſaid.

4. 'Tis alſo, obvious, from what has been ſaid before, that the medullary Oil can paſs from the Cavities of the Bones into the Cavities of the Articulations of the moveable Bones, where it ſerves to lubricate and anoint the Extremities and Ligaments of the Articulations, and is conſum'd by an Increaſe of Motion in the Body. Hence, therefore, by ſuch an Increaſe of Motion, the Fluids, ſtagnating in the Cavities of the Bones, are put in Motion, and their Motion is render'd briſker, and more accelerated. If, therefore, a Pain ariſes from an Inflammation of

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the internal Periosteum, or of the medullary Membrane, 'tis evident the Pain must be increased by an accelerated Motion of the Humours thro' these Parts. Such an Increase of Pain is always produced in the Patients by this Cause, as, also, by their being heated by a copious Use of Wine, or aromatic Substances.

This Disorder is cured, first, by the general Method used in Inflammations; see the Article INFLAMMATIO: And, secondly, by the Method already proposed, strictly and duly observed, as soon as the Signs of a beginning Resolution appear.

The Cure of an Inflammation by Resolution is, of all others, the best and most desirable, but cannot, in this Case, be obtained, without the greatest Difficulty. For, during the first Days of such a Disorder, Physicians are rarely consulted, whilst the obtuse and deep-seated Pain is either entirely neglected, or treated with external Remedies; which, in the very Nature of the Thing, can hardly be expected to do any Service. But, how much the Recency of the Disorder contributes to the Cure of an Inflammation by Resolution, is obvious from the Article INFLAMMATIO. Besides, Fomentations, Frictions, and Baths, so useful in other Inflammations, cannot, in this, reach the Part affected. Hence, in this Case, nothing remains to be done, but by Venesection, and antiphlogistic Purgatives, to diminish the Impetus and Quantity of the arterial Fluid; and to use a slender Diet, in Conjunction with attenuating and diluting Medicines.

Secondly, If, after the Use of these Medicines, the Symptoms are mitigated, but not entirely removed, the Physician is not to give over his Efforts, but to use his utmost Skill, in order to make a perfect Cure; for the smallest Disorder left in this Part often afterwards lays a Foundation for the worst Misfortunes of an incurable Nature. Though, therefore, the Inflammation is allay'd, yet 'tis still expedient to use the Method before recommended, that is, filling the Body with penetrating Decoctions, and taking the other Measures there prescribed; that, by this means, all Remains of the former Disease may be removed. But since, by this Method of filling the Body with Decoctions of the Woods, an artificial Fever is raised, 'tis sufficiently obvious, that it cannot be attempted, till the Inflammation is cured; otherwise all the Symptoms would be render'd worse.

But if a Suppuration, or Gangrene, should happen in this Part, and be known, not only by the palpable Signs of a previous Inflammation, but, also, by the deep-seated, fixed, and obtuse Pain; then the Method by Decoctions is the only Thing capable of producing a Cure.

But when the Medicines proper for the Cure of an Inflammation by Resolution have not been used at all, or too late; or when the Inflammation is so violent, that it cannot be resolved, tho' all these Medicines have been seasonably applied; we must then expect other Terminations of the Inflammation, that is, a Suppuration, or a Gangrene; for, since there is no Method for the Discharge of the Pus, or the gangrenous Gore collected here, 'tis sufficiently obvious, what terrible Misfortunes must be produced by that means. That these Terminations of an Inflammation are present, may be known from the Absence of the Signs of a Resolution, and the fix'd, deep-seated, and obtuse Pain. In this Case, the only Hope of Relief consists in the Method before recommended, that is, filling the Body with Decoctions, and, by that means, washing off all the corrupted Matter. But if the Disorder cannot be cured by these Measures, and if an Incision can be safely made to the Bone, it is to be perforated to its Cavity, that thus the corrupted Sanies may be eliminated. That this Method has been sometimes used with great Success, is sufficiently obvious from what has been already said. A Salivation, excited by means of Quicksilver, has often been tried in Cases of this Nature; but, says *Van Sweiten*, I never saw it prove effectual. Hence 'tis obvious, that no good Effects can be produced by any other Remedies.

For then the internal Part of the Bone becoming putrefied, tumefied, inflamed, and carious in all its Substance, the external Periosteum is inflamed, distended by the Tumor of the Bone, and corroded by the acrid Matter; and the incumbent Parts, being corrupted by the slow-spreading Contagion, become spongious, tumid, and painful, till the whole Member is at last destroy'd. In such a Situation, Extirpation is the only Method of Relief.

For the Pus, retain'd in a warm and close Place, will become attenuated, putrid, and acrid. See the Article SUPPURATIO. And, if a gangrenous Gore is present, it will still sooner degenerate, and assume a malignant Quality. The medullary Oil discharged, in consequence of its having corroded its containing Vesicles, will become stagnant, and acquire a rancid Acrimony, of an highly malignant Nature. Thus the whole Cavity of the Bone will soon be fill'd with an highly putrid and acrid Sanies. The concave Surface of the Bone will, therefore, be corroded by this acrid Ichor; the Vessels distributed between the Laminæ of the Bones will be inflamed; the Laminæ, before contiguous, will be separated; a Tumor will happen in the Substance of the Bone; and, at last, all the Parts will be corroded. Whilst these Changes are happening, fresh Pains arise; for all the Parts contain'd in the Cavity of the Bone being corrupted, the former Pain often ceases, or, at least, remains very obtuse: But when the external Periosteum, which is highly sensible, begins to be distended by the Tumor of the Bone, or corroded by the acrid Sanies penetrating to it, the Patient is afflicted with the most intense and violent Pains. Then the soft Parts, incumbent on the Bone, begin to be affected and corrupted by the slow-spreading Contagion; and in these Parts, especially in the Membrana Adiposa, arise Tumors, sufficiently large, but spongious, and yielding to the Touch. Thus the Disorder is gradually propagated to the external Parts, the Whole of which become corrupted by degrees, till at last, the whole Member is destroy'd; for all the Parts, together with the Bone, being mortified, a true Sphacelus is present, which can only be cured by Extirpation. In malignant Gangrenes, and violent Contusions, tho' many of the Parts are destroy'd, yet there is still some Hope, that there are, under the mortified Parts, live Vessels; by means of which, the corrupted Parts may be separated, and the lost Substance regenerated. But, in this Case, the subjacent Parts are first corrupted.

A Venereal or Scorbutic Quality of the Humours, or their Tendency to that Disorder call'd the Rickets, are frequently the Causes of this Disorder. Hence we may understand what Gummata, Tophs, Nodes, Exostoses, Abscesses, a Caries, and a Spina Ventosa of the Bones are.

Tho' an Inflammation of the internal Periosteum, of the Membrane surrounding the Marrow, and of the Follicules containing the medullary Oil, may arise from almost all the Causes capable of producing an Inflammation in other Parts of the Body; yet, since these Parts are so safely defended, an Inflammation is rarely produced in them by the common Causes. But 'tis observable, that, in some Disorders, a Cacochymy generated in the Blood is deposited in the Bones, and corrupts their Fabric. Of this Kind is

A Venereal Quality of the Blood. 'Tis certain, from frequent Observations, that, in this Disorder, the subtile Contagion, mix'd with the Blood, is afterwards deposited in various Parts of the Body, where it gradually corrodes all around it; and is, at the same time, possess'd of such a Quality, as to corrupt the sound Humours, and so transform them into its own Nature, that, by their means, the like Misfortunes may not only be produced in the Neighbourhood of the Part affected, but, also, in remote Parts; for it is certain, that the Venereal Poison surprisingly insinuates itself into the oleous and mucous Parts of the human Body: 'Tis not, therefore, to be wonder'd at, if it insinuates itself into the pinguious Oil, whether dispersed thro' the Substance of the Bones, or collected in their Cavities; and then, by a generally slow Corrosion, corrupts all the Parts. The worst, and most malignant Disorders of the Bones are frequently observed to arise from a Lues Venerea; especially when it is inveterate, and has taken deep Roots; for the Bones are rarely affected by this Disorder, when recent. But, when the Disease is of long standing, those intolerable and obstinate Pains arise, which often yield to no Remedies; but, becoming milder by a Salivation, or Decoctions of the Woods, afterwards return. The Marrow is, also, affected by the Lues Venerea; and 'tis certain from numberless well-vouch'd Observations, that this Disease often produces very terrible Disorders of the Bones. Thus *Van Sweiten* informs us, that he saw the Ribs, the Sternum, and the Clavicles, consumed by a Lues Venerea, the Vertebræ of the Neck corroded by a Venereal Ulcer of the Pharynx, and the outward Plate of the Right Bregma render'd so carious by a Lues Venerea, as to fall off. These Observations are sufficient to prove, that a Lues Venerea is frequently the Cause of Disorders in the Bones.

As for a Scorbutic Quality of the Humours; the first Signs of a Scurvy generally appear about the Gums and Teeth: And 'tis well known, not only that the Teeth, being render'd carious by this Disorder, fall out by Pieces, but, also, that the bony Part of the Maxilla is greatly affected by it; and the obstinate Ulcers of the Legs, so frequent in scorbutic Patients, are often accompanied with a Caries of the Bones. In the most malignant Species of this Disorder, all the Bones have been found carious; an Instance of which we have in *Mem. de l'Acad. des Sciences, An.* 1699 And *Petit*, in his *Traité des Maladies des Os, Tom.* 2. informs us, that in a great Number of Soldiers, who died of a Scurvy, he found the Periosteum, which was in a great many Parts corrupted entirely, separated from the Bones, and under it a dark-colour'd or blackish Lymph, of an intolerably fetid Smell. Hence 'tis obvious, how unfriendly a Scurvy, especially of the inveterate Kind, is to the Bones; for it has, then, many Symptoms in common with a Lues Venerea, and especially nocturnal Pains.

As for a Tendency of the Humours to that Disorder call'd the Rickets; 'tis obvious that this Disorder has a great Affinity with the

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the Scurvy, and often lays a Foundation for ſuſpecting an Admixture of a Venereal Taint; for it moſt frequently ſeizes Children procreated by Parents infected with a Venereal Taint, or who have been ſo unfortunate as to have frequent Gonorrhœas. But we obſerve, that, in this Diſorder, the Bones are ſeverely affected; for the Teeth become black, and, growing carious, fall out; the Epiphyſes become protuberant, and are, by a ſlight Force, ſeparated from the Bones to which they adhered: And, in the higheſt Degree of the Rickets, a Caries and Spina Ventoſa of the Bones are frequently obſerved.

From what has been ſaid, we are the better enabled to underſtand the following Diſeaſes of the Bones; that is,

Gummata, which are Tumors ariſing out of the Subſtance of the Bones, of ſuch a tenacious and ſoft Nature, as to yield to the Fingers, almoſt like the Gum of Trees, when ſoften'd by the Rays of the Sun, or before it has acquired its perfect Hardneſs. In Patients labouring under a Lues Venerea, ſuch Tumors are frequently obſerved, not only on the Head, but, alſo, on the middle and moſt ſolid Parts of the larger Bones. Now theſe Tumors ſeem to be produced, when the Veſſels, running between the bony Laminæ, being either obſtructed or inflamed, are dilated, and by that means raiſe the incumbent Laminæ. Perhaps, alſo, in ſuch Tumors, the Subſtance of the Bone, properly ſo call'd, which is naturally hard, degenerates into a preternatural and morbid Softneſs. There are, in practical Authors, ſurpriſing Inſtances, in which, from latent Cauſes, not only particular Parts, but, alſo, the Whole, of the Bones have been render'd ſoft. From ſuch Obſervations, 'tis ſufficiently obvious, that in certain Diſorders, the Bones become ſoft; and it has, at the ſame time, been frequently obſerved, that the Bones, thus ſoften'd in particular Parts, have there become tumid. Hence appears the Origin of the Tumors call'd *Gummata*.

'Tis, alſo, obvious, from what has been ſaid, that ſuch a Softneſs of the Bones ſometimes ſucceeds Abſceſſes of the adjacent Parts; and that ſometimes the Origin of this Diſorder is lodged in the Subſtance of the Bones, and eſpecially when they are affected with a Lues Venerea. Such Gummata have, however, been ſometimes obſerved on the Bones, when no adequate Cauſe could be diſcover'd. Perhaps the acid Cacochymy of the Blood may ſometimes prove the Cauſe of a Softneſs of the Bones. Thus in weak Children, whoſe Aliments are, for the moſt part, of the aceſcent Kind, and whoſe Veſſels and Viſcera are, at the ſame time, ſo weak, that they cannot ſubdue the Quality of the Chyle generated from their Aliments, the Rickets, and a preternatural Flexibility of the Bones, are ſo frequently produced. *Ruyſch*, in his *Theſaur.* 4. N° 38. informs us, that when the Liquor, in which he preſerved a Fœtus, was made too acid, the Ribs were ſo ſoften'd, that they could not only be bended any way, but even ty'd in a Knot, like a Rope.

As for Tophs and Nodes; when Tumors of the Bone ariſe, harder than *Gummata*, but ſofter than the Subſtance of the Bone, they are call'd Nodes, or Tophs. The celebrated *Boerhaave* uſed to compare Tophs to the Horns of Calves, when as yet under the Skin; and Nodes to theſe Horns, after they appear'd without the Skin, but had not, as yet, acquired the Hardneſs of an Horn. Hence 'tis obvious, that Nodes and Tophs only differ from *Gummata* in their different Degrees of Firmneſs.

As for Exoſtoſes; theſe are Tumors which equal, or, perhaps, ſurpaſs, the Bone in Hardneſs. Sometimes the whole Bone is enlarged into an Exoſtoſis, as is ſometimes obſervable in the Bones of the Carpus and Metacarpus, thoſe of the Tarſus and Metatarſus, and the Phalanges of the Fingers. In the larger Bones, this very rarely happens, ſince only particular Parts of them are generally raiſed into Exoſtoſes. The Nutrition and Increaſe of the Bones, and the Reſtitution of the loſt Subſtance of the Bones, conſidered under the Articles CAPUT and FRACTURA, ſufficiently prove, that the hard Subſtance of the Bone may be reſtored by means of laudable Humours convey'd in a due Quantity, and with a proper Impetus, thro' ſound Veſſels. Beſides, in the Cure of Fractures, it is often obſerved, eſpecially in young Patients, that the Callus generated is raiſed above the Surface of the Bone, and often remains an hard and bony Tumor, during the whole Life of the Patient. But that Subſtance which unites and conſolidates fractured Bones, and reſtores the Subſtance loſt, is firſt ſoft, and only gradually acquires a bony Hardneſs. See the Article VULNUS. If therefore, by any Cauſe, thoſe Veſſels are dilated, which convey the Matter by which the Bone is nouriſhed, and the loſt Subſtance repair'd, there may be an Enlargement of the Bulk, and a Tumor produced in the Bone. And ſince between the Laminæ of various Strata, of which the large Bones conſiſt, 'tis highly probable, that ſuch Veſſels are diſtributed, as is obſerved under the Article CAPUT, ſo the Bulk of the Bone may be enlarged in theſe Interſtices, and the Laminæ of the Bone ſeparated farther from each other; in conſequence of which, the Thickneſs of the Bone will, in theſe Parts, be augmented.

Now, according as theſe Tumors protuberate to the external or internal Parts, according as they affect different Parts of the Bone, according to the Diverſity of the adjacent Parts injured by theſe Tumors, and according to their different Bulk and Figure; ſo various, and often ſurpriſing, Misfortunes are produced by them, as we learn from practical Obſervations.

Ruyſch, in *Theſaur.* 10. N°. 178. *Tab.* II. *Fig.* 4. and 5. informs us, that, by means of a Saw, he longitudinally divided a Part of the Os Tibiæ, affected with an Exoſtoſis; upon which he found, that an hollow Exoſtoſis had ariſen from the internal Surface of the Bone, and render'd the Cavity, in which the Marrow was contain'd, narrower. Hence 'tis obvious what Misfortunes might ariſe from ſuch an Exoſtoſis; ſince, by its means, the Marrow might be compreſs'd and injur'd; and conſequently all the Symptoms ariſing from that Circumſtance, and already enumerated, were to be dreaded. The Exoſtoſes ariſing in the middle and moſt ſolid Part of the large Bones are generally pretty hard in all their Parts; but ſuch as appear near the Joints, have ſometimes been found only with their external Parts hard; and, under this hard Cruſt, ſurpriſing Degeneracies of the ſoft Parts lodged between the receding bony Laminæ, into fungous Fleſh, Pus, Sanies, and Mucus, have been obſerved. See *Petit Maladies des Os, Tom.* 2. If the interior Lamina of the Cranium is raiſed into ſuch a Tumor, 'tis ſufficiently obvious, that, in conſequence of the Compreſſion of the Brain, Epilepſies, Palſies, and Apoplexies, are to be dreaded. But, as Exoſtoſes ariſing on the external Surface of the Bone ſlowly diſtend the incumbent Perioſteum, highly intenſe, and ſometimes long-protracted, Pains are produced by that means; which, however, ceaſe ſooner, if the Tumors are of an acute Figure.

Such Tumors of the Bones ſometimes ſucceed external Injuries; and are, alſo, obſerved to proceed from internal Cauſes; but from none more frequently, than from a Lues Venerea. In a malignant Scurvy, the Ulcers of the Legs, ſo often incurable by all Remedies, are frequently accompanied with a Caries, and ſometimes with Exoſtoſes of the Bones. Exoſtoſes ariſing from external Cauſes are generally pretty mild, tho' not to be cured without great Difficulty; whereas thoſe ariſing from internal Cauſes ſometimes diſappear, or, at leaſt, are much diminiſhed, when the Diſorder producing them is removed, as is frequently obſerved in Venereal Exoſtoſes. 'Tis, alſo, certain, that Exoſtoſes may be produced by ſlight Contuſions, eſpecially in thoſe Parts where the Bones are only cover'd with a few Integuments. Hence ſuch Tumors are ſo frequently obſerved in the Spine of the Os Tibiæ. And as this Part is much obnoxious to external Injuries, *Petit*, in his Treatiſe *des Maladies des Os*, informs us, that there are few Men who have not ſome Aſperities in the Surface of that Bone. What ſurpriſing Exoſtoſes may be produced by ſtrong Contuſions, is obvious from a Caſe recorded in *Mem. de l' Acad. des Sciences*, *An.* 1720.

Exoſtoſes produced by external Injuries are rarely cured, unleſs they can be removed by a chirurgical Operation; but, as they are generally of a pretty mild Nature, this Method, which is always difficult, and ſometimes dangerous, is not adviſeable, unleſs by their Bulk, Figure, or Situation, they are productive of conſiderable Inconveniencies.

But Exoſtoſes ariſing from internal Cauſes are often cured, or, at leaſt, much diminiſhed, when theſe Cauſes are removed. But if, after the Cure of theſe Diſorders, the Exoſtoſes ſhould remain, as is ſometimes obſervable after the Cure of a Lues Venerea, an Inciſion is to be made in the Integuments, and the Exoſtoſes removed either by the Knife, or the actual Cautery, if any terrible Misfortune is to be dreaded from ſuffering them to remain. Yet, ſays *Van Sweiten*, I have ſeen many Caſes, in which, after the Cure of a Lues Venerea, the Exoſtoſes have remain'd for many Years, without any farther Diſadvantage than the Deformity of the Part. The moſt commodious Method of removing Exoſtoſes is found in *Petit's Traité des Maladies des Os, Tom.* 2.

As for Abſceſſes; under the Article SUPPURATIO is deſcribed what is meant by an Abſceſs of the ſoft Parts; and 'tis obvious, from what has been already ſaid, that the Bones are ſubject to ſimilar Misfortunes. 'Tis, alſo, certain from practical Obſervations, that not only in the cellular Parts, near the Joints of the Bones, but, alſo, in the middle Cavities of the large Bones, Inflammations have degenerated into Abſceſſes. Beſides, an Abſceſs is ſaid to happen in the Subſtance of the Bone, when one or more of thoſe Laminæ, by the Union of which the Bone is form'd, becoming mortified and corrupted, are diſengaged and ſeparated from the ſubjacent live Veſſels, and a Subſtance like the ſeparated Laminæ regenerated; and, on this regenerated Part, a new Perioſteum is form'd, by which means the Subſtance loſt is reſtored. See the Article CAPUT, where 'tis ſaid, that *Hippocrates*, in Wounds of the Head, obſerved, that a denudated Bone, or the Remains of a Weapon left in the Bone, were generally ſeparated from that Part of the Bone which was ſtill furniſhed with Life and Blood. We may, alſo, refer to Abſceſſes of the Bones, thoſe ſurpriſing Obſervations of *Ruyſch*; ſince in the middle Cavities of the large Bones a round bony Pipe was found, ſeparate from the reſt of the Bone.

As for a Caries of the Bones; this is a Diſorder far more terrible, and entirely diſtinct from an Abſceſs of the Bones; for, in

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in an Abſceſs of the Bone, it ſtill retains its Coheſion, and is generally ſeparated in the Form of a Lamina; whereas, in a Caries, the Subſtance of the Bone is ſo corrupted and corroded, that it moulders away into a kind of Powder; ſo that a Caries indicates a far greater Corruption of the Bone, and a far greater Difficulty of Cure. How a Caries of a Bone, cover'd with Fleſh and Integuments, may be known, we ſhall hereafter ſpecify: But when the Bone may be either ſeen with the Eyes, or touch'd with a Probe, the Caries is eaſily diſcover'd. *Celſus*, in the ſecond Chapter of his eighth Book, informs us, "That we may "ſoon, by means of a Probe, diſcover a Caries of the Bone; "ſince the Probe will penetrate farther, or leſs, according as "the Caries is deeper, or ſuperficial;" for the carious Part of a Bone has ſcarce any Solidity, but yields to the Probe; and, when the Probe comes to the ſound Part of the Bone, a Reſiſtance is perceived. Hence *Celſus*, in the ſame Part, after, for the Cure of theſe Diſorders, he has order'd the Bones to be raſp'd, adds; "But we muſt raſp them no longer, than till we have ar"rived at a white or ſolid Part of the Bone; for 'tis certain, "that the Blackneſs is removed, when we come to a white, "and the Caries, when we come to a ſolid Part of the Bone."

As for a Spina Ventoſa, which is the worſt Species of a Caries of the Bones; ſince the Marrow, corrupted by an internal Cauſe, corrodes them, we have already treated of it.

Hence we know why a carious Bone ſo variouſly changes its Colour, from a whitiſh-blue, to a pinguious white, a yellow, a cineritious, a livid, and a black Colour, and what Degree of Corruption each of theſe Colours denotes.

When, under the Article CAPUT, thoſe Signs are conſidered, by which we know that the Cranium is affected, it is obſerved, that, in live Perſons, the Colour of ſound Bones is ſomewhat rediſh or bluiſh; and that the firſt Sign of a vitiated Bone is a Change from this Colour to a white, a yellow, a dark, and at laſt, a black Colour. The ſame, alſo, holds true in the other Bones; and generally the greater Degree of Corruption is indicated, the more they recede from their natural Colour. The firſt Change of Colour is, when the Bone becomes white, which, as it were, denotes a beginning Mortification in the Bone. Hence, when ſmall Perforations are made in a Cranium thus affected, the firſt Sign, that the Cure ſucceeds happily, is, when the white Surface of the Bone begins to aſſume a rediſh Colour. But ſince we have already demonſtrated, that the medullary Oil paſſes thro' Pores of the Laminæ mutually applied to each other, to the external Surface of the Bone, where it is, perhaps, received by the ſmall Veins of the Perioſteum, and mix'd with the Blood; 'tis ſufficiently obvious, that when the vital Fabric of the Bone is deſtroy'd, the Oil convey'd thither muſt be accumulated, become ſtagnant, and corrupted. For this Reaſon the Bone will become pinguious and yellow, as *Celſus*, in the ſecond Chapter of his eighth Book, excellently obſerves, when ſpeaking of the Diſorders of the Bones. "The vitiated Part, ſays he, generally "firſt becomes pinguious, and then either black, or carious." In proportion as the Diſorder increaſes, the Colour becomes cineritious, livid, and at laſt black, which indicates a perfect Mortification, and a violent Corruption of the Bone. This ſucceſſive Change of Colour is, alſo, obſerved in the Teeth, when they begin to be corrupted; for, firſt, they become pinguious, then yellow, then dark-colour'd, and, laſt of all, black; when, becoming carious, they fall out by Pieces.

From what has been ſaid, 'tis obvious, why a carious Bone is unequal, rough, ſpongious, friable, ſoft, and eaſily broken; for the external and internal Arteries no longer compreſs the Laminæ of the Bone.

'Tis obvious, from what has been already ſaid, that the Bones conſiſt of Laminæ mutually applied to each other; and that between theſe Laminæ Veſſels are diſtributed, which convey the vital Humours, requiſite to the Life and Nouriſhment of the Bones; and eſpecially in thoſe Parts of the Bones, where large Interſtices are left between theſe Laminæ. The ſmall Arteries, therefore, lying between the exterior Laminæ of the Bone, and the next ſucceeding one, when in their Diaſtole, endeavour, almoſt in every Point, to raiſe the external Laminæ; but the ſmall Arteries diſperſed thro' the Perioſteum, when dilated by an equal, or perhaps a greater Force, reſiſt the Elevation of this Lamina. When, therefore, by whatever Cauſe, the Perioſteum is corrupted, the Action of the Arteries running between the Laminæ of the Bone will prevail, and the external Lamina will be elevated; and 'tis ſufficiently obvious, that the ſame may happen in all the Interſtices between the Laminæ of the Bone. Perhaps the Action of theſe ſmall Arteries may appear too inconſiderable for elevating an hard Lamina of Bone, and ſeparating it from its ſubjacent Laminæ; but if we conſider, that theſe ſmall Arteries, almoſt in all Points of ſuch a Lamina, repeat their Pulſations four thouſand times in an Hour, it will not, perhaps, appear ſo ſurpriſing, that ſo ſmall a Force, ſo often applied, ſhould produce ſuch an Effect. When, in Wounds of the Head, the Surface of the Cranium, diveſted of the Pericranium, is diſorder'd by the Acceſs of the Air, or the Application of pinguious Subſtances, the corrupted Lamina has often, in a few Days, been ſeparated by the Force of theſe Arteries. See the Article CAPUT.

The Reaſon, therefore, appears, why the internal Arteries, that is, thoſe which run between the Laminæ, elevate theſe Laminæ externally, as ſoon as the Preſſure of thoſe Arteries ceaſes, which were capable of acting upon the external Surface of theſe Laminæ. For this Reaſon, the Surface of the corrupted Bone is rough, and, in conſequence of the Laminæ receding from each other, becomes ſpongious, more friable, and loſes a great deal of its natural Solidity; for, in ſound Bones, the firmeſt Part is that in which the bony Laminæ are moſt contiguous to each other; which is generally in the middle of the large Bones; and, on the contrary, the Bones are far more ſpongious, ſoft, and eaſily broken, near their Extremities, where the bony Laminæ are at great Diſtances from each other. But the Friability of carious Bones is much augmented, becauſe the Humours, becoming ſtagnant and acrid, corrode the Subſtance of the Bone; and this Effect is principally produced by the corrupted medullary Oil. Beſides, the Coheſion of the Bones ſeems to depend upon the Interpoſition of the Oil, which, like a kind of Glew, unites their terreſtrial Parts; for, as we before obſerved, the Bones become highly brittle, when, by means of an open Fire, their whole Oil is extracted; and ſuch Bones, render'd thus friable by long Calcination, again cohere firmly, when immerſed in Oil. Since, therefore, the attenuated medullary Oil is conſumed by Putrefaction, and the Bone, at the ſame time, corroded by acrid Humours, the Reaſon is obvious, why carious Bones are ſo friable as to moulder into Duſt upon the ſlighteſt Touch of a Probe.

Hence, alſo, the Reaſon is plain, why from ſuch a Bone an highly fetid Smell, like that of rancid Bacon, is exhal'd.

This fetid Smell is ſo ſtrong, that ſkilful Surgeons are able, from it, to tell that there is a Caries of the Bone below the Ulcer. 'Tis, therefore, expedient to know this Smell, which cannot, in the very Nature of the Thing, be deſcribed by Words, but approaches to that of corrupted and rancid Bacon. When the Caries of the Bone reaches to the Marrow, this fetid Smell may be eaſily accounted for; but 'tis, alſo, perceived, when the Corruption of the Bone is only ſuperficial. We have already obſerved, that the medullary Oil paſſes thro' the Pores of the Laminæ, and is carried in their Interſtices to the external Surface of the Bone: Though, therefore, the exterior Laminæ ſhould only be carious, the medullary Oil, convey'd thither, will become ſtagnant, corrupted, and produce the ſame fetid Smell.

From what has been ſaid, we alſo underſtand, why in an ulcerous Part, by means of a ſubjacent Caries of the Bone, the ſuperincumbent Fleſh is ſoft, flaccid, fungous, inflated, and tumid, and the Lips of the Ulcer inverted; the Sanies clear, ſubtile, hardly at all glutinous, fetid, and full of ſmall black Scales; as, alſo, why the Diſorder returns, without any apparent Cauſe; and the Ulcer proves obſtinate againſt the beſt Medicines for other Ulcers.

We now come to conſider theſe Symptoms which generally accompany a Caries of the Bone, the Preſence of which often diſcovers ſuch a latent Diſorder to the ſkilful Surgeon.

Why in an ulcerous Part. When, in conſequence of a previous Diſorder, and Corruption of the Bone, the incumbent Parts are affected and exulcerated, they are generally corroded by degrees, and raiſed into a ſoft and flaccid Tumor, as is always obſerved by Surgeons; and, in a particular manner, appears in the Spina Ventoſa, which ſeems to have received its Name from this Circumſtance; for the Putrefaction of the ſubjacent Bone diffuſes a malignant Exhalation thro' all the adjacent Parts; by which means the Membrana Adipoſa, naturally ſo prone to become tumid, is ſoon inflated. Nor is it, in this Caſe, tumid with an inflammatory Hardneſs, but ſoft, lax, and, as it were, fluctuating under the Fingers. For this Reaſon, when ſkilful Surgeons examine old Ulcers, they always ſearch with their Fingers, whether all the adjacent Parts appear firm and ſound; for the incumbent Parts do not adhere to the corrupted Bone, nor can they, by any means, be made to grow to it, till all the corrupted Part is firſt removed. When the Teeth become carious, the Gums are ſeparated from them, and never after grow to them. We have already obſerved, that, in Patients who died of a malignant Scurvy, the Perioſteum is found not to adhere to the Bones: Hence, alſo, in Wounds of the Head, we know that the Cranium is affected, if, about the ſeventh Day, the Fleſh is ſeparated from it, a Pain is felt, and the Pus is thin and fetid, which diſcovers the Malignity of the Wound. See the Article CAPUT. Perhaps, alſo, the elaſtic Matter, for the moſt part generated by the Putrefaction, increaſes the Tumor of the incumbent Parts.

Why the Lips of the Ulcer are inverted. The Lips of a Wound are reverted, in a ſound and robuſt Body, by a riſing of the *Membrana Adipoſa*, when unconfined by the Skin. By the ſame Cauſe, therefore, the Lips of ſuch an Ulcer will be inverted by the

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the inflated *Membrana Adipoſa*. But in a Wound, the Lips are of a live red Colour; whereas in ſuch Ulcers, they are ſordid, pale, and often livid; and, as *Hippocrates* juſtly obſerved, with reſpect to Wounds of the Head, accompanied with a Corruption of the Bone, the Lips reſemble Fleſh macerated with Salt.

Why the Sanies is clear and ſubtile. Under the Article SUPPURATIO, 'tis obſerved, that *Galen* and *Hippocrates*, ſometimes, uſed the Word Putrefaction, in order to denote a Suppuration; but they accurately diſtinguiſhed a Suppuration from a Putrefaction, properly ſo call'd; ſince the former was a Sign that Nature was Conqueror, and the latter, that ſhe was conquered. Hence *Galen* juſtly concluded, that a Suppuration was not ſimply Putrefaction, but had ſomething of Concoction in it; and that by the remaining Power of the Veſſels, thoſe Humours which would otherwiſe become putrid, were converted into Pus. And the ſame Author adds, that in Ulcers there is generated a Liquor, more or leſs degenerating from the Nature of good Pus, according as the concoctive Powers are ſtronger or weaker, and according as the Matter to be converted into Pus, is more or leſs obſtinate. Since, therefore, in an Ulcer, attended with a Caries of the Bone, there is a malignant Putrefaction, produced by a Corruption of the medullary Oil, and ſince the incumbent and adjacent Parts are flaccid, ſoft, inflated, and often almoſt half gangrenous, it is obvious, that the Matter to be converted into Pus is highly obſtinate, and the concoctive Powers, at the ſame time, exceſſively weak. It is not therefore to be wonder'd at, if inſtead of a laudable Pus generated by the ſuperior Force of Nature, which is white, thick, ſmooth, equal, and inodorous, there ſhould here be formed a Sanies which is thin, fetid, ſometimes dark-colour'd, and highly acrid. For the moſt part the black Scales of the corrupted Bone are diſcharged along with this Sanies, which Surgeons juſtly take for the moſt infallible Sign of a carious Bone: For this Reaſon, in Ulcers of long ſtanding, they always carefully view the Plaiſters and Pledgets, upon renewing the Dreſſings; and if on theſe there is any Blackneſs, and if they have a fetid Smell, a Caries of the Bone is juſtly ſuſpected.

As for the Return of the Diſorder, without any apparent Cauſe; unleſs the affected Bone is previouſly depurated, the Fomes of the Diſorder always remains, though the Ulcer ſhould be healed up; for which Reaſon it will always return. Nor is a laudable and firm Cicatrix ever formed upon ſuch Ulcers, ſince it is always ſoft, elevated, and infirm; and the Place will afterwards, ſooner or later, become open. When corrupted Teeth produce a Caries in their Sockets, there is often a ſudden Inflammation and Suppuration produced in the Gums. Upon the opening of the Abſceſs, a fetid Pus is diſcharged, and the Diſorder ſeems cured; but it generally recurs in a few Months, unleſs by an Extirpation of the Tooth, and a ſufficient Depuration of the Part affected, a thorough Cure is made. Thus *Van Sweiten* informs us, that he knew a Boy, who, after the Cure of the Small-pox, was ſeized with Tubercles full of Pus, in various Parts of the Body, and in the Forehead with an obſtinate Ulcer, which frequently appeared to be healed, by means of drying Medicines; but ſoon after broke out afreſh, till about two Years after, the corrupted Part of the Bone being ſeparated, the Ulcer was perfectly cured in a few Days.

As for the rebellious and obſtinate Nature of the Ulcer. No Ulcer can be perfectly cured, till it is reduced to the State and Condition of a clean and pure Wound; for any mortified or corrupted Part remaining in the Ulcer, is an heterogeneous Body, which will hinder the Union of the ſeparated Parts, ſo long as it remains there! Under the Article CAPUT, the various Methods, and the moſt efficacious Remedies for removing ſuch Sordes are ſpecified. Surgeons often find, that in ſeemingly inconſiderable Ulcers, a long-continued Application of ſuch Medicines, produce no happy Effects; in which Caſes they always find that the Bone is carious. *Hippocrates*, in *Aph.* 45. of *Sect.* 6. informs us, *That if Ulcers continue a Year, or longer, they muſt of Neceſſity affect the Bone; ſome Part of which being ſeparated, will leave deep and hollow Scars.* Sometimes theſe Diſorders of the Bones are ſo obſtinate as to yield to no Medicines at all: And *Hippocrates*, in his Treatiſe *de Fracturis*, tells us, that when the Os Calcis is corrupted, the Diſorder cannot be cured.

From what has been ſaid we, alſo, underſtand, why a Caries of the Bone, ariſing from an external Cauſe, is moſt eaſily cured: Why that ariſing from an internal Cauſe is not to be cured without Difficulty: Why a Caries ariſing from a Lues Venerea, is ſtill more difficult to be cured: And why that ariſing from a Spina Ventoſa is, of all others, the moſt difficult to be cured.

The Cure of a Caries is eaſier, or more difficult, according to the various Cauſes which produce it; for when a Caries ariſes from an external Cauſe, a Contuſion, for Inſtance, or a Wound, there is only ſome Part of the Bone thus corrupted; and the ſound Humours, convey'd, by means of entire Veſſels, through the remaining Subſtance of the Bone, will be able to ſeparate the corrupted Part, and reſtore the loſt Subſtance: Hence, in Wounds of the Head, a Caries of the Cranium is often ſoon and ſucceſsfully cured; provided the Patient is ſound in every other reſpect: But when, in conſequence of a morbid Cacochymy, the Humours flowing through the Subſtance of the Bone, are become ſo acrimonious as to corrode it, it is ſufficiently obvious, that the Cure muſt be difficult; ſince, after the carious Part is cleanſed, the ſame Cauſe which firſt produced it often ſtill remains. The more difficult it is to ſubdue and correct this Cacochymy, the more difficult the Cure muſt of courſe be. Since, therefore, in a Lues Venerea, the Contagion, when once affecting the Bones, is not without great Difficulty to be removed, and ſince, after the Cures with Mercury, and the Decoctions of the Woods, the latent Diſorder often appears afreſh, with equal Malignity, ſome Months after, it is ſufficiently obvious, that the Caries, ariſing from this Cauſe, is not to be cured without the greateſt Difficulty. In a Spina Ventoſa, as we have before obſerved, a Caries of the Bone ariſes from a previous Corruption of the medullary Oil; for which Reaſon it hardly appears, till the whole Subſtance of the Bone is corroded: There are, therefore, no vital Parts under ſuch a Caries, capable of ſeparating the corrupted, and reſtoring the loſt Parts; and the only remaining Method of Cure conſiſts in an artificial Separation of a large Portion of the corrupted Bone. After ſome Months, or even Years, the corrupted Bone has been ſometimes ſeparated from the ſound, as is certain from chirurgical Obſervations. However, it is certain, that the Cure of ſuch a Caries is, of all others, the moſt difficult.

From what has been ſaid we, alſo, underſtand why, in the ſolid Parts of the Bones, a Caries is bad; in their ſpongious Parts, worſe; and in their Joints, worſt of all; the firſt of theſe ſlow, the ſecond quickly ſpreading, and the third ſtill more ſo: Why in Children, a Caries ſpreads quickly, and is with Difficulty cured: And why a Spina Ventoſa generally affects a conſiderable Number of Places, either at one and the ſame time, or ſucceſſively.

It is certain, from what has been already ſaid, that the Middle of the large Bones is moſt thick, and leaſt vaſcular, and that in proportion as they approach to the Extremities, the bony Laminæ recede more from each other, and leave greater Interſtices, which are filled with a great Number of ſmall Veſſels, and Veſicles full of Oil. It is, alſo, before ſhewn, that in thoſe Parts of the Bones which conſtitute the Joints, and are cover'd by a Capſula of Ligaments, which unite the Articulations, ſuch a cavernous Subſtance is found in the largeſt Quantity, and only cover'd with a thin bony Cruſt, which, even in the Os Femoris, hardly ſurpaſſes the Thickneſs of one's Nail. If, therefore, there is a Caries in the moſt ſolid Part of the Bone, it is bad; but at the ſame time, there is great Hope, that the Separation of the carious Part may be obtained, nor will the Subſtance of the Bone, here ſo firm, be ſo ſoon corroded as in other ſofter Parts. But, when a Caries of the Bone ariſes in a ſpongious Part of the Bone, this thin bony Cruſt will ſoon be diſtroyed, and the ſubjacent ſoft Parts corrupted: Hence a violent Putrefaction, and, what is in a particular manner to be dreaded, a Corruption of the medullary Oil will follow. But ſince about the Joints the Subſtance of the Bone is moſt tender, and the Number of the Follicules containing the pinguious medullary Oil greateſt, the worſt Symptoms will follow. If at the ſame time we conſider, that the putrid Sanies collected here, after corroding the Surface of the Bone, may fall into the Cavity of the Articulation, the Reaſon will be obvious, why a Caries produced here, muſt be followed by the worſt Conſequences, which can hardly ever be removed, except by the Extirpation of the affected Part.

From what has been ſaid, the Reaſon is, alſo, obvious, why a Caries ſlowly conſumes the thick and ſolid Part of the Bones; the ſpongious Part ſooner; and ſooneſt of all, that cavernous Subſtance of which the Extremities of the large articulated Parts of the Bones conſiſt.

But, becauſe obſtinate and numerous Diſorders of the Bones, happen in their moſt vaſcular, and, conſequently, ſofteſt Parts: Hence the Reaſon is obvious why, in Children, a Caries of the Bones ſpreads faſt, and is cured with Difficulty; for in young Patients, there is a far greater Number of Veſſels in all the Parts of the Body; many of which are, as Age advances, aboliſhed, and concreted, after an Expreſſion of their Contents, as is obſerved under the Article FIBRA. Hence in the Bones of Children, the Number of Veſſels is greateſt; for which Reaſon their Subſtance is ſoft, in conſequence of which they are eaſily injur'd, and ſoon corrupted. It is, alſo, certain from Obſervation and Experience, that a Spina Ventoſa, or that Caries of the Bones which ariſes from a Corruption of the medullary Oil by internal Cauſes, is not generally confined to one Part, but affects ſeveral Parts, and theſe often removed at a conſiderable Diſtance from each other: Thus *Van Sweiten* informs us, that, in the Finger called the *Index*, he knew a Spina Ventoſa, affecting the middle Phalanx, a few Weeks after the ſame Diſorder appeared in the Tarſus, and afterwards in the Os Jugale: A conſiderable time after, the corrupted Part of the Bone was ſeparated, and the Diſorder cured, but in ſuch a manner as to leave an unſeemly and deep Cicatrix. Hence

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it is, alſo, obvious, that we are not raſhly to proceed to the Extirpation of a Spina Ventoſa in one Part, ſince it generally ſprings up and appears in ſome others. The Reaſon of this ſeems to be, that a Spina Ventoſa draws its Origin from an internal Cauſe, and of all others moſt frequently, as we have already obſerved, from a venereal, ſcorbutic, or rickety Cacochymy, which is generally depoſited, not in one, but in various Parts. Beſides this Diſorder happening in one Part, may infect the ſound Humours acting on the Part affected; and, by this means, propagate the Diſorder through the whole Body, as is particularly obſervable in a Lues Venerea, which often affects the Genitals firſt, and then the whole Body.

If, to what has been ſaid, we add the Doctrine of Contuſions, Luxations, and Fractures of the Bones, delivered under their reſpective Articles; as, alſo, what, under the Article CAPUT, is ſaid concerning Wounds of the Head, which injure the Bone, we ſhall have both the Hiſtory and Cure of the principal Diſeaſes of the Bones; eſpecially if to theſe we add an Anchyloſis, which is an Immobility of the Joint, attended with an hard Tumor, and principally produced by a Callus of a Bone, fractured at the Articulation, an Inſpiſſation of the Mucilage of the Joints, mentioned by *Clopton Havers*, a Rigidity of the Ligaments, and an Exoſtoſis at the Joints. The Cure of this Diſorder, which is highly difficult, is to be adapted to the Diverſity of Cauſes from which it proceeds.

From what has been already ſaid, we may underſtand the principal Diſeaſes obſervable in the Bones, eſpecially if we conſider what is advanced concerning the Bones, under the Articles CONTUSIO, FRACTURA, and LUXATIO: For under the Article CONTUSIO are enumerated the Diſorders ſubſequent to Contuſions: Under the Articles FRACTURA and LUXATIO are many Things relating to the Diſeaſes of the Bones: And under the Article CAPUT there are various Obſervations relating to the Knowledge and Cure of Diſeaſes of the Bones. Yet we ſhall here ſay ſomething concerning the Anchyloſis, ſince it frequently ariſes from Diſorders of the Bones, though it may ſometimes happen without them; when for Inſtance, the Ligaments of the Joints become rigid; or when the Mucilage which lubricates the Extremities and Ligaments of the Articulations, is inſpiſſated and accumulated.

Under the Article LUXATIO, when treating of an Anchyloſis as the Conſequence of a Luxation, it is obſerved from *Celſus*, that Contractions of the Joints, by means of recent Cicatrixes, are by the *Greeks* called ἀγκύλας; but that *Paulus Ægineta* called an Immobility of the Joints ἀγκύλας, and ἀγκυλώσεις, the Cauſes of which were, according to him, an Infarction of the Humours, or a Contraction of the Nerves. Now it is certain, that this Misfortune, which may be juſtly defined, An Immobility of the Joints, accompanied with an hard Tumor, may ariſe from a Diſorder of the Bones. When this Diſorder ariſes from the luxuriant Callus of fractured Bones, or an Exoſtoſis near the Joints, it is ſufficiently obvious, that an hard Tumor is preſent. But, when it ariſes from a Rigidity of the Ligaments, or an Inſpiſſation of the Mucilage of the Joints, this Mucilage muſt gradually be accumulated in the Cavity of the Joint, ſince, in conſequence of its Immobility, it is not conſumed. For this Reaſon the Mucilage will diſtend the articular Capſula, and produce a Tumor, which, when the thiner Parts of the accumulated Matter are diſſipated, may become pretty hard. For this Reaſon an hard Tumour generally accompanies an Immobility of the Joints, or at leaſt ſucceeds it, if it does not appear in the Beginning of the Diſorder. There is, however, one Exception to this: An Inſtance of which, ſays *Van Sweiten*, I myſelf ſaw, where the whole Arm was dried up by a true Maraſmus; in which Caſe, all the Parts being dried, there was an Immobility of the Joints of this Member, without any Tumor. But, in order to the due Mobility of the Joints, a proper Figure of the articulated part of the Bones is neceſſary; a Lubricity of their Surfaces, where they mutually touch each other, and a due Flexibility of the Ligaments ſurrounding the Joints: So that an Anchyloſis ariſes from the following Cauſes.

A Callus of the Bone fractured at the Joint. It is obſerved under the Article FRACTURA, that Fractures are ſometimes ſucceeded by a Luxuriancy of the Veſſels of the Bone, and an Inequality of the Callus, by which means the natural Figure of the Bones is altered and deformed. It is certain from many Obſervations, that ſuch an unſeemly Prominence, ariſing from the Luxuriance of the Callus, has often continued in the fractured Part, during the whole Remainder of the Patient's Life. If, therefore, the Fracture is near the Joint, it is obvious, that an Immobility of the Joint may ariſe from ſuch a Change of Figure in the Bone. It is true, in moſt of the Joints, the Extremities of the articulated Bones are ſafely defended, and covered with a large Number of Parts; for which Reaſon they are not to be eaſily broken, in thoſe Parts contained within the Cavities of the Joints. But in ſome Parts the Bones are ſufficiently bare and ill defended; about the Elbow, for Inſtance, and the Knee; for which Reaſon an Anchyloſis may happen in theſe Parts. Thus *Petit*, in his Treatiſe *des Maladies des Os*, *Tom.* 1. tells us, that in a fractured *Rotula* he knew the luxuriant Callus to produce an Anchyloſis, which, however, was afterwards cured, becauſe the Subſtance of the Callus had not acquired a bony Hardneſs. When, in ſuch a Caſe, an Anchyloſis is dreaded, skilful Surgeons order the Part affected to be ſo ſituated, that the Callus may, by its own proper Weight be determined to ſome other Part; that Compreſſes be gently ſecured, between the Joint and the Fracture, that, by this means, the Callus may be hinder'd from falling to the Joint; and, laſtly, that the Joint be gently moved, when the firſt Dreſſing is removed, afterwards every two Days, and then every Day: Nor, if the Joint is prudently moved, is there any great Danger leſt, by this means, the reduced Bones ſhould be removed from their Situation, becauſe, as the Bones are largeſt about the Joints, the fractured Parts will touch one another in many Points, and, conſequently, not be eaſily removed from their Situation. *Petit*, in the Part laſt quoted, tells us, that by ſuch a Motion of the Joint alone he removed an Anchyloſis already formed by this Cauſe.

By an Inſpiſſation of the Mucilage of the Joints. That the Extremities of the articulated Bones might move eaſily, without being injured by their mutual Attrition, they are lubricated by a mucilaginous Liquor, the Nature and conſtituent Parts of which are accurately deſcribed by *Clopton Havers*, to whom we owe ſo many beautiful Diſcoveries, with reſpect to the Fabric and Structure of the Bones. *Hippocrates*, as is obſerved under the Article LUXATIO, informs us, that there is naturally in all Joints ſuch a mucilaginous Liquor; and that the Joints are ſound when this Liquor is pure: Now this mucilaginous Liquor, as is obvious from the laſt quoted Article, conſiſts of three diſtinct Liquors, that is the univerſal perſpiring Matter, the medullary Oil, and the Mucilage ſecreted from the Follicules ſituated in theſe Parts: If, therefore, by whatever Cauſe this Mucilage is not diſſipated or reſorbed, it will be gradually accumulated, ſo as to fill the Cavity of the Joint, and hinder the free Motion of the articulated Bones. In the mean time the thineſt, and moſt ſubtile Part of this Mucilage will be diſſipated, and the Remainder, of courſe, render'd thicker: And as the Motion of the Joint is the principal Cauſe by which this Mucilage, after it has perform'd its Office, is diſſipated, ſo, when ſuch a Motion is either hindered, or totally aboliſhed, there will be a greater Accumulation of the Mucilage; and the Diſorder will become incurable, partly by the Inſpiſſation of the Matter, and partly by the Acrimony it has acquired by Stagnation, and which will be capable of corroding and corrupting the ſmooth cartilaginous Surfaces of the Bones, and the Ligaments which ſecure the Joints.

This Diſorder is known by a Tumor of the Joint, which is at firſt ſoft, and then gradually enlarged, but not extending itſelf beyond the Joint. This Misfortune is moſt frequently obſerved in the Joint of the Knee.

Hippocrates, in the twenty-fifth Aphoriſm of his fifth Section, tells us, that *Thoſe who have Tumors, and Pains of the Joints, without Ulcers, are greatly relieved by throwing large Quantities of cold Water upon them.* And celebrated Phyſicians have ſince approved of this Method. Perhaps in the Beginning of the Diſorder it may prove beneficial, by ſuddenly contracting the Parts, by means of the Cold; in conſequence of which the Humour beginning to be accumulated, may be repelled, provided it is ſufficiently thin: But where the Humour is already thick, and its Quantity large, it is not probable that a great deal of Relief can be afforded by this Method. But often repeated Frictions, Motion of the affected Joint, penetrating Fomentations of Wine, Salt, Vinegar, and the Urine of ſound Perſons, with an Addition of aromatic Herbs, ſuch as Horehound, Scordium, and Rue, and Cataplaſms prepared of the like Subſtances, will prove beneficial. In the moſt difficult Caſes, Embrocations of warm mineral Waters, falling ſlowly, and from an Height, upon the Part affected, have not only afforded great Relief, but, alſo, ſometimes produced a perfect Cure. The want of mineral Waters may be ſupplied by the penetrating Fomentations juſt recommended, and applied by way of Embrocation. *Petit*, in his Treatiſe *des Maladies des Os*, *Tom.* 1. informs us, that he ſaw happy Effects produced by Quick-lime-water, with a Lixivium of Sal Ammoniac, poured from an Height upon the Part affected; for by this means there is inſtantaneouſly produced an highly penetrating Spirit of Sal Ammoniac, which is juſtly eſteem'd the moſt powerfully attenuating Medicine. But when the Quantity of this accumulated Mucilage is ſo large, that it cannot be diſſipated by all theſe Methods, *Petit* orders the moſt depending Part of the Tumor, to be laid open with a Lancet, to the very Cavity of the Articulation, that the contained Liquor may be thus diſcharged; after which he orders the Uſe of the Medicines before preſcribed.

A Rigidity of the Ligaments. That the articulated Bones may move freely, 'tis requiſite that the Ligaments ſhould be ſufficiently firm to ſecure the Joints, and, at the ſame time capable of yielding, and being lengthen'd, whilſt the Joints are bending. When, therefore, by whatever Cauſe the Ligaments are become rigid, tho' all the other Parts of the Joint are in their natural Condition, there will be an Immobility produced, which will afterwards

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afterwards be ſucceeded by a Tumor, becauſe the Mucilage, accumulated in the Cavity of the Joint, is not, as in a ſound State, diſſipated by Motion; in conſequence of which, there will be a perfect Anchyloſis. This Diſorder may be produced by all the Cauſes capable of producing too great a Rigidity in the ſolid Fibres, as, alſo, by the Cauſes capable of producing the ſame Effect in the ſmall and large Veſſels; ſee the Article FIBRA. Thus we obſerve, that decrepit old Perſons have almoſt all their Joints ſtiff and rigid, partly through a Defect of the pinguious Oil, deſtined for the Lubrication of the Bones, and partly becauſe the Ligaments are become callous, and ſometimes bony. Theſe Effects are, alſo, obſerved in thoſe Men, who, before they have arrived at a great Age, have laboured intolerably hard, whilſt, by too ſtrong a muſcular Motion, the firm Parts of the Body are indurated. This Diſorder, alſo, frequently ſucceeds violent and ill-cured Inflammations of the Ligaments, ſince the Fluid, becoming ſtagnant, and coagulating, is concreted with the Veſſels which contain it. Hence thoſe who have been frequently afflicted with the Gout, are ſo often ſubject to an Immobility of the Joints. Beſides, it is ſhewn under the Article FIBRA, that too great a Diſtraction of the ſolid Parts renders them weak, and that the Weakneſs ariſing from this Cauſe, is cured by every thing which removes their too great Diſtraction. When, therefore, the Ligaments, in conſequence of the Immobility of the Joints, are not ſtretched, they are generally ſpontaneouſly contracted, and become ſo rigid, as afterwards totally to hinder the Motion of the Joint. After Fractures and Luxations, unleſs, during their Cure, the Joints are ſometimes mov'd, an Anchyloſis frequently ariſes from this Cauſe, as alſo, in paralytic Members; and, in this Caſe, as the Flexor Muſcles are generally ſtronger than thoſe called the Extenſors, the Joints are ſomewhat bended and become rigid, not only on account of the Induration of the Ligaments, but, alſo, becauſe, by the long State of Reſt, the Flexor Muſcles are gradually contracted and ſhorten'd, ſo as to become almoſt incapable of being leng'hen'd any farther.

'Tis, therefore, obvious, that a preternatural Rigidity of the Ligaments is, of all others, the moſt frequent Cauſe of an Anchyloſis; but, at the ſame time, there are, for the moſt part, great Hopes that ſuch a Diſorder may be cured, provided it is not of too long ſtanding, nor draws its Origin from Cauſes which cannot be ſurmounted by any Art, as in decrepit Old-age: For Inſtance, If ſoft Aliments are uſed, and the Part affected, frequently expoſed to aqueous Baths, and eſpecially Vapour-baths. If after theſe the Part is well cleanſed, and rub'd with emollient Oils, and the Motion of the Joint attempted, by bending and extending it as much as poſſible, without producing any conſiderable Pain, Diſeaſes of this Kind are, by theſe Meaſures, often cured, when they were thought deſperate. But theſe are more fully conſidered under the Article FIBRA. A memorable Inſtance of the Power and Efficacy of this Method is found in *Mem. de l'Acad. Royale des Sciences, An.* 1721. See ANCYLE. *Paulus Ægineta* gives a Cure of the Anchyloſis, pretty much the ſame with this, whilſt, in the 55th Chapter of his fourth Book, he orders the Part affected to be anointed with Hydrelæum, in which Linſeed, Marſhmallows, and Fenugreek, have been boiled. Then he orders it to be anointed with Liniments, compoſed partly of emollient, and partly of aromatic Ingredients, and to be covered with Plaiſters of a like Nature. He, alſo, commended gentle and continual Friction, in Conjunction with this Method, and frequent Attempts to bend and extend the Joint.

An Exoſtoſis about the Joints. Since, to the due Motion of the Joint, a certain determinate Figure of the Extremities of the articulated Bones is requiſite, 'tis ſufficiently obvious, that this Figure being changed by the Exoſtoſis, the Motion of the Joint muſt, of courſe, be hindered. 'Tis obvious, from what has been ſaid, that there may be ſuch Tumors about the Joints. To this Species of Diſorders, we may, alſo, refer a Concretion of the articulated Bones, whether by an Inſpiſſation of the Mucilage naturally lodged between them, or a Conſolidation of their rough, and, perhaps, corroded contiguous Surfaces; memorable Inſtances of which are found in *Hildanus de Ichore & Meliceria, Cap.* 25. *Hiſt. de l'Acad. des Sciences, An.* 1716. and *Columbus de Re Anatomica, Lib.* 15.

That an Anchyloſis is not to be cured without great Difficulty, is certain from what has been already ſaid: But the prognoſtic Signs vary according to the Diverſity of the known Cauſe; for if it proceeds from a Callus of a Bone fractured near the Joint, and if that Callus has acquired a bony Hardneſs, the Diſorder is incurable, as, alſo, when it ariſes from an Exoſtoſis, or Concretion of the articulated Bones. But when it ariſes from an Inſpiſſation of the Mucilage of the Joints, or a preternatural Rigidity of the Ligaments, there are ſtill Hopes of a Cure to be entertained, if the Diſorder is not inveterate. *Van Swieten.*

In the Works commonly aſcribed to *Hippocrates*, the Caries is ſaid to be a dried Phlegm between the Laminæ of the Bones, or Earth dried by Heat, or a Defect of the Mucus. The Accounnt of the Symptoms is very incomplete. The Prognoſis is as ſuperficial; for I ſee no more, than that, in tedious Ulcers, the Bones are affected, and the Cicatrices are hollow; and livid Fleſh, in a diſeaſed Bone, is a bad Sign. As to the Cure, Cold is ſaid to be hurtful to Bones, and this Diſeaſe is to be treated as a Fracture.

Celſus gives no Opinion of the Cauſe of the Caries, and deſcribes very few of its Symptoms; but is very particular in his Directions concerning the Cure.

His Method is to lay all the carious Parts bare; and, if it be then doubtful how deep the Caries goes, to pierce with the Terebra, or pyramidal Perforator, till the Raſpings are no more black. If the Caries be ſuperficial, he orders it to be burnt once and again with an hot Iron, that a Scale may ſeparate from it; or to raſp it till either Drops of Blood ouſing out, or the white Surface of the Bone, ſhew all the carious Part to be taken away, when Nitre, well-pounded, is to be ſprinkled on the Bone. When the Caries is deep, he adviſes a great many Holes to be made through it with the Perforator, till the Bone be quite dry: For thus, adds he, the corrupted Part will be brought off. When the Caries penetrates to the other Side of the Bone, it muſt be cut out. When the Extent of this deep Caries is not larger than what the Head of the Trepan will cover, he employs this Inſtrument to take it out. If the Caries be large, he orders Holes to be made round the Edges of it with the Perforator; and then, cutting the Bridges between theſe Holes thro' with a ſtrong Knife ſtruck with a Hammer, he takes away all the carious Part.

The Medicine which *Dioſcorides* principally recommends for bringing away the Scales of Bones, or for what is now called their Exfoliation, is the Powder of the Root of the Peucedanum, and the Juice of Euphorbium; adviſing the Teguments to be defended with Liniments, or Cerats, when the Euphorbium is to be applied.

Galen defines the Bones to be the hardeſt, moſt dry, and terreſtrious Parts of the Body, whoſe Qualities are cold and dry. He thought a Caries in a Bone; analogous to an Ulcer in a ſoft Part; and that it was occaſioned either by the adjacent Fleſh generating a bad Sanies, with which the Bones being moiſtened, were corrupted, or that it proceeded from a mucous Humour drove to the Bones.

In conſequence of this general Doctrine concerning Bones, and their Eroſion, with the general Axiom, *That Contraries are the Remedies of Contraries*, *Galen* muſt neceſſarily have been led to diſcharge all things which he eſteemed cold, and to recommend Driers in a Caries. He is very ſparing in his Recommendations of particular Medicines for this Diſeaſe; Opopanax in Ulcers of Bones, and the Root of Peucedanum for Exfoliation, with ſome compounded Plaiſters, are all he mentions.

The *Greek* Phyſicians, after *Galen*, have added little concerning this Diſeaſe, except ſome few Medicines, anſwering *Galen's* Intentions of Cure. *Paulus Ægineta* has ſomething of a different Formula for making the affected Part of a Bone ſeparate: It is a Cataplaſm made of the Leaves of the wild Poppy, and of the Fig-tree, with Barley-flour and Wine; or, inſtead of it, he recommended equal Parts of the Seeds of Henbane, and of Vitriol.

The *Arabians* added greatly to the Liſt of drying Medicines, moſt of them actually ſo, that is, in the Form of Powders, and the greater Number potentially ſo too; that is, ſuch as, when taſted or applied to Sores, ſtimulate, raiſe Heat, and ſome Degree of Inflammation. They, alſo, reſtored the *Celſian* Practice of burning and raſping diſeaſed Bones, which had been neglected by the *Greek* Phyſicians, but has been generally mentioned by Writers after the *Arabians*.

One of the *Arabians* (*Albucaſis*) adviſes, in a compound Fracture, where a Bone is bare, to put a Cloth, dipt in black ſtyptic Wine into the Wound; but not to make uſe of a Cerat, or any thing in which there is Oil, leſt it make Corruption happen to it.

Thoſe who wrote on Surgery, when Learning began to be reſtored in *Europe*, in the fourteenth and fifteenth Centuries, copy'd moſtly the *Arabians*; but, after burning the Bone, which is the Method of Cure in the Caries, that the moſt eminent of them are fondeſt of, they applied oily Medicines to the cauterized Bone.

After Chymiſtry came to be cultivated in the ſixteenth Century, other Methods of cauterizing were introduced.

Angelus Bologninus tells us, that ſome, in his Time, made uſe of ſcalding-hot Oil, heated Roots of the Aſphodel, kindled Brimſtone, and the Water by which Gold is ſeparated from Silver.

Joannes de Vigo, beſides Aqua Regia, mentions Oil of Vitriol, Unguentum Ægyptiacum, and Vitriol burnt and mixed with Aqua-vitæ, as Cauteries. After cauterizing, he dreſſed with Unguentum Abſterſivum de Apio; and ſays, that, by this Method, the Separation of the diſeaſed Part is made in forty Days after Caurerizing.

Veſalius mentions Oil of Sulphur and Euphorbium for the Caries; but prefers a Preparation of Antimony, which he does not deſcribe.

Fallopius agrees with *Veſalius* in the Form of the drying Medicines to be applied, and in the Management of a Bone after it was burnt: The Place, ſay they, immediately after being burnt, is to be frequently moiſtened with Roſe-water, and the White of an Egg, that Inflammation, and other Symptoms, may be prevented; afterwards the Eſchar is to be ripened with Butter, or Unguentum Tetrapharmacum.

Ambroſe

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Ambroſe Paré ſays, more explicitly than *Albucaſis*, that the Application of unctuous and oily, or of moiſt and ſuppurating Medicines, corrupts Bones. *Paré* ſeems, alſo, fonder of the ſimple Driers, that is, the abſorbent Powders, than thoſe who went before him, whoſe Driers were as much potentially ſo as actually.

Fabricius ab Aquapendente reckons Aqua-vitæ among the ſtronger Driers, and recommends the Juice of Leeks with Salt.

Gulielmus Fabricius Hildanus is rather more poſitive than *Paré*, in forbidding the Application of all moiſt and oily Medicines to Bones laid bare: He ſeems, in one Part of his Writings, to expect always an Exfoliation from Bones laid bare, though, in other Places he relates Examples of Bones laid bare, being cured without any Deſquamation.

Hildanus introduced the free Uſe of Euphorbium, and its Tincture, in Spirit of Wine, the Acrimony of which the Writers before him had warned their Readers to guard againſt.

Marcus Aurelius Severinus takes notice of the ſhrill Sound, as if a Void was below, which a Piece of Bone has, when ſtruck after its Exfoliation begins. He recommends Oil of Euphorbium, and of Lime, as a proper Application to corrupted Bones.

Soon after *Severinus*'s Time, that is, about the Middle of the ſeventeenth Century, the eſſential aromatic Oils of Vegetables were introduced.

Nicolaus Tulpius's favourite Medicine for Exfoliation was Oil of Cinnamon, with Oil of Sublimate.

In the latter Part of the laſt Century, not only Variety of theſe Oils were uſed, and different Tinctures in ardent Spirits; and other Compoſitions of the Driers of the Antients, and of the aromatic Oils, were contrived; but the alcaline Salts, both fixed and volatile, ſuch as Salt of Tartar, Spirit of Sal Ammoniac, *&c.* came to be employed, as well as the acid Spirits, Oil of Sulphur, Vitriol, *&c.*

While the Generality of Writers at this time, were ſo fond of the Aromata, Tinctures, Elixirs, Spirits, *&c.* Some mention their having cured carious Bones by perforating, trepanning, and cutting them out, or by burning and deſtroying them with Cauſtics. Others ſucceſsfully employed watery Medicines, and dry Lint.

Among the Writers of this Time, *Wiſeman* is more accurate in relating the Appearances of carious Bones than former Authors: They generally remarked only the black Colour, Greaſineſs, Roughneſs, ſpongy Softneſs, and ſtinking Smell, and thin brown Ichor of Bones, when carious, with the ſpongy Fleſh growing out from them: *Wiſeman* obſerves, that carious Bones may be of a white, brown, or black Colour; and adds, *If the white be pory, the Caries may be deeper, and more dangerous, than if it were black and hard.*

His Method of Cure is like to *Celſus*'s in ſeveral Particulars: He orders all the carious Part to be laid bare, with Cauſtics applied to the Teguments; then to ſcrape the rotten Fleſh away, or to conſume it with Eſcharotics: Where that cannot be done, becauſe of large Veſſels, Nerves, or Tendons in the Way, he deſires the Orifices of the Ulcer to be dilated with Sponge, Tent, Gentian-root, *&c.* But if the Cure of the Caries is of greater Conſequence to the Patient than theſe Parts are, he adviſes to cut them through to come at the Bone. When the carious Bone is laid bare, if the Caries be ſuperficial, he would have it raſped, and then to be dreſſed with the milder Sarcotics, or digeſting Ointment: In few Days after the Application of which, he ſays, you may ſee the Fleſh thruſt forth in ſmall Grains, which is Callus. Burning with an hot Iron he frequently uſed with Succeſs, for haſtening the Exfoliation; at other times he pinched away, or broke off the Caries: His Medicines are the Driers, chymical Oils and Eſcharotics, only that in ſeveral Places where the Bone lay deep, he uſed Injections, compoſed of the vulnerary Plants, boiled in watery Liquors, with ſome ardent Spirit, and a little dulcified Spirit of Vitriol.

I took notice before, that *Hildanus* expreſſed himſelf as if he thought Bones laid bare muſt exfoliate: This came to be a general Opinion, as is evident from the Directions which moſt chirurgical Authors give for treating Wounds, where Bones were laid bare; and *Belloſte* tells us, it was the univerſal Practice in his time, to dilate ſuch Wounds, and to keep them open, in Expectation of the Exfoliation: He endeavours to ſhew the Abſurdity of this Practice, and recommends to Surgeons to endeavour to prevent Exfoliation in ſuch Caſes, and for this Purpoſe he not only adviſed what *Felix Wurtz* and *Cæſar Magatus* had done before him, to bring the Lips of the Wound nearer together, and to dreſs ſeldom; but, alſo, propoſed, that, when a conſiderable Space of the Surface of ſmooth firm Bones is laid bare, there ſhould be a great Number of ſmall Holes, made with a Perforator of a Trepan, as deep as the Diploe, or Cancelli of the Bones; after which he ſays, fleſhy Papillæ riſe out from theſe Holes, and extend themſelves all over the bared Surface of the Bones, and the Wound is ſoon cured, without any Exfoliation: This Practice has been approved by ſome conſiderable Men, though, ſo far as I know, it has not been general among Surgeons. *Belloſte* condemns the Application of acid Spirits to Bones, as increaſing the Caries; and being of Opinion, that the Air acts by its Acid on Bones, he inſiſts in rather ſtronger Terms than moſt former Writers had done, that Bones ſhould be well defended from the Air.

Petit is the only Author of this preſent eighteenth Century, whom I need to mention: He names the ſeveral Diſeaſes in which Caries moſt frequently happens, and relates the Symptoms by which it may be judged, that a Bone is corrupted: Such are the deep ſeated Pains preceding an Abſceſs forming near a Bone, with a livid Colour, and Sponginess in the Teguments; an Ulcer continuing long near a Bone; the ſprouting Fleſh of ſuch Ulcer appearing ſpongy, of a pale Colour, eaſily penetrated by a Probe, and bleeding readily without giving Pain; the Quantity of Matter being larger, than commonly comes from an Ulcer of that Extent; the thin Conſiſtence, browniſh Colour, and ſtinking Smell of the Matter; its appearing black on the Plaiſters, though there be no Lead in their Compoſition; feeling the Bone ſcrabrous and unequal.

Petit obſerves ſeveral Appearances that rotten Bones have, which may make ſo many Species of Caries. 1. The Surface of a Bone may be corrupted, and may, notwithſtanding, be pretty firm and ſmooth, without throwing out much Matter: He calls this a *dry* Caries. 2. If the Surface of a Bone be very unequal, with a Number of ſmall Holes, diſcharging large Quantities of Sanies, he names the Caries *Vermouillé* or *Worm-eaten*, from the Reſemblance it has to Wood eroded by ſmall Inſects. 3. Fleſh may grow in the Interſtices of the corrupted bony Fibres, and may fill up the Cavernulæ. 4. Sometimes the Bones are imperceptibly waſted in Cancers.

Petit ſays, the dry Caries is generally the moſt ſuperficial, and cures more eaſily by Exfoliation than the other Kinds, which has made him think, *That the Exfoliation of Bones is only made readily, when the carious Part has no more Communication with the Veſſels of the ſound Bone: This Communication entirely ſtopped, gives Ground to believe, that the Juices, which move in the Veſſels of the ſound Part, make an Effort againſt the corrupted Part; and that theſe Efforts, redoubled by the Reſiſtance, and repeated every Moment of Life, are the Cauſe which inſenſibly ſeparates the corrupted Part of the Bone.*

I perceive ſoon, ſays he, *Fleſh riſing in the Circumference of the corrupted Piece, which grows more and more. I have Reaſon to believe, that, proportionally as the firſt Efforts of the Liquors make the Separation, theſe nutritive Juices congeal, and form Fleſh; and that it is the inſenſible Growth of this Fleſh, which completes the Separation of the diſeaſed Bone, and thruſts it outwards. I am the more certain Nature acts thus, becauſe I find this granulated Fleſh in the Place where the ſeparated Piece of Bone was; and that the good Qualities of this Fleſh make me certain, that the Bone is ſound below.*

The Motion of the corrupted Piece of Bone, and the Blood coming out below it, are the Symptoms by which, *Petit* tells us, the Exfoliation may be known to begin.

Our Author remarks, that the Worm-eaten Caries, and that where Fleſh riſes in the Cavernulæ, may be of different Depths in the Bone, and are more difficult to cure than the dry Caries. When the Quantity of Sanies (which is generally bloody in the latter Species of Caries) is very large, there is Reaſon, ſays he, to ſuſpect it comes from the *Cancelli*, where the Marrow is contained, and where the Diſeaſe frequently begins; from which if it does not find an Exit, it will kill the Patient.

Petit's Methods of Cure are theſe: When the Caries is very ſuperficial, and of the dry Kind, he dreſſes it with Doſſils dipped in Spirit of Wine, as he would do a ſound Bone laid bare, which he affirms does not always exfoliate. If the Caries is deeper, and an Exfoliation muſt be haſten'd, he applies to it Aqua-fortis, or Spirit of Nitre in which Quick-ſilver has been diſſolved, which he recommends as a favourite Medicine; and afterwards he makes uſe of Spirit of Wine. He diſcharges the exfoliating Part to be taken away, till it be quite looſe. If the carious Part cannot be ſeparated by theſe Means, he recommends the red-hot Iron, Raſping, the Perforator, and Trepan, as *Celſus* orders.

After the Caries is thus removed, *Petit* judges by the white, thick, mild Matter, firm Fleſh, and hollow hard Cicatrix, that the Bone is ſound; or he dreads a Relapſe, if the Appearances are otherwiſe.

The general Practice of our Surgeons is to keep Ulcers with carious Bones, as much dilated as they can, by Doſſils, Spongetent, and the like, to deſtroy the ſpongy Fleſh with Eſcharotics, to apply Spirit of Wine, Tincture of Myrrh and Aloes, Tincture of Euphorbium, and ſuch like, to the Bone, and frequently to all the Sore. As theſe ardent Spirits are applied to haſten the Exfoliation in a Caries, they are applied for the moſt part, alſo, to ſound Bones laid bare, as Preſervatives, it is ſaid, againſt their Corruption, and to prevent Exfoliation.

From this hiſtorical Sketch of what Authors have ſaid of the Caries, it is evident how little the Circumſtances of this Diſeaſe have been conſider'd, and what a contradictory odd Medley of Practice has been followed. Surely all of it could not have been ſupported by Obſervations tolerably made! Of late indeed

ſome

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ſome Species of this Diſeaſe have been diſtinguiſhed, but the Practice is too uniform in all of them. To reform this, it will be neceſſary to examine more accurately the Appearances of this Diſeaſe.

Previous to any Account of the Caries, it will be neceſſary to remark, that Bones have their Veſſels, and circulating Fluids, and, in ſhort, the ſame general Texture which other Parts have; ſo that Solidity, and ſtronger Coheſion of Parts, are the only evident diſtinguiſhing Characters of the Compoſition of Bones. Of this Truth there are many Proofs, ſuch as,

1. Bones are in the State of Membranes and Cartilages, before they oſſify.

2. The hardeſt Bones have ſometimes changed back again into a ſoft State.

3. The granulated Fleſh, which riſes out from Bones after Fractures, Amputations, the Trepan, or in Exfoliation, differs nothing from what would come from any ſoft Part; yet in ſeveral Caſes becomes ſound ſolid Bone.

4. When the Texture of Bones is unravelled artfully, and compared with the Texture of the ſofter Part, it appears alike in each.

5. By a chymical Analyſis, the ſame Principles are obtained from Bones, as other Parts, the Proportions of theſe Principles being different in different Parts.

6. By comparing the Diſeaſes of Bones with ſimilar ones in ſofter Parts, as I ſhall do in conſidering the different Species of Caries, the general Propoſition, of Bones differing only in Solidity, and Coheſion of Parts, from the other ſofter Organs of the Body, will be further confirmed.

The Species of Caries which I have had Occaſion to ſee, are,

I. What *Petit* calls the dry Caries, where the Bone is pretty ſmooth and firm, and throws out little Matter. Though the Surface of the carious Part of a Bone in this Species is not of a very dark Colour at firſt, yet, before Exfoliation, it becomes of a dark-brown or black Colour. An Exfoliation is more eaſily obtained here, than in any other Kind. Before the corrupted Part can otherwiſe be obſerved to ſeparate, one will hear, as *Severinus* remarks, a ſhrill Sound, when it is ſtruck with a Probe, as if it was hollow; ſoon after this the Edges of the carious Part riſe a little, and Pus, or, if it ſhould be preſſed, Blood, is ſeen coming out below them; granulated Fleſh then appears at theſe Edges, the Bone is more raiſed gradually towards the Middle, till all the carious Part be ſeparated from the new ſprouting Fleſh, which ariſes up on the whole Surface of the Bone below, and ſeems to puſh off the carious Scale, ſo that it becomes quite looſe, and can be taken away without any Violence. The Ulcer is then in a fair way of curing, and though a conſiderable Thickneſs of Bone is come away, yet, in ſome time after, little Depreſſion is to be felt on the Surface of the Bone, the new Fleſh having gradually become harder, till it ſupplies, in a good meaſure, what was taken away.

Whoever has ſeen the Separation of a gangrened Piece of Skin, or of the Eſchar of a Cauſtic, applied to the Skin, where a Fiſſure firſt appears in the Margin of the mortified Part, Pus begins to ouſe out there; the Diviſion between the ſound and mortified Part becomes larger; new Fleſh ariſes; the Separation goes on from the Circumference to the Centre, till the mortified Part drops off, and the new Fleſh ſupplies its Place: Whoever, I ſay, has ſeen this, and compares it with the Phenomena of the dry Caries, will judge that, Allowance only being made for the Rigidity of the bony Fibres, which cannot contract, as the Fibres of Skin do, the Appearances are the ſame in both Caſes: And, therefore, I would call the State of the Bones, deſcribed above, the gangrenous Caries.

II. The ſecond Kind of this Diſeaſe is *Petit*'s worm-eaten Caries, in which the ſpongy, or cavernulous Texture is evident; it has not ſuch a dark Colour as the former, the Quantity of Matter ſent out from the Cellules of the Bones is greater than in the former Kind, and is vaſtly increaſed when the corrupted Sanies comes out from the Marrow of the Cancelli. Pieces of the rotten Bone may be broken off here, or they may fall away; but no regular Exfoliation is to be expected, unleſs, when, by Art, it is reduced to the former Species. The gradual Waſting of the bony Fibres, by the Suppuration, is often very remarkable in this Caries; a Piece of Bone, which appeared as large as the End of one's Thumb, and of a ſolid Subſtance, ſhall become leſs than the Point of the little Finger, and ſo ſpongy, that it can ſcarce be touched without breaking.

The worm-eaten Caries, where the Subſtance of the Bone only is affected, may be compared to an Ulcer of the ſoft Parts, which has a Number of little Sinuſes in its Sides; ſuch as I have frequently ſeen, when hard Tumors had only in part ſuppurated, and were not all melted down into Pus; Drops of Matter could be ſeen drilling out from the numerous Orifices of the ſmall Caverns in its Sides. When the Sanies comes from the corrupted Marrow in the Cancelli, the Diſeaſe is analogous to an Abſceſs, the Matter of which has eroded a Number of ſmall Holes in the Skin.

III. Frequently a ſpongy, bleeding, fleſhy Subſtance riſes in all the little Caverns of the worm-eaten Caries, when it may be called Carnous; and is much akin to Ulcers, with Hyperſarcoſis.

IV. As the ſoft Parts are diſſolved into a mucilaginous Subſtance, which deſtroys their original Form and Texture in the white Swellings, as they are called, ſo, in this Diſeaſe, and ſome others, the Perioſteum becomes thicker, the Bone turns ſofter, its Surface is eroded, a yellowiſh ſpongy Subſtance ſprouts out, and, proceeding deeper into their Subſtance, waſtes the bony Fibres.

The Difference of the Appearance of this Kind from what I called the carnous is, that, in the carnous, the ſpongy Fleſh grows out of the Caverns, while the grey, or brown-coloured, ſpongy, bony Sides of them ſtill remain; whereas, in the other, the bony Fibres diſappear where-ever the ſpongy Fleſh comes, ſo that one can ſcarce determine, by the Probe, whether or not the Bone is carious. Upon ſcraping away this Bone-conſuming Fleſh, the Surface of the Bone appears rough indeed, but not much eroded, nor greatly altered in its Colour. I have ſeen ſome Ulcers in ſoft Parts, where ſuch a conſuming ſpongious Fleſh aroſe.

V. Frequently, upon opening an Abſceſs, one ſhall ſee, at the Bottom of it, a white ſmooth Bone, without its Perioſteum, or Connection to any of the neighbouring Parts, except by its Ligaments at its Extremities. By any Trials we can make, and by what we can judge of the Bone, changing its Colour gradually, as it continues expoſed to the Air, and the Neceſſity of its coming all away, before any Cure can be made of the Ulcer, it appears, that there was no Circulation of Liquors in ſuch Bones, before the Abſceſs was opened.

This Way of Bones mortifying happens moſt commonly in ſcrophulous Patients, in whom ſomething analogous to this is often to be obſerved in the Glands, round which a ſlow Suppuration is made, which leaves them almoſt entirely ſeparated from the ſurrounding Parts.

VI. In one Species of Exoſtoſis, the tumefied Part of the Bone is ſofter than the reſt of it, and is not compoſed of regular Fibres, nor cavernous, but as if the oſſifying Juice had been thrown out irregularly; over which a cartilaginous or tendinous Subſtance is ſpread; and from this a firm, ſhining, ſmooth Fleſh grows out, which, after the Teguments are removed, ſends forth a thin, ſtinking, acrid Sanies; the Patient complains often of throbbing Pains in it, and ſometimes conſiderable Hæmorrhages are made from imperceptible Veſſels in its Surface. May not this be compared to ulcerated Glands?

VII. In the ſpreading, eating Cancers, of which all Practiſers know the Symptoms, the Bones are waſted, as well as the ſoft Parts; and the Appearances are the ſame in both, unleſs that the Bones do not conſume quite ſo faſt.

As the Ætiology would lead me into too large a Field of Diſpute, and the Prognoſis would require ſo many Suppoſitions as would be tedious, or would be ſo general as to be of little more Uſe than the common Directions laid down by practical Authors, I ſhall, therefore, proceed to the Cure.

In treating any Caries, it is altogether neceſſary to examine ſtrictly all Circumſtances, and to diſcover, if poſſible, what Cauſe, either general or topical, may have made the Corruption of the Bones, that Endeavours may be uſed to remove it, if it ſtill ſubſiſts. Seeing it would be very improper to pretend to give here Directions for the Cure of the Lues Venerea, Scrophulæ, Scurvy, Gangrenes, Abſceſſes, Wounds, Contuſions, and all the other Diſeaſes which may occaſion Caries, I muſt confine myſelf to the topical Management of the Caries, without any regard to the Habit of the Patient, or to any other Diſeaſe.

A ſpeedy and ſafe Separation of all the corrupted Part is, then, the principal Indication to be purſued; for executing which, you ſee from the Hiſtory, very many Means have been propoſed: To know which of theſe are preferable in the different Caſes which may be under our Care, it will be neceſſary to conſider the evident Operation and Effects of the ſeveral Medicines propoſed, which may be reduced to the following Claſſes.

1. The inſipid terreſtrial Abſorbents, ſuch as Powder of Coral, Crabs-eyes, and the like, put into an Ulcer, where a Bone is carious, can have little other Effect than to imbibe the Matter of the Ulcer; if they fall into any Cavernaculæ of the corrupted Bone, they may remain ſo long there, as that the Matter they imbibe may become acrid. Scraped Lint is an Abſorbent which has not this Diſadvantage.

2. The Powders which have aromatic, or other acrid Particles in them, ſuch as the Powders of the Roots of Birthwort, Bryony, Peucedanum, Aloes, Myrrh, Euphorbium, not only abſorb Liquors, but give more or leſs Stimulus in proportion to their Acrimony; and as the Effect of all Irritation is ſome Degree of Inflammation, which in Sores is principally removed by a ſubſequent increaſed Suppuration, theſe Powders may aſſiſt to ſeparate corrupted from ſound Parts. Such of them as have balſamic Particles in their Compoſition, encourage the Suppuration moſt. Several of them reſiſt the Putrefaction of animal Subſtances, and, therefore, may preſerve a carious Bone, or the Matter coming from it, from ſuch an high Degree of Putrefaction as they might otherwiſe go to. Beſides theſe Effects on the

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Sore, regard muſt always be had to their Operation, if any of their Particles are abſorb'd into the Blood-veſſels; for ſome of them produce more or leſs of Fever; others become Purgatives, &c. according to their different Powers, which are known to thoſe who are acquainted with the Virtues of Drugs.

3. Ardent Spirits, as Aquavitæ, Spirit of Wine, being liquid, can be introduced further into a carious Bone than Powders; they ſtimulate Sores, reſiſt Putrefaction, harden the Fibres, coagulate the Liquors, hinder Suppuration, and quicken the Pulſe when abſorbed.

4. The Tinctures of the Powders above-mention'd, in theſe Spirits, partake of the Nature of both, principally of the Spirit of which the larger Share of the Compoſition conſiſts.

5. The eſſential Oils, as Oil of Cinnamon, of Cloves, and the like, ſtimulate, erode, reſiſt Putrefaction, and, mixed with the Blood, raiſe ſome Degree of Fever.

6. Common Oils, Balſams, Reſins, relax, increaſe the Putrefaction, and are allowed univerſally to be the moſt effectual Suppurants and Incarners.

7. Water relaxes the Solids, and dilutes the Fluids, when nearly of the ſame Heat with Animals.

8. Vinegar ſtimulates and reſiſts Putrefaction; when weak, enjoys, alſo, the Virtues of Water; when ſtrong, approaches to the following Claſs.

9. The natural Salts, Nitre, Sea-ſalt, Alum, the Vitriols, have different Degrees of Pungency, and proportionally ſtimulate or erode; otherwiſe they preſerve animal Subſtances from Putrefaction.

10. Acid Spirits, extracted from Foſſils, by the Force of Fire, ſuch as the Spirits of Nitre and Sea-ſalt, the Oils of Sulphur and Vitriol, coagulate the Liquids, and mortify the Solids; by being diluted with Water, they approach to Vinegar.

11. By diſſolving metallic Subſtances in thoſe acid Spirits, generally their corroding, ſphacelating Power is increaſed, and ſome of them give ſuch violent Pain, as frequently to bring on Convulſions.

12. Metallic Bodies, corroded by Acids, generally erode, when applied to Sores. Some of theſe, for Example, *Sublimate Mercury*, and ſome other mineral Subſtances, particularly Arſenic, have ſhaken the whole Frame of the Body, when applied externally; and the Mercurial Preparations ſometimes enter the Blood, and produce a Salivation.

13. Alcaline Salts and Spirits, as the Salt and Spirit of Hartſhorn, Salt and Spirit of Sal Ammoniac, Pot-aſh, Salt of Tartar, Oil of Tartar, and the like, ſtimulate, erode, and increaſe Putrefaction; when abſorb'd, as the volatile ones very readily are, they quicken the Pulſe. The eroding Power of theſe Salts is greatly increaſed in their Preparations with Quick-lime, as in the common Cauſtic, which mortifies any Part of a living Animal it is applied to, but with remarkably leſs Pain than what the Acids, or their Preparations with Metals, give.

14. All Bodies heated beyond a certain Degree, and applied to our Bodies, give us Pain, ſtimulate, and inflame; when greatly heated, they mortify whatever Part of an Animal they touch.

15. The Effects of raſping, cutting, breaking, and trepanning Bones, are altogether evident.

16. In every Wound, or Ulcer, the Matter diſcharged into it muſt be the moſt conſtant Application to the Side of the Sore; when this Matter is laudable mild Pus, it is one of the moſt powerful good Digeſters, Suppurants, and Incarners; when it ſtagnates too long, or when the Liquors or Veſſels are faulty, it may become an acrid ſtimulating eroding Sanies; when abſorbed into the Blood, it infects all the Liquors, ſtimulates the Veſſels, and is capable of producing violent Diſorders.

The Effects I have attributed to theſe Medicines, are ſuch, as are evident to the Senſes, and what all who practiſe know; but do not always conſider; when they make uſe of them; otherwiſe, they would have adapted them better to the ſeveral Species of Caries, and to the different Stadia of each, the Cure of which I now proceed to.

Of the dry or gangrenous Caries.

When the dark Colour, and dry Surface, of a carious Piece of Bone ſhew it to be fully mortified; eſpecially, if the ſhrill Sound, and riſing Edges of it, with Pus coming out below them, diſcover the Exfoliation to be begun, Nature of herſelf, or with very little Aſſiſtance, will make the Cure.

If the Pus be mild, and in due Quantity, it will prove the beſt Suppurant and Incarner, for making the new Fleſh thruſt off the carious Piece of Bone; care only being taken not to remove it too frequently, nor to ſuffer it to remain ſo long as to become too acrid.

If the Quantity of Pus be too little, it is to be ſupplied by the Medicines, whoſe Effects are neareſt to it; ſo that thoſe of the ſixth Claſs are proper. The *Unguentum Baſilicon*, the *Linimentum Arcæi*, or ſuch-like, every Surgeon employs to haſten the falling out of a Piece of Skin mortified by a Cauſtic. I have often employed them, with equal Succeſs, in bringing away a Scale of a carious Bone, the Separation of which would neceſſarily be retarded by every thing which checks Suppuration, and the Growth of new Fleſh, as the common favourite Medicines comprehended under Claſs third and fourth neceſſarily do; though it muſt be acknowledged, that Nature, with the Aſſiſtance of the Balſam of her own preparing, Pus, will often get the better of all that Surgeons do againſt her.

While the Exfoliation is making, the external Opening in the Teguments is large enough, if the Pus be ſo evacuated, that it neither forms ſinuous Ulcers, nor is abſorbed to taint the Blood; for otherwiſe it haſtens the Separation of the carious Part of the Bone, more by being collected upon it, than when it has a free Exit.

If, by the external Orifice being ſmall, either of the bad Conſequences juſt now mentioned happens, the Aperture ought to be enlarged, either by filling it with prepared Sponge, which, expanding itſelf, ſtretches the Orifice; or it may be enlarged by cutting with a Knife, or eroding with a Cauſtic the Teguments which cover the Caries; and they are afterwards to be kept aſunder, by filling the Sore with ſoft Doſſils, and preſſing them in gently by a proper Bandage.

When the Colour of Part of a Bone is conſiderably alter'd from what it ſhould be in a ſound State, but is not ſo dark as it can be judged to be entirely mortified, while there are no Signs of its Separation, it may prove a very tedious Task to truſt the Exfoliation to Nature; and therefore, after laying all the altered Part bare, if it can be done by the Methods propoſed in the preceding Suppoſition, the Surgeon ought to try with the Perforator, or with the Raſper, how deep the Diſeaſe goes. If it be only ſuperficial, a complete Mortification is to be made, by applying a red-hot Iron, or the potential Cautery; after which, the Caſe, and its Management, are the ſame as were mentioned already.

If the Alteration of the Bone be deeper than the Action of the Iron, or Cauſtic, can reach, the Surgeon may cut off all that is ſuſpicious, with a very ſharp Inſtrument ſtruck with a wooden Mallet, which gives little Shock to the Member; after which he is to promote, as much as poſſible, the ſprouting of granulated Fleſh, ſuch as riſes in Exfoliations, from the whole Surface of the Bone, without which no Cure is made; but the Surface anew alters its Colour, and corrupts. If it were asked Surgeons, what the Medicines are, which would moſt readily procure the Growth of Fleſh; they would readily anſwer, in general, Pus, and balſamic or unctuous Medicines; and ſuch they would apply in all ſuch Caſes, except where the Bones are bare. For what Reaſon this Exception ſhould be made, I underſtand not: The Parts which yield new ſprouting Fleſh with the greateſt Difficulty, ought, one would think, to have the moſt powerful Incarners applied to them: And now, after a great many Trials, I can aſſure you, that no Medicines ſo effectually prevent the Corruption of Bones laid bare, and aſſiſt to cover them ſo ſoon with Fleſh, as Ointments, Balſams, and Dreſſing ſeldom, to have the Aſſiſtance of the moſt effectual Balſam of all, Pus. With theſe we ſee daily the Extremities of amputated Bones covered over with Fleſh; and by this Method I have had the Pleaſure to ſee large Parts of the Skull, Tibia, and other ſuch very ſolid Bones, covered in a little time with granulated Fleſh, after they had been made quite bare by Wounds, made even with bruiſing Inſtruments, and, likewiſe, after their exterior carious Surface had been cut off, as above directed; and a complete Cure was made, without the leaſt obſervable Exfoliation.

It is plain, that in the Caſe I now treat of, where the corrupted Part of a Bone has been all cut away, or when ſound Bones have been laid bare, and we wiſh to make a Cure without Deſquamation, that all Medicines, which can mortify the exterior Fibres, ſuch are all eroding Medicines, are to be avoided; as are all ſuch as harden and dry Fibres to which they are applied, ſo as to prevent the growing of Fleſh, which ardent Spirits moſt effectually do; and therefore, of all the Claſſes of Medicines which I mentioned, there are none except the Abſorbents, N° 1, and 2. the unctuous and balſamic, N° 6. and Water, N° 7. which are not oppoſite to the Indications of Cure. The terreſtrial Abſorbents are of no Uſe; Water dilutes and waſhes away the Pus; ſo that ſome of the more active or balſamic Powders, and the unctuous Medicines, can only be the proper Remedies here.

Whoever has taken notice of the Progreſs of the Exfoliation of a Bone, or of the Cure of a Bone laid bare without Exfoliation, muſt have ſeen the granulated Fleſh, riſing from every Part of the Surface of the Bone to cover it; and that what Fleſh grew out from any neighbouring Part, though it may lie over the Bone, and hide it from the Sight, yet it does not grow to the Bone; and no Cure is made, unleſs by what riſes from every Point of the Bone. Surgeons are even often obliged to deſtroy ſuch overloping ſpongy Fleſh, to promote the Cure; from which it is reaſonable to conclude, that *Belloſte*'s Dreſſing ſeldom contributed much more to the Cures he performed without Exfoliation of Bones laid bare, than the Holes he propoſes to be made with the Perforator into the Diploe or Cancelli: The Fleſh ariſing from that ſofter Subſtance, overſpreading the Surface in the

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the Circumference of the Holes, can be no better than the ſpongy Fleſh, which hangs over the Bone from the Sides of the Sore.

If, notwithſtanding our Endeavours to make Fleſh riſe from the Surface of a ſound Bone laid bare, or of one that has had its mortified Surface cut off, we cannot obtain this wiſhed for Incarnation, and the Surface of the Bone ſhews its beginning Corruption by a Change of Colour, it muſt be treated as above directed in the Caſe, where we ſuppoſed a ſuperficial Caries, it muſt be completely mortified.

When the carious Part of a Bone is too thick for being ſeparated, either by the Raſper, or Chiſſel, it is to be taken out by the exfoliating Trepan, or by making a great many Holes in the Circumference of the Caries; and then, cutting the Bridges between them through, the middle of it is raiſed, or cut off; after which the Management is the ſame as in the preceding Caſe.

Very often there is not Space enough in the Sore, to apply right the Inſtruments proper for cutting away the carious Part of a Bone, and it cannot be ſafely enlarged: When this is the Caſe, we can only haſten the Exfoliation, by fully mortifying all that is ſpoiled, by repeated Applications of a red-hot Iron, or of potential Cauteries. When the hot Iron is to be uſed, the Bone ought to be previouſly well dried, that the Iron may not be extinguiſhed by the Moiſture; and we are commonly deſired to guard the Sides of the Sore with wet Rags; whereas, when either the Iron is to be applied from time to time, or we can judge, that the Exfoliation cannot be ſpeedily made, while we wiſh to continue a large external Opening, the reaſonable Practice is of Deſign to burn the Sides into a fully mortified Eſchar, if ſome Part is not to be hurt, the burning of which might be of very ill Conſequence; for, while this dead Eſchar remains, leſs Moiſture will be thrown out, to prevent the Effect of the Cautery, and the ſubſequent Applications of the hot Iron can be made with little or no Pain to the Patient; and the Orifice does not contract. If a carious Bone, which is to be burnt, lies deep, the hot Iron ought to be introduced through a Cannula placed upon the Bone, that the Iron may be rightly directed.

If the potential Cauteries are choſen, rather than the actual, the common Cauſtic, prepared of Quick-lime and Soap-lees, deſerves the Preference to any of thoſe compoſed of the acid Spirits; for it gives not near ſo much Pain; and is not ſo ready to occaſion Convulſions; it penetrates better than the dry Forms of eroded Metals; and does not run ſo much when it melts, as the mere liquid Acids do; it either is not abſorbed, or its Effects are not obſerved in the Blood, whereas the Mercurial Preparations frequently raiſe an unexpected Salivation. The Reaſons given for burning the Sides of ſuch a Sore as I now treat of, are equally good for forming an Eſchar all round the Sides, with the potential Cauteries. This Eſchar ought to be kept from ſeparating, as long as the Surgeon can: The moſt effectual way of doing this, is to ſoak it frequently with ardent Spirits; by which Management the Exfoliation of the Sides (pardon the Expreſſion, which I uſe to ſhew the Analogy) may ſometimes be near as long in making, as the Exfoliation of the Bone, if the Suppurants, Pus, and digeſting Balſams, are rightly applied to it.

When the affected Part of the Bone is fully mortified either of theſe ways, the Caſe is reduced to the Suppoſition I firſt made, and is to be treated the ſame way.

Though Neceſſity obliges to uſe Cauſtics, in the very deep dry Caries, yet, becauſe they require ſo much Time, and ſo frequent Applications, before they can pierce through any conſiderable Thickneſs of a ſolid Bone, I would prefer the chirurgical Inſtruments, with which the whole corrupted Part can be taken away at once, where-ever they can be conveniently made uſe of.

After an exfoliating Piece of Bone is moveable, the Orifice of the Sore ought to be made ſo large, by the Methods before propoſed for enlarging Orifices of Sores, as the ſeparated Piece can eaſily be brought out, and without leaving any conſiderable hollow Ulcer under the Skin; for thus the pricking Pain, which a looſe Piece of rotten Bone frequently occaſions, when left to work its Way through a ſmall Paſſage, and the Suppurations, which may be occaſioned by its remaining under the Teguments, may be prevented; and there is no Danger of leaving a ſinuous Ulcer, which may require more Time and Labour, than is otherwiſe neceſſary for a complete Cure of the Sore, which needs no other Treatment, after all the corrupted Bone is brought away, and the ſound Part is covered with firm Fleſh, than what any common Ulcer does

The Caſes I have ſuppoſed may ſerve for underſtanding the different Stadia of this dry Caries, with the Management neceſſary in each; and, therefore, I proceed to the ſecond Species of Caries.

Of the Worm-eaten Caries.

The Cells formed in the eroded Bone, in this Species of Caries, lodging and retaining the acrid putrid Sanies, which increaſes the Diſeaſe, it is neceſſary to deſtroy all the affected Part of the Bone, as ſoon as can conveniently be done. Where-ever the proper Inſtruments can be applied, Raſping, Chiſſeling, or Trepanning, according to the Depth or Extent of the Caries, will moſt ſpeedily anſwer the Intention. After any of theſe Operations are performed, the Method of Cure is the ſame as was propoſed, when we ſuppoſed theſe Operations to have been performed in the dry Caries.

When the Sanies comes from the Cancelli of the Bones, the corrupted Sides ought to be taken out by one or more Applications of the Trepan. If the carious Part be of large Extent, the Trepan is to be applied all round the Circumference of it; and, the Bridges being cut through, it is to be all raiſed up. A Patient was received into the Infirmary at *Edinburgh*, for a ſwell'd carious *Tibia*; the Teguments were all mortified by Cauſtic, and then cut away; the Operation of the Trepan was performed fourteen times in the Circumference of the corrupted Part, and all the anterior internal Side of the middle of the Tibia was taken out; new Fleſh roſe from the Cancelli, and became firm Bone, before he went from the Hoſpital.

If leſs of the firm Sides of the Bone are found to be corrupted, than what, upon opening the Cancelli, we diſcover them affected, care muſt be taken, that the Matter within the Bone ſhould be eaſily diſcharged.

When, by the Orifice through the Sides of the Bone being in the lower Part of the putrid Cancelli, the Matter eaſily flows out, or all the affected Cavity can be filled with proper Dreſſings, the Cure may be made without taking any more off the ſolid Sides of the Bone. A Girl, after the Small-pox, having an Ulcer very near the internal Malleolus, an Hole was eroded by the Matter through the Bone, large enough to admit a Finger; a Probe was introduced three Inches upwards within the Tibia, without meeting any Reſiſtance; but, on directing the Probe downwards, we felt the Bone full of firm Fleſh. A Paſtil made of Myrrh, Aloes and Honey, had been put every Day into the Bone; and the Girl had a conſtant Purging, which ceaſed after I ordered the Aloes to be omitted in the Dreſſing of the Sore. An Injection compoſed of Digeſtive, and Honey of Roſes, diſſolved in Water, with ſome Vinegar, was thrown every Day into the Bone; the Paſtil of Myrrh and Honey was introduced a little Way; the Cavity of the Bone gradually filled up with new Fleſh, and a complete Cure was made.

When the Sanies ſtagnates, becauſe of the unfavourable Situation of the Aperture in the Sides of the Bone, one or more new Openings muſt be made with the Trepan, till either the Sanies has a free Exit, or all the Part of the Bone, covering the putrid Cancelli, is taken away, when the common Cures for other Ulcers are to be employed.

If we cannot perform the neceſſary Operations for removing a worm-eaten Caries, we muſt burn it frequently with a red-hot Iron; the Directions for which Operation were already given in treating of the dry Caries. The hot Iron ſeems to be preferable here to the potential Cauteries; becauſe theſe may ſink into the Cells, and erode deeper than we incline, while they might not deſtroy the exterior Part.

When, in this Species of Caries, the Sanies is in great Quantity, and very fetid, and the Bone cannot be come at, to do what is neceſſary for a free Diſcharge, ſo that there is Reaſon to be afraid, that not only the Bone may be farther eroded, but that the Sanies may be abſorbed, to occaſion an hectic Fever, and all its fatal Conſequences, it will be fit to encourage the Diſcharge of the Matter as much as poſſible, and to apply ſuch Medicines as blunt or deſtroy its Acrimony. It is, therefore, neceſſary to dreſs frequently in this Caſe, and to waſh out the Sanies, at each Dreſſing, with a proper Liquor. Ardent Spirits, the Tinctures made with them, and eſſential Oils, indeed deſtroy or confound the putrid Smell of ſuch Sanies; and, by contracting the Veſſels of any Sore they were put into, leſſen the Diſcharge of the Sanies, which makes them anſwer the old Theory of their being proper Medicines for the Caries of the Bones; which Diſeaſe was ſuppoſed to proceed from too much Moiſture thrown upon the Bones, whoſe natural Quality is dry, and, therefore, required drying Medicines to cure them. Theſe, I am perſuaded, have been the Reaſons, why thoſe Medicines came to be employed for carious Bones: But, from what has been obſerved of the different Circumſtances of Caries, it is evident, that theſe Reaſons cannot be alleged for employing them in all Caries: And in the very Caſe, which we now conſider, and which is the moſt favourable for uſing them, there are Objections to them, which make others appear more reaſonable to be employed, and which, upon Trial, I have found more ſucceſsful. The Objections are, that ardent Spirits, and eſſential Oils, in very ſmall Quantity, or diluted, (for when pure, and in large Quantity, they are cauſtic, and penetrate too deep) retard the Separation of the corrupted Parts; they render all the Ulcer callous, which is indeed of ſome Advantage to prevent proud Fleſh, whilſt the Bone is not ſeparated, but is troubleſome to remove afterwards; they are very readily abſorbed, and produce more or leſs Fever, which hurts the Patient. Some of the moſt common Tinctures employed, that

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that of Aloes particularly, frequently brings on a conſtant Purging. Common Digeſtive, or Honey, or both, diſſolved in Water, with which Vinegar, or ſome Drops of an acid Spirit, have been mixed, more effectually correct the putrid Sanies, and can be uſed in any Quantity, to waſh it out of the Sore, without either retarding the Separation of the ſpoilt Bone, or raiſing the leaſt Diſorder, if abſorbed; but, on the contrary, preventing the Miſchief, which the abſorb'd Sanies would otherwiſe produce. When the Ulcer is deep, this Medicine ought to be thrown into it from a Springe, that it may penetrate every-where, and may bring the Sanies away with it when it recoils.

Of the Carnous Caries, or Ulcer of the Bones with Hypersarcosis.

This Diſeaſe differing only from the immediately preceding in the Addition of ſpongy Fleſh growing in the Cells of the Bone, the general Indications of Cure alter very little; only, as this Fleſh bleeds eaſily, and obſtructs the Surgeon's View, the Raſping, Chiſſeling, and Trepanning, cannot be ſo proper here as the Cauteries for deſtroying the corrupted Part; and, ſeeing the Liquors, conſtantly ouſing from the ſpongy Fleſh, ſoon extinguiſh the hot Iron, the potential Cauteries are preferable to the actual Cautery. The Application of the Cauſtic will require to be frequently repeated, becauſe this kind of Caries is generally very deep; and, therefore, it will be convenient to make an Eſchar round all the Sides of the Ulcer, at the firſt Application of the Cauſtic, and to keep it as long on, as we can, by ſoaking in ardent Spirits, that it may ſerve as a Fence for preventing the future Cauſtics from ſpreading too far, or giving Pain. The Moiſture which the ſpongy Fleſh in this Diſeaſe ſpews out, eſpecially when irritated, is ſo great, that I have daily dreſſed with Powder of common Cauſtic, removing a conſiderable Quantity of gelatinous Stuff, which collected on the Surface, where the Cauſtic had been applied, inſtead of the Eſchar, which uſes to be made in drier Parts. If the Cauſtic makes an adhering Eſchar, it is in vain to apply any more Cauſtic, till that Eſchar ſeparates, which is to be haſtened by ſuppurant Ointment. By ſuch repeated Applications of common Cauſtic, I have, in a very ſhort time, conſumed a whole metatarſal Bone of the great Toe of an Adult; and have penetrated into the Cancelli, in the middle of a Tibia, the leſſer and more ſpongy Bones conſuming ſooner.

What has been ſaid of the two former Species of Caries, will readily make one know, what further is to be done in managing the differing Stadia of this Caries.

Of the Phagedenic Caries with Hypersarcosis.

The Management of this Caries is nearly the ſame with the former; only one or two Applications of the potential Cauſtic are ſufficient to mortify ſome of the Surface of the ſolid Bone, which ſeems to reduce it to the dry Caries. But I muſt obſerve, that when this Caries is partial, I mean, when it only ſeizes one Part of the Bone, which ſeldom is the Caſe, the Fleſh which thruſts off the mortified Scale, is, for the moſt part, as phagedenic, or bone-conſuming, as what appeared at firſt: And, therefore, even in this moſt favourable Suppoſition, the Surgeon ſhould not promiſe a Cure, unleſs he has corrected the Habit, or topical Indiſpoſition, by internal Remedies.

When this Diſeaſe has taken firm Root, it will ſpread upon one End of a Bone, which was in Appearance ſound when the Cure of the other End attacked with it was begun; and it will creep along from one Bone to another, with this Diſadvantage too, that it is far advanced before one can well diſcover it.

Of the scrophulous Caries.

The ſpoilt Bones here being principally retain'd by their Ligaments, which we ſeldom can conveniently come at, to cut through, and which are too ſenſible to be eroded, Surgeons not only loſe their Labour, but do conſiderable Miſchief, when they forcibly keep open and dilate the Orifice of Ulcers where ſuch Bones are, by cramming them with hard Dreſſings, kept in by a firm Bandage; and by waſting down the ſpongy Fleſh with Eſcharotics, while they are forcibly endeavouring to make the Bone come away; ſuch tender Conſtitutions, as theſe Patients have, cannot bear ſuch rough Treatment; they languiſh and decay under it. What I have always found of moſt Service, or rather that did the leaſt Hurt, was to deſtroy fully the Teguments covering the Abſceſs formed on the Bone with Cauſtic, to cut the Eſchar through the Middle, to evacuate the collected Matter, and to ſave the Eſchar on the Sides as long as I could; to order very mild Applications afterwards to the Sore, and to waſh it frequently with Water. Nature at laſt ſeparates the Bone, which is to be taken out, whenever it is quite looſe.

Of the Scirrho-cancrous Caries.

Actual and potential Cauteries have the ſame Effect here, as in ulcerated Cancers of the Glands; they don't diminiſh the Tumor, create great Pain, occaſion Hæmorrhages, when their Eſchars ſeparate, and the like. Moſt other Medicines do Miſchief, none of them do Good; Extirpation only can make a Cure, which may be done, either by trepanning round the Root of the Exſcreſcence, cutting the Bridges between the Holes, and bringing all away, or the Member is to be amputated. All of them I have yet ſeen were ſo ſituated, that it was impoſſible to make the partial Extirpation; ſo that I cannot ſay poſitively, how it would ſucceed. After the Amputation of the Member, the Wound cures as well as in other Diſeaſes; but ſome of the Patients have ſince been ſeized with the ſame Diſeaſe in another Member.

Of the spreading cancrous Caries.

This ſort of Cancer ſeldom cures; it will ſometimes get a Skin upon it after cutting or burning, or with gentle drying Medicines, or dry Lint, often breaks out again unexpectedly, and there is no certain Cure yet found for it. I never ſaw this Diſeaſe originally formed in the Bones; they are only affected by being in the Way of the Diſeaſe; ſo that whatever Change the original Diſeaſe undergoes, the Bones partake of it. *Monro, in the Medical Eſſays, Vol.* 5.

Caries *of the* Bones, *from* Heister.

The Caries or Corruption of the Bone may be reckon'd among the principal Cauſes of the Depravity of obſtinate Ulcers. For, when a carious Bone is conceal'd in an Ulcer, it is ſcarce poſſible to heal it; or, if it ſhould be brought to appear ſound outwardly, it will ſoon break out again, unleſs the carious Part of he Bone be removed.

A Caries of the Bone happens, when the Bone, from whatever Cauſe, is deprived of its Membrane, or Perioſteum; and, having loſt its natural Heat and Colour, becomes pinguious, yellow, brown, and, at laſt, black. This State, which is the firſt and gentleſt Degree of this Diſorder, was call'd by the Antients, *Os vitiatum*, and alſo *Nigrities*. But the greateſt Degree of this Diſeaſe is, when the Bone is corroded, and become rough, and ſunk into little Holes; when a fetid Sanies is diſcharged, the Acrimony of which ſoftens, relaxes, or conſumes the adjacent Fleſh, ſo that the Bone ſeems as if it were ulcerated. All the Bones of the Body are ſubject to this Diſtemper: And though this Ulcer may ſometimes appear to be perfectly heal'd, yet, ſome time after the Cicatrix has been induced, an Abſceſs will be form'd, and the Ulcer return, diſcharging the corrupt, acrid Matter, collected within, from the carious Bone, and producing many dreadful Symptoms, ſuch as Horror, Vomiting, and a Fever, attended with a new Corroſion of the Fleſh.

Of this Diſorder, and thoſe which are nearly allied to it, there are many different Names and Species. It is denominated Caries, Spina Ventoſa, or Spinæ Ventoſitas, a Gangrene or Cancer of the Bones, by *Celſus*; and ſometimes it aſſumes the *Greek* Appellations of *Teredo* and *Pædarthrocaces*. But although ſome Authors have conſtituted as many Species of this Diſeaſe, as there are Names, ſo many Diſtinctions appear to me unneceſſary; becauſe I can ſee but two material Differences, which can only make two Species: 1. When the Diſorder proceeds from the internal Part of the Bone. 2. When it begins on the Outſide of the Bone, or ariſes from an external Cauſe. This Species, with the generality of Phyſicians, I call Caries, and that Spina Ventoſa, or, with *Severinus*, when it happens in Children, *Pædarthrocaces*.

The Caries of the Bone, properly ſo call'd, may be produced by two Cauſes; 1. If, after a Wound, Blow, Contuſion, Fracture, or Fall, the Bone ſhould be deprived of its Perioſteum, ſo as to be expoſed to the Injury of the external Air, or corrupted with the pinguious oily Dreſſings, which are commonly applied to ſimple Wounds, ſuch as the Oil of St. John's-wort, or of white Lilies, *Samaritan* Balſam, and the like. 2. If by external Violence, or an internal Cauſe, the Circulation of the Fluids be interrupted, and ſucceeded by Inflammation and Suppuration: Whence the Veſſels deſigned for the Nouriſhment of the Bone and Perioſteum are inflamed and corrupted, and the Bone itſelf becomes corroded. This Diſorder, if not quickly cured, like Ulcers in the ſoft Parts, ſpreads, and communicates its Corruption by degrees.

Hence it may appear, that there are ſeveral Degrees of Eroſion, or Caries of the Bones. The firſt and mildeſt is, when the Bone is laid bare, looks greaſy, and turns yellowiſh; but, as ſoon as it becomes truly yellow, brown, or black, it degenerates into a worſe State. The third Degree is, when the Bone comes to be conſumed, rough, and uneven. The more the Bone is corroded, the more rough and uneven it is render'd; as, when the Cranium is perforated, or the Os Tibiæ, or Os Femoris, or conſumed to the very Marrow, the Caries is reckon'd very ſevere. But the moſt malignant, and almoſt deſperate Degree of this Diſeaſe, is when the Caries attacks the Joints, or any other Part of the Bone, which lies deep; becauſe the Hands cannot then have Acceſs to clean the Bone, and the Caſe admits of no Remedy, but Amputation of the Limb.

A Caries may be diſcover'd two Ways; as it is conceal'd, or as the corrupted Bone appears to View. When the Bones are open

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open to the Eye, the Caries may be discovered by the following Signs: The Bone looks pinguious, and degenerates from its natural Colour, to yellow, brown, or black; the Bone is bare, and the Periosteum destroy'd; if a Finger, or a Probe, be applied to the Bone, it will be found uneven, rough, and perforated, or spongy. 2. But when the Bone is concealed by the Flesh, or other Causes, the Caries will discover itself by the following Signs: The discharged Matter will, for the most part, appear oily, brown, or black, and stink like corrupted Bacon: When the Dressings are taken off, they will be tinged, by the corrupted Matter, with a blackish Colour: When there is Room for passing a Probe to the Bone, which is not always the Case, it will be found to be rough and uneven; the neighbouring Flesh will appear flaccid, soft, loose, spongy, and stink like corrupted Bacon: Lastly, when the Bone can neither be seen, nor reached with a Probe, we may reasonably suspect a carious Bone, when the Ulcer frequently breaks out afresh, after it has been healed, without any other manifest Cause.

Hence it may be deduced, that Ulcers of this kind are always cured with great Difficulty, and seldom without Deformity of the Part; that they are subject to spread, especially if the Caries cannot be conveniently reached; and even when they are healed, as was already observed, they frequently break out again; but when the Disorder increases, and extends to a Joint, as the Knee, no Relief can be expected, but from Amputation of the Limb. If the State of the Patient will not admit of this Operation, he is attack'd with a Languor, and slight Fever, which are soon succeeded by Death. A Caries in the Os Femoris, Os Coccygis, Os Sacrum, Os Cranii, Os Tarsi, and Ossa Palati, are extremely difficult of Cure; but when it attacks the Cranium, and, as often happens, even penetrates to the Dura Mater, the Patient is tormented with intense Pains in the Head, continued Watchings, Vertigos, a disturb'd Imagination, with many other such dangerous Symptoms.

With regard to the Cure of a Caries, various Methods have been attempted with Success. The first and easiest Method is used in the slightest Degree of a Caries, by the Application of spirituous Medicines, as the Spirit of Wine, or *Hungary* Water; or by Balsamics, such as the Powder of Birthwort, and *Florentine* Orris, or the Powder of Myrrh and Aloes: Let one or other of these be daily sprinkled on the affected Bone, after the Sanies is wiped off with dry Lint, till the morbid Part of the Bone is almost exfoliated, and the Flesh appears new, sound, and firm. If the Caries penetrates deeper, stronger Remedies are required; such as the Powder or Essence of Euphorbium, prepared with the best Spirit of Wine, which powerfully destroy the Caries; or the Oils of Cloves, Cinnamon, or Lignum Gualacum. These may be applied with a Pledget of Lint, and cover'd with dry Linen. Some use, in the same Manner, and with equal Success, other corrosive Medicines, such as the Aqua Phagedænica, or Spirit of Vitriol, or of Sulphur; or a Solution of Mercury in Aqua-fortis, or the Spirit of Nitre, may be substituted in the room of all the rest. These we have enumerated as the principal Remedies used for this Purpose, without taking notice of those which are too weak for the Intention, or too strong to be admitted with Safety; such as Arsenic, or Sublimate Mercury in Substance. When, by this Method, an Exfoliation of the Bone is procured, you must proceed to incarn, and complete the Cure with Balsamics. Therefore, the next Dressings should consist of *Hungary* Water, or the Essences of Mastich, Myrrh, Amber, Aloes; also *Peruvian* Balsam, or Balsam of Capivi, or other Balsams of this Kind; covering the Whole with a Plaister, and proceeding as in the Cure of common Ulcers. See ULCUS. *Le Dran* has given us some curious Observations on the Caries of the Bones, especially in the *Cubit*, *Obs.* 51, 52, 53; in the Loins, *Obs.* 69; after the Small-pox, *Obs.* 70; in the *Os Ilium*, *Obs.* 95; in the greater Trochanter, *Obs.* 97; in the Knee, *Obs.* 102, 103; and in the Leg, *Obs.* 104.

The Cure for the second Degree of Caries consists in perforating the Bone, after being laid bare, with the Perforator, or Instrument, described in *Tab.* XXVIII. *Fig.* 2. or *Fig.* 7. A; or *Tab.* XXXVI. *Fig.* 8. as far as the sound Part, in the same manner as is done after a Wound in the Cranium. The Dressings may consist either of dry Lint, or the balsamic Medicines above recommended. By these means, not only the morbid Part of the Bone will be exfoliated, but new Vessels will shoot into the small Perforations, which, coalescing with the neighbouring Flesh, form a new Covering for the Bone.

When it is certain, that the morbid Bone is black, with a Raspatory, or File, scrape away all the corrupted Part, till the Bone appears white, or red, and sound. *Celsus* advises this Operation to be done vigorously, for Expedition; otherwise little or nothing can be effected by it. *Scultetus* thinks the Raspatory should not be applied, till the Bone lies fairly exposed, or not till it begins to separate from the sound Part, and that the Bone should be dressed only with dry Lint, till this happens; which, however, is not a general Rule. Others, in particular Cases, use a Mallet and Chissel (see *Tab.* XXVIII. *Fig.* 10, 11.) for separating the corrupted Parts from the sound, with or without a Perforation. But both these Methods have been generally disused by the modern Surgeons; tho' *Petit* affirms, that the best Method is to rasp the Bone, tho' the luxuriant Flesh should be continually sprouting, and afterwards to apply the actual Cautery. And in those Tumors of the Bone, now call'd *Spina Ventosa*, which refuse to yield to Medicine, he directs not only to make frequent small Perforations, but that the Tumor should be taken off with the Mallet and Chissel.

The fourth, which, tho' the oldest, is the readiest and most certain Method of Cure, especially in the higher Degrees of the Disorder, is perform'd by burning the morbid Part of the Bone, with the actual Cautery, having the Instrument adapted to the Place (see different Kinds in Plate XXIV.) But particular Caution must be observed, in this Operation, not to injure the adjacent Flesh, and soft Parts. For this Purpose, the Lips of the Ulcer should be held asunder by an Assistant; or, if they are too narrow, they should be widen'd with an absorbent swelling Tent, made of Gentian-root, or a Piece of Sponge; or, otherwise, they must be laid open by Incision, till the Bone fairly appears. The Bone should, likewise, be cleaned with dry Lint, and the fungous Flesh removed, before the hot Iron be applied, lest the Matter should extinguish it, or, at least, weaken its Action. If the Caries penetrates deeper, or spreads wider, so that it cannot be destroy'd by the first Cautery, more Applications must be made, either immediately, or some time after, when it appears that all the morbid Part of the Bone is not removed. If the Caries be wide, the first Application of the Cautery should be in the Middle, thence proceeding towards the Edges. No violent Pain attends this Operation, if the soft Parts are untouched, the Bones having no Sensation of Pain. But, in a Caries of the Bones of the Cranium, there would be great Danger, from this Operation, of injuring the Membranes of the Brain, or even the Brain itself; and a like Danger would arise, if it were perform'd on some of the soft, spongy Bones, as upon the Sternum, or carious Ribs; in both which Cases the Cautery should be avoided. Nor will the Carpus, Tarsus, and other spongious Bones of that Kind, admit of cauterizing; principally, because of the neighbouring Ligaments, Nerves, and Tendons, which can scarcely avoid being injured; and this would be follow'd with dangerous Consequences.

The diseased Part of the Bone being thus cauterized, the first Dressing must be dry Lint; or, if the Patient still feels a Sense of Heat in the Part, the Lint may be moisten'd with tepid Spirit of Wine. The Dressings may, afterwards, consist of the balsamic Remedies before recommended, till the Exfoliation succeeds; and the Vacuity will soon be supplied with new sound Flesh, which will be a Proof, that the Cure is completed. But where the Bone continues bare, or where the new Flesh is soft, lax, and spongy, and does not sufficiently adhere to the burnt Part of the Bone, or where the Bone remains discolour'd, the Disorder is evidently not extirpated. In these Circumstances, the new Flesh must be cut off, or abraded, or consumed with burnt Alum, and red Precipitate, or some other stronger corrosive Medicine; and then the actual Cautery may be repeated; or, according to the Circumstances of the Disorder, some of the other Methods, before recommended, may be used; otherwise, no permanent Cure can be expected.

If the Caries has penetrated even to the Marrow of the larger Bones, *Petit* advises, after the Example of *Meckren*, to make one, two, or more Perforations with the Trepan; and gives us a Case, where, after having used the actual Cautery, he perforated the *Tibia* thrice, and cured the Patient. But this Method can seldom be used in any other great Bone but the Tibia, because of the Obstruction occasion'd by the Thickness of the Flesh. He farther informs us, that the Os Pectoris, or Sternum, may be sometimes perforated in this Manner; which not only makes a Passage for the Discharge of the confined Matter, but, likewise, gives an Opportunity of immediately applying proper Remedies, even to the innermost Recesses of the Wound. But this Operation must be perform'd with the highest Caution and Deliberation upon the Sternum; because Respiration may be injured, and other violent Disorders produced. It is proper to observe here, that when the Caries extends to, or begins in, the Marrow of the Bones, (which is called a Spina Ventosa) it does not always proceed from an internal Cause, but sometimes from the interior Vessels of the Bone being broke by external Violence; and the Blood, being discharged into the Cavity of the Bone, by degrees, degenerates into Pus, and corrodes the Bone. Thus a Caries is produced, which spreads from the Marrow to the exterior Parts.

If the Blackness, or Caries, extends to the other Side of the Bone, so that it seems thoroughly corrupted, *Celsus* advises to take it entirely out. If the lower Part is sound, only what is affected must be remov'd. If a Bone of the Head, of the Breast, or if a Rib, be carious, the Cautery will have no Effect, and it must, likewise, be cut out. This Operation must be expeditiously perform'd; for the Bone must be taken out as soon as it is laid bare, before any inflammatory Symptoms appear; by which means the whole Operation may be perform'd with greater Safety. When a Cartilage is carious, it must be scraped with a Knife, till no-

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thing remains but what is ſound. I am obliged to *Celſus* for what I have here advanced, who treats on theſe Subjects better than any modern Writer.

Upon the Whole, we may conclude, that the Cure of a Caries of the Bone principally depends upon removing, in the moſt proper and expeditious Manner, all the corrupted Part of the Bone: And this, I have found by Experience, may be done in the gentleſt Caſes, by Spirit of Wine, and *Hungary* Water; in more violent Degrees of this Diſorder, by a Solution of Mercury in Aqua-fortis; and in the moſt malignant, by the actual Cautery, or Amputation. The Cure of the Ulcer may be completed, as in other Ulcers, by the balſamic Remedies ſo often recommended.

If the Bone be conſiderably conſumed by the Caries, or if it extends itſelf towards a Joint, as the Knee, or of the Hand, or Foot, ſo that the affected Part cannot be removed by Inciſion, Extraction, or Cauterizing, conſiſtently with the Preſervation of the reſt of the Limb, there remains but one Remedy, for the Safety of Life itſelf, which is amputating the whole affected Member; otherwiſe the Patient leads a miſerable Life, and, after being exhauſted with Pain and Trouble, with a Loathing of Aliment, Watchings, a ſlight Fever, and a long wretched Train of Symptoms, will at laſt expire: But when only one Side of a large Bone, as the exterior Part of the Os Maxillæ, Humeri, Tibiæ, or Claviculæ, is corrupted; or a Part of a Rib, of the Ulna, Radius, or Fibula, and the like; not the whole Limb, or Bone, muſt be immediately removed, but only the carious Part, which may be done in the propereſt Manner, as we have already directed. When it happens, that more or leſs of the morbid Bone ſeparates ſpontaneouſly from the reſt; if it can be laid hold on, and the Ulcer be ſufficiently wide, it ſhould be extracted with the Fingers, or the Forceps; but, if the Orifice of the Ulcer be too ſmall, it muſt be widen'd with the Knife. A remarkable Inſtance of this we have in *Meckren*, *Obſ. Chir.* 69. where a large Portion of a corrupted Bone was taken out of the Arm; and another in *Ruyſch*, where it was extracted from the Tibia.

Of the Spina Ventoſa, Pædarthrocace, and Exoſtoſis, which may be called Tumors of the Bones.

That Species of Corruption of the Bones, which proceeds from their internal Parts, which, by degrees, enlarges the Bone, and ſwells it into a Tumor, is now generally called a *Spina Ventoſa*, and, by ſome, *Spinæ Ventoſitas*; tho' theſe Names were unknown to the Antients, who termed them *Sideratio*, *Gangræna*, or *Cancer Oſſis*, and ſometimes *Teredo*. Some *French* Authors uſe the Appellation *Exoſtoſis*; though this Term more properly belongs to certain preternatural Eminences, or acuminated Exceſcences, which ariſe from a Fracture, Contuſion, or other Cauſe, and are often attended with a Caries; though I have frequently ſeen Bones with ſuch Eminences, without any Appearance of a Caries. *Spina* ſeems to have been a Term applied to this Diſorder, becauſe it occaſions a Pricking in the Fleſh, like the Punctures of Thorns, producing very violent Pains; and the Epithet *Ventoſa* is added, becauſe, upon touching the Tumor, it ſeems to be fill'd with Wind, though this is ſeldom, or never, the Cauſe of the Diſtention. Afterwards ſome Authors, particularly *Pandolphinus*, barbarouſly diſtorted the Word into *Spinæ Ventoſitas*.

Children are often affected with this Diſorder; and then, with *Severinus*, many denominate it *Pædarthrocace*, from παῖς, a Boy; ἄρθρον, a Joint; and κακὸν, an Evil; intimating, that this Diſorder frequently appears about the Joints of Children, and oftener in them than in Adults, becauſe the Bones of Children are more ſoft and ſpongious, and, conſequently, more eaſily corroded by peccant Humours, and diſtended into Tumors, ſometimes of a ſurpriſing Deformity. *Severinus* makes another Diſtinction between the Spina Ventoſa and Pædarthrocace; for the Tumors of the firſt Kind are frequently attended with Pain, Redneſs, and all the Appearances of Inflammation; but the Pædarthrocace is accompanied with little or no Pain in the Beginning, as may be often obſerved in ricketty Children. But theſe Names are now generally uſed promiſcuouſly, as ſynonymous Terms for the ſame Diſtemper, and not improperly, as *Merklin* obſerves; for though this Diſeaſe, in Children, is, at firſt, attended with little or no Pain, yet the Pain increaſes with the Diſeaſe.

Other Names have been already mention'd, which agree better with the Spina Ventoſa, than with the Caries properly ſo call'd; as, a Cancer Oſſis, Gangræna or Sphacelus Oſſis, Sideratio Oſſis, frequently uſed by the Tranſlators of *Hippocrates*; and, alſo, Τερηδὼν, or *Teredo*, from its Reſemblance to Wood eaten and conſumed by a Species of Worms called *Teredines*. All theſe ſynonymous Terms of the Spina Ventoſa may, probably, have been applied to different Degrees of that Diſorder, which has been ſufficiently proved by *Merklin*, in his Annotations upon *Pandolphinus*. The ſame Author has, alſo, demonſtrated, that this Diſeaſe was not unknown to the Antients, as ſome have imagined. One Obſervation remains; that *Petit*, in his Treatiſe on Diſeaſes of the Bones, *Cap.* 16. comprehends all theſe Diſeaſes, and their Names, under that of Exoſtoſis; and, at the ſame time, entirely omits thoſe Names which were better known, and more commonly uſed. I ſhall principally uſe the Term *Spina Ventoſa*, as it is now moſt generally received.

As theſe Diſeaſes, eſpecially their Difference and Degrees, have been generally imperfectly deſcribed, and as many Caſes of this Kind have occur'd in my Practice, I intend to illuſtrate their Diſtinctions particularly, which may be very ſerviceable in promoting their Cure. A Spina Ventoſa is a Corruption, Corroſion, or kind of Caries of the Bone, which is generally produced ſpontaneouſly, by ſome peccant Humours, and ſeldom ariſes from an external Cauſe. It begins not in the Surface of the Bone, but in its Laminæ, or Cells, or within its internal Cavity, proceeding towards the exterior Part, and affecting the Whole, or more or leſs of the Bone, ſpreading in Breadth, or riſing into a Tumor, (ſee *Tab.* XXXIII. *Fig.* 16. A B) which is frequently hard, and ſometimes without Pain; ſometimes it appears filled with Wind, and is attended with a greater or leſs Degree of a corroſive pungent Pain; at laſt it reddens, renders the Patient unable to move, and has a Train of other bad Symptoms; at laſt, the Bone is corroded, and the Skin, and other Integuments, which were at firſt ſound, partake of the Corroſion, and break out into moſt malignant Ulcers. When theſe Tumors of the Bones are hard, without inflating the ſoft Parts, and without Redneſs, Inflammation, and Pain, as frequently occurs in ricketty Subjects, they do not then ſo readily ulcerate, nor are attended with ſuch malignant Symptoms, while they remain ſo. *Severinus* denominates this Species *Pædarthrocace*, becauſe Children are moſt ſubject to it, and in order to diſtinguiſh it from the Spina Ventoſa of the *Arabians*. But when the Tumor is painful, red, and inflated, to which Children and Adults are equally liable, it is named *Spina Ventoſa*, *Cancer*, or *Gangræna Oſſis*, and *Teredo*. I call an Exoſtoſis, a preternatural acute Eminence of the Bone, or any Exceſcence of the Bone, with or without Corroſion. The Spina Ventoſa differs from the Caries, as it is attended with a Tumor; and from the Rickets, becauſe, in them, the Epiphyſes or Extremities of the Bones are affected with deformed Tumors, without Pain or Corroſion.

Theſe Diſorders generally begin about the Extremities, Heads, or Epiphyſes, of the larger Bones, where they are moſt tender and ſpongy, and where the morbid Matter may not only have ſufficient Room to lodge in the cellular Subſtance, but where it will, alſo, meet with the leaſt Reſiſtance in ſoftening and expanding the Parts. However, they often appear between the Laminæ, in the middle of theſe Bones, eſpecially in the Tibia. Tophi, and Venereal Gummata, as they are called, in the Forehead, Cranium, and other Bones, eſpecially the Tibia, as they owe their Origin to an internal Cauſe, may be included in this Species, though they are eaſily diſtinguiſhed by nocturnal Pains. The Spina Ventoſa, therefore, attacks the Bones of the Head, Face, Neck, and Breaſt; but moſt frequently thoſe of the Feet, Arms, Fingers, Carpus, Metacarpus, Tarſus, and Metatarſus; and there is ſcarcely a Bone in the Body, but what is ſubject to it. Caſes of this Kind may be ſeen in the Notes of *Merklin* upon *Pandolphinus*.

They are commonly produced ſpontaneouſly by internal Cauſes, as by acrimonious, ſcorbutic, rickety, or variolous Humours, but generally from a Venereal Taint; for, before this Diſeaſe appear'd in *Europe*, they were little known. However, both Reaſon and Experience inform us, that they ſometimes proceed from external Cauſes, eſpecially in an Habit inclinable to ſuch Diſorders; as from a Contuſion, Fall, Fracture, Fiſſure, or other external Violence, by which the Veſſels, internal Lamina, or Marrow of the Bones are injured or lacerated, the Humours are extravaſated, and putrefy, corrupt and deſtroy the Marrow, and ſoften and corrode the Subſtance of the Bones. Hence ariſe Pains, Tumors, Ulcers, and Fiſtulas, both in the Bones, and external Parts.

The immediate Cauſe of this Diſtemper is a Collection or Defluxion of a viſcid and tough, or an acrid and corroding Humour, or an Inflammation in the Marrow, or in the cellular Subſtance of the Bones, which degenerates into an Abſceſs, and forms Ichor, or Pus. For, as theſe Humours can find no Evacuation, they ſtagnate in the Cavities of the Bones, where, in time, they gradually putrefy, become acrimonious, corrode and corrupt the neighbouring Parts, convert the Marrow into a ſimilar Sanies, and, at laſt, attack and conſume the Bone. This Collection of viſcid and pituitous Humours, and Swelling of the Bone, ſometimes happens without Pain, as in the Pædarthrocace; but the Corroſion of the Parts can never happen without the moſt intenſe Pains, proceeding, according to the common Expreſſion, from the inmoſt Marrow, which Pains are ſometimes called Oſteocopi. When, in the Beginning of this Diſorder, it is confined to the interior Part of the Bone, the morbid Part feels no Increaſe of Pain by an external Touch, or Preſſure; but, when the Pain becomes increaſed by the Touch, the Diſeaſe has extended itſelf to the exterior Parts of the Bone. When this happens, the Periоſteum, and other adjacent Parts, together with the Subſtance of the Bone, and the cellular Coat, are tumefied: Whence ariſes a Senſation, as if the Parts were inflated. When this Tumor is opened

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opened by Inciſion, or, as it frequently happens, ſpontaneouſly, if the morbid Part is expoſed to View, it will appear like a Sponge, or a Pumice-ſtone, full of little Holes, as in the Caries; and from what has been ſaid, the Reſemblance of theſe two Diſeaſes, their Signs and Diſtinctions, may eaſily be diſcovered.

The Spina Ventoſa, ſtrictly ſo called, may be properly divided into three Species: 1. When the Oſteocopi, or Pains in the Marrow of the Bone, are inceſſant, ſo as to deprive the Patient of Sleep, but without either Tumor, or external Pain; in this State the Diſeaſe is confined to the interior Part of the Bone. 2. When theſe Pains either continue, or ceaſe, and a Tumor gradually appears upon the Bone either harder or ſofter, and, as it were, inflated, attended with external Pain, which ſometimes abates, and ſometimes increaſes. 3. When this Tumor induces an Abſcels, which either burſts ſpontaneouſly, or is opened by Inciſion, diſcharging a fetid Ichor, or a purulent Matter ſmelling like rancid Butter, or Bacon, this Efflux of Matter continues more or leſs, as in the carious Ulcer; and that Kind of Ulcer is produced, which the Antients frequently called an Ulcer with Caries in the Bones. This Species may be called an inveterate Spina Ventoſa, and the firſt an incipient or recent one.

A Pædarthrocace generally begins with a Swelling of the Bone, without any Pain, or external Cauſe; but, if it continues long, it is often attended with Pain and Inflammation, and at laſt with an Abſcels, Ulcer, or Caries, like the Spina Ventoſa, eſpecially about the Joints and Extremities of the Bones. Hence there appears ſome Reaſon for reckoning a Pædarthrocace a diſtinct Diſeaſe; which, however, if not timely prevented, will degenerate into a Spina Ventoſa; ſo that they ſeem to differ only in Degree.

From what has been now advanced, and what we before delivered of the Prognoſtic of the Caries, it will be no difficult Matter to underſtand and foretel the Conſequences of theſe Diſorders. For when it appears, that the preſent and corrupt acrimonious Matter is lodged in the Cavity, Laminæ, or Cells of the Bone, which Nature is unable ſpontaneouſly to diſcharge, and which can hardly be evacuated by Art, it muſt neceſſarily follow, unleſs prevented by timely Aſſiſtance, that the adjacent Parts will be corroded and corrupted, till at laſt the Bone itſelf is altogether deſtroy'd, ſo that there can be only one Method left of preſerving the Patient, by the Amputation of the whole Limb. What is ſtill worſe, if the Diſorder proceeds from a vitiated State of the Blood, it is often ſo malignant, than when it has ſeized one Part, the Arm for Inſtance, when this is extirpated, it will then attack the other Arm in the ſame manner, as in cancerous Affections; but this may be prevented by purifying and correcting the Blood by a proper Regimen and Remedies. The Pædarthrocace, and mildeſt Degree of the Spina Ventoſa, frequently yield to proper Medicines. But the Cure will be difficult, in proportion to the Inveteracy of the Diſeaſe, the Progreſs it has made, the Weakneſs of the Patient, and the Corruption of the Blood, joined with other violent Symptoms. Sometimes it becomes irremediable, and, the Strength of the Patient being exhauſted, he is, as it were, conſumed by a ſlight Fever, and he dies of an inveterate Caries.

There are two Methods of curing a Spina Ventoſa, adapted to the different States of the Diſeaſe: 1. In the two firſt or milder Degrees, if the Patient be an Adult, he muſt daily uſe, for correcting the Blood, a Decoction of the Woods, as it is commonly called, as of the Roots of Sarſaparilla, China, Scorzonera, and the Woods of Saſafras, Guaiacum, and Juniper, drinking each time eight, ten, or twelve Ounces, according to the Strength of the Patient, taking it warm like Tea, or Coffee. Let him drink this Quantity every Morning in Bed, giving him, in the firſt Draught, fifty or ſixty Drops of the Eſſence of the Woods, or of white Burnet, or the like, endeavouring to raiſe a gentle Sweat, that they may thoroughly penetrate the ſmaller Veſſels, or even the bony Fibres, and expel or correct the peccant Humours: They, likewiſe, greatly promote the Digeſtion and Diſcuſſion of ſtagnated Humours and Tumors. 2. This Intention will be greatly forwarded by fumigating, ſeveral times a Day, the affected Parts, with the Steam from Decoctions of reſolvent or aromatic Herbs. 3. In the intermediate Times, let the Part be rubbed twice a Day with a Mercurial Ointment, and apply to it a Mercurial Plaiſter. 4. Mercurial Remedies ſhould, likewiſe, be preſcribed inwardly, once in weakly Conſtitutions, or twice in more robuſt Habits, in order to raiſe a gentle Salivation, or not, according to the different Degrees of the Diſorder, or State of the Patient: For Experience has convinced me, that nothing can be effected in the Cure of this Diſeaſe by other Remedies alone, without the Aſſiſtance of Mercurials; which makes it the more probable, that this Diſtemper is either contracted by a Venereal Infection, or is very nearly allied to it. When, therefore, this Method has been continued ſome Weeks, (for a ſhort Time is of no Service) the firſt Degree of this Diſorder may be removed; and even in the ſecond Degree, where the oſſeous Tumors are already formed, they may be digeſted, or diſcuſſed, or reduced to ſuch a State, that they may continue without increaſing, without Pain, or without any great Inconvenience to the Patient. This I have often ſeen happily obtained, when a Diſcuſſion could not be procured, eſpecially when the Patient uſed a regular and moderate Diet, living upon Broths, Vegetables, and the tendereſt Sorts of Fleſh, thereby tempering and ſweetening the Blood; and uſing, for common Drink, ſmall Decoctions of the Roots and Woods above-named, or of Hartſhorn, Barley, Oats, and the like watery, ſoft, thin Liquids.

The ſame Method is to be obſerved in the Cure of the Pædarthrocace, or Tumors in the Bones of Children, without any, or, at leaſt, much Pain; exhibiting, at the ſame time, Medicines for gently opening the Belly, principally prepared with Mercurius Dulcis. If this Diſorder is accompanied with the Rickets, Remedies adapted to the Rickets muſt be prudently exhibited, and frequent Motion and Exerciſe muſt be uſed.

But if either of theſe Diſorders are become ſo obſtinate, as not to yield to the Medicines we have already adviſed; if the Pains and Tumors of the Bone are increaſed; if an Abſcels appear, and the entire Deſtruction of the Bone be threatened; you muſt, if the Abſcels be not already burſt, lay the Bone bare in the moſt proper Place, which is generally the loweſt, and moſt painful, without ſtaying for Maturation; or, if the Orifice be too ſmall, after the Abſcels has burſt, it muſt, alſo, be widened by Inciſions, or, in the Timorous, by the Cauſtic. Then, with the ſmall Perforator, (in *Tab.* XXVIII. *Fig.* 2. or 7.) penetrate ſeveral times into the Marrow of the Bone, in order to open a Paſſage for the morbid Matter. But, where theſe ſmall Perforations are not ſufficient for diſcharging the Sanies, then pierce the Bone with the Trepan, as was before directed in the Cure of the Caries; by which means the Matter will not only have a freer Paſſage, but Medicines for cleanſing and healing the Part may more readily be applied. After theſe Operations, the Decoctions and Eſſences of the Woods, with antimonial and mild Mercurial Medicines, ought to be preſcribed internally, and detergent and balſamic Remedies ought to be outwardly applied; ſuch as the Decoction of Agrimony, Sanicle, St. John's-wort, or Birthwort, with Honey of Roſes, and Eſſence of Myrrh and Aloes, for deterging the Ulcer; or Mercurius Dulcis diſſolved in Plantain-water, or Lime-water. Afterwards the Dreſſings may conſiſt of the Eſſence juſt now recommended, or the Eſſence of Maſtich or Amber, ſpread upon Lint, covering all with a Mercurial, or other proper Plaiſter, till the Ulcer be healed. Sometimes the actual Cautery, if it can be conveniently applied, is not improper for rooting out the Diſorder, when it is confined to the Lamina, eſpecially if it can be conveniently apply'd; otherwiſe Abraſion may be uſed, tho' this Operation ſeems better adapted to the Caries, than the Spina Ventoſa.

But if all theſe Remedies are ineffectual, and the Part be ſo much corroded and deſtroyed, that it cannot be preſerved, there remains but one Remedy of ſaving the Patient, which is Amputation; and this may be performed in different manners, according to the different Circumſtances of the morbid Part. When the Diſorder is ſituated in the ſmall Bones, as in the Carpus, Tarſus, Metacarpus, or Metatarſus, or in the Finger, there is no Neceſſity of extirpating the whole Finger, Hand, or Foot, but only of extracting the ſmall putrefied Bone. Thus, when the Bone at the End of the Finger, or even that of the middle Phalanx, is corrupted, I have extracted the foul Bone, and preſerved the ſound Part of the Finger. Thus, from a Boy of ten Years of Age, who had the metatarſal Bone, which ſupports the great Toe, corrupted, the Toe itſelf remaining unaffected, I extracted only ſo much of the Bone as was corrupted, leaving the ſound and anterior Part behind, and healed the Wound with Balſamics; and the Boy, afterwards, walked as well as formerly. But when the entire Finger, or only the firſt Bone of it, has been corrupted, I have amputated the Whole. But when a large Bone of the Shoulder, Thigh, or Leg, or when any of the Joints in the Arm, Knee, or Foot, are affected, no Cure can be expected, except by extirpating the whole corrupted Part, with all the inferior Part of the Limbs, making the Amputation in the ſound Part above.

In ſome Species of the Spina Ventoſa, when the Tumors will not yield to the Remedies already propoſed, to which the Hand can be readily admitted, *Petit* adviſes to lay the Bone bare by a crucial Inciſion, and to cut off the Extremities of the four Angles of the Shin, and then to dreſs with dry Lint. The next Day he orders the oſſeous Tumor to be pierced with the Perforator, and the Holes to be made ſo near one another, and ſo numerous, as to repreſent a Sieve, and then to extirpate the whole Tumor with the Chiſſel and Mallet. He afterwards fills up the Wound with dry Lint; and, that the diſeaſed Part may ſooner ſeparate from the ſound, he orders a Solution of Mercury in Aqua fortis to be apply'd to the corrupted Part, till it be wholly removed: This Method he highly recommends, and prefers it, in my Opinion, not unjuſtly, to every other Remedy in theſe Caſes, and even to the actual Cautery, if the Corruption be not too deeply ſituated.

When an acute Eminence, or preternatural Exereſcence, appears upon a Bone, which is properly called an Exoſtoſis, and is accompanied with no Trouble, Pain, or Deformity, nor any Symptoms of a Caries, or Spina Ventoſa, in ſuch Caſes, no Cure, in my Opinion, ſhould be attempted. For the Remedy would not

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not only be worse than the Disease, but by laying the Bone bare, a Caries, or other Inconveniences, might be occasioned. On the contrary, if it produces any Deformity, Impediment of Action, Pain, or other Mischiefs, it may be removed by the Methods already prescribed. Various Cases of the Caries, Spina Ventosa, and Exostosis, are given by *Cheselden*, in his Osteography, from *Tab.* XLI. to the End; and *Ruysch*, in his *Observat. p.* 94. and, in his *Thesaur. Anat.* 8. *Tab.* III. and *Thesaur.* 10. *Tab.* II. *Heister.*

OS. The Mouth.

Of the Cancer of the Lips, and Mouth.

Cancers of the Lips, like other Cancers, are either occult, or open. An occult Cancer happens, when a Tumor appears in the Lip, attended with Hardness, Pain, and Heat. An open Cancer is, when that Tumor degenerates to an Ulcer; or when a cancerous, phagedenic, and fetid Ulcer is produced in the Lip without any previous Tumor; discharging an acrimonious Sanies, of a most disagreeable Smell, which not only corrodes the Lip, but frequently the whole Face in a most miserable manner, and is for the most part situated in the under Lip. See *Tab.* XLI. *Fig.* 11. *a a a.*

This, like other Cancers, is produced by a certain Acrimony of the Blood, and an Obstruction of the spongy Glands of the Lips. Hence a livid painful Tumor, or Wart, which by degrees degenerates into a malignant Ulcer, or open Cancer, quickly dividing the Lip, at first like a small Fissure, which gradually widens. See *Fig.* 11. This Disorder may likewise arise from an accidental Bite, Blow, Puncture, Fall, or from the Lip being affected with an acute Pain in the Teeth.

As little can be effected by Medicine in the Cure of this Disorder, recourse must be had to the Knife. The Incision should be made without Delay; otherwise the Distemper would spread, and produce large Tumors in the Neck and Fauces, so as even to strangle the Patient. But, when the Incision is timely made, there may be some Hopes of a Cure; especially, if the corrupted Blood be corrected by proper Medicines, a Task which is, indeed, difficult to be performed; upon which Account a Relapse generally ensues. This most pernicious Disease is more easily cured in young than in old People, and more easily when it proceeds from an external Cause, than from the peccant Quality of the Blood alone.

The Cure must be adapted to the different States of the Disease. 1. When a small Fissure appears on the upper Part of the Lip, like an Ulcuscle, attended with Heat and Pain, and is produced by the Coldness of the Air, anoint it with the Honey of Roses, and Peruvian Balsam, or Ointment of Lead or Diapompholygos, mixed with a little Mercury; and afterwards apply a Plaister of Lead, or a leaden Plate, rubbed with Quicksilver, to the Part, till the Disorder be entirely removed. In the mean time, a proper Diet, with Medicines for purifying the Blood, ought not to be neglected. I cured a young Woman of this Disorder, by the Application of the Juice of rotten Apples mixed with Mercurius Dulcis, and the Use of proper internal Medicines. In *Ephemerid. Nat. Curios. Cent.* 6. *Obs.* 43. we read of Cancers of this kind being cured by *Roman* Vitriol, with or without the Oil of Olives. But when neither these nor the like Medicines have any Effect, and the Disorder increases, the readiest Remedy is, with the Knife, or Scissars, to cut out of the Lip all the indurated or cancerous Part, by two or three Incisions, observing rather to take away some of the sound Flesh, than to leave any of the Cancer behind. The Lips of the Wound may be united with two or three Pins, in the same manner as in the Hare-lip; or, if the Fissure be but small, the knotted Suture will be sufficient. This Method I successfully took with the Cancer represented in *Tab.* XLI. *Fig.* 11.

2. But if the Cancer has not degenerated into an Ulcer, and the Lips are infested with an hard troublesome Tumor near the Skin, some Physicians have advised to destroy the Tumor by corrosive Medicines, afterwards healing up the Wound. But though these Remedies may not be improper, when the Disorder proceeds from an external Cause, or when the Tumor is encysted; yet, as the Application of Corrosives in Cancers is generally dangerous, I would prefer, with the wisest Physicians, Incision with the Knife, or Scissars, which may be performed two ways, according to the Nature of the Tumor. If the Tumor is moveable, open the Skin with the Knife; and, after freeing the Tubercle from its Adhesions, by the Knife, or Scissars, the Wound may be healed in the usual Manner; but if the Tumor is fix'd, immoveable, and firmly adheres to the Skin, all that Part of the Lip which contains it, must be cut away, and the Wound must be treated with the Suture, as before directed. Whatever Method of Cure be used, a regular Course of Life, and proper Regimen, must not only be used, but, likewise, internal Medicines, for removing the vitious Affections of the Blood, lessening its Quantity, and destroying its Acrimony, in order to prevent a Relapse, which often happens. Consult *Sculletus*, *le Dran*, and *Garengeot*.

Os Leonis. See Antirrhinum.

OSATIS. The same as Isatis. Woad.

OSCHEALIS HERNIA. A Scrotal Rupture. See Hernia.

OSCEDO. A Propensity to Oscitation. Sometimes it imports the same as Aphthæ. *Castellus.*

OSCHEOCELE. A Scrotal Rupture. See Hernia.

OSCHEON, ὀσχεον. The *Scrotum.* The *Amphidium*, or Os *Uteri*, is, also, thus called by *Galen.*

OSCITATIO. Oscitation is performed by expanding, at one and the same time, almost all the Muscles capable of spontaneous Motion; by greatly extending the Lungs, by drawing in gradually and slowly a large Quantity of Air, and gradually and slowly breathing it out, after it has been retained for some time, and rarefied; and then restoring the Muscles to their natural State. Hence, the Effect of Oscitation, or Yawning, is to move, accelerate, and equally distribute, all the Humours through all the Vessels of the Body, and, consequently, to qualify the Muscles and Organs of Sensation for their various Functions. *Boerhaav. Institut.*

A great deal is insensibly discharged, when Nature endeavours to get rid of the retained perspirable Matter, by yawning, and stretching of the Limbs.

To these a Person is most inclined just after Sleep, because, a greater Quantity going off by the Pores of the Skin, than at other times, whensoever a Person wakes, the increased Contraction that then happens, closes a great deal of the perspirable Matter in the cutaneous Passages, which will continually give such Irritations, as excite Yawning and Stretching; and such Motions, by shaking the Membranes of the whole Body, and shifting the Contacts of their Fibres, and the inclosed Matter, by degrees throw it off.

Hence we see the Reason, why healthful strong People are most inclined to such Motions, because they perspire most in time of Sleep, and, therefore, have more of the perspirable Matter to lodge in the Pores, and greater Irritations thereunto.

I cannot here omit the vast Advantages of some little Exercises just after waking in the Morning. At that time, by the Quantity which is gone off during Sleep, the Body is much emptied and lessened, and all the Fibres invigorated with a fresh Stock of Spirits: That Firmness, therefore, and due Tension of the Solids, which are so necessary to a good State of Health, are then most easy to be obtained, because the Fibres at that time may most conveniently be drawn up, and hardened, by any such means as gently contracts them, and at the same time shakes off their grossest and most useless Moistures. Now that Exercise contracts the Solids nothing is more manifest; and, therefore, nothing can be of greater Service, than to use it at these times. But such is the best, as gives a gentle Motion to all the Parts, especially the Membranes, and cutaneous Fibres; and this can be effected no surer Way that I know of, than by the Flesh-brush, which ought to be used just before rising, and putting on any Cloaths; and if now-and-then the Person would leap about, and stretch his Arms with Weights in each Hand, it would wonderfully promote the good Ends which are to be procured hereby. By this means all that Matter which is sufficiently digested for Perspiration, would be drawn out, and the Solids have no manner of Weight left upon them but the necessary Fluids, by which they would be enabled to perform their Offices with Ease and Vigour; and as in a Clock or Watch new cleaned, the several Motions of the whole Machine would go on with great Regularity.

Yawning, and stretching the Limbs after Sleep, is a Sign the Body has perspired very well

Stretching and yawning, after Sleep, is occasioned by a great Plenty of perfectly well-digested perspirable Matter, which is in Readiness to be thrown off.

The Body, by yawning and stretching, in the Space of half an Hour, perspires more than in three Hours at at any other time.

Such Extensions in general, or of any particular Part, proceed from some gentle and pleasing Irritations of the muscular Fibres: And that such Irritations, or gentle Vellications, are occasioned by a great Quantity of the digested perspirable Matter hanging about the Surface and extreme Parts of the Body, and not thoroughly discharged, is no difficult Matter to conceive. For it appearing, that, in time of Sleep, there is a continual Course and Tendency of a fine thoroughly-digested Matter towards the Circumference, which is discharged thro' the cutaneous Pores; and that, during Sleep, likewise, the Nerves are in a State of Relaxation; it cannot but happen, that when a Person awakes, both the Course of those Streams will be considerably diverted, and the Fibres something more contracted; and, consequently, the perspirable Matter just passing, detained at the Extremities of the excretory Ducts; which, as the Sleep is still shaken off, and the Solids are more and more drawn up, will be squeezed so close, as at last to give those Vellications to the small Fibres composing those Glandules where they stick; and insomuch that sometimes the Muscles themselves are drawn into Consent, and provoked to those Tensions and Concussions, by which they excite the Stretchings and Yawnings, to which at times we find ourselves inclined. And these Inclinations remain, until all that Matter is thoroughly shook off; which, by this means, is loosened from its small Entanglement,

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ment, and dispersed as Water is shaken off a wet Sheet; and this is the Reason why Perspiration is so large at those times. *Sanctorius.*

OSEUS, in *Paracelsus*, is the *Scrotum.*

OSMUNDA.

The Characters are;

It produces no Flowers, but bears its Fruit in Clusters.

Boerhaave mentions two Species of *Osmunda*; which are,

1. Osmunda vulgaris; & palustris. *Tourn. Inst.* 547. *Boerh. Ind. A.* 27. *Filix florida, Osmunda regalis.* Offic. *Filix florida, sive Osmunda regalis.* Ger. Emac. 1131. Raii Hist. 1. 151. *Filix ramosa non dentata, florida.* C. B. P. 357. *Filix floribus insignis.* J. B. 3. 736. *Osmunda regalis.* Ger. 971. *Osmunda regalis sive Filix florida.* Park. 1038. OSMUND ROYAL.

This is the biggest of our *English* Ferns, sending forth several large branched Leaves, whose long broad Pinnulæ are not at all indented about the Edges like the other Ferns, they are of a light yellow Colour; among these arise several Stalks, which have the like Leaves growing on them on their lower Parts, but towards the Tops they are full of round, slender, seed-bearing, curled Heads, an Inch or more long when ripe, of a brown Colour, covered with small dusty Seed. These appear in *June*, and ripen in *July*. The Root consists of a great Number of small, long, round Parts, matted together, blackish on the Outside, and green within, covered over with small Fibres. It grows in marshy, boggy Places, particularly in a Bog, at the Backside of *Woolwich*, near the Warren.

The Roots are the only Part used, are accounted good for Obstructions of the Liver and Spleen, and particularly esteemed for the Rickets in Children, as, also, for Ruptures, Wounds and Bruises. *Miller's Bot. Off.*

Lobelius informs us, that the Root of this Plant is highly beneficial in the Cure of Hernias and Ulcers; that it is serviceable in Colics, and Disorders of the Spleen; and that it is somewhat hot, acrid, and of an agreeable Smell.

The middle and whitish Part of the Root is thought highly efficacious not only in recent Wounds, but, also, where the Patients are stab'd, have any of their Vessels ruptured, or have fallen from Eminences, when boiled or bruised, and drank with some Liquour.

The Root of this Plant is thought an effectual Cure for the Rickets, without any other Medicine. In the Rickets, says Doctor *Bowles*, I generally use, with Success, Conserve of Asparagus, or of the tender Buds of Osmund-royal, and the male Fern, or those of Milt-waste, and Hart's-tongue. *Raii Hist. Plant.*

2. Osmunda; foliis lunatis. *Tourn. Inst.* 547. *Boerh. Ind. A.* 27. *Lunaria.* Offic. *Lunaria minor.* Ger. 328. Emac. 405. Park. 507. Raii Hist. 1. 127. Synop. 44. *Lunaria racemosa minor, vel vulgaris.* C. B. P. 354. *Lunaria Botryitis.* J. B. 3. 709. MOONWORT.

This is a small low Plant, seldom growing to be above three or four Inches high, having only one Leaf, which is pinnated or cut into several half-round Sections, standing about the Middle of the Stalk, which has, towards the Top, several Bunches of small globular Heads, in which is contained its dusty Seed. It grows in dry hilly Pastures, as in the Warren by *Woolwich* in *Kent*, being in its Perfection in *May*.

Some have a great Opinion of this Plant, and esteem it good for all Sorts of Wounds. The People in *Wales* make an Ointment of it, which, apply'd to the Reins, they reckon a very sovereign Remedy for the Bloody Flux. It is but little used in the Shops. *Miller's Bot. Off.*

According to Doctor *Eales*, it stops the Menses, and, according to *Bobart*, puts a Stop to the *Fluor albus*. *Dale.*

OSORON. Opium.

OSPRION, ὄσπριον. A Bean; and all Sort of Puls.

OSSA *Paralleli.* An universal Medicine in the Gout. *Rulandus.*

OSSIFICATIO. Ossification; that is, the Formation of a Bone. It is either natural, or morbid, as when any Part, which ought to be soft and flexible, becomes bony.

However solid and compact adult Bones are, yet they were once Cartilages, Membranes, and even a mere Jelly. This needs no further Proof, than repeated Observations of Embryos, when dissected: And how much more tender must the Bones be before that time, when neither Knife or Eye is capable to discover the least Rudiments of them? By degrees they become more solid, then assume the Nature of Gristles, and at last ossify: Which is brought about partly by the Bones being, more than any other Parts, exposed to the strong Pressure of the great Weights they support, to the violent Contraction of the Muscles fixed to them, and to the Force of the Parts they contain; which endeavour to make way for their own further Growth. By all this pressing Force, the solid Fibres and Vessels of the Bones are thrust closer, and such Particles of the Fluids, conveyed in these Vessels, as are fit to be united to the Fibres, are sooner and more firmly incorporated with them; whilst the remaining Fluids are forcibly driven out, by the Veins, to be mixed with the Mass of Blood. In consequence of which, we observe, that gradually, as the Bones harden, the proportional Number and Largeness of their Vessels decrease. From which, again, we can understand one Reason for the Bones of young Creatures sooner reuniting after a Fracture, than those of old. From this, also, we can deduce the Cause of Horses, Bullocks, and other young Creatures of a large Breed, decaying in their Size, when put too soon to hard Labour.

That the Ossifying of Bones depends much on such a Pressure, seems to be evinced from the frequent Examples we meet with of other Parts turning bony, when long exposed to the compressing Force of the surrounding Parts; or when they are subjected to the like Circumstances by their own frequent and violent Contraction; witness the Bones found so frequently near the Bone of the Heart in some old Men, and in several other Creatures: And the muscular Substance of the Heart has been ossified in such, Instances of which *Cheselden* and *Garengeot* give us; and the Arteries of old Men often become bony. The Cartilages of the Larynx are generally ossified in Adults. In Beasts of Burden, the Cartilages between the Vertebræ of the Back and Loins very often change into complete Bones, and, being intimately united with the Vertebræ, the Whole appears one continued Bone: Nor is the Periosteum exempted from such an Induration; for *Peyer* tells us, he divided this Membrane into several bony Plates.

To confirm this Argument still further, we may observe, that Bones begin their Ossification at the Places, where they are most expos'd to these Causes, *viz.* in the cylindrical Bones from a middle Ring; and, in the broad ones, at or near their Centre, from one or more distinct Points: The Reason of which is, that these Parts are contiguous to the Bellies of the Muscles annexed to the Bones, where the Swelling of these moving Powers are the greatest. What the Effects of this may be, let any judge, who view some of the Bones, as the Scapula and Ilium, which are on each Side covered with Muscles; how compact and thin they are in Adults, where the Bellies of the Muscles were lodged, whereas in Children they are thicker. But this being the middle Part of these Bones, where the greatest Number of Fibres is, this particular Place would have been much thicker in Adults, had not this forcible Cause been applied, which has not had such Effects in Children, whose Muscles have not been much exercised. Besides, if we allow, that all the Parts of a Bone are equally increased by the constant Supply of new Particles, each Fibre, and every Particle of a Fibre, will endeavour to make way for its own Growth, by pushing the one next to it; and consequently by far the greatest Pressure will be on the Middle, whereby the Particles there will be made most firm: And here it is, that Bones begin their Ossification. Lastly, the Pulsation of the medullary Arteries, which enter the Bones near to this middle Part, may, as Authors have alleged, contribute, perhaps, somewhat to this Induration.

From the Effects of Pressure only it is, that we can account for the Bones of old People having their Sides set much thinner; yet more dense and solid, while the Cavities are so much larger than in young Bones; and for the Prints of Muscles, Vessels, *&c.* being so much stronger marked on the Surfaces of Bones, according to their Ages, if they belong to People of near the same Condition of Life, or if they belong to those of the same Age, according to the Labour or Exercise they have had; the Bones of old People, and of those accustomed to Labour, being more strongly impressed than those of young Folks, and of such who have lived in Indolence and Inactivity.

It is, also, probable, that Ossification depends on the Vessels of the Bones being so disposed, and of such Diameters, as to separate a Liquor, which may easily, when deprived of its thinner Parts, turn into a bony Substance; as it seems plain from the Observation of the callous Matter separated after Fractures and Ulcers, where Part of the Bone is taken out; for, in these Cases, this Liquor hardens, and often cements the two Extremities of a Bone, though at a good Distance from each other; as I have seen happen in two or three Cases, and of which there are Abundance of very remarkable Instances handed down by Authors. One, scarce inferior to any of them, was communicated to me by Mr. *Laing*, Surgeon at *Jedburgh*, and is now published, of a Child, whose Tibia he took out, leaving little more than the Epiphyses at each Extremity; all that he took away of the Bone was supplied by a bony Substance, on which his Patient walks easily and firmly.

Perhaps both the Causes of Ossification above-mentioned may be assisted by the Nature of the Climate People live in, and the Food they use: Whence, in hot Countries, the Inhabitants sooner come to their Height of Stature, than in the Northerly cold Regions: And thence seems to have arisen the common Practice among the Ladies, of making Puppies drink Brandy, or Spirit of Wine, and of bathing them in these Liquors, to prevent their growing big. And it has been observed, that much Use of such Spirits has occasioned Parts naturally soft to petrefy in some, and to ossify in other People of no great Age; witness the Causes related by *Listre* and *Geoffroy.*

Whoever is desirous to know, in what Time and Order each Bone, and its several Parts, begin to assume a bony Nature, let him consult *Kerckringius*, who gives us the Delineations of Abortions from three Days after Conception, and traces the Ossification of the Bones from three Weeks and a Month, till the

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Time of the Birth: To whom ſhould be added *Coiterus* and *Eyſſonius*. A pretty complete Account of this Subject might alſo be collected out of *Ruyſch*'s Works, where ſome of the Miſtakes committed by former Authors are corrected, and ſeveral more Particulars, to make the Account of the Oſteogonia more accurate, have been ſince added by *Nesbitt* and *Albinus*. *Monro's Oſteology*.

OSSIFRAGA is the ſame as OSTEOCOLLA.

OSSIFRAGUS. The Oſſifrage. The Stomach of this Bird, taken internally, is reported to break the Stone. *Dioſcorides*, L. 2. C. 58.

OSSISANA. A ſandy Stone, ſaid to be found near *Spire* and *Darmſtad*, celebrated for conglutinating fractur'd Bones.

OSTAGRA, from ὀστέον, a Bone; and ἄγρα, a thing laid hold of. A Forceps, to take out Bones with.

OSTEOCOLLA. *Offic. Schrod.* 355. *Dougl. Ind.* 66. *Worm.* 53. *Charlt. Foſſ.* 22. *Oſteocollus*. Aldrov. Muſ. Metall. 626. Schw. 387. *Oſteocollus cruſtaceus*. Geſn. de Rar. Foſſ. 30. *Oſſifragus Lapis*. Boet. 416. THE BONE-BINDER.

This is a Subſtance of a ſeemingly middle Nature between Earth and Stone, white, friable, cruſtaceous, ſabulous; in Figure reſembling a Bone, and growing out of ſandy Places, and other ſtony Soils: It is highly commended for the ſpeedy Conglutination of Bones, becauſe it quickly affords Matter for a proper Callus; and conſequently haſtens the Conglutination. *Schrod.* It alſo ſtops the Fluor albus, and removes intermittent Fevers. But *Hildanus*, in *Cent.* 3. *Obſ.* 90. juſtly cautions us to be very circumſpect in exhibiting it to young Perſons furniſhed with a laudable Habit of Body, becauſe it generally leaves an unſeemly Scar; for which Reaſon he thinks it is only to be uſed in old and extenuated Patients, whoſe native Heat is weak and languid. According to *Wormius*, they in ſome Shops ſell for the Bone-binder, a Species of the Galactites, which is white, porous, ſmooth, ſoft, eaſily diſſoluble into a Liquor, and of a ſaline Taſte. *Dale*.

I find, that Oſteocolla grows in a ſandy, yet not gravelly Soil, and not at all (that I know) in any rich or clayey Ground. It ſhoots down two Mens Depth under-ground; the Branches moſt commonly growing ſtrait up; yet, ſometimes, alſo, they ſpread ſideways. The Branches are ſome of them thicker, ſome ſlenderer; and the farther they are diſtant from the common Stem, the thinner they are; the thickeſt Stalk uſually equalling the Thickneſs of an ordinary Arm or Leg, and the Branches the Thickneſs of a little Finger.

Upon the Sand, which is here [at *Franckfort* on the *Oder*] every-where yelloviſh, there appears a whitiſh fatty Sand, which, if it be dug into, hath under it a dark, fatty, and (how hot and dry ſoever the Sand be) a ſomewhat moiſt and putrid Matter, like rotten Wood; which Matter ſpreads itſelf here-and-there in the Earth, juſt as the Oſteocolla itſelf does, and is called, by thoſe whom I have employed to look for it, the Flower of this Subſtance. The Oſteocolla, being thus found, is altogether ſoft, yet rather friable than ductile: Wherefore, if one has the Curioſity of getting out of the Ground a whole Piece of it with its Branches, he muſt very carefully remove the Sand every Way from it, and then let it be ſo awhile; its Quality being, that, remaining expoſed to the Sun for half an Hour, or ſomewhat longer, it grows to that Hardneſs, as it is found in the Shops.

It ſeems to be a kind of Marle, or to have great Affinity with it, of which we here have, alſo, great Store, yet not near thoſe Places, where I have found Oſteocolla. It, alſo, requires much Time to come to Maturity; which appears from hence, that, in the very ſame Place where I digged ſome of it laſt Year, I this Year found more; yet with this Difference, that the firſt grew hard, after the Manner before deſcribed, but the laſt remains ſtill ſoft and friable, though now in the fifth Month.

The Cauſe of its being divided into ſo many Branches, I conjecture to be from the Roots, which ſpread themſelves here-and-there in the Earth, ſo that the Matter gathers and ſettles itſelf about them; and afterwards, according to the Diviſion of the Roots, acquires a plantal Form and Appearance. Whence it ſeems alſo to proceed, that through the Midſt of the Oſteocolla there always paſſes a dark Line, which is thought to be a Piece of the Root. And it often happens, that the Stroke loſes itſelf by little and little, and the Oſteocolla in the Middle grows clear; which comes to paſs, when the Root, by the Corruption begun in the Oſteocolla, is reduced to Powder. Yet have I found a Place hereabout, where the Oſteocolla was not hollow at all; but there I obſerved, that, inſtead of ſetting about a big Root, it had gathered itſelf about many ſmall Fibres: Whence, alſo, this Sort had acquired Pores through its whole Length, but no Cavity like the other. *Philoſophical Tranſactions*.

OSTEOCOPOS, ὀστεόκοπος, from ὀστέον, a Bone, and κόπος, Labour, or Uneaſineſs. That Sort of Pain and Uneaſineſs, excited by too much Motion, which is called a Wearineſs of the Bones.

OSTEOGENICA. Medicines which promote the Generation of a Callus.

OSTIARIUS. The PYLORUS.

OSTIOLOGIA. Oſteology; that is, the Doctrine relative to the Bones; or a Deſcription of the Bones.

OSTRACITES. Offic. *Oſtracites*. Boet. de Lap. 393. Lan. de Lap. 124. Geſn. de Lap. 84. Plot. Hiſt. Oxon. 105. Morton. Northampt. 189. *Oſtracites maximus rugoſus et aſper*. Lift. Hiſt. A. A. 236. An. n. 37. Ejuſd. Hiſt. Conch. App. Lib. 3. *Oſtracites maximus conglobatior admodum craſſus in argillaceis delitescens*. Luid. Lithogr. 26. N. 471. *Oſtracites rugoſus et undatus mediocris ſubcinereus ſubrotundus*. Lang. Hiſt. Lap. Fig. 151. Tab. 47. 2. *Oſtrea Labris non crenatis*. Woodw. Att. 2. 43. HOBGOBLINS CLAW.

Women uſe the Oſtracites inſtead of a Pumice-ſtone, to take off Hairs. A Dram of it, taken in Wine, ſtops the Courſe of the Menſes; and two Drams thereof, exhibited four Days after the menſtrual Purgation, prevent Conception. Applied outwardly, it is effectual againſt ſpreading Ulcers, and Inflammations of the Breaſts. *Dioſcorides, Lib.* 5. *Cap* 165. Taken with Chamomile-flowers, it is eſteemed an excellent Lithontriptic. *Dale*.

OSTRITES. A Name for the OSTEOCOLLA.

OSTRITIUM, or OSTRUTIUM. Names for the *Imperatoria*, Maſterwort.

OSTRYA. The ſame as OSTRYS.

OSTRYS. Offic. *Oſtrys ſive Oſtria*. Park. Theat. 1406. *Oſtrya ulmo ſimilis, fructu in umbilicis foliaceis*. C. B. P. 427. Raii Hiſt. 2. 1428. Synop. 3. 451. *Tragus ſepium vulgo Oſtrys Theophraſti*. J. B. 2. 146. *Carpinus*. Tourn. Inſt. 582. Boerh. Ind. A. 2. 176. *Betulus ſive Carpinus*. Ger. 1296. Emac. 1479. THE HORNBEAN.

It grows every-where in Woods and Hedges in *England*, *France*, and *Germany*. The Wood is white, hard, and firm: Whence it is much uſed by Wheelwrights. Being wounded in the Spring, it diſcharges a Tear, after the Manner of the Birch; but I find no medicinal Virtues aſcribed to this, or any other Part of the Plant. *Ray*, *Dale*.

OSYRIS. Offic. *Oſyris fruteſcens baccifera*. C. B. P. 212. *Caſſia Poetica Lobelii*. Ger. 1110. Emac. 1295. Raii Hiſt. 2. 1489 *Caſſia Poetica Monſpelienſium*. Park. Theat. 452. *Caſſia lignea Monſpelienſium*. I. B. 1. 458. *Caſſia Poetica Monſpelienſium, an Theophraſti?* Tourn. Inſt. 664. *Caſſia Latinorum*. Alpin. Exot. 41. POETS ROSEMARY.

The whole Shrub has ſomething of an aſtringent Quality, the Root is hard and woody and covered with a reddiſh, thick Bark, which is very aſtringent. It grows in *Italy*, and about *Montpelier* in *France*, where *Ray* obſerved it in great Plenty; and flowers in *January*, and ſometimes in *April* and *May*; and the Fruit is ripe in *October*, or ſooner.

The whole Plant being aſtringent, it is likely to be of Efficacy in Fluxes of the Belly, and other Diſorders of that Kind. *Ray*. Some Shops, as *J. Bauhine* ſays, uſed it inſtead of the Caſſia of the Antients; but it muſt have contrary Effects, as appears from its aſtringent Taſte, and be more proper for Fluxes of the Inteſtines. *Dale*.

OTALGIA, ὠταλγία, from οὖς, an Ear, and ἄλγος, Pain. A Pain in the Ear.

OTENCHYTES, ὠτεγχύτης, from οὖς, an Ear, and ἐγχύω, to pour into. A Syringe for the Ears.

OTHANI. Mercury of the Philoſophers.

OTHONNA. See AFRICANUS FLOS.

OTIS. The Buſtard, a large Bird found in *England*, and other Countries. The Fat is ſaid to be anodyne, and reſolvent. The Dung is reſolvent, and a good Application for the Itch.

OTITES. A Name for the Finger next to the little Finger, called, alſo, *Digitus Auricularis*.

OVARIA. The Ovaries. See GENERATIO.

OVATUS, or OVIFORMIS HUMOR. The Aqueous Humour of the Eye.

OVIDUCTUS. The TUBÆ FALLOPIANÆ.

OVIS. Offic. Schrod. 5. 303. Schw. de Quad. 57. Jonſ. de Quad. 38. Geſn. de Quad. 770. Aldrov. de Quad. Biſul. 370. *Ovis domeſtica*. Raii Synop. A. 73. *Mas Aries dicitur, Fœtus Agnus*. THE SHEEP. See ALIMENTA.

The Parts uſed in Medicine are the Brain, Gall, the Oeſypus, the raw or unwaſhed Wool (*Lana ſuccida*) the Fat, Lungs, Cawl, Dung, Urine, Bladder, Head, Feet, incinerated Bone, and Rennet.

The Brain of a Ram is ſaid to be effectual in preventing immoderate Sleep, in epidemic Diſeaſes, and to facilitate Dentition. The Gall looſens the Belly; applied outwardly, cures a Carcinoma; and is of Service in a Purulency of the Ears: The Gall of a Lamb is preſcribed for the Epilepſy. The Oeſypus is emollient, reſolvent, heating, anodyne, and proper in Luxations, Contuſions, and the like. The Wool of a Lamb is good to mitigate and mollify Tumors in the Neck. The raw Wool of a Sheep is heating, emollient, lenient, and has the ſame Virtues as the Oeſypus. The Fat, given in Red-wine, ſtops Hæmorrhages, and cures a Diarrhœa, Dyſentery, and Gripes. The Lungs, applied to the Head, mitigate the Pains, and immoderate Heat thereof, and compoſe the diſordered and tumultuous Spirits; whence it is of principal Service in Phrenſies, Want of Sleep, and the like Diſorders. The Cawl, applied hot, cures the Pain of the

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the Colic. The Dung is refrigerating, drying, aperitive, and discutient: Whence it is of very great Efficacy in the Jaundice, and other Distempers; and, used externally, cures a Tumor of the Spleen, a Thymus, Corns, Warts, and other cutaneous Tumors; and is, also, very comfortable in Ambustions. The Urine, drank, expels the Water in an Anasarca. The Bladder, burnt, and exhibited, relieves those who cannot retain their Urine. The Head and Feet of a Wether, well boiled in running Water, are serviceable in Atrophiæ and Contractions. The Bones of a Lamb, incinerated, promote the Consolidation of Wounds, even of those which are most difficult to be consolidated. The Rennet is good against Poisons; to curdle Milk; and for venomous Bites. *Dale* from *Schroder*.

You are to chuse the Flesh, and such other Parts of a Sheep as are young, pretty fat, tender, well-fed, and bred in a pure and dry Air.

Well-fed Mutton yields good Nourishment, and is easy of Digestion.

When it is old, it is dry, hard, and not easily digested.

Mutton contains much Oil, and volatile Salt, in all the Parts of it.

Rams-flesh is seldom eat, because of its unpleasant Smell, and rank Taste, almost like that of an He-goat. The Flesh of an Ewe is a little more used; yet not much in Esteem, because it is insipid, viscous, and subject to produce gross Humours, and bad Juice.

As for what is properly called *Mutton*, which is the Flesh of a Wether, it is much esteemed, because it is tender, well-tasted, very mollifying, full of oily balsamic Parts, and volatile Salts, proper to produce the good Effects we attribute to it. *Lemery on Foods.*

As the Sheep lives on Vegetables and Water only, and the habitual Exercise of this Animal is very small; in consequence of these, the Juices are not much inclined to an alcaline Putrefaction, especially if it is suffered to bleed sufficiently, and not killed whilst heated by Exercise.

OVUM. See ALBUMEN.

Eggs differ very much, according to the Birds that lay them; according to their Colour, Form, Bigness, Age, and the different Way of Dressing them: Those most used in Food are Hens Eggs. You ought to chuse those that are new-laid. Some Authors, also, require, that they should be very white and long.

Eggs are nourishing and good Food; they increase the seminal Juices, qualify the sharp Humours of the Breast, are good for phthisical People, easily digest, ease the Piles, and are looked upon to be good to make the Voice loud and fine.

When Eggs are too old, they heat too much, produce bad Juice, and are more especially noxious to those who are of an hot and bilious Constitution: They contain much Oil and Salt, and agree at all times with any Age and Constitution; provided they are endued with the good Qualities before-mentioned.

REMARKS.

There is no Food more in Use than Eggs: They are good in Sickness and Health, and make a Part of the Composition of several medicinal Remedies. The various Ways of dressing them make them more or less wholsome. In general, if you would have Eggs produce good Effects, they should be moderately boiled; for, when they are done too little, they continue slimy, and, consequently, hard of Digestion; and, when they are done too much, they are hard and heavy in the Stomach; because the Heat hath dissipated their more volatile and exalted Principles, leaving none but the grosser Parts behind, which being close united together, make the Eggs compact and hard; and, therefore, Eggs ought neither to be too slimy, nor too hard, but of a soft and moist Substance.

The Egg consists of two Parts, the White and the Yolk; and these, being taken separately, have different Virtues: The White is full of oily and balsamic Principles, that make it moist, cooling, nourishing, and fit to qualify the Violence of the Juices. The Yolk abounds more in volatile and exalted Principles, by the Help of which it strengthens the solid Parts, increases the Spirits, and keeps the Humours in a just Fluidity. These two Parts of the Egg, though differing in Virtue, fail not to concur together, in producing the good Effects attributed to the Egg.

The freshest Eggs are the best, and most healthful, because they abound more in volatile and exalted Principles; besides, their oily and saline Parts being in a more perfect Union one with another, they yield a more easy Food: Old Eggs, on the contrary, have undergone a Sort of Effervescence, which not only dissipates the more volatile Parts, but, also, destroys the Union between this oily and saline Principle. Therefore such Eggs are very heating, have often an unpleasant Taste and Smell, and produce bad Juice.

Aquapendente relates several Ways how to know whether Eggs are new-laid, or not: He would have them held to a Candle, and then see whether the Humours contained therein are clear, thin, and transparent; for, if they be otherwise, it is a Sign the Eggs are old; because the Effervescence has embroiled and confounded the insensible Parts of these Humours, and made them dark.

Lastly, Hold an Egg to the Fire, and if a little watry Moisture sticks to it, it is new; but if not, it is old: Because a new-laid Egg is moister than the old; and its Humours, being thinner, work easier through the Pores of the Shell.

Galen, in his third Book of the Nature of Food, assures us, that the best and wholsomest Eggs are those of the Hen and Pheasant; but he disallows of the Use of those of the Goose and Ostrich: But other Authors much extol them.

Hippocrates, in his third Book of Diseases, says, that the White of Eggs, well beaten in Spring-water, make a Drink that is very moistening, cooling, good for those that are sick of Fevers, and for opening the Body. Some assert, that Peacocks Eggs are good for the running Gout; and that those of the Raven are an excellent Remedy for the Bloody Flux.

Aristotle, in *Lib. 6. Hist. An. Cap.* 2. says, that long Eggs produce the Female, and round the Male Kind. *Scaliger*, in *Comm.* seems to be of the same Opinion. *Pliny* is of the opposite Side; for he pretends, that the long Eggs are for the Males, and the round for the Females: *Columella* and *Avicen* agree with him. But these Opinions are supported by no Foundation, as the Authors give neither good Reasons, nor Experiments, to prove their respective Assertions, and it is very likely, that both the round and the long Eggs may indifferently produce Male and Female. *Lemery, on Foods.*

As a Knowledge of the Nature of Aliments, as well as of Medicines, is of great Importance to Health; since the former contribute very much, not only to the Preservation and Restitution of a sound State, but, also, to the Generation of various Disorders; so we shall investigate the Nature, and muster up various Experiments, relating to the Eggs of Animals, especially those of Hens, which are justly accounted the most salutary, and best adapted for nourishing and recruiting the human Constitution.

First, It is, therefore, to be observed, that in Bulk and Weight Hens Eggs greatly differ from each other; but an Egg of an ordinary Size weighs generally about two Ounces, whilst the Shell is, for the most part, about one Dram and a few Grains; the Yolk, about half an Ounce; and the White, an Ounce and an half, that is, by one Third heavier than the Yolk.

Secondly, If a new-laid Egg, weighing two Ounces, is boiled to Hardness, in Water, its Weight is diminished one Dram and an half; an infallible Proof, that, by the Boiling, some Portion of that most subtile Principle, which is the Cause of its Fluidity, is carried off through the Pores of the Shell.

Thirdly, A new-laid Egg, when boiled, does not suddenly become hard, but a Portion of the White appears fluid, like Milk; a Proof, that an highly subtile and fluid Matter is contained in an Egg, and in Process of Time transpires; which is, also, evinced from this, that old Eggs not only become dry and collapsed, so as to leave a certain Cavity within, but, also, easily become rotten, especially in the Summer-time, when, in consequence of the great Heat, this subtile Matter is most copiously carried off by Transpiration: Hence we may lay it down as a Rule, That new-laid Eggs, especially in the Summer-time, are most commodiously kept fresh in a cold Place, or rather in cold Water, impregnated with Salt.

Fourthly, If an unboiled Egg is laid immediately upon live Coals, which are not very hot, a Liquor is observed to sweat through its Pores; for the Heat so increases the Elasticity of the Fluid in the Egg, as forcibly to open the Pores, and protrude the Liquor: Hence we learn, that the Shell of an Egg is a very perspirable Substance.

Fifthly, The White of an Egg, by a very gentle Fire or Warmth, is forthwith resolved, and melted down; but the more the Heat is increased, the more it is inspissated. For this Reason, if we examine incubated Eggs, we find the White highly attenuated and liquid, but never thick. And these so different Effects are to be ascribed to the Augmentation or Diminution of the Degrees of Heat; for the White of an Egg becomes inspissated by an Heat surpassing that of a sound Person: Hence we may justly infer, that poached Eggs are very improperly exhibited in feverish Heats: Hence, also, we learn, that a moderate Heat is more efficacious in softening Tumors, than that intense Heat generally produced by the Application of Cataplasms, and other Topics; for intense Heat, whether external or internal, proves hurtful to the human Fluids, by disposing them to Thickness.

Sixthly, If in a Sand-heat, duly hot, we distil the White of an Egg, inspissated by Boiling, there is first yielded a large Quantity of Phlegm, which, being void of Taste and Smell, is neither acid, nor alcaline. Afterwards, upon augmenting the Fire, there is yielded a Spirit of a yellow Colour, which, by Rectification, yields a Water, a volatile Salt, and, at last, a thin, fetid, and heavy Oil. In the Retort there remains a spongious and insipid Earth, deprived of all fixed and alcaline Salt, and which, in an open Fire, becomes light, spongious, and insipid: Hence we learn, what

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what various Effects the different Degrees of Fire may produce in the ſame Proceſs, and how great Neceſſity there is for a cautious Application of theſe Degrees of Fire.

Seventhly, The White of an Egg, upon an Admixture of highly rectified Spirit of Wine, is ſtrongly coagulated, which, alſo, happens upon an Admixture of the Oil of Vitriol, or any other Acid: Since, therefore, the nutritious Juices of Animals approach very much to the Nature of the White of an Egg, which affords the firſt Nouriſhment to the Chicken, hence it is obvious, how prejudicial Brandy muſt be to the habitual Drinkers of it; for nothing is more injurious, either to the Life or Health of Animals, than that which coagulates the vital Humours, and deſtroys their due Fluidity, ſince they ought continually to be carried through numberleſs Veſſels: For, by this means, various Diſeaſes are generated, and the Viſcera diſpoſed to Obſtructions, Indurations, and a Scirrhus: Hence, alſo, terrible chronical Diſorders, ſuch as a Phthiſis, a Dropſy, a Cachexy, polypoſe and calculous Concretions, not only ariſe, but are increaſed. It is, alſo, certain from Practice, that ſpirituous Subſtances, ſuch as camphorated Spirit of Wine, are not always beneficial in diſcuſſing Tumors, and removing Pains of the Joints; ſince it is certain from Experience, that, in arthritic Patients, tophaceous Concretions are eaſily formed by the frequent Application of ſpirituous Subſtances. *Hoffman, Obſervat. Phyſ. Chym. Lib.* 2. *Obſ* 20.

OXALIS. The ſame as Acetosa; which ſee.

OXALME. See Acetum.

OXELÆUM, ὀξέλαιον. A Compoſition of Vinegar, and Oil.

OXERUM EMPLASTRUM. A Name for a Plaiſter, mentioned by *Aetius, Tetrabib.* 2. *Serm.* 4. *Cap.* 53.

OXINES, ὀξίνης. Wine which is ſour, but not quite converted into Vinegar.

OXOS, ὄξος. Vinegar.

OXYA. The *Fagus*. Beech-tree.

OXYACANTHA. See Berberis.

OXYBAPHON, ὀξύβαφον. A Meaſure. The ſame as Acetabulum; which ſee.

OXYCEDRUS. A Name for the *Cedrus; folio Cypreſſi; major; fructu flaveſcente.*

OXYCOCCUS. Offic. *Oxycoccus Tournefortii.* Rupp. Flor. Jen. 74. *Oxycoccus ſive Vaccinia paluſtria.* J. B. 1. 525. Raii Synop. 3. 267. Tourn. Inſt. 565. *Vaccinia paluſtria.* Ger. 1367. Emac. 1419. Raii Hiſt. 1. 685. *Vaccinium paluſtre.* Park. Theat. 1229. *Vitis Idæa paluſtris.* C. B. P. 471. MOOR-BERRIES.

The Plant grows in a marſhy and putrid Soil, and flowers in *June*. The Fruit, which is uſeful in Medicine, ſtops a Looſeneſs and Vomiting, quenches Thirſt, ſtrengthens the Stomach, mitigates the Heat in Fevers, and reſiſts the Peſtilence. *Dale.*

OXYCRATUM, ὀξύκρατον. Oxycrate; that is, Vinegar and Water.

OXYCROCEUM EMPLASTRUM. The Name of a Plaiſter, deſcribed under the Article Crocus.

OXYDORCIA. The Name of a *Collyrium.* See Dacheron.

OXYGALA, ὀξύγαλα. Sour Milk.

OXYGARUM, ὀξύγαρον. A Compoſition of *Garum*, and Vinegar.

OXYGLYCU, ὀξύγλυκυ. This is a Species of Drink prepared of the ſweeteſt Honey-combs, macerated and boil'd. The Combs, from which all the Honey has been expreſs'd, are to be put into a Pot with pure Water, and boil'd, till they ſeem to have depoſited all their contain'd Honey in the Water. This Liquor is kept, and, when diluted with cold Water, is to be drank in the Summer-time, in order to remove Thirſt. *Galen*, in *Comment.* 2. *de Fracturis*, and in *Comment.* 3. informs us, that the ὀξυγλυκὲς is the ſame with the ἀπόμελι; and that it is, by ſome, made with Honey and Vinegar; and, by others, with Honey-combs and Vinegar. The ἀπόμελι, then, is an acid Liquor, of an inciding and refrigerating Quality.

OXYLAPATHUM. A Name for the *Lapathum; folio, acuto plano.*

OXYLIPES, ὀξυλιπὴς. An Epithet for Bread, which has a Portion of Vinegar mix'd with it.

OXYMEL, ὀξύμελι, from ὄξος, Vinegar, and μέλι, Honey. A Compoſition of Vinegar, and Honey. We have already given the Methods of preparing the ſeveral Sorts of Oxymel, under the Article Acetum; and, under the Article Alcali, we have ſpecify'd the Medicinal Virtues of *Oxymel.* See, therefore, Acetum, and Alcali.

OXYMYRRHINE. A Name for the *Ruſcus* Bruscus. See Bruscus.

OXYNITRUM. The Name of a Plaiſter, deſcribed by *Aetius, Tetrabib.* 4. *Serm.* 3. *C.* 17.

OXYPETRA. A Sort of Stone, or Earth, of a yellowiſh white Colour, and ſomewhat acid, found in the Territories of *Rome.* It is recommended for mitigating the exceſſive Heat of Fevers, and quenching Thirſt. For this Purpoſe it is infuſed in Water, and the Water is drank.

OXYPHLEGMASIA. An acute Inflammation.

OXYPHOENICA. An Epithet for Tamarinds.

OXYPHYLLON. A Name for the *Cnicus*, according to *Oribaſius, Medic. Collect. L.* 12. But he does not ſeem to mean the Plant we now call by this Name.

OXYPORON, ὀξύπορον, from ὀξὺς, quick, and πείρω, to paſs through. A Name for ſeveral Medicines, thus call'd, becauſe they are extremely penetrating.

OXYREGMIA, ὀξυρεγμία, from ὀξὺς, acid, and ἐρεύγω, to break Wind. An acid Eructation.

OXYRRHODINON. A Compoſition of Vinegar, and Oil of Roſes.

OXYS, ὀξύς. Acute, or acid.

OXYS.

The Characters are;

The Calyx is quinquefid, monophyllous, tubulous, and Bell-ſhaped; the Leaves are Heart-ſhaped, like thoſe of the Trefoil, and acid. The Flower is monopetalous, pentapetaloidal, and Bell-ſhaped; containing five inferior, and five ſuperior Stamina, of which the latter are almoſt concreted to one another, at their lower Part. The Ovary, which is ſeated in the Bottom of the Calyx, ſhoots forth five Tubes, and becomes a membranaceous, oblong, quinquecapſular Fruit, furniſhed with five Valves, which burſt aſunder from the Baſe upwards towards the Area, and full of Seeds, involved in an elaſtic Calyptra, by whoſe Force they are diſcharged with Violence.

Boerhaave mentions ſix Species of *Oxys*; which are,

1. Oxys; flore albo. See Acetosella.
2. Oxys; flore purpuraſcente. *T.* 88.
3. Oxys; lutea. *J. B.* 2. 388. *T.* 88.
4. Oxys; lutea; Americana; erectior. *T.* 88.
5. Oxys; bulboſa; Æthiopica; minor; folio cordato; flore ex albido purpuraſcente. *H. A.* 1. 43.
6. Oxys; bulboſa; Africana; rotundifolia; caulibus & floribus purpureis, amplis. *H. A.* 1. 41. *Boerh. Ind. alt. Plant.*

OXYSACCHARUM. A Compoſition of Vinegar and Sugar.

OXYSAL DIAPHORETICUM ANGELI SALÆ. This Medicine is prepared in the following Manner.

Take of the beſt Salt of *Carduus Benedictus*, in Grains; put it in a Pot, and gradually pour upon it Spirit of ſtrong Wine-vinegar, or Spirit of Sugar, prepared by a gentle Heat of a *Balneum Mariæ*, without any empyreumatic Taſte or Smell, till the Salt is not only diſſolved, and the Vapour, produced by their Conflict, ſtopt, but a grateful, and ſomewhat acid, Taſte is acquired by the Mixture; the Humidity of which is to be conſumed by a gentle Evaporation. After this, when the Salt is again diſſolved in Water, and left in Digeſtion *in Balneo Mariæ*, for eight Days, a Liquor, of a beautiful and pellucid Colour, is produced, which, when pour'd off clear, into a proper Veſſel, is to be again reduced to a dry Conſiſtence, and kept in cloſe-ſtopt Veſſels, leſt, by the Acceſs of the Air, it ſhould be colliquated, which it is very ſubject to. *Angelus Sala.*

OXYSCHOENOS. A Name for the *Juncus; acutus; capitulis Sorghi.*

OXYTOCA, ὀξύτοκα, from ὀξὺς, quick, and τίκτω, to bring forth. Medicines which promote Delivery.

OXYTRIPHYLLUM. A Name for the *Lotus; polyceratus; fruteſcens; incana; alba; ſiliquis curtis; craſſioribus, brevioribus erectis.*

OZÆNA, ὄζαινα. A Diſorder of the Noſe. See Nares.

OZE, ὄζη. A Fœtor, or ill Smell, of the Mouth.

OZEMAN. The White of an Egg. *Rulandus.*

OZO. Arſenic. *Rulandus.*

P.

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P.

P. FOR the Signification of this Letter in the Chymical Alphabet, see ALPHABETUM. *P.* in Prescription, sometimes imports a *Pugil*, and sometimes *Parts*.

PACAL. The Name of a Tree which grows in *Peru*, the Ashes of which the Inhabitants use, mix'd with Soap, in order to cure leprous Eruptions in any Part of the Body. *Raii Hist. Plant.*

PACCIANUM. The Name of a *Collyrium* mention'd by *Galen* and *Aetius*.

PACHUNTICA. Incrassating Medicines.

PACHYS, παχύς. Thick. *Hippocrates*, in his Treatise of internal Diseases, describes a Disorder, or rather several Disorders, under the Name of παχὺ νόσημα. This Disease is of a very singular Nature, and there are various Species of it. The first is produced by Phlegm and Bile, which, being convey'd to the Stomach, and inflating it, are, with great Violence, discharg'd both by Vomit and Stool. The Patient is seiz'd with Shiverings, and a Fever: The Pain is removed from the Stomach to the Head, and, when it descends to the Intestines, it produces a Suffocation. Sometimes the Patient vomits a sour, and sometimes a saline Phlegm: After Vomiting, he perceives a bitter Taste in his Mouth; a Redness, accompanied with Heat, appears in his Sides; and his Back becomes, in some measure, incurvated; he cannot endure to have any Part of him touch'd; and the Pain he feels is so great, that his Flesh palpitates; his Testicles are drawn up, and the Heat and Pain at the same time affect the Anus and Bladder; his Urine is thick, like that of dropsical Patients; the Hairs fall from his Head, and his Feet are always cold: At last the Pain principally affects his Sides, his Back, and the Nape of his Neck; and he imagines, that something is creeping or crawling all over his Skin. This Disorder sometimes remits, and sometimes not. The Skin of the Head becomes red and thick. This Disease lasts six, and sometimes ten Years, and towards its End the Patient is seized with a copious Discharge of fetid Sweat. During his Sleep he is frequently subject to Pollutions, and the Semen he discharges is bloody and livid.

Tho' *Hippocrates* seems here at first to describe a Cholera, or some Species of Colic, yet what he afterwards advances seems to have no Analogy to these two Diseases.

The second Species of this Disorder is produced by Bile alone conveyed to the Liver, and the Head. The Liver is inflated, and presses upon the Diaphragm. The Head, and principally the Temples are at first seized with Pains. The Patient does not hear well, and often sees but very little. Then, that is, at the Beginning of the Disorder, a Fever and Shivering come on; and the Disease has sometimes considerable, and at other times less Relaxations. The longer the Disorder lasts, the more intense the Pain becomes; the Eye-balls dilate themselves, and the Patient becomes blind, so that, if a Finger is held before his Eyes, he neither perceives it, nor winks. But, if any Degree of Sight is left, he is with his Fingers continually drawing the Knots of Wool upon the Bed-clothes, imagining them to be Filth, or Lice. But when the Liver extends itself farther to the Diaphragm, the Patient becomes delirious, and imagines that he sees before him Reptiles, wild Beasts of all Kinds, or armed Men. All these he is inclined to encounter with, and agitates himself, as if he was in a real Battle. If he is not left to do as he has a mind, he uses menacing Language; and, if he is allowed to walk, he drops down. His Feet are always cold, and, if he sleeps, 'tis with continual Startings. He is frighted by terrible Dreams, and, when he wakes, he relates every thing he has done and seen; at other times he remains in Bed the whole Day and Night without speaking one Word, with a very difficult Respiration. His Delirium is, also, remov'd at certain Intervals, he returns to himself, answers the Questions ask'd him, and hears what is said to him; but soon after relapses into his former Condition. This Disorder is principally incident to Travellers, and those who, having passed thro' uninhabited Places, have been frighted by the Sight of some Spectre.

The third Species of this Disorder is produced by Phlegm, as is obvious from the Eructations of the Patient, which smell as if he had eaten Horse-radish. That Species of the Disease, or the Pain accompanying it, begins at the Legs, whence it ascends to the Abdomen; and there communicating itself to the Entrails, produces a violent Noise and Rumbling, which is succeeded by a Vomiting of acrid and putrid Phlegm. But this Evacuation affords no Relief to the Patient; on the contrary, he is seized with a Delirium, and an intense Pain of the Entrails, and sometimes a Pain of the Head so acute and fix'd, that he only hears and sees very confusedly. He sweats a great deal, and the Sweat is fetid; but he is relieved by this means. He is of the same Colour with those labouring under the Jaundice. This Disorder is less frequently mortal, than the former Species.

The fourth Species of this Disorder draws its Origin from white Phlegm, and succeeds long and chronical Fevers. This Kind of it begins in the Face, which is inflated; then the Abdomen is affected and elevated. The Patient feels a Pain resembling that produced by too violent Exercise, and the Abdomen is, as it were, loaded with a great Burden; the Feet are also inflated. If Rain falls upon the Earth, the Patient cannot bear the Smell exhaled by that means; and if, by chance, he is exposed to the Rain, and perceives the Smell of the Earth, he forthwith falls down. This Disorder has its lucid Intervals, but it is longer protracted than the preceding; for it lasts five Years.

Neither the modern Practitioners, nor any who succeeded *Hippocrates*, have describ'd any particular Disease, accompanied at one and the same time with a Train of so seemingly incompatible Symptoms. Some may, therefore, infer, that these Disorders either no longer attack Persons, or that they have never had any Existence, but are describ'd at Pleasure. Neither of these Circumstances are probable; but 'tis far more reasonable to suppose, that the Book here quoted is not the Production of *Hippocrates*, but of the *Cnidian* Physicians, who are by *Hippocrates* condemn'd for the very Fault which reigns thro' this Work, which is, multiplying the Species of Diseases without any Necessity: And this unnecessary Multiplication and Distinction of Species accounts for the Perplexity and Obscurity with which this Disorder is describ'd. *Le Clerc. Hist. Med. Lib.* 3. *Cap.* 11.

PACO-CAATINGA. *Marcgr.* A coniferous Species of *Brasilian* Canna.

The Stalk of this Plant, being chewed, attracts Humours from the Head: Thus used, it is heating, and breaks the Stone; and, being chewed frequently in a Day, and the Juice swallow'd, is an excellent Remedy against the Gonorrhœa, which it cures in less than three Days without the Help of any other Medicine. It is offensive to the Stomach by its Acor, and, therefore, the frequent Use of it is to be avoided.

There is a second Species of this Plant, which is distinguish'd by the Sweetness of its Leaves underneath, and its red Flowers; and a third Species, known by its ceruleous, tetrapetalous Flowers. *Raii H. P.*

PACOEIRA. Pison. Marcgr. A Name for the *Musa*, or Plantain-tree.

PACO-SEROCA, *Brasilienſibus*. Marcgr. Piso. A Species of *Brasilian* Canna, which bears its Fruit in Clusters at the Bottom of the Stalk. The fresh Leaves, as well as the Stalk and Fruit, before it is ripe, being rubbed, give a Smell like Ginger, which is very grateful; and therefore serve instead of Spices: They are, also, used in hot Baths. *Raii H. P.*

PACOURII. *De Laet.* A vast Tree growing in the Island of *Maragnan*, belonging to *Brasil*; it bears Leaves like those of an Apple-tree, a white Flower, and a Fruit of the Bigness of two Fists. The Rind, or Peel, of this Fruit, which is about half an Inch thick, being boiled, or preserved with Sugar, is reckon'd a Delicacy. *Raii H. P.*

PADRI. H. M. A siliquous Tree of *Malabar*, bearing a pentapetalous Flower, and long, narrow, quadrated, inflected Pods.

The Decoction of the Leaves cures the intolerable Rigor of the Viscera; the Juice hereof, mixed with the Juice of Lemons, is a Remedy for a Mania; the Juice of the Bark, worked up with the Fruit of the *Pera*, restrains the immoderate Flux of the Menses. The Skin, or Peel, of the Root, bruised with Calamus aromaticus and Ginger, and mixed with the Juice of the Leaves, is prescribed as a Remedy for the putrefying Bite of the Snake called by the *Malabarians Polenga*. *Raii H. P.*

PADUS. See CERASUS.

PAEDANCHONE, from παιδίον, or παῖς, a Child; and ἀγχω, to strangulate. A Species of dry Quinsey, familiar to Children.

PÆDARTHROCACE, from παῖς, a Boy; ἄρθρον, a Joint; and κακὸν, an Evil. A Disease principally incident to Children, where the Joints swell, and most commonly the Bones are rotten; so called by *Marcus Aurelius Severinus*, in his Treatise *de recondita Abscessuum Natura*. The Joint Evil.

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PÆDOPHLEBOTOMIA. The Phlebotomy or Bleeding of Children.

PAENOE. The Name of a very large Tree, which grows in *Malabar*.

The Resin discharg'd from the Root, Bark, Fruit, and other Parts of this Tree, when boiled either with a large or small Quantity of Oil, is used either for hard or liquid Pitch, and is, in the *Indian* Sacrifices, sometimes burned instead of Incense.

The Kernels of the Fruit, when bruised, and, in Conjunction with warm Water, levigated on a Marble, corroborate the Stomach, remove a Nausea and Vomiting, allay racking Pains of the Belly, and cure the Cholera. The Resin of this Tree, when melted with the *Oleum Sesami*, is an excellent vulnerary Balsam. When reduced to a Powder, and exhibited, it, also, powerfully cures Gonorrhœas, and other Venereal Symptoms. *Raii Hist. Plant.*

PÆONIA.

The Characters are;

It arises from a Seed, like a monocotyledinous Plant; the Root is tuberous and thick, and the Calyx polyphyllous. The Flower is like a Rose, very large, polypetalous, and furnished with very numerous Stamina. The Fruit consists of a Multitude of horned Pods, whose Number is uncertain, incurvated downwards, cover'd with Down, and gaping lengthwise; the Seeds are commonly globular, and contain a small Kernel.

Boerhaave mentions twelve Species of *Pæonia*; which are,

1. Pæonia; mas. *Offic. Ger.* 830. *Emac.* 980. *Boerh. Ind. A.* 292. *Park. Theat.* 1381. *Parad.* 341. *Raii Hist.* 1. 693. *Pæonia mas præcocior.* J. B. 3. 492. *Pæonia folio nigricante splendido, quæ mas*, C. B. P. 323. *Tourn. Inst.* 273. MALE PEIONY.

This Peiony has several large branched Sections, usually five, of long round brownish-green Leaves, somewhat hairy underneath, not indented about the Edges, growing on a round Foot-stalk. The Stalk on which the Flower grows, is about two Feet high, having one or two smaller Leaves, and on the Top a large deep-red Flower, made of five or six pretty big round Leaves, set about a triangular greenish Head, encompassed with yellow Chives. When the Flowers are fallen, the Head swells into two or three Seed-vessels, which are angular, whitish, and hairy, bending downwards, and opening Lengthways; when ripe, shewing the large black oval Seed. The Root consists of a Number of Tubers, some round, and some longer, that hang by Strings to the main Head; it is planted in Gardens, and flowers in *April* and *May*.

The Roots, Flowers, and Seeds, are cephalic, and counted good against the Epilepsy, Apoplexy, and all Kinds of Convulsions, and nervous Affections, both in Young and Old; as, also, in hysteric Cases, the Obstructions of the Menses, and the Retention of the Lochia. The Root and Seed are hung about Childrens Necks, to prevent Convulsions in breeding their Teeth. *Miller's Bot. Off.*

Peiony, or *Glycyside*, is by some called *Pentorobon*; and some call the Root *Idæus Dactylus*. *Dioscorides*. It is called *Pæonia* from *Pæon*, the Physician, who with this Plant, as *Homer* says, *Odyss.* E', cured *Pluto*, when he was wounded by *Hercules*.

I saw, says *Galen*, a Boy who was freed from the Epilepsy for eight whole Months after he had worn the Root of Peiony; but when by chance it had fallen off from his Neck, about which it had hung, he was immediately seized with the same Disorder, which was again removed by hanging another Root about his Neck. I then resolved, he says, for the surer Trial, to take off the Root again; which being done, and the Boy relapsing into Convulsions, we hung a large and fresh Piece of the Root about his Neck, from which time he was never troubled with any Disorder of that Kind. This Experiment of *Galen* is confirm'd by *Montanus*, *Fernelius*, and *Apollonius Menubenus*, in his Book *de Alce*, *Cap.* 7.

By what Property, or Quality, inherent in Peiony, this was effected, remains a Doubt; but, whatever it were, says *Julius Alexandrinus*, in his Notes on *Galen de S. M. F.* we are frustrated in our Hopes of the like Success at present. Either, therefore, our Peiony is not so effectual as that of some other Countries, or Diseases in the Time of *Galen* were less severe than in our Days, perhaps on account of the Change in Regimen for the worse. Some pretend that the whole Affair depends on taking up the Root under a certain Position of the Stars; and this is an Opinion which seems to border too much on Magic, and superstitious Vanity. And *C. Hoffman* makes a Question, whether *Galen*'s was of such Virtue in its own Nature, or as it was τέτελεσμένη (*teteleſmene*), *conjur'd*; for the Devil in many Things helps or hinders Nature. *Sylvius* says, that he had seen nothing extraordinary effected by virtue of the Root and Seed of this Plant, tho' he had very often used them. *Raii H. P.*

2. Pæonia; communis; vel fœmina. *C. B. P.* 323. *Tourn. Inst.* 274. *Boerh. Ind. A.* 294. *Pæonia fœmina*, Offic. Ger. 830. Emac. 981. Raii Hist. 1. 694. *Pæonia fœmina vulgaris, flore simplici.* Park. Theat. 1380. Parad. 490. *Pæonia fœmina vulgatior.* J. B. 3. 492. FEMALE PEIONY.

This Peiony has larger, taller, and greener Leaves than the Male, and arises higher, bearing very large red Flowers, consisting of a great Number of Leaves, the outermost large and broad, but the innermost composed of various Magnitudes, some very narrow and slender, others broader, and sharp-pointed, set about a double whitish woolly Seed-vessel, in which sometimes grows round black Seed, less shining than in the Male. The Roots grow after the same Manner as the former, and, indeed, being more increasing, and easier to be had, they are generally sold for the Roots of the Male; they are cultivated in Gardens, and flower in *April* and *May*. The Root and Flowers are used.

They are accounted useful for all Distempers for which the Male Peiony is serviceable, and indeed they generally supply its Place.

Officinal Preparations from the Peionies are, the *Syrupus Florum Pæoniæ*, and the *Syrupus Pæoniæ compositus*, the *Aqua Simplex*, and the *Aqua Pæoniæ compositus*: Both the Seed and the Root are put into the *Pulvis ad Guttetam. Miller's Bot. Off.*

3. Pæonia; fœmina; altera. *C. B. P.* 323. *M. H.* 3. 455.

4. Pæonia; peregrina; flore saturatè rubente. *C. B. P.* 324. *M. H.* 3. 455.

5. Pæonia; peregrina; flore saturatè rubente; maxima.

6. Pæonia; folio subtus incano; flore albo, vel pallido. *C. B. P.* 323. *M. H.* 3. 454.

7. Pæonia; tenuius laciniata; subtus pubescens; flore purpureo. *C. B. P.* 323. *M. H.* 3. 455.

8. Pæonia; folio maximè laciniato; flore kermesino simplici. *An Pæonia, aquilinæ foliis. C. B. P.* 323. *M. H.* 3. 454.

9. Pæonia; fœmina; flore pleno, rubro, majore. *C. B. P.* 324. *Tourn. Inst.* 274. *Boerh. Ind. A.* 295. *Pæonia.* Offic. *Pæonia fœmina multiplex.* Ger. 831. Emac. 981. *Pæonia fœmina vulgaris flore pleno, rubro.* Park. Theat. 1380. Parad. 341. *Pæonia flore pleno, rubro.* J. B. 3. 493. COMMON PEIONY.

It is frequent in Gardens, and flowers in *May*; the Flowers, which are the Part used in Medicine, agree in Virtue with those of the Male Peiony.

10. Pæonia; flore pleno, coloris ex rubro & roseo variegati.

11. Pæonia; flore exalbido pleno, major. *C. B. P.* 324. *Raii Hist.* 1. 695. *Tourn. Inst.* 274. *Boerh. Ind. A.* 295. *Pæonia flore albicante.* Offic. *Pæonia flore pleno albicante.* Park. Parad. 342. *Pæonia fœmina Polyanthos flore albo.* Ger. 831. Emac. 982. *Pæonia albo flore pleno, sive Polyanthos alba fœmina. J. B.* 3. 494. WHITE-FLOWERED FEMALE PEIONY.

The Virtues are the same with those of the Male Peiony.

12. Pæonia; tenuifolia; cæsia; flore pleno, ex petalis latioribus & angustioribus. rubro, *Boerh. Ind. alt. Plant.*

The Root, Flowers, and Seeds of this Plant discover, by the Taste, an aromatic and somewhat astringent Quality, attended with a Viscidity; whence it is effectual in all Disorders proceeding from too great Laxness of the Brain, and in nervous Affections. The Root is taken up in the Month of *March*, about the New or Full Moon, dried, and cut into Slices, and may then be preserved for a considerable time. A Dram of this Root, given every Morning to an epileptic Person, will prevent the Fit, as I have made the Experiment in Children; but, as soon as you desist from giving it, the Fit returns; for Peiony has not Virtue sufficient for eradicating an Epilepsy. Dr. *Grew* observed, that the inner Kernel is a strong Cathartic; but, while it remains involved within its Cortex, has no Operation at all. The Root is hung about the Necks of Children, to prevent an Epilepsy; and the Seeds are strung as Beads, to make a Necklace for the same Purpose. Of the Flowers are prepared a Conserve, and a distilled Water; half an Ounce of the Syrup of the Flowers, given three or four times a Day, is an excellent Remedy for Children affected with the Epilepsy. Some prepare Emulsions of the Seeds with proper Waters. The Virtues I have mentioned, belong, in a more eminent manner, to the first Species, which cures all Sorts of Convulsions, Palsies, Tremblings, nocturnal Frights in Children, and Apoplexies. *Hist. Plant. adscript. Boerhaav.*

PÆPALE, παιπάλη. Exquisitely fine Flour. *Gorræus.*

PAGANINA. An *Italian* Word, by which are meant the first Excrements of Infants, reduced to a very fine Powder; which, taken for many Days together, is a most approved Remedy for the Epilepsy. *Castellus.*

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PAGOYUM. A *Paracelſic* Term, ſignifying that ſpiritual Being which is the Author of occult Diſeaſes, or thoſe which depend on Inchantment. On this imaginary Subject *Paracelſus* has written a Treatiſe, which he calls *Pagoyus. Caſtellus.*

PAGRUS, *ſive* PHAGRUS, πάγρος ἢ φάγρος. A kind of Fiſh living near the Shores, reckoned by *Galen*, *de Aliment. Fac. Lib. 3. Cap.* 31. among Fiſh which have an hard Fleſh, are difficult of Concoction, and generate thick and ſalt Juices in the Body.

PAGURUS. A kind of Crab, good to eat, but difficult of Digeſtion: It contains much Oil, and volatile and fixed Salt; and is aperitive and pectoral. The Shell, Claws, and the Stone in its Head, are aperitive and alcaline, good for the Stone, to provoke Urine, for Diſorders in the Throat, to ſtop a Looſeneſs and Hæmorrhages: The Doſe is from half a Scruple to a Dram. *Lemery des Drogues.*

PAIANELI. H. M. A tall ſiliquous, or Pod-bearing Tree of *Malabar*, of which there are two Species.

1. *Palega Paianeli*, which has an Heart-ſhaped Leaf, and a very large oblong flat Fruit, containing a membranous Seed. The Bark of this Tree, bruiſed, and applied with Wine, conſolidates Fractures and Cuts; a Decoction of the Root is good for a Dropſy; and the tender Leaves, bruiſed, and applied, with Saffron of *Malabar*, to Ulcers, conduces to their Cure.

2. *Paianeli*, with the larger mucronated Leaf, which principally diſtinguiſhes it from the former. The Root of this Tree, bruiſed, and boiled in Oil, ſerves to anoint the Head under a Pain or Cold. The Bark of the Root, given in a Decoction, is good to reſolve Tumors; and a Decoction of the Bark and Leaves, bruiſed together, is uſed to anoint the Body affected with Puſtules and Ulcers. *Raii Hiſt. Plant.*

PAIOMIRIOBA, *Raii.* A Name for the *Senna orientalis*; *fruticoſa*; *Sophera dicta.*

PAI-PAROCA, *ſeu Couradi.* H. M. A bacciferous Shrub of *Malabar*, with a flat, round, hairy Fruit, containing four Stones; it is an Ever-green, flowers in *July*, and the Fruit is ripe in *November*. An Apozem is prepared of the Leaves, Roots, and Fruits, boiled in Water, which is ſaid to be of excellent Uſe in the Gout. *Raii Hiſt. Plant.*

PALA. A very tall ſiliquous Tree of *Malabar*, pentaphyllous, and lacteſcent, with very long and narrow Pods. The Bark, bruiſed, and given in Decoction, is good to mollify the Belly; and, with an Addition of a little Salt and Pepper, to corroborate the Stomach, to diſcuſs Flatulencies, and allay the immoderate Heat of the Liver; the ſame bruiſed, and taken in warm Water, kills Worms; bruiſed, and applied with Water, it cleanſes and heals Ulcers, and mitigates the Pain of the Gout; and, boiled in Oil with the Seed of *Cudu Pariti*, and inſtilled into the Ears, it cures Deafneſs. *Raii Hiſt. Plant.*

PALÆSTE, παλαιστὴ. A *Greek* Meaſure of Length, the ſame as *Dochme*, or *Doron*, being four Fingers-breadths, or Digits. *Arbuthnot.*

PALÆTYRUS, παλαίτυρος, from παλαιὸς, old, and τυρὸς, Cheeſe, is old Cheeſe. *Blancard.*

PALATINÆ *Glandulæ*. Conglomerated Glands adjoining to the Tonſils. *Caſtellus.*

PALATUM. The Palate.

The Palate is that Arch and Cavity of the Mouth, ſurrounded anteriorly by the alveolary Edge and Teeth of the upper Jaw, and reaching from thence to the great Opening of the Pharynx. This Arch is par ly ſolid and immoveable, and partly ſoft and moveable. The ſolid Portion is that which is bounded by the Teeth, being formed by the two Oſſa Maxillaria, and two Oſſa Palati. The ſoft Portion lies behind the other, and runs backward like a Veil fixed to the Edge of the Oſſa Palati, being formed partly by the common Membrane of the whole Arch, and partly by ſeveral muſcular Faſciculi, &c.

The Membrane that covers all this Cavity, is like that which lines the ſuperior and middle Portions of the Pharynx. It is very thick-ſet with ſmall Glands, the Orifices of which are not ſo ſenſible as in the Pharynx, and eſpecially in the Rugæ of the ſuperior Portion thereof, where *Heiſter* obſerved a conſiderable Orifice, and a Canal proportioned to that Orifice, which he could eaſily inflate with Air. This is certainly the beſt way of beginning theſe Kinds of Inquiries, eſpecially if the Pipe be held at firſt only very near the Part, without endeavouring to force it in. To immerge the Parts in clear Water, is, likewiſe, a very good way to diſcover ſmall Orifices by the Help of a Microſcope. Small Ducts, of the ſame Kind with what I have now mentioned, may be ſuppoſed to lie along the middle Line, or Raphe, of the Arch of the Palate, and along the alveolary Edge, becauſe of ſome ſmall Tubercles, or Points, which appear there.

This Membrane, together with that of the poſterior Nares, forms, by an uninterrupted Continuation, the anterior and poſterior Surface of the ſoft Portion, or Septum Palati; ſo that the muſcular Faſciculi of this Portion lie in the Duplicature of a glandulous Membrane. The Muſcles compoſed of theſe Faſciculi ſhall be preſently deſcribed.

The Septum, which may likewiſe be called *Velum*, or *Valvula Palati*, terminates below by a looſe floating Edge, repreſenting an Arch ſituated tranſverſly above the Baſis or Root of the Tongue. The higheſt Portion, or Top, of this Arch, ſuſtains a ſmall, ſoft, and irregularly conical glandulous Body, fixed by its Baſis to the Arch, and its Apex hanging down without adhering to any thing, which is called *Uvula.*

On each Side of the Uvula there are two muſcular half Arches, call'd *Columnæ Septi Palati.* They are all joined to the Uvula by their upper Extremities, and diſpoſed in ſuch a manner, as that the lower Extremities of the two, which lie on the ſame Side, are at a little Diſtance from each other, and ſo as that one half Arch is anterior, the other poſterior, an oblong triangular Space being left between them, the Apex of which is turned toward the Baſis of the Uvula.

The two half Arches on one Side, by joining the like half Arches on the other Side, form the entire Arch of the Edge of the Septum. The poſterior half Arches run by their upper Extremities, more directly toward the Uvula than the anterior. The anterior half Arches have a Continuation with the Sides of the Baſis of the Tongue, and the poſterior with the Sides of the Pharynx. At the lower Part of the Space left between the lateral half Arches on the ſame Side, two Glands are ſituated, termed *Amygdalæ.*

The half Arches are principally made up of ſeveral flat fleſhy Portions, almoſt in the ſame manner with the Body of the Septum. The Membrane which covers them is thinner than the other Parts of it towards the Palate, Pharynx, and Tongue. Each Portion is a diſtinct Muſcle, the greateſt Part of which terminates in one Extremity in the Subſtance of the Septum, and of the half Arches; and by the other Extremity, in Parts different from theſe.

As Anatomiſts uſed formerly to aſcribe all theſe Muſcles, as far as they knew them, to the Uvula, without any regard to the Septum; they term'd them in general, either *Ptery-ſtaphylini*, or *Peri-ſtaphylini.* The laſt Part of theſe two compound Words expreſſes the Uvula; the firſt Part of the firſt Word is an Abridgment of *Pterygoides*, and expreſſes the Inſertion of theſe Muſcles; but the firſt Part of the ſecond Word ſignifies no more than *round*, or *about.*

I ſhould be very glad to make uſe of the Term *Peri-ſtaphylinus*, as a general Denomination for the Muſcles belonging to the Septum; and then to add the other Terms, of which theſe Names have been made up by modern Writers. But, leſt I ſhould be thought to affect a Language different from the common, I ſhall retain the ordinary Names, only deſiring the Reader to take notice, that, by the Term *Staphylini*, I do not mean preciſely the Uvula, but only the Parts round it. If we could be allow'd to form Names of *Greek* and *Latin* Words compounded together, we might, for Example, ſay, *Gloſſo-palatinus*, inſtead of *Gloſſo-ſtaphylinus.* I ſhall call the Muſcles that go to the Uvula, ſimply, *Staphylini*, or *Epiſtaphylini*, becauſe that Part reſembles a ſmall Bunch of Grapes, according to the Signification of the *Greek* Word. From what has been ſaid, I name theſe Muſcles in the following Manner:

Gloſſo-ſtaphylini.
Pharyngo-ſtaphylini.
Thyro-ſtaphylini.
Pterygo-ſtaphylini.
Spheno-ſalpingo-ſtaphylini, commonly called *Peri-ſtaphylini Externi.*
Pterygo-ſtaphylini Superiores.
Pterygo-ſtaphylini Inferiores.
Pterygo-ſalpingo-ſtaphylini, commonly called *Ptery-ſtaphylini Interni.*
Staphylini ſive Epiſtaphylini.

The Gloſſo-ſtaphylini are two ſmall Muſcles, fixed each in the lower and lateral Part of the Baſis of the Tongue; whence they run up obliquely backward, along the anterior half Arches of the Septum Palati, and terminate inſenſibly on each Side near the Uvula, ſome of their Fibres being ſpread through the Septum. The Thickneſs of the anterior half Arches is principally produced by theſe two Muſcles.

The Pharyngo-ſtaphylini are likewiſe two ſmall Muſcles, each of them being fixed by one Extremity to the lateral Part of the Muſculi Thyro-pharyngæi, as if they were Portions detached from theſe Muſcles. Thence they run up obliquely forward along the two poſterior half Arches of the Septum, and terminate in the Septum above the Uvula; where they meet together, and ſeem to form an entire Arch by the Union of their Fibres. The Thickneſs of the two poſterior half Arches is produced by theſe Muſcles.

The

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The Thyro-ſtaphylini are two ſmall Muſcles, which accompany the Pharyngo-ſtaphylini very cloſely, through their whole Courſe, except that their poſterior Extremities are fixed in the Thyroide Cartilages near the other Muſcles. They likewiſe contribute to the Thickneſs of the poſterior half Arches, and are inſerted in the Septum in the ſame manner with the former. Theſe two Pairs of Muſcles may be made one Pair, and may be called *Thro-pharyngo-ſtaphylini*.

The Spheno-ſalpingo-ſtaphylini are each fixed by one Extremity, partly to the Sphenoidal Side of the bony Portion of the *Euſtachian* Tube, partly to the neareſt ſoft Portion of the ſame Tube. Thence it runs toward the external Wing of the Apophyſis Pterygoides, into which one Portion of this Muſcle is inſerted. The other Portion runs to the End of the Wing, and turns round to the forked Extremity thereof, as over a Pully; and is afterwards inſerted in the Septum Palati, near the Uvula.

I look upon theſe two Portions as two diſtinct Muſcles, one of which, ending in the Wing, ſeems only to ſerve for the Dilatation of the *Tuba Euſtachiana*. The other Portion is a true Spheno-ſtaphylinus, and, as it has likewiſe an Inſertion in the Tube, it may be termed *Spheno-ſalpingo-ſtaphylinus*, or *Staphylinus Externus*. This is the Muſcle commonly called *Peri-ſtaphylinus Externus*.

The Pterygo-ſtaphylinus Superior is only the external Portion of the Muſcle laſt deſcribed; and this Name may, alſo, be given it, becauſe it has a ſmall Inſertion in the upper Part of the Apophyſis pterygoides, beſides that in the ſphenoidal Part of the bony Portion of the Tube. The Pterygo-ſtaphylinus Inferior, on each Side, is a ſmall Muſcle inſerted by one Extremity in the Uncus pterygoidæus; and, by the other, in the Septum near the Uvula. This Obſervation we owe to Mr. *Heiſter*.

The Petro-ſalpingo-ſtaphylini, or Salpingo-ſtaphylini Interni, are thoſe which are commonly call'd *Peri-ſtaphylini Interni*. Each Muſcle is fixed by one Extremity, partly, to the inner Side of the bony Portion of the *Euſtachian* Tube, or that next the Apophyſis petroſa; partly along the cartilaginous Portion of the ſame Tube. Thence it paſſes a little Way under the ſoft membranous Part, and toward what I called *The half Pad of the Tube*; and then, turning toward the Septum, is fixed in the Edge, and partly in the upper Side thereof.

The Staphylini, or Epiſtaphylini, are two ſmall fleſhy Ropes, cloſely united together, as if they made but one Muſcle; but in ſome Subjects they are diſtinguiſhed by a very fine white Line. They are fixed by one Extremity in the common Point of the poſterior Edges of the Oſſa Palati, and from thence run downward and backward along the Middle of the Septum, and likewiſe along the Middle of almoſt the whole Uvula. Theſe Muſcles have been term'd *Azygos Morgagnii*, from the Diſcoverer; but he conſidered them as one Muſcle. The Pterygo-ſtaphylini Inferiores are of the ſame Kind, and might be termed *Staphylini*, or *Epiſtaphylini Laterales*, and theſe laſt *Medii*.

The Septum Palati ſerves to conduct the lachrymal Lymph, and that which is continually collected on the Arch of the Palate, into the Pharynx. It ſerves for a Valve to hinder what we ſwallow, and eſpecially what we drink, from returning by the Nares. The Uſes of the different Muſcles of the Septum are not as yet ſufficiently known, nor the different Motions of which it is capable, as may be obſerved by looking for ſome time into the Mouth of an healthy Perſon wide-open'd. *Winſlow*.

Of Ulcers of the Palate.

Theſe Ulcers are of ſo malignant a Nature, that ſometimes they not only conſume the ſoft Parts, but corrode the Bones, and extend themſelves even to the Noſe. The Voice of the Patient becomes not only alter'd and broken, but whatever he drinks is immediately diſcharged by the Noſe with very great Uneaſineſs. Theſe Ulcers proceed from a ſcorbutic Acrimony, or a Venereal Infection, in the Blood; and, if the Cauſe is not ſpeedily removed, not only the Palate, but, likewiſe, the Noſe, will be in a miſerable manner deſtroy'd.

The firſt Intention of Cure, therefore, muſt be either to alleviate, or entirely remove, the Acrimony of the Blood, or the Venereal Malignity, by proper internal Medicines. If the Palate is not yet perforated, or conſum'd by the Caries, let it be cleanſed with frequent Gargariſms, Ointments, and Injections. For this Purpoſe, firſt, make a Decoction of Agrimony, St. John's-wort, Ladies-mantle, and the like vulnerary Herbs; then mix it with Honey of Roſes, or, if more powerful Detergents are neceſſary, with Unguentum Ægyptiacum, or Fuſcum. The Honey that ſwims a-top of the Ægyptiacum, and, alſo, *Fallopius*'s Alum-water, are excellent Detergents, even when the Caries has affected the Bones. As often as the Ulcer is thus cleanſed, it will not be improper ſoon after to apply to the ulcerated Part with Lint, or a Pencil, Honey of Roſes, Oil of Myrrh *per Deliquium*, Elixir Proprietatis, or *Peruvian* Balſam.

If the Caries has already ſeized the Bones, the morbid Part may be ſeparated from the ſound, by the Remedies already recommended, eſpecially if the Part be carefully anointed with the Oil of Cloves, or with Honey of Roſes acidulated with Spirit of Vitriol, the internal Medicines being conſtantly continued. But, when theſe do not ſucceed, the actual Cautery ought to be gently apply'd to the morbid Bone, after having carefully cleanſed the Ulcer with dry Lint, and ſecured the Tongue from Injury, by covering it with wet Linen Cloths, and applying the Speculum Oris. After the Cauterization is completed, continue the Application of balſamic Remedies, till the Bone is again covered with Fleſh, and the Ulcer entirely cured. But thoſe Perforations, which penetrate through the Palate to the Noſe, can never again be naturally cloſed.

The Method of ſtopping Perforations through the Palate to the Noſe.

When by theſe Perforations the Voice is injured, and Liquids are diſcharged by the Noſe, as Nature cannot ſtop them up by a new Supply of Bone and Fleſh, we muſt have recourſe to Art. A Plate, therefore, of Gold, or Silver, muſt be adapted to the Perforation, having a Tube or Handle with Holes (ſee *Tab.* XXXXII. *Fig.* 4. 5.). A Piece of Sponge muſt be fix'd to the End of this Handle, which, being inſerted in the Perforation, prevents the Plate from falling down from the Palate; by which means the natural Voice of the Patient will not only be reſtored, but likewiſe the Power of Deglutition, in the ſame manner as if the Palate was entire. However, he ſhould be provided with two of theſe Inſtruments, that they may be changed, and the Sponge waſhed in Water every Day, leſt the Humours attracted by it ſhould putrefy, and grow fetid. I once ſaw a large Perforation of the Palate, occaſioned by a leaden Bullet, in an Officer, which was remedied in this manner. *Heiſter. Chirurg.*

PALE, *πάλη*. Beſides its common Meaning, which is Colluctation, whence the Word *Palæſtra*, a Place for gymnaſtic Exerciſes, it ſignifies, alſo, the ſame as *Pæpale*, the fineſt of Flour. *Hippoc. Lib.* 1. & 2. *in Morb. Mul.*

PALEAR. The ſame as Callæon; which ſee.

PALEGA-PAIANELI. See Paianeli.

PALIMBOLOS, *παλίμβολος*, from *πάλιν*, an Adverb, implying Recourſe, or Repetition, and *βάλλω*, to attack or ſeize, in *Hippocrates*, 6 *Epid. Sect.* 6. *Aph.* 16. is an Epithet applied to ſuch Diſeaſes as are of a mutable and fluctuating Nature, or eaſily degenerate into others; or, as *Galen* underſtands the Word, which flatter the Patient with Hopes of Relief, but retain a ſecret Malignity. *Foeſius.*

PALIMPISSA, *παλιμπισσα*, from *πάλιν*, importing Repetition, and *πίσσα*, Pitch, is a Name, as *Dioſcorides* ſays, *Lib.* 1. *Cap.* 97. given by ſome to dry Pitch, becauſe it is prepared of Pitch twice boiled.

PALINCOTOS, *παλίγκοτος*, from *πάλιν*, again, and *κότος*, a Term importing a great Uneaſineſs in the Mind, excited by Anger mix'd with Indignation, is an *Ionic*, and highly poetical Epithet, frequently apply'd by *Hippocrates* to a Diſeaſe, which, contrary to Hope, returns upon the Patient with renew'd Violence and Malignity. *Foeſius.*

PALINDROMIA, *παλινδρομία*, from *πάλιν*, again, and *δρέμω*, to run, is a Term uſed to expreſs the preternatural Recourſe, or Regurgitation, of the peccant Humours to the inner and more noble Parts. The Verb *παλινδρομέω*, from whence the Word is immediately derived, is often uſed by *Hippocrates* in the Senſe before given. *Foeſius.*

PALINGENESIA, *παλιγγενησία*, (from *πάλιν*, again, and *γενησία*, or *γένησις*, Generation) Regeneration, is a Word by which the Chymiſts have preſum'd to expreſs the Revireſcence, or returning Greenneſs of dry Plants, by virtue of ſome Mercurial Water. *Theat. Chym.*

PALINIDRYSIS, *παλινίδρυσις*, from *πάλιν*, again, and *ἵδρυμαι*, to be placed, or ſettled, is a Reſettlement, and a Word uſed by *Hippocrates*, *Lib. de Humor.* to expreſs the Subſiding again, and Reſettlement, of thoſe Humours which before were elevated; and oppoſed to *Meteoriſmus*, *μετεωρισμὸς*, Exaltation. *Foeſius.*

PALINOPTOS, *παλίνοπτος*, from *πάλιν*, again, and *ὄπτομαι*, to ſee, is expounded, in *Galen*'s *Exegeſis*, averſe, or turned from the Sun.

PALIRRHŒA, *παλίῤῥοια*, from *πάλιν*, again, and *ῥέω*, to flow, in *Aretæus de Cur. Morb. Acut. Lib.* 2. *Cap.* 4. is the Reflux, or retrograde Courſe, of the Humours, as in the Cholera Morbus, under black Vomitings.

PALIURUS.

The Characters are;

It has long and very ſharp Spines, diſpoſed in regular Order. The Calyx is monophyllous and pentaphylloidal; the Flower roſaceous,

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roſaceous, pentapetalous, and furniſhed with five Stamina. The Ovary in the Bottom of the Calyx becomes a Fruit, reſembling a Bonnet, or Target, and ſurrounding another almoſt globular and tricapſular Fruit, containing in each Capſula, or Cell, one round Seed.

Boerhaave mentions but one Sort of *Paliurus*; which is,

Paliurus Dodonæi. *Tourn. Inſt.* 616. *Boerh. Ind. A.* 2. 236. *Paliurus.* Offic. Ger. 1153. Emac. 1336. Raii Hiſt. 2. 1708. *Paliurus ſive Rhamnus tertius Dioſcoridis.* Park. Parad. 607. *Rhamnus ſive Paliurus folio Jujubino.* J. B. 31. *Rhamnus folio ſubrotundo fructu compreſſo.* C. B. P. 477. *Paliurus ſive Rhamnus tertius Dioſcoridis.* Park. Theat. 1006. CHRIST'S THORN.

We are very much inclin'd to believe with *J. Bauhine*, that this Plant is the *Paliurus* of *Theophraſtus*, and the ſame with what *Dioſcorides* in one Chapter makes a third Species of *Rhamnus*, and, in another, the *Paliurus*. It grows about *Verona*, *Bergamum*, and other Parts of *Italy*, and about *Montpelier* in *France*. It delights in open, plain, and uncultivated Places, and flowers in *May* and *June*; the Fruit is ripe in Autumn, and adheres to the Tree all the Winter. It is called *Chriſt's Thorn*, becauſe, as ſome imagine, our Saviour's Crown of Thorns was compoſed of it; and, indeed, you ſhall hardly find any Species of Rhamnus, or other Shrub, arm'd with ſharper or ſtiffer Spines, or more dangerous to the Touch: Whence quick-ſet Hedges were uſually planted of it, as being a moſt commodious Fence againſt the Incurſions of Men or Beaſts.

The Leaves and Root of the Paliurus are aſtringent, ſtop a Looſeneſs, and digeſt and cure Tubercles; and the Fruit is ſo powerfully inciding, as to diminiſh the Stone in the Bladder, and promote Excretions from the Breaſt and Lungs. The Seeds bruiſed are commended againſt the Cough, and the Phyſicians of *Montpelier* preſcribe their Uſe in Diſorders from Sand and Gravel. *Raii H. P.*

PALLAX. A Name given by ſome Chymiſts to an imaginary factitious Stone, compoſed of the Heaven and Earth, of the Moon, with an equal Weight of the Sun. *Theat. Chym.*

PALLIATIO. A Palliation. Phyſicians call it a *Palliation*, or a *palliative Cure*, when in deſperate and incurable Diſeaſes, after predicting the fatal Event, they preſcribe ſome Remedies for mitigating the Pain, or ſome other urgent Syptoms, as in ulcerated Cancers, or cancerous Fiſtulas, and the like. *Caſtellus.*

PALLIUM PURPUREUM, a purple Cloak, is a Title beſtow'd by *Baſil Valentine* on a certain Solar Powder, prepared of an Amalgama of Gold and Mercury put into a Retort, where the Mercury being ſeparated, what remains is calcined with Sulphur, and turned a purple Colour. *Caſtellus.*

PALMA.

The Characters are;

The Fruit, under an eatable Pulp, has an hard ſtony Nucleus, like the Stone of a Plum.

Boerhaave mentions nine Species of *Palma*; which are,

1. Palma major, *C. B. P.* 506. *Boerh. Ind. A.* 2. 169. *Palma.* Ger. 1333. Emac. 1517. J. B. 1. 351. Raii Hiſt. 2. 1352. *Palma vulgaris.* Park. Theat. 1545. *Indis Mahaindi.* Herm. Muſ. Zeyl. 69. THE PALM, or DATE-TREE.

The Palm-tree grows in *Barbary*, *Egypt*, and *Syria*, and other hot Countries, being a large Tree, having a rough ſcaly Bark. The Leaves, which all grow at the Top, are large and wrinkled, made of divers ſtiff, nervous, hard, ſingle Leaves, about the Breadth of a Reed, ſet together like a Fan. The Flowers grow among the lower Leaves, in a long Skin, or Sheath, which, opening in the middle, ſhews a great Number of three-leaved white Flowers, hanging on long Foot-ſtalks, which are ſucceeded by the Fruit or Dates. The Date is a round longiſh fleſhy Fruit, of a yellow Colour, but frequently rediſh on one Side, of a pleaſant ſweet mucilaginous Taſte, incloſing in a thin white Skin an hard cylindrical Stone, having a Chink, or Furrow, running its whole Length. *Miller's Bot. Off.*

The Vagina, or Sheath, which incloſes the Flowers and Rudiments of the Fruits, was called by the antient Writers *Elate* and *Spatha*; and that tender and medullary Subſtance, which grows on the Top of the Palm-tree, called by *Theophraſtus* ἐγκέφαλον, (*Encephalus*) the Brain, and by *Dioſcorides*, improperly, ἐγκάρδιον φοίνικος, (*Encardium Phœnicis*) *the Heart and Marrow of the Trunk*, is nothing but a large Bud, producing, as *Theophraſtus* himſelf ſays, both Leaves and Fruit; if the Tree be deprived of this Part, it is rendered barren, and, in a ſhort time, periſhes. It appears, in many Places of the antient Writers, that this Part is eatable; and *Xenophon*, in his ſecond Book of the Expedition of *Cyrus*, ſays, that the Soldiers, in ſuch a Place, firſt fed on the Brain of Palm-trees, which all wither'd after being deprived of it: *Galen* alſo relates, that ſome, rather than ſtarve, uſed to eat it; and *Diphilus Siphnius*, in *Athenæus*, ſays, that it cauſes a Plethora, affords too much Nouriſhment, oppreſſes the Stomach, is very difficult of Diſtribution, excites Thirſt, and binds the Belly. *C. Bauhine* tells us, that the *Egyptians* in *Alexandria* feed on it, and even eat it raw; and that the *Egyptian* Peaſants ſearch out barren Palm-trees, in order to cut off their Tops, and take out this Pith, or medullary Subſtance, and ſell it.

Dates, or the Fruit of the Palm-tree, when thoroughly ripe, and not too pinguious, are grateful to the Stomach, highly nutritive, and generally render thoſe who uſe them, fat; but they are of difficult Digeſtion, and moſt of the antient Phyſicians agree, that they excited Pains of the Head: But *Aretæus* alone aſſerted, that all ſweet Meats were prejudicial to the Stomach, except Dates, Figs, and Grapes.

The Antients, by infuſing Dates in Water, prepared a Wine, the Method of making which is delivered by *Dioſcorides*; according to whom, the Date is ſour and aſtringent, and conſequently proper for ſtopping Fluxes, and immoderate Diſcharges of the Menſes, if drank in auſtere Wine. It, alſo, ſtops Hæmorrhages, and conglutinates Wounds, if the Parts affected are anointed with it. Recent Dates are of a more aſtringent Quality, than ſuch as are dry; but they produce Head-achs, and, when eaten too copiouſly among Aliments, intoxicate the Perſons who uſe them. Dry Dates eaten afford Relief to thoſe who labour under Spittings of Blood, Pains of the Stomach, and Dyſenteries; when triturated with Quinces, and the Ceratum Oenanthinum, and uſed by way of Ointment, they are beneficial in Diſorders of the Bladder. The Palmæ Caryotæ, if eaten, remove Aſperities of the Fauces. A Decoction of *Theban* Dates, if drank, allays burning Fevers; and, if taken with old Hydromel, reſtores the Strength. This Species of Dates, alſo, produce the ſame Effect, when uſed as an Aliment. A Wine poſſeſſed of the ſame Virtues is, alſo, prepared from them. Decoctions of them, by themſelves, either drank, or uſed by way of Gargariſm, are highly aſtringent.

The Kernels of Dates, burn'd in a new earthen Veſſel, and extinguiſhed, and waſhed in Wine, ſupply the Place of Putty, for adorning the Eye-lids. They are of an aſtringent Quality; brace up the Pores of the Skin; are good againſt Puſtules of the Eyes, Staphylomata, and ſhedding the Hairs of the Eye-brows. In Conjunction with Wine, they repreſs fungous Fleſh, and bring Ulcers to a Cicatrix.

Apothecaries, in preparing their Ointments, uſe the Spatha of the Palm-tree. The beſt Species of this Spatha is fragrant, aſtringent, weighty, cloſe, and internally pinguious. It is of an aſtringent Quality, ſtops ſpreading Ulcers, and ſtrengthens relaxed Joints, if triturated, and mixed with Malagmas and Cataplaſms: When mixed with proper Cataplaſms, 'tis, alſo, beneficial in Diſorders of the Præcordia, Weakneſs of the Stomach, and Diſeaſes of the Liver.

A Decoction of it, frequently rubbed on the Hairs, renders them black; and, when drank, relieves Diſorders of the Kidneys, Bladder, and other Viſcera. It, alſo, ſtops Fluxes, the Menſes, and Hæmorrhages of the Uterus. A Decoction of it, whilſt as yet tender, with Reſin and Wax, cures the Itch, if applied to the Parts affected, for twenty Days. The Fruit, alſo, contained within it, called *Elate* and *Boraſſus*, produces the ſame Effects, and is a proper Ingredient in Ointments.

The Virtues of the Palm-tree, and its ſeveral Parts, are deſcribed by *Pliny*, *Galen*, and others of the Antients, and *J. Bauhine*, *Hiſt. Lib.* 3. *Cap.* 159.

Among the Moderns, *Proſper Alpinus* enumerates the Medicinal Uſes of the Fruit of this Tree, in the following manner: In the Fruit, ſays he, there are three Things principally uſed in Medicine; that is, the Spatha, the Powder contained in the Spatha, and the Dates themſelves: The Spatha is uſed both in Powder and Decoctions. The Powder, taken internally, is highly beneficial in ſtopping Diarrhœas, Lienteries, and Dyſenteries, as, alſo, all other Diſcharges of Blood, or other Humours, eſpecially the Hepatic Flux, the Hæmorrhoids, the Menſes, and a Spitting of Blood. This Powder is, alſo, uſed by the *Egyptians* in ſtopping Spreading Ulcers, removing a Relaxation of the Uvula, and fixing the Teeth, when looſe. They, alſo, uſe the Decoction for all the ſame Purpoſes; but often mix the Powder with it. It, alſo, ſurpriſingly ſtrengthens ſuch Joints as are weak, and ſubject to Defluxions. The white Powder found in its proper Covering in the Spring, when the Palm-tree begins to flouriſh, when mixed with Sugar, is by the *Egyptians* very frequently uſed againſt Hoarſneſs, Coughs, and Inflammations of the Eyes. This Powder is, alſo, ſweet, and ſomewhat aſtringent; for which Reaſon 'tis frequently uſed by the Women, for ſtopping immoderate Diſcharges of the Menſes, and procuring a Retention of the Fœtus. Unripe Dates, both uſed in Aliments and Decoctions, are by them, alſo, uſed

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againſt Spittings of Blood, and for ſtopping all Evacuations of Blood, Lienteries, Diarrhœas, Dyſenteries, Vomitings of Blood, and Hæmorrhoids, as, alſo, for curing ſimple Ulcers and Wounds. For the Cure of theſe Diſorders, they, alſo, frequently uſe a Syrup prepared of unripe Dates. They, alſo, uſe the Dates when perfectly ripe; at which time they are highly ſweet, and ſomewhat aſtringent; for which Reaſon they are frequently uſed in Hoarſneſs, Coughs, Dyſpnœas, Pleuriſies, and Peripneumonies. A Decoction of them is, alſo, frequently uſed for promoting the Eruption of the Small-pox. *Proſp. Alpin. Raii Hiſt. Plant.*

2. Palma major, Dactylifera, folio ſlabelliformi, pedunculo, ad latera duriſſimis, magniſque, ſpinis armato. *Carnaiba*, 1. *Piſan.* 126.

3. Palma, humilis, Dactylifera, radice repenti, ſobolifera, folio ſlabelliformi, pedunculo ſpinoſo. *Boerh. Ind. A.* 2. 169. *Chamærhiphes.* Offic. *Palma minor.* C. B. P. 506. *Palma humilis Hiſpanica ſpinoſa & non ſpinoſa.* J. B. 1. 370. Raii Hiſt. 2. 1369. *Palma humilis ſive Chamærrhiphes vel Palmites.* Park. Theat. 1545. *Palmites ſive Chamærrhiphes.* Ger. 1335. Emac. 1519. THE DWARF PALM.

The Fruit of this Species is of an aſtringent Quality, and for that Reaſon exhibited againſt all Fluxes. *Raii Hiſt. Plant.*

4. Palma, humilis, Dactylifera, radice repentiſſimâ, ſobolifera; folio ſlabelliformi, pedunculo vix ſpinoſo.

5. Palma, Chamærops; Plinii. *Lugd.* 369. *Palma, Chamærops, Plinii, ſive Chamærophes, ſpinoſis foliis.* Park. Theat. 1546.

6. Palma, foliis longiſſimis, pendulis, abſque ullo pedunculo ex caudice glabro enatis. See DRACONIS SANGUIS.

7. Palma, Guineënſis, vinifera. *Belgis Chriſtiaan Wiin Boom, & Kriſſia Boom.* Boſman. *An Palma vinifera* Lugd. 1834. *Palma, vinifera, Theveti.* C. B. P. 507.

8. Palma, Japonica, ſpinoſis pediculis, Polypodii folio. *Boerh. Ind. A.* 2. 170. *Sagou.* Offic. *Palma Indica caudice in annulos protuberante diſtincto, fructu pruniformi.* Raii Hiſt. 2. 1360. *Palma referens Arbor farinifera.* C. B. P. 508. *Arbor farinifera.* Park. Theat. 1646. *Zagu ſeu Arbor farinifera.* Jonſ. Dendr. 144. *Todda-panna, ſeu Monta-panna.* Herm. 3. 9. Tab. XIII. &c. Commel. Flor. Mal. 264. THE SAGO-TREE, INDIAN BREAD, or LIBBY-TREE.

The Pith of theſe Trees, being well beat in a Mortar with Water, forms an Emulſion, the Fæcula of which, dried, is Sago. It is a very kindly and nouriſhing Food, never fermenting in the Stomach, and very proper in Hectic Fevers. It is very much uſed in *England. Geoffroy.*

The Inhabitants of *Malabar* eat the Fruit of this Tree with Sugar; otherwiſe it renders them coſtive. The Juice expreſſed from the recent Leaves, and exhibited, allays racking Pains of the Inteſtines, mitigates the preternatural Heat of the Stomach, and cures a Vomiting of bloody Matter. The Cone which bears the Fruit, when bruiſed, reduced to the Form of a Cataplaſm, and applied to the Region of the Loins, removes nephritic Pains, and checks an involuntary Effuſion of Seed in Gonorrhœas. A Decoction of its tender Fruit with Water excites a Vomiting, and excellently cleanſes the Stomach. The Gum of the Tree, taken internally, reſiſts all Poiſons; and, when mixed with Hens Dung, ſurpriſingly cures the Bites of Vipers, if applied to the Part affected. The Inhabitants of *Japan*, of the Trunk of this Tree, make a kind of Meal; of which they prepare a Species of Bread, by them called *Sagou. Raii Hiſt. Plant.*

9. Palma, Indica, coccigera, anguloſa. *C. B. P.* 508. *Boerh. Ind. A.* 2. 170. *Coccus.* Offic. *Palma Indica nucifera Coccys dicta.* Raii Hiſt. 2. 1356. *Palma nucifera Arbor.* J. B. 1. 375. *Palma coccifera, ſeu Nux Indica, Indis Lubi.* Camel. Syllab. 43. *Palma ſive Nux Indica, vulgaris ferens Coccos.* Park. Theat. 1596. *Nux Indica Arbor.* Ger. 1338. Emac. 1522. *Cocceira Indica.* Piſ. 63. (*Ed.* 1648.) *Inaja-Guacuiba, vulgò Coccos.* Ejuſd. 130. (1658). *Inaja-guacuiba, cujus Fructus Inaja-guaca.* Marg. 138. *Tenga.* Hort. Mal. 1. p. 1. Tab. I. II. III. IV. *Polgaha.* Herm. Muſ. Zeyl. 50. THE COCO, or COCKER-NUT-TREE.

From this Tree is extracted a Liquor, by the *Indians* called *Suri*, which, when drank, intoxicates, like Wine. It is of a grateful Taſte, reſembling that of a Mixture of ſweet, ſaline, and acid Subſtances: When 'tis newly extracted, 'tis pretty ſweet, but, in Proceſs of Time, becomes more acid, and is of a whitiſh, ſomewhat green, or pale Colour. From this Liquor is diſtilled a Water, or Spirit, which burns in the Fire. There is, alſo, a Vinegar, and a Species of Sugar, by the Inhabitants called *Jagra*, prepared from it. The Method of extracting this Liquor is accurately deſcribed by the Authors of the *Hortus Malabaricus.* They make an Inciſion in the Top of the Capſule, which bears the Flowers or Fruit, and which they call the Breaſt of the Tree, and hang a Veſſel to it. About four Inches below the Top of the Capſule, they make an oblique Inciſion in the Bark, which they raiſe by way of *Beard*, as they call it, over which the Suri may drop into the Veſſel.

In the Morning and Evening, and ſometimes, alſo, in the middle of the Day, they remove the Veſſels with the Suri. That obtained in the Morning is ſweet, that in the Evening ſomewhat acid, and that obtained next Day aceſcent; but that on the third Day, entirely acid, without any Sweetneſs at all. In order to make Vinegar of the Suri, they put the Veſſels, in which it is received, among Calx, for fifteen Days, by which a violent Fermentation being excited, much Froth thrown up, and a whitiſh Matter ſubſiding to the Bottom, the Suri is changed into Vinegar.

The Species of Sugar called *Jagra* is prepared thus: They put into the Pots a ſufficient Quantity of Calx, to tinge the Suri diſtilled into them of a rediſh Colour; then they boil this Liquor, continually ſtirring it with a Spoon, till it is inſpiſſated. Then a red Sugar is produced, which they render white by reiterated Diſſolutions and Boilings.

The exterior Covering of the Nut is at firſt ſaid to be eatable, of a pretty ſweet Taſte, good for corroborating the Stomach, ſtopping Diarrhœas, and curing Surfeits.

The Liquor, or Wine of Suri, is ſaid to be highly beneficial to phthiſical Patients, and thoſe who labour under any Diſorder of the Kidneys, or a Difficulty of diſcharging their Urine. From the bruiſed Kernels is expreſſed a Milk without the Aſſiſtance of the Fire, eight Ounces of which drank every Morning, with the Addition of a little Salt, are highly efficacious in killing Worms, eſpecially in Children.

Upon Water boiled with the Shavings of theſe Kernels there floats a ſweet liquid and tranſparent Oil, not unlike that of ſweet Almonds. When ſix or eight Ounces of this Oil, with an Addition of Water, in which Tamarinds have been ſteeped, are drank, they gently cleanſe the Stomach and Inteſtines, evacuating principally melancholic and pituitous Humours; whereas the Kernel itſelf is ſaid to render Patients coſtive; but this Oil muſt be uſed when recent. It is highly beneficial in Wounds; for it not only ſtops the Effuſion of Blood, but, alſo, waſhes away the Sanies, mitigates the Pain, and at laſt induces a Cicatrix. From the ſmall Fragments of the Kernels, is extracted an Oil fit for burning in Lamps, preparing Rice, relaxing the contracted Nerves, and killing Worms.

The Liquor contained in the Kernel is proper for extinguiſhing Thirſt and Fevers, for curing and cleanſing the Eyes, and for waſhing the Skins of Women. It, alſo, purifies the Blood; cleanſes the Stomach, and urinary Paſſages; and removes Diſorders of the Breaſt. It is of a grateful Taſte, affords much Nouriſhment, and is an excellent Drink in biliary Fevers. *Hernandez. Raii Hiſt. Plant.*

Beſides the foregoing Species of *Palma*, *Dale* mentions the following Sorts.

1. *Palma oleoſa.* Offic. *Palma foliorum pediculis, fructu pruniformi, luteo, oleoſo.* Cat. Jamaic. 175. Hiſt. 2. 113. Raii Dendr. 1. *Arbor exotica fructu Dactylis ſimili.* C. B. P. 508. *Palma Guineæ.* J. B. 1. 369. *Nucula Indica racemoſa.* Germ. Emac. 1554. Park. Theat. 1596. THE PALM-OIL-TREE.

This is a kind of Palm-tree, which grows upon the Coaſt of *Guiney*; from whoſe flatiſh Fruit, about the Size of a ſmall Plum, covered over with a fibrous Coat, they expreſs the Palm-oil, which, when freſh, is of an Orange-colour, as thick as Butter, of a pleaſant, ſoft, ſweet Scent, of little Taſte.

The Natives uſe this Oil with their Food, inſtead of Fat, or Butter: With us it is only uſed outwardly, being of a ſtrengthening Nature, good for all kinds of Pains, and Weakneſs of the Nerves, Cramps in the Limbs, and for Strains and Bruiſes. *Miller's Bot. Off.*

This Tree grows ſpontaneouſly in *Guiney*. The only Part of it uſed is its Oil, or rather a thick Ointment of an Orange-colour, and fragrant Smell, obtain'd from the Fruit in the following manner: To the Pulp taken out of the Kernels, they add a large Quantity of boiling Water. Then they for a long time agitate the Pulp in a Kettle over the Fire, till it is intimately mixed. Then taking the Kettle off the Fire, they let the Matter ſtand, till its more ſordid Parts ſubſide to the Bottom. Then they ſkim off the Oil floating on the Surface of the Water; and, when they have taken all the Portion then floating on it off, they repeat the ſame Operation by pouring boiling Water on it again. This Oil is beſt when recent, not rancid, of an Orange-colour, a fragrant Smell, and of the Conſiſtence of Butter. Externally uſed, it is anodyne, ſtrengthens the Nerves, allays arthritic Pains, removes Wearineſs, and relaxes contracted Parts. *Dale.*

2. *Palma coccifera figura Ovali.* See COCCUS DE MALDIVA.

3. *Palma Haira.* See EBENUS ÆTHIOPICA.

4. *Palma Areccifera.* See ARECA.

5. *Palma*

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5. *Palma Sanguinem Draconis fundens altera.* See DRACONIS SANGUIS.

6. *Palma ſylveſtris Bdellifera.* Kemph. Amœn. Exot. 668. THE BDELLIUM-PALM.

This is the Palma Nucifera, folio Flabelliformi. *Kempherus* imagined, that it was the Bdellifera Chamæriphes of *Serapion. Dale.*

Beſide the foregoing Species of *Palma*, *Ray* takes notice of the following:

1. *Palma viniſera Theveti.* J. B. C. B. This is a tall, beautiful, ever-green Tree, bearing ſmall auſtere and acid Dates, which are ſcarce eatable. The wild *Ethiopians* bore the Trunk two Feet from the Ground, and thence extract a Liquor of a very ſweet Taſte, and of *Anjouin* Wine: This they keep in earthen Veſſels, and call it *Mignol*; and, the better to preſerve it from Corruption, they ſeaſon it with ſome Salt, otherwiſe it eaſily turns ſour: It is of an excellent Flavour, and very proper to quench Thirſt. The antient *Egyptians* ſprinkled the Bodies of the Dead three or four times with this Juice, before they embalmed them, in order to preſerve them the more ſecurely from Putrefaction. This Species of Palm-tree grows plentifully at *Cape Verd.*

2. *Palma Javanenſis longiſſimo Folio.* C. B. *Palmæ Indicæ Genus Lantor dictum.* J. B. This bears a ſmall Fruit, of the Bigneſs of a Cherry, of an Orange colour, and containing a Kernel, which they call CUCOS. Of this Fruit they make a very fine Oil, of an Orange-colour, pleaſant to the Taſte, and very wholſome to thoſe who are us'd to it.

3. *Pindoba Braſilienſibus.* Marggr. *Pindova.* Piſon. *Inaia Braſilianis, Palma Braſilienſis cortice glabro, Fructu Ovi gallinacei Magnitudine & Figura.* Of the Saffron-colour'd Pulp of the Fruit they make an Oil of the ſame Colour, which is us'd in Lamps; and from the Kernel they expreſs a very limpid Oil, which, while freſh, is good to ſeaſon Food; and, when ſtale, ſerves to burn. They are both of a cold Quality, and what is expreſſed from the Kernels ſerves inſtead of Oil of Roſes. The Leaves ſerve to cover the Houſes, and of the ſame they make Mats, Baskets, and other Things; from the Top of the Tree diſtils a pellucid, ſweet-ſcented, and very beautiful Gum, which ſometimes ſerves inſtead of Gum Arabic: In the ſame Top is contained a medullary Subſtance, of a whitiſh Colour, taſting like a recent Walnut, and affording very good Nutriment, if eaten with Bread and Salt.

4. *Palma Braſilienſis quinta ſeu Tucum Piſoni.* Pal. Braſil. *aculeata, Fructu Pruni Damaſceni Magnitudine & Figura.* The Trunk, Branches, and Leaves, are prickly; the Wood black, and extremely hard, and us'd by the Natives to ſharpen their Arrows; its Fruits are produced two or three hundred or more in a Cluſter; Swine and Monkeys feed upon them, and a very limpid Oil is expreſſed from them, which ſerves to the ſame Uſes, as that from the Nuts of the *Pindova*, and is very much eſteemed. The Fruit is blackiſh on the Outſide, and contains a Kernel which is not ill-taſted, eſpecially when new: From the filamentary Subſtance the *Braſilians* ſpin a very fine and ſtrong Thread, very like red Silk.

5. *Palma Braſilienſis ſeptima ſeu Aque Piſoni. Palma Braſil. viniſera, Foliis cinereis.* It bears its Fruit in Cluſters of the Size of a moderate Plum, yellow when ripe, of a very ſweet Taſte, and containing a white and very delicious Kernel, from which the Inhabitants prepare a Wine. The Negroes call this Tree, in their own Tongue, *Catole.*

6. *Palma Braſilienſis octava Iraiba dicta.* Piſonis. *Pal. Braſ. farinifera, an Yri Lerii; id eſt, Palma Americana Fructu racemoſo.* C. B. In the Branches about the Top of the Tree is contained a very white medullary Subſtance, which, boiled with Fleſh or Oil, is eſteemed good Food; they yield alſo an harder and white Subſtance, which they bruiſe, and make up into Lumps like Dough, of which Cakes are made of no ungrateful Taſte; and of the Juice they prepare a very ſweet and pleaſant Spoonmeat. The Fruits are ſweet and ſavoury, and ſerve to ſatisfy the Hunger of thoſe who travel through theſe Woods, and vaſt Deſerts.

7. *Palma nobilis ſeu regulis Jamaicenſis & Barbadenſis. Palmiſte Franc. & Rochefort.* THE CABBAGE-TREE, or PALMETO ROYAL. This is a vaſt tall ſtrait Tree, growing ſometimes to the Height of two hundred and fifty, or three hundred Feet. The Top of the Trunk contains a white, very tender and ſavoury medullary Subſtance, which, eaten raw, taſtes like a Walnut; but, boiled and pickled with the Multitude of tender and white Leaves, which cover and involve it on all Sides, is reckon'd one of the fineſt Diſhes that is prepared in the *Leeward Iſlands.* The *French*, and our People too, call this medullary Subſtance, with the Leaves which involve it, *Chou de Palmiſte*, that is, the Cabbage of the Palm-tree, becauſe they boil it in their Broth, inſtead of Cabbage, and other Herbs. On the very Top of the Trunk grows the Involucrum, or Sheath, of the Flower and Fruits called *Spatha*. The Fruits are round, and about the Size of an Hen's Egg.

8. *Urucuri-iba.* Marggr. & Piſon. *Palma Braſilienſis farinifera, Fructu Pruni, Capulce inſidente.* Of the Fruit is prepared an Oil, which is very medicinal, and particularly againſt the Punctures of the Ray-fiſh; nor do I think there is a better Remedy againſt that Misfortune.

9. *Palma Braſilienſis nona Miriti dicta Piſonis.* It bears a ſingle Fruit, which is eatable and ſweet, and of the Size of an Hen's Egg.

10. *Palma Braſilienſis decima Miraiaiba dicta Piſoni.* Its Fruit is of the Size of a Pigeon's Egg, eatable and ſavoury enough.

11. *Jocara & Jucoara Braſilienſibus.* Marcgrav. *Giocará* Piſoni. *Palma coccifera minor Braſilienſis.* This has nothing ſingular, but in its very ſmall Fruit growing in Cluſters, and of the Figure of the Coco-nut.

12. *Katou-Indel.* H. M. *Palma ſylveſtris Malabarica, Folio acuto, Fructu Pruni Facie.* D. Commelin. See KATOU-INDEL.

13. *Palma Facie cuciofera.* J. B. *Palma cujus Fructus Cuci.* C. B.

The *Cuciophoron*, κυκιοφορον, of *Theophraſtus*, is different from the Palm-tree; for the Palm-tree riſes up with one ſingle and individual Trunk, but the other, after it is ſomewhat grown, becomes biſid, and each Member is again ſubdivided into other Branches: The Fruit is as big as a Man's Fiſt, round and oblong, of a yelloviſh Colour, and of a ſweet and very grateful Taſte, not cluſter'd, like that of the Palm-tree, with other Characters, which ſhew that the cucioferous Tree of *Theophraſtus* is not a Species of *Palma*; but, becauſe all Botaniſts refer it thither, we, in Compliance with them, have reduc'd it under the Genus of Palm-trees. The *Nux Indica minor* of *Cordus*, which anſwers to the *Cuci* of *Theophraſtus* in all things but the Size and Shape, ſeems to me to agree with the Coco-nut. I find no Deſcription of the *Arbor cuciophore*, among the Moderns; but the Fruit ſhews it to be a Species of *Indian* Palm-tree, and particularly of the *coccifera anguloſa. C. B.*

14. *Palma Indica Folio bicompoſito, Fructu racemoſo, Schunda-pana.* H.M. The diſtinguiſhing Character of this Tree ſeems to be the Leaves growing by Pairs, and acroſs each other.

15. *Palma viniſera Fructu ex Arboris Trunco ſpinoſo.* C. B. The Fruit of this Tree hangs from the Trunk, after the manner of Pine-nuts and Ananas, whereas in other Palm-trees they proceed from the Head of the Trunk, and are included in a *Spatha.*

The three following Species are reduc'd by *Ray*, together with the *Caranaiba*, which may be found under its proper Article, to a ſubordinate Genus of *Palma*, diſtinguiſhed by its pliable Fan-ſhaped Leaves.

16. *Palma coccifera, Folio plicatili Flabelliformi Fœmina Carimpana.* H. M. *Palmeira brava Fœmina Luſitanis.* The Female cocciferous *Palma* with the pliant Fan-ſhaped Leaf.

17. *Palma cocciſer Folio Flabelliformi mas, Ampana.* H. M. *Luſitani Palmeiro bravo macho.* The Male cocciferous Palma with the pliant Fan-ſhaped Leaf.

18. *Palma montana Folio plicatili Flabelliformi maxima, ſemel tantum frugifera, Codda-panna, ſive Palma montana Malabarica.* H. M. *Cingalenſibus Talagas & Talagaita, & Talipot. An Palmam referens Arbor farinifera.* C. B? The Mountain Palm-tree, with the pliable Fan-ſhaped Leaf of the largeſt Size. The Leaves of this Tree are ſaid by Captain *Knox*, who lived twenty Years a Captive in the Iſland of *Ceylon*, to be very tenacious, and ſoft like Parchment; and, tho' large enough, when extended, to cover twenty Men, yet to be pliable like a Fan, to ſuch a Degree as to be contracted and reduced to no bigger Size than that of a Man's Arm, and beſides to be extremely light, ſo as, when divided into Parts, to be eaſily carry'd in the Hand.

19. *Palma humilis ſpinoſa, Atitara Braſilienſibus dicta.* Maregrav. The prickly Dwarf Palm-tree.

20. *Palma Manicam Hippocraticam referens.* C. B. *Palma ſuccifera.* Cluſ. The Dwarf Palm-tree reſembling *Hippocrates*'s Sleeve. Theſe two laſt are in *Ray* the ſecond and third Species of the *Palma humilis*, or Dwarf Palm-tree. The firſt of them you have under the Title *Palma humilis. Raii H. P.*

To make Palm-wine, take ripe common Dates, and put them into a Veſſel, which has an Hole bored at the Bottom, and ſtopped with a pitch'd Reed, bound about with Linen, to cover the Hole. Then, to ten Choenices of Dates, pour three Congii of Water [See the Articles CHOENIX and CONGIUS]: if you would not have your Wine very ſweet, pour on five Congii of Water on your Dates, and let them alone to macerate for ten Days. On the eleventh Day, take off the Linen Cloth from the Reed; and, receiving the thick and ſweet Wine in proper Veſſels, ſet it aſide for Uſe.

This

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This Wine is pleaſant, but noxious to the Head; it is good for Defluxions becauſe of its aſtringent Quality, and is for the ſame Reaſon proper in Diſorders of the Stomach, the Cœliac Paſſion, and an Hæmoptoe. Some add the like Quantity of Water a ſecond time, and ſo draw it off: They do the ſame the third, fourth, and fifth time, but no more; for afterwards it grows ſour. *Dioſcorides*, *Lib.* 5. *Cap.* 40.

PALMA ſignifies, alſo, the Palm of the Hand.

Palma-pinus ſeu coniſera. The Name of a large Tree, reſembling both a Palm, and a Pine.

PALMARIS MUSCULUS. The antient Anatomiſts mention but one Muſcle belonging to the Palm, the *Palmaris longus*; but *Fallopius* deſcribes the *Palmaris brevis*, communicated by *Joannes Baptiſta Cannanus*, an eminent Anatomiſt, his Cotemporary; and was firſt publiſhed by *Valverda*, in his Anatomy written in *Spaniſh*.

The *Palmaris Longus*, otherwiſe called *Ulnaris Gracilis*, is a ſmall Muſcle, lying between the *Os Humeri* and the *Carpus*, on the Inſide of the fore Arm, its Body being ſmall and ſlender, its Tendon very long and fat.

It is fixed by its fleſhy Portion in the ſmall Criſta of the inner Condyle of the *Os Humeri*, ſometimes cloſely united to the *Ulnaris Internus*. From thence it runs down fleſhy for ſome Space, turning a little obliquely towards the middle of the fore Arm, and ends in a long narrow thin Tendon.

This Tendon paſſes down the middle of the fore Arm, over all the other Muſcles, to which it ſlightly adheres; and, advancing over the large internal annular or tranſverſe Ligament of the Carpus, is inſerted in the Surface thereof, ſending off ſome radiated Filaments to the *Aponeuroſis Palmaris*.

I have found this Muſcle fixed to the Condyle of the *Os Humeri*, by a Tendon about a Finger's-breadth in Length, to which the fleſhy Body was joined toward the Middle of the fore Arm.

I have alſo ſeen the inferior Tendon inſerted in the *Os Scaphoides* of the Carpus, without communicating with the large annular Ligament; and I have ſeen the *Aponeuroſis Palmaris* ariſe from this Ligament; from all which it may be reaſonably concluded, that that *Aponeuroſis* has no eſſential Dependence on this Muſcle.

Sometimes this Muſcle appears to be only a Production from the *Ulnaris Internus*.

The *Palmaris brevis*, otherwiſe called *Palmaris cutaneus*, is a ſmall thin Plane of fleſhy Fibres, ſituated tranſverſely, or more or leſs obliquely, under the Skin of the large Eminence of the Palm of the Hand, between the Carpus and the little Finger; its Fibres adhering to the Skin, and being, in ſome meaſure, interwoven with the *Membrana adipoſa*.

Theſe Fibres are fixed along the Edge of the *Aponeuroſis Palmaris* from the large Ligament of the Carpus toward the little Finger; and they run in for ſome Space on the Plane of the *Aponeuroſis*; but without any Connection with the Bones of the Metacarpus. Near the *Aponeuroſis* theſe Fibres are more or leſs tendinous, and ſome of them often croſs each other. They are ſometimes ſo thin and pale, as hardly to be ſenſible; and, in ſome Subjects, this Muſcle ſeems to be divided into ſeveral Parts.

The *Ulnaris Gracilis* ſeems to be an Aſſiſtant to the *Ulnaris* and *Radialis Interni*, in bending the Wriſt; and it ſeems, alſo, particularly to aſſiſt the *Radialis Internus* in the Motion of Pronation. *Winſlow.*

PALMATA. A Name for ſeveral Species of ORCHIS.

PALMOS, παλμός. A Palpitation. See PALPITATIO.

PALMULA. A Date. *Palmula* is, alſo, a Name for the broad and flat End of a Rib. *Blancard.*

PALPEBRÆ. The Eye-lids.

PALPITATIO, Palpitation, is a Diſeaſe affecting the Heart, in which it labours under a ſort of Concuſſion, and trembles and palpitates. The *Greeks* call this Diſorder παλμὸς τῆς καρδίας, "a Vibration or Trembling, of the Heart;" and we (the *Latins*) *Palpitatio*, a Palpitation: The Arteries throughout the Body are affected with a vehement Pulſation, and ſometimes are, alſo, dilated; eſpecially thoſe above the Clavicles. The Diſeaſe frequently intermits, eſpecially whilſt the Body enjoys Reſt; but after immoderate Exerciſe, drinking ſtrong Wines, Indulgence in Venery, hot Bathing, or a Fit of Anger, returns upon the Patient. If a Palpitation of the Heart continues long, it threatens ſudden Death; it is as much to be dreaded, if it often ſeizes the Patient, and that after the Solution, or going off, of other Diſtempers; and comes attended with a great Nauſea and Vomiting, and is not at all alleviated thereby. Thoſe on whom this Diſeaſe recurs after ſome Months, or even after a Year, never arrive at old Age, all dying either of acute Fevers, or ſuddenly of a Syncope. It is moſt incident to Perſons who are between forty and fifty Years of Age, and to ſuch as are moleſted with melancholy Flatuoſities, or a Tumor of the Spleen from black Bile. A Palpitation of the Heart precedes a Syncope, and often degenerates into it. *Lommii Med. Obſ.*

Some ſpaſmodic and convulſive Diſorders affect the whole nervous Syſtem, and deſtroy almoſt all the Functions of the Body, whilſt others are confin'd to particular Parts, which they frequently exagitate with terrible Violence. Of this latter kind is the Palpitation of the Heart; which may be defin'd, A violent Twitching, or Convulſion, of the Heart, which is a muſcular Subſtance; or a Removal of it from its natural Place; ariſing from an impetuous Influx of the fine nervous Fluid into the cardiac Nerves, and a too copious Impulſe of the Blood into the Right Ventricle of the Heart; or from an Acrimony of the Humours; or from ſome other Cauſe.

That this Definition is juſt, will appear from what is afterwards to be ſaid; but it is to be obſerv'd, that it is only applicable to a morbid and uneaſy Palpitation of the Heart, which is frequently chronical, and which differs from a Tremor, or ſlight Palpitation, of the Heart, which happens in ſound Perſons, and is ſoon remov'd; for a Tremor of the Heart ariſes from a quick Influx of the nervous Fluid into thoſe nervous Fibres, which, in the ſame Direction with the Veſſels, eſpecially the Coronary Arteries, ſurround the external Surface of the Heart, or from a too ſlow Influx of that Fluid into ſome Ramifications: Hence *Lower*, in his Treatiſe *de Corde*, *Cap.* 2. obſerv'd that the Heart of a Dog, upon tying the Eighth Pair, was immediately ſeiz'd with a Tremor. Hence, alſo, the Reaſon is obvious, why this Tremor is obſerv'd to happen partly after violent Commotions of Mind, and an exceſſive Uſe of Venery; and partly why it ſucceeds a Loſs of Strength, and ſometimes prognoſticates Deliquiums, ſometimes accompanies malignant Fevers, ſometimes ſucceeds large Hæmorrhages, and ſometimes afflicts thoſe who are juſt about to die. There is, alſo, a more frequent Palpitation or Motion of the Heart, which happens in thoſe who run faſt, jump, play at Ball, uſe the hot Baths, indulge themſelves in exceſſive Joy, or diſcompoſe and ruffle themſelves by exorbitant Paſſions; and this Species of Palpitation is no more than a quick and ſpeedy Syſtole of the Heart and Arteries, ariſing from too great a Commotion, and too expeditious a Circulation, of the Humours through the Cavities of the Heart. This quick Syſtole of the Heart, when free from an Hardneſs of the Pulſe, is diſtinguiſhed from a febrile Pulſe, which is hard and frequent. A Palpitation of the Heart ought, alſo, to be diſtinguiſhed from that which is ſometimes perceived, eſpecially in Women, about the laſt Months of Geſtation, in the epigaſtric Region of the Abdomen, and which is nothing but too great a Repletion and Pulſation of the Arteries, ſituated there, eſpecially of the Cœliac Arteries, by means of too large a Quantity of Blood, which cannot quickly enough return through the ſplenic Veins. This Species of Palpitation is moſt commodiouſly cured by Veneſection; and an Inſtance of it is found in *A. N. C. Dec.* 1. *An.* 6. But of theſe we do not treat, ſince we only conſider ſuch as frequently, and without any evident or external Cauſe, ſeizes the Patient, and is performed with ſo great a Contraction and Agitation of the Heart, that it is moved out of its natural Seat, and either forced more to the Left Side, or thruſt ſo violently againſt the Ribs, Sternum, and Præcordia, that the Pulſation raiſes the external Integuments, and may be, ſometimes, perceived without the Cloaths, according to *Foreſtus*, in *Obſ. Lib.* 17. *Obſ.* 10. and *Chriſtophorus a Vega*, in *Lib.* 3. *de Art. Med. Cap.* 8. *Rivinus*, alſo, in his Treatiſe *de Palpitatione Cordis*, *Sect.* 13. informs us, that, in a Patient labouring under a Palpitation of the Heart, he found a red Spot in that Part of the Breaſt; where, upon applying his Hand, he found the Pulſation; and that, in another Patient, he found a Callus in the ſame Part.

In the hiſtorical Deſcription of this Diſorder, there are ſome Circumſtances, which deſerve a particular Conſideration. Thoſe, then, are more ſubject to this Diſorder than others, who are of firm Habits, ſanguine melancholy Temperaments, delicate Minds, ſuch as are ſubject to Frights, young Perſons who abound in Blood and Juices; thoſe whoſe Evacuations of Blood, whether artificial or natural, are ſuppreſſed or neglected; and eſpecially Women whoſe Menſes are not duly diſcharged, or who have Hæmorrhages of the Noſe ſuppreſſed. Hence *Ballonius*, in *Lib.* 1. *Conſil.* uſes theſe Words: "As in "young Men entering into a State of Puberty, and accuſtomed to frequent Hæmorrhages, a Palpitation of the "Heart may happen, if theſe Hæmorrhages are ſuppreſſed, ſo "it may alſo happen to young Women, in whom the Menſes "have not as yet begun to flow, becauſe in this Caſe the "Blood regurgitates to the ſuperior Parts." The Palpitation is ſometimes more gentle, and ſometimes more violent; ſometimes ſhorter, and ſometimes longer; ſometimes it attacks the miſerable Patients when aſleep, ſo as to awake them ſuddenly; ſometimes it, alſo, ſeizes them by Day, and is often increaſed after eating; ſometimes violent Anxieties of the Præcordia precede

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precede this Palpitation, and under the immediate Paroxyſm the Breathing is quick and difficult: It is ſometimes accompanied with a Tremor of the Heart; and what is particularly remarkable is, that tho' the Pulſe is intermitting, it does not, nevertheleſs, correſpond to the Motion of the Heart; but is languid and diminiſhed. Beſides, according to *Timæus a Guldenklee*, in *Epiſt.* 23. the Pulſe is not at all to be perceived in the Wriſt. Under a violent Paroxyſm, a great Uneaſineſs is perceived in the Region of the Præcordia, on account of the Diſorder produced in the Diaphragm, by the Force, and palpitating Motion, of the Phrenic Nerve, ſituated about the Left Side of the Heart. A conſiderable Languor of the Body, and a Tremor of the Joints, remain after the Palpitation is over.

As for the Cauſes and Seat of the Diſorder, the formal Cauſe is always ſo violent a Contraction and Convulſion of the Heart, that it is moved out of its natural State; but the material and proximate Cauſe is a certain Stagnation of the Blood, eſpecially in the Right Ventricle of the Heart, and a too great Congeſtion of it to the ſame Part; on account of which there happens an impetuous Influx of the nervous Kind into the Cardiac Nerves and Fibres of the Heart, and a preternatural Contraction of them. But, that theſe Things may be the better underſtood, we ſhall premiſe ſomething concerning the Structure of the Heart.

Firſt, then, *Johannes Maria Lanciſi*, in his Treatiſe *de Motu Cordis & Aneuriſmatibus*, contrary to the Opinion of moſt Phyſicians, who think that the Nerves of the Heart are very ſmall, and hardly conſiderable, has ſhewn, from accurate anatomical Reſearches, that very conſiderable and numerous Nerves are communicated to the Muſcles of the Heart; for, in each Side, the Right as well as Left, there are five Pairs of Nerves to be found; the firſt of which, called the *Par Vagum*, ariſing in the Brain, between the Nates and Teſtes, is propagated among the ſmall Ramifications of the Carotid Arteries, and, in the ſame Direction with the Vena Cava, is convey'd to the Pericardium; and, ſpreading its ſmall Ramifications to the Auricles and Arteries, terminates in the Rete Nervoſum, to be found between the Aorta and Pulmonary Artery in the poſterior Baſis of the Heart. The ſecond, called the Superior intercoſtal Pair, ariſes from the ſame Origin with the former; and, being ſent from the Head through the Perforation of the Os Petroſum, deſcends above the Aorta; and, dividing itſelf into three Ramifications, communicates one to the external Part of the Heart, and the other two to what is commonly called the Reticular Contexture. The third, called the Vertebral Pair, ariſing within the Brain near the tenth Pair, and running off with the Vertebral Artery, proceeds through the bony Canal; and, going out about the ſeventh Vertebra of the Neck, is inſerted in various Parts of the Heart, and is at laſt diſtributed to the Rete Nervoſum. The fourth, called the Inferior Intercoſtal Pair, ariſes from the Spinal Marrow, between the third and fourth Vertebra of the Neck; and, ſending off ſome Ramifications to the Auricles, and both Veins, often concurs in the Formation of the Plexus Nervoſus. The fifth, called the Phrenic Pair, ariſing from the laſt Vertebra of the Neck, and firſt of the Back, diſtributes Nerves to the Auricles and Ventricles, and ſpreads through the Plexus Nervoſus, from which numberleſs Ramifications are diſtributed through the whole Subſtance of the Heart. Hence we learn, why the Heart is poſſeſſed of a Degree of Strength ſuperior to that of all the other Muſcles of the Body; as alſo, why, when one Nerve is tied, the Heart, by reaſon of the irregular Influx of the nervous Fluid into the other Pairs, trembles; and why its Motion is not totally interrupted. 'Tis, alſo, to be obſerved, that three Pairs of theſe Nerves form Ganglions, of which the other two are free. By theſe laſt, the regular and natural Motion of the Heart is performed; and, by the three former, its violent and irregular Motions ſucceeding the Paſſions of the Mind. Hence the Reaſon is obvious, why the Paſſions of the Mind are ſo powerful in altering the Motion of the Heart. 'Tis, alſo, to be obſerved, that the Vena Cava is furniſhed with more Nerves than the other Veſſels; becauſe it ſtands in need of a great Degree of Strength, in order to return the Blood of whole Body.

'Tis, alſo, to be obſerved, that the Heart is a Muſcle, or rather a Congeries of Muſcles; for, as Anatomy informs us, that it is formed of numberleſs Fibres, and fleſhy Columns, ſo 'tis certain, that each of theſe is compounded of numberleſs other ſmall Fibres, every one of which, as it is a Congeries of the ſmalleſt Fibres, deſerves the Name of a Muſcle, eſpecially ſince each is covered with a very fine Membrane, prepared of a Contexture of the nervous Fibres and Arteries. Hence it follows, that the Heart, both internally and externally, is highly nervous, ſenſible, and capable of being vellicated to a Contraction by every thing lodged in it. Beſides, the Heart is a diſengaged Muſcle, ſuſpended by four large Veſſels; for which Reaſon it may, by preternatural Commotions, be drawn to any Side, and removed from its natural Seat. The Uſe of the Heart is to promote the Circulation of the Blood through the whole Body, concerning which we ſhall obſerve the following Circumſtances, as moſt neceſſary for our Purpoſe. The Blood from all Parts of the Body is, by means of Veins, which are at firſt ſmall, and then larger, convey'd into the Vena Cava, and enters its large Sinus, which it forms near the Right Auricle of the Heart; and, being convey'd thence, enters into the ſaid Auricle, as being an hollow Muſcle at that time dilated; the Chyle, at the ſame time, from the Subclavian Vein, enters the ſame Auricle by means of the Vena Cava Deſcendens. This Auricle, therefore, being full of Humours, is ſolicited to a Contraction; by which it forces the Blood into the Right Ventricle of the Heart, which is either totally relaxed, or, according to *Lanciſi*, in the End of its Diaſtole, and Beginning of its Syſtole; but the Right Ventricle, in conſequence of its nervous Structure, is, by the large Quantity of Blood contained in it, ſtimulated to a ſtrong Conſtriction, and forces the Blood into the pulmonary Artery every-where diſtributed through the Lungs; the Return of the Blood into the Auricle being prevented by the Tricuſpid Valves. Hence, the Paſſages being every-where free, it is convey'd to the pulmonary Vein, and is, in the ſame manner, received by the Left Ventricle of the Heart; from which it is convey'd, through the Aorta, to all the Parts of the Body. When the Blood is expreſſed from the Heart, its empty Ventricles are reſtored to their natural State, which is the Diaſtole; and, as ſoon as they are again filled with Blood, they are again neceſſarily contracted. Thus the Syſtole and Diaſtole of the Heart laſt as long as Life, which conſiſts in an entire and perfect Circulation of the Humours.

From what has been ſaid, 'tis obvious, that to the natural Motion of the Heart there are requiſite, firſt, a juſt Proportion between the Fluid to be moved and the ſolid Part, that thus only ſuch a Quantity of the former may be convey'd, as is capable of being ſurmounted by the natural Force of the Heart: Secondly, a juſt Temperature, and natural Mixture, of the Fluids: Thirdly, a due Strength of the Heart, and conſequently a ſufficient Influx of the nervous Fluid, and of the arterial ſpirituous Liquor: Fourthly, a right Diſpoſition of the Ducts and Veſſels which convey and return the Blood to and from the Veſſels of the Heart, and a Freedom of their Cavities from all preternatural Obſtructions. If theſe are not in a natural State, they alter the Motion of the Heart in various Manners. But ſince we only treat of a violent Palpitation of the Heart, in order to diſtinguiſh it from other Motions of the Heart, we are to obſerve, that it is always requiſite, firſt, that ſomething offenſive be lodged in the Right Ventricle of the Heart: Secondly, that, in conſequence of this, there ſhould be a greater and more impetuous Influx of the nervous Fluid into the Cardiac Nerves: And, thirdly, that, in conſequence of this, there ſhould ſucceed a preternaturally great and violent Subſultus, and Contraction of the Heart, which, being often and quickly continued, does not ceaſe till the foreign Impediment is removed: Fourthly, that, by ſo violent an Agitation, the Heart ſhould be moved out of its natural Seat, becauſe it is diſengaged and pendulous: Fifthly, that it ſhould frequently be protruded principally to the Left Side, becauſe the Impulſe happens from the Right to the Left Side: And, ſixthly, that the Progreſs of the Humours through the Arteries ſhould be irregular, and ſometimes abſolutely ceaſe for ſome Minutes. Hence, in the Wriſt, the Pulſe is generally perceived intermittent, weak, ſmall, or abſolutely none at all. Deliquiums, alſo, frequently accompany this Diſorder.

We now come to inquire into the mediate Cauſes of a Palpitation of the Heart; for which Purpoſe we ſhall firſt inquire into the Phenomena which preſent themſelves upon laying open the Carcaſes of thoſe who have died of this Diſorder. We ſhall not mention the Polypuſes, the Stones, and other preternatural Subſtances found in Hearts, and the Cavities of the Veſſels, ſince theſe Facts are ſufficiently atteſted by Authors: Nor ſhall we mention the preternatural Quantity of Water tinged with Blood in the Pericardium after Death, which we ſhall afterwards account for; but we ſhall only ſpecify what kind of Conſtitution of the Heart has been found upon diſſecting ſuch Patients: Thus, in *A. N. C. Dec.* 2. *An.* 9. *Obſ.* 44. we are told, that, upon opening ſuch a Carcaſe, the Heart appeared preternaturally large; its Right Ventricle dilated, and filled with a very black Blood; the Arteries collapſed, and the Vena Cava Aſcendens elevated into a very large Tumor. The ſame is evinced by *Willis*, in *Tr. de Medicament. Oper. Sect.* 7. *Cap.* 3. where, beſides the Infarction of the Right Ventricle, and Auricle of the Heart, the Lungs were alſo infarcted with a black, ſtagnant, and extravaſated Blood. *Joh. Couſin, in Nov. Aſthmat. Hiſt.* 3. informs us, that he had found ſome Hearts as large as that of an Ox.

Upon inveſtigating, therefore, the mediate Cauſes which contribute to produce a Palpitation of the Heart, we find that they are either lodged in and about the Heart, or in remote and diſtant Parts: Among the former Claſs, the moſt frequent and conſiderable are polypous Concretions, which are always fibrous and

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and membranous, generated principally in the Ventricles and Auricles of the Heart, then reaching into the Veins, and thence, frequently, forced into the Arteries. Where these Concretions produce a Palpitation of the Heart, we generally find these Signs: The Palpitation is immediately increased after violent Exercise, going up Stairs, or the slightest Commotion of the Blood. There is a great Anxiety about the Præcordia, accompanied with a weak, unequal, and sometimes a plainly intermitting Pulse; the Patient breathes with so much Difficulty, that there is often Danger of Suffocation; the Disorder is, also, frequently accompanied with Deliquiums, continues long, and yields to no Medicines. Such a Concretion, when lodged in the Cavities of the Heart, according to its various Situation, admits sometimes more, and sometimes less, of the Blood, convey'd through the Vena Cava. Hence, according as the Quantity of Blood is greater or less, the Pulse is sometimes strong, and at other times weak and obscure. When such a Polypus remains immoveable in the Place to which it adheres, we observe no Palpitation; but if, when separated from the Part where it was first formed, it fluctuates freely in the Ventricles of the Stomach, hence it may possibly be conveyed, along with the Blood, into some wide Blood-vessel, where, being firmly impacted, it totally closes it up, and hinders the Progress of the Blood, till it is again resolved; then the Pulse is not only intermittent and silent; but, also, the Vessels being thus obstructed, and the perpetual Afflux continuing to the Right Ventricle of the Heart, the Blood stagnates there, distends it, and thus stimulates the Heart to a violent Concussion, or Palpitation, which does not cease, till a free Circulation of the Blood is again restored.

Hence, in those who die of a Palpitation of the Heart, arising from a Polypus, the Right Ventricle and Auricle of the Heart, together with the Vena Cava, are found strangely dilated by the Blood stagnating within them. See *M. N. C. Dec.* 2. *An.* 6. *Obs.* 233. and *Act. Berol. Dec.* 2. *Vol.* 7.

A Palpitation of the Heart, also, frequently arises from some Fault of the Fluids; especially when their Bulk is so great, as to render them superior to the Force of the Solids; for, when the Humours are redundant, not only the Vessels in which they are contained, but, also, more especially, the Ventricles of the Heart, when these Humours are thrown into violent Commotions, or, by Spasms, carried impetuously, and in too large a Quantity, to the superior Parts, must be distended, relaxed, and stimulated to a Palpitation. In such a Case, the Countenance is red and florid, the Vessels turgid with Blood, and the Pulse large. This Species of the Disorder is principally incident to young Persons of sanguineous Constitutions, who, when young, were subject to large Hæmorrhages of the Nose; upon the Cessation of which, they perceive Compressions, and Uneasiness of the Breast. The same Misfortune is, also, frequently observed to happen to those, who, at the stated Times, neglect their usual Evacuations of Blood. Hence we can account for the Instances of those, who, at stated Times of the Year, prevent a recurring Palpitation of the Heat by Venesection alone: An Example of this we have in *Zacutus Lusitanus*, *M. P. H. Lib* 2. *Hist.* 39. The same is, also, asserted by *Stalpart Vander Wiel*, who, in *Obser. Rarior. Cent.* 1. *Obs.* 36. gives us a Case, from *Galen*, of a certain young Man, who, being, for three Years successively, afflicted with a Palpitation of the Heart, always felt Relief from Venesection; but, on the fourth and subsequent Years, totally preserved himself from it by seasonable Venesection.

But it more frequently happens, that a Palpitation of the Heart is induced by too large a Congestion of Blood, and viscid Serum in it; for 'tis to be observed, that thick and viscid Humours are, in their Circulation, first of all, stopt in the Liver; then, stagnating in the Viscera of the lower Abdomen, and the nerveo-membranous Parts, they stimulate them to spasmodic Strictures. When the Abdomen is constricted, the Blood is more copiously forced to the Præcordia, and from the Vena Portæ the blackest Blood is forced thro' the Vena Cava into the Right Ventricle of the Heart, in such a Quantity, that the natural Systole is hardly sufficient for propelling it; but a Blood so thick and viscid frequently leaves in the Heart a stagnant Portion, to the Expulsion of which the Palpitation is often opposed. Hence the first Rudiments of a Polypus are almost always laid.: And hence a Reason may be given, why hypochondriac, scorbutic, and cachectic Patients labour under a Palpitation of the Heart, as one of their most troublesome Symptoms; as, also, why young Girls, on account of the great Compression of their Abdomen by their Stays, are greatly subject to this Disorder. Hence 'tis, also, obvious, why Men, by a Suppression of the Hæmorrhoids, are afflicted with this terrible Symptom; and why cacochymic Girls, about the first Eruption of their Menses, when they are not duly evacuated, as, also, Women, whose Age renders them incapable of such an Evacuation, are much subject to this Disorder, under which they generally labour about the more remarkable Changes of the Moon. In this Case, where the vital Juices are thick, a Palpitation of the Heart is a familiar Symptom to those who labour under a flatulent or nephritic Colic; for, whilst the Flatulencies and Spasms compress and distend the Vessels of the lower Abdomen, and, by that means, force the Blood in a greater Quantity to the Præcordia, the Reason is obvious, why a Palpitation of the Heart should thence be produced.

A Palpitation of the Heart is, also, frequently produced by a certain subtile acrid and caustic Matter, which, not only acting on the Precordial and Cardiac Nerves, renders Respiration difficult; but, also, being carried along with the Mass of Humours to the Heart, and its dilated Coronary Vessels, adhering to the nervous and fleshy Fibres, it, by vellicating them, disposes them to violent concussory Motions. Thus, there are numberless Instances of Persons who have been seized with a Palpitation of the Heart, in consequence of an Itch, or Purple Fever, either repelled, not sufficiently appearing, or receding; as, also, other exanthematous Disorders prepostorously repelled, or Ulcers too soon consolidated. The same Observation holds equally true, with respect to the arthritic or gouty Matter, when forced inwards. *Simon Pauli*, in *Quadripart. Botan.* gives us a remarkable Instance of a violent Palpitation of the Heart, produced by a Suppression of a Fœtor of the Feet: Of this kind are, also, the Instances of Persons who have fallen into this Disorder by fetid and poisonous Vapours. Thus *Godofredus Schultzius*, *Tr. de Natur. Tinct. Bezoard. Cap.* 5. informs us, that this Disorder was produced by the Fumes of Antimony received into the Lungs.

This Disorder may not only be induced by these Faults of the Humours, but, also, by a Defect of Blood; as we find from many Instances. Thus 'tis certain from Experience, that not only Tremors, but, also, genuine Palpitations, of the Heart have been produced after large Discharges of Blood, whether from the Uterus in Abortions, or Child-birth, or by the Menses, or by a Spitting of Blood from the Lungs, or from any other Parts of the Body; for, as, in order duly to perform the Systole and Diastole, a due Influx of the nervous Fluid, and arterial Blood, into the Heart, and its Vessels, is requisite; so when, in these Cases, his Influx is lessen'd, the Strength of the Heart is weaken'd, and its Contraction rendered insufficient. Hence, by the Blood rushing in, Grumes and Coagulums are gradually left in the Cavities of the Heart; and, being accumulated, not only hinder the free Circulation of the Blood, the Cause of Deliquiums, so frequent in these Disorders, but, also, stimulate the Heart to that Commotion commonly called Palpitation. But, in this Case, the Disorder is found slight, tho' frequently recurring.

Among the Causes of this Disorder, the most considerable are immoderate Perturbations of Mind, which operate in various Manners, since some of them throw the Humours into brisk Commotions, and force them from the interior Parts to the Surface of the Body, such as Anger, and Joy; whilst others, constricting the exterior Parts, rather force the Humours inwards, such as Fear, Terror, and Grief. Thus, according to Experience, and the Observation of *Gabelcoverus*, in *Cent.* 4. *Curat.* 84. Anger, and profuse Joy, rarely induce a true Palpitation of the Heart, but only such a Motion as consists in a quick Systole and Diastole of the Heart and Arteries, and is widely different from a true Palpitation. Fear will frequently produce a Tremor of the Heart, and may, also, be the Cause of a Palpitation, according to *Baglivi*, in *Prax. Med. Lib.* 2. But 'tis certain from daily Experience, that Dread, or Terror, is very powerful in exciting a Palpitation of the Heart; the Reason of which seems to be this, That, whilst the Force of Terror is such, that, constricting the external Parts, it forces the Humours to the internal Parts; these rush more copiously to the Heart, which they distend beyond its natural Degree of Dilatation and Force, to a preternatural Resistance, which produces a Palpitation. I have, also, frequently observed, that hypochondriac Men, and those of weak nervous Systems, were seized with a Palpitation of the Heart after intense Meditation, a previous Refrigeration of the Extremities, and a Vertigo. Hysteric Women are, also, afflicted with a Palpitation of the Heart, upon the Smell of Perfumes.

Among the more remote Causes of a Palpitation of the Heart, are flatulent Aliments, especially when eaten by those of a weak and languid Digestion, such as hypochondriac Patients are; for such leguminous and oleraceous Aliments leave a mucous Lentor in the Stomach and Intestines; the Vapours arising from which not only distend the Intestines, and thus hinder the free Circulation of the Blood through the Vessels of the Abdomen; but, also, by expanding the Stomach, hinder the due Descent of the Diaphragm, and the Course of the Blood through the Lungs, and retard its Motion through the Cavities of the Heart. Thus *Malpighi*, in *Epist. ad Borellium*, informs

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informs us of himself, that he had been frequently afflicted with violent Palpitations of the Heart, by eating leguminous Substances. Hence, also, the Reason is obvious, why hypochondriac Patients are principally afflicted with a Palpitation of the Heart after eating, and why many of the Antients placed the Cause of this Disorder in Flatulencies: So that *Hippocrates*, in *Lib.* 2. *Epidem. Sect.* 5. affirmed, that all Palpitations of the Heart were accompanied with Flatulencies. Nor, among the accidental Causes of this Disorder, are we to overlook the Strictures of the lower Abdomen, Thighs, and Legs, and too tight Clothes; since these, by forcing the Humours upwards, contribute to the Production of this Disorder, in those who are previously disposed to it, as *Gabelcoverus*, in *Cent.* 3. *Curat.* 114. informs us; and *Forestus* gives us a memorable Instance of one, who, falling asleep about Noon, with his Garters too tight, was seized with a Palpitation of the Heart; which was forthwith removed, upon loosing his Garters. In those, who from too great a Thickness of Blood, or polypous Concretions, are subject to Palpitations of the Heart, nothing more contributes to recal the Disorder, than all Commotions of the Humours, whether produced by violent Passions of the Mind, or hot Aliments and Liquors; an Instance of which, produced by Aliments too high-season'd with Spice, is found in *M. N. C. Decad.* 1. *An.* 3. *Obs.* 134. or by violent Motion of the Body, which is always observed to be injurious to such Patients.

Before we leave the Pathological Consideration of this Disorder, we shall briefly deliver our Sentiments concerning the Water of the Pericardium. 'Tis, therefore, certain from many Observations, that, in those who have died of a Palpitation of the Heart, a large Collection of Water has been found in the Pericardium: This is evinced by various Instances, to be found in *Carolus Piso, de Morbis a serosa Colluvie*; *Olaus Borrichius, in Act. Haffn.* *Hollerius, in Schol. Lib.* 1. *Cap.* 39. *Tulpius, Lib.* 4. *Cap.* 20. *Fernelius, Lib.* 5. *Pathol. Cap.* 12. Many Physicians have, also, assigned this Water in the Pericardium, for the Cause of the Palpitation; but I am rather of Opinion, with *Lower, in Tr. de Corde, Cap.* 2. that it is the Effect of the Palpitation; for, as 'tis certain from many Observations, that the Blood, when stagnating in any Part, deposits its more serous and subtile Portion, as in the Brain, the Intestines, the Uterus, and the Bladder; so 'tis equally certain, that Blood stagnating in the Ventricles and Auricles of the Heart, and put into violent Commotions, deposits its more subtile Part, which is extravasated into the Pericardium. Hence we observe, that not only a Dropsy of the Pericardium, but, also, of the Breast, is generated, and succeeds the Palpitation of the Heart.

As for the Prognostic of this Disorder, *Galen*, in his Treatise *de Locis affectis*, informs us, That "those, who in Youth, or "the Declension of Age, were seized with a violent Palpita-"tion of the Heart, rarely live long, but die soon." And, *Avicena, Fen.* 3. *Primi L. Doct.* 5. *Cap.* 1. has these Words: "The Person who is often afflicted with a Tremor of the "Heart, ought to dread a sudden Death; because, as this "Symptom affects a principal Part, it is easily changed into a "Syncope, which terminates in Death." Nor is this Disorder be neglected, from whatever Cause it proceeds; for it often to terminates in a mortal Suffocation or Syncope, if the Heart is so distended beyond the Sphere of its Elasticity, that it cannot again contract itself. It is, also, easily converted into a dangerous Hæmoptysis, a Phthisis, a Cachexy, a convulsive Asthma, a Dropsy of the Breast, and an Anasarca. An unlucky Termination is to be dreaded, if the Palpitation is frequent, large, and accompanied with a Difficulty of Breathing, Deliquiums, and an unequal Pulse. In general, both in making the Prognostic, and accomplishing the Cure of this Disorder, the Physician must carefully observe, whether the Palpitation is idiopathic, or has its Cause within the Heart, or, at least, the adjacent Vessels; or whether it is symptomatic, or appears as a Symptom of spasmodic, convulsive, hysteric, and hypochondriac Disorders. The former can hardly be cured, whereas the latter totally ceases when the primary Disorder is removed.

The Cure.

The more inveterate a Palpitation of the Heart is, the more difficult it is to be cured; for, if the Fibres of the Heart are often preternaturally vellicated and distended, they are at last so weakened, that the Disorder becomes habitual, and is excited by the slightest Cause: So that, if the Beginnings of any Disorder are to be seasonably check'd, much more ought the Rudiments of this to be opposed; because, tho' in the Infancy of the Disorder a perfect Cure may be obtained, yet when it is inveterate, and especially when it is of the idiopathic Kind, a palliative Cure can only be hoped for. The Intentions of Cure, to be pursued, are:

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First, By proper Methods to allay the preternatural Commotions of the nervous Parts and Fibres of the Heart and Vessels.

Secondly, To hinder the Stagnation of the Blood about the Heart and Lungs, by deriving its Afflux to these Parts elsewhere, and rendering the Circulation more free. And,

Thirdly, Out of the Paroxysm to remove the Causes which excite the Disorder.

As for the Paroxysms, a rational Physician is to inquire what occasional Cause has contributed to induce them: When, for Instance, he is ascertained, that it proceeds from an Ebullition of the Humours, the most valuable Medicines are such as correct this Ebullition, and, at the same time, allay the preternatural Motions of the solid Parts. This Intention is best answered by the antispasmodic Powders prepared of Crabs-eyes, diaphoretic Antimony, depurated Nitre, Cinnabar, Amber, the Tooth of the Sea-horse philosophically prepared, Hartshorn prepared without Fire, and a small Quantity of the Extract of Castor: The precipitating Powders, also, either alone, or in Conjunction with the anodyne mineral Liquor, exhibited in a Draught of cold Water, is highly beneficial in correcting the Orgasm of the Humours. When the Palpitation proceeds from Flatulencies of the Intestines, or when the Patient is costive, the Skin dry, and the Feet cold, besides the above-mentioned internal Medicines, we are, also, to use external Remedies; and especially the Flatulencies and Fæces are to be eliminated by the Anus, by means of oleous and gently carminative Clysters. The Feet must also be immersed in limpid Water, but with this Caution, that, if they are excessively cold, they are previously to be rubbed with warm Cloths. When violent Hæmorrhages have preceded a Palpitation, and the Patient is excessively weak, and subject to frequent Deliquiums, to the temperating Medicines, already mentioned, we are to add Analeptics; such as Mixtures prepared of the Waters of Lily of the Valley, and Turkish Baum, Cinnamon-water prepared without Wine, Black-cherry-water, the Pulvis Marchionis, Crabs-eyes, the anodyne mineral Liquor, and some analeptic Syrup, such as that of the four cordial Flowers. The Essence of Amber is, also, of an excellent analeptic and corroborative Virtue in this Case. Nor, in the Cure of Palpitations of the Heart, are we to neglect the Use of external Remedies; among which are discutient and balsamic Fomentations, and Bags applied to the Præcordia, and Pit of the Stomach: These may be prepared of Rosemary, Mint, Baum, the Flowers of *Roman* Chamomile, and other Ingredients; which are to be sprinkled with vinous Baum-water. *Forestus* highly commends green Baum with Borrage warmed, and applied with Rose-water, and a little Vinegar. This Intention is, also, answered by anointing the Præcordia with the Balsam of Life. If there is a Redundance of Blood, and Venesection has for a long time been neglected, and if the Disorder will yield to none of the above-mentioned Remedies, nothing remains but to open a Vein in the Foot; or, if other Circumstances permit, in the superior Parts of the Body; in which Case, a sufficient Quantity of Blood is to be taken away; for, by this means, the Præcordia are freed from the preternatural Load of Humours, and a due Equilibrium is restored between the solid and fluid Parts. Thus *Horstius*, in *Lib.* 3. *Obs.* 16. affirms, that Venesection proved surprisingly beneficial in the Paroxysm of a Palpitation. Some Persons, by inclining the Right Side to the Earth, can alleviate, and even totally remove, the Paroxysms of this Disorder. Instances of this I have frequently seen, and a memorable one is found in *A. N. C. Dec.* 1. *An.* 2. The Reason of this is sufficiently obvious; for, by this incurvated Posture of the Body, the too quick Afflux of the Blood through the Vena Cava Descendens is intercepted.

Out of the Paroxysm, the whole Intention of Cure consists in removing, or, at least, diminishing, the Causes which foment and support the Distemper. For this Purpose, the Physician is diligently to guard against an Increase of the Humours, except when the Disease derives its Origin from a Defect of Blood; for by this means we not only prevent a Redundance and Spissitude of the Humours, but, also, retard the Growth of Polypuses, if they are already formed. This End is most effectually answered by Venesection, which not only affords signal Relief in the Paroxysm, but is, also, highly beneficial in preventing fresh Returns of the Disorder. Hence *Galen*, in *Lib.* 5. *de Locis affectis, Cap.* 2. does not hesitate to affirm, that all Patients who labour under a Palpitation of the Heart, may be cured by Venesection, and the Use of attenuating Aliments and Medicines. This same Opinion is espoused by *Antonius ab Altomari, Cap.* 45. *Capivacius, Lib.* 2. *Pract. Cap.* 8. *Victor Trincavelius*, in *Prælect. de Compos. Medicament.* & *Cap. de Palpitatione Cordis*; *Stalpart Vander Wiel, Obs. Varior. Cent.* 1. *Obs.* 36. *Zacutus Lusitanus, M. P. H. Lib.* 2. *Hist.* 39. and *Verzasche, Obs.* 90. These Measures are not only the most effectual in Palpitations of the Heart arising from a Redundance, or Spissitude,

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tude, of the Blood, but almoſt the only Means which can afford Relief to thoſe afflicted with polypous Concretions in the Heart.

Beſides, ſtronger Attempts are, alſo, to be made for the Removal of the Cauſes; for anſwering which Intention, if the Palpitation is ſymptomatic, we are, in the Cure, to direct our View to the primary Diſorder. If this is of the hypochondriac Kind, the ſame Meaſures are to be taken with thoſe recommended under the Article HYPOCHONDRIACA PASSIO; but a particular Regard is to be had to the Thickneſs of the Humours, which, as it lays a Foundation for polypous Concretions, ſo it requires the ſame Method of Cure; only with this Difference, that, in a ſimple Spiſſitude of the Humours, the Diſorder is to be totally removed; whereas in Polypuſes it is only to be removed, in order to prevent greater Dangers. But, in both Caſes, it is the principal Intention of Cure, both by Aliments and Medicines, to preſerve the due Fluidity of the Humours, and a regular Evacuation of the ſalutary Excretions. For this Purpoſe we are to preſcribe aperient, attenuating, and reſolvent Infuſions and Decoctions, and thin Broths prepared with the Roots of Succory and Graſs, and the Herb Chervil. *Rhodius*, in *Lib.* 2. *Obſ.* 40. in ſuch a Palpitation of the Heart, which he calls melancholic, recommends Whey. But the Virtues of all other Medicines are ſurpaſſed by mineral Waters, eſpecially the *Caroline* Springs, which excellently attenuate and reſolve thick, coagulated, and viſcid Humours, carry off the impure Juices by Excretion, and happily remove Infarctions of the Viſcera. And I know ſome Patients, who, being afflicted with a Palpitation of the Heart, ſeemed to have polypous Concretions in it, and who, by the annual Uſe of Veneſection, and the *Caroline* Springs, have preſerved themſelves alive for many Years.

When a Palpitation of the Heart derives its Origin from a Retention of the Menſes or Hæmorrhoids, it is expedient to reduce theſe Excretions to Order; which is done by temperating, antiſpaſmodic, diluting, and gently laxative Medicines, by Veneſection, by bathing the Feet, by Baths, hot Springs, and other Things adapted to the various Circumſtances of the Patient. But if Ulcers, the Itch, an arthritic Matter, or other exanthematous Diſorders, are repelled, after evacuating the Sordes lodged in the Primæ Viæ by gentle Laxatives, we are to ſheath up the acrid ſubtile Matter diſtributed through the Maſs of Blood, diſpoſe it for an Evacuation, and then eliminate it through the cutaneous Pores: Which Intention is excellently anſwered by Abſorbents, and fixed Diaphoretics, or acidulated Medicines, ſuch as the Mixtura Simplex, with the anodyne Liquor; firſt alone, and then with the Spiritus Bezoardicus Buſſii, or the ſuccinated Spirit of Hartſhorn. This Intention is, alſo, anſwered by warm Infuſions, to be drank in the Morning, in Bed; uſing, at the ſame time, a diaphoretic and temperate Regimen; but when the Diſorder conſiſts in the Heart, and its preternatural Conſtitution, ſuch as a bony Hardneſs, Excreſcences, or Abſceſſes, the Art of Phyſic is abſolutely of no Uſe. However, the moſt proper Meaſures to be taken, in order to ſatisfy the Patient, are thoſe recommended in *Polypuſes*.

The moſt effectual Method of preventing this Diſorder conſiſts in a careful avoiding its occaſional Cauſes, and a right Uſe of the Non-naturals: For which Reaſon, thoſe who ſeem to be afflicted with Polypuſes, are to be adviſed to avoid all, and eſpecially violent, Motions of the Body; leſt, by this means, the Humours being thrown into a Commotion, the fibrous Concretions ſhould perhaps be torn away, and, by fluctuating freely in the Veſſels, produce a ſpeedy and fatal Event; as *Gabelcoverus*, in *Cent.* 3. *Curat.* 114. obſerves; who, alſo, adviſes that looſe Clothes ſhould be uſed, eſpecially by Women, for the Abdomen, Thighs, and Legs. *Crato*, in *Lib.* 5. *Conſil.* 12. uſes theſe Words: "Tight Clothes about the Abdomen "are to be condemn'd; the Stomach and Breaſt are to be well "defended from the cold Air. Nor is it ſafe to remain in a "cold Air, for any time; the Night Air is, alſo, to be avoided; "and, when the Palpitation begins, a Clyſter is to be ſuddenly "applied, and the Hands and Feet to be rubbed." The Aliments and Drink muſt alſo be of an attenuating Nature, and every Species of flatulent Food is carefully to be avoided: But, in a particular manner, the Patient is to guard againſt the Paſſions of the Mind, eſpecially Anger and Terror, as alſo, from Venereal Pleaſures, and too penſive a State of Mind; ſince theſe Things are, in their own Nature, capable of producing a Palpitation. And, laſtly, Care is to be taken, that the Excretions of the Body be preſerved in due Order; ſo that the Fæces be duly eliminated, and the Perſpiration kept free.

CAUTIONS.

In Palpitations of the Heart ſome Authors greatly extol Opiates; but in this Diſorder we are to take care not to exhibit vaporous and ſtrong Narcotics, ſuch as Opiates are, eſpecially when not ſufficiently corrected; ſince theſe, eſpecially when exhibited to Patients exhauſted by large Hæmorrhages, are ſo far from relieving the Patient, that they rather render the Diſorder worſe; but in hyſteric Women, where the Paroxyſms are accompanied with a Palpitation of the Heart, we, with great Advantage, apply to their Noſtrils vaporous fetid Subſtances, ſuch as Caſtor, Aſa-fetida, and burnt Feathers. On the contrary, in theſe Caſes, we are to abſtain from Perfumes, ſince theſe not only increaſe, but recal the Diſorder.

As in all ſpaſmodic Diſorders, it is an infallible Rule to uſe Veneſection in the Feet, and bathe them; ſo 'tis to be obſerved, that theſe are not to be uſed, if the Feet are cold, ſince by this means the Diſorder is increaſed. This Caution is, with equal Care, to be obſerved in Palpitations of the Heart. The Humours are rather, by Fomentations and Frictions, to be derived to the Feet; and then Bathing and Veneſection may be uſed.

When a Palpitation ariſes from a Penury of the Humours, in conſequence of Hæmorrhages, Analeptics, and ſuch Things as reſtore Strength, are to be uſed; only they ought not to be of too hot a Nature, leſt they ſhould induce Orgaſms. This Intention is moſt commodiouſly anſwered by Eſſence of Amber mixed with the anodyne Liquor. The Patient is, alſo, to be relieved with nutritive Aliments, Preparations of Milk, and ſuch Emulſions as quickly generate Blood. And, that the Digeſtion may be render'd the keener, we are to the other Medicines to add ſuch as corroborate the Tone of the Stomach, ſuch as the Elixir Viſcerale Balſamicum. In a chronical Palpitation of the Heart we recommend a Change of Air and Place.

In Palpitations of the Heart we are carefully to avoid draſtic Purgatives and Emetics, ſuch Things as throw the Humours into a Commotion, as, alſo, too aromatic and acrid Subſtances; ſince theſe throw the Humours into too great Commotions, and induce Spaſms of the Stomach, which are immediately ſucceeded by an Afflux of the Humours to the Præcordia. As Baths of ſweet Water may poſſibly throw the Humours into Commotions, ſo they are very cautiouſly to be uſed, and can only prove beneficial when uſed very tepid, and when the Paroxyſm is remitting. On the contrary, mild Diaphoretics are principally to be uſed when exanthematous Diſorders are repelled; ſince theſe, by provoking a gentle Diaphoreſis, expel the peccant Matter, and recal the Efflorescence to the Surface of the Body.

When a Palpitation of the Heart ariſes from a conſiderable Plethora, and the Face appears pretty turgid with Blood, it is ſometimes expedient to take a ſufficient Quantity of Blood from the Jugular Vein; but, leſt there ſhould be too great an Afflux of Humours to the ſuperior Parts, 'tis expedient, both before, and in the very Time of the Operation, to uſe pretty warm Foot-baths. Sometimes 'tis, alſo, neceſſary, previouſly to open a Vein in the Foot, and then to open the Jugular Vein. *Hoffman.*

Actuarius tells us, that a Palpitation of the Heart may be cauſed by too great an Heat or Plenitude of the Blood; or by Vapours. If it proceeds from the firſt, the Pulſe will be unequal; but there is no Neceſſity, that it ſhould be ſo in the latter Caſe: What he ſays of the Inequality of the Pulſe, we find often, by Experience, to be true. And it is not only a Forerunner of a Palpitation, but often of a Syncope, and ſudden Death; and indicates ſome Obſtruction about the Heart; as *Galen* prognoſticated in the Caſe of *Antipater* the Phyſician, who died ſoon after in this manner. The Pulſe is not only unequal, as to Time and Strength, but, frequently, intermitting. In a Fit of very ſtrong Palpitation, the Diſtance between the Pulſations is greater; and the longer the Interval, the more violent they are. This is the Caſe in great Fulneſs of Blood: Hence *Galen* obſerves, that, upon this Account, thoſe are moſt ſubject to Palpitations, in whom the Hæmorrhoids, or Menſes, are ſuppreſſed. A Palpitation may, alſo, be owing, either to an exceſſive Rarefaction, or too great Coheſion, of the Particles of the Blood, or to any large Quantities of Wind, which oppreſs and diſtend the Cheſt, or the lower Belly. A Palpitation is a familiar Symptom in hypochondriac and hyſteric People: And *Hollerius* deſcribes a Caſe relating to this Diſeaſe, where the Pericardium was ſwelled with Wind alone, to a vaſt Dimenſion. For the Cure, *Actuarius* lays the greateſt Streſs upon Bleeding and Purging; which laſt is firſt mentioned by *Actuarius*. Alteratives muſt, alſo, be adapted to the Cauſe of the Complaint and Conſtitution of the Patient. *Piſo* recommends both this, and Bleeding. *Salius* ſeems to be in the right, when he adviſes Bleeding, whether there is a Plenitude or not.

In ſymptomatical Palpitations, which ariſe from the Menſes, or Hæmorrhoids ſuppreſſed, as ſoon as ever Nature recovers her uſual Courſe, this Diſorder of the Heart goes off. Even the ſudden Eruption of the latter, where it has not been habitual, ſeldom fails of removing this

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this Complaint. When an Exceſs of Water in the Pericardium cauſes a Palpitation, Bleeding and Purging are ineffectual; but how an hot Loaf, a warm Electuary, or an aromatic Bag, ſhould diſcuſs or waſte this Water, is not conceivable. This *Sennertus* propoſes; nor is it comprehenſible, how bliſtering upon the Sternum, which ſome adviſe, ſhould draw off this Water.

The Cure of an original Palpitation has been omitted by moſt of our Writers in Phyſic, who have generally directed all their Rules of Practice to thoſe of the ſympathetic Kind only.

Galen adviſed Bleeding, univerſally, in Palpitations; and it is a remarkable Caſe he gives of one, who, every Spring, was ſeized with a violent Palpitation: Bleeding every Spring three Years ſucceſſively in the Fit, took it off, which the Patient obſerving the fourth Year, he prevented the Fit by Bleeding earlier, and had the like Succeſs for ſeveral Years after. *Freind's Hiſt. Phyſ.*

In a Palpitation of the Heart ariſing from a Perturbation of the Spirits, *Boerhaave* commends the Water of Baum, made by repeated Cohobations.

Of PALPITATIONS, *and what they portend in Diſeaſes.*

By *Palpitation*, properly ſo called, *Galen*, and other *Greek* Phyſicians, as we are inform'd by *Galen* himſelf, *de Symptom. Cauſ. Lib.* 2. *Cap.* 2. underſtand a depraved kind of Motion, and not the Pulſation of the Arteries, which, however, was the Senſe that ſome Antients affix'd to the Word, as the ſame Author aſſures us, in 3 *Prorrhet. T.* 52. where he, alſo, defines *Palpitation* to be *a preternatural Dilatation and Diſtention of ſome Part.* And, *Lib. de Trem. Convulſ. & Palpit. Cap.* 5. he tells us, that Palpitation is a kind of Diſtention, and Subſidence, which either affects the whole Body, as was obſerved by *Hippocrates*, 3 *Epid. Ægr.* 4. in the phrenetic Patient, or only one Part, or many Parts together. Palpitations, for Inſtance, are generated, or excited, as *Galen*, in the above-cited Book, obſerves, in ſome Part of the Belly, Hypochondrium, Heart, or other Regions of the Body; and, indeed, in every Part thereof, which will admit of Dilatation; but eſpecially in the Skin, or Place between the Skin and Fleſh. And this Kind of Affection is more incident to the Muſcles, from the Wideneſs of their Paſſages, which diſpoſes them for the Reception of groſs Flatulencies, which are the Cauſe of Palpitations. That Palpitations are excited by a groſs Vapour, obſtructed in its Paſſage, we are taught by *Galen*, in the Place juſt cited, where he ſays, "The Cauſe of Palpitations I take to be a groſs "and vaporous Spirit, obſtructed in its Paſſage; and this Spirit, "I ſay, muſt be collected into no very ſmall Cavity, that the "Part may have a ſenſible Diſtention." And, to the ſame Purpoſe, in 1 *Prorrhet. T.* 29. he ſays, that Palpitation proceeds from a flatulent Spirit; and that Flatulencies are generated by groſs and crude Humours; and that thoſe Flatulencies and Humours are collected on account of the Coldneſs of the Parts. That the Heart and Stomach are frequently affected with Palpitations from the Stimulations of bilious and highly putrid Humours, and, alſo, from poiſonous Vapous infeſting the Mouth of the Stomach, and eſpecially the Heart, appears from the ſame Author, *Lib. de Trem. Convulſ. & Palpit.* above-cited. Some make this Affection to be the ſame with *Cardialgia*, and *Cardiaca Paſſio*; but Palpitation is a different Diſorder.

Theſe things being premiſed, let us come to the Prognoſtics: And here, firſt of all, it ſeems Matter of Inquiry, whether in acute Diſeaſes there can be obſerved any Palpitation at all, from which we may predict a Recovery. It is really a very doubtful Caſe, ſince the ſlight Palpitations of ſome Parts portend nothing certain of themſelves, tho' they are ſometimes critically excited after the ſame Manner as a Vertigo, Pains, Anxieties, and the like critical Symptoms, are excited before the general and critical Perturbation. Palpitations, then, ſometimes appear as critical, and are eaſily diſtinguiſhed as ſuch, by the Signs of a future Criſis. Of theſe we read, 1 *Prorrhet.* 36. where it is ſaid, that "Palpitating or throbbing Pains about the Navel have "ſomething in them predictive of a Delirium; but a vehe-"ment and plentiful Spirit, with a Diſtention of the Parts, is "obſerved near a Criſis." And, in the ſame Treatiſe, *T.* 144. "Palpitations about the Belly, with an oblong ſwelling Ten-"ſion of the Hypochondrium, foreſhew an Hæmorrhage with "a Shivering." Hence it appears, that there are ſome ſalutary critical Palpitations. Theſe excepted, all Palpitations in Diſeaſes are bad, and not only in acute Diſorders, but are even to be dreaded when attended with no other Indiſpoſition, eſpecially ſuch as affect the Heart and Stomach; but moſt of all in the *Cardiaca Paſſio*, which proceeds from poiſonous Humours and Vapours, and ends in a Syncope. To this laſt Kind of Palpitations, perhaps, *Hippocrates* had a reſpect, 2 *Aph.* 41. where we read, that "They who are frequently and ſtrongly, "without manifeſt Cauſe, ſeized with fainting Fits, die ſud-"denly;" as he, for Inſtance, who, as *Galen* ſays, while he was in his fainting Fit, was affected with a violent Palpitation of the Heart. In ſhort, all ſtrong Palpitations, which frequently affect the Heart, and are attended with Fainting from no manifeſt Cauſe, prove mortal in a ſhort time, according to *Galen, de Loc. affect. Lib.* 5. *Cap.* 2. nor can thoſe who are affected with this Symptom live many Years.

We ſhall proceed to obſerve, that, in acute Diſeaſes, all Palpitations, critical ones excepted, are bad, and, moſt of all, thoſe which are perpetual, and infeſt the whole Body, or any one of the principal Viſcera, or ſeveral of them together; and for this Reaſon, becauſe they indicate a Refrigeration of the natural Heat, as being occaſioned by a Refrigeration, according to *Galen, in* 1 *Prorrhet.* Now all Refrigerations in hot and dry Diſeaſes are very much to be dreaded; whence a Coma, or Lethargy, ſucceeding a Phrenſy, prove mortal. Of this Nature were the Palpitations which *Hippocrates* obſerv'd in many of his dying Patients, as we read in the *Epidemics*, particularly, *Lib.* 1. *Ægr.* 2. in *Silenus*, of whom we read, that, "From "the Beginning to the End, he had a great and rare Reſpira-"tion, with a perpetual Palpitation of the Hypochondrium."

Palpitations in all Parts of the Body are very bad, as indicating a very great Diminution of the natural Heat. Under theſe univerſal Palpitations, the Patient is in Danger of dying ſpeechleſs, as we find it hinted by way of Query, 1 *Prorrhet.* 30. on which Place *Galen* commenting, ſays, "If Palpita-"tion affect the whole Body, it is very poſſible, that the Pa-"tient may loſe his Voice, before he expires, on account of "Refrigeration, the Muſcles of the Larynx being deprived of "Motion, or the Nerves which ſerve them being no longer "able to perform their Function." Of theſe Kinds of Palpitations it is, perhaps, that *Hippocrates* ſpeaks, 1 *Epid. Ægr.* 4. as affecting the Wife of *Philinus*, when he ſays, "About the "fourteenth Day ſhe was affected with Palpitations, and her "whole Body was pain'd [as if he had ſaid, ſhe had pal-"pitating Pains over all her Body]; ſhe talked much *; and, "for ſome little time, ſhe had the Uſe of her Reaſon, but was "ſoon delirious again; about the ſeventeenth Day ſhe loſt her "Voice, and died on the twentieth." And, more clearly to the Purpoſe, he ſays of the phrenetic Patient, 3 *Epid. Ægr.* 4. "The Day after he was taken, in the Morning, he loſt "his Voice, had an high Fever, ſweated, had no Intermiſſion, "was affected with Palpitations all over his Body, and at "Night with Convulſions; on the third Day, all the Sym-"ptoms were exaſperated; and, on the fourth Day, he died."

From the Premiſes it appears, that, in acute Diſeaſes, all Palpitations, which for a conſiderable Time, and in an high Degree, affect the whole Body, are very bad and mortal; and that of Palpitations, which affect only ſome Parts, thoſe which are obſerv'd in the Region of the Heart, are, in ſuch a Caſe, no leſs fatal; ſince, under a Diſorder of ſo very hot a Nature, they indicate a Refrigeration, which in acute Diſeaſes is always a Proof, that the natural Heat is, in a manner, extinguiſhed. This, perhaps, was the Caſe of the young Man of *Melibœa*, 3 *Epid. Ægr.* 16. of whom *Hippocrates* ſays, "That he la-"bour'd under a continual Palpitation of the Heart, which never "left him; and that his Urine was oily." All Palpitations, therefore, critical ones excepted, in acute Diſeaſes, are bad; but thoſe in particular, which for a conſiderable time affect the whole Body, or ſome one of the principal Viſcera, are pernicious to the laſt Degree. But the perpetual Malignity of thoſe Palpitations is confirm'd by other bad Signs, ſuch as thoſe which indicate the crude State of the Diſtemper, or portend a fatal Event, as it happen'd in the above-mention'd Caſes of *Selinus*, the Wife of *Philinus*, the phrenetic Patient, and the young Man of *Melibœa*, where thoſe Palpitations appear'd in a crude State of the Diſeaſe, and attended with other mortal Signs.

PALTIFERA ARBOR. *De Lact.* A large Tree, which grows in *America*, bearing a Fruit like a Pear, which the *Peruvians* call *Palta*; and which is preſerved with Sugar, and given to the Sick; I ſuppoſe, as a Cooler.

PALUDAPIUM. See APIUM.

PALUMBUS. Offic. Schrod. 5. 312. Schw. A. 313. Bellon. des Oyſe. 308. Geſn. de Avib. 272. Jonſ. de Avib. 63. *Palumbus torquatus.* Will. Ornith. 135. Raii Ornith.

* In the *Geneva* Edition, Fol. 1657, we read, παλμοὶ δὲ ὅλε τῷ σώματος, λόγοι πολλοὶ, &c. "She had Palpitations over all "her Body, talked much, &c."

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185. Ejusd. Synop. A. 62. Charlt. Exer. 85. *Palumbus major seu torquatus.* Aldrov. Ornith. 2. 484. Mer. Pin. 175. THE RING-DOVE.

It is an Inhabitant of the Woods; the Virtues are much the same with those of the common Pigeon, or Dove; the burnt Feathers are said to cure the Jaundice, and to be good for the Stone and Dysury. *Dale* from *Schroder.*

PAMPATHES. The Name of a Plaister described by *Paulus Ægineta, L. 7. C.* 17.

PAMPHILION. The Name of a Plaister described by *Galen, de Comp. M. p. G. L. 1. C.* 17. and *L. 3. C.* 14.

PAMPINIFORME CORPUS. The Veins and Arteries of the Testicles, included in a common Coat, which are curled and knotty, resembling the Tendrils of Vines.

PAMPINUS. A Leaf, or Tendril, of a Vine.

PANACEA, παναάκεια, from πᾶν, the Neuter of πᾶς, all, and ἀκέω, a Remedy. A pompous Title of many Remedies both among the Antients and Moderns: Thus the *Arcanum Duplicatum* is call'd *Panacea Duplicata.* Many Preparations of Antimony are, also, called by this Name: Thus, besides that given by this Title, under the Article ANTIMONIUM, there are two others, one of which is thus prepared:

Take of Antimony, six Ounces; Nitre, ten Ounces; common Salt, one Ounce and an half; and of Charcoal, one Ounce. Let them all be made into a fine Powder, and well mixed, and be put into a red-hot Crucible, by half a Spoonful at a time: Continue the Fire a quarter of an Hour after. Then either put it into a Cone, or let it cool in the Crucible; and there will be three Substances, as, in the Bottom, a little Regulus; above that, a compact Matter, something like the Liver of Antimony; and, upon the Surface, a more spongy Mass. Separate them from one another, and put by the Regulus: Powder the other two, and wash them apart, till they have no Taste of the Salts: Dry them gently, and keep for Use.

The uppermost Substance is counted the best, and is of a fine golden Colour, when wash'd; the middle Substance is not of so pleasant a Colour, and works more churlishly. The Regulus is equal to the Regulus of Antimony. The Operation is emetic and cathartic; and it is given in the Pox, Gout, Dropsy, Scurvy, and all obstinate chronic Cases. The Dose is from two to five or six Grains. This is the Basis of Mr. *Lockyer*'s Pills, which have so long been a celebrated Purge. If ten Grains of the finer Sort of this Panacea be mixed with white Sugar-candy, one Ounce, in a fine Powder, and made up into a Mass, with the Mucilage of Gum Tragacanth, it may be divided into an hundred small Pills; of which one, two, or three, may be taken at a time, and they will gently work by Vomit and Stool.

The other antimonial Panacea is thus prepared:

Take of Antimony, four Ounces; grind it to a most subtile Powder; put it into a Matrass; and pour upon it one Pound of strong capital Lees of the Soap-boilers. Set them to digest on warm Sand for four or five Days, and shake them often; then add some warm Fountain-water; shake it well about; let it stand for two or three Seconds of Time, and pour it off into a clean Pan; repeat that Ablution, till all the brown Powder is separated from that which appears like crude Antimony; to which put more capital Lees, and proceed in all things as before, till all the Antimony is brought into a subtile brown Powder; which wash well from its Salts, dry it, and keep for Use.

This is not distinguishable from the *Russel*'s Powder in its Operation; and as the present State of the Fluids is, it proves either emetic, cathartic, diaphoretic, or diuretic. Its Dose is from five to thirty Grains.

There are, also, several mercurial *Panaceas.*

PANALETHES. The Name of a Plaister described by *Aetius, Tetrab. 4. Serm. 3. Cap.* 13.

PANARITIUM. A Whitloe. See PARONYCHIA.

PANATA, *or* PANATELLA. Panada.

PANAX ASCLEPIUM. A Name for the *Ferula; minor ad singulos nodos umbellifera.*

PANAX CHIRONIUM. A Name for the *Helianthemum, vulgare, flore luteo.*

PANAX COLONI. A Name for the *Galeopsis; palustris; Betonicæ folio; flore variegato.*

PANAX HERCULEUM. A Name for the *Pastinaca; Olusatri folio.*

PANCALA AUREA. The Name of an Antidote described by *N. Myrepsus, Sect. 1. C.* 445.

PANCARPIA, παγκαρπία. The Name of a sort of Cake, much used at *Alexandria*, which was covered with Paper, in order to make it keep the longer.

PANCASEOLUS. A Name for the BULBOCASTANUM.

PANCHRESTOS. A pompous Name for several *Collyria*, mentioned by *Galen*, and *Paulus Ægineta.* It imports, Good against every thing.

PANCHRYSOS is, also, an Epithet for some Collyria, importing, all golden.

PANCHYMAGOGUM, παγχυμαγωγὸν, from πᾶς, all; χυμὸς, Humour; and ἄγω, to bring away. The Name of some cathartic Extracts, which have the Reputation of purging off all Kinds of Humours. The most celebrated of which are that of *Crollius*, and that of *Hartman.*

The *Extractum Panchymagogum* of *Crollius* is thus prepared:

Take of the Pulp of Coloquintida, one Ounce and an half; of the Ingredients which compose the *Pulvis Diarrhodon Abbatis*, good Agaric, of each one Ounce; of black Hellebore, two Ounces. Powder them all grosly, and put them into a Matrass; pour upon them Rain-water distilled, four Fingers above the Mixture; stop the Matrass close, and set it in Digestion in hot Sand, or in Horse-dung, three or four Days, and shake the Vessels every now-and-then. After this, pass your Infusion through a Cloth: Pour upon the Residence a like Quantity of the same Liquor; let it infuse as before; then strain and express it strongly; mix your Infusions; and let them settle, until they become clear; decant them, and evaporate the Liquor in an earthen Pan, in a Sand-heat, with a little Fire, to the Consistence of a Syrup; then mix with them of Rosin of Scammony, half an Ounce; of Extract of Aloes, two Ounces: Evaporate the Whole to the Consistence of an Extract: You will have four Ounces of it.

This is much recommended by some in hypochondriacal and maniacal Affections, to be frequently repeated from one Scruple to two in Pills; tho' I believe it is not ready made in the Shops.

The *Panchymagogum* of *Hartman* is thus prepared:

Take of Sena-leaves, two Ounces; of the best Rhubarb, one Ounce and an half; Root of black Hellebore, one Ounce; white resinous Turpeth, Polypody of the Oak, Trochisci Alhandal, and Troches of Agaric, of each half an Ounce; of the internal Part of the Seeds of Carthamus, and of the best red Myrrh, each three Drams; of the *Species Aromatica Caryophyllatæ*, and of the *Species Diambræ*, each one Dram; and of Citron-peel, one Dram.

After these Ingredients are cut and bruised, make an Extract of them with Spirit of Wine, and Cinnamon-water, each a Pint and an half; then express the Liquor; then let another Extract be made from the Fæces, with weak Cinnamon-water alone; and strain it off. To this Extract, add three Ounces of the Extract of Aloes, prepared with Water of Betony, or Male Speedwell. Mix all together, and inspissate to a due Consistence, adding ten Grains of the Oil of Cloves.

The Dose is from half a Scruple to a Scruple and an half. *Hartman in Crollium. Schrod. Pharmacop.*

PANCOENOS, πάγκοινος, from πᾶν, all, and κοινὸς, common. The same as *Epidemus*, Epidemical.

PANCRATIANUS PULVIS. The Name of a Powder described by *Marcellus Empiricus, Cap.* 31.

PANCRATIUM. A Name for the *Scilla vulgaris; radice rubra.* PANCRATIUM was the Name of an Exercise which was used by the Antients, and consisted of a Mixture of Wrestling and Boxing.

PANCREAS. The *Pancreas* is a long flat Gland, of that Kind which Anatomists call conglomerate, situated under the Stomach between the Liver and the Spleen. Its Figure resembles that of a Dog's Tongue, and it is divided into two Sides, one superior, the other inferior; two Edges, one anterior, the other posterior; and two Extremities, one large, which represents the Basis of a Tongue, and one small, and a little rounded, like the Point of a Tongue.

The Pancreas is situated transversly under the Stomach, in the Duplicature of the posterior Portion of the Mesocolon. The large Extremity is connected to the first Incurvation of the Duodenum, and from thence it passes before the rest of that Intestine, all the Way to its last Incurvation; so that a great Part of the Duodenum lies between the Pancreas, and the

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the Vertebræ of the Back. The ſmall Extremity is fixed to the Omentum, near the Spleen.

The Pancreas is compoſed of a great Number of ſoft glandular Molecules, combined in ſuch a Manner, as to exhibit the Appearance of one uniform Maſs on the Outſide, the Surface of which is rendered uneven, only by numerous ſmall Convexities more or leſs flatted. When theſe Molecules are ſeparated a little from each other, we find, along the Middle of the Breadth of the Pancreas, a particular Duct, in which ſeveral ſmaller Ducts terminate laterally on each Side, like ſmall Branches in a Stem.

This Canal, named *Ductus Pancreaticus*, or *Ductus Virſungi*, from the Diſcoverer of it in the human Body, is very thin, white, and almoſt tranſparent; and the Extremity of the Trunk opens commonly into the Extremity of the Ductus Cholidochus. From thence it diminiſhes gradually, and terminates in a Point, next the Spleen. The ſmall lateral Branches are, likewiſe, pretty large near the Trunk, and very ſmall toward the Edges of the Pancreas, all of them lying in the ſame Plane, like the Branches of the common Filix, or Fern.

The Pancreatic Duct is ſometimes double in Man, one lying above the other. It is not always of an equal Length, and ſometimes runs in a winding Courſe, but always in the ſame Plane; and it is nearer the lower than the upper Side of the Pancreas. It pierces the Coats of the Duodenum, and opens into the Ductus Cholidochus, commonly a little above the prominent Point of the Orifice of that Canal; and ſometimes it opens immediately into the Duodenum.

In Man I obſerved, that where the great Extremity of the Pancreas is connected to the Curvature of the Duodenum, it ſends out an Elongation, which adheres very cloſely to the following Portion of the Inteſtine; and, upon a careful Examination, I found a particular Pancreatic Duct, ramified like the large one, which ran toward and interſected this great Duct, into the Extremity of which it opened, after having perforated the Duodenum. This Portion I term Pancreas Minus, and it ſometimes opens ſeparately into the Duodenum, in which we, likewiſe, obſerve ſeveral ſmall Holes round the Ductus Cholidochus, which anſwer to the Pancreas.

The Arteries of the Pancreas come from the Pylorica Duodenalis, and principally from the Splenica, which adheres very cloſely to the whole lower Side of the Pancreas near the Poſterior Edge; and it ſends off in its Paſſage a great many Ramifications, named Arteriæ Pancreaticæ; which go off from each Side, more or leſs tranſverſly. It receives alſo ſome ſmall Ramifications from the Gaſtrica major, and Meſenterica ſuperior.

The pancreatic Veins are Branches of the Splenica, one of the principal Branches of the Vena Portæ major, or Ventralis. This Vena Splenica runs likewiſe along the lower Side of the Pancreas, near the Edge, in a ſhallow Depreſſion, formed in the Subſtance of the Gland. Theſe Veins anſwer to the Arteries of the ſame Name, and there are likewiſe other ſmall Veins, correſponding to the ſmall Arteries, which are Productions of the great Meſaraica, *&c.*

The Nerves of the Pancreas come partly from the Plexus Hepaticus, partly from the Plexus Splenicus, and partly from the Plexus Meſentericus ſuperior; and it likewiſe receives ſome from the flat Ganglion, or plexiform Intertexture, ſpoken to under the Article NERVUS, and mentioned by the Name of the tranſverſe Rope.

The pancreatic Duct is not only double in ſome Subjects, as has been ſaid, but the collateral Branches have Communications in form of Iſlands, in ſeveral Places within the Body of the Pancreas. See HEPAR. *Winſlow.*

The Pancreas, by means of its glandular Structure, ſecretes, from the Cœliac Arteries, an Humour into one common Duct, which terminates in the Duodenum, into which it diſcharges all the Quantity of Lymph ſecreted.

This pancreatic Juice is almoſt inſipid, or but gently ſaline, limpid, continually ſecreted in large Quantities by the Motion, Preſſure, Warmth, and Contiguity of the Heart; but 'tis moſt copiouſly diſcharged, when during Digeſtion the Stomach is turgid. It is neither acid nor alcaline, but bears a great Reſemblance to the Saliva, not only with reſpect to its Origin, but alſo with reſpect to its Qualities, and the Veſſels ſubſervient to its Generation. In thoſe who are alive, this Juice is mixed and incorporated with the Bile; and, being lodged in the ſame common Duct, produces no Marks of any inteſtine Motion, but is equally mixed with it, or is diſcharged alone, and by itſelf, into the empty Inteſtines. Hence the Uſes of the pancreatic Juice, when mixed and incorporated with the Chyle, the Fæces, the Bile, and the Mucus, are to dilute the thick Parts of the Fluids, to produce a due Mixture of them, to render the Chyle capable of mixing with the Blood, to fit it for its Paſſage thro' the Lacteals, to correct the acrimonious Parts of the Fluids, to correct the Viſcidity and Bitterneſs, and to change the Colour of the Bile, and to mix it intimately with the Blood, to ſerve as a proper Menſtruum, or Vehicle, ſo to change the Taſtes, Smells, and Qualities of Aliments, as that they aſſume nearly the ſame Nature; and, laſtly, to go and return, and conſequently anſwer all theſe Ends, with the utmoſt Expedition. *Boerhaav. Inſtit.*

The antient Anatomiſts denied, that the Pancreas had any Kind of Action; and aſſerted, that it ſerved to ſupport the Veſſels, and prevent their Rupture; and that it was a kind of Pillow or Cuſhion to the Stomach, to prevent its being hurt by the Vertebræ, when it was too full: But more modern Anatomiſts have aſcrib'd a very conſiderable Action to it, which is that above ſpecify'd. The Pancreas is ſubject to Diſeaſes capable of greatly injuring the whole Body: But, like the Meſentery, it is in a peculiar manner ſubject to Obſtructions and Tumors, like other glandulous Bodies.

Riolanus obſerved a Scirrhus of the Pancreas in the celebrated Hiſtorian *Auguſtus Thuanus*, who, during four Years before his Death, among other Symptoms, perceiv'd a continual Senſe of Weight about the Region of his Stomach, eſpecially when he ſtood or walk'd; but his Hypochondria were neither hard nor tumid. Upon laying open his Body, his Pancreas was found as large as his Liver, entirely ſcirrhous, and full of a large Number of Globules reſembling a Pigeon's Egg.

But, as the Pancreas is covered by the Stomach, the Tumors of it are with Difficulty diſcovered by the Touch; and this is the Reaſon why ſuch Tumors are ſcarcely ever mention'd by practical Authors, and even ſuch of them as are mention'd have not been diſcover'd till after the Death of the Patients. But the Preſence of Tumors in the Pancreas may be pretty probably gueſs'd at, from the Symptoms mention'd by *Riolanus* in *Thuanus*; if, for Inſtance, there is a Senſe of Weight in the Region of the Stomach, without any Tumor or Hardneſs in the Hypochondria, whilſt, at the ſame time, there are other Marks of latent Obſtructions, ſuch as thoſe mention'd under the Articles HEPAR, LIEN, and MESENTERIUM. To theſe Signs we may, alſo, add a Pain, and other Diſorders, of the Stomach, by reaſon of its Contiguity to the Part affected; and a Difficulty of Breathing, in conſequence of a Compreſſion of the Diaphragm. By theſe Signs I prognoſticated, that a certain Gentleman of Diſtinction labour'd under a Scirrhus of the Pancreas; nor was I deceiv'd; for, as the Patient was very lean, by preſſing with my Hand near the Side of the Stomach, I perceiv'd a certain Hardneſs, which, when compreſs'd with the Fingers, excited an intolerable Pain. And I have obſerv'd, that theſe Tumors of the Pancreas, are moſt generally incident to ſcorbutic Patients, ſince in them a Difficulty of Breathing, an Oppreſſion and Senſe of Weight in the Region of the Stomach, are for the moſt part obſerv'd; and theſe are, by *Fugalenus*, *Sennertus*, and others, propos'd as the pathognomic Signs of a Scurvy.

Practical Authors furniſh us with ſome Inſtances of Abſceſſes in the Pancreas, which, however, were not diſcover'd till after the Death of the Patients: But ſuch Abſceſſes may be, in a great Meaſure, gueſs'd at from the Symptoms of the Patients, ſome of which are the ſame with thoſe accompanying a Scirrhus of the Pancreas; but to theſe Signs may be added, a ſlow Fever, the almoſt inſeparable Concomitant of internal Abſceſſes, long-protracted Watchings, ſhort Sleeps; and after them, Wearineſs, Faintings, and cold Sweats.

The Cure of Obſtructions, Scirrhuſes, and Abſceſſes of the Pancreas, is the ſame with the Cure of thoſe Misfortunes in the Liver, Spleen, and Meſentery. See HEPAR, LIEN, and MESENTERIUM. *River. Prax. Med. Lib.* 13. *Cap.* 4.

If the Patient has a Tumor under the Region of the Stomach, that is indolent, and it is attended with an obſtinate Coſtiveneſs, we may be ſure there is a Scirrhus of the Pancreas; eſpecially, if any of the Cauſes of a Scirrhus have preceded. The pancreatic Juice dilutes the Fæces, and perhaps ſtimulates the Inteſtines, in ſome meaſure, to an Expulſion of their Contents; therefore, when there is a Defect of this, the Patient muſt be coſtive.

When a Perſon has a Cancer in the Pancreas, when faſting, he will feel a great Weight under the Stomach; after eating he is in extreme Pain, but more ſo, if he vomits; he will have a Diarrhœa, and then fall into an Atrophy, and die.

A copious Uſe of Cherries, perfectly ripe, is very much recommended in a Scirrhus of the Pancreas; and they are preferable to Currants, which, have ſomething acrimonious in them, and are prejudicial to hyſterical Women.

PANCRENE. A Name for the PANCREAS.

PANDALEON. This is a Medicine appropriated to Diſorders of the Breaſt and Lungs, invented by the *Arabians*, and later Phyſicians; conſiſting of grateful Ingredients, anſwering the

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the ſame End with a Linctus, but different from it in Form, in which it agrees with Troches; from which, however, it differs in this, that Troches are made in a certain Figure, whereas the *Pandaleon*, after the Sugar is duly boil'd, and the Ingredients ſufficiently mix'd, is pour'd into a Box, and becomes indurated; and a ſufficient Quantity of it is to be taken, either in a Spoon, or on the Point of a Knife.

The *Pandaleon*, therefore, is a ſolid Medicine like a Cake, receiving its Form from the Box into which it is pour'd; conſiſting of Powders, pectoral Conſerves, and Lozenges of Sugar, and anſwering the ſame Ends with a Linctus. *Morelli Method. præſcrib. Form. Remed.*

PANDALITIUM. The ſame as PARONYCHIA.

PANDEMIUS. Epidemical.

PANDICULATIO. Pandiculation, or Stretching. See OSCITATIO.

PANDI PAVEL. A Name for the *Momordica*; *Zeylanica*; *pampineâ fronde*; *fructu longiori*.

PANEM-PALKA. A ſpurious Species of Nutmeg-tree.

PANJA-PANJALA. H. M. The Name of a very tall Tree, which grows in great Plenty in *Malabar*, producing a kind of Cotton.

The Flowers, and tender Fruits, boiled, and reduced to the Form of a Cataplaſm, are apply'd to the Crown of the Head, as a Remedy for the Head-ach and Vertigo. *Raii H. P.* 1899.

PANICULA. A Panicle. See the Explication of Terms under the Article BOTANY.

Panicula is, alſo, a Diminutive of PANUS. A Species of Tubercle.

PANICUM.

The Characters are;

The Spike conſiſts of innumerable thick Seeds diſpoſed in leſſer Spikes, ſo as to appear like a Cluſter.

Boerhaave mentions nine Species of *Panicum*; which are,

1. Panicum Germanicum; ſive Panicula minore. *C. B. P.* 27. *Theat.* 516. *Raii Hiſt.* 2. 1247. *Tourn. Inſt.* 515. *Boerh. Ind. A.* 2. 158. *Panicum.* Offic. *Panicum ſylveſtre.* Ger. 79. *Panicum vulgare.* Ger. Emac. 85. *Panicum album vulgare.* Park. Theat. 1139. PANIC.

This is a Grain rarely ſeen in *England*; it grows to be as tall as Wheat, with much broader Leaves, and firmer, thicker Stalks, bearing an Ear, or Spike, four or five Inches long, and above an Inch broad, compoſed of a great Number of looſe, hairy leſſer Spikes, full of ſmall round Seed, leſs than Millet, and not ſo ſhining; it is ſown in divers Parts of *Germany*.

Panic is reckoned to be drying and binding, and good for thoſe who are troubled with Spitting of Blood, and for all Sorts of Fluxes. *Miller's Bot. Off.*

Panicum, called by the Greeks ἕλυμος (*Elymus*) and μελίνη, (*Meline*) has its Name, as *Pliny* ſays, *Lib.* 18. *Cap.* 7. *à Paniculo*, from its Panicle.

In Taſte, Qualities, and Virtues, it anſwers to Millet, and may be uſed inſtead thereof, in Food, Bread, and Medicine; whence it is in much Requeſt, as *Cluſius* ſays, throughout *Germany*, *Hungary*, and *Bohemia*; for it makes Part of their Aliment, and Puddings are prepared of its husked Seed, which have no ill Taſte. But *C. Bauhine* ſays, after the Antients, that it is of bad Juice, difficult of Digeſtion, generates Flatulencies, binds the Belly, and is of a drying and refrigerating Quality; for which Reaſons Millet is preferable to it on all Accounts. Milk mixed with it, in Puddings, has been found ſalutary, as removing, or at leaſt diminiſhing, the aforeſaid Inconveniences. A Pudding, or Ptiſan, prepared of it with Milk, is commended for Pains of the Head proceeding from Bile, for an Hæmoptoe, and nocturnal Pollutions. *Galen* ſays, that it is of ſome Efficacy, as is alſo Millet, in Fluxes of the Belly: For this Purpoſe, *Pliny* tells us, it muſt be boiled in Goats-milk, and taken twice a Day; and, being ſo uſed, it cures alſo the Gripes: Externally apply'd, in form of a Cataplaſm, it dries and refrigerates. *Raii H. P.* 1248.

The Plant is aperitive, and, boiled, like Rice, in Milk, is good to correct the Acrimony of the Humours. *Hiſt. Plant. adſcript. Boerhaav.*

2. Panicum, Italicum; ſive Panicula majore. *C. B. P.* 27. *Theat.* 519.

3. Gramen, Paniceum; Spicâ diviſâ. *C. B. P.* 8. *Theat.* 136. *Panicum Herbariorum, ſylveſtre.* Lob. Ic. 42.

4. Gramen, Paniceum; ſive Panicum ſylveſtre; ariſtis armatum. *C. B. P.* 8. *Theat.* 137. *M. H.* 3. 189.

5. Gramen, Paniceum; Paniculâ ſimplici; ἑλυμάγρωστις, *C. B. P.* 8. *Theat.* 138. *M. H.* 3. 189. *Panicum ſylveſtre dictum, & Dens Caninus.* 1. I. B. 2. 443.

6. Gramen, Paniceum; ſpicis nigris. *C. B. P.* 8. *Theat.* 140.

7. Gramen, Alopecuroïdes; ſpica rotundiore. *C. B. P.* 4. *Theat.* 56. See ALOPECUROS.

8. Gramen, Alopecuroïdes major; ſpica longiore. *C. B. P.* 4. *Theat.* 58.

9 Gramen, Alopecuroïdes; aquaticum, geniculatum. *Boer. Ind. alt. Plant. Vol.* 2. *p.* 158.

PANIS. Bread. This is a Preparation of Grain, not only uſeful as an Aliment, but, alſo, a Medicine highly proper in many Caſes. Thus *Hippocrates*, in his Book *de ſalubri Diæta*, adviſes Perſons accuſtomed to a laborious Life, when ſeiz'd with Fluxes, in which the Excrements diſcharg'd reſemble crude Aliments, to eat toaſted Rye-bread ſoak'd in Wine. 'Tis ſufficiently known from Experience, that Bread made of fine Flour, when toaſted and ſoak'd in generous Wine, with the Addition of a little Cinnamon or Sugar, is a Medicine of the greateſt Power and Efficacy, in reſtoring loſt and impair'd Strength. This is an Analeptic of all others the moſt proper and beneficial for thoſe, who, in conſequence of uncommon Fatigue, or violent Hæmorrhages from Wounds, require a ſpeedy and ſeaſonable Recruit of their Strength. For this Reaſon, the Prophet *David*, in Pſalm 104. Ver. 5. tells us, that Wine chears the Heart of Man, and Bread ſupports it. *Henricus ab Heer*, in *Obſ.* 18. informs us, that by the Uſe of theſe two powerful Analeptics, Bread and Wine, he reſtor'd a certain Man to his uſual Strength, after he had by immoderate Venery brought himſelf to the very Brink of the Grave; whereas, if, according to the Advice of another Phyſician, he had uſed Veneſection, he had certainly fallen a Sacrifice to that prepoſterous Piece of Practice. *Boerhaave*, in his *Materia Medica*, in Fevers and other Diſorders, highly extols the analeptic Virtues of a Decoction of Bread, which he orders to be prepar'd in the following Manner.

> Take of wheaten Bread, ſufficiently fermented, with the Bran, eight Ounces, and of pure Spring-water, three Pints: Boil for an Hour, in a new earthen Veſſel cloſe ſtopt. Then ſtrain it thro' a Sieve; and to each Pint of the ſtrain'd Decoction, add half an Ounce of Citron-juice; diſtil'd Cinnamon-water, two Drams; of Rheniſh Wine, four Ounces; and of Sugar, a Quantity ſufficient to render it palatable.

Reuſnerus, in his Obſervations, gives us a memorable Inſtance of a Woman, who, after having her Life ſeveral times endanger'd by Abortion, at laſt, about the Middle of her Geſtation, began every Morning, upon an empty Stomach, to eat a ſmall Piece of Bread ſoak'd in Malmſey Wine; by which means Abortion was happily prevented. *Velſchius*, alſo, informs us, that, after a certain Woman had, notwithſtanding the moſt proper Medicines, ſuffer'd Abortion ſeven times, he prevented the like Misfortune, by Bread and Malmſey Wine uſed in the ſame Manner as in the former Caſe. I have often obſerv'd, that butter'd Toaſt uſed for Breakfaſt, by correcting the violent Acid in the Primæ Viæ, removes Uneaſineſs of the Præcordia, Vertigoes, Head-achs, and Faintneſs. I can alſo, from Experience, juſtly recommend the ſame Breakfaſt in epidemic, morbid Conſtitutions of the Weather, in which the Atmoſphere is impregnated with Effluvia and Exhalations of a noxious Quality.

As Bread, taken internally, is of an highly cordial and analeptic Quality; ſo, when externally uſed, it alſo prroduces ſurpriſing Effects. Thus *Diogenes Laertius*, in *Lib. de Vit. Philoſoph.* informs us, that the incomparable *Democritus*, when very old, and perceiving his Death faſt approaching, at his Siſter's Requeſt, protracted his Life for three Days, by no other means, than the Smell of recent Bread. This Doctrine is, alſo, confirm'd by *Laurentius Joubertus*, who informs us, that Perſons are recover'd from Deliquiums, by applying Bread to their Noſtrils. I have, alſo, found from Experience, that Bread bak'd with Caraway-ſeeds, when cut up, and applied to the Ears, as ſoon as 'tis taken out of the Oven, is an excellent Remedy for Deafneſs. This is, alſo, confirm'd by *Riverius*, in *Prax. Med. Lib.* 3. *Cap.* 2. And *Hieronymus Reuſnerus*, in *Obſ. Med.* 55. informs us, that *Henry* Count of *Stolberg*, when render'd deaf by the Noiſe of Cannons, was greatly reliev'd by applying to his Ears, every Morning, recent Bread bak'd with Juniper-berries. The outer Cruſt of houſhold Bread, cut round, moderately excavated, and ſprinkled with good tepid Wine-vinegar, with an Addition of Cloves and Nutmegs, applied to the Abdomen, immediately ſtops Vomitings and Fluxes attended with Gripes. Beſides, in order to prevent Abortion, there is hardly any more efficacious Medicine, than toaſted Bread ſoak'd in generous Wine, with an Addition of aromatic Subſtances apply'd to the Navel. *Hoffman de Remed. Domeſt. Præſtantia.*

PANIS CUCULI, in Botany, is the ACETOSELLA.

PANIS PORCINUS is the CYCLAMEN.

PANIT-

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PANITSJICA. The ſame as JANIPABA.

PANNICULUS ADIPOSUS. See CELLULOSA MEMBRANA.

PANNICULUS CARNOSUS This is thus deſcribed by *Drake*.

Immediately under the Fat lies the *Panniculus Carnoſus*, which conſiſts of a double Membrane, the upper of which makes the *Membrana Adipoſa*; the under, which is, alſo, call'd *Membrana Muſculorum Communis*, or *Muſculoſa*, is, in ſome Places, interwoven with pretty thick muſcular Fibres, which are ſuppos'd to contract and corrugate the Skin; tho' this Action of it is viſible no-where in an human Body, except on the Forehead, or, in ſome, the whole Scalp. It is ſpread all over the Body, but very unequally in point of Thickneſs; and has its Arteries, Veins, and Nerves, from thoſe of the ſubjacent Parts.

The particular Uſe of it is to ſupport, and be, as it were, a Baſis to the Globules of Fat. It ſerves, in general, as all other Membranes do, to wrap, defend, and connect the Parts together. Its different Names, taken either from the Structure, or the Situation, have occaſion'd ſome to multiply it, tho' through Miſtake only.

But *Winſlow* denies the Exiſtence of the *Panniculus Carnoſus*. Beſides the *Cuticula*, *Cutis*, and *Membrana Adipoſa*, the Antients, ſays he, reckon'd two others, the *Panniculus Carnoſus*, and *Membrana Communis Muſculorum*.

The *Panniculus Carnoſus* is found in Quadrupeds, but not in Men, whoſe cutaneous Muſcles are in a very ſmall Number, and moſt of them of a very ſmall Extent, except that which I call *Muſculus Cutaneus* in particular; but even that Muſcle cannot, in any tolerable Senſe, be reckon'd a common Integument.

There is no common Membrane of the Muſcles, which covers the Body like an Integument; it being no more than particular Expanſions of the Membranes of ſome Muſcles, or aponeurotic Expanſions from other Muſcles.

The Elongations of the Lamina of the *Membrana Adipoſa*, or *Cellularis*, may alſo have given Riſe to this Miſtake, eſpecially in ſuch Places, where this Membrane is cloſely united to the proper Membrane of the Muſcles. *Winſlow*.

PANNUS. Beſides the common Signification of this Word, which is Woollen Cloth, it imports a Diſorder of the Eye, (ſee OCULUS) and, alſo, a Spot, or Mark, upon the Skin, either ariſing from a Venereal, or any other Cauſe. *Caſtellus*.

PANOCHIÆ. Bubos in the Groin. *Fallopius*.

PANTAGATHOS ANTIDOTUS. The Name of an Antidote deſcrib'd by *Nicolaus Myrepſus*, *Sect.* 1. *Cap.* 271, and 273. It imports, Good for every thing.

PANTAGOGUS; from πᾶν, all; and ἄγω, to bring away. A Medicine which brings away all Sorts of Humours.

PANTHEÆ. Penſile Beds.

PANTHERA. See PARDUS.

PANTICES. The Inteſtines. *Caſtellus*.

PANTOLINUS PASTILLUS. The Name of a Paſtil, or Troche, deſcrib'd by *Nicolaus Myrepſus*, *Sect.* 42. *C.* 156.

PANTOLMIUS. The Name of a Troche, in *Paulus Ægineta*, *L.* 7. *C.* 12.

PANUS, PANIS, PANICULA, and PANULA, all import a ſort of crude Bile.

PANYGRON. The Name of a ſort of Ointment, deſcrib'd by *Oribaſius*, *de Locis affectis*, *L.* 4. 121.

PAPAVER.

The Characters are;

The Leaves are alternate; the Calyx is biphyllous and caducous: The Flower is roſaceous, tetrapetalous, ſurrounding the Baſe of the Ovary, and furniſhed with very numerous Stamina: The Fruit is oval, and cover'd with its own Tube, (which is of a very ſingular Figure, being a radiated Lid) and divided by a thin Membrane, into as many Capſules, or Cells, as there are Radii in the Lid: The Seeds are minute, numerous, and adhere to the Membranes which form the Partitions, as to their Placentæ.

Boerhaave mentions thirty-four Species of *Papaver*; which are,

1. Papaver; hortenſe; ſemine albo; ſativum Dioſcoridis; album Plinio. *C. B. P.* 170. *Raii Hiſt.* 1. 853. *Tourn. Inſt.* 237. *Boerh. Ind. A.* 279. *Papaver album.* Offic. *Papaver ſativum album.* Ger. 296. Emac. 369. *Papaver ſimplex album ſativum.* Park. Theat. 365. *Papaver ſativum.* J. B. 3. 390. WHITE POPPY.

The white Poppy, which is cultivated for medicinal Uſes, has many large and long whitiſh-green Leaves, very much torn, and cut in about the Edges. The Stalk is ſmooth and round, growing to be five or ſix Feet high, having the Leaves which grow on it ſhorter and broader, and ſomewhat encompaſſing it: Towards the Top, it is divided into three or four Branches, having at the End of each a round Head, hanging down at firſt; but, as the Flower comes on to open, it grows erect. The Flower conſiſts of four large white Leaves, incloſed in a Couple of green, ſkinny Huſks, which ſoon drop off, when the Flower opens: When the Flowers are fallen, which ſoon happens, the Seed-veſſel grows to a great Bigneſs, being frequently as big as a large Orange, round, and having a denticillated Crown on the Head: It is divided into ſeveral membranous Partitions, to the Sides of which grow the ſmall white Seed. The whole Plant is full of a bitter Milk, of a ſtrong, viroſe, unpleaſant Smell; it is ſown in Fields and Gardens, and flowers in *June*, and the Heads are fit to be gathered at the End of *July*. From theſe Heads the Opium is produced, whereof the beſt comes from *Turky*; there being vaſt Quantities of theſe Poppies ſown in the Fields of *Natolia*. See OPIUM.

Of the dry Poppy-heads, infuſed and boiled in Water, is made the Syrupus e Meconio, or Diacodium.

The Seeds are much uſed in Emulſions, being cooling and good in Fevers, and inflammatory Diſtempers; as, likewiſe, for the Strangury, and Heat of Urine. *Miller's Bot. Off.*

The diſtilled Water of Poppy, and its Oil, but eſpecially Opium, are narcotic and anodyne: Theſe Qualities proceed not from its Coldneſs, as ſome will have it; for its bitter Taſte, rank Smell, Inflammability, and exulcerating Effects, evince the contrary; but from ſome other Property as yet unknown. It is, however, of excellent Service in the Diarrhœa, Dyſentery, Catarrhs, and Coughs, and other Diſorders; tho' it is to be uſed with the greateſt Caution. For the moſt ſevere Pain of an Ophthalmy, *Sennertus* preſcribes, as an effectual Remedy, an Emulſion of the Seeds of Poppy, with Milk, Water of Lettuce, and Decoction of Fenugreek. *Raii H. P.*

2. Papaver; hortenſe; ſemine albo; flore leviter purpureo. *C. B. P.* 170.

3. Papaver; hortenſe; ſemine albo, flore cinereo, ungue purpureo. *C. B. P.* 170.

4. Papaver; hortenſe; ſemine albo; flore candido, rubris maculis infecto. *C. B. P.* 170.

5. Papaver; hortenſe; ſemine nigro; ſylveſtre Dioſcoridis, nigrum Plinio. *C. B. P.* 170. *Raii Hiſt.* 1. 853. *Tourn. Inſtit.* 237. *Boerh. Ind. A.* 279. *Papaver nigrum.* Offic. *Papaver ſativum nigrum.* Ger. Emac. 370. *Papaver ſativum ſimplex nigrum.* Park. Theat. 366. BLACK POPPY.

This Poppy does not grow ſo tall as the white; but, in other reſpects, is much like it. The principal Difference is in the Flower, which, in this, is of a purple Colour, with a black Bottom; and in the Heads, which are much leſs than the white, and contain a black Seed. The Roots, both of this and that, are ſticky, and periſh when the Seed is ripe; it is ſown in Gardens, and flowers in *June*.

The Heads are now rarely uſed, being left out of the Syrupus e Meconio, in the laſt Edition of the Diſpenſatory: But the Leaves are put into cooling Ointments, being accounted good for Burns and Inflammations, and hot Swellings, and are an Ingredient in the Unguentum Populeum. *Miller's Bot. Off.*

6. Papaver; flore pleno, rubrum. *H. Eyſt. Æſt.* o. 12. *F.* 7. *Fig.* 1.

7. Papaver; flore multiplicato, incarnato. *H. Eyſt. Æſt.* o. 12. *F.* 8. *Fig.* 1.

8. Papaver; flore multiplici, purpuraſcente. *H. Eyſt. Æſt.* o. 12. *F.* 9. *Fig.* 2.

9. Papaver; laciniatum, rubrum, unguibus purpureis. *H. Eyſt. Æſt.* o. 12. *F.* 9. *Fig.* 2.

10. Papaver; laciniatum, rubrum, unguibus albis. *H. Eyſt. Æſt.* o. 12. *F.* 9. *Fig.* 2.

11. Papaver; multiplex, album, oris rubicundis. *H. Eyſt. Æſt.* o. 12. *F.* 10. *Fig.* 2.

12. Papaver; flore miniato, pleno. *H. Eyſt. Æſt.* o. 12. *F.* 10. *Fig.* 2.

13. Papaver; flore pleno, argentei coloris. *H. Eyſt. Æſt.* o. 12. *F.* 10. *Fig.* 2.

14. Papaver; flore pleno, album. *C. B. P.* 171.

15. Papaver; flore pleno, violaceo. *C. B. P.* 171.

16. Papaver; flore pleno, eleganter ſtriato, laciniato. *H. Edinb.*

The Characters of the following ſingle Species are;

A very large Capſule and Flower, and a very hairy, indented, and dark-green Leaf.

17. Papaver; Orientale; hirſutiſſimum; flore magno. *T. Cor.* 37.

The Characters of the following fourteen Species are, a leſſer Capſule and Flower, and dark-green Leaves, with deeper Jags.

18. Papaver; erraticum; majus; ῥοιὰς Dioſcoridi, Plinio, Theophraſto. *C. B. P.* 170. *Tourn. Inſt.* 238. *Boerh. Ind. A.* 279. *Papaver rubrum, Rhœas & erraticum.* Offic. *Papaver, Rhœas.* Ger. 299. Emac. 377. Raii Hiſt. 1. 855. *Papaver erraticum Rhœas, ſive ſylveſtre.* Park. Theat. 367. *Papaver erraticum rubrum campeſtre.* J. B. 3. 395. *Papaver*

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ver laciniato folio, capitulo breviore, glabro, annuum, Rhœas dictum. Raii Synop. 3. 308. RED POPPY, or CORN-ROSE.

The Leaves of this Poppy are very rough and hairy, divided into ſeven or nine narrow indented Sections, that at the End being the largeſt: The Stalk is rough and branched, beſet with the like Leaves; having on the Tops of the Branches large four-leav'd ſcarlet Flowers, with a black Spot on the Bottom of each Leaf. The Head is but ſmall, covered with a denticillated Cap, or Crown, containing very ſmall brown Seed. The Stalks and Leaves are of a yellowiſh-bitter Juice, of a ſtrong Smell, but not ſo viroſe as the two former; it grows every-where among the Corn, and flowers in *June* and *July*.

The Flowers of this Poppy are of a cooling, anodyne Nature, and uſeful in all inflammatory Fevers, particularly the Pleuriſy and Angina: They are, in ſome meaſure, hypnotic, and cauſing Reſt; and may be given when the Preparations of of the former may not be ventured on: They are a noted Remedy againſt Surfeits, eſpecially the Infuſion of them in Brandy, or the Tinctura Papaveris Officinarum.

Officinal Preparations from the red Poppy are the ſimple Water, the Syrup, and Conſerve of the Flowers, and the Tincture. *Miller's Bot. Off.*

The Flower of this Plant, which is the principal Part uſed in Phyſic, is glutinous, and gives much ſuch a faint-red Colour to the blue Paper, as the Solution of Opium, by which it ſeems the Salt of the one is analagous to that of the other; but, in Opium, this Salt (which ſeems pretty near to Sal Ammoniac) is mixed with a great deal of fetid Oil; whereas, in the red Poppy, the Proportion of the Oil is much leſs than that of the viſcous Phlegm. Thus the Flowers of this Plant are emollient, and good for Expectoration in Defluxions of the Breaſt, in Rheums, and in a dry Cough. They ſtanch Blood, and are gently ſudorific. The diſtilled red Poppy-flower Water is preſcrib'd, from three to ſix Ounces: The Tincture is given by Glaſs-fuls, for Defluxions of the Breaſt. This Tincture is impregnated ſometimes with three or four Infuſions, in each Quart of which is diſſolved one Ounce of Sugar-candy. The following Ptiſan is very good for a dry Cough: Boil three Ounces of Bugloſs-root, and as much of that of Dog's-graſs, in two Quarts of Water; pour the Decoction, boiling, upon one Ounce of red Poppy-flowers, and three Heads of white Poppy, cut ſmall, and put up in a ſmall Bag, ſo that they may be ſqueez'd: The dried Flowers of the red Poppy are drank in the Manner of Tea; there is, alſo, a Conſerve and a Syrup prepared of them. *Martyn's Tournefort.*

Some apply the Herb to the Region of the Liver, in order to ſtop an Hæmorrhage from the Noſe; and the ſame Virtue is aſcribed to the Root. The Decoction of the middle Bark, or Rind of the Sambucus, or Ebulus, with the Syrup of Poppy, is a moſt effectual Sudorific; where we may obſerve, that Narcotics, added to Diaphoretics, or Diuretics, are of extraordinary Efficacy in provoking Sweat. *Raii Hiſt.*

19. Papaver; erraticum; majus; foliis florum variegatis. *H. R. Par.*

20. Papaver; erraticum; majus; flore albo. *C. B. P.* 171.

21. Papaver; erraticum; majus; flore carneo. *H. Edinb.*

22. Papaver; erraticum; majus; florum unguibus albis. *H. Edinb.*

23. Papaver; erraticum; flore pleno. *C. B. P.* 171.

24. Papaver; erraticum; flore pleno miniato. *H. R. Par.*

25. Papaver; erraticum; flore pleno igneo. *H. R. Par.*

26. Papaver; erraticum; flore pleno igneo, marginibus candidis.

27. Papaver; erraticum; flore pleno purpuraſcente. *H. R. Par.*

28. Papaver; erraticum; flore pleno phœniceo, unguibus albis.

29. Papaver; erraticum; minus. *C. B. P.* 171.

30. Papaver; erraticum; Pyrenaïcum; flavo flore. *C. B. P.* 171. *Prodr.* 92.

31. Papaver; Orientale; tenuiter inciſum; ad caulem floridum. *T. Cor.* 17.

The Characters of the three following, and laſt Species are, ſmall, very finely jagged, and dark-green Capſule Flowers, and Leaves.

32. Papaver; erraticum; capite oblongo, hiſpido. *T.* 238. *Argemone, capitulo breviori.* C. B. P. 172.

33. Papaver; erraticum; capite longiore, hiſpido. *T.* 238. *Argemone, capitulo longiori.*

34. Papaver; erraticum; capite longiſſimo, glabro. *Tourn. Inſt.* 238. *Boerh. Ind. A.* 280. *Argemone.* Offic. *Argemone capitulo longiore, glabro.* Raii Hiſt. 1. 856. *Papaver laciniato folio, capitulo longiore, glabro; ſeu, Argemone, capitulo longiore glabro.* Raii Synop. 3. 309. LONG-HEADED POPPY.

It grows by the Sides of Ditches, flowers in *June*, and the Leaves and Juice are uſed in Medicine. A Cataplaſm of the Leaves, as *Dioſcorides* ſays, abſterges the Albugo, and Filmæ in the Eye, and mitigates Inflamations.

The Plant, ſays *Dale*, which I here exhibit for *Argemone*, comes neareſt to, if it be not the very ſame with, the *Argemone* of *Dioſcorides*, whoſe Deſcription of it is as follows: *Argemone*, ſays he, has, in the Whole, the Appearance of the wild Poppy; but has Leaves like thoſe of *Anemone*, divided; a red Flower; an Head like that of the red Poppy, but more oblong and wide at the Top; a round Root; and yields a Saffron-colour'd acrimonious Juice. *Dioſcorides, Lib.* 2. *Cap.* 208.

The Name *Papaver* is from *Pappa*; that is, *Pap*; becauſe, in former Times, Nurſes mixed this Plant with their Childrens Pap-meat, as a Remedy againſt the Pain of the Colic.

The Plant deſerves the higheſt Commendations, if it be rightly uſed. The Garden Papavers, taſted in hot Weather, while they are in their full Vigour, have a very aromatic Savour; the Juice is very aperitive; and the Bitterneſs of its Taſte, which exceeds that of Bile itſelf, is not eaſily remov'd from the Palate. All the Parts of this Plant, if gathered in an hot Seaſon, ſend forth a very ſtrong Smell, which flies to the Head, and induces Sleep, by their volatile Mucus, in Conjunction with ſomething of Acrimony and Bitterneſs. Poppies are all gently diſcutient, moderately incraſſating, lenient, demulcent, and narcotic; for which Reaſons they are proper in Catarrhs proceeding from an acrid Lymph; for a Cough, Hoarſeneſs, Spitting of Blood, Head-ach, exceſſive Hæmorrhages, an immoderate Flux of the Menſes, and the flatulent Colic. The Head of this Plant conſiſts of two Parts; the Head, which gives the Taſte; and the Seeds, which are of a very mild Nature, and oily, but induce no Sleep. The Oil of the Seed taſtes like Oil of ſweet Almonds, and has the ſame Virtues: Hence in *Germany*, and other Countries, they are put in Cakes, which are very well taſted. What is juſt now ſaid, is to be underſtood of the ſixteen firſt Species. Some Phyſicians have been ſurpriſed at my preſcribing four Ounces of Poppy-ſeeds, and ſaid, they were enough to make a Perſon ſleep to Death; but they were afraid without Reaſon, for the Seeds have the Taſte of Almonds, and are endued with the ſame Virtues. The twelfth Species only is perennial; but, tho' it be very full of Milk, it affords no Opium. Thoſe from the twelfth to the thirty-firſt, incluſive, are not very ſoporific; and the three laſt are not ſoporiferous at all. The Leaves of the Garden Poppies, bruiſed with Salt, or boiled, and made into a Cataplaſm, and apply'd to Places afflicted with a Pain or Inflammation, mitigate the ſame, and are remarkably aperient; whence they are proper in the Rheumatiſm, Gout, and Sciatica. Of the Seeds are prepared Decoctions and Emulſions, which have nothing of a ſoporific Virtue, but are only demulcent. The Heads, when in a good State of Maturity, and without their Seeds, boiled in Milk, and taken to the Weight of an Ounce or two, very gently induce to ſleep. Two Ounces of the Heads are equivalent to one Grain of Opium. *Hiſt. Plant. adſcript. Boerhaav.*

A Method of preparing the Extract and Syrup of Poppies.

That this *Britiſh* Opium may be got to the greateſt Advantage, both as to Quantity and Quality, the Culture and Management of the Poppies are to be taken care of. What I have found moſt ſucceſsful, is to trench a Spot of new rich Ground, where Poppies had not grown the preceding Year; for, if they are continued ſeveral Years on the ſame Ground, they degenerate; and, chuſing the ripeſt and whiteſt Seed of the great ſingle-flowered *Turky* Poppy, I ſow it in *March*, very thin and ſuperficially, in Drills at two Feet Diſtance each, to allow room for Weeding. As ſoon as the young Plants ſpring up, I take moſt of them away, leaving only the ſtrongeſt moſt thriving Plants, at about a Foot diſtant from each other. When the Heads of theſe come to their full Growth, but before they are ripe, I chuſe a calm, warm, and Sun-ſhine Day to cut them off, at an Inch or leſs Diſtance from the Top of the Stalk, going backwards from the End, at which I begin the Lopping, to the other End. The Deſign of this Caution is, to ſave the milky Liquor, which riſes to the cut Part of the Stalk, from being ſpilt by the Motion which the Wind or my Cloaths would make, and that the Heat of the Sun may make it thicken ſoon. What Heads are ſmall, and with the Appearance of growing larger, are left to be cut afterwards. All the Heads are put into a Baſket as they are taken off, and are allowed to lie there together for about two or three Days, till the Drops of Liquor, which runs out of them, thicken, and thereby are ſaved; after which they may be ſpread out on a Floor, or hang'd up on Strings to dry. Two or three Days after, I, in the ſame Manner, lop off ſuch other Heads

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Heads of the Poppies, as are become large enough; and, at the ſame time, cut off Pieces of two or three Inches Length from the Stalks of thoſe formerly cut. This cutting of Heads and Pieces of Stalks I perform every ſecond or third Day, till I obſerve no more Juice riſe in the Stalks, keeping them always in a Baſket ſome Days, and drying them afterwards as the firſt Heads were, that all the Juice may be ſaved; only preſerving ſome few of the beſt-grown Heads, and allowing them to ripen fully, that I may have Seed for ſowing next Year.

The dried Heads and Stalks being cut and bruiſed, I infuſe them ſome Hours in boiling-hot Water, and then boil them three or four Hours; after which, I ſtrain the Liquor ſtrongly out, and allow it to depurate, by the groſſer Parts ſubſiding, for a Day or two. The clear Liquor, which is poured off, I clarify with Whites of Eggs, and boil in the common Way of making Extracts, till it comes to the Conſiſtence of Honey. Some of it I keep in this Form; but I put the greater Part near to a Fire, or in a Sand-heat, till it becomes as thick as the Extract of Opium, taking great care, that it ſhall contract no Empyreuma. Out of five or ſix Pounds of the dried Heads, and Cuttings of the Stalks, I have had a Pound of the Extract, which is of much leſs Price than Opium.

The Doſe of this Extract muſt be double to that of *Turky* Opium, to anſwer the ſame Intentions, which it does, without inclining Patients to thoſe Ravings, or giving them the Nauſea or Giddineſs which common Opium does. This I attribute to the groſſer viſcous Parts being ſeparated by ſubſiding, and with the Whites of the Eggs.

I prefer the Syrup of Poppies made with this Extract, to any made in the common Way; for, beſides that I can make it with much leſs Trouble than the common Syrup, and therefore prepare it freſh more frequently than Apothecaries will incline to make the common Syrup, ſo that mine has no Chance of turning ſour, or of candying; mine has other Advantages: For it does not ferment, as the other does, when moved, or in a warm Place; and what principally makes me prefer it is, that I am certain to have it always of the ſame Strength; whereas the Doſe of the other muſt be very uncertain, ſince different Poppies have very different Proportions of the narcotic Juice.

In preparing the Syrup with this Extract, I mix ſuch a Proportion, as that an Ounce of the Syrup ſhall contain two Grains of the Extract, equal to a Grain of common *Turky* Opium.

That Part of the Decoction, which I mentioned to be preſerv'd in the Conſiſtence of Honey, is nearly half ſo powerful as the Extract; and is kept to ſave the Trouble and Time of diſſolving Opium, or the Extract, when preſcribed in Electuaries, Liniments, Plaiſters, and the like, where the Opium requires to be intimately and equally mixed with the other Ingredients of the Compoſition. *Medical Eſſays.*

PAPAVER CORNICULATUM. A Name for ſeveral Sorts of GLAUCIUM.

PAPAVER HERACLEUM. A Name in *Boerhaave* for the *Cyanus*; *Segetum*; *flore cæruleo.*

PAPAVER SPUMEUM. A Name for the *Lychnis*; *ſylveſtris*; *quæ Been album vulgo.* See BEHEN ALBUM.

PAPAYA.

The Characters are;

The Trunk is ſimple, or without Branches, and only ſhoots forth Pedicles for Leaves, which are jagged like thoſe of the *Ricinus.* The Flower is male, naked, tubulated, and multifid, conſiſting of five long narrow Segments, which are expanded in the Form of a Star: This Flower is furniſhed with a Multitude of Stamina, and grows on a ſeparate male Plant.

On another Plant, which is female, the End of the Pedicle opens into a ſmall, dentated Calyx, on which grows the Reſemblance of a pentapetalous Flower (if it ought not rather to be called a Pericarpium) deſtitute of Stamina. In the Bottom of this Flower, or Pericarpium, is ſeated the Ovary, furniſhed with a quinquefid open Tube, (the Segments evolved into foliaceous Fimbriæ) which becomes a carnous, ſtriated Fruit, like that of the Melon, with a thick Rind, and a Pulp every-where abounding with ſtriated Seeds, covered with an Involucrum.

Boerhaave mentions two Species of *Papaya*; which are,

1. Papaya; fructu Melopeponis effigie. *Plum.* 659. *Papayamaram.* H. Mal. 1. 23. *Platanus, ſecunda, ſeu Arbor, Platani folio, fructu Peponis magnitudine eduli.* C. B. P. 431. *Papaye Peruvianis.* J. B. 1. 147. *Mamæra fœmina.* Park. Theat. 1649. Raii Hiſt. 2. 1370. THE FEMALE PAPA-TREE.

Some eat the Fruits raw; but thoſe of a more delicate Taſte eat them prepared with Sugar. They ſtrengthen the Stomach, and promote Concoction. *Raii H. P.*

2. Papaya; *mas. Mamæra*; mas. Park. Theat. 1649. Raii Hiſt. 2. 1370. THE MALE PAPA-TREE. *Boerh. Ind. alt. Plant. Vol.* 2.

PAPAYAMARUM. A Name for the *Papaya*; *fructu Melopeponis effigie.*

PAPILIO. A Butterfly. Hence certain Flowers are call'd Papilionaceous; becauſe, in ſome meaſure, they reſemble a Butterfly, with its Wings expanded. They always conſiſt of theſe four Parts; the *Vexillum*, or Standard, which is a large erect Segment, or Petal; the Alæ, or two Wings, which compoſe the Sides; and the Carina, or Keel, which is a concave Petal, or Segment, reſembling the lower Part of a Boat; this Keel is ſometimes entire, and ſometimes it conſiſts of two Petals, or Segments, adhering pretty cloſely together: Of this Tribe are Peas, Beans, Kidney-beans, Vetches, and other leguminous Plants. *Miller's Dictionary, Vol.* 1.

PAPILLA. The Nipple of the Breaſt. See MAMMA. *Peyer* calls the Inteſtinal Glands by the Name of PAPILLÆ.

In the Skin there is an infinite Number of *Papillæ pyramidales.* They are the Ends of all the Nerves of the Skin, each of which are incloſed in two or three Covers of a pyramidal Figure, and theſe Covers are each above another. They may be eaſily ſeen and ſeparated in the Skin of an Elephant, and in the Skin of the Feet of ſeveral other Animals. *Keill's Anatomy.*

PAPILLARE OS. The *Os Sphenoides.*

PAPILLARES PROCESSUS are the Extremities of the Olfactory Nerves, inſerted into the mucous Membrane of the Noſe.

PAPIO, or PAVIO. A large Species of Monkey, which is found in *Ethiopia*; the Fat of which is ſaid to be reſolvent. *Lemery des Drogues.*

PAPPA. Paſteboard. *Heiſter. Chirurg.*

PAPPUS. The Down of the Seeds of Plants. Hence Plants, whoſe Seeds, when ripe, are furniſh'd with Down, are call'd *Pappoſe*, or *Pappeſcent.*

PAPULA. A Pimple, or ulcerous Tubercle.

PAPYRUS. Offic. *Papyrus Nilotica.* A. B. 2. 506. Ger. 37. Emac. 40. Raii Hiſt. 2. 1302. *Papyrus Nilotica Alpina.* Berd *Ægyptiis dicta*; Biblos *Syriaca quorundam.* Chab. 195. *Papyrus Nilotica ſive Ægyptiaca.* C. B. P. 19. Theat. 334. *Papyrus Antiquorum Nilotica.* Park. Theat. 1207. *Cyperus Niloticus vel Syriacus, maximus papyraceus.* Hiſt. Oxon. 3. 239. THE PAPER-TREE.

Of the *Papyrus*, in antient Times, was made Paper for the Uſe of Writing; the Way of Preparation may be found in *Pliny, Lib.* 13. The *Papyrus*, alſo, before the Diſcovery of Fruits, was the Food of the *Egyptians:* On this they fed both raw, boil'd, and roaſted, chewing it in their Mouths, and ſwallowing the Juice; but ſpitting out the reſt. Of the *Papyrus* they made Furniture for their Beds, Sails for their Shipping, Utenſils for their Houſes, and Shoes for their Prieſts; and, of its Flowers, they made Garlands to crown their Gods; and the Root ſerved for the ſame Purpoſes as Wood. Their Surgeons, as we are informed, by *Proſper Alpinus*, now uſe the medullary Subſtance of the Leaves, to dilate the Mouths of Ulcers: The Trunk, burnt to Aſhes, cures recent Ulcers, and prevents the Increaſe of Malignity in others, being ſprinkled thereon; and the diſtilled Water of the recent Trunk is very effectual againſt Cataracts, and Dimneſs of Sight. *Raii Hiſt. Plant.*

PAR, when applied to Days, imports even. See ARTIOS. When uſed in Preſcriptions, it ſignifies, *a Pari*, or *Two.* Some Medicines are call'd *ſine Pari*, without an Equal, on account of their ſuppoſed Virtues.

PARA, παρὰ, a Prepoſition of much Uſe and Significancy in medicinal Terms, which are compounded, wherein it generally deſtroys or diminiſhes the Force of the ſimple Word, or implies ſome Deficiency, or Degeneracy from a State of Integrity, tho' ſtill with a Reſerve of ſome Meaſure of Goodneſs. Inſtances to this Purpoſe will appear in ſome following Articles.

PARABOLANI. A Name given to thoſe who attended the Neceſſities of the Sick in the Hoſpitals eſtabliſhed by the firſt Chriſtian Emperors: The moſt natural Derivation of the Word, is, from παραβάλλω, *Parabolos*, ſignifying *bold, hard, venturous*; becauſe thoſe poor People expoſed their Lives and Health in attending the Sick, eſpecially when they laboured under contagious Diſtempers.

Godefridus ſuppoſed the *Parabolani* to be ſome of the Clergy, or Eccleſiaſtics; becauſe there is mention made of that Office in the Code, under the Title *de Epiſcopis & Clericis*; Perhaps ſome Eccleſiaſtics had taken upon them ſuch an Employment; but it is probable, they were not the only Perſons; It is poſſible, alſo, as ſome learned Men have thought, that thoſe who entered into that Order, did it in conſequence of ſome Vow, or from a Principle of Religion. But the Reaſon why the *Parabolani* are mentioned in the Code, under the Title aboveſaid, is, becauſe the Election of theſe People depended upon the Biſhops. The Number of *Parabolani* for the City

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of *Alexandria* was regulated at six hundred, as may be infer'd from the Law in the Code, which, alſo, obliges them to be upon continual Duty near the Sick, or in the Hoſpitals, whence they were never to depart, in order to be preſent at the Shews to which all the People were invited, or to go to the Palace to hear Cauſes tried, which was permitted to all Sorts.

Further, it appears by the proper Terms in which the Laws ſpeak of the *Parabolani*, that the Word was in Uſe, and the Office eſtabliſhed, before the Laws were made; ſo that the Emperors *Theodoſius* and *Juſtinian* ſeem to have done no more than regulate the Manner of Elections, the Number, and the Office of thoſe People, whoſe Name might be very antient, tho' the Regulation concerning that Office might be new.

Another thing worthy Obſervation is the groſs Miſtake of thoſe who took the *Parabolani* to be Phyſicians, properly ſo called. What gave Occaſion to this Error, is the Word *curare*, in the Laws where mention is made of the Buſineſs about which they are employ'd, which ſignifies as well *to cure*, as *to take care of*; but it is evident, that the Word in that Place can only be taken in the latter Senſe, and that *Curare Debilium ægra Corpora*, which are the very Words of the Law, mean no more than to take care of the weak and infirm Bodies of the Diſeaſed. To this may be added, that if the *Parabolani* had been Phyſicians of the Hoſpitals, their Elections would not have depended on the Biſhops and Prieſts: The *Archiatri*, or principal Phyſicians, of the great Cities would have been the Perſons concerned in chuſing them; becauſe theſe *Archiatri* were themſelves obliged to viſit the Poor. *Le Clerc, Hiſtoire de la Medicine.*

PARABOLICUS IGNIS. The Heat of the Sun, collected by means of a concave Mirror. *Collect. Chym. Leidenſ. Prolegom. Cap.* 2.

PARACELSUS. The Name of a celebrated Phyſician and Chymiſt, an Abſtract of whoſe Life and Doctrine we have given in the Preface.

PARACENTESIS, παρακέντησις, from παρακεντέω, to make a Perforation. The Name of a chirurgical Operation, which conſiſts in making a Perforation in the Abdomen, in a Dropſy, in order to evacuate the Water in an *Aſcites*. See HYDROPS. The Perforation of the Breaſt, in order to let out extravaſated Blood, Water, or Pus, is, alſo, called *Paracenteſis Pectoris*.

PARACMASTICOS, παρακμαστικός. Declining. See ACMASTICUS.

PARACME, παρακμή, from παρά, and ἀκμή, which ſee. The Decline, uſed generally with reſpect to a Diſeaſe, or the Age of a Perſon.

PARACOE, παρακοή. Dulneſs of Hearing.

PARACOLLETICOS, παρακολλητικός. Agglutinating.

PARACOPE, παρακοπή, from παρακόπτω, to be delirious. In *Hippocrates*, it imports a ſlight Delirium, or any Alienation of Mind.

PARACRUSIS, παράκρυσις, from παρακρύω, to be a little delirious. This imports much the ſame as *Paracope*. Hence the Adjective, παρακρυσικὸς, ſomewhat delirious.

PARACYNANCHE. A Species of Quinſey. See ANGINA.

PARADISI GRANA. See CARDAMOMUM.

PARAGOGE, παραγωγή, from παρά, importing near to, and ἄγω, to bring. An Approximation or Reduction of the Bones.

PARALAMPSIS, παράλαμψις. A Cicatrix in the tranſparent Part of the *Cornea* of the Eye; from παραλάμπω, to ſhine a little.

PARALIUS. A Species of *Tithymalus*, mentioned by *Dioſcorides*, *L.* 4. *C.* 165.

PARALLAXIS, παράλλαξις, from παραλλάσω, to change mutually. A mutual Change in the Situation of the Parts of a broken Bone, as when the two Fragments ſlip to the Sides of each other. See FRACTURA.

PARALLELA. A ſort of Scurf, or Leproſy, affecting only the Palms of the Hands. It is a Symptom of the Venereal Diſeaſe. *Caſtellus* from *Foreſtus*.

PARALOPHIA, from παρά, near, and λοφία, the Eminence of the Back, is the lower and lateral Part of the Neck, according to *Keil*.

PARALYSIS, from παραλύω, to diſſolve, or weaken. A Palſy.

Among the Diſeaſes ariſing from the Want of a due Tone of the Viſcera, and ſolid Parts, none are more conſiderable than ſuch as affect the Head, and Parts ſituated therein: And, of theſe, the moſt important are, thoſe Reſolutions of the Nerves, commonly, by Phyſicians, called an Apoplexy, an Hemiplexy, and a Palſy; which three Diſorders are ſo nearly connected, that we ſhall conſider them in one joint View.

That all theſe Diſorders affect Senſation and Motion, the primary Organs of which are, the Nerves, and the nervous and membranous Parts formed of them, is univerſally allowed. Now a Nerve is compoſed of tender Ducts, which convey an highly ſubtile Fluid, and are covered with a Membrane ariſing from the Meninges of the Brain. This Membrane, which ſurrounds them, is furniſhed with all kinds of Veſſels, thoſe of the lymphatic Kind not excepted; for which Reaſon it is capable of being inflamed, and rendred tumid, according to *Boerhaave*, in *Prax. Med.* and *Bartholomæus de Moor. Pathol. Cerebr. Cap.* 10.

What Cauſe communicates Senſation and Motion to the Body, by means of the Nerves, is much diſputed; but, in my Opinion, it can be no other than an highly ſubtile and lymphatic Fluid, impregnated with a pure aereal, ethereal, and elaſtic Subſtance; which, being ſecreted within the ſmall Ducts of the Brain, Cerebellum, and ſpinal Marrow, is convey'd not only into the ſmall Tubes of the nervous Fibres; but, alſo, from theſe to the Nerves themſelves; and, at laſt, to all the nervous Parts of the Body. This Fluid, when convey'd in a due Quantity, and with a proper Impetus, to the Nerves, and nervous Membranes, produces a certain Tenſion thereof; and, when this Tenſion is in its due State, Senſation and Motion are rightly performed thro' the whole Body; and the Nerves themſelves are ſaid to be poſſeſſed of their natural Tone and Elaſticity. The Nerves are ſaid to be robuſt, when their moſt minute conſtituent Particles cohere in ſuch a manner, that they are capable of ſurmounting the natural, or perhaps, a ſomewhat greater Force of the Fluids; but if, in conſequence of a too lax Coheſion, they are overcome by this Force, the nervous Syſtem is ſaid to be weak.

A Nerve naturally tenſe is always full of its proper Fluid: Hence, when its moſt remote Extremity is but gently touch'd, according to the Laws of Hydraulics, it, with an incredible Celerity, conveys the Motion impreſſed upon it to the Brain, and Common Sentory, juſt as a ſmall Tube full of Water, and covered at each End with a Piece of Bladder, has the Motion of its contained Fluid inſtantaneouſly convey'd to one End, upon preſſing the other with the Finger. This is, properly, what we call Senſation. The Inſtruments of voluntary Motion are the Muſcles, which are compoſed of nervous, tendinous, and fleſhy Fibres, every-where interwoven with nervous Fibrils, and which perform their Offices in the following manner: The nervous, tendinous, and fleſhy Fibres ought to be ſo ſtretched and filled with Lymph, as in ſome meaſure, to retard the Blood paſſing thro' the Muſcle. And the Blood, thus ſtopping, inflates the Belly of the Muſcle; and this becoming turgid, the Muſcle is ſhortened, and its Extremity, together with the moveable Parts adhering to it, are down towards its Origin. Hence, when the Muſcle is in Action, it is harder, and, as, it were, reſiſts the Touch. Hence we infer, that, in order to Motion, a greater Force, and more copious Influx, of the nervous Fluid are requiſite, than to Senſation.

From what has been ſaid, 'tis certain, that, by a Diminution of the Influx of the nervous Fluid into the Nerves, their Action, both as to Motion and Senſation, muſt be either totally aboliſh'd, or, at leaſt, in a great meaſure, hinder'd. From this Cauſe ariſe the Diſorders comprehended under the common Name of a Reſolution of the Nerves; by which we underſtand an Inability of performing Motion and Senſation, ariſing from a diminiſhed Influx of the nervous Fluid into the Nerves. Of this there are various Degrees, of which we ſhall conſider two, as the moſt general; for either the voluntary Motions, the animal Actions, and the Uſe of Reaſon, are deſtroy'd, and the Patient drops down, as thunderſtruck; or, the Cauſes and Reaſon remaining entire, the voluntary Motions, and animal Actions, or at leaſt the Senſe of Touch, become languid, or are totally deſtroy'd: In the former Caſe, the Patient is apoplectic; and, in the latter, paralytic.

Of Apoplexies, there are three Degrees, the higheſt, and univerſally mortal Degree of which is, when, together with the Senſes, and all the animal Motions, all the vital Actions of the Body are at once deſtroy'd. See APOPLEXIA. Another Degree of this Diſorder removes the Uſe of the Senſes, voluntary Motions, and Reaſon; but does not deſtroy the vital Actions, nor always terminate in Death; but is generally converted into an Hemiplegy. The third and ſlighteſt Degree of this Diſorder, which we call a ſpaſmodic Apoplexy, diſcovers itſelf by the ſame Signs with the ſecond; only it is removed in a ſhorter time, and does not ſo often degenerate into paralytic Diſorders. And this ſlighter Degree of an Apoplexy we ſhall principally here conſider.

This Species, therefore, of Apoplexy diſcovers itſelf by theſe Marks: It is, for a conſiderable time, preceded by a Weakneſs of the Senſes, eſpecially the Sight and Hearing; a Vertigo, Liſtleſſneſs of the Joints, a Tremor, a Torpor of the animal Actions, and, generally, hypochondriac and hyſteric Diſorders. During this State, the Patient, being ſuddenly and unexpectedly deprived of his Reaſon, all his Senſes, and animal Motions, drops down; his Feet, and inferior Limbs, are cold, his Skin dry and

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and ſpaſmodically conſtricted, his Face and Eyes red and turgid with Blood, and his Pulſe ſtrong and quick. Patients labouring under ſuch a Paroxyſm for ſome Hours either ſpontaneouſly vomit up a large Quantity of viſcid Sordes, or have their whole Bodies covered with a Sweat; after which they return to themſelves, and recover their Reaſon, Senſes, and a Power of Motion. Many inform us, that under ſuch a Paroxyſm their Fauces have been conſtricted, a Power of Deglutition deſtroy'd, and their Breaſts, as it were, confined with Cords: Such a Paroxyſm, unleſs cured, returns frequently, and at laſt terminates in a fatal Hæmorrhage of the Brain.

On the contrary, an Hemiplegy is, when the Reaſon and vital Motions remaining, the Power of voluntary Motion, or with it, the Senſe of Touch, is weakened. That ſuch an Hemiplegy, or Palſy, is univerſal, or affects the whole Body, I deny, unleſs perhaps under an Apoplexy: Nor do I believe, that a Paraplegy can affect the whole Body, the Head remaining unaffected; at leaſt, ſuch a Diſorder never occur'd to me in Practice; for every Palſy rather affects the Whole of one Side of the Body, and deprives it of Senſation, or is only confined to one particular Part. It is called an Hemiplegy, when the Half of the Head and Face is paralytic; and, in the other Caſe, it is called a Palſy of either Side; and, in the laſt Caſe, it is called a particular Palſy; which is either genuine, or ſpurious: The former has its Seat ſometimes in the ſuperior, ſometimes in the middle, and ſometimes in the inferior Parts of the Spinal Marrow; in ſome meaſure, deprives the Patient both of a Power of Senſation, and Motion; and ariſes from a Tranſlation of the Humours to the Nerves, which are compreſſed by them.

An Hemiplegy either ſucceeds an apoplectic Fit, or happens without it; and begins with a Refrigeration of the Side to be affected, and a preceding Vertigo; and gradually terminates in an Abolition of Senſation and Motion. The ſound Side is often racked with ſpaſmodic and convulſive Motions; the Mouth is frequently diſtorted, like that of a Dog; and as the Diſorder proceeds, the Functions of the Mind, and eſpecially the Memory, begin to be weakened. According to *Cœlius Aurelianus*, in *Chron. Lib.* 2. *Cap.* 1. a particular Palſy is preceded by a Senſation of Weight in the Part about to ſuffer, a ſlow Motion accompanied with Stupor, Paleneſs, and Torpor; the Part affected is lax, flaccid, ſoft, and cold to the Touch, as it is affected with an Atrophy, or an œdematous Tumor. But we are by no means to confound that Inability of voluntary Motion, which accompanies a Palſy, with that which is ſometimes joined with rheumatic and arthritic Diſorders; for we often find this laſt Inability accompanied with Spaſms and Convulſions, Symptoms quite foreign to paralytic Indiſpoſitions.

A particular Palſy affects various Parts; for ſometimes the inferior Limbs, together with the Parts of the Abdomen, are deprived of Motion, and ſometimes both of Motion and Senſation, whilſt the Parts above the Diaphragm remain entire; then the Urine and Fæces are diſcharged involuntarily, after which an œdematous Tumor, a ſlow Fever, and, at laſt, Death, ſucceed; ſometimes the Arms and Hands are afflicted with a Palſy; which, if ſpurious, or happening after a Colic, is called a Palſy ariſing from the Colic; but, when it ariſes from other Cauſes, it is call'd a Palſy of the Hands: There is, alſo, a Palſy of the Eye-lids, in which Caſe they cannot be ſeparated, and there is an involuntary Diſcharge of the Tears: A Palſy of the Tongue is called APHONIA; which ſee. When the Pharynx is affected with a Palſy, all Deglutition is deſtroy'd; and this Species of Palſy is different from Spaſms of the Pharynx. In dying Perſons, the Oeſophagus, Stomach and Inteſtines, become paralytic; and, in this Caſe, every thing ſwallowed, eſpecially Liquors, deſcend with a kind of Noiſe and Rumbling: A Palſy of the Sphincter Ani diſcovers itſelf by a Falling down of the Inteſtinum Rectum, and an involuntary Diſcharge of the Fæces; that of the urinary Bladder, by an involuntary Evacuation of the Urine; that of the ſpermatic Veſſels, by a perpetual Effuſion of the Semen; and that of the Muſcles of the Penis, by the want of a due Erection. *Cœlius Aurelianus*, in *Chron. Lib.* 2. *Cap.* 1. informs us, that *Herophilus*, among the Antients, mentioned a Palſy of the Heart ſucceeded by ſudden Death, without any evident Cauſes. And, among the Moderns, *Boerhaave*, in *Prax. Med. P.* 5. affirms, that the ſame may happen.

That the proximate and formal Cauſe of theſe Diſorders conſiſts in a more or leſs intercepted Influx of the nervous Fluid into the Nerves, is ſufficiently obvious from what has been already ſaid: Hence, alſo, appears the Reaſon, why ſome Palſies are legitimate, and others ſpurious; for the latter happens more readily than the former, becauſe an Abolition of Senſation ſuppoſes an almoſt total Defect of the nervous Fluid, whereas an Inability of Motion is produced by a diminiſh'd Influx of this Fluid into the Nerves. 'Tis, therefore, neceſſary we ſhould carefully inveſtigate the ſeveral Cauſes capable of retarding ſuch an Influx: Many Phyſicians have accuſed an Obſtruction of the Nerves; but that this Opinion is falſe, is evident not only from the Smalneſs of the Nerves, but, alſo, from the Subtilty of the Fluid they contain, as *Bartholomæus de Moor, in Path. Cer. Cap.* 10. has demonſtrated at large. But the true Cauſe is rather a Solution of Continuity in the Nerves, as in Wounds, and violent Contuſions, or a Compreſſion of the Nerves, or their Origins, by any thing preternaturally acting upon them. But as all Palſies proceed from this common Cauſe, which, however, produces different Effects, we muſt inquire, to what this Diverſity is owing.

That this, therefore, is to be accounted for from the Diverſity of the Parts affected, is obvious, not only from Reaſon, but, alſo, from the anatomical Diſſections of thoſe who have died of theſe Diſeaſes; for all who have made Obſervations of this Kind, ſuch as *Willis*, *Bonetus*, and *Wepfer*, have univerſally obſerv'd, that, in Perſons who died of an Apoplexy, the Cauſe of the Diſeaſe was lodged in the Brain, and its Ventricles, as, alſo, in the Cerebellum. *Brunnerus, in A. N. C. An.* 1. *Decad.* 3. *Obſ.* 153. & 154. gives us two celebrated Hiſtories of Apoplexies, which prov'd mortal, the one proceeding from a Dropſy of the Brain, and the other from Blood extravaſated in it. On the contrary, the ſame Authors inform us, that in hemiplectic Patients, one Side of the Origin of the ſpinal Marrow is found overflowed with extravaſated Serum, or compreſſed by Tumors. *Bonetus, in Sepulchr. Lib.* 1. *Sect.* 15. gives us Inſtances of the Extravaſation of Serum in theſe Parts. And *Wepfer, in Auctario, Hiſt.* 14. and *Brunnerus*, in the Work already quoted, *Obſ.* 154. inform us, that they ſaw encyſted Tumors there. 'Tis needleſs, in Confirmation of this Doctrine, to mention Abſceſſes, Wounds, and Ulcers, which, by affecting the ſpinal Marrow, have produced an Hemiplegy; and, by penetrating into the Brain, an Apoplexy. Beſides, if from Anatomy we find, that the Nerves deſtin'd for the vital Functions ariſe from the Cerebellum, thoſe ſubſervient to the Senſes from the Baſe of the Brain, and thoſe ſubſervient to the voluntary Motions, and the Senſe of Touch, principally from the ſpinal Marrow, we may readily infer, that, in all Apoplexies, the Cauſe compreſſing the Nerves is within the Brain; but in a Palſy, within the ſpinal Marrow; and particularly that, in an Hemiplegy, it is lodged about one Side of the Origin of the ſpinal Marrow.

But, among the Cauſes which produce a Compreſſion of the Nerves in the Brain, and intercept the Influx of the highly ſubtile and moveable nervous Fluid into them, the moſt conſiderable is generally a Stagnation of the Blood in the Veſſels of the Membranes of the Brain: And this Stagnation ariſes from a retarded Motion of the Blood through the Veins, and venous Sinuſes, and its ſlow Return to the Heart; for, when the Blood is convey'd to the Head with a greater Impetus and Effort than that it can be received into the Veins, on account of the too great Diſtention and Expanſion of the Veſſels it becomes ſtagnant; and this principally happens in plethoric, hypochondriac, nephritic, and hyſteric Patients, on account of the violent Spaſms of the inferior Parts. Sometimes a gentle Species of Apoplexy, call'd *Spaſmodic*, is produced by this Means, becauſe in this, when the Spaſms remit, the Maſs of Blood is derived to the inferior Parts, and the free Circulation of the Humours through the Veſſels is reſtored, the Force of the Diſeaſe generally forthwith remits. And this principally happens when a Vein is ſeaſonably open'd, and the Body render'd ſoluble by a Clyſter. Under ſuch a Paroxyſm, the Face is generally red, the Pulſe quick and full, Motion and Senſation are aboliſhed, and ſometimes the whole Body is covered with a profuſe Sweat.

But if this Stagnation continues long, and happens in Patients who abound with Serum, the thinner ſerous Juices are gradually ſecreted through the Pores of the preternaturally expanded Veſſels, act upon the Nerves, and compreſs them. If this happens in the Baſe of the Brain, an Apoplexy is produced. The other Degree of an Apoplexy, produced by a Conveyance of Serum to either of the Crura of the Medulla Spinalis, generally leaves an Hemiplegy after it. This Diſorder is from the ſame Cauſe generated without any previous Apoplexy, if the Serum ſeparating from the ſtagnant Blood immediately falls upon the ſpinal Marrow. Such an Hemiplegy is called *Serous*, and principally ſeizes pituitous, ſanguine, and phlegmatic Perſons. Under it, the Pulſe is languid and weak, the Face pale, and the Patient afflicted with a kind of Drowſineſs, and Torpor of the Senſes. Phyſicians, and, among the reſt, *Cœlius Aurelianus*, in *Chron. Lib.* 2. *Cap.* 1. have juſtly obſerved, that it is moſt familiar to old Perſons, eſpecially in the Autumn and Winter.

Among the more remote Cauſes, which, according to the Diverſity of Conſtitutions, produce ſometimes a ſerous, and ſometimes a bloody Hemiplegy, the moſt conſiderable is too large a Quantity of Blood in active Perſons, and ſuch as have

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the Misfortune of a lax and ſpongious Habit of Body. This Redundance of Blood is the more ready to induce theſe Diſorders, the more the Humours are put into a Commotion; for theſe, when in too violent an Ebullition, too much expand the tender Veſſels of the Brain, and are ſometimes abſolutely extravaſated. Hence 'tis eaſy to aſſign a Reaſon, why plethoric Patients are ſuddenly ſeized with theſe Diſorders after an immoderate Uſe of Venery, liberal drinking of hot Wine, the Uſe of too hot Baths, violent Exerciſe in an hot Air, or expoſing themſelves to the Sun, as we are told by *Proſper Martianus* in his Comment; as, alſo, why theſe Diſorders are brought on by violent Commotions of Mind, and Surfeits, eſpecially if the Body is expoſed to Cold: And I myſelf know Inſtances of Perſons, who, after drinking too copiouſly of Wine or Ale, and expoſing themſelves to the Cold, have ſuddenly died of Apoplexies.

Beſides, a Redundance of Blood contributes to bring on Palſies, when the Blood, by Spaſms of the inferior Parts, produced by any Cauſe, is forced to the ſuperior Parts, and eſpecially the Head, and there ſtagnates. Hence we are to account for a ſpaſmodic Apoplexy, and a ſanguineous Hemiplegy, which happen to hypochondriac and hyſteric Patients; a memorable Inſtance of which is found in *Fred. Hoffman. Conſult. Med.* For this Reaſon 'tis, alſo, often obſerved in Practice, that the Menſes, and hæmorrhoidal Diſcharge, when not duly carried on, contribute much to the Production of Palſies. Paralytic Diſorders ſcarce ever fail to be excited by a ſudden Stopping of any Evacuation of Blood, when actually flowing; ſo that they are very often brought on under the Menſes, Hæmorrhoids, and Lochia, by violent Frights, exceſſive Cold, and the prepoſterous Uſe of Aſtringents, Repellents, and Opiates.

Thus the Blood by its Stagnation produces Palſies and Apoplexies, though, for the moſt part, of the ſanguineous and tranſitory Kind; but, in Proceſs of Time, ſerous and longer protracted Palſies and Apoplexies. But theſe are immediately produced by a ſerous Colluvies, too copiouſly congeſted in the Head, and acting on the Origins of the Nerves. Hence 'tis certain from Experience, that violent Palſies are produced by ſuddenly checking and ſuppreſſing ſerous Excretions, critical Sweats, inſenſible Tranſpiration, an immoderate Diſcharge of the Saliva, whether ſpontaneous, or excited by Mercurials, ſerous Diſcharges from the Ears, Eyes, and Noſtrils, inveterate Ulcers, Fontanels, and a fetid Diſcharge from the Feet. For this Reaſon Infants, otherwiſe free from ſuch Misfortunes, are ſubjected to paralytic Diſorders: Thus an Inſtance of a Palſy produced in a Boy of two Years old, by a Suppreſſion of Tranſpiration, is found in *Fred. Hoffman, Conſult. Med. Sect.* 1. *Cap.* 26. For the ſame Reaſon, long Walking, or continuing in cold and moiſt Places, contributes to the Production of Palſies. Memorable Inſtances of this are found in *Foreſtus, Lib.* 10. *Obſ.* 83. & 84. To this, alſo, belongs that memorable Caſe in *A. N. C. Decad.* 3. *An.* 7. & 8. *Obſ.* 203. where we have an Account of a Man of Seventy, who, after a Deafneſs ſuddenly ceaſing, was ſeized with an Apoplexy of the Right Side; which was only owing to a Tranſlation of the Serum the firſt Cauſe of the Deafneſs, to the ſpinal Marrow of the Right-Side.

Theſe Diſorders will be the more terrible, if the Serum conveyed to the Head is acrid, ſcorbutic, and prepoſterouſly recal'd from the Joints and Skin by repellent and ſulphureous Ointments: Hence there are various Inſtances of Achors, Cruſta Lacteas, Tineas, Itches, and Purple Fevers, which, when repel'd, have been immediately ſucceeded by Palſies: The ſame holds true with reſpect to arthritic, gouty, and rheumatic Diſorders, which, as is ſufficiently known, are ſupported and cheriſhed by an acrid Serum lodged about the membranous Parts of the Joints; for if this Serum is either by Opiates, or Aſtringents, uſed to alleviate the Pain, repelled, or if it recedes through a natural Imbecillity, it proves the Cauſe of the moſt obſtinate Palſies. Thus an Inſtance of an Hemiplegy, ariſing from a rheumatic and arthritic Diſorder, is found in *Fred. Hoffman. Conſult. Med. Caſ.* 21. To this Claſs evidently belongs the ſcorbutic Palſy, which is always ſpurious, and derives its Origin from an acrid ſcorbutic Serum ſtagnating about the Beginnings of Nerves, and compreſſing them. Such, alſo, is the Nature of Mercurials, that, when prepoſterouſly uſed in weak and impure Habits, in order to promote a Salivation, they induce Palſies; for Mercury, when mixed with the ſaline and excrementitious Particles of the Body, acquires a ſtrongly ſtimulating Quality, by which it principally acts on the nerveo-fibrous Subſtance of the Glands, and excites a greater Afflux of the ſalival and lymphatic Humours. If the Diſcharge of theſe from the Mouth is by any Cauſe ſuddenly ſtopt, it eaſily happens, that, whilſt the Afflux continues, theſe Juices are too copiouſly convey'd to the Origins of the ſpinal Marrow, and the Nerves themſelves, where by ſtagnating, and compreſſing them, they hinder the Influx of the nervous Fluid into them.

Spaſms of the Membranes ſurrounding the Brain, and ſpinal Marrow, alſo, frequently lay a Foundation for hemiplectic and apoplectic Diſorders: The Reaſon of which is no other than this, that the nervous Membranes, agitated by ſo violent Motions, are weaken'd, relaxed, and render'd incapable of hindering the Juices which enter them, however lymphatic and thin, from ſtagnating in the Veſſels of the Membranes, and compreſſing the medullary Subſtance. Hence Experience informs us, that an Epilepſy is frequently ſucceeded by an Hemiplegy, which, if fatal, always terminates in an Apoplexy. And what ſhould be the Cauſe, that a great Fit of Anger is ſometimes ſucceeded by paralytic Affections, but that, by means of this violent Paſſion, there is a ſtronger Conſtriction of the Nerves and Veſſels, producing that Stagnation of the Humours, which is ſo ſubject to intercept the Influx of the nervous Fluid?

All theſe Cauſes exert their pernicious Force with the greater Eaſe and Certainty, if they meet with a Flaccidneſs of the Brain, and a Debility of the nervous Frame: For, if the nervous Parts are too lax, they are the leſs able to reſiſt an Inundation of Humours; but, on the contrary, are in a ſurpriſing manner diſpoſed for their Stagnation and Extravaſation. A Weakneſs of the Nerves may be known from antecedent Cauſes, ſuch as Old-age, a ſanguine Temperament, and from thence a lax, ſoft, and ſpongy Habit of Body; a ſedentary and idle Life; too ſcanty an Uſe of Liquors, or too great an Indulgence of thick hopt Malt Liquor, or Wine; rich and plentiful Feeding, too much Sleep, as well as immoderate Wakefulneſs, much Study and Meditation, Indulgence in Venereal Pleaſures, Sorrow and Grief of long Continuance, an Habitation in cold and moiſt Places, and a wintry Seaſon. Bodies thus weaken'd, are by the ſlighteſt Cauſe, and what ſeems not worth Attention, diſpoſed to Palſies and Apoplexies; as it happen'd, for Inſtance, to a certain Perſon, who, after drinking the *Selteran* Waters, tho' in a regular Manner, and with a Body well prepared, was ſeized with an apoplectic Fit, which left behind it a ſpurious Palſy.

Having premiſed theſe things relating to an Hemiplegy, we are now to treat of the particular Species of a Palſy. And here, thoſe which deſerve our chief Attention are, ſuch as affect the lower Parts of the Body, or only the Legs and Feet, or the Abdomen, and all the Parts ſeated below the Diaphragm, the Parts above it remaining ſound and unaffected. In the latter Caſe, the Cauſe is lodged in the ſpinal Marrow, about the firſt Vertebræ of the Loins, as is ſufficiently demonſtrated by the Diſſections of the two Patients who died of this Diſorder, and the Accounts of which we have in *A. N. C. Vol.* 2. *Obſ.* 51. & 120. In one of theſe Patients the ſpinal Marrow, about the firſt Vertebræ of the Loins, was ſhatter'd and diſſolv'd for more than half its Thickneſs. In the other, the ſpinal Marrow, thro' the whole inferior Part of the Spine, was ſo flaccid, and deſtitute of Juice, that there was a conſiderable Interſtice between it and the Bone. This Diſorder ariſes either, firſt, from external violent Cauſes, ſuch as Fractures, Laxations, or Wounds of the Spine, at the ſame time affecting the Marrow; two Caſes of which Kind are found in *A. N. C. Cent.* 10. *Obſ.* 8. & *Dec.* 1. *An.* 3. *Obſ.* 66. or, ſecondly, from internal Cauſes, and eſpecially rheumatic, or convulſive Diſorders of the Back; as is obvious from the memorable Caſe before quoted from *A. N. C. Vol.* 2. *Obſ.* 102.

Sometimes the Cauſe is lodged within the Os Sacrum; in which Caſe the Diſorder diſcovers itſelf by an Inability of Walking, and a Palſy of the Legs and Feet. This Species of the Diſorder is ſometimes hereditary, and depends upon a preternatural State of the Marrow contained within the Os Sacrum: Inſtances of this Kind ariſing from original Tumors within the Os Sacrum, which afterwards became exulcerated, and proved mortal, may be ſeen in *Hiſt. Morb. Wratiſl. Ann.* 1701. The ſame happens after acute and intermitting Fevers, which terminate ill, if the Patient uſes a bad Regimen, or indulges himſelf in Paſſion. And, in theſe Caſes, the Cauſe of the Misfortune is a peccant Serum, by Tranſlation convey'd to the Marrow of the Os Sacrum. The ſame Diſorder is incident to Women after difficult Labours, Abortions, and Retentions of the Lochia; nor does it proceed from any other Cauſe, than Blood too copiouſly convey'd by the Spaſms to the Os Sacrum, there becoming ſtagnant, and, unleſs Relief is ſeaſonably afforded, ſuffering its ſerous Part to be ſecreted through the ſmall Pores of the Veſſels.

There is a remarkable Species of Palſy incident to the Arms, which, when it ſucceeds a Colic, unſeaſonably check'd by Anodynes and Opiates, is called *a Pareſis ariſing from the Colic.* The Cauſe of it is a peccant and acrid Serum, by a Tranſlation convey'd to the nervous Parts of the Arms, and eſpecially thoſe of the Carpus. Thus, in *A. N. C. Decad.* 3. *An.* 7. *Append.*

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Append. ad Obſ. 308. we have a memorable Inſtance of ſuch a Palſy ſucceeding a Colic ſtopt by Opiates: And in the ſame Work, *An.* 4. *Obſ.* 30. we have an Account of a Palſy ſucceeding a Colic, produced by drinking Wine edulcorated by Litharge. This Diſorder is very familiar to thoſe who work in Lead Mines, who after a violent Colic, accompany'd with an obſtinate Coſtiveneſs, induced by the unfriendly Steams, fall into a Palſy of the Arms. This Diſorder may, alſo, ariſe from other Cauſes, and ſometimes proceeds from a ſcorbutic State of the Humours; an Inſtance of which is found in *A. N. C. Decad.* 1. *An.* 3. *Obſ.* 334. Sometimes the Cauſe of this Diſorder is lodged within the Vertebræ of the Neck, and ſuperior Vertebræ of the Back, from which the Nerves are diſtributed to the Arms. A Caſe of this Kind, ariſing from a Blow of a Stone on the Neck, is deſcribed by *Foreſtus*, *Lib.* 10. *Obſ.* 95. This Diſorder, alſo, ſometimes ſucceeds a Dropſy of the Breaſt, as *Carolus Piſo*, in *Tr. de Morb. ex ſeroſa Colluvie*, *Sect.* 3. *Cap.* 7. obſerves; in which Caſe the Cauſe is Lymph, ſtagnating within the ſmall Veſſels diſtributed through the Membrane of the Nerves, by reaſon of its obſtructed Motion to the Thoracic Duct, and compreſſing the Nerves.

As for the Prognoſtic of paralytic Diſorders, 'tis to be obſerved, that a ſpaſmodic Apoplexy, and a ſanguineous Hemiplegy, are eaſily cured; but, unleſs prevented by proper Meaſures, frequently return, and, at laſt, terminate in an Hæmorrhage of the Brain. The other Species of Palſies, and a ſerous Hemiplegy, do not ſuddenly prove mortal. But the Cure is more difficult and intricate, the more the internal or external Senſes are injured; and theſe Diſorders frequently afflict the Patients during the whole remaining Parts of their Lives. When Infants are ſeized with Palſies, we ſometimes obſerve, that they are freed from them about the Years of Puberty; but ſuch a lucky Change rarely or never happens in Adults. An Hemiplegy of the Left Side is more dangerous than one of the Right, by reaſon of the Aorta, and its more numerous Ramifications in the former than in the latter. If the Part affected is as yet painful, capable of Senſation, not too cold, nor extenuated, there are ſome Hopes of a Recovery, which is ſtill the more to be expected, if there is a Senſation of Formication and Puncture in it. A Palſy of the Abdomen, and inferior Limbs, is generally mortal, and frequently accompanied with a Gangrene of the affected Parts. Paralytic Diſorders, of all Kinds, are more eaſily cured in the Spring and Summer, than in the Autumn and Winter.

A Fever ſucceeding a Palſy is ſaid to cure it; but this is rather to be underſtood of an artificial, than a natural, Fever; and rather holds good with reſpect to a ſerous, than a ſanguineous Palſy; for, if there is a natural Fever, it muſt either be continual, which is always dangerous; or intermittent, which hardly removes the Diſorder: But, by an artificial Fever, we mean an increaſed Motion of the Heart and Arteries artificially excited; by which means the Circulation of the Blood is render'd briſker, and the Juices ſtagnating about the Nerves, and their Origins, diſcuſſed, and, as it were, reſorb'd. Such an artificial Fever is brought on by Medicines ſomewhat hot and acrid, by nervous and volatile Subſtances, by violent Exerciſe, eſpecially in the Heat of the Sun, and by Baths, eſpecially thoſe of *Laughſtad*, and the *Caroline* Springs. But theſe muſt by no means be uſed in a ſanguineous Palſy, already attended with a febrile Motion; but only in ſerous Palſies, where the Circulation of the Humours is languid.

In the Cure of paralytic and apoplectic Diſorders, there are two Intentions to be principally purſued. The former is to remove the proximate, as well as the remote Cauſes, which contribute to intercept the Influx of the nervous Fluid into the Nerves. The ſecond is to ſtrengthen and corroborate the Part affected, and whole nervous Syſtem, ſo as to reſtore them to their former and natural Tone. 'Tis of great Importance to know, whether the Diſorder is recent, or confirm'd; becauſe, in theſe different States, different Methods of Cure are to be purſued.

If, when the Phyſician is call'd immediately after the Invaſion of the Diſorder, he finds the Pulſe quick, and the Face red, there is no more preſent and efficacious Method of removing the Cauſe of the Diſorder, which is a Stagnation of the Blood in the Head, than Veneſection, which is forthwith to be uſed, either in the Arm or Neck, making a pretty large Inciſion, that the Blood may flow in a large Stream; or, if the Patient is plethoric, a Vein is firſt to be open'd in the Foot, leſt, a Vent being given to the Blood in the ſuperior Parts, the Humours ſhould by that means flow more copiouſly from the inferior Parts to them. Then the Veneſection is to be repeated, either in the Arm, or Jugular Veins. It is ſometimes requiſite, that this Veneſection ſhould be twice, or oftener, repeated in a pretty large Quantity.

Then, in order to make a Revulſion of the ſtagnant Humours, ſomewhat acrid and ſtimulating Clyſters, compoſed of the nervous Herbs, Rue, Marjoram, Savory, Thyme, Mother of Thyme, Flowers of Lilies of the Valley, Oil of Chamomile, and, for the ſake of the greater Stimulus, a proper Quantity of Sal Gemmæ, Sal Ammoniac, or human Urine, are to be injected as often as the State of the Patient requires. Bathing the Feet, alſo, pretty deep in warm Water impregnated with the nervous Herbs, and the Flowers of Chamomile, the Tops of Yarrow, and Pot-aſh, is of ſingular Service in theſe Diſorders.

After Veneſection, Spaſms of the internal Parts, and, as it were, a febrile Ebullition of the Humours, ſometimes remain; for alleviating which, we are to uſe fixed Diaphoretics, in Conjunction with precipitating and nitrous Subſtances, ſuch as the Powders of diaphoretic Antimony, Crabs-eyes, Mother of Pearl, Cinnabar, Nitre, and Amber, exhibited in Water of Lilies of the Valley, or in the Water prepared of the Flowers of the Lime-tree; to which may be, alſo, added a proper Quantity of the Syrup of Citron-juice: For by ſuch Medicines Tranſpiration is aſſiſted; by which means we often find apoplectic and paralytic Paroxyſms terminated. Nor in alleviating the Spaſms of the internal Parts is there any Medicine more efficacious, than a proper Quantity of the anodyne mineral Liquor mixed with the bezoardic Liquor, or the volatile Spirit of Tartar; which Medicine ought to be given alternately with the above-mentioned Powders, and exhibited twice a Day. The Patient is, alſo, to abſtain from all Malt Liquors, and only uſe Decoctions, pure Spring-water, or *Selteran* Water, mixed with a little Wine.

By a ſeaſonable Exhibition of theſe Things, ſuch Diſorders, if recent, and as yet only ſupported by a Stagnation of the Blood, may be ſoon remov'd. But when there already ſeems to be a Secretion of the Serum, the ſole Intention ought to be to diſcuſs and derive it to other Parts. And in this Caſe, if the Patient is, as it were, lethargic, and ſnores, I with great Succeſs uſe and exhibit an Emetic in a diluted Form, mixed with Analeptics; by which means the vital Motions are roufed, and the Patient reſtored to the Exerciſe of his Senſes and Reaſon. I generally uſe the following Formula:

> Take of the vinous Water of Lilies of the Valley, of the Waters of Lime-tree-flowers, Primroſes, Cinnamon, and diſtilled Vinegar, each two Ounces; of the ſuccinated Spirit of Hartſhorn, one Dram; of diaphoretic Antimony, Cinnabar, and Crabs-eyes, each half a Dram; of emetic Tartar, two Grains; and of the Syrup of Orange-bark, two Drams. Make into a Mixture; two Spoonfuls of which are to be taken every other Hour.

Then, in order to diſcuſs the ſtagnant Serum, volatile urinous Subſtances, applied to the Noſtrils, are of ſingular Service: Of this Claſs the moſt conſiderable is, Spirit of Sal Ammoniac prepared with Quick-lime, and mixed with Oil of Marjoram, or Rue. Sternutatories, eſpecially of the nervous Kind, are, alſo, beneficial in ſuch Caſes, ſince they not only convey Motion to the Nerves, but, alſo, eliminate the ſerous Matter by the Noſtrils. The following may ſerve as a Formula for this Purpoſe:

> Take of Marjoram, and Flowers of Lilies of the Valley, each two Drams; of *Syrian* Marum, Flowers of Benjamin, and Cloves, each half a Dram; and of powdered Caſtor, ten Grains: Mix together for a Powder, to be uſed inſtead of Snuff.

In obſtinate paralytic Diſorders, in order to derive the ſtagnant Serum, nothing is more efficacious, than actual Cauteries applied between the ſecond and third, or third and fourth Vertebræ of the Neck: And this Method was not only highly approved of by the Antients, but is, alſo, recommended by the Moderns, eſpecially *Ernſtolius*, in *Warſavia phyſicè illuſtrata*: But, in our more delicate Age, we generally ſubſtitute, in the room of this apparently cruel Method, Setons in the Nape of the Neck; or, if the Patient is diſguſted at theſe, Veſicatories may be applied to the Nape of the Neck, or the Feet; which laſt are in delicate Patients to be prefer'd to the former, ſince, by Veſicatories applied to the Nape of the Neck, it has been found, that convulſive Motions of ſome Part before not affected have been excited.

If the Diſorder is inveterate, beſides the above-mentioned Remedies, proper Evacuants are to be called in, in order to make a Revulſion of the Humours from the Head. And theſe Evacuants muſt be balſamic Purgatives, the moſt conſiderable of which are the Pills prepared of the Extract of Coloquintida, Aloes, black Hellebore, Reſin of Ladanum, Aloes-wood, Flowers of Benjamin, Salt of Amber, Myrrh, and *Peruvian* Balſam, each one Scruple; of Mercurius Dulcis, half a Dram; of Camphire, and volatile Salt of Hartſhorn, each four Grains: Let

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twenty-four Pills be form'd out of each Scruple, and let fourteen of theſe Pills be exhibited for a Doſe. Among diaphoretic Medicines the moſt proper are, the ſuccinated Spirit of Hartſhorn, the anodyne mineral Liquor, with an Addition of a proper Quantity of the Eſſence of Caſtor, and Decoctions prepared of Guaiacum, Saſſafras, Saunders, and *China* Root. Nor, in ſerous Diſorders of the Head, can we enough commend the Virtue of diuretic Medicines, eſpecially of the ſuccinated Kind, the moſt conſiderable of which is Eſſence of Amber, with acrid Tincture of Antimony.

They who have for a long time laboured under paralytic Diſorders, and are at the ſame time afflicted with a Weakneſs of the nervous Syſtem, ought to be treated with corroborative Medicines, and have a proper Regimen preſcribed them. For this Purpoſe, one Part of the urinous Spirit of Sal Ammoniac, mixed with three Parts of Water, is a Medicine highly efficacious. A nervous Mixture may be, alſo, prepared of the Eſſences of red Gentian, and Caſcarilla-bark, acrid Tincture of Antimony, the anodyne mineral Liquor, and the Oils of Mace or Cinnamon. And this Medicine may be exhibited in an Infuſion of Baum prepared with Citron-peel. They who are afflicted with a languid Appetite, and a Weakneſs of the Stomach, receive great Benefit from the Elixir Viſcerale, or an Electuary prepared of the *Peruvian* Bark, and that of Caſcarilla. To old Perſons nothing is more beneficial than a few Drops of the Balſam of *Life*, exhibited in the Morning in an Infuſion of Baum.

Various external Medicines are recommended for recovering Senſation and Motion. In the Days of Antiquity, ſtrong Frictions of the Part affected, with rough Cloths, were greatly extol'd; or, if Senſation was deſtroy'd, they uſed either to irritate the Skin with Nettles, or, previouſly uſing Friction with a Squill cut through the Middle, they applied Cupping-glaſſes without Scarification. It is, alſo, of ſingular Service to anoint the paralytic Parts with Spirit of Sal Ammoniac, and camphorated Spirit of Wine. Excellent Effects are produced by old *Rheniſh* Wine digeſted in a gentle Heat with Roſemary, the Flowers of common Chamomile, Spike and Cloves, and with folded Linen Cloths applied to the Spina, Dorſi, the Os Sacrum, and the Joints. After Baths, or Frictions, it is beneficial to apply to theſe Parts nervous Liniments compoſed of human Fat, Galbanum, Turpentine, Balſam of Capivi, *Peruvian* Balſam, and the expreſſed Oils of Lavender, Juniper, Marjoram, Rue, Roſemary, Amber, and Nutmegs; for diſtil'd Oils alone are improperly uſed, becauſe by drying and indurating the Nerves too much, they do more harm than good. The Head is to be covered with diſcutient and corroborating Caps; apoplectic Balſams are to be applied to the Temples; but theſe muſt not be of too agreeable a Flavour. The Head muſt be ſhav'd, and Powder of Amber ſprinkled upon it. The hinder Part of the Head is, alſo, with great Advantage waſh'd with ſpirituous Liquors prepared of the volatile Spirit of Hartſhorn, Spirit of Worms, the *Aqua Anhaltina*, the Eſſence of *Peruvian* Balſam, the Eſſence of Caſtor, and the Oils of Nutmegs and Cloves.

In paralytic Diſorders Baths are had recourſe to as the laſt, and moſt important Medicine. Among theſe the moſt conſiderable are the hot Baths moderately uſed, among which the moſt celebrated are theſe of *Toeplitz*, *Emſen*, *Wisbaden*, *Aix la Chapelle*; and in *Miſnia*, thoſe of *Wolkenſtein*, which are to be uſed when the Diſorder is inveterate; but thoſe of *Laughſtad*, on account of their chalybeate aſtringent Principle, are only proper in a recent Palſy, or one already ſubdued, and which only diſcovers itſelf by a Weakneſs of Motion: But the Virtues of theſe are ſurpaſſed by Baths artificially prepared, the moſt efficacious of which is, that made with the Scoriæ of Metals. Next to theſe are the Baths prepared of nervous Herbs, and Ants. For this Purpoſe, the moſt commodious Herbs are Mother of Thyme, Ironwort, Southern-wood, Origanum, Mint, Hyſſop, Roſemary, Marjoram, and Chamomile-flowers; which, wrapt up in a Bag, and boiled in a ſmall Lixivium, are to be immerſed in tepid Water, and the Parts affected are to be fomented with them. Among Liniments, the moſt efficacious is that prepared of *Venice* Soap, and camphorated Spirit of Wine, with an Addition of the Eſſences of Galbanum and Bdellium.

In paralytic Diſorders ariſing from a Redundance of Blood, Veneſection, eſpecially in the Beginning, is of great Service. The Antients, and among the reſt, *Archigenes*, according to *Aetius*, *Celſus*, *Cœlius Aurelianus*, and *Aretæus*, affirm, that the Practice of letting of Blood immediately, was authorized by a Tract of faithful and conſtant Experience. But Veneſection is injurious in an inveterate ſerous Palſy where the Strength is impaired, and the Appetite languid. For this Reaſon *Ballonius*, in *Lib.* 6. adviſes not to open a Vein in Palſies, where a cold Humour is in Motion; and confirms the Diſadvantages of ſuch a Practice by an Example. *Trallian* affirms, that, in the Cure of a Palſy, Veneſection is never to be uſed, unleſs when a manifeſt Redundance of Blood appears. A Vein is not to be open'd in the Feet, if they are cold, and ſpaſmodically conſtricted. Men who have fallen into a Palſy from a retarded or ſuppreſſed hæmorrhoidal Diſcharge, after Veneſection, may with great Advantage have Leeches applied to the Anus. And in the *A. N. C. Vol.* 3. *Append.* we have an Inſtance of an Hemiplegy ſpeedily cur'd by applying Leeches behind the Ears, and Veſicatories to the Calves of the Legs.

Thoſe who, by paralytic Diſorders, have their Heads greatly weaken'd, and their internal Senſes, eſpecially, their Memories, injur'd, ought to abſtain from an incautious internal Uſe both of the hot and cold mineral Waters; for theſe Waters paſs ſlowly through the too much relaxed minute Veſſels of the Head, and lay a Foundation for a greater Stagnation of the ſerous Humours. Nor have I found the Acidulæ mixed with Wine, for ordinary Drink, ſalutary, becauſe the Head is too much filled with the ſpirituous Vapour. But if the Patient is young, and the Diſorder has aroſe from the hypochondriac Paſſion, the more temperate of the *Caroline* Springs, or even cold Mineral Waters warm'd, may be uſed: But when the Patient drinks theſe Waters, which ought to be uſed in a ſmall Quantity, he ought to guard againſt Cold, Grief, and Fatigue of Mind; he is not to indulge himſelf in too much Sleep, but carefully to uſe Exerciſe, and nervous and balſamic Medicines. In general, 'tis to be obſerved, that the drinking of theſe Waters is far more proper when the Diſorder is in its Decline, than when in its Vigour.

Artificial Baths prepared of Ants, and nervous Herbs, are the more efficacious, the lighter and finer the Water of which they conſiſt, is. For this Reaſon, the beſt is thought Rain-water; or, if that cannot be had, Water is to be taken from a River after a large Fall of Rain. But all artificial Waters are ſurpaſſed by thoſe of *Toeplitz*, which, in Lightneſs, ſurpaſs Rain-water, and by their diſcutient, and diaphoretic Virtue, reſtore the Tone and Strength of the affected Parts. We, alſo, know from Experience, that ſuffering theſe Waters to drop on the Beginning of the ſpinal Marrow has frequently been of ſingular Service in diſſolving the ſtagnant Humours.

For paralytic Diſorders, eſpecially of the inveterate Kind, cold and gently aſtringent Baths are deſervedly recommended; as, alſo, Fomentations, prepared of the Roots of the greater Conſound boil'd in Water. In this Caſe may be uſed chalybeate medicinal Springs, ſuch as thoſe of *Fregenwalden*, thoſe of *Laughſtad*, and thoſe prepared of the Scoriæ of Metals: But they muſt be applied only tepid; otherwiſe, by throwing the Maſs of Blood and Humours into too great Commotions, they excite Anxieties, Cephalalgias, and Palpitations of the Heart. Theſe Waters, by exciting an artificial Fever, augment the Diſeaſe, ſince, by conſtricting the exterior Parts of the Body, they render the Motion of the Blood and Humours greater to the internal Parts, and eſpecially to the Heart, and large Veſſels, which ſurround it. Hence the Syſtole of the Heart and Arteries is render'd quicker and ſtronger; and, conſequently, the Circulation of the Humours through the minute Veſſels, briſker. Hence it may eaſily happen, that Obſtructions are removed, viſcid Juices reſolved, and Stagnations diſcuſſed. But theſe Baths are not to be uſed by Perſons turgid with Blood, ſuch as labour under a Dyſcraſy of the Humours, or thoſe afflicted with a Weakneſs of the ſolid Parts, ſuch as old Perſons.

Waſhing the Head, in paralytic Diſorders, is of ſingular Service, eſpecially in thoſe accuſtomed to it; but they who are not accuſtomed to it, are to begin with a Lixivium which is not very acrid, and has nervous Herbs boil'd in it. Then let the Root of Aſarabacca, and the Herb Roſemary, be incloſed in a Bag, and boil'd in the Lixivium. But theſe Medicines are not to be uſed, till the Patient is previouſly purged.

In a ſcorbutic Palſy, which is generally of a particular and ſpurious Nature, little Good is done by external Remedies. It is rather expedient by diluting Decoctions and Infuſions, both hot and cold, uſed as ordinary Drink, to correct the Acrimony of the Humours, and ſubdue it by antiſcorbutic Specifics, of which the moſt conſiderable are Earth-worms, either in Powder, or their Juice exhibited in Whey. Then the groſſer Parts of the Sordes are to be eliminated by Stool, by laxative Preparations of Manna and Rhubarb. But the more ſubtile Parts of the Sordes, fluctuating in the Blood, are to be carried through the cutaneous Pores, by means of the diaphoretic Powders; for unleſs the whole Maſs of Humours be purged, there can be no perfect Cure.

A Palſy of the Eye-lids is produced by a Tranſlation or Stagnation of the Humours; and, unleſs ſoon removed, becomes incurable. I have obſerv'd, that the moſt effectual Method of removing this Diſorder was to anoint the Eye-lids Morning and Evening with the Balſamum Vitæ warm, or with Oil of Cinnamon and Cloves, mixed with ſome pinguious Sub-

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ſtance. Neither are we to neglect the Derivation and Evacuation of the peccant Serum, which may be obtained by Laxatives, Diuretics, and Veſicatories. Hence, in *A. N. C. Vol.* 1. *Obſ.* 140. we have an Account of ſuch a Palſy of the Eyelids, happening after the Meaſles, cured by Veſicatories.

A Palſy ariſing from a Colic requires ſuch Medicines, as by Tranſpiration eliminate the peccant Serum from the Blood. Externally, ſingular Service is done by the Skins of newly kill'd Animals applied hot to the Parts affected; which may be, alſo, rubbed with an Ounce of human Fat, mixed with a Dram of the Oil of Cloves. In this Diſorder great Service is, alſo, ſometimes done by the Application of blind Cupping-glaſſes, by which we have an Inſtance of ſuch a Palſy cured in *A. N. C. Decad.* 1. *An.* 3. *Obſ.* 308.

In paralytic Diſorders a ſerene and temperate Air is of great Uſe: Hence *Cœlius Aurelianus*, in *Lib.* 2. *Cap.* 1. *Chron.* orders the Patient to be laid in a light Place, ſo that the Chamber muſt be neither too hot, nor too cold, but temperate. The Aliment ought, alſo, to be light, and of eaſy Digeſtion, eſpecially in the Beginning, when the Palſy is, for the moſt part, an acute Diſorder, and the Force of the Stomach always languid. Nor are Wines, or Malt Liquors, of any Kind, to be uſed, eſpecially in the Beginning: But, when the Diſeaſe is of a longer Standing a fuller Diet may be allowed.

For waſhing the paralytic Parts when dry, or affected with an Atrophy, we are by no means to uſe Spirit of Sal Ammoniac, which is rather to be uſed when the Parts are ſwell'd; in which Caſe it is, alſo, expedient to incloſe the tumid Parts in a ſmall Sack, filled with the following Species:

> Take of Bran and Millet, each four Handfuls: Mix them in any Kettle, or proper Veſſel; dry them over a gentle Fire; put them in the Bag, which is to be applied warm to the Part affected, when the Patient goes to Bed.

Violent Diſorders of the Head, ſuch as Lethargies, Apoplexies, and Hemiplegies, are very familiar to old Perſons, and almoſt incurable. For the ſake of Prevention, therefore, it is expedient, they ſhould carefully abſtain from all thoſe things, which can weaken the nervous Syſtem, or render the Circulation of the Blood through the Head ſlower; and particularly from Cold, eſpecially when the Body is diſpoſed to ſweat, from liberal drinking of ſpirituous Wine, from Grief, from Terror, and from the Intermiſſion of uſual Veneſection. Old Perſons ought, alſo, to abſtain from the exceſſive Uſe of Tobacco, vaporous Preparations of Wormwood, thick Ale, and a moiſt and vapid Air. That in old Perſons theſe Diſorders are rarely cured, is, in my Opinion, owing to this, that their Blood abounds with a pituitous and glutinous Humour, which greatly contributes to hinder the Regreſs of the Blood through the ſmall Veins, and venous Sinuſes of the Brain, the former of which it obſtructs by its Viſcidity. But 'tis no eaſy Taſk to remove thoſe Obſtructions, which are deep-ſeated in the Veſſels of the Brain.

Paralytic Patients, when abounding with Fat, and a Redundance of peccant Humours, are not eaſily reſtored to Health and Strength, unleſs they uſe a drying Regimen, which conſiſts in abſtaining from Broths, boiled Meat, and moiſt Subſtances; in uſing little Drink, eſpecially of the thick Kind. They are only to uſe a ſmall Quantity of the Decoction prepared of *China* Root, Shavings of yellow Saunders, Saſafras, and Raiſins. They may, alſo, drink a moderate Quantity of generous Wine. They muſt eat no Fleſh, but what is roaſted; and may be allowed ſtoned Raiſins. The Body, and its various Members, ought, alſo, to be carefully exerciſed. *Hoffman.*

A Palſy is ſuch a lax State of the Muſcles, as is ſufficient to produce an Immobility not to be ſurmounted by any voluntary or vital Efforts. In this Diſorder Senſation is ſometimes abſolutely deſtroy'd; at other times, a ſmall Degree of it, accompanied with a Stupor, and, as it were, a ſlight punctory Pain, remains.

The moſt immediate Cauſe of this Diſorder is always found to be an intercepted Influx of the nervous Fluid from the Brain, or of the arterial Blood into the paralytic Muſcle.

This Diſorder may therefore ariſe,

1. From every Cauſe capable of producing an Apoplexy;

2. From every Circumſtance which renders the Nerves unfit for tranſmitting the animal Spirits; and,

3. From every Circumſtance which hinders the Ingreſs of the arterial Blood into the Muſcle. Hence we underſtand the reſpective Natures of a Paraplegy, an Hemiplegy, and a Palſy of a particular Part.

A Palſy may therefore be produced by an Apoplexy; a ſlight Parapoplexy; an Epilepſy; Convulſions; intenſe and long-protracted Pain; a Retention of any of the uſual Evacuations, attended with a ſubſequent Vertigo; ſuch as, a Suppreſſion of the hæmorrhoidal and menſtrual Diſcharges; the ſtopping of Abſceſſes and Fiſtulas; the Retention of the Fæces, Urine, and Saliva. This Diſorder is, alſo, produced by Tranſlations of any morbid Matter, either in acute or chronical Diſeaſes; by whatever injures the Nerves, either by Obſtruction, Solution, Compreſſion, Ligature, Diſtortion, Diſtraction, or Conſtriction: Hence a Palſy may be produc'd by groſs Humours, Wounds, Eroſions, Abſceſſes, Gangrenes, inflammatory Tumors in the Integuments of the nervous Medulla, in the Ganglions, and the Nerves themſelves; by ſerous, purulent, ichorous, and ſcirrhous Tumors; by ſtrong and tight Ligatures; by Fractures, Luxations, highly aſtringent Aliments, Medicines, and Poiſons. Hence a Palſy may be generated by exceſſive Cold, intenſe Heat, a cold and moiſt State of the Air, the continual and exceſſive Uſe of warm Water, and the Steams of Antimony, Arſenic, recent Lime, Mercury, and other Poiſons.

The immediate and remote Cauſes already enumerated, and concurring to the Generation of a Palſy, produce various Effects, according to the different Seats where they reſide; according to their different Strength; according to the Diverſity of the Part affected, as it is more or leſs, more mediately or more immediately, neceſſary to Life; for, from theſe Circumſtances, the Diſorder may be reckoned more or leſs mortal, curable or incurable.

A Palſy of the Heart, Lungs, Muſcles ſubſervient to Reſpiration, and the Throat, ſoon proves mortal: A Palſy of the Stomach, Inteſtines, and Bladder, ariſing from internal Cauſes, is highly dangerous: A Palſy of the Muſcles of the Face is bad, and eaſily convertible into an Apoplexy: A Paraplegy is highly dangerous, prognoſticates an Apoplexy, and, when the latter happens, the former proves mortal: An Hemiplegy is bad, partakes of the Nature of a Paraplegy, and, conſequently proves mortal, when an Apoplexy happens: A Palſy, accompanied with Coldneſs, Inſenſibility, and Atrophy of the Part, is bad, and rarely curable: A Palſy, accompanied with violent Convulſions, and an intenſe Heat of the oppoſite Part, is bad; but, from the Symptoms oppoſite to theſe, 'tis known what Palſies are curable and leſs dangerous; as, alſo, what in this Diſorder are the Cauſes of ſo ſudden Deaths, which happen without any previous Sign, or almoſt any concomitant Symptom.

The Phyſician who applies what has been ſaid to all the Muſcles, whatever their Functions are, will underſtand the Cauſes, and know the Diagnoſtics and Prognoſtics, of an almoſt infinite Number of ſurpriſing, and, otherwiſe, unaccountable Diſeaſes.

Nature cures a Palſy, by attenuating and diſſipating the morbid Matter, by a bad Criſis depoſited in the exterior Parts of the Brain, its Ventricles, about the Medulla oblongata, the Medulla ſpinalis, and the Egreſs of the Nerves from the Marrow, by reſolving the impacted Matter by a violent ſupervening Fever, by moving the impacted Matter by a convulſive Tremor of the Part, and by eliminating this Matter by a copious and long-protracted Diarrhœa.

The Cure requires a Removal of thoſe Cauſes which hinder the Functions of the Nerves and Arteries; and then a Reſtitution of the free Circulation of the Fluids.

The Cauſes hindering the Functions of the Nerves and Arteries are removed by various Methods, eaſily applicable to theſe Cauſes previouſly known.

If the internal Cauſe of a Palſy is a groſs and ſtagnant Matter, ſuch Medicines muſt be uſed, as are capable of producing thoſe Circumſtances, by which Nature cures this Diſorder.

The Cure of a Palſy is to be attempted,

1. By attenuating and diſſipating Medicines; ſuch as aromatic, cephalic, nervous, and uterine Vegetables, the expreſs'd Juices, Infuſions, Decoctions, Spirits, or Preſerves of which may be uſed: By fixt Salts obtained from theſe, by Calcination; by volatile Salts obtained from them, by Deſtillation or Putrefaction: By Oils obtained from theſe, by Expreſſion, Coction, Infuſion, and Deſtillation: By ſaponaceous Subſtances artificially prepar'd of a Combination of theſe: By the ſtrong-ſcented Parts of Animals, and the Juices, Spirits, Oils, Salts and Tinctures of Inſects: By foſſile Salts, metallic Cryſtals, and ſuch Compoſitions as principally conſiſt of theſe Subſtances: By all theſe ſo judiciouſly mix'd, as that they ſhall mutually aſſiſt each other: By theſe means the Attenuation and Diſſipation of the Matter, together with a febrile Heat, are obtain'd.

2. The Cure is to be purſued by ſtrong Stimulants, and ſuch Subſtances, as, by exciting a nervous, tremulous, and convulſive Motion, powerfully diſſipate the impacted Matter: Of this Kind, the moſt conſiderable are ſtrong Sternutatories and Emetics, eſpecially when frequently repeated.

3. The Cure is to be attempted by hot, reſolvent, aromatic, or foſſil and acrid, metallic, mercurial and antimonial Purges; and conſequently ſtrong Hydragogues exhibited in large Doſes, and for ſeveral Days ſucceſſively repeated; by which

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means a copious, and sometimes a long-protracted Diarrhœa may be excited.

4. By filling the Vessels of the Body with large Quantities of attenuating Liquors; and then exciting a greater Degree of Motion and Sweat, by means of the Steam or Vapour of kindled Spirits.

Hot, dry, external Frictions to a Redness of the Part, or Frictions with penetrating and stimulating animal or vegetable Spirits, or with nervous Oils, Liniments, Balsams, and Ointments, are beneficial in the Cure of this Disorder. Vapour-baths, and Immersions; acrid, aromatic and attractive Plaisters; Cuppings; Scarifications; Vesicatories; Fustigations; and such Things as excite Pain, and a gentle Inflammation, as Nettles, are also serviceable in the Cure of a Palsy. Formulæ for this Purpose are these following.

Take of Mastich, Olibanum, and Amber, each half an Ounce; mix up into a Powder: Let half a Dram of this be sprinkled on live Coals, and when the Steam arising is receiv'd into an hot and dry Linen Cloth, let the Parts affected be strongly rubbed with it.

Take of the Spirit of Lavender, three Ounces; of Sal Ammoniac, two Drams; of the Tincture of Castor, four Drams; and of distil'd Lavender-water, six Ounces: Make into a Mixture, with which the Parts affected are to be rub'd.

Take of Cumin-plaister, Melilot-plaister, and pure Galbanum, each one Ounce; and of the Oil of Castor, half an Ounce: Make into a Plaister, to be applied upon Leather to the Part affected, after previous Friction.

Take of the Oils, by Infusion, of Wormwood, Dill, Chamomile, Nep, Rue, sweet Trefoil, Castor, Saffron, Orris, Earth-worms, Spikenard, and Earth, each one Dram; and of the Unguentum Agrippæ, the Unguentum Artanitæ, the Unguentum Martiatum, and the Unguentum Nervinum, each six Drams: Make up into a Liniment, to be applied to the Parts affected.

Acrid Plaisters are the Cumin-plaister, the Galbanum-plaister, the Melilot-plaister, and some others.

But we are above all things to take care, that all these Remedies may, if possible, be applied to the Seat of the Cause, when detected. Now the Part affected, the various Parts labouring under the same Disorder, a Knowledge of the Muscles and Nerves, of their Unions, Origins, and Distributions, and a Knowledge of the Functions depending on each of these, when compared with each other, clearly indicate and point out the latent Seat of the Disorder. *Boerhaave Aphorism.*

A Palsy in the Iris.

The excessive Contraction and Dilatation of the Iris are occasioned by a sort of Palsy in its Muscles. The Dilatation proceeds from a Palsy of the circular Muscle; the Contraction is caused by a Palsy in the radial Muscle. The general Cause of these Palsies must be deduced from an Obstruction in the Nerves of the Choroides; which, by their Communication with the Nerves of these Muscles, produce their Motion. It happens, tho' seldom, that the Pupil is almost deprived of any Motion, either of Contraction or Dilatation while the Sight, tho' weak, still remains. In this Case, 'tis to be observ'd there is a Palsy in the nervous Filaments of the Iris; and that the Impression of the Object is convey'd to the Optic Nerve, by means of its close Union with the Choroides. I have always remarked, that the Palsy of the Choroides is attended with that of the Iris; and that the Palsy of the nervous Fibrils of the Iris does not damage the Choroides, tho' it weakens the Sight; which seems to be occasioned from the too great Dilatation or Contraction of the Pupil, which, by admitting either too many or too few Rays, renders the Sight imperfect.

A Palsy of the upper Eye-lid.

The upper Eye-lid becomes paralytic, when it is drawn down, and cannot be raised; or when it is raised, and cannot be brought down. In the first Case, the Elevator Muscle is affected; in the second, the Orbicular, or Deprimens. This Palsy is either perfect; or imperfect: It is said to be perfect, when the Eye-lid is almost destitute of Motion; and imperfect, when the Eye-lid has some Motion: This last Sort has several Degrees, which differ only in their having more or less Motion. When the Eye-lid remains always open, and without Motion, it is what the Antients called the Hare's Eye.

In the Palsy in general, both Sense and Motion are often lost; but, in this sort of Palsy, the Defect is in the Motion, whilst the Sense is not injured, or, at least, very seldom.

As Palsies are generally the Effects of an Apoplexy, this may be called a sort of slight or insensible Apoplexy. The Matter which causes it is thrown upon, obstructs, and compresses the Nerves, that supply the Fibres which move the Eye-lids. Purgatives, and all Remedies used for the Palsy in general, are proper in the present Case. The hot mineral Waters, the Success of which we daily experience, are equally beneficial in this Palsy. I have cured several of this Disease by Purges, Sudorifics, and, above all other Remedies, with Viper-broths.

The following Fumigation receiv'd in the Eye, and the neighbouring Parts, may be used. It is made of Rosemary, Thyme, Sage, and Wine boiled in a Coffee-pot: Let the Pot be covered with a Funnel; the broader Part of the Funnel must fit the Coffee-pot exactly: Let the Eye be placed before the Steam, which comes out of the End of the Funnel, as from a little Chimney; this must be done Night and Morning, for about a Quarter of an Hour. It is of the same Efficacy, as the pumping of hot mineral Waters on paralytic Parts: Care must be had to place the Eye at a due Distance, to support the Heat. The following Method must be used at the same time: Take a little pewter Pan, that will cover the Eye-lid, with a Pipe at its Bottom in the Form of an Handle, about four Fingers in Length. Let this Pipe be filled with Spirits of Wine distilled several times on Cloves, Lavender, Origanum, and Thyme: Afterwards lay the Pan on the Eye, and heat the Handle with your Hand. The Spirit thus rarefied bears on the Part, and there excites the animal Spirits in the moving Fibres. Care must be had to repeat this three times a Day. Several have been cured by these Means, especially when the Disease has not been inveterate.

The Eye-lids are likewise attacked with a quick, involuntary Motion, or Vibration, which I take to be a convulsive Motion of the Eye-lids. When this Accident happens seldom, it is of no Consequence, and is cured by rubbing the Palm of the Hand with *Hungary* Water, and applying it afterwards to the Part, for some Moments, three times a Day.

This convulsive Motion degenerates, sometimes, to a total Convulsion of the Eye-lid; then the Eye-lid remains shut about a Minute, and is afterwards raised; this happens often in the Day: During the Time of this Convulsion, the Fibres of the orbicular Muscle, which it affects, become stiff and tense. It may be compared to that Sort of Convulsion commonly called the Cramp, which seizes the Leg in the Night, and continues some time before the Position of the Leg can be altered. The Cause of this Convulsion must be deduced from the irregular Motion of the animal Spirits, which, flowing with too great Rapidity into the Fibres of the orbicular Muscle, obstruct, for a short time, the Action of the Musculus attollens.

This Convulsion may be instantaneously removed, either by rubbing the Hand round the Orbit and the Eye-lids, or making the Persons sneeze in the Time of the Fit.

Although either of these Methods give immediate Ease, yet they do not prevent the Return of the Convulsion; for which Reason proper Remedies, both internal and external, must be employed, as Bleeding, Purges, and Antiepileptics; such are, Piony-roots and Seed, a Decoction of the sudorific Roots and Woods, the Mistelto of the Oak, Cinnabar of Antimony, the volatile Salts, and the like. Among all these Remedies, I have not found a more efficacious one, than the sublimed Flowers of Sal Ammoniac, mixed with the Caput Mortuum of Oil of Vitriol; they must be washed in common Water to carry off their Salts, and afterwards they must be dried; three Grains of them must be taken every Morning in the Confectio Hyacinthi. This Medicine commonly removes the Fits of the Convulsion before the eighth Day. As to external Remedies, let the upper Part of the Eye-lids be rubbed with an Ointment made of the Oil of Earth-worms, mixed with some Drops of Sal volatile oleosum, or compound Baum-water. The distilled Water of Elder-flowers is, likewise, very beneficial in the Convulsion and Palsy of the Eye-lid.

When the Eye-lid remains shut, and cannot be raised, there is an Operation which takes off Part of the Skin of that Eye-lid. When the Wound is healed, and the Skin is less extended, the Musculus attollens of that Eye-lid recovers its Motion, the Disease is cured, and the Person opens and shuts his Eye-lid at Pleasure. *St. Yves.*

PARAMERIA, παραμήρια. The internal Parts of the Thighs.

PARAMESOS, παράμεσος. The Ring-finger; that which is next to the Little-finger.

PARA-

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PARANOEA, παραίνοια, from παραινοέω, to be delirious. A Delirium, or Alienation of Mind.

PARAPAR. Cluſ. A ſort of *Indian* Kidney-Bean. *Raii Hiſt. Plant.*

PARAPECHYON, παραπήχυον. The *Radius*, a Bone of the Arm.

PARAPHIMOSIS.

When the Prepuce is either naturally ſo ſhort, or ſo ſwelled and contracted, that it cannot be drawn over the Glans, a Diſorder is produced, called by the *Greeks* Paraphimoſis. By this Stricture of the Prepuce, the Circulation of the Blood in the Glans is generally ſo much obſtructed, that not only a Tumor of the Glans is occaſioned, with violent Inflammation, and moſt acute Pains, but a Sphacelus is induced, and the Penis muſt be ſubjected to Inciſion. Thoſe are moſt affected with this Diſorder, who have naturally a Prepuce too narrow, and who exert themſelves too vigorouſly in Coition, eſpecially with Virgins, in whom the Vagina is ſtrait. Young Husbands are ſometimes egregiouſly miſtaken, when, after the Embraces of a new Spouſe, they find themſelves affected by this Diſorder; and therefore imagine her to have been unchaſte and infected, while the real Cauſe was, the natural Stricture of Virginity. Sometimes thoſe Youths, or Boys, are affected by this Diſorder, who, having a very tight Prepuce, laſciviouſly draw it back, while the Penis is in a State of Flaccidity; by which means, an Erection being occaſioned, the Glans becomes tumid, and the Prepuce cannot be returned. Thus have I ſeen a ſurpriſing Tumor of the Prepuce occaſioned behind the Glans. Nor is it to be denied, that thoſe are, ſometimes, liable to a Paraphimoſis, who have engaged in impure Embraces; for while the Penis, and interior Skin, are infected and corroded by the virulent Matter, the Prepuce may very readily be attacked with an Inflammation, Tumor, and thoſe other Diſorders beforementioned.

The Cure of a Paraphimoſis principally conſiſts in reducing the Prepuce ſo, that the naked Glans may again be covered; for ſuch a Reduction is immediately followed by a Remiſſion of the Pain, and other Symptoms. Meanwhile, becauſe a violent Inflammation ſeizes the tumid Part of the Penis, which renders the Return of the Prepuce difficult, and often impoſſible, it will not be improper to apply to the *Penis* digeſtive and emollient Fomentations or Cataplaſms, or warm Wine, or camphorated Spirits of Wine; if, upon renewing the Application, no Erection appears, the Prepuce may be attempted to be drawn over the Glans; which being effected, all the other Symptoms immediately vaniſh. But becauſe Wine, and camphorated Spirit of Wine, by their acrimonious Quality, and the emollient Cataplaſms by their emollient Power, produce a Flux of the Blood towards the morbid Part, and, conſequently, increaſe the Diſtention of the tumefied Penis, ſome prefer the Application of cold Water; for, when the Penis is immerged in the Water, and when it is plentifully ſprinkled on, or applied by Compreſſes to the Abdomen or Scrotum, and if, at the ſame time, copious Bleeding be uſed, the Tumor and Erection generally ſoon ſubſide. The Penis, thus becoming flaccid, ſhould be lubricated with the Oil of Olives, or with Butter: Then let the Surgeon take the Penis between his fore and middle Fingers of both Hands, and with his Thumbs ſtrongly repreſs the naked Glans, while the Prepuce is at the ſame time powerfully drawn forwards with his Fingers, till the naked Glans be again covered. During this Operation, the Patient is obliged to ſuffer excruciating Pain, and he makes miſerable Outcries; which, however, the Surgeon ſhould entirely diſregard, or, as *Celſus* adviſes, diſpatch his Buſineſs the ſooner, upon which all Complaint ceaſes; for, after returning the Prepuce, little or nothing elſe is required for completing the Cure. If the Penis is affected with a ſlight Inflammation, where there is little Virulency, it generally ſuffices to bathe it in warm Water.

But if the tumefied Penis, by reaſon of the violent Inflammation, or long Continuance of the Diſeaſe, tends towards a Gangrene, it will be moſt proper, firſt, to bleed in the Arm, and afterwards, in the ſuperior Part of the Penis, till it becomes flaccid; then the Prepuce may be returned as before directed, and the Bleeding ſtopt. *Petit* uſed a different Method in curing the Paraphimoſis. He compreſſed the tumefied Glans with a narrow perforated Bandage, and, extending the Prepuce, he again brought it over the Glans. Sometimes the Prepuce is ſo diſtended with the ſerous Part of the Blood, that it appears like a Bliſter produced by a Burn, or a Veſicatory; and the contained Humour is conſpicuous to the Eye, much obſtructing the Reduction of the Prepuce over the Glans. In this Caſe, the diſtended Skin ſhould be opened with a Knife, or a Lancet: Thus the Serum being diſcharged, the Wound muſt be cleanſed with warm Wine, and the Skin may be again ſtretched over the Glans. In order to prevent the wounded Skin from growing to the Glans, the Patient, as often as he makes Water, ſhould retain it a little between the Prepuce and the Glans; he ſhould likewiſe frequently draw the Skin backward and forward, till all Danger of its Coheſion with the Glans diſappear. The ſame Intention may, alſo, be anſwered, by often injecting warm Spirit of Wine between the interior Skin of the Prepuce, and the Glans; or by interpoſing ſoft Lint between the Glans and the Skin. If the Prepuce already adheres to the Glans, they ſhould be forthwith ſeparated by a Tooth-picker, a blunt Lancet, or a Knife armed with a Button; but particular Caution muſt be uſed to avoid wounding the Glans, which would occaſion a large Hæmorrhage. The Prepuce and Glans being thus diſcharged, their reuniting muſt be prevented, by the Methods above directed. The Skin and Glans ought to be the more carefully kept aſunder, while they are ſo; becauſe, if once they are firmly united, they cannot be ſeparated without the greateſt Difficulty. After the Operation, the Penis ſhould be bound up to the Belly, leſt, by its hanging downward, the Afflux of the Blood being eaſier, an Inflammation and Tumor might be induced. I have ſometimes ſeen the Prepuce, after it has been drawn back over the Glans, affected with a large hard Tumor, which could by no means be diſcuſſed.

When all theſe Remedies prove ineffectual, *Petit* directs the following Method: Introduce a ſmall crooked Knife between the Penis and Prepuce, with its Edge turned upwards towards the Prepuce, till the ſwelled, conſtricted Part of the Skin can be conveniently divided by it. If the Prepuce be conſtricted and tumefied in more Places, as in two, three, or four, like ſo many Rings, the Operation muſt be as often repeated, as the Nature of the Diſorder requires. All the conſtricted Parts of the Prepuce being thus divided, the Penis muſt be fomented and waſh'd with warm Wine; and, the Prepuce being drawn over the Glans, the Part muſt be carefully bound up, and healed as before. *Heiſter Chirurg.*

PARAPHORA, παραφορά, from παραφέρω, to deprave. A ſlight Delirium, or a Delirium in general.

PARAPHRENITIS. An Inflammation of the Diaphragm, or Parts adjacent.

If a Diſeaſe ſimilar to the Pleuriſy ſeizes that Part of the Pleura which ſurrounds the Diaphragm, or affects the Diaphragm itſelf, a terrible Species of Diſorder, call'd *Paraphrenitis*, is produced.

This Diſeaſe is far more frequent than is commonly believ'd, ſince, when preſent, it either remains undiſcover'd, is neglected, or treated as if it was another Diſorder.

A *Paraphrenitis* is known from an highly acute and continual Fever; an inflammatory Pain of the Part affected, intolerable on account of the nervous Membranes. This Pain is greatly augmented during Inſpiration, Coughing, Sneezing, Repletion of the Stomach, a Nauſea, Vomiting, and a Compreſſion of the Abdomen in diſcharging the Fæces, or the Urine. Hence the Diſorder is accompanied with an erect, ſmall, quick, and ſuffocating Reſpiration, performed only by the Action of the Thorax, the Abdomen remaining at Reſt; with a perpetual Delirium; a Revulſion of the Hypochondria, inwards and upwards; the Riſus Sardonius; Convulſions; Madneſs; and a Gangrene.

A *Paraphrenitis* terminates in the ſame manner with a Pleuriſy; but, in conſequence of the great and continual Motion of the Part affected, its Neceſſity to Life, and the Tenſion of the nervous Membranes, all the Symptoms are quicker, and more fatal. Hence ariſes a purulent Aſcites.

Hence the Cure of a *Paraphrenitis* requires the ſame Diſtinctions and Cautions with that of a Pleuriſy, and almoſt the ſame Remedies, ſuch only excepted, as the Situation of the Part affected cannot admit of. Emollient Clyſters, in conſequence of their acting on the Parts next to that affected, are often beneficial.

But when the Diaphragm, previouſly inflam'd, comes to a Suppuration, and the Abſceſs, breaking, diſcharges its Pus into the Cavity of the Abdomen, the Pus is there collected, congeſted, and putrefied, produces a Tumor, a Corroſion of the Viſcera, a violent Tabes, and, at laſt, Death.

This Species of *Paraphrenitis*, tho' known, is yet abſolutely incurable. *Boerh. Aphoriſm.*

PARAPHROSYNE, παραφροσύνη, from παραφρονέω, to be delirious. A Delirium, or Alienation of Mind.

PARAPLEGIA, παραπληγία, from παρά, importing ſomewhat injurious; and πλήσσω, to ſtrike. A Paraplegy, or Palſy of all the Parts below the Neck, as it is now underſtood; but in *Hippocrates* it ſeems to import a Palſy of any particular Part, in conſequence of an Apoplexy, or Epilepſy. See Apoplexia, and Paralysis.

PARARMA, πάραρμα. The Liſt of Cloth. *Galen, in Hippocrat. de Arte.*

PARARTHREMA, παράρθρημα. A ſlight Luxation.

PARAR-

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PARARRHYTHMOS, παραῤῥυθμος. An Epithet for a Pulſe which is not ſuitable to the Age or Nature of a Perſon.

PARASCHIDES, παραχίδες, from παραχίζω, to cleave. The Fragments, or Splinters, of fiſſur'd Bones. *Hippocrates, de Fract.*

PARASEISMA, παράσεισμα. A Concuſſion of the Body, eſteem'd a Species of Exerciſe. *Hippocrates de Diæta, L. 2.*

PARASITICAL PLANTS are ſuch as are produced out of the Trunk or Branches of other Plants, from whence they receive their Nouriſhment, and will not grow upon the Ground, as the Miſelto and others.

PARASPHAGIS, παρασφαγίς. The Part of the Neck contiguous to the Clavicles.

PARASTATÆ, παραστάται. This, in *Hippocrates*, ſignifies the *Epididymis*. But *Herophilus*, and, after him, *Galen*, call'd theſe the *Varicoſe Paraſtatæ*, in order to diſtinguiſh them from the *Glanduloſe Paraſtatæ*, now call'd PROSTATÆ. The Word is deriv'd from παρίσημι, to be ſituated near.

PARASTREMMA, παράστρεμμα, from παραστρέφω, to diſtort, or pervert. A Perverſion, or convulſive Diſtortion, of the Mouth, or any Part of the Face. *Hippocrates, Prorrhet. L. 2.*

PARASYNANCHE. A Species of Quinſey. See ANGINA.

PARATHENAR.

PARATHENAR MAJOR.

This is a pretty long Muſcle forming Part of the outer Edge of the Sole of the Foot. It is commonly termed *Hypothenar*, but very improperly, according to the Signification of that Word.

It is fix'd backwards, by a fleſhy Body, to the outer Part of the lower Side of the *Os Calcis*, from the ſmall poſterior external Tuberoſity, all the Way to the anterior Tuberoſity. There it joins the *Metatarſus*, and, at the Baſis of the fifth Metatarſal Bone, ſeparates from it again, and forms a Tendon, which is inſerted in the Outſide of the firſt Phalanx of the little Toe, near its Baſis, and near the Inſertion of the *Parathenar minor*.

PARATHENAR MINOR.

This is a fleſhy Muſcle fixed along the poſterior Half of the outer and lower Side of the fifth Bone of the Metatarſus. It terminates under the Head of the Bone, in a Tendon which is inſerted in the lower Part of the Baſis, of the firſt Phalanx of the little Toe.

The tendinous Inſertion of this Muſcle is very cloſely united to the cartilaginous Ligament of this Part. The ſame thing is to be obſerved, concerning the other Muſcles, which go to the lower Parts of the Baſis of the firſt and ſecond Phalanges of the Toes. In aged Perſons, ſome Parts of theſe Ligaments are often turned to Bone, and thereby form theſe bony Portions, which are taken for diſtinct Seſamoide Bones.

The *Parathenar major* ſerves, particularly, to ſeparate the little Toe from the reſt; and the *Parathenar minor* bends the firſt Phalanx of that Toe. Both theſe Muſcles ſeem to be too large and ſtrong for the neceſſary Motions of ſo ſmall a Part on ſo weak a Joint: But as the little Toe makes a Part of the outer Edge of the Sole of the Foot, which is very much expoſed to external Violence when we walk bare-footed, and no Part of it ſo much expoſed as the little Toe, very powerful Muſcles were neceſſary to ſtrengthen it on theſe Occaſions.

Beſides the two Uſes already mention'd, the great and ſmall *Parathenar* may have another, in which they may, alſo, be aſſiſted by the *Thenar*; and that is, to bend the Sole of the Foot according to its Breadth, which Action is very requiſite in walking a Tip-toe, in going up a Ladder, and in climbing; on which Account, the two *Parathenars* deſerve the Name of the Tiler's Muſcles, much better than the *Tranſverſalis Pedis. Winſlow.*

PARDALIANCHES. The *Aconitum Pardalianches* is, according to *Boerhaave*, a Name for the *Ranunculus*; *folio Cyclaminis*; *radice Aſphodeli, major.*

PARDUS. Offic. Jonſ. de Quad. 81. Aldrov. de Quad. Digit. 64. Charlt. 14. *Pantherus, Pardalis, Pardus, Leopardus.* Geſn. de Quad. Digit. 824. *Pardalis.* Raii Synop. A. 166. THE LEOPARD.

The Fat is eſteemed one of the beſt Coſmetics. *Dioſcorides.*

PAREAS. The Name of a Serpent ſaid to be found in *Syria*, ſome of which are of the Colour of Braſs; others, blackiſh. The Bite is not mortal, but only excites an Inflammation. *Caſtellus* from *Foreſtus.*

PAREDRIA, παρεδρία, from παρά, importing near; and ἕδρα, a Seat. An Aſſociation, Vehemence, or Aſſiduity (of a Diſorder, or Diſorders.) *Hippocrates Præcept.*

PAREGORICUS, παρηγορικὸς, from παρηγορέω, to conſole, or mitigate. Mitigating, lenient; an Epithet for Medicines which relieve Pain.

PAREIRA BRAVA. Offic. Mont. Exot. 7. Dale Diſſert. Med. Cod. Med. 89. Chomel. 261. *Caapeba, Pareira, Brava,* Lochn. Sched. p. 29. *Caapeba Braſilienſibus.* Worm. Muſ. 158. *Caapeba.* Piſ. 1. 94. *Caapeba ſive Convolvulus Colubrinus.* Ejuſd. 2. 312. *Caapeba Braſilienſibus, Luſitanis.* Erva de Noſſa Sennora, *aut* Cipo de Cobras. Marcg. 25. Raiz, & Erva de Noſſa Sennora. Worm. Muſ. 157. *Convolvulus Braſilianus flore octopetalo monococcus.* Raii Hiſt. 2. 1331. *Pareyra, Ambutua, Butua overa Brutua.* Ind. Med. 89. *Butua overa Brutua, Pianta Indiana.* Zan. Hiſt. 59. *Butua ſive Pareira Brava Luſitanica.* Geoff. Tract. 286. *Pareira Brava.* Chom. WILD VINE.

This Root is commonly about the Bigneſs of the little Finger; tho' ſometimes larger. It is of a brown Colour, wrinkled both ways on the Surface; but its inner Subſtance is fibrous, like the *Thymelæa. Zanoni* ſays, that, when cut tranſverſly, it repreſents the Sun, and its Rays; but this Conceit is without Foundation. It is of a ſweetiſh Taſte, with a diſagreeable Mixture of Bitter, and without any Smell. Authors pretend that this Root comes from *Braſil*, for this Reaſon, becauſe we get it from the *Portugueſe:* But it is much more probable, that it is of *Eaſt-India* Growth; for a Surgeon ſent it from *Surat* to M. *de Juſſieu*, by the Name of *Boutua* Root; and wrote, that it grew along the Coaſt of *Malabar.*

This Root is much celebrated by the *Portugueſe*, as an Alexipharmic, and an Antidote againſt all poiſonous Plants. It is, undoubtedly, a very good Diuretic, and very proper in Nephritic Colics.

The Way of uſing it is, Boil about a Quarter of an Ounce, ſcraped or raſped, in two or three Pints of Water, till reduced to a Pint; of which the Patient is to drink a Glaſs every half Hour, in a warm Bath, his Body being before prepared by Bleeding and Clyſters.

A ſmall Quantity of the Syrup of the Five opening Roots may be added to the Decoction; and, by this Method alone, *Geoffroy* the elder cured the great *Abbé Bignon* of a Stone-colic, and made him void a very large Stone. When given in a large Doſe, it heats conſiderably. It ſeems to act by diſſolving the ſlimy Matter contained in the Kidneys and Bladder; and has been given with great Succeſs, mixed with Balſam of Capivi, in Gonorrhœas, after ſufficient Evacuations. The Decoction already mentioned has, alſo, done Wonders in hepatic Colics, ariſing from an Obſtruction of the Orifice of the Gall-bladder, a Glaſs being drank every three Hours, to the Quantity of a Quart. The *Portugueſe* uſe this Root powder'd, for Quinſeys and Diſeaſes of the Thorax. *Geoffroy.*

There is, alſo, another Sort of *Pareira Brava*; which *Dale* thus diſtinguiſhes:

Pareira Brava alba. Geoff. Tract. 287. *Pareiræ Species ſecunda.* Lochn. Sched. 32. THE WHITE WILD VINE.

This is ſaid to come from *Braſil.* It is more woody than the former, compoſed of Fibres, of which ſome are longitudinal, the reſt orbicular. The Bark of this Root is white, but the Subſtance within yellow, like Liquorice. *Geoffroy.*

PARENCEPHALIS. The *Cerebellum.*

PARENCHYMA, παρέγχυμα, from παρεγχέω, to pour into. A Term introduc'd, as is ſaid, by *Eraſiſtratus*, importing all that Subſtance, which is contained in the Interſtices betwixt the Blood-veſſels of the Viſcera, which he imagin'd to be extravaſated and concreted Blood. The Moderns, having diſcover'd all the Viſcera to be vaſculary and glandulous, have rejected this Term, together with the Doctrine.

PARESIS, πάρεσις, according to the Definition of *Aretæus, Chron. L. 1. C. 7.* is a Palſy of the Bladder, when the Urine is either ſuppreſs'd, or diſcharg'd involuntarily.

PARIETALIA OSSA. The Temporal Bones. See CAPUT.

PARIETARIA.

The Characters are;

The Flower is male, tetrapetaloidal, ſtellated, furniſhed with four Stamina, and with Teſticuli, having a ſmall Apex in the Centre without an Ovary. The Flower is female, conſiſting of a foliaceous, triſoliated Calyx, in whoſe Centre is a conoidal Ovary, furniſhed with a fimbriated Tube in another Place of the Plant. The Floſcules and Ovaries are cloſely collected in thick Nodes to the Stalks.

Boerhaave mentions two Species of *Parietaria*; which are,

1. Parietaria; Officinarum, & Dioſcoridis. *C. B. P.* 121. *Tourn. Inſt.* 509. *Boerh. Ind. A.* 2. 92. *Helxine, Parietaria.* Offic. *Parietaria.* Ger. 261. Emac. 331. J. B. 1. 976. Raii Hiſt. 1. 206. Synop. 66. *Parietaria vulgaris.* Park. 436. PELLITORY OF THE WALL.

Pellitory of the Wall has ſeveral ſmooth, reddiſh, ſucculent Stalks, half a Foot or a Foot high, with roundiſh, ſharp-pointed Leaves, ſet on alternately upon long Foot-ſtalks, of a Deep-green above, and lighter underneath. The Flowers are ſmall and

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and ſtaminous, reddiſh before their Opening, white afterwards, growing among the Leaves all along the Stalks; it grows upon old Walls, flowering in *May*. The whole Herb is uſed.

It is cooling, opening, and cleanſing, abounding in nitro-ſulphureous Salt, and is accounted very good for the Stone, Gravel, Stoppage and Heat of Urine; and for theſe Purpoſes the Juice, or Decoction, is given in Draughts, or in Glyſters; ſome commend the ſame for Coughs. *Miller's Bot. Off.*

By the chymical Analyſis, Pellitory yields a great deal of Oil, a great deal of fix'd Salt, and Earth, and ſeveral Liquors, of which ſome are acrid, and the reſt acid: As for the volatile Salt, one obtains none that is concrete from this Plant; but it yields an urinous Spirit.

Dioſcorides affirms, that it leniſies and reſolves, and is good to ſtop Tetters, and ſpreading Ulcers: They applied it, in his Time, to the Parts affected with the Gout; they gave the Juice to drink in an old Cough, made a Gargariſm of it for the Diſeaſes of the Throat; and injected it into the Ears to appeaſe their Pain. *Cæſalpinus* ſays, it provokes Urine, and opens the Kidneys; *Tragus* very much commends the Decoction, to remove Obſtructions of the lower Belly. Take, according to him, Pellitory of the Wall and Water-creſs-leaves bruiſed; add a ſufficient Quantity of Wine; mix, and put them in a Frying-pan; apply them in Form of a Cataplaſm, moderately hot, to the lower Belly, for Suppreſſion of Urine. *Dodonæus* only makes a Cataplaſm of the Leaves, and Oil of ſweet Almonds. *Hildanus* uſes Oil of Scorpions, inſtead of Oil of ſweet Almonds. *Tragus* makes another Cataplaſm for Contuſions, frying it with Bean-meal, Mallows, Wheat-bran, Oil, and Wine. *Camerarius* preſcribes it bruiſed with Vinegar, and applied hot to the Teſtes, in caſe of Ruptures. *Aurelius Victor* ſays, that *Conſtantine* gave the Name of this Plant to the Emperor *Trajan*; becauſe his Statues and Inſcriptions were on all the Walls of *Rome*, like Pellitory. It is now uſed in all deterſive and lenitive Decoctions, and Semicupiums. The Syrup of Pellitory gives great Relief to hydropic Perſons. *Martyn's Tournefort.*

Parietaria abſterges, and is ſomewhat aſtringent and cooling; it is ſeldom uſed internally; yet ſome commend it for the Cough: Externally, it is of Service in Tumors, Eryſipelas, and Ambuſtions; and, being ſlightly bruiſed and apply'd, it is ſaid to be very effectual for the Cure of recent Wounds. The Powder of the dry'd Herb, taken in Honey, or drank in Beer, or Poſſet-drink, is an excellent and approved Remedy for an inveterate Cough, and Conſumption of the Lungs; and was uſually preſcribed by the Antients for the Cough and Aſthma. The Decoction in Wine, or Hydromel, is conducive to the ſame Purpoſes; but the Powder is more effectual. This Plant affords a nitro-ſulphureous Salt, as well as Borage and Bugloſs. That it abounds with nitrous Salt, is evident from its deterſory Virtue.

It is called *Parietaria*, and *Muralis*, from *Paries*, or *Murus*, a Wall, becauſe it grows on Walls: *Helxine*, from ἕλκω, ἕλξω (*helco*, *helxo*) to draw or attract; becauſe its rough Leaves and Seeds draw and tenaciouſly adhere to Cloaths: *Perdicium*, from *Perdix*, a Partridge, becauſe Partridges uſually feed on it: *Vitriaria* and *Urceolaris*, becauſe, by its *Mucouſneſs*, it is of Service for ſcouring and cleanſing Pots and Glaſſes. *Raii H. P.*

2. Parietaria; minor; Ocymi. *C. B. P.* 121. *Boerh. Ind. alt. Plant. Vol.* 2.

PARILI. H. M. The Name of a tall Tree, which grows in *Malabar*.

The Root and Leaves are ſaid to correct a melancholy Diſpoſition of the Blood, and to temperate acid and ſalt Humours. Of the Leaves, together with the Leaves of the *Caretti*, boiled in the lacteous Juice of the Coco-nut, a Potion is prepared, which mitigates the Pains of the Piles, either internal, or external.

PARIS HERBA. See HERBA PARIS.

PARISTHMIA, παρίσθμια. The Tonſils; or Diſorders of the Tonſils. See TONSILLÆ.

PARITI, or TALI-PARITI. A Species of *Alcea*, which grows in *Malabar*, the Flowers of which, bruiſed in Milk, are put into the Ears, as a Remedy for Pains of the Head.

PARKINSONIA.

The Characters are;

It hath a polypetalous, anomalous Flower, conſiſting of five diſſimilar Leaves, from whoſe Cup ariſes the Pointal, which afterwards becomes a rough-jointed Point; each Knot or Joint containing one Kidney-ſhaped Seed.

Miller mentions but one Species of this Plant; which is,

Parkinſonia aculeata, *foliis minutis*, *uni coſtæ adnexis*. Plum. Nov. Gen.

This Plant was diſcovered by Father *Plumier*, in *America*, who gave it this Name, in Honour to the Name of Mr. *John Parkinſon*, who publiſhed an univerſal Hiſtory of Plants, in *Engliſh*, in the Year 1640.

It is very common in the *Spaniſh Weſt-Indies*; but, of late Years, it has been introduc'd into the *Engliſh* Settlements in *America*, for the Beauty and Sweetneſs of its Flowers. This, in the Countries where it grows, naturally riſes to be a Tree of twenty Feet high, or more; and bears long ſlender Branches of yellow Flowers, which hang down after the ſame manner as the *Laburnum*. *Miller's Dictionary.*

PARNASSIA.

The Characters are;

The Leaves are roundiſh, and diſpoſed in a Circle; the Calyx is pentaphylloidal; the Flower roſaceous, one on a Stalk, conſiſting of greater and ſmaller fimbriated Petals. The Ovary becomes a ſmall conoidal Fruit, opening into three or four Keel-ſhaped Cells, full of minute Seeds.

Boerhaave mentions but one Sort of *Parnaſſia*; which is the Parnaſſia; paluſtris & vulgaris. *Tourn. Inſt.* 246. *Boerh. Ind. A.* 243. *Raii Synop.* 3. 355. *Hepatica alba*. Offic. *Gramen Parnaſſi*. Ger. Emac. 840. Raii Hiſt. 2. 1049. *Gramen Parnaſſi vulgare*. Park. Theat. 429. *Gramen Parnaſſi, flore albo ſimplici*. C. B. P. 309. *Gramen Parnaſſi Dodonæo, quibuſdam Hepaticus flos*. J. B. 737. *Ciſtus humilis paluſtris, Hederæ folio, perfoliata noſtras*. Pluk. Almag. 108. *Pyrola rotundifolia paluſtris noſtras flore unico ampliore*. Hiſt. Oxon. 3. 505. GRASS OF PARNASSUS.

It grows in putrid and marſhy Places, and flowers in *Auguſt*: The Parts uſed in Medicine are the Root, Herb, and Seed.

The Juice of the Leaves, and Decoction of the Root, are moſt approv'd Medicines for the Eyes. The Seed is a powerful Provocative of Urine, and ſtops a Looſeneſs and Vomiting. *Dioſcorides*. It ſtrengthens the Liver, and frees it from Obſtructions. *Chab.* It is vulnerary and aſtringent, and is ſaid to be effectual in ſtopping Hæmorrhages. *Hiſt. Plant. adſcript. Boerhaav.*

PAROCHETEUSIS, παροχέτευσις, from παρὰ, and ὀχετεύω of ὀχετὸς, a Canal, or Duct, Derivation, is uſed by *Hippocrates* to ſignify a Derivation of the Humours from one Part, in order to evacuate them by another not far diſtant. The Laws of Derivation, in *Hippocrates*, *Lib. de Humoribus*, are thus expreſs'd: Παροχέτευσις ἐς κεφαλὴν, ἐς τὰ πλάγια, ἢ μάλιστα ῥῆσι· "Derivation is made to the Head, to the Sides, and where "there is the greateſt Tendency." Or, otherwiſe, 6 *Epid. Sect.* 2. *Aph.* 5. παροχέτευειν ὑπεξαίρεσις ἀνίσπασιν αὐτικα, ἀνίσπνουλα ὑπεξαίρεσι· "Derivation is to be uſed, when you have "done ſomething immediately towards a Revulſion, and Re-"nitences are to be ſubdued (or mollified)." *Galen* very well explains *Derivation*, in his Comment on theſe Words: "*Hip-"pocrates*, ſays he, uſes the Word *Parocheteuſis*, Derivation, "when an Humour requires to be evacuated, and does not take "its Courſe the Way which it ought to do, nor yet very re-"mote from the proper Paſſage, nor to the moſt contrary "Place; for Inſtance, when the Urine tends to Evacuation "through the diſeaſed Kidneys and Bladder, it may be beſt, in "that Caſe, to make a Derivation of it by the Inteſtines, in "the ſame Manner as when the Courſe of the Humours is "directed towards the Inteſtines, if the Inteſtines are vitiated, "a Derivation is to be made by the urinary Paſſages. Thus, "in Women, *Derivation* is to be made, ſometimes, to the "Uterus, or the contrary; ſometimes a Derivation is to be "made of an uterine Flux towards the urinary Paſſage, or "the Inteſtines." And, *Lib.* 1. *ad Glauc.* he ſays, "While "the Humours are in a flowing State, *Revulſion*, ἀνίσπασις, "as *Hippocrates* calls it, is the proper Remedy; but, when "they are ſettled and fixed on ſome particular Part, *Deri-"vation* is to be attempted."

PARODONTIDES, from παρὰ, frequently ſignifying, in Compoſition, the ſame as the Latin, *præter*, by, nigh to, by the Side of; and ὀδὼς, Tooth. The ſame as PARULIDES; which ſee.

PARONYCHIA, in Surgery, is a Whitloe.

By a *Paronychia*, or Whitloe, is meant an intenſe, corroding Pain which affects the Phalanges, and eſpecially the Ends of the Fingers, and which is attended with a violent Pulſation, and preternatural Heat. The Fingers are, for the moſt part, tumefied; and ſometimes there is no Tumor, when the Diſorder lies deep, or about the Bone. Sometimes theſe Pains extend to the Cubitus, or Shoulder; becauſe of the Connection between the Fingers and thoſe Parts by the Flexor Muſcles: Sometimes the Pain is gentle or moderate; and ſometimes the Pain is ſo violent and intolerable, that the Patient is obliged to paſs both Day and Night without any Sleep, in a miſerable Condition: Nor is it altogether unuſual, to ſee thoſe of more delicate Conſtitutions ſo tormented with the Pain of a Whitloe, that a Fever, Faintings, Convulſions, great Heat and Deliriums, with a violent Inflammation of the Arm, an Abſceſs, or Spacelus, are induced; and, unleſs timely Aſſiſtance intervene, Life itſelf is endangered.

As, therefore, the Paronychia is more mild, or more violent, according to the different Parts affected by it, ſeveral Species of it have been conſtituted by Surgeons. *Garengeot* reckons

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four, and *Gouey* five; but I can see no Reason for making more than three. 1. When the Disorder arises in the Skin or Fat, in the back, or fore Part of the Finger, or even under or near the Nail; in this Case, the Pain may be severe, but the Symptoms are usually not malignant. 2. When the Periosteum is attacked, inflamed, or corroded; and then the Patient is tormented with most violent Pains, which, however, are more or less intense, as that tender Membrane is more or less affected. 3. The most malignant Species is, when the nervous Coats of the Flexor Tendons of the Fingers, or the Nerves near them, are seiz'd with this Disease; for then it is attended with the most excruciating Pains, the most malignant Symptoms, and the Patient is every way disordered.

The immediate Cause of a Paronychia appears to me to be, an Inspissation of stagnated Blood, whence proceeds an Inflammation of the adjacent Parts; and this is evident from the Heat and Pulsation of the Part affected. This Inspissation may be produced, partly by internal Causes, as a Crudity and Acrimony of the Blood; and, partly, by various external Causes, as the Prick of a Pin, a Thorn, or a Splinter, or by a Contusion or Bruise, and other like Accidents: So that a Paronychia is more or less dangerous and troublesome, in proportion to the Degree of the Wound or Inflammation, or the Sensibility of the morbid Part. Some Physicians have asserted, that in Fingers thus affected Worms have been observed, to which they ascribed the Cause of the Disorder; and, perhaps, upon this Account, the *Germans* named it the Worms in the Fingers.

In the Beginning of the first Species, the affected Part of the Finger swells, with a slight Hardness, but little or no Pain. Afterwards Redness, with Inflammation and Pain, appears, which are gradually succeeded by the Symptoms already mention'd: But, tho' the Tumor wonderfully increases, the Pain and other Mischiefs seldom become intolerable in this Species, or extend themselves beyond the affected Finger, as in the other Kinds. In this Sort, the peccant Matter is so far from being lodged deep, that it is often perceptible to the Eye: But the nearer the Inflammation reaches to the Periosteum, or Tendons of the Fingers, the more intense are the Pains, so as, sometimes, to affect the whole Arm; and in lax, delicate Constitutions, induce almost continual Watchings.

The second Species of Paronychia may be distinguish'd from the first, by the intense Pain, either in the End of the Finger, or over its whole Extent, accompanied with great Heat, a Fever, Watchings, Convulsions, and sometimes with a Delirium. The Tumor and Inflammation scarcely appear outwardly, nor does the Pain reach the Wrist.

The third Sort of Paronychia may be known by the following Symptoms. There is either no Tumor about the End of the Finger, or it is very small; especially if the Inflammation affects the interior Coat or Vagina of the Tendon, more than the exterior. Here the Pain is so intense and intolerable, that the Patient is in extreme Agonies: Nor is the Finger only affected, but the whole Hand and Carpus; especially that Part of the Hand near the Carpus, under the transverse Ligament of the Hand. The Pain even extends over the Arm, to the internal Part of the Elbow, where the Flexor Muscles of the Fingers have their Origin; and is sometimes propagated to the Top of the *Humerus*, inducing almost continual Watchings, with a Fever and Convulsions.

If the corrupted Matter is lodged in the Coat of the Tendon, its hard and compact Substance makes little or no Swelling upon the Fingers, excepting towards the Joints, where it is but moderate. The Hand is more swelled than the Fingers, but its Pain is milder; and sometimes the Arm has become so surprisingly tumid, that *Garengeot* says, he has seen it as large as the Thigh.

The Paronychia terminates variously, according to its different Degrees and Symptoms. In the first Species, there is generally little Danger: If the Parts about the Nail be affected, the Nail generally separates from the Finger, occasioning much Pain to the Patient; tho' sometimes only that Half of the Nail comes away, which is nearest to the Whitloe. But if the morbid Matter is lodged under the Nail, or extends itself towards a Tendon, the Patient is tormented with very intense Pains. In the Paronychia of the second Kind, the Pains and other Mischiefs are so violent, that, as some affirm, the Life of the Patient is sometimes endangered; tho' I have seldom seen the Disorder increased to such a Degree. Sometimes, after the Inflammation and Suppuration, I have seen the Bone attacked with a Caries; and, if this happens in the last Joint, it will be more likely to come away entire, as being very small, than that the carious Part should separate from the sound. But the third Species of Whitloe is the most dangerous, and the most malignant. If, in this Case, an Abscess or Gangrene happens, the Pains are so excruciating, and attended with a Fever, Tumor, and Inflammation of the Arm, and other pernicious Concomitants, that, unless timely Assistance be administer'd, a miserable End may be put to the Patient's Life. If an Abscess should be formed in the Arm, near the Musculus Quadratus of the Radius, under the annular Ligament, *Garengeot* is of Opinion, that, without Incision, the Case ought to be deem'd incurable; and, even then, the Patient may be in danger of losing the Use of the morbid Finger, notwithstanding the most prudent Treatment; and then the inevitable Consequences of the Disorder are often, by the Ignorant or Malevolent, imputed to the Negligence or Unskilfulness of the Surgeon.

With regard to the Cure of a Paronychia, *Garengeot*, without mentioning any other Remedy, directly proposes Incision. But I think it more prudent, as in other Diseases, according to the Advice of *Hippocrates*, (*Sect.* 8. *Aphor.* 6.) first to try the Effects of Medicine, before I assume the Knife, so much dreaded by the Patient. In this Practice, I am confirmed by Experience, not only in other Diseases of this Kind, but even in the Paronychia itself, when I have exhibited Medicines proper for digesting the inspissated, stagnant Blood, and for mitigating the Inflammation. For this Purpose, let the Patient often hold his Finger, for some Hours at a time, in the best Spirit of Wine, or camphorated Spirit, mixed with a little *Venice* Treacle. A Decoction of Garlick in Milk, or of an Handful of Sabine and Germander, may answer the same Intention; in which warm Liquor the Finger should be constantly immerged, or fomented very frequently with it. The Academy of Sciences at *Paris*, in their Memoirs for 1707. have advised to dip the morbid Finger often in boiling Water, for a small Space of Time. Others prescribe a Plaister of Asa-foetida, thick spread on Linen, to be apply'd to the Part. Others recommend, from Experience, the thin, white Membrane between the Shell and Substance of a boiled Egg, to be apply'd like a Plaister. *Riverius* says, that a Whitloe may be easily cured, by a frequent Intrusion of the diseased Finger into the Ear of a Cat. If, during the Use of these Remedies, the Fever and Inflammation are violent, proper internal Medicines, and Bleeding, ought not to be neglected. If by any of these Means the Patient finds Relief, he should persist in the Use of them till the Finger be without Pain, and perfectly recovered: But if these Remedies operate but slowly, or have no Effect, so that a Suppuration seems to be advancing, Recourse must be had to Incision, as the safest Remedy. Meanwhile, as the Patients are apprehensive of Incision, because of the great Pain it produces, it will not be improper, in the first or milder Species of the Paronychia, to apply a Plaister of Diachylon cum Gummis, or, the like, for ripening the Suppuration, till the Situation of the morbid Matter becomes more conspicuous, and the Operation may be performed with less Pain. But in the two other severer Species of this Disorder, the least Delay is dangerous; because the Periosteum, and small Bones, are soon corroded by the malignant Matter, which may induce more intense Pains, larger Abscesses, a Caries, or a Gangrene of the whole Arm, and, probably, the Death of the Patient.

For the easier Cure of a Paronychia, its Species should first be considered: If it be of the mild, or first Kind, and has not penetrated deep, the Cure may, without Difficulty, be obtained. As soon as the purulent Matter becomes prominent, like a Tubercle, or Blister, let the Surgeon place a Finger on each Side of the affected Part; and, stretching the Skin, by drawing it, on both Sides, from the Whitloe, make the Incision: Thus will the Matter be discharged, and the Finger will generally heal spontaneously. *Hildanus*, in *Cent.* 1. *Obs.* 97. gives the following safe and ready Method of curing a Paronychia, which he had frequently tried with Success. He first fermented the Finger, several times, with the Decoction of the Flowers of the Chamomile, and Melilot, and Fenugreek, and Quince-seeds, boiled in Cows-milk; then he gradually cut off the Surface of Skin, where the Pain was. The Skin being thus removed, some red Specks appeared, in which, upon Incision, he found one or two small Drops of a red Water; and, this being discharged, he applied a Linen Cloth moistened with a Solution of *Venice* Treacle in Brandy; the Pain immediately ceased; and, next Day, the Finger was sound.

If the Disorder is seated near the Roots of the Nail, beneath it, or at either of its Sides, the Whole, or Part of the Nail, is generally lost. If the purulent Matter is concealed under the Nail, it affects the adjacent Parts with Inflammation, and most intense Pains. In this Case, *Solingen*, with other Surgeons, advises, first, to remove that Part of the Nail, under which the morbific Matter stagnates, either by extirpating it intirely, or by making an Incision in it; and, having expressed the Matter, the Wound may be easily healed, by the Application of Lint moistened with Spirit of Wine, or Lime-water.

If the peccant Matter lie deeper under the Skin, it must, also, be discharged by Incision, without Delay; for otherwise it would, probably, rather affect and consume the subjacent Bone, than

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than burſt the external Skin, which is generally both thicker and harder than in other Parts. If the Patient is unwilling to undergo the Operation, the Danger to which he expoſes himſelf, ſhould be remonſtrated to him, and the Surgeon ſhould be cleared from the Blame that may ariſe from the Conſequences. In the mean time, in order to ripen the collected Matter, and bring it to Suppuration, apply to the Part a Plaiſter of Diachylon with the Gums. If, by this Method, the external Skin burſts, the Orifice muſt be immediately widened, if it be too narrow; and the Wound may be deterged by ſome digeſtive Ointment, or the Liniment of *Arcæus* warmed, and mixed with Spirit of Wine; and then apply the before-mentioned Plaiſter with a proper Bandage; but, if the Patient be willing to ſubmit to a chirurgical Operation, it is to be thus performed. Let the morbid Finger be laid on a Table, with the affected Part upwards; then let a ſtrong able Aſſiſtant firmly hold the Hand and Arm of the Patient, leſt, being almoſt unable to ſuſtain the intenſe Pain, he ſhould ſuddenly retract his Arm, which, in the Operation, would be extremely detrimental. Then let the Operator penetrate through the Middle of the affected Part, with a ſtrong ſharp-pointed Knife, to the very Bone. Thus the Skin and Fat being laid open to the Extremity of the Finger, the ſtagnant Blood, or corrupted Matter, may be diſcharged, though the Quantity be ſometimes but ſmall, and the Bone will be preſerved from Infection.

In the ſecond Species of Paronychia, when the Periоſteum is corroded, and the peccant Matter has penetrated to the very Bone, an Inciſion ſhould be made for its Diſcharge, according to the preceding Directions; but particular Care muſt be taken, that the Knife reaches to the Bone. Although little, and ſometimes no Matter, appears to be evacuated, becauſe the Quantity is ſometimes extremely ſmall; yet, if the Pain gradually remits after the Operation, it is a Signal of a ſpeedy Cure.

Some Authors adviſe, always to make the Inciſion in one of the Sides of the Finger, and never in the fore or back Part of the laſt Bone, to avoid wounding the Tendons: But this is an unneceſſary Caution; partly, becauſe it is plain, that the Tendon reaches no farther than the Beginning of the laſt Bone of the Finger; and, partly, becauſe we learn from Experience, that an Inciſion may be ſafely made, either in the fore or back Part of the Finger. *Garengeot*, however, without offering any Reaſon for his Opinion, adviſes, that the lateral Method of Inciſion ſhould be ſtrictly obſerved; he likewiſe directs, that if the Pain does not abate, after the Operation is performed upon one Side, it muſt likewiſe be performed on the other, and upon this Account, becauſe the Pain, continuing after the Inciſion, intimates that the true Seat of this Diſorder had not been laid open. But, in my Opinion, the lateral Inciſion ſhould only be uſed, when a Tumor appears on the Side of the extreme Phalanx of the Finger, or when it ariſes in the ſecond and third Phalanges towards the Hand: On the contrary, I think, the Wound is better made in the Middle of the Extremity of the Finger, when all that Phalanx is affected, or when the morbid Matter indicates its Situation there. Beſides, it will neither be agreeable to the Inclination of the Patient, nor the Reputation of the Surgeon, to make two Inciſions, when Reaſon and Experience ſhew, that one may be ſufficient.

The Inciſion being thus performed, the Blood ſhould not only be ſuffered to flow out; but ſhould, alſo, be carefully expreſſed. Then let the Wound be filled with dry Lint, over which apply a Diachylon-plaiſter, and the Compreſs in the Form of a *Malta* Croſs, dipped in warm Spirit of Wine, ſecuring the Whole with a proper Bandage. When the Dreſſings are taken off next Day, there generally appears a little fungous Fleſh, which often alarms an unſkilful Surgeon, but without a Cauſe; for it is no bad Symptom, and may, without Difficulty, be removed by the Sciſſars, by a corroſive Medicine, or by digeſtive Ointments mixed with a gentle Eſcharotic. The Wound may then be healed, like thoſe in which the Bones are affected, with the Eſſence of Myrrh, or Amber, or with *Peruvian* Balſam. If the Bone appears to be corroded, the Wound ſhould be filled, and kept open, with Lint moiſtened with the Eſſence of Myrrh, or of round Birthwort, till an Exfoliation of the morbid Part is procured, or, which often happens, the Bone comes away entire; for, till the firſt Bone be removed, the Wound cannot be healed.

The third Species of Paronychia, when the malignant Matter is lodged in the Vagina or Coat of a Flexor Tendon, has rarely occurred to my Obſervation. *Garengeot* firſt laid down the Method of Cure in the following manner: In the ſmall Tumor, which, with the intenſe Pain, generally diſcovers the concealed Matter to be lodged at the End of the Finger, muſt be made a longitudinal Inciſion, ſo as to penetrate the Vagina of the Tendon. After this Operation, ſome Lymph will be diſcharg'd, to the great Eaſe of the Patient; but both the Diſorder and Pain, contrary to all Expectation, will ſoon return. Sometimes the morbid Matter will ſpontaneouſly burſt the Coat of the Tendon, and make its Way through the external Skin; and then the State of the Patient is the ſame as above. Near the Orifice, by which the Humour is diſcharged, appears a ſmall Caruncle extremely ſenſible, which is continually moiſtened by Humours flowing from the Hand to the Fingers. He, therefore, orders a Director to be introduced through the external Orifice within the Coat of the Vagina; and then with a Knife, or Sciſſars, expeditiouſly to lay open the Fleſh lying above the Director; by which means, a thick, inſpiſſated Matter will be diſcovered at the Bottom of the Sinus. If, after this Operation, the Seat of the Diſorder is not found, the Director muſt be again introduced, and the Operation repeated, till the Seat appears. If the Sinus of the Paronychia is ſituated in the middle Phalanx of the Finger, and the Inciſion is carried to the Middle of the firſt Joint, *Petit* adviſes to continue the Inciſion about a Quarter of an Inch into the Hand, in order to remove the Stricture which that Part of the Tendon, at the Extremity of the Finger, occaſions, where it is hard, and, as it were, cartilaginous; but where the Tendon continues ſoft and membranaceous, there is no need for continuing the Inciſion into the Hand.

If the Diſorder extends to the membranous Part of the Vagina in the Hand, and proceeds under the tranſverſe and annular Ligaments of the Hand to the Arm; ſo that the Fat upon the *Muſculus Quadratus* of the *Radius* begins to degenerate into a purulent Matter, the Director muſt be gradually and gently introduced into the Abſceſs, towards the tranſverſe Ligament, and an Inciſion muſt be made into the incumbent Fleſh, till it reaches that Ligament; which done, the Patient's Hand muſt be bent to relax the Parts; and then the Director being convey'd under the Ligament, an Inciſion muſt be made into the Skin and Fleſh, as far as the Director can be perceived to reach. The Aperture being thus made, and ſufficiently enlarged, the Tendons and Muſcles about the Carpus muſt be with great Caution diſengaged, ſo that the Abſceſs will gradually come in View, and ſometimes a copious Diſcharge of the purulent Matter will be made. In the next Place, as *Garengeot* informs us, *Thibaut*, late an eminent Surgeon at *Paris*, rightly adviſed, that, as is uſual in making a Seton, we ſhould convey a proper Cord through a Paſſage previouſly marked out by a Probe; ſince, by this means, at every freſh Dreſſing, the Matter collected in the Ulcer may be commodiouſly eliminated, and the Ulcer itſelf cleanſed, whilſt the Ligament is preſerved entire. But if, by theſe Meaſures, a Remiſſion of the Pains, the Fever, and other Symptoms, is not obtained, the moſt proper, and, at the ſame time, the moſt expeditious Method of the Relief is, according to *Petit*, forthwith to raiſe the Tendon that is moſt affected above the Ligament, and cut it off near to the Muſcle; by which Method, he aſſerts, the Pain has inſtantly ceaſed, and the Patient been happily cured. He, alſo, thinks, that the tranſverſe Ligament ſhould be uſed in the ſame manner, if it is found to be affected with the purulent Matter and Inflammation, ſo as to excite acute Pains; the Succeſs of which Practice is confirmed by the Inſtances of *Arnaud*, formerly a celerated Surgeon of *Paris*. But, if the Probe cannot be readily convey'd under the tranſverſe Ligament, an Inciſion ſhould be made between the Radial Artery, and the Tendons of the Muſcles, called Perforatus, and Perforans; which being cautiouſly enlarged, the Abſceſs ſhould be ſearched, and the incloſed peccant Matter diſcharged. To recommend this Practice, *Garengeot* relates an Inſtance of a Patient of *Arnaud*'s, whoſe Caſe was ſo deſperate, that the Surgeons judged that the Arm ſhould be amputated, for the Preſervation of the Patient's Life; but, upon *Arnaud*'s dividing the tranſverſe Ligament, the Patient was, in a ſudden and ſurpriſing manner, cured. One Caution muſt be particularly obſerved, that the Hand be not extended during the Operation, nor for ſome time after; for, when the Hand continues bent, the divided Ligament will more readily unite, and the Hand recover its uſual Motions: But if the Hand be imprudently extended, the Tendons under the divided Ligaments may ſtart out of their Places, and the Hand never recover its proper Motions.

With regard to the Dreſſings, if the Vagina of a Tendon be opened, lay ſeveral oblong Doſſils of dry Lint on each Side of the Tendon, by compreſſing of which the Hæmorrhage may be ſtopped. But if one of the large Blood-veſſels be cut, ſo that the Bleeding is very copious, it ought to be ſtitched up with a crooked Needle and Thread; for corroſive and ſtyptic Medicines, proper for ſuppreſſing Hæmorrhages in other Caſes, cannot be ſafely uſed here. Warm emollient Cataplaſms muſt be applied to the Hand and Arm, and carefully ſecured by the Eighteen-headed Bandage, repreſented *Tab.* XXX. *Fig.* 4. B B. The Advantage of this Bandage over the long ones is evident;

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evident; becauſe, when it is uſed, the Dreſſings may be removed at Pleaſure, without moving or ſtretching the Parts. To finiſh the Dreſſing completely, the entire Part of the Bondage ſhould be applied to the ſound Part of the Limb, oppoſite to the Wound; and thus will the Dreſſings be more effectually ſecured by the Heads of the Bandage. *Heiſter's Surgery.*

PARONYCHIA.

The Characters are;

The Root is perennial, the Calyx ſhaped like a Baſon; and divided into five Parts, which are ſhaped like a Capucin. The Flower conſiſts of five Stamina, and the Ovary, which is ſeated in the Centre of the Calyx, produces a ſingle erect Tube, and becomes with the Calyx a pentagonal Fruit, pregnant with a ſingle Seed. The Flowers are ſurrounded with a Multitude of very thin Silver-colour'd Spangles, diſpoſed in a Circle.

Boerhaave mentions two Sorts of *Paronychia*; which are,

1. Paronychia, Hiſpanica. *Cluſ. Hiſp.* 478. *Polygonum, minus, candicans.* C. B. P. 281.

2. Paronychia, Hiſpanica, nivea: polyanthos. *Barr. Obſ.* 1137. *Polygonum, montanum, niveum, Polyanthos.* Barr. In. 725. *Boerh. Ind. alt. Plant. Vol.* 2.

It is called *Paronychia*, from παρὰ, *para*, near to, or importing Reſemblance, and ὄνυξ, a Nail; becauſe it is of a ſhining, Silver-like Colour, or, probably, from *Paronychia*, a malignant Ulcer, affecting the Part about the Nail; but, whether this Herb be of any Effect towards curing that Diſeaſe, I cannot ſay; only, that it is a remarkably emollient Plant. *Hiſt. Plant. adſcript. Boerhaav.*

Paronychia rutaceo folio. A Name for the *Saxifraga*; *verna, annua, humilior.*

PAROPIÆ, παροπίαι. The external Angles of the Eyes.

PAROPTESIS, παρόπτησις, from ὀπτάω, to roaſt. A Provocation of Sweat, by making the Patient approach a Fire of live Coals, or by placing him in a Bagnio, or Stove.

PARORASIS. An Imbecillity of Sight.

PAROTIS, παρωτὶς, from παρὰ, importing near, and οὖς, the Ear. One of the ſalivary Glands. See SALIVA. An Inflammation, or Abſceſs of the parotid Glands, is, alſo, call'd *Parotis.* See ABSCESSUS.

Alexander Trallianus lays down a very good Rule, in relation to a *Parotis*; that is, at firſt to be ſure to bleed, before any diſcuſſing or drawing Application be made; that thoſe who have been forward in doing this without Bleeding, have been the Inſtruments of ſtrangling their Patients. And, upon the ſame Principle, he very juſtly explodes the Uſe of ſtrong Repellers, and Aſtringents; ſuch as Solanum, Alum, &c. He deſcribes the Medicines which are proper to make theſe Parotids yield to Diſcuſſion: An Application which ought always to be attempted, where the Caſe is capable of being cured by it, rather than Suppuration: But if, upon this, the Tumor does not in the leaſt ſubſide, and the Pain continues, all Endeavours, he ſays, ſhould be uſed to bring it to ſuppurate; and 'tis a Sign, that Matter is making, if a Rigor and Fever, which were not before, come on unexpectedly, and the Pain increaſes. And in this he agrees, in the main, with *Celſus*, who gives us a very good Diſtinction to guide our Practice in the Point; which is, when the Swelling comes originally of itſelf, without any other Diſtemper, to try moderate Repellents firſt, and Diſcutients; but where it attends or follows upon another Diſeaſe, as no Caſe is more frequent, it muſt then be brought to Maturation, and opened as ſoon as poſſible; for, in this Caſe, the Swelling is critical, and ſolves the Diſtemper. And *Hippocrates* pronounces thoſe Parotids, which ſucceed long Fevers, mortal, unleſs they ſuppurate. When theſe are obſtinate, and can't be ripen'd by external Applications, there have been Inſtances, where Burning has brought them to ſuppurate. And *Severinus*, and *Valeſius* before him, have given an Account how they have tried this Practice in malignant Parotids, with Succeſs. *Freind's Hiſtory of Phyſic.*

There is a Species of Tumors, which ariſe with Inflammations in particular Parts of the Body; for Inſtance, under the Armpits, in the Groin, or under the Ears, in the parotid Glands; whence they are called *Parotides*; but, in the other Place, *Bubos.*

Theſe Tumors are either mild, or malignant; they are ſaid to be mild, when they ariſe ſpontaneouſly, without any preceding contagious or peſtilential Diſeaſe, as they frequently do in growing Children; and theſe are generally not dangerous. Of this kind, alſo, are thoſe which ariſe after gentle Fevers, being a critical Tranſlation of the Diſeaſe. Thoſe Bubos are called malignant, which happen in the Peſtilence, or Venereal Diſeaſe; whence they are denominated Peſtilential or Venereal Bubos.

The mild Bubos are produced, like all other Inflammations, proceeding from internal Cauſes, from a Stagnation of the Blood, in a viſcous inſpiſſated State; and they differ from other Inflammations only in their Situation, under the Armpits, in the Groins, and below the Ears, in pinguious, glandulæ Parts.

The Diagnoſtic is eaſy, if we conſider, whether they are preceded by a venereal or peſtilential Infection.

The mild, or leſs dangerous, Species are ſeldom attended with any ill Conſequences, as they may either be diſcuſſed, or brought to a Suppuration; but a ſpeedy Diſcuſſion or Suppuration of them becomes more difficult in Perſons of an ill Habit; and ſometimes, from their Suppuration, proceed Fiſtulæ, which cannot be eaſily cured. The Parotides are brought to a Suppuration with great Difficulty, the Inguinal Bubos with more Eaſe, and the Axillary, with very little Trouble.

Againſt thoſe Bubos, which are unaccompanied with any other Diſeaſe, as in Children; the moſt effectual Remedies are Purgatives mixed with Mercurius Dulcis, which muſt be often repeated: By theſe Medicines, the glutinous inſpiſſated Blood is diſcuſſed, and drawn from the Part affected. Other Medicines for attenuating the Blood ſhould be, alſo, uſed; but, if the Tumor be attended with a ſlight Fever, a Phyſician ſhould be conſulted, in order to treat the Fever with proper Medicines.

When the Inflammation is very gentle, and a Diſcuſſion may be expected, for this Purpoſe, digeſtive Plaiſters, as ſimple Diachylon, the Plaiſter of Sperma Ceti, Galbanum, Soap, or of Frogs with Mercury, may be outwardly applied.

If the Inflammation be more violent, and attended with more intenſe Pains, ſo that digeſtive Plaiſters are of no Effect, it muſt, without Delay, be brought to a Suppuration; and for this Purpoſe apply a Plaiſter of Diachylon with the Gums. But, if the Pain be extremely ſevere, digeſtive Cataplaſms often laid, warm, upon the Part affected, will not only mitigate the Pain, but, alſo, promote a Diſcuſſion. Theſe Cataplaſms may be made of the Crums of Wheat-bread boiled in Milk to a proper Conſiſtence, with the Addition of a little Saffron; or of Meal, with Honey, and freſh Butter, mixed over the Fire, to which a little Treacle may be added.

Theſe, and Cataplaſms of the like Nature, ſhould be often applied to the Tumor, till it appears to be ſuppurated; and then, without Delay, it muſt be opened either with a Cauſtic, or a Kniſe. But, in Inciſion, great Care muſt be taken to avoid wounding any of the large Blood-veſſels near the Abſceſs, which might occaſion a fatal Hæmorrhage. After the Abſceſs is opened, it may be treated as directed under the Article ABSCESSUS. A Plaiſter of Diachylon will be very proper to ſoften and diſcuſs any remaining Hardneſs about the Mouth of the Ulcer. *Heiſter.* See SUPPURATIO.

PAROXYSMUS, παροξυσμὸς, from παροξύνω, to irritate, or render ſharp. A Paroxyſm; Acceſs, or Fit, of a Diſeaſe.

PARTHENIASTRUM. Baſtard Feverfew.

The Characters are;

It has a radiated diſcous Flower, conſiſting of ſeveral Florets, which occupy the Diſk; but are barren: The Half-florets, which are ſhaped like an Heart, are ſucceeded by black Seeds, which are naked, having no Down adhering to them: To which may be added, the Flower-cup is ſimple, and cut into five Parts to the Bottom.

Miller mentions two Species;

1. *Partheniaſtrum artemiſiæ folio, flore albo.* Acad. Reg. Scien.

2. *Partheniaſtrum helenii folio.* Hort. Elth.

The firſt Sort grows wild, in great Plenty, in the Iſland of *Jamaica*, and in ſome other Parts of the *Engliſh* Settlements in the *Weſt-Indies*, where it is called wild Wormwood, and is uſed by the Inhabitants as a vulnerary Herb.

The ſecond Sort grows plentifully in ſeveral Parts of the *Spaniſh Weſt-Indies*, whence the Seeds have been brought into *Europe*. They are both annual Plants. *Miller's Dictionary.*

PARTHENIUM. The ſame as MATRICARIA; which ſee.

PARTUS. A Birth. See OBSTETRICATIO.

PARVIBIBULUS. See BRACHYPOTÆ.

PARULIS, παρουλὶς, from παρὰ, near, and οὖλον, a Gum. A Boyl, or Abſceſs, of the Gums.

A painful Tumor of the Gums, with Inflammation and Swelling of the Cheek, more or leſs, is ſometimes occaſioned by the Tooth-ach. Theſe Tumors are called, by the *Greeks*, *Parulides*. They muſt be treated in the ſame manner with other inflammatory Tumors, by digeſtive Medicines. If theſe are not effectual, or if the Diſorder be neglected, it ſometimes degenerates into an Abſceſs, or Fiſtula. If the Diſorder be recent, in order to alleviate the Pain, which will not ſuffer the Patient to ſleep, and to diſcuſs the Tumor, boil Chamomile, Sage, the Flowers of Elder, and the like digeſtive Herbs; and let the Patient often hold, for a conſiderable time, a little of the warm Decoction in his Mouth. Outwardly let him apply a Bag

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Bag filled with the same Herbs, or a Plaister of Melilot, or simple Diachylon with Camphire; or, if these cannot be readily procured, apply a warm Cloth to defend the Part from the Cold, and obtain an easy Resolution; not omitting internally, diaphoretic and resolvent Medicines. If by these means a Resolution cannot be obtained, recourse must be had to Emollients, as Marshmallows, Mallows, Mullein, Figs, and the like, boiled in Milk, and frequently held in the Mouth. To accelerate the Maturation, apply half a Fig, roasted upon the Coals, to the Tumor; and outwardly an emollient Cataplasm upon the Cheek. As soon as the Softness indicates a Suppuration, an Incision must be made into the Tumor, with all Expedition, though the Matter should not be entirely maturated; lest, by its Continuance there, the Bone should be affected and corroded; whence the most malignant Fistulas are often produced. The Ulcer being opened, the corrupted Matter must be carefully expressed with the Fingers; and then let the Ulcer be often cleansed with warm Wine, or a Decoction of Agrimony, and St. John's-wort, mixed with Honey of Roses; and the Wound will heal spontaneously. If the Disorder has penetrated deep, let the Decoction be injected with a Syringe; and, the Liquor being carefully pressed out, apply a Compress to the Bottom of the Ulcer, which must be secured with a Bandage, that it may begin to heal from the Bottom. But if the Ulcer should degenerate into a Fistula, which is often accompanied with a Caries of the Bone, after using the above-mention'd Injections, a little of the Oil of Myrrh *per Deliquium*, or of the Elixir Proprietatis, should be instilled into the Ulcer for deterging and healing it. By this Method I have not only cured simple Ulcers of the Gums, but likewise a Fistula attended with a Caries of the Bone, even after it had continued above a Year. But, if none of these Medicines succeed, the Fistula must be laid open by Incision, and the Caries extirpated either by Medicines, the Rasp, or the actual Cautery. Sometimes a Fistula may be occasioned in the Gums by a corroded Tooth, which are usually called *Fistulas of the Teeth*, or *Maxillary Fistulas*; the Tooth, therefore, must be first extracted before the Application of proper Medicines. The Miscellanea Berolienſia contain some particular Observations on the Parulides: Whence it appears, that suppurating Medicines have but little Effect; and that, if these Tumors are not quickly laid open by Incision, and the Tooth extracted, they degenerate into Fistulas. It is, therefore, a better Method, as we have already directed, to discharge the Matter early by Incision, although crude, than, by delaying it, to endanger a Caries of the Bone. *Schelhammer*, in 1692. published an excellent Dissertation *de Epulide & Parulide*, very proper to be consulted. See EPULIS. *Heister. Chirurg.*

PARUS. Offic. Bellon. des Oyse. 369. *Parus major.* Aldrov. Ornith. Gesn. de Avib. 578. Jonst. de Avib. 86. Charlt. Exer. 96. Mer. Pin. 178. *Parus carbonarius.* Schw. A. 318. *Parus carbonarius major.* Schrod. 5. 322. *Fringillago seu Parus major.* Raii Ornith. 240. Ejusd. Synop. A. 73. Wil. Ornith. 174. THE TITMOUSE.

This Bird is celebrated for its Virtues against the Stone in the Kidneys, and colic Pains, if eaten as Food, or burnt, and taken as a Medicine.

PASIONIS PASTILLUS. The Name of a Pastil, described by *Galen*, *Oribasius*, *Aetius*, and *Nicolaus Myrepsus*.

PASMA. The same as CATAPASMA.

PASSA. An Epithet for Grapes, importing their being dried in the Sun.

PASSA, in *Paracelsus*, is a Whitloe.

PASSAVANTICUS PULVIS. The Title of a cathartic Powder, described by *Schroder*, *L.* 2. *Cap.* 77.

PASSER VULGARIS. Offic. Schrod. 5. 322. *Passer.* Gesn. de Avib. 581. Bellon. des Oyse. 362. *Passer domesticus.* Aldrov. Ornith. 2. 534. Jonst. de Avib. 65. Schw. A. 321. Mer. Pin. 175. Wil. Ornith. 182. Raii Ornith. 249. Ejusd. Synop. A. 86. *Passer domesticus vulgaris.* Charlt. Exer. 86. THE HOUSE SPARROW.

Because it is a very salacious Bird, it is recommended, especially the Brain of it, as a Strengthener and Incentive to Venery.

PASSER TROGLODYTES. Offic. Schrod. 5. 322. Aldrov. Ornith. 2. 655. Mer. Pin. 177. Gesn. de Avib. 588. Schw. A. 324. Jonst. de Avib. 82. Bellon. des Oyse. 341. Will. Ornith. 164. Raii Ornith. 229. Ejusd. Synop. A. 80. THE WREN.

The Bird is very much commended for its Virtue in the Attrition and Expulsion of the Stone, whether it be taken whole, and eaten raw season'd with Salt; or burnt to Ashes, and so exhibited. *Schroder.*

PASSERINA. The Name of a Plant, which *Parkinson* calls, *Passerina, Linariæ folio*, Sparrows Toad-flax. Some make it a Species of *Linum*; others of *Lithospermon.*

PASSIO. A Passion, Affection, or Disease. Thus there are the Iliac Passion, the Hysteric Passion, and many others, distinguished by their proper Epithets.

PASSULÆ. See UVA.

PASSULATUM. The Form of a Medicine, consisting of the Pulp of dry'd Grapes (*Passæ*) passed through a Sieve.

PASSUM, γλυκύ, Raisin-wine; that is, Wine made of dry'd Grapes, or of Grapes suffer'd to remain upon the Vine, till they are much wither'd by the Heat of the Sun.

PASTA, πάστα. A kind of Aliment, prepared, according to *Hesychius*, of unsalted Cheese, fine Flour, and Sesamum. It is, also, explain'd, a sort of Gruel, made of bruised Puls, mixed with Meal; and, Pottage, thicken'd with Flour.

PASTA REGIA. A Lozenge.

PASTA EPISPASTICA. The blistering fine Paste.

Take of Cantharides in Powder, and Wheat-flour, each as much as you please; and of strong Vinegar, a sufficient Quantity, to make into a fine Paste.

PASTÆTUM. A Pasty; a well known Species of Aliment.

PASTILLUS. A Troche, or Pastil.

The *Pastillus ex Seminibus* is thus described by *Paulus Ægineta*, *L.* 7. *C.* 12.

Take of the Seeds of Anise, Bishops-weed, and Fennel, each four Drams; of the Seeds of Smallage, and Henbane, and of Opium, each two Drams. Bruise them in Water for Pastils.

PASTINACA.

The Characters are;

The Root is thick, carnous, and succulent; the Leaves are large and broad, and strengthen'd by a thick Rib. The Seed is oval, large, thin, marginated, and casts its Husk.

Boerhaave mentions eight Species of the *Pastinaca*; which are,

1. Pastinaca; sylvestris; latifolia. *C. B. P.* 155. *Raii Hist.* 1. 409. *Synop.* 3. 206. *Tourn. Inst.* 319. *Boerh. Ind. A.* 66. *Pastinaca sylvestris Elaphoboscum.* Offic. *Pastinaca latifolia sylvestris.* Ger. quoad Descript. 870. Emac. 1025. Park. Theat. 944. *Pastinaca Germanica sylvestris, quibusdam Elaphoboscum.* J. B. 3. 149. *Bancia.* Offic. Volck. 320. WILD PARSNEP.

The wild Parsnep is much less than the Garden Parsnep, both as to the Thickness of its Roots, and the Height of its Stalks, which are not so much branched as those of the other. The Leaves are smaller, hairy, and of a strong Smell. The Flowers are small and yellow, growing not only on the Top, but coming forth from the Sides of the Stalks, at the Setting on of the Leaves, and are succeeded by the like Seed: It grows frequently by Hedges, and Way-sides, and flowers in *June*. The Root and Seed are used, though but seldom.

They are said to open Obstructions of the Liver and Spleen; to expel Wind, and help the Colic; to provoke Urine, and the Menses; and to be useful against the Bitings of venomous Creatures. *Miller's Bot. Off.*

It agrees in Virtues with the Garden Parsnep; which, as *J. Bauhine* thinks, differs from it only in Cultivation.

2. Pastinaca; sativa; latifolia. *Ger.* 870. *Emac.* 1025. *Raii Hist.* 1. 410. *Park. Theat.* 944. *Parad.* 506. *Raii Synop.* 3. 206. *C. B. P.* 155. *Tourn. Inst.* 319. *Boerh. Ind. A.* 67. *Pastinaca.* Offic. *Pastinaca sativa latifolia Germanica luteo flore.* J. B. 3. 150. PARSNEP.

The Parsnep is a Root well known to every one, being large, running deep into the Earth, not much branched, white in the Inside, of a pleasant sweet Taste; it has many large, winged, hairy Leaves, of a dull-green Colour, divided into several tripartite Sections. The Stalks grow to be five or six Feet high, much branched and chanelled, beset with several smaller Leaves, which grow at the Divisions; on the Tops grow Umbels of yellow five-leav'd small Flowers; and, after them, come smooth, flat, oval Seed, two growing together, as in other umbelliferous Plants: It is planted in Gardens, and flowers in *June* and *July*. The Root is only used.

Parsneps are more used for Food than Medicine, being a pleasant nourishing Root, tho' somewhat windy; and thought to be Provocatives to Venery. *Miller's Bot. Off.*

It is said, that the Seeds of the wild Parsnep, twice sowed in a rich and fat Soil, produce Garden Parsneps, in the same manner as Garden Carrots are produced from the Seeds of the wild Carrots. *Cæsalpinus* relates, that an Electuary is prepared of the Roots with Sugar, which is very much in Use among the Peasants for Women in Child-bed, and Persons recovering from Sickness, to renew their Strength; it, also, creates an Appetite. That it is of an inciding, attenuating, deterging, and deobstruent Quality, is evident, says *J. Bauhine*, from the very Taste and Smell. They who pull the Roots in Winter, says the same Author, must beware of the *Cicuta*, or *Cicutaria*;

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Cicutaria; becauſe, while he was at *Mompelgard*, he ſaw two Families, who were almoſt dead with eating the Roots of theſe Plants inſtead of Parſneps; but they recover'd by the Help of Vomiting, *Theriaca Andromachi*, *Pulvis Saxonicus*, and ſome Purgatives. It is an Opinion among our People, ſays *Ray*, that old Parſneps, which have endured Years in the Ground, induce Deliriouſneſs and Madneſs; for which Reaſon they give them the Name of MADNEPS, that is to ſay, MAD PARSNEPS. *Raii Hiſt. Plant.*

3. Paſtinaca; ſylveſtris; altiſſima. *T.* 419. *Panax coſtinum.* C. B. P. 156.

4. Paſtinaca; Oluſatri folio. *Boerh. Ind. A.* 67. *Panax Herculeum.* Offic. *Panax Heracleum majus.* Ger. 850. Emac. 1003. Raii Hiſt. 1. 410. *Panax Paſtinacæ folio.* C. B. P. 156. *Panax Heracleum.* Hiſt. Oxon. 3. 315. *Panax Heracleum alterum ſive peregrinum Dodonæi.* Park. Theat. 948. *Paſtinaca ſylveſtris altiſſima.* Tourn. Inſt. 319. *Sphondylio vel potius Paſtinacæ Germanicæ affinis Panax vel Pſeudo-coſtus flore luteo.* J. B. 3. 156. HERCULES's ALL-HEAL.

This is a large tall Plant, growing to be two or three Yards high, having many large Wings, of a yelloviſh-green Colour, a Foot or more long divided into five or ſeven Diviſions, of longiſh round-pointed rough Leaves, crenated about the Edges, having one Side of the Leaf growing lower and deeper toward the Bottom than the other. The Stalk is hollow, having ſeveral Joints beſet with the like Leaves; and on the Top roundiſh Umbels, of ſmall yellow five-leav'd Flowers, each of which is ſucceeded by two broad flat oval Seeds. The Root is large, branched, of a yelloviſh Colour on the Outſide, and white within. This Plant grows naturally in *Syria*, as, alſo, in *Italy*, *Sicily*, and the Southern Parts of *France*, though in theſe laſt Places it yields but little Gum. See OPOPANAX. *Miller's Bot. Off.*

The Roots of this Plant are ſaid, by thoſe who import it, to be effectual in all cold Affections of the Brain and Nerves, for Diſorders of the Breaſt, and tormenting Pains of the Stomach; for all Obſtructions of the Viſcera, and Diſeaſes of the Kidneys, Bladder, and Womb; on which Account, they are of Service in inveterate Pains of the Head, Vertigo, Epilepſy, Stupor, Lethargy, Convulſions, Palſies, Aſthma, Cough, Jaundice, and Dropſy: They expel Wind, kill Worms, provoke Urine, and the Menſes, break the Stone, and promote the Birth. The Decoction is given in Clyſters, for the Colic and Sciatica. *Raii Hiſt. Plant.* The *Opopanax* is the concreted Juice of this Plant; an Account of which ſee in its proper Place.

5. Paſtinaca; folio quaſi Libanotidis latiſoliæ. *Panax, folio glabro, nitente, lato.* Ind. 16.

6. Paſtinaca; ſemine longiſſimo. *Panax, folio glabro, nitente, lato, altior.* Ind. 16.

7. Paſtinaca; ſylveſtris, altiſſima. *T.* 319. *Hoc nomine miſit D. Salvadore; differt â tertia, foliis majoribus, ſcabris, aſperis.*

8. Paſtinaca; ſativa; radice turbinatâ. *Vaill. Boerh. Ind. alt. Plant.*

This Plant has its Name *Paſtinaca*, *à Paſtu*, from Feeding, becauſe its Root is much uſed in Food; it is, alſo, called *Elaphobeſcum*, from ἔλαφος, (*Elaphos*) a Stag, and βόσκω, (*boſco*) to feed, becauſe Deer eat the Herb.

It is a Plant of great Note in Medicine: The Seed hereof, with the Seed of the *Daucus*, are very ſerviceable in breaking the Stone. Hence there was a very celebrated Phyſician, who preſcribed the Flour of theſe Seeds, together with the Root of Liquorice, reduced, alſo, to a Flour, in Caſes which required Lithontriptics: It is, alſo, good for the Pain of the Colic proceeding from Phlegm; for the Strangury, Hiccups, and Obſtructions of the Menſes; it is hurtful in nephritic Diſorders proceeding from a cold Cauſe. The ſecond Species has a Root which is eatable, on account of its ſoft Pulp; and, boiled in Milk, is good for conſumptive and lean Perſons, being very nouriſhing. The third Species is by ſome taken for the Original of the *Opopanax*; its Seeds are not remarkably acrid. But the fourth is the true Plant whence the *Opopanax* proceeds; of which I made an Experiment this laſt Summer, when upon making a Wound in it, there flowed out a Juice, which, being a little inſpiſſated in the Sun, had the perfect Smell and Taſte of *Opopanax*. *Hiſt. Plant. adſcript. Boerhaav.*

PASTINACA AQUATICA. A Name for the *Sium, latifolium.*

PASTINACA ECHINOPHORA. A Name for the *Echinophora*; *Paſtinacæ folio.*

PASTINACA SYRIACA. A Name for the *Tordylium*; *Orientale*; *Secacul Arabum dictum Rauwolfio.*

PASTINACA TENUIFOLIA. A Name for ſeveral Sorts of DAUCUS.

PASTINACA, is, alſo, the Name of a Fiſh, which is thus diſtinguiſhed by Authors:

Paſtinaca. Salv. de Aquat. 144. Rondel. de Piſc. 1. 331. *Paſtinaca marina.* Offic. Charlt. Exer. 10. Aldrov. de Piſc. 424. Jonſ. de Piſc. 19. Geſn. de Aquat. 679. *Paſtinaca marina lævis.* Bellon. de Aquat. 95. *Paſtinaca marina prima Rondeletii.* Raii Ichth. 67. *Paſtinaca marina lævis Bellonii.* Ejuſd. Synop. Piſc. 24. *Aquila Piſcis, ſeu Paſtinaca marina.* Mer. Pin. 185. THE POISON-FISH, FIRE, or FIERCE-FLAW.

It is taken in the main Sea; the Parts of it uſed in Medicine are the Liver, and the Prickle, which grows out of its Tail. The Liver is ſaid to be good for the Itch; and, boiled in Oil, deterges the Lichen and Leproſy; the Prickle, as *Dioſcorides* ſays, cures the Tooth-ach, by breaking and expelling the grieved Tooth.

PATELLA. The Knee-pan.

PATETHEISÆ, or PATETÆ UVÆ, πατηθεῖσα, or πατεταὶ σαφυλαί, Grapes ſuffered to remain on the Vines, till they are much wither'd, and dry'd by the Sun.

PATHEMA, πάθημα. An Affection, or Diſorder.

PATHETICUS. An Epithet of the fourth Pair of Nerves, ſo called, becauſe they direct the Eyes to intimate the Paſſions of the Mind.

PATHOGNOMONICUS, παθογνωμονικὸς, from πάθος, a Diſorder; and γινώσκω, to know. An Epithet for a Symptom, or Concourſe of Symptoms, that are inſeparable from a Diſtemper, and are found in that only, and no other.

PATHOLOGIA, παθολογία, from πάθος, a Diſorder; and λέγω, to ſpeak, or commemorate. That Part of Medicine, which explains the Nature of Diſeaſes, their Cauſes and Symptoms.

PATIAS. The ſame as *Squama Æris. Rulandus.*

PATIENTIA. A Name for the *Lapathum*; *hortenſe*; *folio oblongo*; *ſive ſecundum Dioſcoridis.*

PATIENTIÆ MUSCULUS is a Name for the *Levator Scapulæ proprius*, otherwiſe called *Angularis.*

PATOR NARIUM. The Sinus, Cavity, or Chaſm of the Noſe. *Scribonius Largus.*

PATOS, πάτος. The ſame as RHYPOS; which ſee.

PATRIMONIUM. The Genitals are ſometimes called by this Name. *Caſtellus.*

PATURSA. The Venereal Diſeaſe. *Caſtellus* from *Fallopius.*

PAVATE. Acoſtæ. Lugd. Caſt. Ap. *Arbor Eryſipelas curans* Luſitanis, *Vaſaveli* Canarin.

This is a Shrub which grows on the Banks of the Rivers *Memgate*, and *Cranganor*, in *America.*

The *Indians* uſe its Wood and Root, as Specifics againſt an Eryſipelas. They reduce them to Powder, and infuſe the ſame in a Decoction of Rice, till it becomes four; and with this Liquor they foment the Eryſipelas, and make the Patient drink it twice a Day, after they have purged the Stomach. They give it, alſo, to thoſe who labour under burning Fevers, Inflammations of the Liver, and Fluxes of the Belly. *Lemery des Drogues.*

PAUCIFERUS. An Epithet of Wine, importing the ſame as *Oligophorus.*

PAVEL. A Name for the *Momordica*; *Zeylanica*; *pampinea fronde*; *fructu breviori.*

PAVIA. The ſcarlet-flowering Horſe-cheſtnut.

The Characters are;

The Leaves are like thoſe of the Horſe-cheſtnut, and conjugated; but ſo diſpoſed, as to have every conſequent Order croſs the preceding. The End of the Pedicle becomes a long tubulous red Calyx, of the ſame Colour with the Flower, with a Margin divided into ſix Segments. Within the Calyx grows an anomalous pentapetalous Flower, ſo diſpoſed, as, with its five Petals, to reſemble a monopetalous bilabiated Flower; for the two upper Petals, in Conjunction, form a kind of Galea; the two lateral ones, the Jaws, and the under one, the Beard. The Flower incloſes eight Stamina, each furniſhed with its Apex, and the Flowers are diſpoſed in Spikes. The Ovary in the Bottom of the Calyx ſhooting forth a long, cylindrical, red Tube, becomes a tricapſular, tricoccous Fruit, containing globular Seed.

Boerhaave mentions but one Sort of *Pavia*; which is,

Pavia. An Ricinoides, Americana, Caſtaneæ folio. Plum. T. 656. *Saä mouna Piſonis.* Plukn. Phyt. 56. 4. *Boerh. Ind. alt. Plant.*

The Flowers are like thoſe of Brank-Urſine. Many Authors will have it to be the *Ricinoides Americana*; but their Flowers do not agree. I am unacquainted with the Virtues of this Plant; but it is of an acrimonious Quality, like the *Tithymalus. Hiſt. Plant. adſcript. Boerhaav.*

PAULA. The Name of a Plaiſter deſcribed by *Paulus Ægineta, Lib. 7. Cap. 17.*

PAULADADUM. A Name for the *Terra Melitæa*, otherwiſe called *Terra Sigillata Sancti Pauli. Dorneus* ſays, *Pauladadum* is a Species of Seal'd Earth, which is found in *Italy.*

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PAVO. Offic. Schrod. 5. 322. Aldrov. Ornith. 2. 8. Mer. Pin. 172. Schw. A. 323. Gesn. de Avib. 393. Jonst. de Avib. 37. Charlt. Exer. 80. Will. Ornith. 112. Raii Ornith. 158. Ejusd. Synop. A. 51. *Pavus & Pavo.* Bellon. des Oyse. 234. THE PEACOCK.

What is used in Medicine is the whole Bird, the Fat, Gall, Dung, Feathers, and Eggs. The Broth of a Peacock, especially if it be fat, is said to be a Specific against the Pleurisy; the *Fat*, with the Juice of Rue, and Honey, is an excellent Medicine for the Colic. The *Gall* cures Dimness of Sight, represses Defluxions of the Eyes, and cures the Asperities of the Eyelids. The *Dung*, dried and pulverized, and the Weight of a Dram macerated at Night in Wine, and exhibited for many Days together, has a peculiar Virtue of curing the Vertigo and Epilepsy. The *Feathers* are used in Suffumigation, for the Hysterics; and the Eggs are prescribed for the Cure of what they call the *Erratic Gout*. *Dale* from *Schroder*.

PAVOR. Besides Fear, the usual Signification, it sometimes imports the Itch. *Castellus*.

PAUSIS, παύσις, from παύω, to cease. A Remission, or Cessation, of a Disease.

PAYCO HERBA. *Monard.* The Name of a Species of *Peruvian* Plantain.

The Powder of it, taken in Wine, is said to remove nephritic Pains proceeding from Flatulencies, or a cold Cause; and the Plant itself, boiled, and applied in Form of a Plaister to the Part affected, is said to work the same Effect; which *Monardes*, as he assures us, found to be true by Experience. *Raii Hist. Plant.*

PECHEDION, πηχέδιον. The *Perinæum.*

PECHYAGRA, πηχυάγρα. The Gout in the Elbow.

PECHYS, πῆχυς. The Elbow.

PECHYTYRBE. An Epithet for the Scurvy. *Castellus* from *Forestus.*

PECTEN. The Pubes. In Zoology, it signifies a Shell-fish, called a Scallop. These are esteemed a good Food, and are recommended as detersive, aperitive, and carminative, and are said to increase the seminal Juices. The Shells agree with those of the Oyster in Virtues.

PECTEN VENERIS. A Name for the *Scandix*; *Cretica*; *minor.* Shepherd's Needle, or *Venus*'s Comb.

PECTINÆUS MUSCULUS. This is a small flat and pretty long Muscle, broad at the upper Part, and narrower at the lower, situated obliquely between the Os Pubis, and upper Part of the Os Femoris. It is commonly a single Muscle; but I have sometimes found it double.

It is fixed above by fleshy Fibres to all the sharp Ridge, or Crista, of the Os Pubis, and to a small Part of the oblong Notch, or Depression, on the fore Side of that Crista, in which the upper Extremity of this Muscle is lodged.

Thence it runs down obliquely towards the little Trochanter, under, and a little behind which, it is inserted obliquely by a flat Tendon, between the superior Insertion of the Vastus Internus, and inferior Insertion of the Triceps Secundus, with which it is united.

The Pectinæus is an Assistant to the Psoas and Iliacus, in moving both the Thigh, and the Pelvis. It may, likewise, assist in bringing the Thigh inward, or toward the other, whether it be extended, or bent, at the same time. *Winslow.*

PECTINATIO. Combing the Head. This is recommended by some as an Exercise conducive to Health, and considered as a Species of Friction; it is certainly very useful, not to mention that, by cleaning the Head from Scurf and Dirt, it prevents Obstruction of the cutaneous Pores.

PECTORALIS. Pectoral; an Epithet for Medicines appropriated to Disorders of the Breast and Lungs.

The Pectoral Decoction is thus directed in the College Dispensatory:

> Take of stoned Raisins, one Ounce; of Dactyls, No. six; of fat Figs, No. eight; of Barley cleansed, one Ounce: Boil these in three Pints of Spring-water to the Consumption of a third Part; towards the End putting in, of Liquorice-root, half an Ounce; of the Leaves of Maiden-hair, Ground-ivy, Scabious, and Coltsfoot, of each one Handful. Let them stand in Infusion a quarter of an Hour, and then strain out the Liquor.

PECTORALIS MAJOR.

This is a large, thick and fleshy Muscle, covering the fore Part of the Breast, from the Sternum, where it is very broad, to the Axilla, where it contracts in its Passage to the Arm. It is naturally divided into two Portions, one superior and small, which may be termed *Clavicular*; the other inferior and large, which we may call *Thoracic.*

The Clavicular Portion is fixed by a fleshy Insertion in almost half the Clavicle next the Sternum, ending under the Insertion of the Sterno-mastoidæus. Thence it runs obliquely down toward the Axilla, contracting by small Degrees, and ends in a flat Tendon, or tendinous Band. In this Passage, it borders on the anterior Edge of the Deltoides, from which it is distinguished only by a pinguious or cellulous Line, and a small Vein, named *Vena Cephalica.*

The Thoracic Portion is broad, and, in some measure, radiated. It is fixed by its anterior Circumference in the lateral Part of the Outside of the Sternum, in the Cartilages, and in a small Part of the Bones of all the true Ribs, and of the first, and sometimes of the second, small Ribs. All these Insertions are like so many Digitations.

The Insertions in the Sternum end by a great Number of very short Tendons, which run toward the Middle of the Bone, meeting, and decussating those from the same Muscle on the other Side.

The lower Insertions are most distinctly digitated, and they mix with those belonging to the Rectus, and Obliquus Externus, of the Abdomen; there being, likewise, several Fasciculi of Fibres common to the Pectoralis, with these Muscles. This Portion is, also, fixed to the Ribs by internal fleshy Strata, covered by the external Insertions, and forming together with them the Thickness of the Muscle.

From thence all the fleshy Fibres contract in Breadth, and approach each other in their Passage to the Arm. The superior Fibres run downward, joining those of the Clavicular Portion; those next them run less obliquely; the following, more or less transversly; and the inferior run upward in the same manner. This whole Portion ends at length in a flat Tendon, joined to that of the small Portion, and folded back upon it in the following Manner:

The inferior fleshy Fibres of the Thoracic Portion, before they reach the Tendon in their Passage to the Arm, are gradually turned inward under each other, and then run up behind the Extremities of the superior Fibres. By this Turn, the lower Part of the Tendon answers to the superior fleshy Fibres, the middle Fibres of both to each other, and the upper Part of the Tendon to the lower fleshy Fibres, and so on. Thus the Tendons of both Portions, adhering closely by their flat Sides, and united at their Edges, form a double tendinous Plane, the Fibres crossing each other. The anterior, or external Plane, belongs to the Clavicular Portion; the internal, or posterior Plane, to the Thoracic Portion.

The Tendon thus formed is inserted according to its Breadth, at about one fourth Part of the Length of the Bone from the Head, in the osseous Ridge of the great Tuberosity, that is, in the outer Edge of the Groove or Chanel, the Cavity of which it lines in Conjunction with another Tendon, by a Stratum of very thin, shining transverse Fibres. This Insertion lies between that of the Tendon to the Deltoides, which it touches, and that of the Latissimus Dorsi, which is on the other Side of the Groove.

This Muscle, together with the Deltoides, sends off an Aponeurosis, which, joining that of the Biceps, is spread over the Muscle of the Arm. It partly covers the Pectoralis minor, and Serratus major; and by its broad Tendon it covers transversely the Brachial Chanel, and the Tendon of the Biceps lodged there. Lastly, it forms the anterior Border of the Hollow of the Axilla, as the posterior is formed by the Latissimus Dorsi.

The Pectoralis major serves in general to bring the Arm near the Ribs, to press it strongly against them, and to carry it towards the fore Part of the Thorax. This last Motion may be performed without separating the Arm from the Ribs, as when one Arm is crossed over the other; and it may likewise be done with the Arm raised, as when the Hand of one Side is laid over the Shoulder of the other Side; and in that Case the anterior Portion of the Deltoides may assist this Muscle in great Efforts.

By means of the Fold in its Tendon, the superior and inferior Portions may act as two distinct Muscles, that is, one may act without the other. The superior fleshy Portion, which answers to the lower Portion of the Tendon, serves chiefly to raise the Arm forward.

The inferior fleshy Portion, which is joined to the upper Portion of the Tendon, by its Insertion in the Os Humeri, and by the Connection of that Bone with the Scapula, may depress the Shoulder, or keep it from rising, with more or less Force, much after the same manner as the inferior Portion of the Latissimus Dorsi; the inferior Portions of these two Muscles concurring in the same Use; as when we support ourselves upon our Hands, or walk with Crutches.

It is, likewise, by means of the lower Portion of this Muscle, that we can suspend the whole Body by the Hands grasping the Branch of a Tree in climbing, and the like. In this Case, also, the Latissimus Dorsi acts in Concert with the Pectoralis; and this Co-operation the Painters and Carvers have taken Care to express in Crucifixes.

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The inferior Portion of this Muſcle cannot perform theſe two Uſes, without the Aſſiſtance of the Muſcles of the Abdomen, which, by pulling the Ribs downward, become, in a manner, a Continuation of the Inſertion of this Portion. The ſame thing may be obſerved concerning that Part of the inferior Portion of the Latiſſimus Dorſi, which is inſerted in the falſe Ribs.

The Uſes of the ſuperior Portion of all the Body of the Pectoralis cannot take place without the Co-operation of the Muſcles, which move the Scapular on the Trunk, eſpecially the Serratus major; becauſe the Scapula muſt be ſecurely fixed, before it can be a Fulcrum for the Os Humeri to move upon. The ſame thing is to be obſerved concerning the Deltoides, and all the other Muſcles which move the Os Humeri on the Scapula. *Winſlow.*

PECTORALIS MINOR.

This is a ſmall fleſhy Muſcle, ſomething of a triangular Shape, ſituated at the ſuperior, lateral, and anterior Part of the Thorax.

By its Baſis it is inſerted in the external Labium of the upper Edge of the ſecond, third, fourth, and fifth true Ribs, near their Union with the Cartilages, by the ſame Number of Digitations, or ſeparate fleſhy Portions, becauſe of the Intervals between the Ribs; and for that Reaſon it has been called *Serratus minor Anticus.*

From thence theſe Portions run up more or leſs obliquely toward the Shoulder, and form a fleſhy Belly, which contracts as it paſſes before the two firſt Ribs; and then, becoming a ſhort, flat, and broad Tendon, is inſerted in the upper Part of the Apophyſis Coracoides of the Scapula, reaching all the Way to the Point of that Proceſs.

This Muſcle is covered by the Pectoralis major, and adheres very cloſely to the external intercoſtal Muſcles. The Digitations commonly taken notice of cover and hide ſeveral others, by which the Number of Fibres, and Thickneſs of this Muſcle, are increaſed. Its Tendon unites a little, at the Apex of the Coracoide Apophyſis, with the Inſertion of the Coracobrachialis, and with that of one Portion of the Biceps.

The Pectoralis minor aſſiſts the Rhomboides and Angularis, as Moderators of the Action of the Trapezius, and Serratus major, in turning the Point of the Acromium upward, the ſuperior Angle downward, and the inferior Angle forward.

It is, likewiſe, an Aſſiſtant to the Rhomboides and Angularis, in reſtoring the Scapula to its natural Situation, when the Trapezius and Serratus major ceaſe to act; by drawing downward the Apophyſis Coracoides, in which it is inſerted.

It has been reckoned among the Muſcles employ'd in Reſpiration, by ſome who imagine, that, in ſome Caſes, the Shoulder may be kept ſo ſteady, as that this Muſcle may be able to raiſe the Ribs in which it is fixed. But as the Serratus major, which muſt principally be employ'd in keeping the Shoulder in a fixed Poſition, is partly inſerted in the ſame Ribs, and in this Action muſt keep them depreſſed, it will be impoſſible for the Pectoralis minor to raiſe them. *Winſlow.*

PECTUNCULUS. Offic. Schonef. Ichth. 55. *Pectunculus vulgaris, albidus, rotundus, circiter* 26 *Striis majuſculis, & planioribus donatus.* Liſt. Hiſt. A. A. 189. *Capite minore, rotundiore, & magis æquali margine.* Ejuſd. Hiſt. Conch. N. 171. *Concha ſtriata altera.* Rondel. de Aquat. 2. 21. *Concha ſtriata altera Rondeletii.* Aldrov. de Exang. 449. *Concha cordiformis æquilatera umbone cardinum unito ſtriato.* Lang. Meth. Teſt. 60. THE COCKLE.

The Fiſh is eſteemed a delicious Food, either raw, or boil'd. Of the Shells calcin'd, and powder'd, excellent Dentrifices are prepared. *Dale.*

PECTUS. The Breaſt. See THORAX.

PEDAGRA. Tartar. *Rulandus.*

PEDETHMOS, πηδηθμός. The Beating, or Pulſation, of the Arteries. *Hippocrates.*

PEDICULARIS. See ALECTOROLOPHUS.

PEDICULATIO. The louſy Evil. See PHTHIRIASIS.

PEDICULUS. Offic. Schrod. 5. 345. Aldrov. de Inſect. 542. Jonſ. de Inſect. 89. Mouff. 259. Charlt. Exer. 52. Mer. Pin. 202. THE LOUSE.

Lice are taken by the Country-people, as a Remedy againſt the Jaundice, and an Atrophy. *Schroder* takes notice of a very whimſical Uſe of this Inſect, which is, to put it into the Beginning of the Urethra, in order to excite Urine.

PEDICULUS, in Botany, is the Foot-ſtalk. See the Explication of Terms under the Article BOTANY.

PEDILUVIUM.

This Word ſignifies no more than a Bath for the Feet, which may be prepared of the ſame Ingredients with other Baths; and, as it requires a leſs Apparatus, is for that Reaſon frequently uſed as a Succedaneum to them; for a Bath for the Feet may either conſiſt of pure light Water alone; or, in order to correct the Qualities of heavy and hard Waters, a Lixivium, or Bran of Wheat, or Chamomile-flowers, may be added; or ſuch Waters may be mixed with Milk. But, tho' Baths for the Feet are only immediately applied to the inferior Parts and Extremities of the Body, yet their Virtues and Efficacy diffuſe themſelves farther, and alleviate violent Diſorders in remote and diſtant Parts of the Body; for, whilſt the Feet are cheriſhed with ſuch a warm Liquor, the nervous, tendinous, and muſcular Fibres, by the Intertexture of which they are formed, are relaxed and unbended; the Pores and Ducts, before conſtricted, are enlarged; the Blood has Acceſs to the Parts; and the Return of the Humours from them is rendered free and uninterrupted. By this means, the Impetus of the Blood on other Parts is diverted; and, to the ſurpriſing Relief of the Patient, derived to the inferior Parts. Beſides, Baths for the Feet, by their temperate Heat, act upon the Blood and Humour, which, during their Uſe, paſs through the Veſſels of the Feet, render them more thin and diluted, and by that means qualify them for paſſing more expeditiouſly through all the various Ducts and Parts of the Body. Hence it is, that, if pretty hot Baths for the Feet are uſed, they increaſe the Pulſe, and excite a Sweat over all the Body. Beſides, the Conſent of the Feet, as being nervous and tendinous Parts, of an exquiſite Senſation, is ſo great with all the other nervous Parts of the Body, eſpecially thoſe of the Abdomen, that, if the Feet are only rendered throughly cold, a Colic is forthwith produced, the Patient becomes coſtive, the Skin is render'd rough, Perſpiration is intercepted, and the ſalutary Evacuations from the Uterus, and hæmorrhoidal Veins, ſtopt. For this Reaſon, 'tis not to be doubted, but when the Feet are fomented, and their ſpaſmodic Stricture removed by means of a tepid Liquor, the ſalutary Effect muſt, alſo, be propagated to thoſe remote Parts of the Body, with which they have ſo near and immediate a Conſent.

Baths for the Feet are certainly highly expedient for the Purpoſes of Derivation in thoſe Diſeaſes which ariſe from Congeſtions of the Humours to the Head and Breaſt, produced by Spaſms of the inferior Parts, and, eſpecially of the Hypochondria. Among this Kind, beſides lethargic Diſeaſes, we may reckon almoſt all Diſorders of the Head, ſuch as Madneſs, melancholy Cephalæas, Hemicranias, the Clavus Hyſtericus, Vertigos, Tooth-achs, Pains of the Ears, a Gutta Roſacea, Inflammations, and Defluxions of ſaline Humours on the Eyes, immoderate Hæmorrhages from the Noſe, and long Watchings. Of this Kind are, alſo, ſome Diſorders which affect the Breaſt, ſuch as convulſive Aſthmas, Dyſpnœas ariſing from a Plethora, Palpitations of the Heart, dry Coughs, and Spittings of Blood. Beſides, Baths for the Feet, in conſequence of their ſingular Efficacy in relaxing Spaſms, are highly beneficial in ſpaſmodic and convulſive Diſorders, in Pains, Cardialgias, Colics, eſpecially of the hæmorrhoidal Kind, Gripes produced by the Stone, and Inflations of the Stomach, accompanied with an Uneaſineſs of the Præcordia. Beſides, Baths for the Feet promote the ſalutary Excretions by Perſpiration, Urine, and Stool, together with thoſe made from the Uterus, and hæmorrhoidal Veins, by procuring a free Circulation of the Blood, attenuating the Humours, and ſolliciting them to the Emunctories of the Body. Baths for the Feet, alſo, remove and prevent very terrible Diſorders of the Head and Breaſt, eſpecially thoſe which return at certain Periods; and I myſelf, ſays *Hoffman*, have known the daily Uſe of theſe Baths for the Feet remove the moſt terrible and obſtinate Cephalalgias. Some, alſo, in intermittent Fevers, adviſe the Uſe of theſe Baths, tho' not on the Days of Remiſſion. And this Piece of Practice is productive of very ſalutary Effects, as is obvious from *Obſ* 144. *Decad.* 2. *An.* 6. *Miſcell. Nat. Curioſ.* where we have an Account of a Quartan Fever cured by means of Foot-baths, and *Kozak de Salib. Sect.* 12. *Cap.* 10.

But 'tis to be obſerved, that Baths for the Feet produce far more happy Effects, if, before they are uſed, the Quantity of Blood is leſſen'd by Veneſection in the Feet; if they are uſed about Bed-time, and the Feet not expoſed to the Cold after them, but kept duly warm, till the Patient gets to Bed; by which means the Perſpiration, all over the Body, is increaſed. But Baths for the Feet muſt not be uſed about the Time the Menſes are about to flow, or already preſent, becauſe, by diverting the Courſe of the Blood from the Uterus, and ſoliciting it to the inferior Parts, this ſalutary Diſcharge is either ſtopped, or prevented. On the contrary, Baths for the Feet, uſed ſome Days before the ſtated Period for the menſtrual Diſcharge, excellently promote it, eſpecially if, at the ſame time, the Pilulæ Becheri, or temperate Emmenagogues, are uſed. We muſt, alſo, carefully abſtain from aſtringent, aluminous, and ſulphureous Baths, in order to prevent a Sweating of the Feet, diſcuſs œdematous Tumors, cure Ulcers, or remove arthritic Pains; ſince by means of ſuch aſtringent, aluminous, and ſulphureous Baths, the virulent Matter is repel'd to the internal and more noble Parts. And becauſe the common hot Spring in the *Caroline* Baths, commonly call'd *Der Prudel*, is

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poſſeſſed of an highly repellent Quality; ſo bathing in it ought to be very cautiouſly uſed in all Diſorders affecting the Surface of the Body, and more eſpecially in gouty and arthritic Pains. *Hoffman.*

PEDION, πεδίον. The Sole of the Foot.

PEDORA. The Sordes of the Eyes, Ears, and Feet. *Caſtellus.*

PEDRO DEL COBRA. See COBRA DE CAPELLO.

PEDRO DEL PORCO. See HYSTRIX.

PEDUNCULUS. The ſame as PEDICULUS, with reſpect to both Significations.

PEGANELÆON, πηγανέλαιον. Oil of Rue.

PEGANERON, πηγανηρὸν, according to *Gorræus*, is the Name of a Plaiſter, deſcribed by *Aetius*, and *Paulus Ægineta*, in which Rue is an Ingredient.

PEGANIUM. A Name for the *Ruta*, *ſylveſtris*, *minor*.

PEGANON, πήγανον. Rue.

PEGE, πηγή. A Fountain. But the internal Angles of the Eyes are call'd πηγαί. *Pegæ.*

PEGERNUS. Mercury. *Rulandus.*

PELA. A Name for the *Guajava*; *rubra*; *acida*; *Fructu rotundiori.*

PELADA. A kind of *Alopecia*, or ſhedding of the Hair, from a Venereal Cauſe. *Caſtellus* from *Foreſtus.*

PELAMYS, πελαμύς. The Tunny fiſh. See THUNNUS.

PELARION, πηλάδιον, from πηλὸς, Mud. The Name of a *Collyrium*, deſcribed by *Paulus Ægineta*, *Lib. 7. Cap. 16.* and of a Plaiſter, in the ſame Author, *Lib. 7. Cap. 17.* See EDESSINUM.

PELECANUS. The Pelecan. See ONOCROTALUS. An Inſtrument for drawing Teeth, is, alſo, called *a Pelecan.*

PELECANUS. A Pelecan, or Veſſel of Glaſs, formerly uſed in Chymiſtry, for the Digeſtion and Circulation of Liquors, poured in at their narrow Necks, which were afterwards Hermetically ſeal'd. The Figures of the Pelecans were various; ſome were round, and others long. But, at preſent, we uſe, inſtead of the Pelecan, two Matraſſes, the Neck of one of which enters into that of the other. *Lemery Pharmacop. Univerſ.*

PELECINUS.

The Characters are;

It is, in all reſpects, like the *Aſtragalus*, except that the Pod is flat, long, bicapſular, bivalve, and full of Kidney-ſhaped Seeds.

Boerhaave mentions but one Sort of *Pelecinus*; which is,

Pelecinus vulgaris, *T.* 417. *Lunaria*, *radiata Robini.* J. B. 2. 348. *Securidaca peregrina.* Cluſ. H. 238. *Boerh. Ind. alt. Plant. Vol.* 2.

There are no Medicinal Virtues aſcribed to this Plant at preſent, that I know of.

PELIAS. The Name of a Serpent, mentioned by *Aetius*, *Tetrabib. 4. Serm. 1. C. 32.*

The now quoted Author informs us, that the Symptoms attending the Bites of the *Pelias* were ſo generally known, that no Author before him had deſcribed them. Thoſe, however, ſays he, who are bit by the *Pelias*, have a Pain and Putrefaction about the Part affected, which, nevertheleſs, are not dangerous. They are, alſo, afflicted with a Dimneſs of Sight, in conſequence of a Diſtribution of the Poiſon to their Eyes. Patients labouring under this Misfortune are cured by the Juice of Ptiſan, and Oil, exhibited in ſome proper Liquor, by way of Drink; as, alſo, by a Decoction of the Oxylapathum, and the ſimple Remedies proper in a Jaundice. The Eyes of ſuch Patients are to be waſhed with the Urine of young Perſons who are Strangers to Venery, both by itſelf, and when mixed with Brine. Their Heads are, alſo, to be anointed with the ſame. Then, after purging the Body, their Eyes are to be anointed with Opobalſam and Honey, or with ſome Collyrium capable of increaſing the Sight, and removing the Obſtructions of the Veſſels; for, by this means, the Poiſon will be diſcharged along with the Tears. But, if this Practice ſhould be ſucceeded by a Pain of the Eyes, it muſt be allay'd by means of mild Collyriums, which operate without inducing a Stupor of the Parts. See ELAPS.

PELICIDE. Boiled Honey. *Rulandus.*

PELIOMA, πελίωμα. A livid Sugillation.

PELLICULA. A Pellicle, or thin Membrane.

PELLIS. A Skin of an Animal. In a Dropſy, or Inflation of the Uterus, *Riverius* directs the Skin of a Sheep juſt killed, and ſprinkled with generous Wine, to be applied to the Belly. Some of the *French* Writers in Midwifry adviſe to involve the Belly in a warm Sheep-ſkin, after a difficult Labour; and the ſame is an excellent Application, by way of *Fotus*, in caſe of inflammatory Pains of any of the Viſcera.

PELMA, πέλμα. The Sole of the Foot, or a ſort of Sock adapted to the Sole of the Foot, made of Leather, or any other Subſtance.

PELORIS. The ſame as *Chama.*

PELTATIS CARTILAGO. A Name for the Scutiform Cartilage of the *Larynx.*

PELVIS. A Name for the inferior Part of the Cavity of the *Abdomen.* See ABDOMEN. It is formed by the *Oſſa Ilea*, and *Iſchia*, the *Os Sacrum*, and *Os Coccygis*, and the *Oſſa Pubis.* See INNOMINATA OSSA. If the *Pelvis* is too ſmall, or too flat and narrow, it is evident, that theſe Circumſtances muſt occaſion a difficult Birth: But *Henricus à Deventer* ſays, that a too great Wideneſs of the *Pelvis* is frequently an Obſtruction to the Birth, and of bad Conſequence. By too large a *Pelvis*, ſays this Author, I mean one, which, when compared with the Fœtus, and the Uterus, is ſo large, as without any Pains eaſily to ſuffer the Head of the Infant, together with the Uterus, as yet cloſed up, to fall down to the Lips of the Pudenda. In conſequence of ſuch a large and capacious *Pelvis*, the ſuperior Parts of the Uterus are either not ſufficiently, or not at all, ſurrounded and retain'd. Hence, neither the Head of the Fœtus, nor the Waters, can, by the Force and Impreſſion of Pains, act ſufficiently on the Mouth of the Uterus, to open it; ſo that the Pudenda alone muſt retain the Uterus, and hinder it from falling entirely out of the Body along with the Fœtus. In a Caſe of this kind, the Waters are generally perceived to poſſeſs a large Space; and their containing Membrane is ſometimes found to protuberate ſo much without the Lips of the Pudenda, that the Infant ſeems ready to be diſcharged, and brought into the World with them; and, when this Circumſtance happens, it is attended with little Danger, and renders the Labour eaſy: But, ſometimes, the Mouth of the Uterus is thick and hard, whilſt, at the ſame time, the Vagina is lax. Hence the former is with Difficulty, and the latter with Eaſe, dilated: In which Caſe the Waters, tho' not poſſeſſing a large Space, are yet diſcharged from the Body, with a great Impetus; and the Mouth of the Uterus penetrates far into the Pudenda. Then the Membrane being broken, not only the Head of the Infant appears without the Lips of the Pudenda, but, alſo, the Mouth of the Uterus; and, unleſs this latter is duly retained, it falls ſo far down, in conſequence of the exceſſive Relaxation of the Vagina and Ligaments, as to pave a Way not only for a Falling out of the Vagina, but, alſo, of the Uterus. For this Reaſon, 'tis the Duty of the Midwife, as ſoon as poſſible, to replace and retain the Mouth of the Uterus, before it falls down ſo far; for, in this Caſe, the Hands of the Midwife muſt perform the Office of the Vagina. *Heur. à Deventer Operat. Chirurg.*

PELVIS AURIUM. The *Cochlea.* See AURIS.

PELVIS CEREBRI is the *Infundibulum.* See CEREBRUM.

PELVIS is, alſo, a Name for the Cavity of the Kidneys, which receives the Urine, and conveys it to the Ureters. See RENES.

PEMPHIGODES, or *Pemphingodes*, πεμφιγώδεις ἢ πεμφιγγώδεις πυρετοί. Fevers, diſtinguiſhed by Flatulencies and Inflations, or a windy Spirit; in which we feel a ſort of aereal Effluvia paſſing through the Skin of the Patient, in manner of an Exhalation, and ſtriking upon the Touch. This is the Senſe which *Galen* ſeems to chuſe among various others, which he gives us of the Word πέμφιγξ, in his Comment on 6 *Epid. Sect. 1. Aph.* 17. where it is uſed by *Hippocrates*, Sometimes by the Term *Pemphingodes*, as *Galen* ſays, is meant, a Fever attended with puſtulous Eruptions, and, therefore, of a peſtilential kind; ſometimes a Fever which ſeems to ſtrike the Touch, like Sparks of Fire, penetrating through the Skin; and ſometimes a Fever attended with a Delirium, according to the various Significations of the Word πέμφιγξ, which he there gives us. Πεμφιγώδεις πυρετοὶ, in *Galen*'s Exegeſis, are expounded to be Fevers in which there is a Redundance of Humidities, or Flatulencies. The Author of the *Definitiones Medicæ* tells us, that πεμφιγώδης πυρετὸς, is a Fever, which, by the Intenſneſs of its Heat, excites Puſtules in the Mouth; and πέμφιγξ, in *Varinus*, is a Breath, Spirit, and Ray of the Sun. Some will have πεμφιγώδης πυρετὸς, to be a Synochus, not of the putrid Kind, but proceeding from a Redundance of hot Blood, by its Fervor and Ebullition diſtending and inflating the Veins; and, therefore, it is called, by Practitioners, an *Inflative Fever. Foeſius.*

PEMPTÆUS, πεμπταῖος. An Ague, the Paroxyſm of which returns every fifth Day.

PENICILLUS. A Pledget, or Tent.

PENIDIUM SACCHARUM is thus prepar'd. Diſſolve Sugar as much as you pleaſe, and clariſy it with the White of an Egg; then ſtrain and inſpiſſate it gently, or ſlowly, till great Bubbles appear: This done, take it off the Fire, till the Bubbles ſubſide; and then pour it out upon a Board, which has been rub'd over with Oil of Almonds; and, when it is ſomewhat harden'd, take it up with your Hook, and with your Hands, ſprinkled with Starch, ſpeedily reduce it into its proper Form, and lay it up for Uſe. *Schroder.*

PENIS. Having given, under the Article GENERATIO, a general Account of this Organ, I ſhall, in this Place, inſert the curious Remarks of Mr. *Cowper*, relative thereto.

Regnerus de Graaf, in his elaborate Treatiſe of the Organs of Generation, has accurately deſcrib'd this Part; and *Ruyſch*, in

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in his late Anatomical and Chirurgical Obſervations, demonſtrated the Structure of its Glans, which the Former has not ſo well obſerved; to which I ſhall add what a ſtrict Inquiry on this Subject has given me occaſion to diſcover.

I ſhall not here repeat thoſe many ſynonymous Appellations, which laſcivious Wits, or other ſedulous Authors, have invented. The *Penis* is an Organ contriv'd by the Author of Nature, for the Ejection of the Seed, and Emiſſion of Urine, compoſed of certain ſpongy and cavernous Bodies, with their Veſſels and Integuments, of which in their Order. Firſt, of its external, or common containing Parts, as the *Cuticula*, *Cutis*, and *Membrana Carnoſa*.

In the *Cuticula*, we could never obſerve any conſiderable Difference from that of other Parts, except on the Glans, where we find, by the Aſſiſtance of a Microſcope, that its exterior Surface is villous or downy.

The true Skin, or Cutis, in this and the Scrotum, is much thinner than we find it in other Parts; and both have a peculiar Diſpoſition of their Blood-veſſels. The Arteries are called here *Pudenda*, which, ariſing from the external Branch of the Iliac, and running under the ſuperior Part of the Skin of the Penis, divide themſelves into many Branches, the larger of which are ſtill ſubdivided, till they become capillary; from whoſe Extremities are continued ſo many Veins, which, again, uniting into larger Branches, paſs into thoſe that partly ariſe from the *Corpora Cavernoſa Penis*; and, marching under the common Integuments, empty themſelves into the upper Part of that continued from the *Saphena Vein* of the Foot: Theſe, for Diſtinction, we call *Venæ Præputii*.

Beſides the Blood-veſſels now mention'd, it has Lymphe-ducts, which I had firſt an Opportunity of obſerving, by injecting this Part with prepar'd Mercury; which confirms the Opinion of *Schelhammer*, and the accurate *Nuck*, concerning the Origin of theſe Ducts: But whether they ariſe here from that Part of the *Canalis Sanguineus* call'd the Artery, or the Vein, did not appear from my Experiment; ſince I made Injection into both promiſcuouſly: I obſerv'd divers Trunks on each Side, paſſing under the common Integuments accompanying the *Venæ Præputii*, which (as I ſuſpect) afterwards empty themſelves, like thoſe ariſing from the inferior Parts, into the *Glandulæ Inguinales*. This Contemplation may ſerve to inform us, how the morbid Matter comes to be convey'd more particularly to thoſe Glands in Venereal Caſes, and cauſe thoſe Tumors that frequently happen on that Occaſion, commonly called *Buboes*; which Conception is the more confirm'd, by obſerving thoſe Phænomena that are previous to that Effect, as Ulcers and Inflammations on the Prepuce, and by the too early Uſe of aſtringent Topics, which probably may inſpiſſate the refluent Lymph, and render it unfit to paſs through thoſe *Veſiculæ Glandoſæ* into their exporting Lympheducts; from which Obſtruction begun, a Tumor may ariſe: Hence an Account may be, alſo, given, how ſoon the Malignity may be ſometimes convey'd into the Maſs of Blood, by the common Paſſages of the Lymph; and a very good Reaſon offer'd for the Practice of opening thoſe Tumors before the uſual Time of Suppuration.

In that Part where the *Præputium* is contiguous to the *Balanus*, my very good Friend, that judicious Anatomiſt Dr. *Tyſon*, has diſcover'd certain ſmall Glands, which he calls, from the great Scent their ſeparated Liquor emits, *Glandulæ Odoriferæ*: Their Number is uncertain; in thoſe that have the Præputium longer than ordinary, they are not only more, but, alſo, larger, and ſeparate a greater Quantity of their Juice, which, being lodged there, often grows acrid, and corrodes the Glans. They are very conſpicuous in moſt Quadrupeds, particularly in Dogs and Boars, in the latter of which, their ſeparated Liquor is contain'd in a proper Ciſt, at the Verge of the Præputium; out of which there is a large Aperture, whereby it is remitted again to lubricate the Penis of that Animal.

The third common Tegument is the *Membrana Carnoſa*; this Part commonly wanting Fat, for divers Reaſons: Firſt, leſt its Erection into that neceſſary Stiffneſs ſhould be thereby hinder'd: Secondly, leſt it ſhould be too bulky; and, laſtly, it would have dull'd the Pleaſure the Male is affected with in Venereal Enjoyments: But whether theſe Conſiderations induced the Author of Nature to frame this Part without a *Membrana Adipoſa*, does not appear, ſince its want of Fat may not unlikely depend on its great Alteration from that Flaccidity when it is not erected, to that Extenſion of it when it is. In the former, tho' we can conceive no great Obſtacle, why its Adipoſe Cells ſhould not be ſupply'd with their Oil, except its too great Laxity ſhould retard the influent Blood in its Paſſage through its Papillary Arteries; yet, in the latter, its great Extenſion may not unlikely compreſs them to void their contained Oil; which may be the Cauſe, why the Interſtices of the Muſcles, and other Parts moſt quieſcent, are ſubject to be fill'd with Fat. And in the Penis itſelf in Children, before Erection has been frequent, I have obſerv'd its *Membrana Adipoſa* to be extended with Fat; but, afterwards, tho' the Membrane remains, yet the Increaſe of Fat is hinder'd, and therefore we find it commonly without: Yet, in ſome Subjects, and thoſe adult too, I have found it almoſt cover'd with Fat; but what Inconvenience the Party ſuffer'd when living, was not my Fortune to be acquainted with.

I come next to take notice of its Ligaments; firſt, of that called the *Frænum*, which ties the Prepuce to the lower Part of the Glans. This, in ſome, we have found ſo ſhort, that we have been obliged to divide it to procure a complete Erection; in others, I have been oblig'd to do the like, where a Cicatrix has been made after large Ulcers on it, which frequently happens in Venereal Infections.

The next Ligament which I ſhall ſpeak of, I call *Suſpenſorium*: Altho' it has eſcap'd the Obſervation of Anatomiſts, yet it is very conſpicuous, and of remarkable Uſe; of which hereafter, when we come to give an Account how this Part becomes erected. It ariſeth from the anterior Part of the *Oſſa Pubis*, and is fix'd to the upper Part of the *Dorſum Penis*, on each Side its great Vein. The reſt of the Ligaments are ſuch as compoſe its Capſulæ, or divide them as their Septums: Theſe we ſhall mention in treating of its internal or contained Parts; which are, the two *Corpora Cavernoſa Penis*, the *Corpus Cavernoſum Urethræ*, their *Septums*, Muſcles and Veſſels, of which as they appear in Diſſection.

Firſt, of the Veſſels that carry Blood to it, as, the Arteries. They ariſe, ſometimes, from the *Rami Iliaci interni*; at other times, from the inferior Parts of the umbilical Arteries: Whence an Account may be given, why this Part is leſs than uſual, by tying the Umbilical Rope too cloſe to the Belly; and that not only from the Retraction of the *Urachus*, but by the Conſtricture attending theſe Arteries by the great Extenſion of the Umbilical ones, from which they have their Riſe; whereby may be denied that Plenty of influent Blood; but this we leave to future Obſervation. As theſe Arteries paſs towards the Penis, they ſend forth two or three Branches on each Side, the two inferior of which run to the *Muſculi Directores Penis*: The two ſuperior adminiſter Blood to the adjacent Parts, particularly to the *Muſculi Elevatores Ani*, between which, and the *Marſupiales Femorum*, theſe great Trunks paſs; but, marching over the Cavernous Bodies of the Penis, they are both ſubdivided into two large Branches, the two inferior of which paſs to the Bulb of the Cavernous Bodies of the Urethra; but the two ſuperior are both ſubdivided again, the external running on the ſuperior Surface of the Cavernous Bodies of the Penis; the internal, entering the Capſulæ, paſs through the Middle of each Cavernous Body; wherein they divide themſelves into innumerable Branches, from whoſe Capillary Extremities are continued ſo many Veins, in the Canals of which are divers Apertures into as many Cells, which communicate with each other, and empty themſelves into the larger venous Ducts running on the ſuperior Surface of the Penis, ſome of which join with thoſe of the Prepuce; others make one large Trunk, which we call *Vena ipſius Penis*, marching on the *Dorſum Penis*, immediately under the Ligament that ties the *Oſſa Pubis* together internally, whereby it is compreſs'd in Erection; but, proceeding farther on the Proſtatæ, it is there bifurcated, and enters the *Rami Iliaci Interni*, on each Side. The Veins which ariſe (in like manner) from the *Corpus Cavernoſum Urethræ*, paſs from its Bulb through the *Muſculi Acceleratores*, whereby they are compreſs'd when thoſe Muſcles are in Action.

The Nerves that belong to this Part, are derived from the Trunk, compoſed by the Coalleſcion of the Third of the *Os Sacrum*, and a Branch remitted from the great Crural Nerve; which, after their Union, provide Nerves for Teſtes, Perinæum, and Muſcles of this Part, aſcending on the Cavernous Bodies of the Penis, and, expanding themſelves on its ſuperior Surface, are diſtributed to all its Parts. Its Lympheducts we mention'd in deſcribing its external Integuments: Wherefore we proceed, next, to its Cavernous Bodies.

The *Corpora Cavernoſa Penis*, by *De Graaf* called *Nervoſa*, by others *Nervea Spongioſa*, are two Capſulæ, or oblong Folliculi, every-where outwardly ſenc'd with a thick Membrane, by *Veſalius* and *Columbus* ſuppos'd to be like Ligaments, whoſe external Surface is cover'd with Nerves and Blood-veſſels. They ſpring with two diſtinct Originals from the lower Side of the *Oſſa Pubis*; whence, ſtretching forwards, they meet each other, leaving an Interſtice before their Conjunction, in which the Urethra is convey'd, where they leave the *Oſſa Pubis*; they are each cover'd with a Membrane, and are afterwards joined to each other by the Intervention of a *Septum intermedium*, which, the nearer it approaches the Glans, is more diminiſhed; and, before it arrives to the Middle of the Penis, its Fibres aſcend from the *Urethra* to the *Dorſum Penis* like the Teeth of a Comb, as *De Graaf* has well obſerv'd; but is not oblitерated, and the two Cavernous Bodies united near the Glans, as he would perſuade us; but, on the contrary, rather grows thicker

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thicker and narrower, as *Ruyſch* has well obſerved. In Inflation the Wind, I confeſs, may ſomtimes paſs from the Cavernous Bodies of the Penis to that of the Urethra, which yet will not always happen; which Communication depends on the Mediation of their Blood-veſſels, as our laſt-named Author alſo takes notice. Anatomiſts differ concerning the internal Conſtructure of theſe Cavernous Bodies: *Veſalius* accuſes *Galen* for his Inadvertency herein. *Columbus* firſt obſerv'd their Arteries, which, proceeding ſtrait to their Extremities, diſperſe themſelves into innumerable Branches; which eſcaped the Obſervations of former Anatomiſts, as he writes. Dr. *Whorton* imagines they are partly compoſed of glandulous Fleſh; others conceive they are intertext with divers Nerves, from whence the Name of *Nervoſa* was firſt impoſed on them. *Diemerbroeck* ſuppoſes they are not a mere Texture of Veſſels intricately interwoven in the manner of a Net, as *Bauhine*, *Riolan*, and *Veſlingius*, imagine; but their Subſtance is fibrous, fungous, and cavernous, like the Lungs, receiving into their hollow Interſtices Blood and Spirits, from the Veſſels that are diſperſed through their Subſtance. the Inquiries I have made inform me, that there is a great Analogy between the Structure of this, and that of the Spleen, which *Columbus* alſo remarks; in both which the Sides of the Veins have large Apertures, or Cells, which moſt plainly appear in the Bulbus of a Dog's Penis; but, in an human one, they are here much leſs, and larger in the Spleen, and alſo open into each other: Wherefore, when the refluent Blood is ſtopt, the Penis becomes equally diſtended thereby, and it is driven forwards towards the Glans, when its Muſcles contract.

Under theſe Cavernous Bodies of the Penis lies the Urethra, which has alſo its *Corpus Cavernoſum*, differing very much in Figure from that of the two former, they being leſs at each End, and largeſt in the Middle; whereas this, on the contrary, is there leaſt, and largeſt at its two Extremes; neither is its proper Tegument ſo denſe. The ſuperior Part of it, lying between the two Crura of the former, we call, from its Figure, *Bulbus*, which is cover'd with the *Muſculus Accelerator Urinæ*. It poſſeſſes the lower Part of the Urethra, extending itſelf in the Perinæum; and is divided in cutting for the Stone, in which Operation Caution ought to be had to its Arteries, which enter that Part of the Bulb towards the Anus laterally. It has, alſo, a *Septum intermedium*, (though not hitherto taken notice of by Anatomiſts) dividing the Right Side of the Bulbus from the Leſt, which, deſcending to the End of the bulbous Part, is there obliterated. The Office of this Septum, we conceive, is to direct the refluent Blood to the exporting Ducts, its two Veins mentioned before. As this *Corpus Cavernoſum* deſcends on the inferior Part of the Urethra, it is leſſened; but, when it approaches the Extremities of the two former, it again dilates itſelf, and covers them, compoſing that Body which we call *Glans*, or *Balanus*, which *De Graaf* had miſtaken for fleſhy Subſtance diſtinct from either. This *Ruyſch* has well deſcribed and figured in his above-mentioned Century of Obſervations. Its Cells in the Glans are much leſs than thoſe of the former; but towards its ſuperior Part, or Bulbus, they equal them. Having already deſcribed the Muſcles of this Part, we ſhall proceed to give an Account how it becomes erected.

Galen, and the former Anatomiſts, not knowing the Circulation of the Blood, or that it paſt from the Arteries into the Veins, were extremely deceived in their Ideas of the Erection of the Penis. *Columbus*, who has given an almoſt complete Deſcription of that grand Work, ſtill conceiveth the Arteries of this Part pour out Spirits with great Force into it, by which means it is extended. *Caſpar Bauhine* ſuppoſes, in a Venereal Appetite, the Blood and Spirits flow into this Part in great Plenty; and, being fill'd, like a Gut, with Wind, it begins to ſwell, and grows hard, which he imagines is done by a Sphincter Muſcle conſtringing the Neck of the Bladder, and Roots of its Cavernous Bodies. *De Graaf* aſſigns two Kinds of Veſſels, with its Muſcles, for the Performance of this Office: The Nerves, by which the animal Spirits flow into its membranous Parts, and render them more rigid and tumid; and the Arteries carrying Blood to diſtend the *Corpora Cavernoſa*: "For, as "he reaſons, we are firmly perſuaded the principal Extenſion "of the Penis is from Blood; firſt, by injecting Water into "its *Corpora Cavernoſa*, by its Arteries, in a dead Body, we "ſee it extended to the ſame Dimenſions as when the Animal "was living: Secondly, in firmly tying a Dog's *Penis in Coitu*, "and afterwards examining it, we find nothing but Blood to "diſtend it." To which may be added, that in Criminals which hang long after Death, this Part becomes erected, the Blood in that Poſition of the Body falling to the inferior Parts: And, by inflating the Blood-veſſels of a dead Animal, it will alſo erect; which we firſt practiſed in a human Body, by inſerting a Blow-pipe into the *Vena Saphena*, whereby it was not only erected, but afforded a Proſpect of the external Diſpoſition of its Blood-veſſels, particularly its Veins, which

ſuggeſted to us a Contrivance in Nature in this Action, which has hitherto eſcaped the Reflection of Anatomiſts. *De Graaf*, not conſidering the Uſe of the adjacent Parts, aſſigns its Erection to its Muſcles; imagining that, by the Intumeſcence of their Bellies, they not only compreſs the *Corpora Cavernoſa*, and drive the contained Blood towards the Glans, but likewiſe the Paſſages through which it ordinarily flows back; which latter we can by no means admit in the Cavernous Bodies of the Penis itſelf, ſince the *Muſculi erigentes* are ſo remote from their great Vein. Our Hypotheſis, founded upon the Obſervation above-mentioned, and compared with the Structure and Situation of its Parts, is as follows: The Penis is approximated to the *Oſſa Pubis*, when thoſe Muſcles act, by means of the *Ligamentum Suſpenſorium*; whereby the Blood is not only driven forward towards the Glans in greater Plenty, and its Veins diſtended; but their great Trunks, running over the *Dorſum Penis*, are compreſs'd as they march cloſe under the *Ligamentum Tranſverſum* of the *Oſſa Pubis*. The like cannot happen in the Cavernous Body of the *Urethra*, ſince there is no Bone whoſe Poſition can have that Effect upon its Veins, as the *Oſſa Pubis* have upon thoſe of the Penis itſelf: Wherefore the *Muſculi Acceleratores*, compreſſing thoſe of its Bulb, do that Office: Hence it happens, in an imperfect Erection, the Glans is not equally extended with the Penis itſelf, and, at other times, is ſooneſt relax'd; but, when Muſcles act, the Blood contained in the Bulb is driven forwards towards the Glans, whereby it becomes more extended: So in a Piece of Gut, which if fill'd with Water, or Wind, and either End compreſs'd, the oppoſite being tied, we ſhall ſee it ſtrut out, and be more diſtended, as *De Graaf* inſtances after *Caſpar Bauhine*. The Blood, thus hinder'd in its Return, diſtends the Cavernous Bodies, which is thereby erected; the Arteries which before were flaccid, having then their Trunks alſo extended, do more plentifully import Blood into this Part: But ſince it is abſolutely neceſſary ſome Part of the detained Blood ſhould be ſtill paſſing off, leſt it become grumous, and unfit for a Reflux; to this End, the *Venæ Præputii* are joined to thoſe of the Penis itſelf, as above noted, and are placed under the Skin only; and, running over the *Oſſa Pubis*, carry off Part of the impel'd Blood to give way to a freſh Supply from the Arteries, and preſerve the Circulation uninterrupted. I remember, once, in an obſtinate Priapiſma, which would not yield to ordinary repeated Phlebotomy, I opened the Vein of the Penis itſelf, not without the expected Succeſs, it immediately loſing its troubleſome Rigidity, by which I was confirm'd in my Conjecture.

This elegant Contrivance in diſpoſing theſe exporting, ſanguiferous Ducts, that ſome are liable to be compreſt, while others remain altogether free, is not only obſervable in the Penis of Men, and Clitoris of Women, but in that of all Animals which have hitherto fell under our Examination, as well as in the Pudenda of all Females; and is, indeed, an Artifice that deſerves our Admiration.

PENNA. A Feather. It, alſo, ſignifies a ſubmarine Plant, which grows upon the Rocks, reſembling a Bird's Wing. It is call'd, likewiſe, *Mentula Alata*.

PENO-ABSOU. An *American* Tree, the Bark of which is very fragrant. The Fruit is about the Size of an Orange, and contains ſix, and ſometimes ten Nuts, of the Size of an Almond; which are each furniſh'd with a Kernel, or ſmall Almond, from which an Oil is drawn by Expreſſion. This Fruit is poiſonous. The Oil is ſaid to cure the Wounds made by Arrows, and other Wounds, if apply'd thereto.

PENTADACTYLON. A Name for the *Palma Chriſti*. *Blancard.*

PENTAMOERON. The Name of an Ointment deſcrib'd by *Aetius*, *Tetrabib.* 3. *Serm.* 4. *C.* 44. It conſiſts of Styrax, Maſtich, Wax, Opobalſamum, and Ointment of Nard. This is, alſo, deſcrib'd by *Paulus Ægineta*, *L.* 7. *C.* 20. under the Title of *Pentamyron*.

PENTAMYRON. See PENTAMOERON.

PENTANEURON. A Name for the *Plantago*; *anguſtifolia*; *major*.

PENTAPHARMACUM. A Medicine conſiſting of five Ingredients. It was, alſo, the Name of a favorite Aliment of the Emperor *Adrian*, as *Ælius Spartianus* informs us, which conſiſted of the *Sumen*, or Udder of a Sow, a Peacock, Ham, a ſort of Paſte or Cake, and Brawn; the five Ingredients from which it acquir'd the Name.

PENTAPHYLLOIDES.

The Characters are;

It agrees, in every thing, with the Cinquefoil, only the Leaves are not radiated to one Centre, but rather diſpos'd in the Form of Alæ, or pennated; and terminate in an odd Lobe.

Boerhaave mentions nine Species of *Pentaphylloides*; which are,

1. Pentaphylloides; paluſtre; rubrum. *T.* 298. *Quinquefolium paluſtre rubrum.* C. B. P. 326.

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2. Pentaphylloides; majus erectum; flore luteo; ternis foliis, Fragariæ instar hirsutis. *M. H.* 2. 193. *Fragaria, Pentaphylli fructu.* M. H. Bælf.

3. Pentaphylloides; Ulmariæ facie. *M. H. Blæf.* 291. *Quinquefolium fragiferum.* C. B. P. 326.

4. Pentaphylloides; rectum; fruticosum; Eboracense. *M. H.* 2. 193.

5. Pentaphylloides; argenteum; alatum; seu Potentilla. *Tourn. Inst.* 298. *Boer. Ind. A.* 41. *Argentina, Potentilla, Anserina.* Offic. *Argentina.* Ger. 841. Emac. 993. Raii Hist. 1. 617. *Potentilla.* C. B. P. 321. Park. Theat. 593. *Potentilla seu Argentina.* J. B. 2. 398. *Pentaphylloides, Argentina dicta.* Raii Synop. 3. 256. WILD TANSEY. *Dale.*

This is a low Plant, which never arises up to the Stalk, but creeps upon the Ground, emitting Fibres from the Joints, by which it roots in the Earth, and spreads very much; the Leaves are made up of several Pinnæ set opposite; each being about an Inch long, and not half so broad, serrated about the Edges, and having several small Pieces among them like Agrimony, cover'd over with a shining silver-colour'd Down: The Flowers grow at the Joints, on long Foot-stalks, of five yellow Leaves like Cinquefoil. The Root is slender, with many Fibres of a dark-brown Colour. It grows in moist barren Places, and where Water has stood, all the Winter, flowering in *May*.

The Leaves only are used, and are accounted restringent and vulnerary; good to stop all Kinds of Fluxes, and preternatural Evacuations, to dissolve coagulated Blood, to help those who are bruised by Falls: Outwardly, it is used as a Cosmetic, to take off Freckles, Sun-burn, Morphew, as, also, in restringent Gargarisms. *Miller's Bot. Off.*

This Plant is of an herby Taste, a little saltish, but styptic; it gives a very deep Tincture of Red to the blue Paper; which makes us conjecture, that the acid Part of the natural Salt of the Earth, filtrating itself through the Texture of this Plant, produces there, with the Earth, a kind of Salt very alumminous, united with a little Sulphur.

All Authors agree, that the wild Tansey is astringent, vulnerary, and detersive. They infuse it a whole Night in Wine: They drink it after the manner of Tea: They prescribe it in Ptisans, and Broths, for the Looseness, Bloody-flux and Hæmorrhages. I have seen it have wonderful Effects upon the Whites, especially if seven or eight Cray-fish are added to each Decoction of wild Tansey. It abates the Inflammation of the Kidneys and Bladder, and tempers the Heat of Urine. Its distilled Water is good for the Blearedness and Ulcers of the Eyes; for Tanning and Redness of the Face. *Martyn's Tournefort.*

It is moderately refrigerant, but more powerfully astringent, drying and binding; whence it is good for an Hæmoptoe, Diarrhœa, and other Fluxes of the Belly and Uterus: It is, also, an excellent Lithontriptic, and very serviceable in the Cure of Wounds and Ulcers. Externally, it is much in Use for the Tooth-ach, putrid Gums, and for mitigating the Heat in Fevers; for which Purpose it is of great Efficacy, being bruised, and apply'd to the Soles of the Feet, or to the Wrists. The Women in *England* use the distilled Water as a Remedy for Itch, Freckles, Sun-burns, and other cutaneous Desedations. In *Yorkshire*, about a Town call'd *Settle*, it is customary for the Boys to dig up the Roots, which they call *Moors*, and eat them, for they are of a sweet Taste, and as grateful as a Parsnep, as I have been credibly assured, says *Ray*, by an Apothecary who lived in those Parts. *J. Agricola*, by a remarkable Experiment, found the Juice of this Herb, with the Powder of the common *Colchicum*, to be a Cure for the Disease of the Anus, called the *Mariscæ*. *Castor Durantes* advises to put it in the Shoes of those who labour under a Dysentery, and assures us, that not only the Dysentery, but all preternatural Fluxes of the lower Belly, as well as an immoderate Flux of the Menses, and even an Hæmorrhage, at the Nose may be cur'd by the same Experiment; *Sim. Paulus. Hartman* affirms, that this Remedy was effectual in a Dysentery which had eluded the Prescriptions of Physicians: And the same is the celebrated Arcanum of *Petr. Borellius, Cent.* 1. *Obs.* 12.

Diuretics are sometimes beneficial in Fevers, among which *Anserina* is specifically adapted to such a Purpose; and so is the Salt of *Anserina*, which I regard as a Specific. *D. Soame* from *Dolæus. Raii H. P.*

6. Pentaphylloides; supinum. *J. B.* 2. 398. *Quinquefolio fragifero affinis.* C. B. P. 326. *Fragaria, vesca.* Ger.

7. Pentaphylloides; orientale; erectum; Pimpinellæ folio, & facie. *T. Cor.* 21.

8. Pentaphylloides; Canadensis; folio Agrimoniæ. *Saracen.*

9. Pentaphylloides; erectum. *J. B.* 2. 398. *Boerh. Ind. alt. Plant.*

The fifth Species is most commended, and has its Names *Argentina* and *Potentilla* from its noble and potent Effects. It is endu'd with the Virtues of the *Peruvian* Bark; for if the Herb be bruised, and the expres'd Juice taken an Hour before the Paroxysm of an intermittent Fever, it removes it with one or two Doses, if the Disease be of a kindly Sort, as well as the Bark. If there be any Malignity in the Fever, it is externally apply'd; if an Ulcer or Wound bleed excessively, being apply'd in the Form of a Cataplasm, it rarely fails of answering the Purpose. Internally, it is of Service in all Diseases which consist in Openings of the Vessels, and Evacuations of the Liquids; whence it cures the Dysentery, which has its Original from Liquids. Outwardly, it is consider'd, also, as an Antiphlogistic: If any one has his Feet inflamed with too much Walking, this Plant, apply'd thereto, cures him. If Infants have their Ears oppress'd with Sordes, the Remedy is the bruised Leaves of this Herb mix'd with a little Ceruss. There is prepar'd a Conserve of this Herb, which is well worth the keeping, but the distilled Water is of no Use. The Seeds and Root are astringent, for which Reason they cure the Diarrhœa and Hæmorrhages. A Decoction of the Plant, with River-crabs, is a very good Remedy in the Fluor albus; and the Seeds have the same Effect in an immoderate Flux of the Menses, and an Inflammation of the Bladder. *Hist. Plant. adscript. Boerh.*

PENTAPHYLLUM. A Name for several Species of *Quinquefolium* and *Pentaphylloides.*

PENTAPHYLLUM PEREGRINUM. A Name for the *Sinapistrum*; *Lusitanicum*; *triphyllum*; *flore rubro*; *siliquis corniculatis.*

PENTAPLEURUM. A Name for the *Plantago*; *angustifolia*; *major.*

PENTATHETON. The Name of a Plaister described by *Oribasius, Synop. L.* 3. and mention'd by *Aetius* and *Actuarius.*

PENTOROBUS. Peony. *Aetius, Tetrabib.* 1. *Serm.* 1.

PEPASMOS, πέπασμος, or PEPANSIS, πέπανσις. Concoction. See COCTIO.

PEPASTICA. Digestive Medicines. *Blancard.*

PEPITAS DEL PERU. The Name of a *Peruvian* Fruit, to which I find no Virtues ascrib'd.

PEPLION, PEPLOS, πέπλιον, πέπλος, were Medicines much of the same Kind and Quality, and prescrib'd by the antient Physicians as Cathartics for evacuating the Body of Bile and Phlegm. This is evident from *Dioscorides, Ruffus Ephesius* in his Fragment of Cathartics, and *Actuarius*, who says, also, that those Medicines, after evacuating black Bile and Phlegm, expel Flatulencies, especially such as give Rise to Melancholy; and even that they cure Inflations of the Spleen, Uterus, and larger Intestines. *Hippocrates* usually prescribes *Peplium* as a Purge for black Bile, which, as *Galen* says, it evacuates, as well as black Hellebore, and is more effectual in expelling Flatulencies. It is prescribed also, by *Hippocrates*, as a Purge in an Erysipelas of the Lungs, and the first Appearance of a Consumption. The *Peplos*, *Lib.* 2. *Epid.* was order'd to be taken by *Scopus* afflicted with a Swelling of the Spleen, and a great Distention of the Hypochondria, and lower Parts of the Belly, from Flatulencies; and, *Lib. de Superfœt.* it is recommended for mollifying the Orifice of the Uterus. In 7 *Epid.* the *Peplos* is prescribed under the Name of *Meconium*, μηκώνιον, as a Purge for Bile and Phlegm, as, also, *Lib. de R. V. I. A.* And, in the Book *de Mulier. Morbis*, it is recommended under the Names of *Mecon, Meconium*, and *Meconis. Peplium*, in *Galen*'s Exegesis, is expounded to be the same with what is, also, called *Peplis*, and wild *Andrachne*, which Names are taken from *Dioscorides, Lib.* 4. *Cap.* 169. We find, in the same Exegesis, the *Peplos* to be the same with what is called, also, *Chamæsyce*, *Papaver Spumeum*, and *Meconium*, which *Pliny* also writes, *Lib.* 27. *Cap.* 12. *Erotian* says, that *Peplos* is a kind of Herb which some call *Peplion*, and others *Symphytum. Foesius.*

Hippocrates used to add *Peplium* to *black Hellebore*, but it is not certain what Kind of Plant it was: Many refer it to the *Esulæ*, and *Matthiolus* assures us, that there is, at this Day, in *Italy*, a Species of *Esula*, which they call *Pepla*, or *Peplo*. Because *Hippocrates*, in some Places, gives it the Name of *Meconis*, *Dioscorides* seems to call it *Papaver Spumeum*, tho' the Marks he there gives of it leave us at an Uncertainty to what Species of the *Papaver* we are to apply the Name of *Peplion*. It is a Question whether it be not the *Papaver album* of *Hippocrates*, because it is reckon'd by him as a Purgative; and this, indeed, seems probable, because there is a Species of *Papaver*, which *Pliny* says is called *Tithymalus. Schultzii Hist. Med.*

PEPLIS. A Name for the *Tithymalus*; *annuus*; *erectus*; *folio oblongo, acuminato.*

PEPLUS. A Name for the *Tithymalus*; *rotundis foliis, non crenatis.*

PEPLYMENON. The Name of a Cerate mentioned by *Celsus, Lib.* 5. *Cap.* 18.

PEPO.

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PEPO.

The Characters are;

The Flower conſiſts of one Leaf, which is Bell-ſhap'd, expanded at the Top, and cut into ſeveral Segments: Of theſe Flowers, ſome are male, and ſome are female, as in the Cucumbers and Melons. The female Flowers grow upon the Top of the Embryo, which afterwards becomes an oblong, or round, fleſhy Fruit, having ſometimes an hard, rugged, or uneven Rind, with Knobs and Furrows; and is often divided into three Parts, incloſing flat Seeds, that are edged, or rimmed about, as it were, with a Ring, and fix'd to a ſpongy Placenta.

Boerhaave mentions fifteen Species of *Pepo*; none of which have any particular Medicinal Virtues aſcrib'd to them, except the firſt; which is,

Pepo; oblongus. *C. B. P.* 311. *Raii Hiſt.* 1. 641. *Tourn. Inſt.* 115. *Boerh. Ind. A.* 2. 78. *Pepo.* Offic. Park. Parad. 526. *Pepo maximus oblongus.* Ger. 773. Emac. 919. COMMON POMPION, or MELON.

The Pompion takes up a great Compaſs of Ground, with its large, thick, creeping Stalks, furniſh'd with large Claſpers; its Leaves are very large and rough, in Shape like thoſe of Melons. The Flowers are large, in Shape and Colour like a yellow Lily. The Fruit is of a great Bigneſs, having large, white, oval, flatiſh Seed. The Pompion is ſown in Dunghils, being ripe in *September* and *October*; it is rarely uſed in Phyſic.

The Seed is cooling, and of the Nature of the Melon, and other cold Seeds; and may ſerve very well to make Emulſions. *Miller's Bot. Off.*

All the Kinds of Pompions are cooling, moiſtening, allay ſharp Humours, and quench Thirſt.

They are hard to be digeſted, weaken the Stomach, and cauſe Wind and Colic.

Pompions contain much Phlegm, a middling Quantity of eſſential Salt, and a little Oil.

They agree in hot Weather with young, bilious People; but Perſons of a cold and phlegmatic Conſtitution ought to abſtain from them.

They uſually mix the Pompions with ſome aromatic Herbs, ſuch as Parſley, Onions, Muſtard, Pepper, and ſeveral other ſharp and volatile Things, fit to attenuate the viſcous Phlegm of this Fruit in the Stomach.

They preſerve Pompions with Sugar, in order to make them more pleaſing to the Taſte, and more wholſome. In ſhort, they rareſy their groſs Subſtance by boiling them well; and beſides, the Sugar, wherewith they are mix'd, gives them a little ſort of pricking Quality, that makes them leſs inſipid to the Taſte, and more eaſy of Digeſtion. Preſerv'd Pompions may be uſed in Diſtempers of the Breaſt, in order to allay the Sharpneſſes that are there.

Pompions contain a great many Seeds, which are flat, oblong, cover'd with an hard Rind, that is a little woody, whitiſh or greyiſh. Under this, there is a ſmall ſweet and very pleaſant Kernel, which contains a great deal of Oil, that may be eaſily preſs'd out of it; and is proper to ſoften the Skin, and make it more ſmooth. *Lemery on Foods.*

PEPTICOS, πεπτικὸς. Digeſtive, or promoting Digeſtion. It is uſed with reſpect to the Digeſtion of the Aliments, the Concoction of the Humours, or the Formation of Matter.

PEQUEA, or PEKIA. *Piſon. I. De Laet.* The Name of an *Indian* Tree which bears a Fruit ſomewhat larger than an Orange, the Juice of which is extremely ſweet and delicious, and eſteem'd by the *Europeans* as good in Diſorders of the Breaſt. *Raii Hiſt. Plant.*

PERAGU. *H. M.* The Name of a Shrub, which grows in *Malabar*. The Root, taken in acid Milk, or Wine, is ſaid to be good for a Lientery, the Colic, and Gripes; and the Powder thereof is ſaid to dry up Puſtules. The Juice of the Leaves, taken internally, kills Worms of the Inteſtines. *Raii Hiſt. Plant.*

PERCA. Offic. Schrod. 5. 331. Rondel. de Piſc. 2. 196. Mer. Pin. 190. *Perca fluviatilis.* Bellon. de Aquat. 295. Geſn. de Aquat. 698. Raii Ichth. 291. Ejuſd. Synop. Piſc. 97. Salv. de Aquat. 296. *Perca major.* Charlt. de Piſc. 41. Jonſ. de Piſc. 47. *Perca fluviatilis major.* Aldrov. de Piſc. 622. *Perca major* Schonef. Ichth. 55. THE PEARCH.

This Fiſh is very frequently found in Rivers; and the only Parts of it uſed for medicinal Purpoſes, are the Bones found in the Head near the Beginning of the Spina Dorſi, and in the Shops called *Lapides Percarum*; which, in Virtues, agree with the other teſtaceous Powders, and are uſed in diſſolving the Stone, and cleanſing the Kidneys. Externally they are, alſo, uſed in Dentifrices, and for drying Wounds. *Schrod. Dale.*

There are two Sorts of this Fiſh; the River and Sea-Pearch: The latter, in *Latin*, is called *Perca marina*, and is of a red-brown, or blackiſh Colour; it is ſmaller than the River Pearch: They find it near Rocks, where it preys upon ſmaller Fiſh: It is hard, like Leather, viſcous, not eaſy of Digeſtion, and ill-taſted, according to *Rondeletius*: They do not uſe it for Food, and ſo we ſhall ſay no more of it here. The River Pearch is ſubdivided into two ſorts, the great and ſmall one, which are both of them excellent Victuals. You are to chuſe thoſe that are fat, well-fed, middle-aged, tender, yet firm and well-taſted; and they ſhould be ſuch as are caught in fine clear Rivers.

The Pearch is nouriſhing, produces good Juice, and eaſily digeſts.

It is pretended, that when this Fiſh is too fat and old, it has an ill Taſte, and is hard of Digeſtion; they, alſo, ſay the ſame thing of that which breeds in Marſhes, and muddy Places.

Auſonius reckons the Perch of the Number of thoſe Fiſhes that have a delicious Taſte. It may be ſaid, in general, that the Pearch has but few groſs Humours; that it produces many good Effects, and but a few bad ones: And the Reaſon is, becauſe this Fiſh lives generally, and out of Choice, in pure, clear, and rapid Waters, rather than in thoſe that are muddy, and run ſlowly. Moreover, it feeds upon good Food, and is very active, which, alſo, contributes to make it more delicious and wholſome. It is nouriſhing, and affords good Food, becauſe it contains many balſamic Parts, and moſt pure Juice. It is, alſo, eaſy of Digeſtion, when middle-aged; for then 'tis of a middling Conſiſtence: When, on the contrary, 'tis too young, or too old, 'tis ſoft and viſcous, or elſe hard, like Leather. *Lemery on Foods.*

PERCEPIER.

The Characters are;

The Calyx is quadrifid; the Flower is produced in the *Alæ* of the Leaves; the Seeds are produced ſingle in each Seed-veſſel, which is formed by the Calyx.

Boerhaave mentions but one Sort of *Percepier*; which is,

Percepier Anglorum, quibuſdam. *J. B.* 3. 74. *Boerh. Ind. A.* 2. 93. *Percepier.* Offic. *Percepier Anglorum.* Ger. Emac. 1594. Raii Hiſt. 1. 209. Synop. 67. *Polygonum Selinoides.* Park. 448. *Chærophyllo nonnihil ſimilis.* C. B. P. 152. *Alchimilla montana minima.* Tourn. Inſt. 508. PARSLEY-PIERT.

This is a ſmall low Plant, lying generally upon the Ground, whoſe round hairy Branches are ſeldom an Hand-breadth long; they are full of ſmall Leaves, ſet alternately at the Joints, a little hairy, narrow at the Stalk, and broadeſt at the Ends, cut into three round Sections; the Flowers are ſmall, and ſtaminous, growing in Cluſters at the Joints, among the Leaves; they conſiſt of four Leaves, and are ſucceeded by ſmall round Seeds. The Root is full of Fibres. It grows in dry Places, and in fallow Fields, as, alſo, among Corn.

Parſley-piert is not an officinal Plant, and is ſeldom preſcribed by Phyſicians; but the Vulgar have a great Opinion of it, as a Breaker or Bringer away of the Stone and Gravel, and a Provoker of Urine; and it is given by them for that Purpoſe, either in Powder, or a Decoction of it in White-wine. *Miller's Bot. Off.*

It is ſaid to be a very ſpeedy, as well as potent Provoker of Urine, and to break the Stone: It is eaten raw, as a Green; and is, alſo, preſerved in Pickle. The diſtilled Water of this Plant is very uſeful. *Raii H. P.*

PERCEPIOLUM. An approved or tried Remedy for a Diſeaſe. *Dorn. Dict. Paracelſ.*

PERDETUM, in *Paracelſus*, is the Root of Skirret.

PERDICIUM. A Name for the *Parietaria*, Pellitory of the Wall.

PERDITIO ſometimes imports a Miſcarriage.

PERDIX. Offic. Schrod. 5. 323. *Perdix cinerea.* Aldrov. Ornith. 2. 140. Jonſ. de Avib. 46. Charlt. Exer. 83. Will. Ornith. 118 Raii Ornith. 166. Ejuſd. Synop. A. 57. *Perdix minor fulva.* Bellon. des Oyſe. 258. THE COMMON PARTRIDGE.

The Parts of this Animal, uſed for medicinal Purpoſes, are the Fleſh, Marrow, Blood, Liver, Gall, and the Feathers. The Fleſh, if eaten, augments the Quantity of Semen and Milk, and proves a Stimulus to Venery. The Marrow, as, alſo, the Brain, when drank in ſome proper Liquor, are ſaid to afford Relief to thoſe who labour under a Jaundice. The Gall is, by ſome, highly extolled in Diſorders of the Eyes. The Blood is uſed as an Ointment for the Eyes, when they are Blood-ſhot, and in recent Wounds of them. The Liver, dried before the Fire, and reduced to a Powder, ſtops an Epilepſy; and is accounted an highly efficacious Medicine againſt Fevers, if frequently exhibited in Yarrow-water. *Crato.* The Feathers, uſed by way of Fumigation, and applied to the Noſtrils, are beneficial in a Suffocation of the Uterus, as, alſo, for alleviating, mitigating, and removing Colics, and other Pains of a like Nature. *Schrod. Dale.*

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There are ſeveral ſorts of Partridges, which ought to be choſen while they are young, tender, well-fed, and of a good Taſte. When a Partridge is old, his Fleſh is hard, like Leather, not eaſy of Digeſtion, and diſagreeable to the Taſte.

The Partridge, in all the Parts of it, contains much Oil, and volatile Salt.

It agrees, in cold Weather, with any Age and Conſtitution. but, more eſpecially, with Perſons recovering from Sickneſs, and thoſe who are of a cold and phlegmatic Temper.

The Partridge's Fleſh is firm, and full of viſcous Moiſture; and, for that Reaſon, 'tis very well taſted, good in Diarrhœas, and for pituitous and phlegmatic People. The eating of Partridge increaſes Seed, is very nouriſhing, and wholſome for Perſons recoving from Sickneſs; not only becauſe it contains many oily and balſamic Parts, that are fit to unite with the ſolid Parts, and to reſtore them; but, alſo, by the Aſſiſtance received from its volatile Salts, which keep the Liquids in a juſt Fluidity, and increaſe the Animal Spirits.

A Partridge ought not to be eaten as ſoon as it is killed; but ſhould, for ſome time, be expoſed to the Air; for by that means its Fleſh will grow more tender and ſhort. *Lemery of Foods.*

PERDIX. Schw. A. 327. Geſn. de Avib. 606. *Perdix rufa.* Mer. Pin. 173. Charlt. Exer. 83. Jonſ. de Avib. 46. Aldrov. Ornith. 2. 139. Will. Ornith. 119. Raii Ornith. 176. Ejuſd. Synop. A. 57. *Perdix major rufa.* Bellon. des Oyſe. 256. THE RED-LEGGED PARTRIDGE.

It agrees in Virtue with the preceding.

There is, beſides, another Species of Partridge, called

PERDIX ALBA, or LAGOPUS. This is a Bird whoſe Legs are hairy, and reſemble thoſe of an Hare; there are two Species of it, one as large as a Pigeon, cover'd with Feathers as white as Snow, except thoſe of the Tail, which are variegated with ſome black Spots: Its Beak and Feet are, alſo, of a blackiſh Colour.

The other Species reſembles a Quail; but is larger, and covered with Feathers, partly white, and partly of a yellow Saffron-colour.

Both Species are found in the *Alps*, and *Pyrenean* Mountains, and delight in Snow. They are excellent Food, and contain a large Quantity of volatile Salt, and Oil. They are, alſo, of a reſtorative and corroborating Quality. *Lemery des Drogues.*

PERDIX MARINA is the Sole. See SOLEA.

PERDONIUM. Wine medicated with Herbs. *Dorn. Dict. Paracelſ.*

PERELLE. A ſort of ſcaly Earth, brought from *St. Tour* in *Auvergne*. *Lemery des Drogues.*

PERESKIA.

The Characters are;

It hath a Roſe-ſhaped Flower, conſiſting of ſeveral Leaves, which are placed orbicularly, whoſe Cup, afterward, becomes a ſoft fleſhy globular Fruit, beſet with Leaves; in the middle of the Fruit, are many flat roundiſh Seeds, included in a Mucilage.

Miller mentions but one Species of *Pereſkia*; which is,

Pereſkia aculeata, flore albo, fructu flaveſcente. *Plum. Nov. Gen.*

This Plant grows in ſome Parts of the *Spaniſh Weſt-Indies*, from whence it was brought to the *Engliſh* Settlements in *America*, where it is called a Gooſberry; and, by the *Dutch*, it is called *Blad-apple*. *Miller's Dictionary, Vol.* 2.

PERETERION. The perforating Part of the Trepan.

PERFOLIATA.

Boerhaave mentions three Species of *Perfoliata*; which are,

1. Perfoliata, vulgatiſſima, ſive arvenſis. *C. B. P.* 277. *Boerh. Ind. A.* 72. *Perfoliata.* Offic. *Perfoliata vulgaris.* Ger. 430. Emac. 556. Raii Hiſt. 1. 470. Park. Theat. 580. *Perfoliata ſimpliciter dicta, vulgaris, annua.* J. B. 3. 198. *Bupleurum perfoliatum rotundifolium annuum.* Tourn. Inſt. 310. Raii Synop. 3. 221. THOROW-WAX.

Thorow-wax has a ſmall, fibrous, ſticky Root; from which ſpring ſmooth, and frequently rediſh Stalks. The Leaves are of a bluiſh-green Colour, of an oval Shape; ſmooth, and not indented about the Edges; full of Nerves, which run obliquely from the Centre to the Circumference of the Leaf: They are perforated by the Stalk, which runs through them, and is divided towards the Top into ſeveral Branches, at the Ends of which grow ſmall Umbels of yellow Flowers, uſually five together upon one Stalk, with as many ſmall Leaves under each Umbel; the three outermoſt being the largeſt: Each Flower is ſucceeded by two oblong ſtriated Seeds. It grows only among the Corn, and flowers in *June* and *July*. The whole Plant is uſed.

Thorow-wax is reckoned among the vulnerary Plants, and is eſpecially ſerviceable in green Wounds, Bruiſes, Ruptures, Contuſions, as alſo, for old Ulcers and Sores, either given in Powder, or the Decoction. *Miller's Bot. Off.*

It is reckoned among Plants of a conſolidating and conglutinating Quality. The Decoction of the Herb in Wine, or the Powder of the Leaves, is exhibited for the Cure of internal Affections, as Ruptures, or Bruiſes by Falls. It is much recommended in Hernias, eſpecially of Children, and particularly, according to *Schroder*, an umbilical Hernia, whether taken inwardly, or freſh bruiſed, and applied outwardly, in a Cataplaſm, with Wine and Flour; in the ſame manner it reſolves ſtrumous Swellings. *Schwenckfield* affirms, that it is of great Efficacy in Fractures, Hernias, and the Eryſipelas.

The following Preſcription, ſays *S. Paullus*, is a ſovereign conſolidating Remedy for the *Exomphalon*, or Prominence of the Navel: Take Perfoliata, Root and all, one Handful, Mouſe-ear, Rupturewort, Plaintain, Moſs, *Engliſh* Acacia, of each half an Handful: Boil them in a ſufficient Quantity of red Wine, and apply them to the Place affected. *Raii H. P.*

2. Perfoliata, annua, longioribus foliis. *J. B.* 3. 198. *M. H.* 3. 290. *Bupleurum perfoliatum, longifolium, annuum. T.* 310.

3. Perfoliata, montana, latifolia. *C. B. P.* 277. *Bupleurum montanum latifolium. T.* 310. *Boerh. Ind. alt. Pant. Vol.* 1.

PERFORANS MANUS. The Name of a Muſcle of the Fingers.

This Muſcle is very like the Perforatus, or Sublimis, and it is ſituated much in the ſame manner; only it lies lower, and is covered by the Perforatus. It is compoſed of four Muſcles, which at firſt ſeem to make but one Maſs, and afterwards terminate in four Tendons.

The fleſhy Portions of the firſt and largeſt, and, alſo, of the ſecond, are fixed in the ſuperior Parts of the Ulna, and interoſſeous Ligament, down to their Middle; the fleſhy Portion of the third is joined to the Tendon of the Ulnaris Internus, by a ſort of common Aponeuroſis; and that of the fourth is fixed along the Ulna.

The four Tendons have often ſeveral ſmall collateral Tendons, ſometimes five in Number, united to the Tendons of the neighbouring Muſcle, as they paſs under the large annular Ligament of the Carpus; but the Tendons themſelves are ſeparated from the others by thin Septa, which form a kind of particular Rings. Being thus ſtrengthened, they ſeparate, and, running along the Palm of the Hand, in diſtinct membranous Vaginæ, like thoſe of the Perforatus, by which they are covered, they enter the ligamentary Vaginæ of the firſt Phalanges, together with the former; and, having paſſed through the Fiſſures thereof, and through the ligamentary Vaginæ of the ſecond Phalanges, they are inſerted in the flat inner Side of the third, near the Baſis.

The ligamentary Vaginæ of the ſecond Phalanges appear ſometimes ſtronger near the Baſes, near the Heads of the Bones.

The Perforans bends particularly the third Phalanges, in which it is inſerted; and by the ſame Motion it may likewiſe bend the firſt and ſecond Phalanges. We may apply to this Muſcle all that is ſaid concerning the tendinous Septa in the Perforatus, and concerning its Action, which is ſometimes common to all the four ſubaltern Muſcles, ſometimes peculiar to one or more of them.

It may, likewiſe, be eſteemed an Aſſiſtant to the Ulnaris and Radialis Interni, in great Efforts; and theſe Muſcles may reciprocally be looked upon as Aſſiſtants to the Perforatus and Perforans.

Each of theſe four Tendons paſſes under a diſtinct annular Ligament, as under a Pully; for, having accompanied that of the Perforatus through the great Ligament of the Carpus, through the Furcæ of the Aponeuroſis Palmaris, and through the ligamentary Vaginæ of the firſt Phalanx, and having paſſed through the Slits of the Perforatus, it leaves this Tendon, and continues its Courſe to the third Phalanx through the ligamentary Vagina of the ſecond.

In its Paſſage through the Slit of the Perforatus, it is liable to no Compreſſion, even in the moſt violent Efforts of that Muſcle. The reciprocal Contortions of the two flat Portions of the Fiſſure, and their crucial Inſertion in the flat Side of the third Phalanx, hinder the little oblique Grooves, mentioned in the Deſcription, from cloſing, and the two lateral Portions of the Fiſſure, from coming together, even after the Tendon of the Perforans has been removed; and the more this Part of the Tendon is pulled, the more perfectly does the Fiſſure form a ſort of a Chanel with ſolid Sides, and with the two Ends cut obliquely.

Without ſuch an artful Structure as this, the Tendon of the Perforans would have been continually expoſed to Compreſſions and Contuſions by the Sides of an ordinary Fiſſure; and, without paſſing through the Tendon of the Perforatus, it could not have been inſerted in the middle of

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of the flat Side of the third Phalanx, but near one of the Edges.

In the Inſertion of theſe two Tendons in the Phalanges, we may obſerve ſtill a farther Contrivance. This Inſertion is angular in both, that is, the Extremities of the Tendons are not inſerted according to their Breadth, in a tranſverſe Line; but the Sides of their Breadth make an Angle with the Middle.

Perforans Pedis, sive Flexor Digitorum longus.

This is a long Muſcle, fleſhy above, and tendinous below; lying on the back Side of the Leg, between the Tibia and the Flexor Pollicis longus, covered by the Soleus, and covering the Tibialis poſticus.

It is fixed, above, by fleſhy Fibres, to a little more than the Middle third Part of the back Side of the Tibia, near its external Angle, below the Inſertion of the Soleus; and, alſo, to a kind of Ligament, which runs down from the Middle of the Tibia. It afterwards ends in a Tendon, which paſſes behind the inner Ancle on one Side, and a little behind the Tibialis poſticus, in a ſeparate annular Ligament.

From thence it runs under the Sole of the Foot, ſending off a Detachment, by which it communicates with the Flexor Pollicis longus. There it is divided into four ſmall flat Tendons, which go to the third Phalanges of the four ſmall Toes, in the ſame manner as the Perforans of the Hand.

Theſe four Tendons agree, likewiſe, in this, with thoſe of the Hand, that they give Inſertions to the Lumbricales; but they differ from them in this, that before the Separation they are joined, laterally, by an auxiliary fleſhy Body, which I name *Flexor Digitorum acceſſorius*.

The *Perforatus*, or *Flexor Digitorum brevis*, binds the ſecond Phalanges; and the *Perforans*, or *Flexor longus*, the third; the Uſe of theſe Muſcles being nearly the ſame with the Perforatus and Perforans of the Hand. *Winſlow.*

PERFORATA. A Name for the Hypericum.

PERFORATIO. Sometimes ſignifies a *Seton*.

PERFORATUS MUSCULUS.

Perforatus Manus, vulgo Sublimis.

This Muſcle is conſiderably large, lying along the Inſide of the fore Arm, fleſhy for the greateſt Part near the Articulation of the fore Arm with the Os Humeri, and near the Carpus terminating in four diſtinct Portions, which become the ſame Number of long ſmall Tendons. The Name of *Sublimis* has been given to it; becauſe it lies almoſt on the Surface of the fore Arm; and that of Perforatus, from the Slits found near the Extremities of its Tendons.

It is commonly made up of four Muſcles, cloſely united by their fleſhy Portions, repreſenting there one large Body of Muſcles. It is fixed above to the ſuperior internal Parts of the Ulna and Radius, (this laſt Bone being conſidered in its natural Situation) and to that of the interoſſeous Ligament. A little below the Middle of the fore Arm, this large fleſhy Body is divided into four diſtinct Muſcles, which, on the loweſt Quarter of the fore Arm, end in four flat Tendons of different Sizes.

Theſe four Tendons are incloſed in a common membranous, or mucilaginous Vagina, which, likewiſe, furniſhes each Tendon with a particular thin Vagina. In this manner they advance to the Carpus, and paſs under the large annular tranſverſe Ligament: Beyond this Ligament, they ſpread again, in the Palm of the Hand, ſtill retaining their particular Vagina, and run between the Aponeuroſis Palmaris and Metacarpus, toward the Fingers, ſeparating more and more by degrees. Sometimes there are at firſt only three Tendons, one of them being afterwards divided into two, in their Paſſage to the Fingers; ſometimes they communicate, by a kind of Detachment, with the Tendons of the Perforans.

Having reached the Heads of the metacarpal Bones, they paſs under the four Arches, or Fræna, formed by the Furcæ of the Aponeuroſis Palmaris, and particular Septa of the great tranſverſe Ligament of the Palm of the Hand; and then each Tendon, having got beyond the Head of one metacarpal Bone, and beyond the Baſis of the firſt Phalanx, enters the ligamentary Vagina, and the flat, or inner Side of that Phalanx; and is inſerted in the flat Side of the ſecond Phalanx, near its Baſis, the membranous Vagina accompanying it to its Inſertion. The ligamentary Vagina is ſtronger towards the Baſis, than towards the Head of the firſt Phalanx.

In paſſing along the Inſide of the firſt Phalanx, the Tendon is divided by a long Slit, which gives Paſſage to a Tendon of the Perforans, and from thence the Names of theſe two Muſcles are taken.

This Fiſſure, or Opening, is contrived in a very ſingular manner: The Tendon is, firſt of all, divided in two flat Portions, and each Portion is contorted on the flat Side of the Phalanx; ſo that the Edges, which were neareſt, become oppoſite, and the oppoſite Edges are joined together all the Way to the Extremity of the Tendon. By this Contorſion, the Fiſſure ſeems to form two ſmall oblique Grooves, which ſurround the Tendon in oppoſite Directions; one Groove being covered by the Tendon, and the other covering it.

This is not all: The two Portions, having formed this double Groove by their mutual Contorſion, are not united, only by ſimply approaching each other at their Extremities; for each Portion is at that Place again divided into two others, ſmaller and ſhorter than the former; ſo that, in all, there are four narrow Portions, the two neareſt of which croſs each other, and join the other two, ſo that from the four narrow ones are formed two broad Portions anew, which are joined by their Edges, and afterwards inſerted in the Bone at a ſmall Diſtance from each other.

The Perforatus ſerves to bend the ſecond Phalanges of all the Fingers, except the Thumb; and the particular Muſcles, of which it is made up, may act ſeparately, by reaſon of their diſtinct Inſertions in theſe Phalanges. The Union of the fleſhy Bodies by intermediate tendinous Septa may have ſeveral Uſes, the principal of which is, that theſe Septa, being very broad and thin, give Inſertion to a great many fleſhy Fibres in a very ſmall Compaſs, and thereby ſupply the Place of four large Tendons, which would have taken up much more Room; but by this Union theſe four Muſcles are more diſpoſed to act jointly than ſeparately.

They not only bend the ſecond Phalanges on the firſt, but, alſo, the firſt on the metacarpal Bones, and the Metacarpus and Carpus on the fore Arm. To conceive the Mechaniſm and Force of theſe Muſcles, which is very great, and neceſſary in certain Circumſtances, it muſt be obſerved, that as, in the Muſcles of the Scapula, every Muſcle, which can move a Bone in any given Direction, is, likewiſe, able with the ſame Force to keep it immoveable in any Situation, againſt whatever tends to move it in a contrary Direction. The following Examples will ſufficiently illuſtrate this Obſervation.

It is by bending the Fingers that we raiſe the greateſt Weights, that Sailors pull large Oars, that Printers turn the Screws of their Preſſes, and that Climbers ſupport their whole Bodies, even with an additional Burden upon them. It is by means of the Fingers, when bent, that we tear, pull up, bruiſe, and the like, things that require great Force to be ſo treated.

The Strength of Muſcles depends on the Multitude of their fleſhy Fibres, and the Extent of their Motions, on the Length of theſe Fibres; and, conſequently, where-ever Strength is more neceſſary than large Degrees of Motion, there we find the Fibres of Muſcles proportionably increaſed in Number; and, where-ever there is more Occaſion for a large Degree of Motion than for Strength, the fleſhy Fibres are of a proportionable Length.

In the Perforatus we meet with both theſe Contrivances, a great Number of Fibres for Strength of Motion, and a great Length of Fibres for Extent of Motion. The different tendinous Septa ſerve to give Inſertions to a Number of moving Fibres, ſufficient for the Strength required in the Caſes already mentioned.

Large Degrees of Motion are, likewiſe, ſometimes very neceſſary in this Muſcle, as for Inſtance, when we bend the Fingers at the ſame time that the Metacarpus and Carpus are bent on the fore Arm; and, in this Caſe, certain Faſciculi of Fibres are chiefly employ'd, which appear to be longer than the reſt.

The particular Uſe of the Tendons of this Muſcle is beſt underſtood with that of the Perforans Manus.

Perforatus Pedis, sive Flexor Digitorum brevis.

This is the undermoſt of all the common Muſcles of the Toes, being ſituated immediately above the Aponeuroſis Plantaris, which it reſembles ſomething in Figure; and hence we ſee, that it has been very improperly termed *Sublimis*.

It is fixed by fleſhy Fibres to the anterior and lower Part of the great Tuberoſity of the Os Calcis; and to the neighbouring Part of the upper Side of the Aponeuroſis Plantaris.

From thence it runs forwards, being divided into four fleſhy Portions, which terminate in the ſame Number of Tendons, ſplit at their Extremities in the ſame manner as thoſe of the Sublimis, or Perforatus of the Hand, and inſerted in the ſecond Phalanges of the four ſmall Toes, a little nearer the Inſide, than in the Hand. *Winſlow.*

The Uſes of this Muſcle are mentioned under the Perforans Pedis.

PERFRICTIO. A great Shivering, or Coldneſs.

PERIAMMA, or PERIAPTON, from περιάπτω, to connect, or bind to. An Amulet.

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PERIBLEPSIS, περιβλεψις, from περιβλέπω, to ſtare about. That kind of wild ſtaring Look, and Inſtability of the Eyes, which is perceived in People labouring under a Delirium.

PERIBOLE, περιβολη, from περιβάλλω, to ſurround. In *Hippocrates*, *de decenti Habitu*, it ſignifies the Dreſs, Garb, or Cloathing of a Perſon. In other Places it imports a Tranſlation of the Humours, or morbific Matter, to the Surface of the Body. Thus, when a Diſorder is relieved by a copious Eruption of Puſtules, this is a *Peribole*, or Removal of the morbific Matter from the internal Parts to the Surface.

PERICARDIUM. See COR.

PERICARPIUM, περικάρπιον, from περὶ, about, and καρπὸς, Fruit. Whatever ſurrounds the Fruit of Vegetables, whether Membrane, Huſk, or Pulp. Some reſtrain the Signification to the ſoft and moiſt Pulp, which covers the Seeds, as in Apples, Pears, and Peaches. But,

PERICARPIUM, from περὶ, and καρπὸς, the Wriſt, imports a topical Medicine apply'd to the Wriſt.

PERICHAREIA, περιχάρεια. An Exceſs of Joy, which has been ſometimes known to produce ſudden Death.

PERICHRISIS. A Liniment.

PERICLASIS, from περὶ, about, and κλάω, to break. A Fracture with a great Wound, wherein the Bone is laid bare.

PERICLYMENUM.

The Characters are;

It has the Appearance of the Honeyſuckle. The Flower is monopetalous, reſembles, in ſome meaſure, a Tube, and has its upper Part divided into ſeveral almoſt equal Segments. The Ovary has its Top adorned with a dentated Crown, and becomes a ſoft-Berry, full of a compreſſed, roundiſh Seed.

Boerhaave mentions but one Sort of *Periclymenum*; which is,

Periclymenum; perfoliatum; Virginianum; ſempervirens, & florens. *H. L.* 484. 485. *Jo. & Deſcr. Boerh. Ind. alt. Plant.*

There are no particular medicinal Virtues aſcribed to this Plant at preſent, that I know of.

PERICLYMENUM is, alſo, a Name for ſeveral Sorts of CAPRIFOLIUM; which ſee.

PERICNEMIA, from περὶ, about, and κνήμη, the Tibia, or Leg. The Parts about the Tibia.

PERICRANIUM, περικράνιον. The Name of a Membrane, which covers the Bones of the Skull. See CAPUT.

PERIDROMOS. The extreme Circumference of the Hairs of the Head.

PERIESTECOS, περιεστηκὼς, from περιίστημι, to ſurround, or guard. An Epithet for Diſeaſes, Signs, or Symptoms, importing their being ſalutary, and that they prognoſticate the Recovery of the Patient.

PERIGRAPHE, περιγραφή. An inaccurate Deſcription, or Delineation. In *Hippocrates*, *de decenti Habitu*, it ſeems to import, a Characteriſtic. In *Veſalius*, *Perigraphæ* are certain white Lines and Impreſſions, obſervable in the *Muſculus Rectus* of the *Abdomen*.

PERIN, πηρὶν. A Teſticle. Some explain it, the *Perinæum*; others, the *Anus*.

PERINÆUM. The Space betwixt the *Anus* and Parts of Generation, divided into two equal lateral Parts, by a very diſtinct Line, which is longer in Males, than in Females. This Part is ſubject to Laceration in a difficult Birth. See OBSTETRICATIO. And in this Part an Operation is perform'd, call'd *The Puncture of the Oerinæum*. See ISCHURIA.

But the principal Diſorders to which this Part is ſubject, are Abſceſſes, and Fiſtulas.

A FISTULA OF THE PERINÆUM.

Sometimes, after the Operation of Lithotomy, or after a Puncture of the Perinæum or Bladder, or from an Abſceſs in the Perinæum near the Urethra, or from a Scirrhus in the Glandula Proſtata, or when, by the bad Habit of the Patient, a Wound or Ulcer can by no means be healed, but its Lips become callous, a Fiſtula is formed, through which the Urine is preternaturally diſcharged with great Uneaſineſs to the Patient. Theſe Fiſtulas are ſometimes generated in the Perinæum by malignant Abſceſſes, which ſpread amongſt the Fat under the Skin, to the Inteſtinum Rectum, and Scrotum, the Urethra remaining entire; but theſe cannot be called *Urinary Fiſtulas*, becauſe no Urine is diſcharged by them. The urinary Fiſtulas are often occaſioned by the Uſe of Tents, or Pipes, which have been too long retained in the Wound after extracting the Stone; or when the Perinæum has been greatly diſtended, lacerated, or burſt, by a large rough Stone; or when, by the Obſtruction of a Stone in the Urethra, the Acrimony of the Urine corrodes the adjacent Parts, and at laſt the Skin, eſpecially if the Patient be of an ill Habit of Body.

The Cure of this Fiſtula varies according to the Habit of the Patient, and the Degree of this Diſorder. When the Fiſtula is large, and has conſumed a great Part of the Urethra, and the Patient is of an ill Habit and weak, a Cure is not without great Difficulty, and very ſeldom, obtained; and the more callous, or inveterate, the Fiſtula is grown, the harder is the Taſk to remove it. On the other hand, if the Fiſtula is ſmall, and not much indurated, if the Patient is young, and of a good Habit, the Cure may proceed with Eaſe and Expedition. But if a Scirrhus is produced in the Proſtate Glands, before a Cure can be effected, the Scirrhus muſt firſt be removed, which I have learned by Experience to be a moſt difficult Taſk.

There are four Methods of treating theſe Fiſtulas: 1. The Tent-pipe, or whatever is contained in the Wound, which occaſioned the Fiſtula, muſt be immediately removed. Then the Patient muſt be laid upon the Bed, or a Seat, in the ſame Poſition as is required for performing the Operation of Lithotomy; and the indurated Sides of the Fiſtula muſt be extirpated with great Dexterity. After the Application of a vulnerary Balſam, or Powder, the Lips of the Wound muſt be brought into Contact by an adhering Plaiſter, and over it ſhould be laid a narrow Compreſs on each Side of the Wound, and the Whole muſt be ſecured with a tight Bandage. After the Operation, the Patient ſhould be confined to his Bed, with his Knees tied together, and ſtrictly injoined to abſtain from Motion, that the Lips of the Wound may more eaſily coaleſce. For a few Days a very little Drink muſt be allowed him, that he may not be often excited to make Water. The Dreſſings ought not to be renewed till the ſecond or third Day, or as long as the Patient can contain his Urine. The Wound being, by theſe means, almoſt conglutinated, the Patient may be treated in the ſame manner, as if he had been cut for the Stone; and, if he has Youth in his Favour, he may begin to walk about gently, and by degrees. Thus, if the Fiſtula is not malignant, he may be reſtored to his former Health. 2. Another Method of Cure is, by conſuming the indurated or callous Lips of the Fiſtula with corroſive Medicines; and, after removing the Eſchar with Baſilicon, or a digeſtive Ointment, the Wound may be conglutinated by a vulnerary Balſam, and adheſive Plaiſter, as before. The moſt proper Corroſives in this Caſe are, the Troches of red Lead, the Lapis Cauſticus, or Infernalis, or white Precipitate mixed with *Arcæus*'s Balſam; or, in a recent Fiſtula, a Piece of Bliſtering-plaiſter, according to *Cheſelden*'s Method, as we are told by *Douglas*, in the Appendix to his Hiſtory of the lateral Operation.

It is to be obſerved, that the Cure of theſe Fiſtulas ſometimes advances ſlowly, eſpecially if the Orifice be wide; if the callous Parts are not totally extirpated or conſumed; and if the Patient cannot ſufficiently refrain from Motion, or obſerve a proper Diet. If from theſe, or the like Cauſes, the Fiſtula is not removed, but begins to renew its Callofity, the Operation muſt be repeated, till the Parts appear ſound. 3. Sometimes theſe Fiſtulas may be cured, by bringing the Lips of the bleeding Wound, after the callous Part is cut off, into Contact, with a proper Suture, of two or more Stitches. The Dreſſings may be thoſe before directed; and, as the Lips of the Wound appear to conglutinate, the Threads may be cut and extracted. 4. It may be ſometimes neceſſary, during the Cure, to keep a Catheter in the Bladder and Urethra, by which the Urine may be diſcharged, and its Courſe turn'd from the Wound, the Conglutination of which it would greatly obſtruct. If the Orifice of the Fiſtula be too ſmall to admit of theſe Methods, it may be dilated with a Sponge-tent, or enlarged by Inciſion.

I ſhall only mention another Way of treating theſe Fiſtulas, which is called *The palliative Method*. For this Purpoſe is the Inſtrument deſcribed by *Nuck* and *Solingen*, and propoſed by *Winſlow*, which, while the Fiſtula is compreſſed, and cloſed by it, prevents the Efflux of the Urine that Way; and thus the Diſorder, when a perfect Cure cannot be obtained, may at leaſt be mitigated. But Experience informs us, that this is not to be depended upon, as the Urine eaſily eſcapes through it, and it is troubleſome to the Patient. *Heiſter. Chirurg.*

In *Auguſt* 1725. Mr. *La Serre*, Apothecary to the King, recommended an *Engliſh* Officer to me, who was ſixty-ſix Years of Age, and in a declining Condition.

He had the Scrotum very large and hard, covered with fiſtulous Sinuſes, through which Pus and Urine were diſcharged; which extended from the Anus to the Root of the Penis, and the Number of them daily increaſed.

As it was the Urine that occaſioned all this Ravage, to prevent its eſcaping this Way, I endeavoured to introduce the Algaly; and was fortunate enough to paſs it into the Bladder, though with much Difficulty, the Canal of the Urethra being very callous and winding in its whole Extent. You know, that, in Fiſtulas in Perinæo of a ſhort Date, the Canal loſes its Pliancy, becoming hard and uneven; that it, alſo, loſes its Figure, growing crooked in proportion to the Number of Callofities.

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ſities. I was obliged to change the Direction of my Probe every Inch, in order to advance it: At length, having penetrated into the Bladder, I judged it moſt proper to leave it there five or ſix Days, to form the Paſſage. During the Space of three Weeks I did nothing more than to withdraw the Probe ſometimes to clean it, and to introduce another of the ſame Shape immediately. The Size of the Scrotum was much diminiſhed in this time, and no more Fiſtulas were formed; ſome even cloſed up, and other freſh Calloſities were reſolved, thoſe only remaining which had ſo long ſubſiſted.

Theſe not being curable without an Operation, I had a Conſultation with Mr. *Petit*, Mr. *Malaval*, and Mr. *Boudou*; when we agreed to make a Paſſage that ſhould go directly to the Bladder, that we might introduce a Cannula into it, and to take off as much of the Calloſity as we could, being perſuaded, that the Remainder would diſſolve by an ample Suppuration.

I placed the Patient upon the Edge of his Bed, in the ſame Poſture as for Lithotomy; and, inſtead of the Algaly, introduced a Catheter, and thruſt the Point of the Inciſion-knife croſs the Perinæum into its Groove. As the Calloſity was two Inches thick from the Skin to the Urethra, I could not feel the Cutvature of the Probe with my Finger at the Perinæum; and as I cut, was obliged to put my Finger into the Wound ſometimes, to ſeek for the Urethra, that I might not carry the Point of the Inciſion-knife on one Side the Catheter. The Point being lodged in its Groove, I made an Inciſion in the ſame manner as in the Operation for the Stone; and then, ordering an Aſſiſtant to hold the Catheter, I removed a Part of the Calloſity; then, taking the Catheter into my own Hand, I introduced a Gorget into the Bladder, by means of its Groove, that I might the more eaſily paſs the Cannula.

The firſt Week a ſlender Diſſolution of the Calloſities was procured by the Suppuration; and the Circumference of the Wound, becoming leſs, made the Dreſſing more difficult; when, very fortunately, an Abſceſs was form'd in the Scrotum, on the Right Side, near the Suture. I open'd it, and, taking Advantage of the Opportunity, extirpated all the Calloſity between the freſh Wound, and that I had made eight Days before: Then I withdrew the Cannula, and ſubſtituted a round Piece of waxed Linen in its ſtead, as thick as my little Finger, covered with Mucilage-plaiſter and Diachylon with the Gums mixed together. I leſſen'd the waxed Cloths by Degrees, that the Canal might contract a little, and leave a free Paſſage for the Urine through the Wound.

The whole Urethra being diſtemper'd, I judged it proper to ſuppurate that alſo: To this end, I thruſt an Algaly into the Penis; and, paſſing it through the Wound, put a Seton into the Eye of it at the Extremity; and, withdrawing the Algaly, conducted the Seton through the Penis.

During the firſt Week, I armed the Seton with the *Unguentum Fuſcum*, to conſume the Calloſities, and to procure a large Suppuration; then armed it afterwards with Diachylon, mix'd with Ointment of Marſhmallows: I dreſſed the Wound at the ſame time with *Unguentum Fuſcum*, or with Diachylon with the Gums melted, with which I armed both Doſſils and Pledgets. In ſhort, I deſiſted from the Uſe of the Seton, and waxed Linen, in three Weeks, all the Calloſities being entirely diſſolved.

Now I began to think only of a Reunion, and introduced a leaden Algaly into the Bladder, that the Urine might not paſs through the Wound whilſt it was healing, (was it poſſible to effect it) or, at leaſt, till the Canal was form'd.

During all this time, we had terrible Symptoms to encounter. Notwithſtanding the exact Regimen obſerved, the Patient had a very violent Fever for ten Days, his Pulſe was intermittent, and the Buttocks almoſt mortified, by being obliged to lie upon them continually, and the Difficulty attending his being removed. Bleedings proportioned to the different Neceſſities and Strength of the Patient, a proper Regimen, with Emulſions, and other Remedies, at length quieted all theſe Symptoms.

While the leaden Algaly was in the Urethra, an Eryſipelas came upon the Right Knee, which ſpread over the Thigh and Leg to the very Foot. I preſcribed reſolving Fomentations, and in eight Days the Eryſipelas terminated by an Abſceſs of the Bigneſs of a Crown, covering a Part of the Rotula, and Part of the Ligament that faſtens it to the Tibia.

I open'd it when the Matter was form'd, and was ſurpriſed to find a Stone with the Pus as big as a Lentil, the ſixth Part of an Inch thick, and very rugged, reſembling a Piece of carious Bone. Moreover, a large Quantity of ſmall Gravel was mixed with the Pus, which adhered to ſome ſmall Lumps of indurated Fat. I cut off a Part of the Lips of the Wound, making it flat and oblong: For the Space of a Fortnight, at each Dreſſing, I took out a Quantity of incruſtated Gravel, the third Part of an Inch within the *Pannicula Adipoſa*, round the whole Circumference of the Ulcer; and then it took an happy Turn, and advanced in healing.

During this time the Urine paſſed by the leaden Algaly, and the Wound in the Perinæum viſibly leſſen'd.

The Quality of this gravelly Abſceſs, and that of the Urine, which was very muddy, and loaded with Films, proving a Diſpoſition in the Blood to form Concretions and Petrefactions, I apprehended the Patient would become ſubject to the Stone, provided the Urine had not a very free Paſſage; therefore I changed my Opinion as to the Management of the Fiſtula in the Perinæum, and reſolved to keep it open inſtead of healing it. Then, withdrawing the leaden Algaly that was in the Bladder, I put a Cannula into the Wound, whoſe Extremity reached beyond the bulbous Part of the Urethra, near the Proſtatæ. This Cannula, ſupporting the Sides of the Fiſtula, which daily approached, ſuffered the Urine to paſs with greater Facility, than by the Canal of the Urethra, which could not have been ſuppurated without being a little contracted. This Cannula did not confine the Neck of the Bladder; ſo that the Patient kept his Urine as long as he pleaſed: He wore it a conſiderable time, only drawing it out ſometimes to clean it.

Eight Months after, he came to ſee me, and to inquire what Method it was moſt proper to take. He had drawn out the Cannula a Week before, becauſe it was incommodious when he ſat; and could not introduce it again. I examined the Fiſtula, which was a little contracted, and ſeemed to be cicatrized: As no Matter iſſued from it, and he told me the Urine evacuated freely, both by the Fiſtula, and the Penis, I judged that theſe two Orifices would be ſufficient for it, and prevent the Formation of a Stone; and therefore thought it unneceſſary to continue the Cannula.

I ſaw the Patient about a Year after, when the Fiſtula was ſo contracted, that no Urine paſſed through it, but was freely diſcharged by the Penis. *Le Dran.*

It has been always an Axiom, that to heal a Wound by the Art of Surgery, or to perform an Operation belonging to it, a thorough Knowledge is requiſite, both of the natural and preternatural State of the Part: I go ſtill farther, and ſay, that the Operation ſhould be performed two or three times in the Surgeon's Imagination, before he comes to the Patient; and that it is an improper Time to take his Meaſures for the Operation with the Inſtrument in Hand. The Diſtemper, which is the Subject of the following Obſervation, is one of thoſe Caſes, whereon (becauſe they are not out of the general Rule) we cannot too much reflect before we begin.

In 1727. I had cut a Boy of twelve Years of Age for the Stone, extracting one conſiderably large; and he went from the Hoſpital perfectly cured. In 1729. he felt a Pain in making Water; and the Pain increaſing for ſeveral Days, a ſmall Hole was at length formed in the Perinæum, by which a Part of the Urine was diſcharged, the reſt evacuating by the Penis. In *May* 1730. he was brought to *La Charité*; they examined his Diſtemper, and found a Stone of the Bigneſs of a Pea, fixed in the Fiſtula of the Perinæum, juſt under the Skin, which they eaſily extracted.

When I went to the Hoſpital to dreſs thoſe Patients I had cut, Mr. *Morand* committed this Lad to my Care again. I examined him, and found a ſmall Orifice in the Perinæum, ſurrounded with Calloſities; and could only introduce a very ſmall Probe into the Bladder, which was then confined in the Paſſage, as though it was in a Caſe. I endeavoured to introduce an Algaly into the Penis; but the Extremity of the Inſtrument, with my utmoſt Endeavours, would go no farther than the Bulb of the Urethra, becauſe the callous, or fungous Fleſh, had either broke, or turned the Paſſage, by poſſeſſing the membranous Part of the Urethra.

The Diſtemper ſeeming to me of no ſmall Conſequence, I deferred the Operation till the next Day. Having well reflected upon the Structure of the Parts, and upon the preſent Condition, to which the urinary Paſſage was reduced by the Cicatrices and Calloſities, I placed the Lad upon his Bed, in the ſame Attitude as for the Operation of Lithotomy, with his Hands faſtened to his Heels, and ſupported by aſſiſtant Surgeons. Firſt, I introduced an Algaly into the Penis as far as it would go, and ordered it to be held by an Aſſiſtant, in ſuch a manner, that the Handle made a right Angle with the Body of the Lad. Then I introduced a very ſlender Probe into the Bladder, and upon this an hollow one open at the End, ſo that, embracing the ſmall Probe, it could not err, and withdraw'd the other.

The Groove of the Probe being turned towards the Symphyſis of the Os Pubis, I conducted a long ſtrait Biſtory by it to the End of the Probe, obſerving that the Edge directly anſwered the Extremity of the Algaly; ſo that all between the two Inſtruments was divided. I withdrew the Biſtory, and, turning the Groove of the Probe towards the Inteſtinum

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Rectum, I made a second Incision. This being performed, I passed a Gorget into the Bladder by means of the same Probe; and, by the Assistance of the Gorget, introduced a leaden Cannula. The same Day the Urine, a Drop whereof had not passed by the Penis for three Months before, resumed its natural Course, Part discharging by the Penis, and Part by the Cannula. Perhaps the sudden Thought I had, at the time of the Operation, of turning the Edge of my Bistory towards the Extremity of the Algaly, occasioned the Success; and that, by this means, I opened and renewed the Communication from the Neck of the Bladder, to the nervous Part of the Urethra. If it had not been the first Day, it could not be done after the Dissolution of the Callosities. I continued the Use of the Cannula for the Space of eight Days, during which time I dissolved and destroyed the Callosities by the Assistance of Escharotics. At the End of this Term, I took out the Cannula, and left the Cicatrization of the Wound to Compresses and Bandage; and he was perfectly cured the twentieth of *June*.

An Abscess of the Perinæum.

On the nineteenth of *September* 1726. a Gardener, about twenty-two or twenty-three Years of Age, leaving his Work in the Evening, was seized with an acute Pain in both Groins, which gave him a Difficulty in Breathing the whole Night. He sent for his Surgeon the next Day, who, having examined the painful Part, found neither Tumor, nor Inflammation: He bled the Patient, who was attacked with a Shivering some Hours after Bleeding, which was followed by a Fever. In the Evening he was bled again, and the Pains were a little quieted; but the third Day the Shivering and Fever returned about the same Hour; and then the Pain fixed upon the Perinæum. He was again twice blooded the two following Days, and, at each time, his Pains went off, and began again soon after.

This induced his Surgeon to bleed him again the sixth Day. The Patient still complained; and, though neither Elevation nor Inflammation appeared upon the Part, they applied anodyne Cataplasms, which were continued for several Days: In this Interval, the Fever was become continual, the same Pains subsisted, and yet nothing appeared externally. The Surgeon gave the Patient several Clysters, and purged him, substituting emollient Fomentations instead of the Cataplasms. The Patient remained in this Condition till the Beginning of *October*, when a Tumor began to appear *in Perinæo*; and, on the seventh of that Month, he came to the Hospital.

Till this time he could not make Water, but with infinite Pain, and only by a Drop at a time; at length he had a total Suppression of Urine, and was obliged to be probed in the Night.

In the Morning I found the Tumor *in Perinæo* inconsiderable, and probed him to know in what Condition the Urethra was; and, the Catheter not passing without Difficulty, there was Reason to presume it was affected either by the Pressure or Inflammation.

To hasten the Suppuration, I applied a maturating Cataplasm, which occasioned the Tumor to rise considerably in the Night; and, finding a Fluctuation in the Morning, I open'd it, first introducing the Algaly into the Bladder, that I might not lose Sight of the Urethra. A great Quantity of serous Pus issued from it; and though the Incision was large, having dilated as much as possible, both above and below, all the Sinuses were not open'd, some extending beyond the Reach of my Finger: Then I dressed the Wound according to Art. The Patient made Water freely after the Operation, the Urethra not being affected, and no longer compressed. He was bled again that Day.

When the first Dressing was removed, all the Sinuses appeared, which furnished a large Quantity of Pus. There was one which passed from the Neck of the Bladder, even towards the Bottom of it, in the Cellular Texture that surrounds it, and another that extended behind the Tuberosity of the Ischion.

The Patient was bled again, but the Fever never left him; besides, he had a yellowish Complexion. I used detersive Injections to all the Sinuses in vain; the Wound was always of a bad Colour. The sixth Day after the Operation, he was seized with a Shivering, which was followed by many others very irregular; and, the Suppuration diminishing, he died on the ninth.

I opened the Body, and found, besides the Sinuses that extended by the Side of the Bladder into the Cellular Texture that surrounds it, the Os Pubis, and Os Ischion, so extremely carious, that you might crumble them between your Fingers, like a Piece of Touchwood.

REMARKS.

It is not surprising, that the Bone should be so far destroyed in so short a time; for the Os Pubis is of a spongy Texture, like the Extremities of the large Bones; and their Cells are always lined with a Membrane furnished with Vessels and Glands, that separate the Succus Medullaris from the Blood. This being taken for granted, ought these Parts to be less susceptible of critical and symptomatic Abscesses, than those which are softer? Because the Membranes, lining those little Cells, are not exposed to external Injuries, are they less exempt than others from an Erysipelas or Inflammation? No, certainly; all the Difference is, that they are concealed from us, and lie beyond the Reach of Chirurgical Relief. For this Reason, a Distemper in them ruins the spongious Texture of the Bone, before any certain Sign makes it externally manifest; and, even when it becomes manifest, it is too late to stop its Progress, the Bone being destroy'd.

For this Reason Collections of Pus in the Cellular Texture of the Bones cannot be called *critical*, although the Mass of Blood may be depurated by them, as well as by Matter collected in the softer Parts. Therefore I shall call them symptomatic, since they can only cause the Loss of a Limb, when they are formed upon Parts that may be amputated.

With regard to the Method of Cure in such a Case, the Inflammation that preceded the Putrefaction of the Membranes, might have been dissipated by copious and repeated Bleedings. It is true, that the Patient was bled five times in five Days; but the Relief he received from each Bleeding, is a certain Proof, that, if these five had been performed the first Day, the Inflammation would have entirely yielded.

Though nothing appeared externally, yet there was a deep acute Pain; and wheresoever that is found, it is sufficient to fear an Inflammation, if not already begun, at least at hand; and to act accordingly.

The Blood may, without doubt, be disposed to be inflamed, and fix indifferently upon one Part or another; but its Quantity, its rapid Course to one Part more than another, for Reasons of which we are ignorant, these two, jointly with the small Diameter of the Vessels, are what cause the Disturbance, which must of Necessity augment, while the same Causes subsist. We must, therefore, not only diminish the Quantity of Blood, and divert its Course, when it threatens any Part, by a convenient Regimen, but by copious and quickly repeated Bleedings.

Four Bleedings, in twenty-four Hours, often stop the Progress of an Inflammation, that twenty would not cure, when once arrived to a certain Degree. *Le Dran's Surgery.*

N. B. An Algaly is a sort of hollow Probe or Catheter.

PERIN-KARA. *H. M.* A wild Olive-tree of a vast Bigness, growing in *Malabar*, and bearing Fruit in Form, Size, and Substance, resembling the larger Sort of Olives; when ripe, they are of a purplish-azure Colour, of a sweetish acid and grateful Taste; but, when immature, they are of a yellowish Colour, and of an austere and bitterish Taste.

The Fruit is accounted a Delicacy, and preserved with Sugar, or kept, like Olives, in Pickle, to serve as Sauce for other Foods at Dinner and Supper, being strengthening to the Stomach, and greatly promoting Digestion. *Raii H. P.*

PERIN-NIROURI *seu Ma Nirouri. H. M.* A *Malabarian* bacciferous Shrub, with a brittle Stone containing six Kernels.

PERIN-PANEL. *H. M.* A bacciferous *Indian* Shrub, bearing its Flowers in Clusters, and an oblong Fruit, containing four Seeds: It grows in *Malabar*, and is always green, and with Flowers and Fruit upon it. Of the Leaves dry'd, and put upon Coals, is made a Suffumigation, which is said to give a most effectual Relief in hysteric Paroxysms. *Raii H. P.*

Of the Flowers, Fruits, and Roots, boiled in Water, with Long-pepper, and the Seed of Cumin, is prepared a Drink, which is highly commended for the Asthma, Cough, Phthisis, and the like Affections of the Lungs. The Leaves with the Bark, boiled in an Infusion of Rice, and reduced to the Form of a Cataplasm, and thus applied to a Tumor, are said to be powerful Ripeners of the same. Of the Bark of the Tree boiled with Milk, Honey, and Butter, is prepared a Balsam, which, taken inwardly, and applied outwardly to the Place, is said to cure the Pleurisy. The *Tsjerin Nirouri*, the Authors of the *Hortus Malabaricus* tell us, is very like the preceding; and they have given us no distinguishing Characters of it, nor added a Cut. *Raii H. P.*

PERINYCTIDES. Pustules, or Pimples, which break out in the Night.

PERIODEUTES, περιοδευτής. A Mountebank.

PERIODUS. The Period of a Disease is the Time betwixt the Access of one Fit, or Paroxysm, and that of the next, including the entire Exacerbation, Decline, and Intermission, or Remission. These, in some Diseases, are frequently very regular and constant, as in Fevers; but in chronical Disorders, more

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more irregular and uncertain, as in Epilepſies: Hence ſuch Diſeaſes are called *Periodical*.

The Period of the Blood is its Circulation.

PERIOSTEUM. The fine ſenſible Membrane of the Bones. See Os.

PERIPHIMOSIS. The ſame as PARAPHIMOSIS.

PERIPLEUMONIA. The ſame as PERIPNEUMONIA.

PERIPLOCA.

The Characters are;

The Flower is monopetalous, and rotated; the other Characters are the ſame with thoſe of the ſcandent *Apocynum*.

Boerhaave mentions five Species of *Periploca*; which are,

1. Periploca; foliis oblongis. *T.* 93. *Apocynum, folio oblongo.* C. B. P. 303.

2. Periploca; Monſpeliaca; foliis rotundioribus. *Tourn. Inſt.* 93. *Boerh. Ind. A.* 315. *Scammonia Monſpeliaca.* Offic. *Scammonia Monſpeliaca foliis rotundioribus.* C. B. P. 294. *Scammonia Monſpeliaca dicta.* Park. Theat. 164. *Scammonia Monſpeliaca flore parvo.* J. B. 2. 136. *Scammonia Valentina.* Ger. 716. Emac. 866. *Apocynum latifolium Scammonia Valentina.* Raii Hiſt. 2. 1088. ITALIAN, or FRENCH SCAMMONY.

It is cultivated by the Botaniſts, and flowers in *Auguſt*. The concreted Juice, which is uſeful in Medicine, requires to be given in a larger Doſe than that of the true Scammony, as being leſs effectual. *Dale.*

3. Periploca; Monſpeliaca; foliis acutioribus. *T.* 93. *Scammoniæ Monſpeliacæ affinis, foliis acutioribus.* C. B. P. 294. *Apocynum latifolium, amplexicaule.* J. B. 2. 135. M. H. 3. 611.

4. Periploca; foliis Scammoniæ acutiſſimis.

5. *An* Periploca; foliis atro-viridibus, maculatis, Scammonii latioribus? *Boerh. Ind. alt. Plant.*

The Plant is of a poiſonous Quality, eſpecially the fourth Species; but not to ſuch a Degree as the *Apocynum*. The Juice of the ſecond is a Species of Scammony, and operates almoſt in the ſame Manner. *Hiſt. Plant. adſcript. Boerh.*

PERIPLUSIS, *περίπλυσις*. A Diarrhœa, when the Excrements diſcharged are extremely thin and watery, is ſometimes called by this Name.

PERIPNEUMONIA VERA. A true Peripneumony, or Inflammation of the Lungs; from *περὶ*, about, and *πνεύμων*, the Lungs.

When in thoſe pulmonary Veſſels which are ſuſceptible of an Inflammation, a true Inflammation is form'd, the Diſorder is called a *Peripneumony*.

The Veſſels ſuſceptible of ſuch an Inflammation are the Bronchial and Pulmonic Arteries, and their lateral lymphatic Veſſels.

Hence we may conceive two different Kinds of Peripneumonies, one of which has its Seat at the Extremities of the Pulmonary Artery, and the other in the Bronchial Arteries.

It is ſufficiently obvious, that the former is far more dangerous than the latter; that the more dangerous may ariſe from that which is leſs ſo; and that they have many Cauſes in common.

Theſe numerous Cauſes may be reduced,

1. To the general Cauſes of all Inflammations throughout the whole Body.

2. To thoſe which in a particular manner affect the Lungs, ſuch as an Air too humid, dry, hot, cold, heavy, or light; or an Atmoſphere impregnated with cauſtic, aſtringent, or coagulating Exhalations, and conſequently unſalutary; a thick, dry, and viſcid Chyle, either mixed with acrid Particles, or free from ſuch a Mixture; violent Exerciſes of the Lungs by Running, Wreſtling, Efforts, Singing, Crying, or Riding hard againſt the Wind; coagulating, cauſtic, and aſtringent Poiſons introduced into the Veins running to the Heart; violent Perturbations of Mind; a Quinſey accompanied with an Oppreſſion of the Breaſt, and an Orthopnœa; a violent Pleuriſy, and an exceſſive Paraphrenitis.

If theſe Cauſes have once excited the Diſeaſe, it will produce various Effects, according to the Diverſity of the Part affected; for a Bronchial Inflammation, by Compreſſion and Contagion, inflames the contiguous Extremities of the Pulmonary Artery.

When the Extremities of the Pulmonary Artery are inflamed, the Blood becomes ſtagnant, the Veſſel is extended, the moſt liquid Part of the Fluids is, as it were, expreſſed by Tranſudation; the thicker Part of the Fluids is accumulated; and all the Blood, as yet capable of Circulation, is collected between the Right Ventricle of the Heart, and the Extremities of the Pulmonary Arteries: Hence the Lungs become oppreſſed, incapable of expanding themſelves, and livid; the Left Ventricle of the Heart is deprived of Blood; a great Weakneſs is brought on; the Pulſe is ſmall, ſoft, and highly unequal; the Reſpiration is ſmall, frequent, difficult, hot, accompanied with a Cough, and incapable of being performed but in an erect Poſture; the Blood about the Right Auricle and Ventricle of the Heart ſtagnates; the Face, Eyes, Countenance, Fauces, Tongue, and Lips, become unuſually red; and, at laſt, a ſuffocating Death, attended with an unſurmountable Anxiety and Delirium, enſues.

If a Peripneumony ſtrongly affects both Lobes of the Lungs at once, a ſudden and inevitable Death will enſue; ſince, in ſuch a Caſe, Nature can be aſſiſted by no antiphlogiſtic Medicine.

But if a Peripneumony affects only a ſmall Part of one of the Lobes of the Lungs, and does not proceed from violent Cauſes, there are ſome, though not infallible Hopes, that it may be happily cured.

From what has been ſaid, we may deduce the diagnoſtic and prognoſtic Signs of a Peripneumony; eſpecially if we conſider, that the Terminations of this Diſorder are the ſame with thoſe of an Inflammation. Hence it has, alſo, various Stages, according to the different Times of its Duration; ſo that it may terminate in a Recovery, ſome other Diſeaſe, or in Death.

A Peripneumonia is cured,

1. By a benign Reſolution, if the Habit is lax, the Humour mild, the Viſcidity not too great, and the Part affected, whether in the Bronchial, or Pulmonary Arteries, not conſiderable.

2. By a ſpeedy, free, and copious ſpitting of yellow thickiſh Matter, mixed with a little Blood; in conſequence of which the Pain is alleviated, Reſpiration amended, the Pulſe render'd larger and fuller, and the Spit itſelf ſoon transformed into a mild Nature, and changed into a white Colour. This principally happens, when the Seat of the Diſorder, whether in the Bronchial or Pulmonary Artery, is not very large.

3. By a bilious Flux, which affords Eaſe, and in which a Matter, almoſt reſembling the Spit already deſcribed, is eliminated.

4. By a copious, thick, and hypoſtatic Urine, which affords Eaſe, has, at firſt, a red, and then a whitiſh Sediment, diſcharged before the ſeventh Day. In this Caſe, the Reſpiration becomes eaſy; the Fever mild, and of a good Kind; the Thirſt is removed; and the Heat, Moiſture, Laxity, and Softneſs, are equal all over the Body.

A Peripneumony may terminate in ſome other Diſeaſe, depending either on the Nature of an Inflammation, or of the Lungs themſelves, according as they are by this means deprived of their proper Action.

Hence, in the firſt place, a Peripneumony may terminate in a Suppuration; which happens, when the inflammatory Matter, being neither reſolvable by Nature, nor corrected by Art; but, however, being mild, ſtagnant, hot, and acted upon, breaks the ſmall Veſſels, reſolves them into Pus, and, by extending or corroding the Sides of the Veſſels in which it is confin'd, forms an Abſceſs, or Apoſtem, within fourteen Days.

That this is about to happen, may be known from the following Signs:

1. If the ſure Signs of a pretty ſevere, though not of the moſt violent Peripneumony, have previouſly appear'd.

2. If a Reſolution, and its Signs, have not appear'd ſoon enough; that is, before the fourth Day.

3. If the Symptoms are neither reliev'd by a concocted Spit, evacuated on the critical Days, which are the third, fifth, ſeventh, ninth, eleventh, and fourteenth, which indicates that the Cure is begun, by the ſucceſſive Change of the Spit; nor by Veneſection, nor by Medicines, and a proper Regimen.

4. If on the contrary, the Symptoms, of themſelves not very violent, obſtinately remain, and are accompanied with a ſoft undulating Pulſe, and a continual *Delirium*.

That an Apoſtem is really forming, may be known,

1. If the Signs above enumerated are preſent.

2. If ſlight, wandering, and often recurring Horripilations happen without a manifeſt Cauſe; if the Pain remits, and the Dyſpnœa continues; if the Cheeks and Lips are red; if a Thirſt is preſent, and a Fever, eſpecially towards the Evening, afflicts the Patient; and if the Pulſe is weak and ſoft.

That an Apoſtem is already form'd, may be known,

1. From the preceding Signs:

2. From the obſtinate and dry Cough, which is increaſed after eating; the difficult, ſmall, and wheezing Reſpiration, which is accompanied with a kind of Noiſe, and increaſed after Eating or Exerciſe; a Capacity of lying with Eaſe only on one, and that is the affected, Side; a continual periodical Fever augmented after Eating, Drinking, or Exerciſe, and attended with a Redneſs of the Cheeks and Lips; a Loſs of Appetite; an exceſſive Thirſt; Night Sweats, eſpecially about the Breaſt and Forehead; frothy Urine; Paleneſs; Extenuation; and, laſtly, from the extreme Weakneſs of the Patient.

An Apoſtem already formed has various Terminations; for

1. It either ſuffocates the Patient by a Tumor poſſeſſing the whole

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whole Lungs, and which either compreſſes, or hinders thoſe Parts of them, which were before free; or,

2. An Apoſtem ſuffocates the Patient by an Eruption of Pus, the Apoſtem diſcharging itſelf into the Aſpera Arteria all at once; or,

3. An Apoſtem is diſſipated by purulent Spit, which conſumes it, and frees the Patient from the Diſorder; or,

4. An Apoſtem is terminated by a Falling of the Pus into the Cavity of the Thorax, or the dilated Vacuities of the *Mediaſtinum*: And,

5. Hence ariſe Conſumptions, of various Kinds, and an Empyema, which generally proves mortal.

A Peripneumony terminates in ſome other Diſeaſe, if the purulent Matter, becoming inflammatory, is reſorb'd into the Pulmonary Veins, mixed with the Blood, and depoſited on ſome particular Parts. Hence the Lungs are freed, and ſome other Parts loaded; and, if theſe are leſs requiſite to Life, the Tranſlation is good; but, if the Tranſlation is to the Liver, Spleen, or Brain, the Event is generally fatal. Hence peripneumonic Abſceſſes are form'd about the Ears, Legs, and Hypochondria.

That ſuch Abſceſſes are about to be form'd, may be known,

1. By an Obſervation of the Signs of a Peripneumony not of the worſt Kind; accompanied with a Fever, neither violent nor malignant, though continual; with a Pain, Anxiety, and Heavineſs of the Thorax, and a Dyſpnœa, which are not violent, and without being attended with the Signs of a Reſolution.

2. If, in Conjunction with theſe Signs, the Pulſe is greatly and continually fluctuating; and,

3. By the Pains, Redneſs, Heat, and Tenſion, about theſe Parts.

That ſuch Abſceſſes are about to be form'd about the Legs, may be known,

1. If the Signs of future Abſceſſes are preſent; and

2. If, together with theſe, the Signs of a ſlight Inflammation about the Hypochondria are obſerved.

That ſuch Abſceſſes are about to be form'd about the Ears, may be known,

1. If the Signs already enumerated are preſent; and,

2. If the Hypochondria are at the ſame time ſofr.

That the Matter of an Abſceſs is convey'd to the Liver, may be known,

1. If the before enumerated Signs are preſent; and,

2. If there is a permanent Pain of the Liver, accompanied with a Diſcharge of yellowiſh Urine, and a yellow Colour of the Skin. Hence, an Apoſtem of the Liver ariſing, terrible Diſorders are produced.

If theſe Abſceſſes in the Legs, and about the Ears, relieve the Lungs, and remove the Fever; if they remain purulent, running, and fiſtulous; and if they happen ſoon enough, that is, before the ninth Day; they are always ſalutary: But, if they ariſe after the Spit is already purulent, though not very yellow, and without affording Relief, they are bad; but if, after they are form'd, they diſappear, the Diſeaſe being crude, and the Peripneumony returning, they are abſolutely mortal.

A Peripneumony may, alſo, terminate in a callous or ſcirrhous Tumor of the Lungs, if an impacted Matter, and other Conditions, contributing to the Generation of a Scirrhus, concur. See INFLAMMATIO. Hence the Patient's Reſpiration during the whole remaining Part of his Life is difficult, attended with a Cough, cannot be performed but in an erect Poſture, is increaſed after Eating and Exerciſe, and unaccompanied with the already deſcribed Signs of a latent Apoſtem. Hence ariſes the Adheſion of the Lungs to the Pleura.

If the Bronchial or Pulmonary Artery are, either from an internal or external Cauſe, ſeized with a violent Inflammation, a Gangrene ſoon ariſes; and hence a Sphacelus, on account of the Quantity and Motion of the Blood, and the continual Motion of theſe ſlender Viſcera. That a Gangrene is about to happen, may be known,

1. By the Signs of an highly violent Peripneumony, not relieved by any Accident, or Art.

2. By the great and ſudden Weakneſs, principally diſcovering itſelf in the Pulſe; and,

3. By a Coldneſs of the Extremities. But that a Gangrene is already form'd, may be known, if theſe Signs have preceded, and if the Spit is ichorous, thin, cineritious, livid, black, and fetid. This State is ſoon ſucceeded by Death.

Theſe various Changes of a Peripneumony are to be learned from an Obſervation of the Hiſtory of the Diſeaſe, and a Diſſection of the Carcaſes of thoſe who have died of it.

Hence 'tis obvious, that the Diſorder which the Antients deſcribed under the Name of a *Peripneumony*, is a true Inflammation of the Lungs.

The Prognoſtic, therefore, will be clear and juſt, when we aſſert, that a Peripneumony is always dangerous, on account of the great Neceſſity of the Function of the Lungs to Life, and the Correction of the inflammatory Matter; on account of the Quantity and Impetus of the Blood continually convey'd to the Lungs; on account of their perpetual Motion; on account of their Situation, which prevents the Application of Remedies; on account of the Tenderneſs of their ſmall Veſſels, which are eaſily deſtroy'd; and, laſtly, on account of the Impoſſibility of a Revulſion, ſo requiſite to the Cure of an Inflammation.

From what has been ſaid we underſtand, when, why, and with what Symptoms, a Peripneumony proves mortal: For if the whole Lungs, together with the Heart, are inflamed; if the Heart falls to the Side; if the Patient is ſeized with a Paraplegy, becomes cold, and is deprived of Senſation; then he dies on the ſecond or third Day. If, in the Beginning of the Diſeaſe, the Urine is good, and duly concocted, but thin after the fourth Day; if, in the Height of the Diſorder, the Patient is obliged to ſit erect; if he diſcharges Pus by Stool; if the Diſeaſe is of the dry Kind, and accompanied with anHeat and Noiſe in the Throat, proceeding, as it were, from a Stuffing of the Lungs; if the Diſeaſe is violent in very dry, hard, and callous Habits, and ſuch as have been accuſtomed to Exerciſe; if it is of a bad Kind, and accompany'd with a Stillicidium of very red Blood; if it is of the dry Kind, accompanied with red Spots on the Breaſt; if a Coryza, or exceſſive Sneezing, either precedes or follows it; if it ariſes from a burning Fever; if a bilious Spitting with Pus begins immediately after the ſixth Day; if from the Beginning the Spit is very bloody, entirely yellow, white, and round, very frothy without affording Relief; if it is dark-coloured, clayiſh, like the Lees of Oil, black, livid, unequal, or æruginous; and laſtly, if neither the Fever, nor the Difficulty of Reſpiration, remit; the Patient dies on the ſeventh or ninth Day. And, when ſuch Patients die, their Pulſe fails, all the Parts of their Bodies become cold, except their Breaſt, Neck, and Head, which are intenſely hot, and their Cheeks become red and livid.

The Cure of a Peripneumony is to be varied according to the different Stages of the Diſeaſe, and its Symptoms; ſo that what is beneficial at one time of the Diſorder, is injurious at another.

If, therefore, in a Peripneumony, the Habit is lax, the Humour mild, the Viſcidity not great, and the Part of the Bronchia and Lungs affected, not conſiderable, the Patient is to uſe Reſt of Body and Mind, a tepid moiſt Air, a Vapour-bath of pure Water, applied to the pulmonary Region, the Noſtrils, the Mouth, the Feet, and the Legs, ſlender Aliment, and light Drink; aqueous, nitrous, farinaceous Medicines, and Preparations of Honey. Thus,

Take of Barley-water, forty Ounces; of Nitre, two Drams; and of Oxymel, four Ounces: Mix, and let the Patient drink two Ounces warm every Quarter of an Hour.

But if, in a Peripneumony, a ſpeedy, free and copious Expectoration of yellow thick Spit, which alleviates the Pain, amends Reſpiration, renders the Pulſe larger and fuller, and gradually becomes more mild and white, the laſt-mentioned Medicines are not only to be uſed, but, alſo, ſuch as are of an emollient and depurating Nature, ſuch as promote Expectoration, and are gently reſtorative, and Steams. In this Caſe we are to abſtain from Veneſection, Purgatives, Sudorifics, and every other thing capable of diſturbing Expectoration.

Take of Pellitory of the Wall, Agrimony, and Dandelion, each one Handful; of the bruiſed Seeds of white Poppies, and Fennel, each one Ounce; and of Liquorice, one Ounce and an half: Boil in fifty Ounces of Water, and exhibit in the ſame manner, and for the ſame Purpoſes, with the former.

If a Peripneumony is attended with a bilious Flux, which affords Eaſe, and in which the Matter eliminated reſembles the Spit above deſcribed, mild and emollient Clyſters are to be uſed; gentle Fomentations are to be applied to the Abdomen; emollient and gently laxative Decoctions are, alſo, beneficial; taking, at the ſame time, the other Meaſures before recommended.

If, in a Peripneumonia, a copious, thick, and hypoſtatic Urine, with a Sediment at firſt red, and then gradually becoming whitiſh, is, to the Relief of the Patient, diſcharged before the ſeventh Day, let all the Meaſures already preſcribed be taken; but let Baths for the Feet be added, and Fomentations of the Kidneys by internal emollient Clyſters, and the Application of Linen Cloths externally: Let the Patient, alſo, drink Decoctions of a gently abſtergent and diuretic Nature. For this Purpoſe,

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Take of the Roots of Graſs, Butchers-broom, Parſley, and Fennel, each two Ounces; of Maſterwort, two Drams; and of the bruiſed Seeds of Burdock and Parſley, each one Ounce: Boil with forty Ounces of Water, and exhibit for the ſame Uſes with the former.

If the Inflammation is recent, great, and dry, in a robuſt Habit, a little before ſound, and habituated to Exerciſe, it may be diſcovered by the Signs already enumerated; and we are forthwith to have recourſe,

1. To ſpeedy and copious Veneſection, which is to be inſtituted according to the Degree of the Diſeaſe, and duly repeated, that the Quantity of thick Blood may be leſſen'd, and proper Room made for diluting Liquors.

2. To Vapour-baths of an emollient Nature, continually applied to the Pulmonary Region, and frequently to the other Parts of the Body.

3. To diluent, reſolvent, emollient, laxative, antiphlogiſtic, nitrous, and anodyne Decoctions, to be often drank warm, and in ſmall Quantities.

4. To mild antiphlogiſtic Clyſters: And,

5. To a ſlender Diet, conſiſting of antiphlogiſtic Juices.

If the Inflammation, being great, accompanied with a Fever, and other violent Symptoms, laſts beyond the third Day, and if the Signs of an Inflammation tending to a Suppuration are preſent, there is always much Danger, though the Diſeaſe may be protracted ſo long, as to afford a due Time for the Cure. In this Caſe,

1. We are to uſe no Veneſection; or, if ſome important Circumſtance call for it, only a ſmall Quantity of Blood is to be taken away.

2. We are to uſe ſlender Food, but ſomewhat incraſſating, and conſiſting of maturating Subſtances, as Pot-herbs, farinaceous Vegetables, Peas, and ripe Autumnal Fruits.

3. Till the fifth Day, from the Beginning of the Diſorder, we are to uſe Baths for the Region of the Lungs, conſiſting of emollient and maturating Ingredients.

4. On the fifth and ſixth Days, we are to uſe theſe Baths, adding Sorbitions, which gently excite a Cough, and produce Repletion, that thus, on the ſeventh Day, the Part may be reliev'd by a Diſcharge of concocted Pus, the Veſſels attenuated, and Life ſuſtained. For this Purpoſe,

Take of the Vinegar of Squills, ſix Drams; Oxymel of Squills, three Ounces; Sal Polychreſtum, one Dram; Barley-water, eight Ounces; and diſtilled Hyſſop-water, four Ounces: Mix all together; and let the Patient drink one Ounce every Half-hour.

Take of Coffee, two Pints; of Honey, two Ounces; and of Elder-vinegar, half an Ounce: Mix all together, and let the Patient drink as much of it as he pleaſes warm.

If ſufficient Signs inform us, that an Abſceſs is form'd in the Lungs, its breaking into the Aſpera Arteria is to be accelerated; after which the ulcerated Part is to be quickly and ſafely depurated.

The breaking of the Abſceſs is brought about, if, after the Uſe of many ſoft and ſubpinguious Aliments, and ſoft Wine, the Lungs already ſuppurated, and prepared by warm Steams, are agitated either by Crying, Coughing, Expectorants, Concuſſion in a Ship, or Coach.

But as ſoon as there are any Signs, that the Apoſtem is broken, we are to uſe a Milk, and a mild, and not eaſily putrefying, vegetable, Diet: Then, in the Day-time, we are to uſe aperient and deterſive Medicines; and, towards Evening, gentle Opiates: Emollient Steams, ſailing in a Ship, riding on Horſeback, or in a Coach, are, alſo, to be uſed.

Medicines of an aperient and deterſive Quality, proper for open Ulcers of the Lungs, are theſe following: The Leaves of the common, black, white, and golden Maidenhair, Agrimony, Lady's-mantle, Brooklime, Betony, Meadow-daiſy, Borrage, Oak of *Jeruſalem*, Bugle, Spleenwort, Germander, Ground-pine, Succory, Dandelion, Endive, Hedge-muſtard, Fennel, Fumitory, Ground-ivy, Noble Liverwort, Star Liverwort, Alexanders, St. John's-wort, Hyſſop, Woad, Lettuce, Harts-tongue, white Horehound, Devil's-bit, Moneywort, Reſt-harrow, Primroſe, Self-heal, Sage of *Jeruſalem*, Soapwort, Scabious, Water Germander, Solomon's-ſeal, Flixweed, Coltsfoot, Garden and wild Valerian, Vervain, Veronica, Periwinkle, and Goldenrod.

The ſame Intention is anſwered by Gum Ammoniac, Galbanum, Opopanax, Sarcocolla, Maſtich, Myrrh, Olibanum, and Turpentine.

Take of the recent Leaves of Agrimony, Goldenrod, Betony, and Garden Valerian, each one Handful; of white Horehound, one fourth Part of an Handful; of the Five aperient Roots, each one Ounce; of the Flowers of the Leſſer Centaury, Agrimony, and St. John's-wort, each one Handful: Boil in four Pints of Water; of which let the Patient drink two Ounces every two Hours: Or,

Take of the Roots of Burdock, China, and Sarſaparilla, each three Ounces: Boil in Water for half an Hour; then add three Ounces of Saſſafras-wood; and when they have boil'd a little, add to three Pints of the Decoction, two Ounces of the Syrup of the Five aperient Roots. Its Uſe is the ſame with that of the preceding.

Take of the beſt and moſt tranſparent Myrrh, two Drams; and of the Yolk of a new-laid Egg, one Scruple: To theſe, when duly triturated together in a glaſs Mortar, add of the beſt Frankincenſe, two Scruples: Make into Pills, conſiſting of three Grains each, of which let the Patient take one or two before the Uſe of the Decoction.

Take of the beſt Myrrh, two Drams; and of Sperma-ceti, one Dram: Make into a Powder, to be divided into twelve equal Doſes; one of which let the Patient take every Morning and Evening with the Decoction.

Take of Myrrh, and Olibanum, each one Dram; and of the pureſt Honey, two Ounces: Mix, and let the Patient take one Dram every Hour.

Gentle Opiates, to be uſed in the Evening, are theſe following:

Take of the Pilulæ de Cynogloſſo, one Scruple; form into ſix Pills; of which let the Patient take one or two in the Evening, before going to Bed.

Take of the Styrax Pill, the ſame Quantity: To be uſed in like manner, and for the ſame Uſe.

Take of Opium cut into thin Slices, and gently dried, one Grain; of red Coral, twelve Grains; and of Olibanum, ſix Grains: Make into a fine Powder, to be uſed like the others, before going to Bed.

Taſte of the Syrup of Diacodium, half an Ounce; of the Aqua Vitæ of *Matthiolus*, one Dram; and of diſtilled Hyſſop-water, one Ounce: Make into a Draught, to be taken in the Evening.

Take of Opium, one Grain: Make into two Pills; one of which is to be taken in the Evening.

Take of Opium, one Grain; of the Syrup of Maidenhair, four Drams; and of the Water diſtilled from the Flowers of the red Poppy, one Ounce: Make into a Draught.

For an emollient Steam:

Take of the Leaves of Mallows, Marſhmallows, and Pellitory of the Wall, each two Handfuls; and of the Powder of Linſeed, two Ounces: Boil in Water; and let the Patient receive the Steam, as he draws in the Air.

If there appear Signs, that the inflammatory Matter is become purulent, reſorb'd by the Veins in the Lungs, thence convey'd to the Blood, and depoſited on ſome other Part, whence the Lungs are reliev'd, and the Part which receives the Matter oppreſs'd, without any Certainty whither the Matter will tend, then the Patient is to uſe a light, fluid, gently aromatic, and ſomewhat vinous Diet. His Body is to be preſerved in a State of Reſt: Let his Medicines be emollient, and gently aperient: Let his Lungs be treated with Emollients: Thus the peccant Matter will either be determined to ſome other Part, or farther diſſolved and eliminated: For this Purpoſe,

Take of the expreſſed Juice of recent Chervil, and of ſweet Milk, each four Ounces; and of the Syrup of Hyſſop, one Ounce: Make into a Mixture; of which let the Patient drink one Ounce every two Hours.

But if to the Signs which indicate, that ſuch Abſceſſes are about to be formed, thoſe which ſignify a Determination of the Matter are join'd, the laſt-mentioned Meaſures are to be taken; and, at the ſame time, the Parts indicated for the Depoſition of this Matter, whether Ears, or Legs, are to be ſo treated by Suction, Relaxation, Stimulants, and Aperients, that they may reſiſt leſs, and attract the Matter more.

If the Matter is determined to the Liver, the ſame Meaſures are to be taken with thoſe preſcribed when the Abſceſs is abſorb'd, without any certain Prognoſtic whither the Matter tends: But, at the ſame time, let Aperients ſomewhat ſtronger, ſaponaceous

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ceous and hepatic Subſtances, be uſed: Then let Clyſters, and Fomentations of the like Ingredients be, alſo, preſcribed.

Take of the greater Soapwort, two Handfuls; of recent Endive, four Handfuls; and of the Flowers of wild Succory, three Handfuls: Boil in three Pints of Water; and of the expreſſed Decoction, let the Patient drink two Ounces every two Hours.

When a Peripneumony terminates in a callous or ſcirrhous Tumor of the Lungs, it is rarely ſuſceptible of a Cure; tho' it may ſometimes yield a little to external and internal Emollients, to riding on Horſeback, or in a Coach.

When a Peripneumony degenerates into a Gangrene, it is abſolutely incurable.

If in a Peripneumony, beginning to be carried off by Spit, the Expectoration is ſtopt, we are immediately to uſe all our Endeavours to recal it. The Cauſes which retard this Expectoration, are generally an exceſſive Cold, ſuddenly admitted to the Body; and exceſſive Drineſs of the Parts all over the Body; a burning Fever ſucceeding; heating Medicines; a Diſcharge of Stools, which does not prove critical; exceſſive Sweating; and violent Commotions of Mind.

Immediately upon this, a freſh Inflammation ariſes from a Suppreſſion of the Matter, and an Increaſe of it from Congeſtion: Hence are forthwith produced the ſame Symptoms which ariſe from a primary Peripneumony; but Accidents of this Nature generally ſoon prove mortal to Patients already weakened.

When a Suppreſſion of Spit in a Peripneumony, beginning to be carried off by that means, happens, the Misfortune is prevented, by the Steam of ſome hot, moiſt, and emollient Subſtance, continually drawn into the Mouth and Noſtrils, and by that means convey'd to the Lungs; and by an Air artificially rendered ſimilar, or of a like Quality, with this Steam: The liberal Uſe, alſo, of Liquors of a like Nature, eſpecially when prepared with Honey and Vinegar, is highly beneficial. The ſame Intention is, alſo, promoted by gently reſolvent antiphlogiſtic Medicines, ſuch as diaphoretic Antimony with fixed Nitre; by gentle Opiates; by avoiding Sweat; and, principally, by preſerving the Calmneſs and Tranquillity of the Mind. For this Purpoſe,

Take of ſimple Oxymel, three Ounces; of the Syrup of the Five aperient Roots, two Ounces; of a Decoction of Ground-ivy, ten Ounces; and of pure Nitre, one Dram: Make into a Mixture; of which let the Patient take one Ounce every Hour.

Take of pure Laudanum, two Grains; of the Flowers of Sulphur, Sperma-ceti, and unwaſhed diaphoretic Antimony, each one Dram: Reduce to a fine Powder, to be divided into twelve equal Parts; one of which the Patient may take every three Hours, with an Ounce or two of the preceding Mixture.

Take of the Flowers of Sulphur, two Drams; of Olibanum, one Scruple; of Sperma-ceti, half a Dram; and of unwaſh'd diaphoretic Antimony, one Dram. Reduce to a Powder, to be divided into twelve Doſes, of which let the Patient take one every Hour, with an Ounce of the Mixture.

Take of the recent expreſſed Oil of Sweet-almonds, one Ounce and an half; of the Syrup of Violets, Virgin-honey, and the Yolks of new-laid Eggs, each half an Ounce; form into a Mixture; of which let the Patient take half an Ounce every Hour, till the Expectoration returns.

PERIPNEUMONIA NOTHA. A ſpurious Peripneumonia.

This Diſorder is frequently produced in the Winter by an Exceſs of Cold, and in the Spring by an Exceſs of Heat. It generally ariſes from a viſcid Phlegm form'd in the Blood,

1. By farinaceous, crude, auſtere, and ill concocted Aliments:
2. By a Want of laudable Blood:
3. By a Weakneſs of the Veſſels, Viſcera, and Bile:
4. By a Diminution of animal Motion:
5. By a Diſſipation of the more liquid Parts of the Fluids, in conſequence of a Relaxation of the Secretory Veſſels:
6. By a Retention of the groſſer Parts of the Fluids, in conſequence of a Weakneſs of the Inſtruments of Excretion.

This Phlegm gradually ſtuffs the Lungs, till the Diſorder degenerates into this terrible, and, often unexpectedly, mortal Diſeaſe.

When this Diſorder is of a conſiderable Standing, it produces various Effects in the Body, and eſpecially thoſe peculiar to a ſlow Peripneumony: Hence its Cure muſt neceſſarily be difficult.

For Veneſection, celebrated ſo much as is neceſſary, in ſome Caſes of a true Peripneumony, is in this Diſorder highly prejudicial, on account of the Weakneſs of the Viſcera, and a Viſcidity of the Juices: Hence, what at firſt ſeems to afford Relief, ſoon after increaſes the Symptoms.

Attenuants in this Caſe ſo much eſteemed, whilſt they augment the Impetus on the Pulmonary Veſſels, often increaſe the Thickneſs and Impaction of the obſtructing Matter; by which means they ſoon render the Diſorder mortal.

This Diſorder is frequently incident to old Perſons, thoſe of pituitous, cold, and catarrhous Habits, or ſuch as labour under frequent *Coryzas*. It is generally produced by all thoſe Cauſes, which, by quickly moving the ſtagnant Matter, act upon the Lungs, ſuch as Running, Crying, Singing, Drinking hard, eſpecially of heating Liquors, high Feeding; the Heat of a Fire, of a Bath, or of the Sun, eſpecially if the Body is ſuddenly expoſed to Cold after ſuch an Heat.

This Diſorder at firſt deceives the unwary Patient by its fallacious Lenity; for, beginning with a ſlight Senſation of Fatigue and Weakneſs, a Proſtration of almoſt all the Faculties of the Mind, a Difficulty of Breathing, and an Oppreſſion of the Breaſt, it excites ſo gentle Commotions, that the Heat and Fever ſcarcely indicate any Danger. Soon after, wandering Horripilations, and the Paroxyſms of a gentle Fever, appear. Hence the Difficulty of Breathing, and Weakneſs, ſuddenly increaſing, Death happens, tho' hardly any Signs of it could be diſcovered, either in the Urine, or the Pulſe.

This Diſorder is moſt prudently cured,

1. By letting Blood from a large Orifice:
2. By a ſeaſonable Injection of Clyſters, which are to be repeated daily, till the Symptoms evince, that the Lungs are relieved. For this Purpoſe,

Take of Honey, three Ounces; of Nitre, one Dram; one Yolk of an Egg; and of Barley-water, eight Ounces: Make into a Clyſter.

3. Let the Patient uſe a ſlender Diet of Fleſh-broth, eſpecially ſuch as are impregnated with mild Acids; and let him drink a thin Liquor conſiſting of Water and Honey.
4. Let him uſe the Steams and Suffumigations deſcribed under the Article PERIPNEUMONIA VERA: He muſt, alſo, drink diluting, detergent, and gently aperient Decoctions: His Legs and Feet are to be bathed, and large Veſicatories applied.

Take of the Roots of Fennel, two Ounces; of the Roots of Graſs, four Ounces; of the Leaves of Pellitory and Agrimony, each one Handful and an half; of the bruiſed Seeds of white Poppy, one Ounce; and of Liquorice, an Ounce and an half: Boil for a Quarter of an Hour in two Pints and an half of Water; of which let the Patient drink two Ounces every two Hours.

From what has been ſaid, the Reaſon is obvious, why a Peripneumony is rarely incident to Children and Women; as, alſo, why it hardly ever happens to thoſe whoſe Solids are very lax; why in ſuch it is eaſily, and almoſt ſpontaneouſly, cured; and, on the contrary, why it is otherwiſe in robuſt Conſtitutions, and thoſe inured to Exerciſe. From what has been ſaid, it, alſo, appears, that this Diſorder is, for the moſt part, generated by ſome other Diſeaſe, which precedes it, before the Patient dies of it; and conſequently, that a Peripneumony is the immediate Cauſe of Death, and almoſt the laſt Effect of all mortal Diſorders. *Boerhaave's Aphor.*

A Fever, attended with ſeveral peripneumonic Symptoms, ariſes every Year towards the Beginning; but more frequently at the Cloſe of Winter. It principally attacks ſuch as are of a groſs Habit of Body, middle-aged Perſons, but oftener thoſe who are more advanced in Years, and too much addicted to ſpirituous Liquors, eſpecially to Brandy. For as the Blood of ſuch Perſons hath been loaded with phlegmatic Humours collected in the Winter, and is put into freſh Motion by the approaching Spring, a Cough is hereby immediately occaſioned, whence theſe Humours hurry to the Lungs; and then, if the Patient happens to live irregularly, and drinks more freely of ſpirituous Liquors, the Matter, occaſioning the Cough, grows thick, and ſtops the Paſſage of the Lungs, and the Fever preys upon the Maſs of Blood.

At the Beginning of the Fever, (1.) The Patient grows hot and cold alternately. (2.) Is giddy. And (3.) complains of an acute Pain in the Head, when the Cough is moſt troublesome. (4.) He vomits up all Liquids, ſometimes with, and at other times without, Coughing. (5.) The Urine is turbid, and intenſely red. (6.) The Blood taken away reſembles pleuritic Blood. (7.) He breathes quick, and with Difficulty: If he be adviſed to cough, his Head aches, as if it would burſt; for

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for ſo the Patient commonly expreſſes himſelf. (8.) A Pain of the whole Breaſt generally accompanies the Diſeaſe. And (9.) a Wheezing is heard by the Attendants, whenever the Patient coughs, the Lungs not being ſufficiently dilated; ſo that the vital Paſſages ſeem to be cloſed by the Swelling; whence the Circulation is ſo intercepted, that there are no Signs of a Fever, eſpecially in groſs Habits; tho' this may, alſo, happen from the Abundance of the phlegmatic Matter, whereby the Blood is ſo ſurcharged, that it cannot riſe to a perfect Ebullition.

In order to the Cure of this Fever, I judge it proper (1.) To take away that Blood which inflames the Lungs, and endangers Suffocation: (2.) To open and cool the Lungs by pectoral Medicines: And (3.) to abate the Heat of the whole Body by a cooling Regimen. But as, on the one hand, the Collection of the phlegmatic Matter contained in the Veins, and daily affording freſh Supplies for the Inflammation of the Lungs, ſhould ſeem to indicate frequently repeated Bleeding; yet, on the other hand, I learnt from the moſt accurate Obſervation, that this Practice proved very prejudicial in feveriſh Perſons of a groſs Habit, eſpecially if they were paſt the Prime of Life; ſo that Bleeding with Frequency was often contraindicated. I, therefore, had recourſe to frequent Purging in its ſtead, which is properly enough ſubſtituted, where the Patient hath an Averſion to copious and frequent Bleeding.

Accordingly I proceeded in the following Manner: I directed Bleeding in the Arm in Bed, and forbid the Patient to riſe till two or three Hours afterwards; becauſe Bleeding, which, in ſome meaſure, weakens the whole Body, may, by this means, be more eaſily born; for the Patient can better bear to have ten Ounces taken away in Bed, than ſix or ſeven, when he ſits up. The following Day I give this purging Draught in the Morning.

> Take of freſh Pulp of Caſſia, one Ounce; Liquorice-root, two Drams; three Figs; Sena, two Drams and an half; Troches of Agaric, one Dram: Boil them in a ſufficient Quantity of Water, to leave four Ounces of Liquor when ſtrained, in which diſſolve an Ounce of Manna, and half an Ounce of ſolutive Syrup of Roſes: Mix the Whole for a purging Draught.

The next Day I uſually repeat the Bleeding, and, interpoſing a Day, I exhibit the purging Draught again, which is to be repeated every other Day, till the Patient recovers. On the intermediate Days of Purging, I adviſe the Uſe of a pectoral Decoction, Oil of ſweet Almonds, and the like Remedies. In the mean time, I forbid Fleſh, and Broth made thereof, but eſpecially all ſpirituous Liquors; and, inſtead of theſe, I allow a Ptiſan, made of Barley and Liquorice, boiled in Water, for his common Drink, or ſmall Beer, if he deſires it.

This is the Method of curing the ſpurious Peripneumony, cauſed by an Abundance of phlegmatic Humours collected in the Blood, and by reaſon of the Coldneſs and Moiſture of the Winter, thrown upon the Lungs; wherein both repeated Bleeding, and Purging, are indicated otherwiſe than in a true Peripneumony; which I eſteem to be manifeſtly of the ſame Kind with the Pleuriſy, with this Difference only, that a Peripneumony more univerſally affects the Lungs: And, indeed, both the Diſtempers are cured by the ſame Method, namely, by Bleeding principally, and cooling Medicines.

Though the ſpurious Peripneumony, in ſome meaſure, reſembles the dry Aſthma, both in the Difficulty of Breathing, and ſome other Symptoms, yet 'tis ſufficiently diſtinguiſhed from it, as being attended with manifeſt Signs of a Fever and Inflammation, which never appear in the dry Aſthma; but they are much leſs conſiderable and apparent in the ſpurious than in the true Peripneumony.

It muſt be carefully remarked, that when this Diſeaſe attacks ſuch as have been great Drinkers of Brandy, and other like ſpirituous Liquors, it is by no means ſafe to quit them of a ſudden, but they muſt be left off gradually; for ſo ſudden a Change makes way for a Dropſy: And this ſhould be made a ſtanding Rule in all other Diſeaſes ariſing from the ſame Cauſe. *Sydenham.*

A pneumatic Fever is one of the acute, inflammatory Kind, ariſing from a Stagnation of the Blood in the Blood-veſſels of the Lungs, or the ſmall Ramifications of the Vena Azygos in the Pleura; and accompanied with an acute and pungent Pain of the Side, a Difficulty of Breathing, an immoderate Heat, an hard and frequent Pulſe, a dry or a moiſt, and, ſometimes, a bloody Cough: This Diſorder is always dangerous.

There is no inflammatory Fever, which is ſo incident to Perſons of all Ages, Sexes, and Temperaments, in cold as well as hot or temperate Climates, or which affects more epidemically, on account of the Inequality and Intemperature of the Air, than that which happens in the Thorax, whether in the Lungs themſelves, or in the intercoſtal Muſcles, both internal and external, lin'd internally with the Pleura, which is a nervous Membrane. But, according as the Inflammation ſeizes different Parts of the Thorax, it not only receives different Names; but, alſo, differs widely with reſpect to the Symptoms, the Event, and the Method of Cure. The Antients, who were deſtitute of an accurate anatomical Knowledge of the Parts, thought the Pleura the Seat of a Pleuriſy and Peripneumony; for which Reaſon they gave the Name of Pleuriſy to almoſt every Inflammation in the Thorax: But *Hippocrates* made a Diſtinction between a Pleuriſy and a Peripneumony. For this Reaſon all the antient Phyſicians, thoſe of the intermediate, and thoſe of the preſent Age, are of Opinion, that in a Peripneumony the Lungs were affected, whereas in a true Pleuriſy the Lungs were not at all affected, but only the Pleura, and the Muſcles which it lines. But this Aſſertion is falſe; for *Petrus Servius*, according to *Welſchius*, in *Decad.* 1. *Curat.* 4. upon diſſecting three hundred Subjects who died of a Pleuriſy, always found one of the Lobes of the Lungs affected, and fill'd with Matter, whilſt the Pleura was not ſenſibly, or at leaſt but very little, corrupted. Hence, in my Opinion, the different Seats of an Inflammation in the Thorax are to be determin'd; that, if it only ſeizes the external Parts, a ſpurious Pleuriſy is produc'd; if, like an Eryſipelas, it ſeizes the Surface of the membranous pulmonary Subſtance, a true Pleuriſy is produc'd; and the farther it penetrates into the Subſtance of the Lungs, the more violent the Pleuriſy is, and what is called a Peripneumony is produced.

Theſe different Species of Inflammations in the Thorax are, therefore, by the Phyſician, to be carefully diſtinguiſhed, by certain peculiar and characteriſtical Marks: For, in a ſpurious Pleuriſy, there is an acute and pungent Pain of the Side, which is increaſed by being touch'd; lying on the affected Side is difficult; there is a dry Cough without any Expectoration of the pituitous or bloody Matter, which, however, if it is violent, augments the Pain. It is, alſo, accompanied with a Fever, and a Pulſe ſomewhat hard, depreſs'd, and frequent. It is produc'd not ſo much by a Stagnation of the Blood, as of the Serum, in the Extremities of the ſmall Arteries, and Veins connected with the Vena Azygos, and in the Extremities of the ſmall Ducts in the Pleura, or in the Perioſteum of the Ribs, where the Senſe is ſtill more acute and intenſe. Hence 'tis no more than a Species of Rheumatiſm, and for that Reaſon incident to thoſe who are ſubject to Catarrhs, rheumatic or arthritic Pains, or who are now-and-then afflicted with an Hemicrania, eſpecially when they remove from an hot to a cold, or from a cold to an hot Air, particularly in the Evening: Nor, for this Reaſon, is Veneſection neceſſary, but only a Diaphoreſis, and an increaſed Perſpiration; by which means it is generally eaſily terminated about the ſeventh Day, and is free from Danger.

But a true Pleuriſy is a ſanguineous Inflammation, ariſing from a Stagnation of Blood in the ſmall Ducts of the Bronchial Veſſels diſcover'd by *Ruyſch*, and which are only ſubſervient to the Nouriſhment of the Membranes, Veſicles, and Veſſels, which conſtitute the Fabric of the Lungs. Hence, in this Diſorder, the Lungs are principally affected, tho' only as to their more external and ſuperficial Part. Hence there is, in this Diſeaſe, a greater Difficulty of Breathing than in a ſpurious Pleuriſy; there is, alſo, a Diſcharge of bloody Spit, and the Diſeaſe is terminated by Expectoration. It is, alſo, accompanied, for the moſt part, with a Fever, tho' of a more acute Kind than that attending a ſpurious Pleuriſy. There are, alſo, Pains in the affected Side, tho' not ſo intenſe, nor capable of being augmented by the Touch; for the Pleura, which lines the Thorax, is, alſo, drawn into Conſent, both becauſe the exterior Pulmonary Membrane is form'd of the Pleura, and becauſe in moſt Men the Lungs, at leaſt on one Side, adhere to the Pleura.

In a Peripneumony the Pain is rather tenſive, obtuſe and preſſory, than acute, and is propagated to the Back and Scapulæ: But there is a greater Anxiety and Difficulty of Breathing, and a more painful Expectoration, in which Spit of various Colours is diſcharg'd; for, in a Peripneumony, the Veſſels of the Lungs, which convey the Blood from one Ventricle of the Heart to the other, are affected, infarcted, and obſtructed, by a thick Blood, which, in Proceſs of Time, aſſumes a ſolid Nature. For this Reaſon it is attended with greater Danger, and ſoon deſtroys thoſe whom it ſeizes, eſpecially if they are old, or if ſeaſonable Veneſection is omitted.

But tho' the Antients were not very accurate in diſtinguiſhing the Inflammations of the Thorax; yet becauſe this Misfortune was very frequent in thoſe Parts where *Trallian*, *Aretæus*, *Cœlius Aurelianus*, and others of them, liv'd, a more exact Hiſtory of the Symptoms of the Diſeaſe may, perhaps, be drawn from them than from the Moderns. But, among all the others, *Aretæus* ſeems to be the moſt diſtinct, who, in *Lib.* 1. *Cap.* 10. *Acut.* ſpeaks in the following manner: "It is accompanied, ſays he, with an acute Pain aſcending to the "Throat, and an intenſe Heat: But the Pain, in ſome Pa- "tients,

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" tients, extends to the Back and Scapulæ; a Difficulty of " Breathing, alſo, enſues; Watchings, Loathing of the Aliments, " a Redneſs of the Cheeks, a dry Cough, a Spit which is diſ- " charged with Difficulty, pituitous, pretty bloody, or yellowiſh. " It is ſtill worſe, if a bloody Spit is not expectorated, and if " the Patients are delirious or comatous." The ſame Author, alſo, informs us, that the Patients die or recover within the ſeventh or fourteenth Day, according as the Symptoms are violent, or gentle; or, if the Diſeaſe is protracted to the twentieth Day, that they are ſeiz'd with an Empyema. He adds, that the Diſorder is moſt frequent in the Winter, leſs frequent in the Autumn, ſtill leſs in the Spring, unleſs it ſhould happen to be very cold, and leaſt of all frequent in the Summer. He, alſo, tells us, that old Perſons are moſt ſubject to this Diſorder; whereas Children are either not at all ſubject to it, or not endangered by it, becauſe their Bodies are moiſt, rare, and ſubject to copious Exhalations.

But ſince the violent Symptoms, which accompany a pneumonic Fever, are only founded on the Inflammation of the pulmonary Subſtance, we may readily perceive, that all things which hinder the free Circulation of the Blood through the Veſſels of the Lungs, either by an Obſtruction of the Ducts, by a Redundance of thick Matter, or a ſtrong ſpaſmodic Conſtriction of them by a thin, acrid Matter, are ſubject to generate this inflammatory Fever, eſpecially when many antecedent, procatarctic, and remote Cauſes concur to the Production of this Effect. Thoſe, therefore, who by groſs and impure Aliments, the Uſe of ſpirituous Liquors, a Defect of Moiſture and Exerciſe, have a large Quantity of thick Blood, which *Sydenham*, by way of Diſtinction, calls pleuritic Blood, eaſily, when other procatarctic Cauſes concur, fall into this Diſorder; eſpecially when the Body, by intenſe Exerciſe, hard Labour, warm Baths, or the drinking of ſpirituous Liquors, is rendered exceſſively hot, and afterwards expoſed to a cold Northern Air; or, which is ſtill worſe, when cold Liquors are greedily drank. This Diſorder is, alſo, quickly generated in ſanguineous and plethoric Habits, by the Omiſſion of ſeaſonable Veneſection. The ſame Misfortune happens to Women, whoſe Menſes flow either immoderately, or too ſparingly, or if, through Age, they are entirely ſuppreſs'd; as, alſo to Men, in whom the hæmorrhoidal Flux is either not duly carried on, or entirely ſuppreſs'd.

I have frequently obſerved, that Gripes, Spaſms, colical and hypochondriacal Pains, accompanied with a violent Coſtiveneſs, have been ſucceeded by Inflammations of the Lungs, eſpecially in plethoric and cacochymic Habits; for ſuch is the Nature and Quality of theſe, that by compreſſing the Veſſels, eſpecially the Veins, they hinder the free Circulation of the Blood, render its Motion greater, and its Congeſtion, eſpecially to the ſuperior Parts, more copious. By which means it afterwards happens, that the Blood is not only urg'd to thoſe Ducts, which, on account of the Smalneſs of their Diameters, generally neither receive nor convey the Blood; but, alſo, remaining impacted in theſe narrow Chanels, interrupts the equable Progreſs of the Blood, and diſturbs all the natural Functions. And becauſe Perſons very ſubject to Hæmorrhages are, for the moſt part, of ſanguineous Habits, and ſubject to ſpaſmodic Strictures in the Abdomen, hence it is, that young Perſons, who have been early ſubject to large Hæmorrhages from the Noſe, Spittings of Blood, or the Hæmorrhoids, occaſional Cauſes concurring, eaſily fall into Pleuriſies or Peripneumonies. 'Tis, alſo, confirmed by frequent Experience, that Inflammations of the Breaſt have been produc'd by repelling Itches; by preposterouſly ſtopping ſimple or dyſenteric Fluxes; by conſolidating old Ulcers; by ſuppreſſing a critical and uſual Sweat of the Feet, or of the whole Body; and by the Repulſion of chronical purple Eruptions by external Cold; for this recrementitious Matter, of an acrid and cauſtic Quality, being impacted in the nervous Coats of the Lungs and Thorax, by reaſon of the ſpaſmodic Strictures it excites, hinders the equal and due Circulation of the Blood. Nor is it uncommon for an Inflammation to be produced in the Thorax after the Small-pox and Meaſles, ſince theſe Diſorders always leave ſome Fault or Weakneſs in the Lungs.

Beſides, in conſequence of the preternatural Conſtitution of the Air and Weather, it frequently happens, that Pleuriſies, both of the true and ſpurious Kind, rage epidemically. This principally happens in a long and cold Winter, as, alſo, when a warm Air, and a light State of the Atmoſphere, is ſuddenly ſucceeded by a cold, northerly, and highly elaſtic State of the Air; and when this laſt happens, eſpecially in the Spring and Autumn, Fevers, both of the catarrhal, malignant, benign, and pleuritic Kind, rage. After a ſevere Winter, I have obſerv'd crude Pleuriſies raging, in which the Spit hardly appear'd on the ninth and tenth Day. Theſe Pleuriſies are, by *Hippocrates*, *Lib.* 2. *de Morb.* called dry Pleuriſies; and, during the firſt Days of theſe, the Patients are greatly tormented and waſted with a racking Cough, ſo that the Diſcharge of Spit proceeding, the Patients are hardly able to bear the Expectoration, and with great Difficulty recover: There are, alſo, endemial Peripneumonies; for it is certain, that a Peripneumony is a very frequent Diſeaſe, and proves mortal to many, in *Weſtphalia*, *Pomerania*, *Sweden*, *Denmark*, and *Ruſſia*. This, in my Opinion, is owing to the groſs and coarſe Food, and the Coldneſs of the Air, in theſe Northern Climates.

In no Fevers have I more accurately obſerved the Criſes, than in a Pleuriſy and Peripneumony; for, in young and robuſt Perſons, a bloody Spit generally appears about the fourth Day, and, on the ſeventh, the Diſorder is ſpontaneouſly terminated by a profuſe Sweat. In phlegmatic and languid Conſtitutions, as, alſo, when the Diſorder has a deep Seat in the Lungs, there is a Termination of the Diſeaſe on the eleventh or fourteenth Day, partly by Expectoration, and partly by Sweat, the Pulſe becoming ſofter, the Sleep calmer, and the Strength being increaſed. In an imperfect Criſis, a Sweat, tho' not ſufficient, alſo, appears on the critical Days; for which Reaſon, it neither relieves the Patient, nor terminates the Diſeaſe: And, when the Diſorder continues to the twenty-firſt Day, a dangerous Abſceſs of the Breaſt is to be dreaded. It is, therefore, a good Sign, when the Expectoration from the Lungs ſucceeds well, carrying off, on the fourth Day, a viſcid, bloody, then yellow, and, ſometimes, a purulent Matter; and the more expeditious the Spitting is, the greater Hopes there are of a Recovery; and, on the contrary, the ſlower it is, the leſs Hopes of Safety are to be entertained; only, we are to take care, leſt, when the Diſeaſe terminates by a copious Expectoration of virulent Matter, it ſhould be ſucceeded by a Phthiſis, or an Hectic: But frequent Stools are never ſafe: Urine without a Sediment is a bad Sign; as, alſo, profuſe Sweats happening not on the critical Days. But when, on the eleventh or twelfth Day, a moderate Looſeneſs happens, in which a purulent Matter is ſometimes diſcharged, a Recovery is not to be deſpair'd of. When, alſo, about the fourth Day, there is an Hæmorrhage from the Noſe, it affords ſingular Relief.

No Inflammation ſo readily occurs as a pneumonic Fever, eſpecially when deep-ſeated, and attended with an Abſceſs. I have known ſome, who, being hardly recovered, have, by an irregular Diet, and the liberal Uſe of rich Wine, relapſed in a Month's time; and the Event generally proves fatal. I have, alſo, known ſuch an Inflammation return twice, thrice, four times, or oftener a Year, in the ſame Part in which it firſt appear'd. So that thoſe who have once labour'd under this Diſorder, ought always carefully to guard againſt a freſh Attack, by an exact and proper Regimen.

Thoſe who die of an Inflammation of the Lungs, are ſuffocated, becauſe they can no longer throw up, by Cough, the Matter lodged in the Veſicles of the Lungs, and the Ducts of the Bronchia. In diſſecting ſuch Subjects, the Lungs are found inflated, hard like the Liver; and, becauſe the Veſſels are infarcted with a thick and tenacious Blood, they ſubſide when put into Water. I have, alſo, ſeen the Lungs full of ſmall Abſceſſes, and hard Tubercles, whilſt the Pleura was inflamed, ſphacelated, and adhering to the Subſtance of the Lungs. I have, alſo, known Inſtances, in which polypous Concretions found in the Pulmonary Vein, as, alſo, in the large Artery, have hindered the free Circulation of the Blood through the Lungs, and brought on an Inflammation, by reaſon of the too large Quantity of Blood convey'd thither.

Since, therefore, a Stagnation of the Blood, which hinders its equal Circulation, is the immediate Cauſe of this Diſorder, the principal Intention of Cure is, to render it capable of circulating freely; for obtaining which End, the following Meaſures are to be taken: Firſt, the farther Stagnation of the Blood is to be prevented. Secondly, the Lentor obſervable in the Blood of pleuritic Patients is to be diluted and colliquated. Thirdly, when the Part affected, and rigid by Spaſms, Pain, and a copious Afflux of Humours, is ſoften'd and relax'd, that thus the impacted Matter may be again waſh'd away, and put in Motion by the Action of the arterial Blood: And, fourthly, when the Excretion of the viſcid, ſanguineous, and purulent Matter, lodged in the Bronchia of the Lungs, is facilitated by Spit, and, by that means, an Abſceſs, and the Generation of an Empyema, prevented.

In order to prevent the Increaſe of the Inflammation, nothing is more uſeful than Veneſection; which is the more beneficial, the ſooner it is adminiſtered. For this Purpoſe, let a Vein be opened in the Arm of the affected Side, and a large Quantity of Blood taken away, if there is a conſiderable Plethora, and the Blood flows with a conſiderable Impetus: But if a viſcid and glutinous Serum floats in the Blood, and the Reſpiration continues difficult, the Veneſection is boldly to be repeated, eſpecially if there is a Suſpicion of a deep inflammatory Stagnation.

Among internal Applications, thoſe are moſt beneficial, which render the Blood, Serum, and Humours, thin and fluid, colliquate thoſe which are thick and inſpiſſated; and, at the ſame time,

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time, promote a gentle Diaphoresis. The most proper things for obtaining these Ends are, an Infusion of Paul's-betony, Chervil, and Sage, each two Handfuls; Liquorice-root, one Ounce; and Fennel-seeds, two Drams; of which let the Patient frequently drink four or five Dishes. Then let him use the following discutient and diaphoretic Mixture.

Take of the Waters of Carduus Benedictus, Scabious, Elder-flowers, and the *Egyptian* Thorn, each two Ounces; of Treacle-water, half an Ounce; of distilled Vinegar, one Ounce; of Crabs-eyes, one Dram; of diaphoretic Antimony, two Scruples; of the Syrup of red Poppies, or of Saffron, (prepared of dissolved Sugar, an Ounce; and of Extract of Saffron, eight Grains) two Drams. Of this Mixture two or three Spoonfuls are, every two Hours, to be exhibited alternately with the following Powder.

Take of diaphoretic Antimony, or of the Cerus's of Antimony, of Crabs-eyes, of the Jaws of the Pike-fish, of the Tooth of the Sea-horse, and of the Solution of Crabs-eyes, each one Dram; of pure Nitre, two Drams; and of Cinnabar, one Scruple: Make into a Powder, of which, half a Dram is to be taken for a Dose.

When the Patient is languid, and the Pleurisy epidemical, and of a bad Kind, to the foregoing Powder we are to add Camphire, which powerfully resists Inflammations, and hinders them from spreading; only we are to observe, that half a Grain is sufficient for a Dose; and that the Patient is to drink after it an Emulsion prepared of the Four greater cold Seeds, Ladies-thistle, Pine-kernels, and a Decoction of Barley and Harts-horn.

The acute Pains are mitigated, and the rigid Fibres relaxed, by the almost continual Application of a Bladder full of a warm Decoction of emollient Ingredients, such as the Flowers of Elder, Melilot, Mullen, Chamomile, Mallows, and white Lilies, the Four carminative Seeds, and Saffron, boiled in Milk. *Aretæus*, therefore, in *Lib.* 1. *Acut.* in the Cure of a Pleurisy, prudently orders a Bladder full of warm Oil to be applied to the Part affected, provided the Fomentation is not of such a Weight as to increase the Pain. And, certainly, by this Topic, the Pain is considerably alleviated, the Respiration facilitated, and the peccant Matter prepared for Expectoration, which is greatly promoted by the following Linctus.

Take of the Oil of sweet Almonds, half an Ounce; of Sperma-ceti, two Drams; of Saffron, ten Grains; of the Syrup of Violets, and Sugar-candy, each half an Ounce: Make into a Linctus; of which some is to be frequently taken in a Decoction of excorticated Oats, or in sweet Whey.

The principal Part of the Cure depends upon Venesection, concerning which *Aretæus*, in *Lib.* 1. has these Words: "In "pleuritic Cases, no Delays are to be used; but we are to "have recourse to the most powerful Remedy with all Expedi-"tion: For which Reason a Vein is to be open'd in the Arm "the very first Day of the Disorder; and, when a moderate "Quantity of Blood is taken away, the Patient is refreshed. "Then, some time after, the Operation is to be repeated, if "the Patient can bear it; if not, it is to be delay'd till the "following Day." These Measures are not only useful in Youth, but, also, in old Age, because Persons in this last State abound more with a thick and tenacious Blood, which renders their Inflammations more fix'd, and worse to be discussed; for which Reason Venesection is, also, to be repeated in old Persons, if their Strength will admit of it. We are, above all things, to be careful, that the Quantity taken away bear a Proportion to the Strength and Quantity of Blood of the Patient; for, if too large a Quantity is taken, the Expectoration is not only hindered, but, also, the Stagnation of Blood to be dissolved more confirmed, or the Disorder degenerates into a Sphacelus. But, if too small a Quantity is taken away, little Good is produced; the Blood, acquiring more Room, flows more impetuously to the Part affected; and the Stagnation and Inflammation are increased.

In a Pleurisy and Peripneumony, the Body is to be kept soluble, and the Intestines free from Spasms: This is the Advice of *Trallian*, and of *Hippocrates*, in *Lib.* 3. *de Morb.* where he tells us, "That, in the first four or five Days, the "Body is to be rendered soluble; and so much the more, the "slower the Fever, and the slighter the Pains are." For this Purpose, we recommend emollient, paregoric, and domestic Clysters, prepared with Oil of sweet Almonds, by which the Body is not only render'd soluble, but, also, the spasmodic Stricture of the Intestines is relaxed. *Aretæus*, also, justly observes, "That we are not to neglect Medicines applicable to "the inferior Parts, such as Oil of Rue injected into the Anus "of Men, and into the Uterus of Women." Which Experiment may be, also, made, if the large Intestines are spasmodically constricted, or in Cases where Women are afflicted with Spasms of the Uterus.

Trallian, in *Lib.* 6. in such inflammatory Disorders, greatly and justly commends Drinks prepared of Mulsum and Water, as, also, Cremor of Ptisan, well boiled with sweet Almonds, and liberally drank. "It must, says he, be constantly exhibit-"ed warm, when Aliments, or other Potions, are given; for," adds he, "no other Medicine is found so beneficial to pleuritic "Patients, even tho' the Fever is violent." *Hippocrates*, also, always commends his Ptisan; and I myself from Experience affirm, that moistening Liquors, used tepid, are preferable to all other Medicines. But, in order to dilute the Humours, nothing is more beneficial than a Decoction of Oats, or Barley, with the Addition of a Quantity of *Prussian* Honey, and sweet Whey; and the larger Quantity of such a Liquor is taken, especially if the Body sweats much, the more salutary it proves.

As in all inflammatory Fevers, so especially in those of the pneumonic Kind, we are carefully to abstain from too warm a Regimen with respect to Bed, Chamber, and Drink: But we are, also, to guard against Refrigeration, and the Use of cold Liquors. In the Cure of this Disorder, none of those Medicines are to be used, which forcibly provoke Urine, Sweat, or Stools, lest the fine lymphatic Humours, by whose Assistance the Stagnation ought to be dissolved, should be drawn elsewhere; for *Hippocrates*, in *Lib.* 3. *de Morbis*, when speaking of Stools, justly informs us, "That, if, after the fifth Day, a large Quan-"tity of Matter is discharged by Stool, it proves mortal, since, "by that means, the superior Parts are dried, and the Spit "not carried upwards. The Body must not, therefore, be "too costive, lest the Fever should be acute; nor too soluble, "that thus the Spit may be carried upwards, and the Patient's "Strength preserved." But when two, or even four, Stools happen spontaneously, they are not to be checked.

In order to sooth the acute Pains, Anodynes and Opiates are generally commended: But they are to be abstain'd from, by those, especially if old, in whom the Humours are thick, and the Inflammation considerable. "We are, says *Trallian*, in such "Cases, carefully to avoid Diacodium and Philonium; for they "are dangerous, since they render the Humours difficult to be "eliminated, impair the Strength, and render the Patient lan-"guid." But in young Persons, when the Pain is intense, we are not, except upon urgent Occasions, to exhibit stronger Anodynes, than Preparations of Poppies: Such as an Emulsion prepared of the Seeds and Syrup of Poppies, or the Diascordium of *Fracastorius*, taking care, at the same time, always to mix nitrous and diaphoretic Medicines with them. Externally, in order to mitigate the Pains, and assist the Discussion, besides the things already recommended, a Fomentation, prepared with the warm Fat of a Capon, in an Ounce of which half a Dram of Camphire is dissolved, is useful.

Expectorating and sweet Substances are not to be too soon exhibited, that is, on the first Days; but only when the viscid Matter is concocted, moveable, and fit for Excretion; otherwise a greater Afflux to the Lungs is excited. Some recommend Sperma-ceti, taken in large Quantities, for dissolving the Blood: But I have observed, that this Medicine is more injurious than beneficial, on account of the Nausea it creates; nor, at the same time, is it of so dissolvent a Quality, as Vinegar mixed with Crabs-eyes.

When, on the critical Day, as it frequently happens unless the Physician imprudently raises Commotions, the Inflammation is terminated by a copious Sweat, which is succeeded by a freer Respiration, Ease of Body, and an Increase of Strength, we are still, for some time, to continue the Use of diaphoretic and diluting Medicines, but not to exhibit them so often. Particular regard is, also, to be had to the Method of Living, lest more should be eaten, than the weak Stomach is capable of digesting, that thus the Remains of the Disease may be consumed, and a Relapse prevented. *Hoffman.*

A Pleurisy.

A Pleurisy is said to be present, when the Patient labours under an acute, continual Fever, accompanied with an hard Pulse, an acute, pungent, and inflammatory Pain, which in Inspiration is greatly increased, but in Expiration, or during the Retention of the Breath, milder; as it is, likewise, when, without any Motion of the Thorax, Respiration is principally performed by the Assistance of the Abdomen: This Disorder is generally accompanied with a perpetual Cough, which excites such an intense Pain, as to endanger a Suffocation.

When, with these Symptoms, symptomatic Expectorations are made from the Lungs, the Disorder is call'd *a moist Pleurisy*; but, when such Expectorations are wanting, it is call'd *a dry Pleurisy*.

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This Disorder affects all the Parts of the internal Integuments of the Thorax, the Whole of the Pleura, the Whole of the *Mediastinum*; and consequently, the anterior, posterior, right, left, superior, inferior, exterior, and deeper Parts, but especially the Sides, are affected by this Disorder.

When the Membrane internally lining the Ribs is the Seat of the Disorder, it is called *a true*, or *legitimate Pleurisy*: But, if the intercostal Muscles, and those lying above them, are farther affected, the Disorder is call'd *a spurious*, or *bastard Pleurisy*.

This Disorder principally attacks adult Persons of sanguineous Habits, those who eat and drink too copiously, who use violent Exercise, who are rarely afflicted with acid Eructations, and who are disposed to inflammatory Disorders in the Spring, especially, when an intense Heat suddenly succeeds a severe Cold; or, in the Winter, when excessively cold Winds blow: And, in such Cases, the Disorder is call'd *an idiopathic Pleurisy*.

But a Pleurisy arising from the Motion of the Matter of a previous inflammatory Disorder, and its Translation to the Parts already mention'd, is call'd *a symptomatic Pleurisy*.

This Disorder, for its antecedent Cause, has

1. Every thing capable of generating an Inflammation of any Kind.

2. Every thing which, in a particular manner, determines this general Cause to the Pleura; such as the Nature of the Patient, according as his intercostal Arteries are narrower or harder; a previous Disease, which leaves a Disposition to the same Misfortunes, such as a Scirrhus or Callus of the Pleura, or an Adhesion of the Lungs to that Membrane; the Nature of a raging epidemical Disorder; a cold Air convey'd forcibly thro' small Chinks to the naked Body, previously over-heated by Exercise, or the Influence of the Fire; cold Liquors copiously and suddenly drank, when the Body is over-heated; and cold Northerly Winds in the Winter-time.

3. A Translation of the inflammatory, ichorous, or suppuratory Matter, before lodged in the whole Body, or in some particular Part, to these Parts of the Thorax; as in the Measles, the Small-pox, ulcerous Tumors, large and broad Ulcers, which suddenly disappear in consequence of an Absorption of the peccant Matter into the Veins.

This History of the Disease, together with an Account of its several Stages, and a Dissection of those who die of it, sufficiently evinces, that it is an Inflammation of the sanguineous Kind in those Parts of the Thorax already mentioned, and generally arising from a preceding acute Fever.

Hence we may easily deduce the History of this Disease; for it often begins with a pretty keen Appetite for Aliments; a Coldness and Horror; a Weakness, Lassitude, and Fever; in Process of Time, it is attended with a moderate Heat, which gradually becomes excessively intense; a Thirst; a total Loss of Appetite; a Pain at first mild, but gradually becoming intolerable; and a considerably injured Respiration: At its Height it is attended with a violent, tho' less perceptible Fever, on account of the Respiration, which is check'd, and almost suffocated, by reason of the intense Pain. Hence the Physician is often shamefully mistaken; and the Disorder terminates in various Manners, which depend upon various Causes, but especially on the Diversity of Changes to which Inflammations are subject, specified under the Article INFLAMMATIO; on the Nature of the Parts affected; and a due Consideration of the following Circumstances: Whether there are more or fewer Parts affected at once? Whether the Impetus of the Blood is violent? Whether the Malignity of the primary Disorder is great, and accompanied with a Train of unlucky Symptoms? And especially, whether the Respiration, Pulse, and Excretions, recede from their natural State?

A Pleurisy, like other Inflammations, terminates in the Recovery of the Patient, some other Disorder, or Death.

This Disorder terminates in the Recovery of the Patient, either by the Assistance of Nature, or of Art, whilst the Disease is as yet simple and recent.

It is cured by the Assistance of Nature, either by means of a benign Resolution, or by a Concoction and Excretion of the peccant Matter.

A Pleurisy is cured by Resolution, when the Humours are mild, their Motion regular, the obstructing Cause not too obstinate and the Obstruction small; for, in this Case, the Benignity of the Symptoms indicates nothing to be done, but only to alleviate the Disorder by light Aliments, mild Aperients, and softening Fomentations.

A Pleurisy is cured by the Concoction and Excretion of the peccant Matter;

1. When, by the hæmorrhoidal Veins, a proper Liquor is in a due Quantity, and at a proper time, discharged.

2. When a copious, thick, hypostatic, strangurious, red Urine, with a white Sediment, is discharged, to the Relief of the Patient, before the fourth Day; such a Discharge of Urine, also, cures a dry Pleurisy.

3. When, before the fourth Day, copious, bilious, and yellow Stools, are discharged, to the Relief of the Patient.

4. When ichorous, purulent, fistulous, or long-flowing Abscesses begin, before the sixth Day, behind the Ears, or on the Legs.

5. When the Pain of the Side is translated to the Shoulder, Arm, or Back, and accompanied with a Stupor, Pain, and Heaviness of these Parts.

6. When the Spit is, in some measure, freely discharged, affords Relief, is unattended with a Coryza, copious at first, resembling Pus, soon after white, appears before the fourth Day, is continued, or returns immediately after its Suppression; for, in these Cases, the Patient recovers, either on the ninth, or the eleventh Day.

When the Signs, accurately observ'd, indicate, that the now described State of a Pleurisy is present, then the Physician is to make no Alteration, but suffer every thing to remain as it is. For this Reason, neither Venesection, nor Evacuation, nor any other Change, are to be attempted. The Patient is, therefore, first, to use soft light Food, Rest of Body and Mind, a temperate hot and moist Air, spontaneous Sleep, or such as is procured by gentle Narcotics, softening, thin, and gently aperient Medicines. Then, secondly, each particular Evacuation, which gives Relief, is to be promoted.

When, therefore, in a Pleurisy, a proper Liquor is in a due Quantity, and at a seasonable Time, discharged from the hæmorrhoidal Veins, the Anus is to be fomented with emollient, laxative, and aperient Fomentations; or, if these should prove ineffectual, Leeches are to be applied.

When the Urine is copious, thick, hypostatic, and such as has been already described, Fomentations, of the same Nature with those now recommended, are to be applied to the Kidneys, Perinæum, and Hypogastrium; lenitive and diuretic Aperients are to be used; the Patient is to be kept in an Air somewhat cool; Sweating, and other Evacuations, are to be avoided; and mild diuretic Clysters to be injected.

If, in a Pleurisy, yellow and bilious Stools are copiously discharged before the fourth Day, to the Relief of the Patient, the like emollient Fomentations are to be applied to the whole Abdomen, laxative Clysters are to be injected, and a laxative Regimen prescribed.

When ichorous, purulent, or fistulous Abscesses appear before the sixth Day, behind the Ears, or on the Legs, and if the Part affected is discover'd, then the Patient is to use a light, fluid, gently aromatic, and somewhat vinous Diet, to remain in a State of Rest, and to have emollient and gently aperient Medicines prescribed him. The Part, also, to which the Matter is determined, ought to be treated with Suction, Relaxation, stimulating and aperient Medicines, that thus it may resist less, and attract more. Then somewhat more strong Aperients may be used; as, also, saponaceous and hepatic Substances; to which may be added Clysters and Fomentations consisting of the same. Then the Aperture made in the Abscesses is to be kept open for some time, by suppurating Medicines.

When the Pain is translated to the Shoulder, Arm, or Back, and attended with a Stupor, Pain, and Heaviness of these Parts, besides the things commonly prescribed, the Parts to which the Pain is translated, are to be fomented with emollient Substances, rubbed gently with hot Cloths, and stimulated by Plaisters, in some measure, attractive.

When the Spit is, in some measure, freely discharged, affords Relief, is unattended with a Coryza, is copious, at first resembling Pus, but soon becomes white, or appears before the fourth Day, is either continued, or returns immediately after its Suppression, then the whole Treatment is the same as in a true Peripneumony. See the Article PERIPNEUMONIA.

By Art, a Pleurisy may be cured without any other Disease, especially by the following Method: If a recent Pleurisy, before the End of the third Day, is accompanied with violent Symptoms of the dry Kind, and found in a robust, exercised, and dry Habit, without any Hopes, or Presence, of a Resolution, or of the Concoction and Excretion of the peccant Matter; then,

1. A large Quantity of Blood is speedily to be taken from a large Vein, with a large Stream, and from a large Orifice, the Patient, in the mean time, lying at Rest on his Back, and quickening his Respiration, as the Blood flows, by Coughing and Sighing. The Part affected is, in the mean time, to be fomented, and gently rubbed. The Discharge of Blood ought to be continued, till the Pain is considerably remitted, or the first Signs of a Deliquium brought on. The Venesection is to be repeated, according to the Return of the Symptoms it was intended to remove. The Absence of the Pellicle, formed upon inflammatory Blood, determines when 'tis time to stop. And,

2. We are immediately to use Fomentations, Baths, hot Applications,

plications, Liniments, and Plaiſters, to relax, reſolve, to mitigate, and avert the Pain. See INFLAMMATIO.

3. Then ſuch Medicines are to be exhibited, as dilute, reſolve, relax, mitigate, refrigerate, and alleviate, or ſooth Pain; which, when taken warm, in a moiſt Form, in a large Quantity, and determined to the Part affected, are highly beneficial, and may be varied, according to the Symptoms; always taking care, that ſuch Ingredients be choſen, as reſiſt Putrefaction.

4. A light, ſoft, refrigerating, and antiphlogiſtic Diet is neceſſary.

5. Every thing, which dries, heats, or increaſes the Impetus of the Blood, is to be avoided; ſuch as the Heat of the Air, of the Sun, of the Fire, or of the Bed; as, alſo, heating Aliments and Medicines. A Fomentation may be prepared in the following Manner:

Take of the Leaves of Mallows, Marſhmallows, and Pellitory of the Wall, each two Handfuls; of Garden-poppy, and Henbane, each one Handful; of the Leaves of Elder, Chamomile, and Melilot, each three Ounces: Boil in ſweet Milk, for a Fomentation.

Liniments, for anointing the Sides, are theſe following:

Take of the Sugar of Lead, four Drams; of Vinegar, ſix Drams; and of the Oil of Roſes by Infuſion, one Ounce: Make into a Liniment, to be applied to the Side.

Or,

Take of the Unguentum Populneum, two Ounces.

Or,

Of the Emplaſtrum Diapompholygos, a ſufficient Quantity: Spread on Leather, and apply for the ſame Purpoſe.

Take of the Leaves of Colts-foot and Mallows, each two Handfuls; of the Leaves of wild Poppies and Marſhmallows, each half a Handful; of the Roots of Parſley and Sarſaparilla, each three Ounces; of bruiſed Linſeed, four Drams; of the bruiſed Seeds of Lettuce and Ladies-thiſtle, each one Ounce: Boil in three Pints of Water, of which let the Patient drink two Ounces every Hour.

Take of the Four greater and ſmaller cold Seeds, each three Drams; and of white Poppy-ſeeds, two Ounces: Make into an Emulſion wwithBarley-water; with every fourteen Ounces of whichmix, of the pureſt Nitre, one Dram and an half; and of the Syrup of Maidenhair, one Ounce. Let the Patient drink one Ounce every Hour, or every Quarter of an Hour.

Take of the diſtilled Waters of the Flowers of the red Poppy and Elder, each eight Ounces; of the diſtilled Water of Borrage, five Ounces; of Crabs-eyes, two Drams; of Sal Prunellæ, one Dram; of the Syrups of the Flowers of red and white Poppies, each one Ounce: Mix, and let the Patient drink two Ounces every Half-hour.

How long theſe Meaſures are to be perſiſted in, or repeated, is to be known from the Obſtinacy of the Diſeaſe, its Remiſſneſs, or its Change into a State of Health and Recovery.

A Pleuriſy degenerates into other Diſorders, firſt, when the inflamed Part ſuppurates; which we know, firſt, from the general Signs of a Suppuration, ſpecified under the Article INFLAMMATIO; ſecondly, from the Obſtinacy of the Pain, Cough, and Fever, beyond the fourth Day; thirdly, from the Abſence of the Sign of a Reſolution and Cure; and, fourthly, from a Neglect of the proper Meaſures of Cure.

That an Apoſtem is already forming, is known from the common Signs ſpecified under the Article INFLAMMATIO; but eſpecially, in this Caſe, from the often recurring Horror, without any manifeſt Cauſe, and the Signs ſpecified in the Article PERIPNEUMONIA. Hence it is, alſo, known, when an Apoſtem is actually formed; which ſometimes is evacuated by Spit, thro' the Lungs.

But ſuch an Abſceſs isſometime broken by its own Pus, which drops into the Cavities of the Breaſt; whilſt the Ulcer, as new Pus is formed and accumulated, fills the whole Cavity of the Breaſt, and conſumes the whole Body. That ſuch a Misfortune has happened, may be known from the preceding Signs: From the Duration of the Misfortune beyond the ſeventh Day; from the ſudden Remiſſion of the Symptoms, and their quick Return. Hence ariſes a Phthiſis.

When, therefore, by the Signs already enumerated, we know that the Inflammation is forming into an Abſceſs, the Part, before painful, when known, is to be corroded by Cauſtics; an Inciſion is to be made quite to the Pleura, and kept open by ſuppurative Medicines, that the Matter, being forced outwards by the Action of the Lungs, may be diſcharged from the Pleura, and prevent an Empyema; then the Part is to be ſoftened, till it is quite cleanſed.

But if there are Signs, that, the Apoſtem being broken, the Pus has already form'd an Empyema, the Thorax is forthwith to be opened, the Pus eliminated, and the Wound cured by proper Regimen and Medicines. See INFLAMMATIO and EMPYEMA.

A Pleuriſy, alſo, degenerates into ſome other Diſeaſe, when, for Inſtance, the Part affected becomes ſcirrhous, or callous, or when the Lungs adhere to the Pleura; and, when this laſt Misfortune happens, there is produced an Aſthma, a Dyſpnœa, and a dry Cough, eſpecially after Eating or Exerciſe; from which Signs the Diſorder is known, if they are preſent without the Signs of an Abſceſs or Empyema, already ſpecified; and, eſpecially, if they continue long, without any great Increaſe of the Diſorder.

This Misfortune, when known, is either abſolutely incurable, or to be removed by abſtemious Living, Exerciſe, a free Air, ing in the Country, violent and often-repeated Riding.

Such an Inflammation, alſo, degenerates into a Gangrene, firſt of the Side, and then of the Lungs, by reaſon of the Contiguity of the latter with the former.

This laſt-mentioned Diſorder ariſes, either from the Violence of the Pleuriſy, or from the acrid and putrid Matter accompanying it.

That a Gangrene of the Lungs is about to happen, or is already begun, may be known from various Circumſtances: If, for Inſtance, the Spit is purulent, and ſomewhat bilious, round, purulent, and ſomewhat bloody, black, and ſuliginous, dirty, or fetid; if there is a great Noiſe in the Breaſt, accompanied with a Sadneſs of the Countenance; if the Eyes are of a yellowiſh-red Colour, full of Sordes, and dim-ſighted; or if the Spit is at firſt various; then the Patient often dies on the third or fifth Day: If there is a Stertor, none, or a difficult Expectoration, a languid Pulſe, and an high-coloured Urine; if there is a Flux, the Matter of which is liquid, fetid, putrid, and ſymptomatic; if a violent Peripneumony comes on; if a ſecond Paroxyſm ſucceeds the firſt; if the Blood is highly florid, when flowing from an opened Vein, and without an inflammatory Pellicle, though it comes from a large Orifice, with a full Stream, and is received into a clean Veſſel; if the Spitting is ſuppreſſed, whilſt the Dyſpnœa remains; or is increaſed, and accompanied with Pain, Heavineſs of the Breaſt, an hard, ſmall, quick Pulſe, and an intenſe Heat; for, when theſe Symptoms are increaſed on the fifth Day, they prove mortal on the ſeventh; if the Urine is highly red, and dark-coloured, with a various and indiſtinct Hypoſtaſis, the Diſorder proves mortal within fourteen Days: If the Hypoſtaſis is black, or furfuraceous, the Diſorder proves mortal ſooner: If the Pleuriſy, being at firſt mild, is increaſed on the fifth or ſixth Day, the Patients are in Danger on the ſeventhand twelfth, and are rarely cured, till after the fourteenth; if the Back, Side, and Shoulders are highly red and painful; and if there is a Flux, of which the Matter is green, and highly fetid.

If the Pleuriſy is of the dry Kind, on account of the Defect of Strength, the intenſe Pain, the Unfitneſs of the Matter for Expulſion, the exceſſive Contraction and Criſpation of the Veſſels, and the exceſſive Uſe of hot Subſtances, the Pain, at the ſame time, tending to the ſuperior Parts; if the Tongue is at firſt, dry, ſordid, livid, or black, with a black Bliſter on it; if all or moſt of theſe Signs happen, the Diſorder, which is generally mortal of itſelf, is not eaſily cured; but, for the moſt part, deſtroys the Patient by a Gangrene of the Part, either in the Side, or in the Lungs contiguous to it.

But when theſe Signs indicate, that ſuch a Misfortune is already threatening the Patient, the moſt powerful Remedies are, without Delay, to be uſed; nor are we to truſt to the Aſſiſtance of Nature, nor the Influence of gentler Medicines, provided the Patient has a ſufficient Degree of Strength remaining.

In this Caſe, therefore, deep Eſchars are forthwith to be excited in the Part affected with the actual Cautery; then they are to be covered with ſtrong, cleanſing Medicines, and kept continually warm with penetrating Fomentations; then large Quantities of ſtrong, diluting, aperient, and antiſeptic Liquors are to be taken; for by theſe, if by any, the Severity of the Diſorder will be mitigated: For this Purpoſe,

Take of the Leaves of Scordium, Jack-by-the-hedge, and white Horehound, each two Ounces: Boil in two Pints of Water; with which mix, of the Oxymel of Squills, eight Ounces; of Nitre, three Drams; and of Treacle-vinegar, one Ounce: Of this Mixture let the Patient, every Quarter of an Hour, take two Ounces as warm as poſſible.

But if the Violence of the inflammatory Cauſe produces the moſt ſevere pleuritic Symptoms, neither to be removed by the Aſſiſtance of Nature, nor by any antipleuritic Medicine, and if theſe Symptoms are ſuddenly removed without a Cauſe, ſo far

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far as they depended on the Inflammation, the Pulse remaining quick, small, and intermittent, and the Sweat being small and cold, it is obvious, that a Gangrene has already seized the inflamed Parts. Hence a Delirium, and soon after Death, happens, especially if the Thorax is of a livid Colour. The same Thing happens, if the Patient, who expectorates a somewhat bilious Spit, is relieved of his Pain, without any manifest Reason; for, in this Case, a Delirium, the Presage of Death, produced by a Gangrene, is present.

A Pleurisy terminates in Death, when its Causes are so violent, that the Pain produced, suppressing all Motion of the Thorax, soon creates a mortal Peripneumony, by stopping the Circulation of the Blood.

Hence the Reason is obvious, why a Peripneumony succeeds every violent Pleurisy: Why a Pleurisy is generally mortal to old Persons, Child-bed and pregnant Women: And why the Swathing of the Thorax with a Bandage so alleviates the Disorder, as to render it tolerable. *Boerhaave's Aphorisms.*

PERIPSYXIS, περίψυξις. The same as PERFRICTIO.

PERIPTOSIS, περίπτωσις. A Chance, or fortuitous Accident, by which Remedies for Diseases are sometimes discovered.

PERIPYEMA, περιπύημα. A Collection of Matter, surrounding any Part.

PERIRRHEDES, περιῤῥηδὲς. Bent or broke every Way, or both Ways, or in every Direction. It, also, imports, sprinkled, or irrigated all over. *Hippocrates.*

PERIRRHEPSIS, περιῤῥέψις. The Declination of a Bandage, when it recedes from its due Situation, either to one Part, or to another. *Hippocrates de Officina Medici.*

PERIRRHOEA, περιῤῥοια, from περιῤῥέω, to flow from every Part. A copious Flux of the Humours, or morbific Matter, from all Parts of the Body, to the proper Emunctories, in order to their Discharge; or, rather, the Discharge itself.

PERISCELES, περισκελὲς. An Epithet for a Medicine in *Hippocrates*, importing, very hard, irritating, or pungent.

PERISCEPASTRUM. See CATHOLCEUS.

PERISCYPHISMUS.

This Operation, which, according to the Etymology of the Word, imports an Incision round the Cranium, is performed on those, who are afflicted with copious Defluxions on the Eyes, supplied by a large Number of deep-seated Vessels. During this Disorder, the Patients Eyes are extenuated, small, their Sight weak, and their Angles corroded; the Eyelids are exulcerated, and the Hairs fall from them; thin, acrid, and hot Tears are discharged; and an acute and deep-seated Pain of the Head afflicts the Patient, who, also, sneezes in a violent Manner, without Interruption. We are, therefore, in this Case, to shave the Head; and, avoiding the Temporal Muscles, to make a transverse Incision from the Left to the Right Temple: But let the Incision be confined to such Parts, as are possessed of no great Degree of Motion: Thus, for Instance, let it be made a little above the Forehead, taking care, at the same time, to avoid the coronary Suture. *Leonides* orders the Incision to be made in the Middle of the Forehead. When the Bone is denudated, we are to separate the Lips of the Incision by means of Tents, or a large Quantity of Lint; but the Extremities of the Incision are to have proper Dressings applied to them, which are to be moistened with Wine and Oil. When the Dressings are removed, and the Inflammation declining, we are to rasp the Bone, till it begins to produce Flesh, and carry on the Cure by means of incarning Powders. Among which are, that prepared of two Parts of the Flour of Wheat, and one Part of Colophony, the Powder called *Pulvillus Capitalis*, and incarning Compositions of Pumice; for, when the Skin is rendered thick by a Cicatrix of this Kind, the Orifices of the Vessels are shut up, and, by that means, the former Defluxion to the Eyes is prevented. *Paulus Æginet. Lib.* 6. *Cap.* 7.

PERISPHALSIS, περισφαλσις, from περισφάλλομαι, to wander about. A Circumrotation of a luxated Bone, in order to its Restitution.

PERISSOSIS, περίωσις, from περιωὸς, redundant. A Redundance, or superfluous Plenitude of the Humours. *Hippocrates.*

PERISTALTICUS, from περισέλλω, to compress, or contract. The vermicular, spontaneous Motion of the Intestines, by which the Fæces are protruded towards the Anus, is called the *Peristaltic Motion.*

PERISTERON. A Name, in *Dioscorides*, *L.* 4. *C.* 6. for the *Verbena*, Vervain.

PERISTOLE, περιστολὴ. In *Hippocrates*, *de decenti Habitu*, it imports a modest and composed Dress, or Habit. But it, also, signifies the compressive Power of the animal Fibres, and the peristaltic Motion of the Intestines.

PERISTOMA. The villose Coat of the Intestines.

PERISYSTOLE. The Interval of Rest betwixt the *Systole* and *Diastole* of the Heart.

PERITERION. The perforating Part of the Trepan.

PERITEXIS, περίτηξις. A Colliquation.

PERITONÆUM, περιτόναιον, from περιτείνω, to extend round.

After the Removal of the Muscles of the Abdomen, in Dissection, the first Thing that appears, is a very considerable membranous Covering, which adheres immediately to the inner Surface of the transverse Muscles, and of all the other Parts of this Cavity; and involves and invests all the Viscera contained therein, as in a Bag. This Membrane is named *Peritonæum.*

It is of a pretty close Texture, and yet very pliable, and capable of a very great Extension; after which it can recover itself, and be contracted to its ordinary Size; as we see in Pregnancy, Dropsies, Corpulency, and Repletion.

It seems to be made up, at least, of two Portions, one internal, the other external; which have been looked upon, by many Anatomists, as a Duplicature of two distinct membranous Laminæ: But, properly speaking, the internal Portion alone deserves the Name of a membranous Lamina, as being the main Body of the Peritonæum; the external Portion is no more, than a kind of fibrous, or follicular Apophysis of the internal, and may be properly enough termed the cellular Substance of the Peritonæum.

The true membranous Lamina, commonly called the *internal Lamina*, is very smooth and polished on that Side, which is turned to the Cavity and Viscera of the Abdomen, and continually moistened by a serous Fluid, discharged through almost imperceptible Pores.

These Pores may be seen, by spreading a Portion of the Peritonæum on the End of the Finger, and then pulling it very tight on all Sides; for then the Pores are dilated, and small Drops may be observed to run from them, even without a Microscope.

The Sources of this Fluid are not as yet sufficiently known. Perhaps it comes out by a kind of Transudation, or Transpiration, like that which we observe in Animals newly killed. The whitish Corpuscles, found in diseased Subjects, are no Proof of the Glands, which some Anatomists place there in the natural State.

The cellular Substance, or external Portion, of the Peritonæum adheres very closely to the Parts, which form the Insides of the Cavity of the Abdomen; and it is not every-where of an equal Thickness. In some Places it is in a very small Quantity, and scarcely any appears at the tendinous or aponeurotic Portions of the transverse Muscles, and on the lower Side of the Diaphragm.

In all other Places, it is thicker, and forms Cells expanded into very fine Laminæ, which, in diseased Subjects, become sometimes so broad and thick, as to resemble so many distinct Membranes.

In some Places this Substance is every way like a Membrana Adiposa, being filled with Fat, as round the Kidneys, and along the fleshy Portions of the transverse Muscles, to which it adheres. It entirely surrounds some Parts, as the Bladder, Ureters, Kidneys, and spermatic Vessels; and it is, in these Places, improperly termed the Duplicature of the Peritonæum.

Besides these Differences in Thickness, the cellular Substance has several Elongations, which have been called *Productions of the Peritonæum.* Two of these Productions accompany and invest the spermatic Ropes in Men, and the vascular Ropes, commonly called the *round Ligaments*, in Women. There are other two, which pass under the Ligamentum Fallopii, with the crural Vessels, which they involve; and they are gradually lost in their Course downward.

To these four Productions of the cellular Substance of the Peritonæum, we may add a fifth, which is spread on the Neck of the Bladder; and, perhaps, a sixth, which accompanies the Intestinum Rectum. All these Elongations pass out of the Cavity of the Abdomen, and may be termed external, to distinguish them from others, that remain in the Abdomen, and are called *internal.*

The great Blood-vessels, that is, the Aorta and Vena Cava, are likewise involved in this cellular Substance of the Peritonæum. In a word, it involves immediately, and separately, all the Parts and Organs, which are commonly said to lie in the Duplicature of the Peritonæum.

The true Lamina, or membranous Portion, of the Peritonæum is connected, by the Intervention of the cellular Substance, to the inner Surface of the Cavity of the Abdomen; but it does not naturally accompany the external Elongations of that Substance; it only covers the Origin, or Basis, of these Productions, without any Alteration in its own Surface at these Places.

It has, nevertheless, Productions of its own; but they are very different from those of the cellular Substance; for they run, from without, inward; that is, they advance from the convex Side of the great Bag of the Peritonæum, into the Cavity of that Bag, some more, some less, and, also, in different Manners;

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ners; as if the Sides of a large Ball or Bladder were thrust inward into the Cavity of the Ball or Bladder.

Of these internal Elongations, or Intropressions of the true Lamina of the Peritonæum, some are simply folded, like a Duplicature; some are expanded, like inverted Bags, or Sacculi, to contain some Viscus; some begin by a simple Duplicature, and are afterwards expanded into a Cavity, which contains some Organ; some are alternately extended in the Form of simple Duplicatures, and of Cavities; and, lastly, some form only a small Eminence on the inner Surface of the great Cavity of the Peritonæum.

Under the first Species of these Productions we may bring the membranous Ligaments of the Abdomen, such as those of the Liver, Colon, &c. We see the second Species in the external Membrane of the Liver; the third in the Mesentery; the fourth in the Mesocolon; and the fifth, at the Kidneys and Ureters.

Besides the external Productions of the cellular Substance of the Peritonæum, it has the same Number of internal Elongations with the true Lamina, which lie between all the Duplicatures, and line the Insides, of all the Cavities, or that Side, next the Viscera, contained in them.

The Uses of the Peritonæum seem to be very evident, from its Description; and the principal Uses are, to line the Cavity of the Abdomen; to invest the Viscera contained in that Cavity, as in a common Bag; to supply them with particular Coats to form Productions, Ligaments, Connexions, Folds, Vaginæ, and the like.

The fine Fluid, which transudes through the whole internal Surface of the Peritonæum, prevents the Inconveniences, which might arise from the continual Frictions and Motions, to which the Viscera of the Abdomen are exposed, either naturally, or by external Impulses.

I must here observe, that it is the common Custom to demonstrate four ligamentary Ropes, termed the umbilical Vessels, before the Peritonæum is opened, because they adhere to the Umbilicus, and three of them are really Vessels in the Fœtus, two umbilical Arteries, and one Vein.

Three of these umbilical Ropes, or Ligaments, are involved separately, and sustained by a Production, or Duplicature, which the Peritonæum sends into the Cavity of the Abdomen, in the Form of a Falx. *Winslow's Anatomy.*

PERIZOMA, from περιζώννυμι, to gird about. A Belt, or Truss.

PERLA. A Pearl. See CONCHA MARGARITIFERA, and MARGARITÆ.

PERNA. A Sort of Shell-fish. See PINNA.

PERNIO. A Chilblain, or Kibe.

Tumors of this Kind are produced, generally, in the Hands and Feet, by extreme Cold; and they are attended with Redness, Inflammation, Heat, pricking Pains, and an Inability of Motion in the Part affected. Sometimes Pustules appear, and then the Ulceration penetrates deep. The Humour emitted is sometimes a little fetid, and either resembles Pus, or Sanies. Frequently the Inflammation degenerates into a Sphacelus. From these Symptoms, in my Opinion, Chilblains may be reckoned a Species of Inflammation; and so much the more, as, like other Inflammations, they excite a Sense of Heat, and terminate in a Discussion or Separation, or degenerate into a Gangrene and Sphacelus.

Chilblains may be known by various Symptoms: 1. The common Appearances of Inflammation are to be observed. 2. It must be inquired, whether the Parts affected have suffered by extreme Cold, as in performing a Journey, or in military Expeditions and Sieges undertaken in the Winter. 3. If the Patient feels an itchy Sensation, attended with Heat, and a pricking Pain, and if the Part becomes stiff and insensible.

When the Chilblains swell and redden, if the Part retains Sensation and Motion, without a great Degree of Heat and Pain, the Disorder is mild. On the other hand, when the Chilblains are livid, and the Part is affected with a Stiffness, Numbness, and pricking Pain, there is great Danger of its degenerating into a Gangrene, or, at least, a deep Exulceration. When Pustules rise upon the Skin, like those after a Burn, they are certain Signs of an immediate Gangrene. Lastly, when the Sensibility of the Part is lost, and it becomes livid, soft, flaccid, or fetid, there is Reason to suspect a Mortification, or Sphacelus.

The principal Cause of Chilblains is certainly Cold; for, by a violent Degree of Cold, as in other Inflammations, the small Blood-vessels are not only constricted, but the Blood is, also, inspissated. Nor is there any Degree of this Disorder, but may be readily accounted for, as a Consequence of these Causes.

Naturalists are not yet unanimous with regard to the true Nature of Cold, which has generally been imagined to be only the Effect of a Privation of Heat; but I am rather of Opinion, that some acrid, rigid, hard, and saline Particles, which were before rendered soft, subtile, and volatile, by the Heat, are again condensed and indurated by the Cold. Now, when these Particles insinuate themselves into the small Pores of the Body, they constrict the small Blood-vessels; and, upon their bursting, the Blood is inspissated, and stagnates. Hence, in my Opinion, it happens, that the Skin of the Face, Lips, and other uncovered Parts, becomes chapped, broken, and affected with a continual pricking Pain, by the Cold. The slower the Motion of the Blood, and the smaller the Degree of Heat in any Member, the more gently is the Blood impelled into the Vessels of that Member. So that there is no Cause of Wonder, that the Hands, Fingers, Feet, Toes, Heels, Nose, and Ears, are more subject to Chilblains, than the rest of the Body, which are sometimes milder, and sometimes more severe. Sometimes the Cold is so extreme, as to stop the Circulation of the Blood entirely over all the Body; which necessarily occasions the Death of the Patient, and he is commonly said to have perished with Cold.

Chilblains are almost always, in some Degree, dangerous; and the more the Part affected has suffered by the Cold, both the Violence of the Symptoms, and the Danger, are the more increased. The Danger is, also, greater, when a whole Hand, or Foot, has suffered by the Inclemency of the Cold, than when only a single Finger or Toe is affected. But the most troublesome Circumstance is, that those, who have once been afflicted with Chilblains, are almost every Year subject to Inflammations and Pains; or, in an extreme Degree of Cold, to malignant Ulcers, Chaps, and even a Gangrene. Lastly, when Chilblains are unskilfully treated, when they are removed from the Cold, and suddenly exposed to an Heat, or the Fire, or wrapt up in warm Cloths, there is the utmost Danger, that the Part will become black, soft, and putrid, and, having lost all Sensation, contract a Sphacelus.

Hence, then, it may appear, that the principal Part of the Cure consists in restoring the inspissated Blood to its former Fluidity and Circulation; and this Intention must be answered by a Method different from those used in other Inflammations. For warm Applications, which are beneficial, and even absolutely necessary, in other Inflammations, are found to be extremely pernicious in Chilblains. Nor is it safe to expose those, who have suffered by extreme Cold, to a Fire, or Heat; because the sudden Vicissitudes of Heat and Cold produce an immediate Mortification. It seems, therefore, much more safe and convenient, to bring the Patient into a cool or temperate Air, and to order him to exercise his Limbs continually, and then to be gradually introduced into a greater Degree of Warmth. When the Patient is too weak to exercise himself, let the Part affected be well rubbed with Snow, or cold Water, which will seem warm to him; by which means the acrid, saline Particles, sticking in the Pores, will be extracted, and the natural Circulation of the Blood restored. As soon as the Sensation returns, comforting Medicines are gradually to be applied, such as Spirit of Wine alone, or mixed with Treacle, Oil of Petre, and Balsam of Sulphur. When the morbid Part has been well rubbed with these Remedies, the Patient may be gradually brought to the Fire, or put to-bed, afterwards endeavouring to raise a gentle Sweat.

For this Purpose let the Patient gradually drink a few Glasses of warm Wine, boiled with Cinnamon and Sugar; for by this Method the Patient will revive, and grow warm, and the Circulation of the Blood will be restored. Nor will it be improper to give, alternately with the Wine, a little of the following sudorific Mixture:

> Take of the Waters of Goats-rue, Rue, and Scordium, each two Ounces; of the Aqua Theriacalis, and the Aqua Vitæ Matthioli, each six Ounces; and of the Aqua Prophylactica Sylvii, half an Ounce; of the Mixtura simplex, or of the Tincture of Bezoar, two Scruples; and of the Syrups of Cinnamon and Cloves, each half an Ounce: Mix all together.

About three Spoonfuls of this Mixture should be given to the Patient every Quarter of an Hour, and the hot Wine as often, till the Sweat appear. If Wine cannot be readily had, Ale boiled with Cinnamon, Cloves, and a little Sugar, may be used. Draughts of this kind must be taken, till the Sweat be kept up for an Hour, or half an Hour, or according to the Circumstances of the Patient. It can scarcely be imagined, how expeditious and effectual this Method of Cure is, in the most violent Degree of this Disorder, even when it tends to a Gangrene. In milder Degrees of Chilblains, those Medicines may not, indeed, be absolutely necessary, but are, at the same time, extremely beneficial.

When the Chilblain tends to Suppuration, it ought to be treated like other recent Abscesses. First cleanse the Wound with a digestive Ointment, or the Unguentum Ægyptiacum; then

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then dreſs it with the Oil of Eggs, and of Wax, and the *Peruvian* Balſam, or the Eſſence of Aloes and Myrrh; and, laſtly, apply a Plaiſter of Lead, or of Litharge. The Oil of Myrrh per Deliquium may be beneficial; and, alſo, burnt Mice, if we may believe the *Ephemerides Naturæ curioſorum*. Laſtly, Lime-water mixed with camphorated Spirit of Wine, may be, alſo, uſed very advantageouſly, if a Compreſs dipt in it be applied to the Ulcer, either alone, or after the Application of the Medicines above-recommended. But, if a Gangrene or Sphacelus appears, it muſt be cured as ſuch.

Thoſe who are ſubject to Chilblains every Year towards Winter, in order to prevent their Return, carefully anoint the Parts affected with Petroleum, or Oil of Turpentine, during the Winter: Or, if the Chilblains begin to appear again, apply to the morbid Heel or Finger, a Bladder dipt in the fore-mentioned Oils; but the Cold itſelf ſhould always be carefully avoided, or defended againſt, with proper Cloths or Coverings. Conſult *M. A. Severinus Diſſ. de Pernionibus in Lib. de Abſceſſibus. Heiſter's Surgery.*

PEROLIDUS. A Term uſed by *Paracelſus*, and *Helmont*, by which they underſtand the extreme Circumference of the Body of Air ſurrounding the Earth.

PERONÆUS MUSCULUS. A Name for three different Muſcles, the firſt of which is the

PERONÆUS MEDIUS, VULGO PERONÆUS ANTICUS.

This is a long Muſcle, ſituated anteriorly on the middle Part of the Fibula.

It is fixed above by fleſhy Fibres, to more than the middle third Part of the anterior or Outſide of the Fibula, and to the neighbouring Part of the Aponeuroſis Tibialis.

It is likewiſe fixed to a Production from the Inſide of that Aponeuroſis, which runs to the upper Part of the Tibia, and there ſerves for a middle Septum, between this Muſcle and the Extenſor Digitorum longus.

From thence it runs down, and forms a Tendon, which, going in the Direction of the oblique Line on the Fibula, paſſes behind the external Malleolus, and then through an annular Ligament common to it, and to the Peronæus Maximus; and is afterwards inſerted in the Tuberoſity, at the Baſis of the fifth Metatarſal Bone, ſending off a ſmall Tendon to the firſt Phalanx of the little Toe.

PERONÆUS MINIMUS.

This is a ſmall Muſcle, commonly thought to be a Portion of the Extenſor Digitorum longus, though it is eaſily ſeparable from it.

It is fixed by fleſhy Fibres in the lower Half of the Inſide of the Fibula, between the two oblique bony Lines, on one Side of the lower Part of the Extenſor Digitorum longus, to which Muſcle it is ſimply contiguous.

From thence it runs down, contracting in Breadth, and paſſes, with the Extenſor Longus, through the common annular Ligament, forming a flat Tendon; which ſoon ſeparates from thoſe of the Extenſor, and is inſerted near the Baſis of the fifth metatarſal Bone.

It is diſtinguiſhed from the two other Peronæi, by a Septum, or Production of the ligamentary Aponeuroſis of the Tibia.

The Peronæus Medius bends the Foot; and hinders the Leg from falling back, in the ſame manner as the Tibialis Anticus. By its Inſertion in the Tuberoſity of the fifth Metatarſal Bone, it turns the Sole of the Foot outward, at the ſame time that it bends it, when it acts without the Aſſiſtance of the Tibialis Anticus; the Co-operation of which Muſcle is likewiſe neceſſary to enable it to counterbalance the Force with which the Leg would be carried backward, when we ſtand upon one Foot.

The Peronæus Minimus is an Aſſiſtant to the Medius, in the Flexion of the Leg, in preſerving the Equilibrium of the Leg, and in turning the Sole of the Foot outward; neither can it perform the firſt two of theſe Motions uniformly, without the Co-operation of the Tibialis Anticus.

The uniform Flexion of the Foot furniſhes an Example of all the three Kinds of Levers: Of the firſt, when we bend the Foot, while off the Ground, in which Caſe the Fulcrum is in the Articulation between the two Extremities of the Lever: Of the ſecond, when we walk upon the Heels, or Toes; for then the Weight is between the Power and the Fulcrum: Of the third, when we raiſe a Weight by the Toes; for then the Power is between the Weight and the Fulcrum.

PERONÆUS MAXIMUS, VULGO PERONÆUS POSTERIOR.

This is a long penniform Muſcle, lying on the Fibula.

It is fixed above, to the anterior and outer Part of the Head of the Fibula, and to a ſmall Portion of the Head of the Tibia; then to the Outſide of the Neck of the Fibula, to the upper Half of the external Angle of that Bone, and to the Aponeuroſis Tibialis, which, at that Place, makes a Septum between this Muſcle and the Extenſor Pollicis.

From thence turning a little backward, according to the Direction of the Bone, it forms a conſiderable Tendon, which, running down behind the external Malleolus, paſſes through a kind of hollow Groove, and through an annular Ligament, common to it, and to the Tendon of the Peronæus Medius, which lies before it: It paſſes, likewiſe, through an annular Ligament on the outer and anterior Part of the Os Calcis, and under the ſmall lateral Tuberoſity ſometimes found there.

Afterwards running through the oblique Groove, in the lower Side of the Os Cuboides, it is inſerted in the Side of the Baſis of the firſt Metatarſal Bone, and, alſo, a little in the Baſis of the Os Cuneiforme Majus.

The fleſhy Body of this Muſcle cannot always be diſtinguiſhed from that of the Peronæus Medius.

When the Peronæus Longus, or Maximus, acts alone, it may extend the Foot, hanging freely in the Air; but, then, this Extenſion is obliquely outward. Together with the Gaſtrocnemii and Soleus, it likewiſe changes their Direction to an oblique Extenſion outward.

This Muſcle, and the Tibialis Poſticus, acting without the Gaſtrocnemii and Soleus, may extend the Foot almoſt directly; but they can overcome but a very ſmall Reſiſtance. When it acts with the other two Peronæi, the Sole of the Foot is turned more or leſs directly outward, towards the external Malleolus. *Winſlow's Anatomy.*

PERONE. The Fibula. A Bone in the Leg. See CRUS.

PERPESSIO, in the Spagiric Phraſe, is the Treatment of Metals by Fire.

PERPETUATIO, in Chymiſtry, is a Reduction of any moveable and volatile Subſtance to a State of Reſt.

PERSEA. Offic. C. B. P. 441. J. B. 1. 169. Raii Hiſt. 2. 1552. *Perſea Arbor.* Ger. 1606. *Perſea Arbor Cluſii.* Park. Theat. 1514. *Prunifera Arbor, fructu maximo, pyriformi, viridi, pericarpio eſculento butyraceo, nucleum unicum maximum, nullo oſſiculum tecto, cingente.* Cat. Jamaic. 185. Raii Dendr. 48. *Abvacaquanhitl ſeu Arbor Querciformis butyraceo fructu.* Hern. 89. Jonſ. Dendr. 424. *Ahavacaquahuitl.* Laet. 226. *Pyro ſimili fructus in Nova Hiſpania nucleo magno.* C. B. P. 439. *Pyri facie Aguacat.* J. B. 1. 107. *Nicaraguæ pomum Nuce rotunda.* Ejuſd. 1. 210. *Mala Americana pyri facie.* C. B. P. 433. SPANISH PEAR.

The Tree has the Appearance of a Pear-tree, is wide-ſpreading, and always green; the Leaves are like thoſe of the broad-leaved Laurus: The Flowers, pretty like thoſe of the Laurus Hexapetalus, and growing in Cluſters: The Fruit, at firſt, reſembles a Plum; afterwards becomes of an oblong Figure, like a Pear, of a black Colour, and a pleaſant Taſte, and containing an Heart-ſhaped Kernel, in Taſte much like a Cheſtnut, or ſweet Almond.

The Perſea-tree is mentioned by *Theophraſtus*, *Strabo*, *Pliny*, *Dioſcorides*, *Plutarch*, and *Galen*. Some will have the Perſea to be the ſame with the *Perſica Malus*; but they are refuted by *Scaliger* at large, though *Theophraſtus* calls both thoſe Trees *Perſea*. The Deſcription given of it by this laſt Author differs in many Characters from that of *Cluſius*, given above, who never ſaw but one Tree, and that near the City *Valentia* in *Spain*, which was ſuppoſed to be brought thither from *America*.

Some Authors have written, as *Dioſcorides* tells us, that this Tree, in *Perſia*, is poiſonous; but, being tranſplanted into *Egypt*, has its Nature ſo changed and meliorated, as to produce a Fruit fit for eating; *Galen* writes the ſame. *Pliny* ſays, that ſome induſtrious Authors have written, that this Tree in *Perſia* has its mortal Poiſon attended with tormenting Pains; but, being by the *Perſian* Kings tranſplanted to *Egypt*, in order to be employed as a Puniſhment, had its Qualities mitigated by the Soil: But this Relation is denied, he tells us, by the moſt learned Writers, who ſay, that the Perſea-tree was planted at *Memphis*, by *Perſeus*. *Plin. Hiſt. Nat. Lib.* 14. *Cap.* 13. This laſt Opinion ſeems to me, ſays *Ray*, the moſt probable, though I do not deny, but there may be in *Perſia* ſuch a poiſonous Tree, of a diſtinct Species from the *Egyptian* Perſea; eſpecially ſince *Rauwolfius* writes, that a *Perſian* Merchant informed him of the poiſonous Fruit of ſuch a Tree, called by them *Sepha*, which, for that Reaſon, they would not meddle with. *Raii Hiſt.*

The Perſea is a Native of *Jamaica*; the Fruit is good for the Stomach: And we are told by *Dioſcorides*, that the Powder of the dried Leaves ſtops Hæmorrhages, being ſprinkled on the Part.

The *Laurus Indica Aldini* is the Perſea of *Cluſius*.

Under the Head of PERSEA, *Ray* reduces

Perſicæ Nuci ſimilis Fructus Nucleo venenato Monardis. J. B.

This Fruit is of a catheretic, or rather of a ſeptic Quality: For a certain *Indian*, as *Monardes* tells us, cured a female Negro, whoſe Legs were full of malignant and inveterate Ulcers, with the Powder hereof ſprinkled on the Parts, which conſumed the putrid Fleſh; with the ſame Powder put upon Cotton, and applied to the Ulcers, he incarned and cicatrized them. This Fruit is very common in the Iſland *Margarites*, and commonly eaten: It is of the Size of an *Adam's* Apple, or Orange, and contains a Nut like the Stone of a Peech, which, burnt to Powder, is good for the Purpoſe before-mentioned. The Kernel it contains is of ſo noxious and deleterious a Quality, that, eaten, it is preſent Death

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Death to Man or Beaſt, without Hopes of a Remedy, as if it were Sublimate, or ſome Corroſive. It is probable, ſays *Ray*, that this Fruit, is the ſame with that of the *Manga Silveſtris*, or *Mangas bravas*, deſcribed by *Acoſta*. *Raii Hiſt. Plant.*

PERSICA.

The Characters are;

The Leaves are narrow and oblong; the Calyx is monophyllous, deeply cut into five or ſix Segments, expanded and hollow. Within the Calyx is ſeated a roſaceous, pentapetalous or hexapetalous Flower, (the Petals growing on the Inſide of the Margin of the hollow Calyx) and furniſhed with thirty Stamina: The Ovary is ſeated in the very Bottom of the Calyx, and is furniſhed with a long Tube, adorned with a globular ſcabrous Apex, and becomes a pulpous Fruit, almoſt globous, ſulcated or furrowed lengthwiſe, and incloſing a Stone, adorned with little Pits and Cavities deeply cut, and containing, for the moſt part, only a ſingle oblong Kernel: The Pedicle is very ſhort.

Boerhaave mentions ſix Species of Perſica; which are,

1. Perſica; molli carne, & vulgaris, viridis & alba. *C. B. P.* 440. *Tourn. Inſt.* 624. *Boerh. Ind. alt.* 2. 243. *Perſica malus.* Offic. Ger. 1258. Emac. 1447. Park. Parad. 580. J. B. 1. 157. Raii Hiſt. 2. 1515. THE PEACH-TREE.

The Peach-tree is known to be a Tree of no great Bigneſs, being here, in *England*, generally planted againſt Walls: The Leaves are long and narrow, and ſerrated about the Edges: The Flowers conſiſt of five pale-purple Leaves: The Fruit is covered with a downy Coat, full of pleaſant juicy Pulp, having an hard reddiſh Stone full of wrinkled Cavities: It is planted in Gardens, and flowers in *March*, or the Beginning of *April*, and the Fruit is ripe in *Auguſt* and *September*.

The Flowers are only uſed in Phyſic; they are opening and gently purging, and principally given to Children, to carry off thin ſerous Humours, and to kill Worms. The Fruit is cooling and moiſtening, grateful to the Palate, but ſubject to putrefy, and cauſe Surfeits.

The only officinal Preparation is *Syrupus Florum Perſicorum. Miller's Bot. Off.*

Galen and *Paulus* condemn all Kinds of Peaches, as of bad Juice, and hurtful to the Stomach; for which Reaſon they adviſe to eat them at the Beginning of Repaſts, before other Food, and to drink no Water, but pure Wine, after eating them. But I ſee no Reaſon, ſays *Ray*, why the Judgment of *Pliny* and *Dioſcorides*, that Peaches are good for the Stomach, procure a good State of the Belly, and that nothing more innocent can be eaten, ſhould be wholly condemned and rejected: Nor indeed it is probable, that a Fruit ſo ſavoury and delicious, and the moſt pleaſing to our Palate of all Summer-fruits, as if Nature itſelf had recommended it to our Choice, ſhould be quite noxious and unwholſome. We ought, however, to be careful in chuſing theſe Fruits, and to obſerve a Meaſure in eating them. And, therefore, *Amatus* thinks, that what has been ſaid by *Galen*, and others, concerning the bad Effects of Peaches, ought to be underſtood of thoſe which have a very ſoft Pulp: For the Caſe, he ſays, is quite otherwiſe with the *Duracina*, (Peaches of an hard and firm Pulp) which emit a moſt grateful, comfortable, and reviving Smell; for theſe have a moſt delicious Savour, mixed with ſomething of Auſtereneſs, which is agreeable and ſtrengthening to the Stomach; and all Perſons of Quality, in *Spain* and *Portugal*, and thoſe of the moſt delicate Palates, eat them after Meals, though not before they are infuſed in Wine; and find no ill Effects from them.

Preſerved Peaches are extremely grateful to ſick Perſons, eſpecially to ſuch as are afflicted with Thirſt, and Dryneſs of the Tongue, for they ſtrengthen at the ſame time they refrigerate; whence they are of excellent Service in all hot Diſtempers. *Braſſavola* uſed to give his Patient a Peach or two roaſted under the Aſhes. *Amatus* affirms it to be a moſt delicious Food, and extremely grateful to ſick Perſons. The Leaves, on account of their Bitterneſs, being boiled in Beer, or Milk, deſtroy and expel Worms in Children. *Galen* ſays, that they work the ſame Effect, being bruiſed, and applied to the Navel. *Parkinſon* affirms, that they purge gently, if taken in a ſufficient Quantity; the Flowers operate in the ſame manner, and more effectually than Damask Roſes; for which Purpoſe there is prepared of them a Conſerve, to be taken chiefly in the Morning faſting; and a Syrup, alſo, is prepared thereof, which is very effectual for the ſame Intentions. The recent Flowers, ſays *Matthiolus*, not only purge, but provoke Vomiting; and, eaten in Salads, prove Hydragogues in Dropſies; but not without diſordering the Patient: The diſtilled Water is a Coſmetic. The Gum of this Tree is commended for Fluxes of the Belly, the Stone, Impetigo, Tumors of the Fauces, Roughneſs of the Windpipe, Spitting of Blood, Diſorders of the Lungs, and the Dyſentery. *Matthiolus* recommends the Kernels for the Gripes, and to prevent Ebriety, being taken to the Number of ſix or ſeven before-hand; and, for the Alopecia, being bruiſed, and boiled in Vinegar, to a Pap-like Conſiſtence. The Oil of the bruiſed Kernels, being rubbed on the Temples, procures Sleep, and eaſes the Hemicrania, or Megrim; drank, or uſed in Clyſters, it cures the Colic; and, taken to the Weight of four Ounces, it gives Relief under the Iliac Paſſion, and the Stone. The Water of fifty Kernels of Peaches, with that of an hundred Kernels of Cherries, and an Handful of Flowers of Elder, macerated in three Pints of Malmſey, then buried for ten Days under Ground, in an earthen Pot, and afterwards diſtilled, expels Stones from the Kidneys in a ſurpriſing manner, as we are aſſured by *Matthiolus*. *Raii Hiſt. Plant.*

2. Perſica; vulgaris; flore pleno. *T.* 624.

3. Perſica; malus; Swollana. *Munting. Prax.* 1. 43.

4. Perſica; Africana; flore incarnato, ſimplici. *T.* 625. *Amygdalus Africana, vulgò.*

5. Perſica; Africana; nana; flore incarnato, pleno. *T.* 625.

6. Perſica; ſucco quaſi ſanguineo. *C. P. B.* 440. *Boerh. Ind. alt. Plant. Vol.* 2.

It is called *Perſica*, from *Perſia*, the Country whence it was firſt tranſplanted. An Infuſion of the Leaves, after the manner of Tea, is purging and opening, and kills Worms; as do, alſo, the Flowers. The Fruit is cordial, pectoral, and moiſtening: The Juice is of Service in burning Fevers: The Kernel is anticolical, and antinephritic: The expreſſed Oil thereof is good for the Ringing of the Ears. *Hiſt. Plant. adſcript. Boerhaav.*

There is no Tree more common than the Peach-tree; and yet it has furniſhed *Salmaſius* with Matter enough for a large Diſſertation. The *Greeks*, it ſeems, had learned by a certain Tradition, that the *Perſians*, who were Enemies to the *Egyptians*, had conſulted to convey ſecretly into *Egypt*, and there to plant, a certain Tree, called *Perſea*, from the Country whence it came, the Fruit of which was of a poiſonous Quality: They ſuppoſed that the *Egyptians*, tempted by the Beauty of the Fruit, could not be prevented from eating it: They did indeed make no Scruple to eat it; but the Event was quite contrary to what the *Perſians* expected from it; for the Goodneſs of the *Egyptian* Soil had ſo changed the Nature of the Fruit, by removing its noxious Quality, that the *Egyptians* could eat it with Safety. The *Greeks* and *Romans*, ſays *Salmaſius*, who wrote ſince *Theophraſtus*, as *Dioſcorides* and *Pliny*, believed that the Perſea of *Egypt* was different from the Perſica; becauſe they found, that the Deſcription which *Theophraſtus* had given of the firſt did not agree to the latter. But they did not conſider, that there was no Peach-tree in *Greece*, in the Time of *Theophraſtus*; that this Tree was brought thither very late, and from thence into *Italy*, and, conſequently, that *Theophraſtus* ſpoke of it as of an exotic Tree or Fruit. *Salmaſius* concludes, that the Perſea and Perſica are the ſame Tree, becauſe thoſe who make them different, among whom is *Dioſcorides*, give a good Deſcription of the laſt, but by no means of the former, only ſaying, that it is a Tree peculiar to *Egypt*; which is a Proof, he ſays, that they had never ſeen that pretended Tree; or only ſpoke of it by Hearſay. The only Difference, according to *Salmaſius*, between theſe two Names of the Tree is, that the firſt was in Uſe among the antient *Greeks*, and the other among the more modern *Greeks*, as well as the *Romans*: He adds, that what has made the Perſea of *Theophraſtus* be miſtaken, is, that this Author, inſtead of deſcribing all the Species of the Peach-tree, has only deſcribed the Apricot-tree, which was, alſo, called *Perſea*; but, for Diſtinction, was afterwards named *Perſea præcox*, and by the *Latins* ſimply *Præcoqua*; whence the later *Greeks* formed their Βερίκοκκα (*Bericocca*); whence comes the *French Abricots*. The Perſea, or Perſica, was, alſo, called *Rhodocinea* and *Rhodacina*, becauſe the firſt of theſe Trees had been planted at *Rhodes*, where *Theophraſtus* remarks, that it only flower'd, and bore no Fruit. But that Philoſopher might be miſinformed, the Fruit in his Time being as yet a great Rarity in *Greece*; perhaps too the Soil, where it was firſt implanted, was improper for it. It is probable, however, that thoſe Trees thrived very well afterwards in that Iſland, and were able to furniſh *Greece* and *Italy* with Plants, where the Name *Rhodacina* was ſtill preſerved; whence, by a Tranſpoſition of Letters, which is very common, are formed the Names *Doracina* and *Duracina*, whence the *French Dureau*.

The Peach-tree has, alſo, been taken for the Lemon-tree, not for any Similitude between thoſe Trees, or their Fruit; but only becauſe the Lemon-tree was not only called *Malus Medica*, but *Malus Perſica*. *Le Clerc, Hiſt. de la Med.* See PERSEA.

PERSICARIA.

The Characters are;

The Flowers are diſpoſed in Spikes, at the Top of the Stalks and Branches: The Calyx is quadrifid, though ſome take it for a tetrapetaloidal Flower: The Stamina are ſix in Number: The Ovary, in the Centre of the Calyx, is compreſſed, of an oval or orbicular Form, and furniſhed with a bifid fimbriated Tube: The Seed is flat, and ovally acuminated. A Membrane ſurrounds the Stalk, at the Riſe of the Leaves, and ſmall Branches, oppoſite to the Leaves.

Boerhaave mentions eleven Species of Perſicaria; which are,

1. Perſicaria; mitis; non maculoſa. *C. B. P.* 101. *M. H.* 2. 588.

2. Perſicaria; mitis; non maculoſa. *C. B. P.* 101. *Flore albo. Perſicaria, Antverpienſis, floribus albis.* Lob. Obſ. 171.

3. Perſicaria; mitis; maculoſa. *C. B. P.* 101. *M. H.* 2. 588. *Perſicaria, mitis.* J. B. 3. 779. SPOTTED ARSMART.

Dale ſeems to make this and the firſt Species the ſame Plant.

This

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This Arſmart has many round Stalks, two Feet high, or more, full of Branches, having their Joints thick and ſwelling, and covered with a thin Film, or Skin. The Leaves grow alternately, and are long and ſharp-pointed, but broader in the middle, and larger than thoſe of the *Perſicaria aurens*; *ſeu Hydropiper*: They are ſmooth, and have a dark-brown or blackiſh ſemilunar Spot in the middle of each. The Flowers grow at the End of the Branches, in thick round pale-red Spikes, being ſmall and ſtaminous, containing flatiſh angular, ſharp-pointed ſhining Seed. The Root is a Buſh of Fibres; it grows in moiſt Places, and by Pond and Ditch-ſides; and flowers in *July*. The Leaves are uſed.

They are ſaid to be of a cooling Nature, and good for hot Tumors, Inflammations, Impoſtumes, and green Wounds, though they are but ſeldom uſed. *Miller's Bot. Off.*

Fuchſius has affirmed, that it is of a very aſtringent Taſte; *Cæſalpinus* found it acerb; *Tragus* and *Lobel* louriſh; for my Part, I have found nothing but a little Aſtringency. This Plant gives a pretty deep-red Colour to blue Paper, which makes us conjecture, that its Salt reſembles Sal Ammoniac, loaded with a great deal of Earth, and joined with a little Sulphur; thus this Plant is aſtringent, deterſive, and vulnerary. It yields a little volatile concrete Salt by the Analyſis: The Decoction of the whole Plant is good for a Looſeneſs, and for the Diſeaſes of the Skin. *Martyn's Tournefort.*

4. Perſicaria; mitis; maculoſa; caulibus & ramis nodoſiſſimis, rubris.

5. Perſicaria; mitis; cum maculis Ferrum equinum referentibus. *T.* 509.

6. Perſicaria; urens; ſeu Hydropiper. *C. B. P.* 101. *Boerh. Ind. a.* 2. 87. *Perſicaria non maculata, Hydropiper.* Offic. *Perſicaria acris ſive Hydropiper.* J. B. 3. 780. *Perſicaria vulgaris acris ſive Hydropiper.* Raii Hiſt. 1. 182. Synop. 58. *Perſicaria vulgaris acris ſive minor.* Park. 856. *Hydropiper.* Ger. 361. Emac. 445. *Potincoba Luſitanis pulgera.* Piſ. 221. *An Schovanna-modela-mucu.* H. M. 12. 147. Tab. 76? LAKEWEED, ARSMART, or WATER-PEPPER.

This Arſmart grows not ſo much branched as the Perſicaria mitis maculoſa; the Leaves are long, and proportionably narrower, and more like the Leaves of the Peach-tree, whence it takes its Name *Perſicaria*; but they are not ſerrated about the Edges, and they want the Spot that is in the Leaves of the mild Arſmart, and they have a very hot biting Taſte, burning the Tongue like Pepper. The Flowers grow in long, ſlender, looſe Spikes, of a paler Colour than the *Perſicaria*; *mitis*; *maculoſa*; but containing like Seed: It grows in like Places with that, and flowers about the ſame time.

This has been accounted an extraordinary Plant againſt the Stone, Mr. *Boyle* having, in his Book of the Uſefulneſs of experimental Philoſophy, given to the diſtilled Water of this Plant a mighty Character for its Virtues againſt that Diſtemper. It is commended, alſo, as very cleanſing, and good for old ſtubborn Ulcers. *Miller's Bot. Off.*

Arſmart is of a very acrid and burning Taſte, and gives a lively Tincture of red to the blue Paper. It is full of acid Sulphur and Earth; its Salt reſembles that which reſults from the Mixture of the Salt of Coral with the Sal Ammoniac, loaded with a great deal more Acid than ordinary.

For this Plant, by the chymical Analyſis, yields a great deal of Acid, Oil, and Earth, and a little volatile concrete Salt. Arſmart is very deterſive and vulnerary; and it is uſed in Glyſters, for the Dyſentery and Teneſmus. They give, at the ſame time, a Dram of this Powder in a Bolus, or mixed with Wine, thickened into a Syrup, with Sugar. Some carry this Plant in the Shoes; but it were better to boil an Handful of it in lean Broth, and ſtrain it through a Linen Cloth, adding half a Dram of chalybeated Tartar, for the Jaundice and green Sickneſs. *Martyn's Tournefort.*

It is evidently of an hot and dry Quality, and is principally uſed externally for Wounds, indurated Tumors, inveterate Ulcers, and the like. *Schroder.* For a pained, hollow Tooth, take Water-pepper, and put it into the Cavity. With this Remedy *J. Heurnius* cured a Woman much afflicted with the Tooth-ach. There is nothing found more effectual for expelling the Flies; for whatever Wounds or Ulcers in Horſes or Cattle are rubbed with the Juice of Arſmart, they remain ſecure from the Injuries of the Flies. *Tragus. Raii Hiſt.*

7. Perſicaria; fruteſcens; maculoſa; Virginiana; flore albo & carneo, Parkinſonii. *Theatr.* 857.

8. Perſicaria; minor. *C. B. P.* 101.

9. Perſicaria; major; Lapathi foliis; calice floris purpureo. *T.* 510.

10. Perſicaria; Salicis folio; perennis. *H. L.* 488. *Potamogeton, Salicis folio.* C. B. P. 193. *Potamogeton.* Dod. p. 582.

11. Perſicaria; Orientalis; Nicotianæ folio, calice florum purpureo. *T. Cor.* 38. *Commel. Rar.* 43. *Ic. & Deſcr. T. Voy.* 2. 316. *Boerh. Ind. alt. Plant. Vol.* 2.

It is called *Perſicaria*, becauſe its Leaves reſemble thoſe of the Peach; the ſixth Species is called *Hydropiper*, from ὕδωρ (*Hydor*) Water, and πίπερι, (*Peperi*) Pepper, that is, Water-pepper; becauſe it is an aquatic Plant with the Taſte of Pepper.

The firſt Species is highly commended by Mr. *Boyle*, as an incomparable Lithontriptic: An *Engliſh* Nobleman, he ſays, cured every body of the Stone with the Juice and diſtilled Water of this Herb, and prepared every Year a vaſt Quantity of the diſtilled Water for the Uſe of the Poor. I have, alſo, try'd this Remedy, but without Succeſs. A Decoction of the Leaves is of Service in the Diarrhœa, Dyſentery, and all cutaneous Diſeaſes. *Paracelſus*, obſerving an Impreſſion of Spots on the ſecond and third Species, pronounced them extraordinary Vulneraries, and aſſerted them to be an effectual Preſervative for Horſes againſt Galls and Attritions by the Saddle, being placed under the ſame. *Perſicaria* is an aſtringent Vulnerary, and a Febrifuge; and is good for ſpitting of Blood, for immoderate Fluxes of the Hæmorrhoids, Menſes, and the Fluor albus; the Leaves, bruiſed, and apply'd, repreſs an Hæmorrhage of the Noſe. The ſixth Species is a very burning Plant, and being chewed in the Mouth ſtrikes the Tongue as it were Lightening. The Leaves, bruiſed, and apply'd to the Skin, raiſe an Inflammation and Exulceration, in manner of an Eſcharotic. This Herb deterges and depurates Ulcers, being mix'd with other Things of a more temperate Quality. It is heating, and, on account of its Acrimony, is temper'd with Raiſins: Being thus prepared, it is of Service in the Dropſy, Jaundice, and all Obſtructions of the Viſcera. In Surgery it is a very good Medicine for diſcuſſing œdematous Tumors, if they be fomented with a warm Decoction of the Leaves. *Hiſt. Plant. adſcript. Boerhaav.*

PERSICUS IGNIS. A Carbuncle, according to *Sennertus*. But *Avicenna* makes a ſmall Diſtinction betwixt a Carbuncle and *Ignis Perſicus*, calling that Species of Carbuncle attended with Puſtules, and Veſications, an *Ignis Perſicus*.

PERSISTENS FEBRIS. A regular intermitting Fever, the Paroxyſms of which return at conſtant and ſtated Hours.

PERSIUM. The Peach-tree. *Oribaſius, Medic. Collect. L.* 1. *C.* 63. See PERSICA.

PERSOLATA. The ſame as *Perſonata.*

PERSONATA. A Name for the *Lappa.* See BARDANA.

PERSPIRATIO. Perſpiration. Having given an Account of Perſpiration, and the Organs deſtin'd for this Secretion, under the Article CUTIS, I ſhall, in this Place, farther remark, that Perſpiration is leſs in Women, than in Men; that a redundant Excretion of the perſpirable Matter induces great Weakneſs, in proportion to its Exceſs, Faintings, and ſometimes ſudden Death. But if Perſpiration is diminiſh'd, or utterly obſtructed, the extreme cutaneous Veſſels become dry, and are obliterated; and hence the Veſſels, and Glands, deſtin'd for the Diſcharge of Sweat, and the oily Humour mention'd under the Article CUTIS, are dry'd; in conſequence of which, the Circulation of the Blood is alter'd, the acrid perſpirable Matter is retain'd, and Putrefaction, Crudities, Fevers, Inflammations, and Apoſtemations, enſue. *Boerhaave's Inſtitutes.*

I muſt, farther, obſerve, that when the Orifices of the innumerable perſpiring Veſſels are obſtructed, the Blood propell'd from the Heart meets with a ſtronger Reſiſtance: Hence the Circulation labours, and muſt quickly ceaſe, unleſs the Heart contracts itſelf with greater Force. But becauſe, when the perſpirable Matter is retain'd, the Quantity of the circulating Fluid is increas'd, on this Occaſion the Blood returns more frequently to the Left Ventricle of the Heart: Hence the Contraction of the Heart is more frequent; and, in conſequence of the ſtronger, and more frequent, Contraction of the Heart, there is a greater Attrition betwixt the Solids and Fluids, and a greater Heat, which we call a Fever.

PERTICE CASMIANA. The Name of a compound Medicine, in *Marcellus Empiricus, C.* 20.

PERTURBATIO ALVI. A Diarrhœa.

PERTUSSIS.

Tho' this Word, according to its natural and moſt genuine Signification, imports no more than a violent and terrible Cough; yet it is generally appropriated to that Species of Cough, call'd the Chin-cough, a Diſorder principally incident to Infants and Children; eſpecially in the Spring and Autumn, at which Seaſons it is generally epidemical. The Patients, labouring under this Diſorder, have frequent and violent Paroxyſms of Coughing, in which the Organs of Reſpiration being not only oppreſs'd, but, alſo, ſpaſmodically affected, variouſly interrupt, ſuſpend, and pervert their reſpective Functions. But for the moſt Part, the Diaphragm convuls'd, either of itſelf, or by the Impulſe of other Parts, ſo long protracts ſometimes the Syſtole, and at other times the Diaſtole of the Heart, that Inſpiration, or Expiration, being for a time obſtructed, the Breath, ſo ſubſervient to Life, can hardly be drawn; in conſequence of which, the Patients are, as it were, ſuffocated; and, by reaſon of a Stagnation of the Blood, contract a kind of Blackneſs of Countenance; and if by chance the Organs, ſubſervient to theſe Purpoſes, ſhould not be ſo ſtrongly convuls'd, as to hinder the free Coughing of the Patients, they are nevertheleſs forc'd to cough in a violent manner, and till their Strength is worn out.

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The concurrent Cause of a Chin-cough seems to consist in these two Circumstances, that there is a frequent and violent Irritation of the Lungs, by which they are almost continually stimulated to throw up the Matter, which proves uneasy to them, by Coughing; and that the moveable Parts of the Thorax, that is, the Nerves, and nervous Fibres, being previously dispos'd to Spasms, as often as they are thus irritated, excite not a regular, but generally a convulsive Cough, and induce some Indisposition opposite to the Function of Respiration.

The Matter which, in all Probability, stimulates the Lungs so frequently to coughing, is Serum, by reason of its too thin Texture continually secreted from the Mass of Blood, and affecting the Parts of the Thorax; because it is not only convey'd thro' the Tracheal Arteries into the Cavity of the Aspera Arteria; but, also, copiously pour'd thro' the pneumonic Arteries into all the adjacent open Ducts.

The spasmodic Disposition of the moving Parts seems, as in other convulsive Disorders, to proceed from an heterogeneous and elastic Matter convey'd along with the nervous Fluid from the Brain through the Nerves into the moving Fibres of the Breast. For this Reason, when the Spirits, lodged in these Fibres, are excited to the violent Motions of Expiration, they fall into convulsive Motions.

As for the Prognostic of this Disorder, tho' a Chin-cough is rarely mortal, or very dangerous, yet it is not to be cured without the greatest Difficulty, and is frequently subdued and remov'd by a Change in the Season of the Year, rather than by Medicines.

The Measures taken for the Cure of other Coughs, are rarely effectual in removing this; for which Reason Nurses and Quacks use various Medicines of their own, such as Cup-moss, and its various Preparations exhibited internally; and, if any farther Cure is necessary, they put the Child into a Fright, in order to remove its Disorder. But, if all these Measures should prove ineffectual, they generally reject Ptisans, Syrups, Julaps, Decoctions, and other Medicines, whether pectoral, or of any other Nature, waiting, till the Disease either terminates spontaneously, or is cured by the succeeding Season of the Year.

Cup-moss, so far as can be collected from its Taste, is of an astringent Quality, and contains somewhat acrid Particles, which smell strongly of a volatile Salt. Hence we may conjecture, that its Use consists in fixing the Blood, allaying the Defluxions of Serum, and in removing the spasmodic Disposition of the Parts, by volatilizing the nervous Fluid. Cup-moss may be exhibited either in the Form of a Powder, a Decoction, or a Syrup: Thus,

Take of the Powder of Cup-moss, one Dram; and of Sugar-candy, one Scruple: Mix all together, and divide into three equal Doses; one of which is to be taken every Morning and Evening, in some proper Vehicle.

Or,

Take of Cup-moss, two Drams; of Milk of Sulphur, two Scruples; and of the Powder of Anise-seeds, one Scruple: Mix all together, and divide into six Doses; one of which is to be taken every Morning and Evening, in some proper Vehicle.

Or,

Take of Cup-moss, one Dram: Boil in a sufficient Quantity of Milk; strain the Milk, and drink it every Morning and Evening. For such as do not like Milk, or are injured by it, we may prepare a Decoction of Cup-moss, in Spring-water, that of Hyssop, or any other pectoral Water; two or three Ounces of which are to be drank twice a Day, edulcorated with Sugar, or some proper Syrup.

Or,

Take one Ounce of Cup-moss: Boil in two Pints of some pectoral Water, till Half of it is consumed; to the Liquor, when strain'd, add one Pound of Sugar-candy, and let the Whole evaporate in a gentle Bath-heat, to the Consistence of Sugar-candy.

Another empirical Method of curing the Chin-cough, when Medicines prove ineffectual, is, to fright the Child, by putting it in the Hopper of a Mill, which makes a terrible Noise, and the Aspect of whose Wheels is dreadful; and by this Method a Chin-cough is sometimes suddenly cured; the Reason of which undoubtedly consists in this, not only that the animal Spirits, being, by the Fright, forced into new Distractions, leave their former inordinate Motions, but, also, that the Matter producing the Spasms is, by such a Perturbation, either dissipated, or forced into other Nerves, where it proves less troublesome.

But a more rational, and, according to my own Experience, a more effectual Method of curing a Chin-cough, is to begin with Purging; for which Purpose,

Take of the Syrup of Peach-flowers, one Spoonful, and of hysteric Water, one Scruple: Mix together, and exhibit to the Patient, who must, at the same time, use a proper Regimen.

Or,

Take of Calomel, six Grains; and of sulphurated Scammony, and Resin of Jalap, each three Grains: Reduce to a Powder, a small Quantity of which is to be exhibited to a Child of six Years old, the Dose being increased, or diminished, in proportion to the Age of the Patient. Let the Purge be repeated in six or seven Days.

If the Patient, as it frequently happens, is subject to Vomiting;

Take of Oxymel of Squills, six Drams; and of Salt of Vitriol, three Grains: Mix together, and exhibit to a Child of six Years old; and, according to this Proportion, the Dose is to be accommodated to Patients of other Ages. I have known an Emetic of this Kind, repeated every Morning for four or five Days successively, produce very happy Effects.

For the Cure of Chin-coughs, Vesicatories are frequently used, and applied sometimes to the Nape of the Neck, sometimes behind the Ears, and at other times to the internal Parts of the Arms near the Axillæ; and, when the Blisters begin to heal in these Parts, others are to be excited in others.

Instead of Ale, the Patient ought to use the following Decoction for ordinary Drink.

Take of China-root, an Ounce and an half; of all the Species of Sanders, each an Ounce and an half; of the Shavings of Ivory, and Hartshorn, each three Drams: Infuse in six Pints of Spring-water, which is to be boiled to the Consumption of one half; adding an Ounce and an half of stoned Raisins, and three Drams of Liquorice.

Or,

Take of the Spirit of Gum Ammoniac, prepared with Sal Ammoniac, one Dram; of the Syrup of Cup-moss, three Ounces; and of hysteric Water, one Ounce: Mix all together, and give one small Spoonful for a Dose, every Morning and Evening.

Or,

Take of the Tincture of Sulphur, two Drams; of which mix three Drops, with one Spoonful of the Syrup of Cup-moss; and exhibit for a Dose every Morning.

In Children of hot Constitutions, who, in Coughing, are seiz'd with an intense Redness, or rather a Blackness, of the Face and Countenance, I have sometimes, with great Success, ordered two or three Ounces of Blood to be taken away, either by Phlebotomy, or Leeches; after which the following Preparation is to be used.

Take of well-clean'd live Millepedes, two Ounces; of the Powder of Anise-seeds, one Dram; of Nutmegs, half a Dram; and of the whitest Sugar, one Ounce: Bruise all together, and pour upon them, of Hyssop-water, six Ounces. Agitate them a little with a Pestle, and make a strong Expression of the Liquor, two or three Spoonfuls of which are to be exhibited twice a Day for a Dose. *Willis.*

In a Chin-cough, *Ettmuller* informs us, that the Patients cough so long, that at last they throw up a mucous Matter from their Stomachs by Vomit; after which they are relieved, for some time, perhaps, half a Day, when the Disorder returns in the same manner. A Chin-cough, like most other Coughs of Children, according to *Walschmied*, proceeds from a Disorder of the Stomach, where, according to *Dolæus*, it is produced by a tough, viscid, and acid Matter lodged in its Coats. But, according to *Ettmuller*, a Chin-cough is sometimes produced by a certain Salt communicated by the Air to the tender Bodies of Children, and coagulating the Lymph, which, becoming acrid, and stagnating, or overflowing, affects the Larynx in such a manner, as to produce a Chin-cough, which, he says, can hardly be cured without the Use of Emetics, but may be easily removed by Vomiting, which may be promoted by means of a Feather dipt in Oil.

Sydenham informs us, that in Chin-coughs Bleeding affords more Relief than the Use of pectoral Medicines; and affirms, that they may be happily cured by Venesection alone, and due Purging, with mild Cathartics, the Doses of which are to be proportioned to the Age of the Patient. He, also, tells us, that in this Disorder Drinks, and liquid Aliments, ought to be taken in smaller Quantities than usual, whilst, in their stead, the Patient is moderately to use a mild Decoction of Sarsaparilla, China-root, Sanders, the Shavings of Ivory, and calcined Hartshorn, together with diuretic and antispasmodic Ingredients. He, also, tells us, that many have been relieved by the Decoction, or Syrup, of Castor and Saffron, as, also, by a Decoction of the Roots of male Piony, Misseto, and Hyssop.

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Doctor *Fuller*, in his *Pharmacopœia Extemporanea*, orders the following Preparation for the Chin-cough.

Take of well-cleaned live Millepedes, two Ounces; of the Powder of Aniſe-ſeeds, one Dram; of Nutmeg, half a Dram, and of white Sugar, one Ounce: Bruiſe all together, and pour upon them of Penyroyal-water, ſix Ounces; and of the compound Waters of Bryony and Piony, each one Ounce: Make a ſtrong Expreſſion, and of the expreſſed Liquor exhibit one Spoonful after every Paroxyſm of Coughing, till the Diſorder is removed.

Doctor *Cheyne*, in his Treatiſe of the Gout, informs us, that a Spoonful of the following Syrup, exhibited at a time, and repeated, infallibly cures the Chin-cough.

Take of Millepedes, a ſufficient Quantity; immerſe them in White-wine, expreſs the Juice, and add a ſufficient Quantity of Sugar to make a Syrup.

For the Cure of a Chin-cough, Turnep-broth is much recommended by old Women and Nurſes; and a proper Quantity of Sperma Ceti, in common Broth, is ſaid to be an admirable Remedy for this Diſorder. The Fleſh of fry'd Mice, eaten, is, alſo, among the common People, accounted a Specific: And *Baglivi* informs us, that the Moſs which grows upon Trees, eſpecially on the Oak, is from Experience found to be, of all others, the moſt effectual Cure for a Chin-cough. The *Aurum Moſaicum* is greatly recommended by ſome for the Cure of this Diſorder, but ought only to be exhibited to ſuch as are pretty far advanced in Age. The Oil of Sulphur by the Bell, the *Julapium Moſchatum*, and the *Syrupus ad Tuſſim Convulſivam*, are ſometimes uſed with Succeſs. Some order freſh Whey to be uſed for common Drink.

PERVERSIO. The ſame as DIASTREMMA.

PERVIGILIUM. Watching, or Want of Sleep; a Symptom very common in Fevers, and always of bad Preſage. See PYRETOS.

PERVINCA.

The Characters are;

The Branches are long and creeping; the Calyx is monophyllous and quinquefid, being divided into five long ſlender Segments. The Flower is monopetalous, and much in the Form of a Salver, deeply cut into five Lobes, and furniſhed with five Stamina adorned with elegantly bearded Heads. The Ovary ſeated in the very Bottom of the Calyx, between two lateral Placentæ, is bifid, and from the Centre of its Apex ſhoots forth a ſlender cylindrical Tube, expanded at the Top into a Circle, from whoſe Centre riſes a beautifully plumous Apex; the Ovary at laſt becomes a Fruit conſiſting of two Pods, which contain oblong ſulcated, and almoſt cylindrical Seeds.

Boerhaave mentions eight Species of *Pervinca*; which are,

1. Pervinca; vulgaris; latifolia; flore cœruleo. *Tourn. Inſt.* 119. *Boerh. Ind. A.* 311. *Clematis Daphnoides major.* C. B. P. 302. Raii Hiſt. 2 1091. Synop. 3. 268. *Clematis Daphnoides major flore cœruleo.* J. B. 2. 132. *Clematis Daphnoides latifolia ſive Vinca Pervinca major.* Park. Theat. 380. *Clematis Daphnoides.* Ger. 747. *Clematis Daphnoides ſive Pervinca major.* Emac. 894. THE GREATER PERIWINKLE.

It grows on Banks by the Sides of Ditches, but rarely flowers, in *April*; and it agrees in Virtues with the leſſer or common Periwinkle, and may be uſed in its ſtead.

2. Pervinca; latifolia, variegata. *T.* 120. *Clematis Daphnoides, major, flore variegato.*

3. Pervinca; vulgaris; anguſtifolia; flore cœruleo. *Tourn. Inſt.* 120. *Boerh. Ind. A.* 311. C. B. P. 301. Raii Hiſt. 2. 1091. J. B. 2. 130. *Vinca Pervinca.* Offic. Ger. 747. *Vinca Pervinca minor.* Ger. Emac. 894. Raii Synop. 3. 268. *Vinca Pervinca vulgaris.* Park. Theat. 340. *Clematis Daphnoides, Vinca Pervinca.* Chab. 118. PERIWINKLE.

Periwinkle, from a ſtringy, creeping, fibrous Root, ſends forth ſlender, ſmooth, weak Stalks, having two oval, ſmooth, ſhining-green Leaves, ſet oppoſite at a Joint. The Flowers grow ſingle at a Joint, on long Foot-ſtalks, uſually purple, ſometimes white, in Shape like the Flowers of Jeſſamine, but more round-pointed, which are ſometimes, but very rarely, ſucceeded by two long and ſlender Pods; it grows in ſhady Banks, and dry Ditches, and flowers in Summer. The Leaves are uſed.

This is a good vulnerary Plant, and of frequent Uſe in Wound-drinks, for Bruiſes, Contuſions, inward Bleeding, and Waſting, Spitting of Blood, the Exceſs of the Catamenia, and the Fluor Albus. *Miller's Bot. Off.*

This Plant is bitter, and gives a conſiderable Tincture of Red to the blue Paper; it is very likely, that the Oil and Earth predominate in the Periwinkle. Its Salt reſembles Alum; but it partakes a little of the urinous Salt, and is like the Alum, with which they mix ſome Urine, to make it cryſtallize the better. For,

By the chymical Analyſis, we obtain from this Plant, beſides ſeveral acid Liquors, a great deal of Earth and Oil, and very little volatile Salt. Periwinkle is vulnerary, aſtringent, and febrifugous. For ſpitting Blood, the immoderate Flux of the Piles, the Terms, or the Whites, pour two Quarts of boiling Water upon three Handfuls of the Leaves of Periwinkle, cover the Pot, remove it from the Fire, and give the Infuſion to drink by Glaſs-fulls. Its Conſerve and Extract have the ſame Virtues. For Bleeding at the Noſe, ſtop it with theſe Leaves bruiſed. Milk curdled, with the Decoction of Periwinkle, is very good for the Phthiſic: This Milk is preſcribed for the Dyſentery, and a Gargariſm is made of it for the Diſeaſes of the Throat. For the Dropſy they diſtil the Milk, after having macerated in it a whole Day the Leaves of Periwinkle, Tanſy, and Agrimony. This diſtilled Milk is a much eaſier Medicine, than the curdled Milk. *Martyn's Tournefort.*

The Leaves of Periwinkle, held in the Mouth, ſtop Bleeding at the Noſe, as we have frequently ſeen try'd, ſays *Coſtæus, Lib. de Stirp. Differ.* The freſh Leaves, ſpread upon coarſe and thick brown Paper, and well-matted and preſſed together, then covered with combed Flax, and afterwards ſuffumigated with Frankincenſe, being, by the Advice of an old Woman, apply'd to a ſtrumous Swelling, diſcuſſed it in a ſhort time, after it had been, for a whole Year, under the Treatment of a learned Phyſician, without Effect. The old Woman had, before this, with the ſame Medicine, cured another, whoſe Caſe was reckoned deſperate. *Raii Hiſt. Plant.*

4. Pervinca; vulgaris; anguſtifolia flore albo. *T.* 120. *Clematis, daphnoides, minor, flore candido.* C. B. P. 301. *Clematis, daphnoides, flore albo ſimplici.* J. B. 2. 130.

5. Pervinca; vulgaris; anguſtifolia; flore rubente. *T.* 120. *Clematis, daphnoides, minor, flore rubente.* C. B. P. 301. *Clematis, daphnoides, flore purpureo, ſimplici.* J. B. 2. 130.

6. Pervinca; vulgaris; anguſtifolia; flore pleno, ſaturate purpureo. *T.* 120. *Clematis, daphnoides, flore purpureo, pleno.* H. Eyſt. o. 1. F. 8. Fig. 5.

7. Pervinca; anguſtifolia; vulgaris; variegata ex aureo & viridi.

8. Pervinca; anguſtifolia; vulgaris; variegata ex argenteo & viridi; flore purpuraſcente, pleno. *Boerh. Ind. alt. Plant. Vol.* 1.

The Juice of this Plant is bitter, heating, penetrating, ſaponaceous, opening, deterſive, ſtimulating on all Sides, and vulnerary: Hence it affords a ſovereign Remedy for Infirmities proceeding from pituitous Cauſes. The Juice, boiled in Water, and drank to a good Quantity, opens the Uterus, provokes the Lochia, and revives the vital Heat. The Leaves cut ſmall, then boiled a little, and expreſſed, and the Juice taken in the Morning in Wine, is an excellent Remedy for the Scurvy, by depurating the Blood, and deterging the Primæ Viæ. It is proper for Virgins affected with the Chloroſis, and the Dyſentery. The Plant is very ſerviceable in the Phthiſis, and in Diſeaſes of the Fauces. The Leaves, uſed in Butter-milk, are good for the Fluor Albus. *Hiſt. Plant. adſcript. Boerhaav.*

PERUNDIS. See ZENDA.

PERUVIANUM BALSAMUM. Balſam of *Peru*. See BALSAMUM.

PERUVIANUS CORTEX. Peruvian Bark. See QUINQUINA.

PERYGUA. See ALATERNUS.

PERYSIAS, περυσίας. An Epithet of Wine, importing, that it is of the laſt Year's Vintage.

PES ANSERINUS. A Name for the *Chenopodium*; *Pes anſerinus; primum & ſecundum Tabernæmontani.*

PES CATI. A Name for the *Helichryſum*; *montanum*; *flore rotundiore.*

PES COLUMBINUS. See GERANIUM.

PES LEONIS. See ALCHIMILLA.

PES LEPORINUS. A Name for the *Trifolium*; *humile*; *ſpicatum*; *ſive Lagopus.*

PES TIGRIDIS. A Name for the *Sclarea*; *Indica, floribus variegatis.*

PESSARIUM, a Peſſary, a Medicine proper to be introduced into the *Pudendum muliebre*, for the Cure of ſeveral Diſeaſes incident to the Uterus, has had different Names, according to its Variety of Forms.

When it is prepared of the Length of the fore Finger, and the Thickneſs of the Thumb, with a due Roundneſs and Smoothneſs, it called *Peſſarium*, or *Peſſus*, "Peſſary," and by ſome, πριαπισκωτὲς (*Priapiſcotos*); but Preparations for the ſame Purpoſe, which are of a round Figure, like a Nodule, are called *Naſcalia. Morellus.*

Among other external Remedies employ'd by *Hippocrates*, were *Peſſaries* *. Theſe were a kind of Suppoſitories, which they introduced into the exterior Neck of the Matrix; they were prepared of Wool, or Lint, or Linen, mix'd with Powders, Oils, Wax, or other Things, and made round and long like a Finger.

* Πεσοὶ, πεσσθετὰ, κολλύρια (*Peſſi, Proſtheta, Collyria*); they were, alſo, call'd πριαπισκωτὰ (*Priapiſcota*), from their Figure; but that Word is not to be found in *Hippocrates.*

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The Uſe of Peſſaries was very frequent in antient Times; for they ſerved almoſt as an univerſal Remedy for female Diſorders. They were made to anſwer the Intentions of mollifying, ſuppling, opening, attracting, ſtimulating, cloſing, purging, and cleanſing the Matrix, of drying it, retaining it in its proper Place, and for other Purpoſes. In order to attain thoſe various Ends, they made uſe ſometimes of Oils and Fats, ſometimes of Juices of Herbs, ſometimes of acrimonious and ſtimulating Ingredients, as Nitre, Scammony, Tithymalus, Cantharides, Garlick, and Cumin; ſometimes of Aſtringents, as the Bark and Flowers of the Pomegranate, Rhus, or Sumach, Alum, and the like; ſometimes of Aromatics, as Myrrh, Caſtor, and ſweet-ſcented Plants. There was not a Diſtemper of the Uterus, in which they did not uſe Peſſaries; they were the Remedy for the Suffocation, which they pretended was cauſed by that Part; with Peſſaries they provoked or ſtopped the Menſes; they ſerved as Medicines for the Relaxation, or Falling out of the Matrix, for the ſuperfluous Humidities, Ulcerations, and Inflammations of the ſame, for a Dropſy of the Uterus, and for the Fluor Albus, and Sterility. With Peſſaries they facilitated the Expulſion of the dead Child, and the Afterbirth, and promoted the Child-bed Purgations, beſides other Services; not to mention, that they made uſe of them, alſo, as a Means to procure Abortion.

Peſſaries, or Tali, were by the Antients principally uſed in Diſorders of the Uterus, and diſtinguiſh'd into three Kinds, that is, the emollient, the aſtringent, and ſuch as open the Orifices of the Veins. Thoſe of the emollient Kind were uſed in Inflammations, Ulcerations, Riſings, Refrigerations, Diſtortions, and Inflammations of the Uterus. This Species of Peſſaries was prepared of *Tyrrhenian* Wax, the Oleum Cyprinum, or Suſinum, the Fat of a Gooſe or Fowl, freſh Butter, dry'd Reſin, the Marrow of an Hart, Fenugreek, and other Subſtances of ſimilar Qualities: Such as open the Orifices of the Veins were uſed, when the Intention was to recal the menſtrual Diſcharge, or remove a Cloſure, or Contraction of the Uterus. This Species was prepared of Honey, Mugwort, Dittany, the Juice of Cabbage, Liquorice, the Juice of Leeks, Rue, Scammony, and other Ingredients of a like Nature. But aſtringent Peſſaries were uſed for Purpoſes quite different from thoſe of the aperient Kind, ſince the Intention of the former was to check the menſtrual Diſcharge, contract the expanded Uterus, and prevent its falling down. The Conſiſtence of theſe Peſſaries muſt be ſomewhat thick and ſtrigmentitious. Then a Piece of Wool muſt be folded up in Form of a Tent, immerſed in the Ingredients, and introduced into the Mouth of the Uterus, with a Thread fixed to it, that by this means the Peſſary may be the more eaſily extracted, when it ſeems expedient. *Paul. Æginet. Lib. 7. Cap. 24.*

The Moderns have too much neglected the Uſe of Peſſaries of this Kind; but employ Peſſaries of various Figures and Materials, many of which are repreſented in *Tab.* LV. They are principally ſerviceable in a *Prolapſus Uteri*, and Incontinence of Urine in Females. Their Uſes are farther explained under the Articles of the Diſorders in which they are employ'd.

PESSOS. A Peſſary. See PESSARIUM.

PESSULUS. A Peſſary.

PESTICHIÆ. The ſame as PETECHIÆ.

PESTIS. The Plague.

The Plague is one of the moſt acute kind of Fevers, ariſing from a poiſonous Miaſma, brought from the Eaſtern Countries, and which proves mortal, unleſs, by the Vigour of the vital Motions, the Poiſon is ſoon carried off by means of Buboes and Carbuncles.

The Plague differs from other Fevers of the contagious, malignant, and exanthematous Kind, in this, that it is of all others, the moſt acute, ſince it ſometimes deſtroys the Patient on the firſt or ſecond Day of its Attack. In *Europe* the Plague is neither epidemic, nor ſporadic, ariſing from a prepoſterous Method of living, or an inſalutary Conſtitution of the Air; but, in our healthy Parts of the World, draws its Origin from a Contagion derived from the ſultry, and before infected Eaſtern Climes. A Plague, alſo, has this peculiar to it, that it is not, like other malignant and putrid Fevers, terminated by large Sweats, Fluxes, or other Excretions; but the Poiſon being in a critical and ſalutary manner, forced to the external glandular Parts, it is terminated by Tumors, which end in Abſceſſes. Beſides, contrary to what happens in other contagious and petechial Fevers, ſuch is the ſubtile Quality of the peſtilential Poiſon, that it quickly adheres to porous Subſtances, and, without any Diminution of its Force, may be convey'd to Countries many thouſand Miles diſtant from each other. It is, alſo, peculiar to this Contagion, that its malignant and ſpreading Nature is not only check'd, but, alſo, totally extinguiſhed, by intenſe Cold. Hence it happens, that in cold Weather, and cold Climates, a Plague is rarely or never obſerved, whereas it rages frequently and violently in hot and ſultry Climates.

But, as, in all contagious and malignant Fevers, the poiſonous Miaſma, taken in with the Air, inſinuates itſelf into the fermentable Saliva, and exerts its baleful Influence on the Parts through which it paſſes; ſo this, in a particular manner, holds true, concerning the peſtilential Contagion, which, immediately attacking the Head, Brain, Nerves, and nervous Fluid, excites a Torpor of the Head, a Senſe of Weight, Drowſineſs, an exceſſive Pain, a Stupor of the Senſes, Forgetfulneſs of every thing, Reſtleſſneſs, Watchings, and a Loſs of Strength. When this peſtilential Contagion is convey'd thro' the Fauces to the Stomach, it excites a Loathing of Food, Naufeas, Uneaſineſs of the Præcordia, a ſymptomatic Cardialgia, Efforts to vomit, and actual Vomiting. Then, being convey'd to the Membranes of the Spinal Marrow, and the nervous Coats of the Arteries, it not only produces an Horror, and a languid, ſmall, contracted, and frequent Pulſe, but, alſo, Deliquiums. All theſe are the ordinary Symptoms of a beginning Plague, and are ſo much the more violent and quick in their Operation, as the peſtilential Poiſon exceeds that of other contagious and malignant Diſorders.

The many violent and terrible Symptoms appearing under a Plague are no-where more fully and accurately deſcribed, than in the firſt Deſcription of this Diſorder given by *Thucydides* the Hiſtorian, when, in *Lib. 2. de Bello Peloponneſ.* he gives an Account of the Plague of *Athens* in the following Words: "For "my own part, being ill of it myſelf, and having ſeen others "afflicted in the ſame manner, I ſhall give an Account of it, "that, if it ſhould happen again, the Perſon who reflects on it, "may be able to form the better Judgment concerning it. "The Year in which it began was univerſally agreed to be "highly ſalutary, and free from other Diſeaſes; and, if by "chance any one was ſick before, all his Indiſpoſition termi"nated in this; and they who before were in perfect Health, "were, without any apparent Cauſe, ſuddenly ſeized with a "violent Heat in the Head, accompanied with Redneſs and "Inflammations of the Eyes. Their Tongues, Throats, and "internal Parts, became immediately bloody, whilſt their "Breath was fetid, and Reſpiration difficult. A Sneezing "and Hoarſeneſs enſued; and, in a ſhort time, the Pain de"ſcended to the Breaſt, and was accompanied with a violent "Cough. When this Pain was once ſettled in the Stomach, "a Vomiting of bilious Matter, of as various Kinds as ever "were ſpecified by Phyſicians, ſucceeded, but not without the "greateſt Anxiety and Uneaſineſs. Many were ſeized with "an Hiccup, that brought up nothing, but occaſioned a vio"lent Convulſion, which, in ſome, went off preſently; but "in others, continued much longer. The Surface of the "Body was neither very hot, nor pale, but rediſh, livid, and "full of ſmall Puſtules and Ulcers: But, internally, the Heat "was ſo intenſely great, that they could not endure the ſlighteſt "Covering, though of the fineſt Linen; but could only be "ſatisfied with abſolute Nakedneſs. It was, alſo, an infinite "Pleaſure to them to plunge themſelves into cold Water; and "many of thoſe who were not well attended, did ſo, running "to Wells, in order to quench their inſatiable Thirſt, which "ſtill remain'd, whether they drank much or little; a great "Uneaſineſs and Reſtleſſneſs attending them, together with "a continual Watching. Whilſt this Plague was advancing "to its Height, the Patient's Body did not fall away, but re"ſiſted the Violence of the Diſorder beyond Expectation; ſo "that many died on the ninth and ſeventh Days, of the inter"nal Burning, ſome Strength yet remaining; or, if they held "out longer, many of them afterwards died of Weakneſs; "the Diſtemper deſcending to the Belly, and there producing "violent Exulcerations and Diarrhœas: For the Diſeaſe went "through the whole Body, beginning firſt in the Head; and, "if any one ſurmounted theſe terrible Symptoms, violent "Diſorders of the Extremities ſucceeded; for the Plague "broke out upon the private Parts, the Fingers, and the Toes; "and many ſuſtained the Loſs of theſe Parts: Some, alſo, loſt "their Eyes; whilſt others, immediately upon getting up, "were ſeized with a total Forgetfulneſs of every thing, neither "knowing themſelves, nor their moſt intimate Acquaintances." And, a little after, he adds theſe Words: "The Diſeaſe, there"fore, to paſs over many ſurpriſing Circumſtances, which "differed in different Perſons, was in general ſuch as I have "deſcribed it. And, as for other uſual Diſtempers, they either "did not then appear, or, if they did, they all terminated in "this, as Lines do in a common Centre. Some of the Patients "died for want of Care; and others, notwithſtanding all the "Care that could poſſibly be taken of them: Nor could it be "affirm'd, that there was any certain Remedy, which, when "uſed, proved univerſally beneficial, ſince, if it did Good to "one, it did Harm to another. Nor was there any Differ"ence in different Conſtitutions, as to Strength or Weakneſs, "to enable them to reſiſt the Violence of this Plague, which "ſwept all away, whatever Care was taken, or whatever Re"gimen they uſed. But the moſt terrible Circumſtance of all "was the Dejection of Mind in thoſe who found themſelves

"beginning

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" beginning to be ill; for, growing immediately desperate, they " gave themselves up for lost, without making any Efforts for " their own Relief; and one being infected by another, whilst " they endeavoured to take care of each other, they died " like Sheep. And this Circumstance, of all others, contri- " buted most considerably to the surprising Mortality."

In a Plague, however, the Symptoms are not always of the same Nature, but very considerably different according to different Constitutions; and this Diversity is carefully to be investigated by the Physician. Now, 'tis universally agreed upon by all Authors who have wrote concerning the Plague, that those who are of a spongious, rare, and porous Habit of Body, as, also, those who are fat, of sanguineous and phlegmatic Temperaments, Women, young Persons, and Infants, those of timid and abject Dispositions, those accustomed to poor or unwholsome Diet, those addicted to Surfeits, and who protract their Entertainments till late at Night, are much more readily seized, and more terribly afflicted, with the Plague, than those of bold and resolute Minds, lean Habits, nervous Constitutions, Persons of large Vessels, Adults, those advanced in Years, those obnoxious to the hæmorrhoidal Discharge, and those who have Fontanels, or open Ulcers. 'Tis equally certain from Experience, that nothing lays a better Foundation for receiving or heightening the pestilential Miasma, than Dread, the Fear of Death, and Consternation: So that 'tis certain, that some have not only been seized with the Plague, but, also, died of it, purely through the Influence of Terror; for those Passions of the Mind are the most considerable, which lessen and destroy the vital Motion of the Heart and Arteries, and, consequently, the Circulation of the Blood, whilst, at the same time, they impair the vital, natural, and animal Force, since, by the Benefit of these Motions, the Contagion received is to be exterminated.

'Tis an hard Task to determine the specific Nature of the pestilential Poison *à priori*, because it is hardly subjected to our Senses. But, in as far as we are able to form a Judgment of it *à posteriori*, and an Induction of Facts, it seems to consist partly of a sulphureous, putrid, and multiplicative Nature, like Leaven, and partly of an highly subtile, acrid, and caustic, though, at the same time, more alcaline than acid, Nature. Its putrid and highly foreign sulphureous Nature appears from this, that all malignant Disorders derive their Origins from the putrid Vapours arising from unburied Carcases, putrid stagnant Lakes, and other fetid and excrementitious Sordes; and that this Miasma immediately contaminates the nervous Fluid, stops the systaltic Motion of the Solids, and induces a sphacelous Corruption of the Juices. But that this Miasma is, also, possessed of a caustic and subtile Acrimony, is certain from this, that the Ingress of contagious Disorders is not only generally preceded by Swarms of Insects abounding with a caustic Salt, and generated from Putrefaction; but, also, from this, that, by vellicating and corroding the nervous Fibres, it produces a Pain, Tumor, and Inflammation, sufficiently conspicuous in the Buboes and Carbuncles.

This pestilential Poison, as we have above observed, when received into the Body, totally disturbs and perverts its Functions; and, unless suddenly forced from the internal to the external Parts, proves infallibly mortal: Nor is this Effect, as in other malignant Disorders, produced by profuse Sweats, Discharges of the Fæces and Urine, the Hæmorrhoids, or Menses, nor by Discharges of Blood from the Nose, whether spontaneous, or excited by Art; since these Excretions, especially when profuse, rather prognosticate the Death of the Patient. But the salutary and critical Excretion, by which the Plague is perfectly terminated, is brought on by Tumors appearing on the Surface of the Body: So that, as in an Erypsipelas, this happens within the third and fourth Days; and the sooner and more copiously they appear, the Violence of the Disorder is so much the more mitigated; for that these Tumors contain and eliminate a formal Poison, is certain from this, that if the Surgeon opens the Vein of a sound Person with a Lancet, which has been employ'd in opening one of these Tumors, the sound Person is forthwith seized with the Plague.

These pestilential Tumors are of two Kinds: The one is by the *Greeks* called *Bubo*, a Name common to all Tumors. These Buboes appear principally on the glandulous Parts, and most frequently on the Groins, under the Arm-pits, on the Parotid, Mammary, and inferior Axillary Glands, under the Chin, as, also, on the Glands adjacent to the Aspera Arteria; and discover themselves by an hard painful tensive Tumor of the Glands, accompanied with Heat; and, if they are of a good Kind, they become humid, soft, and are suppurated. The other Kind is far worse than the former, and is by the *Greeks* called *Anthrax*, which signifies a live Coal, from which the *Latins* derive the Word *Carbunculus*. *Celsus*, in *Lib.* 5. *Cap.* 28. describes a Carbuncle in the following manner: " It is a " Redness of the Part with Pustules not rising far above it; " and these Pustules are generally black, tho' sometimes they are " livid, or pale. There seems to be a Sanies in these; and the " Bottom is of a black Colour. The Body of them is more hard " and dry, than it ought to be naturally; and is surrounded with " a Crust, attended with an Inflammation: Nor in the Part af- " fected can the Skin be raised, but adheres to the subjacent Flesh." *Mindererus*, who lived where the Plague raged, and has wrote excellently concerning it, describes Carbuncles in the following manner: " When a Carbuncle, of the Bulk of a Mustard or " Hemp-seed, happens, it contracts round about it a burning " Disk, or Halo, as large as a Trencher, according to the Part " affected: The Flesh affected is separated from the sound " Parts, and, like an Eschar, or putrid Flesh, falls off; so that " the Cavity gapes, as if it had been corroded by that Species " of Cancer called *Lupus*." No Part of the Body is free from these Carbuncles; but they most commonly possess the Membranes of the Muscles, and the nervous and fibrous Substance of the Skin, especially in the Back, the Arms, and the Thighs. In the Part affected, the Patients first perceive an exquisite Itching; and, if they scratch, Pustules of a red, livid, whitish, purple, or black Colour appear. These Pustules are very thick, and appear full of Pus; and, under some of them, a cineritious Crust is form'd, which being taken away, the subjacent Flesh appears corrupted and spongious, with an intolerable Pain and Heat of the adjacent Flesh. Then a total Mortification or Sphacelation of the Part ensues.

But, among those to whom the Plague proves mortal, some die, on the first or second Day, of a Syncope, which, no doubt, proceeds from the Terror with which they are struck. But in many, when the Poison either is not expelled, or when expelled, suddenly it returns, and, lodging in the Coats of the nobler Parts, such as the Pleura, Oesophagus, Stomach, Intestines, and Meninges, a Sphacelus is induced, which quickly spreads to the Viscera and Blood; by which it happens, that the Carcases of such Patients immediately become surprisingly fetid, tumefied, and are quickly putrefied. Sometimes, also, when there is too large a Quantity of pestilential Tumors, the Patients, just as in the Small-pox, die of a symptomatic Fever, on account of the Inflammation, Pain, and intolerable Heat.

The CURE.

Since 'tis certain, that the Plague is not originally generated in *Europe*, but is imported from other Countries, there can be no more safe and infallible Advice given, than to fly from the Contagion. It is the Advice of *Celsus*, that the Person, who is as yet safe, but cannot long be sure of being so, sail, and travel, which in the *Italian* Plague, in the Year 1625. were of singular Service, as we are told, by *Natalis Comes*, *Hist. Lib.* 27. And *Sanctorius*, in *Med. Stat. Sect. Aph.* 138. informs us, " That they, who, in order to avoid the Plague, advise any " other thing than flying from it, are either ignorant them- " selves, or intend to impose upon others." For the same Reason, those Princes excellently consult the Welfare of their Subjects, who, in the Time of the Plague, use all Methods to prevent its Importation; and, if an House is infected, forbid sound Persons to enter it, and forthwith burn all the Furniture, lest, with it, the Contagion should be propagated to others: But all Persons, when the Plague rages, ought to live very temperately, and every Degree of Excess is to be avoided in the Non-naturals, especially with respect to the Passions of the Mind; and all those things are to be abstained from, which impair the Strength, disturb Perspiration, and generate Crudities in the Primæ Viæ. In a particular manner, the Mind is to be fortified, and Terror, Dread, and Cowardice, are to be banished, since 'tis certain, that these Passions, during a Plague, destroy more than the Contagion itself.

Those whose Business obliges them to live among the Infected, ought to take care, that the Miasma do not enter the vital Juices, nor convert to its own Nature the salival Humours lodged in the Primæ Viæ, which easily happens. For this Purpose, we recommend frequent Vomitings, and Washings of the Mouth, with Wine-vinegar or Wine, or the Drawing these Liquors up the Nostrils; and these are still more efficacious, if they are impregnated with Scordium, Rue, or Citron-peel; for an Acid seems to be the genuine Antidote against a Poison of a putrid and sulphureous Nature, because from Chymistry it is certain, that an Acid fixes and enervates Sulphur and volatile Salts. For this Reason it is far safer to use Acids gently, or contain them in the Mouth, than to chew alexipharmic Roots, such as those of Zedoary, Angelica, and Masterwort. Hence, 'tis, also, expedient to drink *Rhenish* Wine, or to take a few Spoonfuls of bezoardic Vinegar, diluted with Water, or Wine. Thus *Forestus* informs us, " That, " when the Plague was raging, he used, when called to his " Fellow-citizens, to fortify himself by these Medicines, espe- " cially by chewing Citron-peels." The *Turks*, according to

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Cole, Lib. de Morb. Acut. when the Plague rages, frequently uſe Lemon-juice, large Quantities of which they ſqueeze into all Kinds of Broths.

Among the external Remedies for this Diſorder, many recommend Fontanels; becauſe it has been obſerved, that thoſe who had chronical and ſcorbutic Ulcers in their Limbs, remained free from the Plague, and other contagious Diſeaſes. *Hildanus* greatly commends Fontanels for this Purpoſe; and, in *Cent.* 4. *Obſ.* 23. has theſe Words: "I do not remember, "that any of thoſe who had Fontanels in their Legs and Arms, "died of the Plague, except one or two, who were highly "cacochymic; and I have found Fontanels to be an efficacious "Preſervative againſt the Plague, both in myſelf and others." I remember the ſame was, alſo, told me by the Phyſicians who were Witneſſes to the Plague of *Erfurt*. The Reaſon of ſo ſurpriſing a prophylactic Effect ſeems to be this, that the Matter of the received Miaſma, which generally firmly adheres to the ſerous Parts of the Blood, will, by the Vigour of Nature, be conveyed to the Part where the Fontanel is, and thence eliminated as being weaker. Hence an unuſual Pain and Tumor are obſerv'd about Fontanels. Perhaps, alſo, the Confidence of the Efficacy of Fontanels may remove the Fear, rouſe the Spirits, and work like a kind of Amulet.

In the Cure of a Plague, the following Intentions are to be purſued:

1. To promote the Expulſion of the received Miaſma in a proper manner, eſpecially by theſe critical Tumors, which are to be duly manag'd: And,

2. To rouſe and ſupport the languid Strength, which is of ſo great Importance to Life; and to remove, or relieve, the moſt urgent Symptoms: But, ſince I am not experimentally acquainted with the Methods of anſwering theſe Intentions, I ſhall deliver the Method of curing a violent Plague, deſcribed by *Johannes Langius*, *Lib.* 1. *Epiſt.* 18. and then ſubjoin my own Opinion, and ſuch Obſervations as are moſt agreeable to Reaſon and Experience. "You know, ſays this celebrated "Author, that I have cured many of the Plague, whoſe Re"covery was deſpair'd of, by the following Method: Firſt, "if, for ſome Days before the Beginning of the Diſeaſe, little "or no Fæces were diſcharg'd, then I rendered the Body ſo"luble by a Suppoſitory, or a gentle Clyſter: Then I exhi"bited a ſudorific Alexipharmic, which, according to the Age "and Strength of the Patient, is to promote a Sweat for two "or three, or more Hours: Then I applied an Epithem to the "Heart. Six or ſeven Hours after the Sweat, ſupporting the Pa"tient's Strength mean time, by ſome proper Broth, I open'd a "proper Vein; and, immediately after the Uſe of the Alexi"pharmic, exhibited, every Morning and Evening, alterative "Draughts, which by their Quality reſiſted the Poiſon, and were, "at the ſame time, cordial; ſuch as Decoctions prepared of the "Juices of Citrons, Lemons, Oranges, Sorrel, and Bugle, "with a little Vinegar and Sugar. In the Decline of the "Diſeaſe, if the Appetite is languid, in order to carry off the "Remains of the Diſeaſe, I exhibited a Medicine prepared of "Rhubarb, Agaric, Caſſia, or *Elæomeli*, or Manna, and "Tamarinds. Then I order'd the Surgeons not to precipitate "the Conſolidation of the Carbuncles and Ulcers; and thoſe "who had the Care of the Patients, to exhibit proper Ali"ments and Liquors at the Time preſcribed: By which Me"thod, a large Number of Patients were reſtored to perfect "Health." A little after, he goes on in the following manner: "But if Buboes and Carbuncles appear about the Emunctories "near the Ears, if Abſceſſes are formed under the Axillæ, if "Buboes are formed in the Glands of the Groin, or if Car"buncles appear in the Arms or Legs, then, as in poiſonous "Wounds, we are, with all Expedition, to apply to the Part "ſuch Medicines as extract the Poiſon, or Cupping-glaſſes, or "a Plaiſter of Leaven, Treacle, Meal, Muſtard, and Onions, "roaſted under the Aſhes, adding Opopanax and Galba"num diſſolved in ſtrong Vinegar: Then ſcarify the Abſceſs "before its Maturation, or lay it open, or cauterize it. But, "if the Patient dreads the actual Cautery, we may uſe one of "the potential Kind, prepared of Cantharides and Leaven, or "the Roots of the *Flammula* bruiſed in Oil; which, by their "heating and burning Quality, not only attract the noxious "Humours, but, alſo, frequently open the Collections made "of them."

This Method of curing the Plague is highly congruous to Reaſon; for, in the Cure of all Diſeaſes, it is to be laid down as a Maxim, that if, for ſome of the firſt Days of the Diſorder, few or no Fæces are eliminated, the Body is to be rendered ſoluble by a gentle Clyſter, that, by this means, the Inteſtines may be freed from the Excrements, leſt otherwiſe the Symptoms ſhould be increaſed, and the Efficacy of the Medicines obtunded. *Langius* is, alſo, greatly to be commended, for uſing an Alexipharmic, in order to excite a Sweat for ſome Hours, ſince, by this means, the Poiſon is more expeditiouſly exhaled and diſſipated. The Application of an Epithem to the Heart is, alſo, a Circumſtance of great Importance; for tho' it does not immediately touch and affect the Heart, but only the Right Orifice of the Stomach, and its nervous and muſcular Coats, yet it is of the laſt Importance, that the Stomach, which is an highly nervous Part, of exquiſite Senſation, has an intimate Communication with the nervous Parts of the whole Body, and in which the Poiſon firſt exerts its virulent Influence, ſhould be well defended; which Intention is anſwer'd by ſuch Medicines as are antiſpaſmodic, and, at the ſame time, corroborative and balſamic; for which Purpoſe I generally recommend ſuch as are prepared of Treacle, expreſſed Oil of Nutmegs, Camphire, Saffron, Caſtor, and *Peruvian* Balſam. After the Uſe of Alexipharmics, the Opening of a Vein is, alſo, highly beneficial: For to begin the Cure with Veneſection, is dangerous, becauſe, one or two Days after it, the Motion of the Blood to the Surface of the Body, and conſequently the Perſpiration, is diminiſhed, and the Poiſon retain'd. Beſides, the Dread and Terror with which thoſe who are ſeiz'd with the Plague are ſtruck, forthwith recal the Blood from the Circumference of the Body; ſo that Veneſection, which produces the ſame Effect, muſt, of courſe, prove prejudicial. But, after the Uſe of Sudorifics, Veneſection may be admitted, if Cuſtom, a Redundance of Blood, a luxurious Diet, or an exceſſive Uſe of Wine, requires it, becauſe, the Redundance of the Blood being removed, the Propulſion of the virulent Matter to the Glands is facilitated and promoted; and this is ſo much the more effectually done, if afterwards the Flux of the Blood to the external Parts is now-and-then aſſiſted by gentle Diaphoretics: Acids, ſuch as Vinegar, the Juice of Lemons and Citrons are, alſo, juſtly recommended, ſince they reſiſt the Poiſon, prevent the Putrefaction of the Humours, and the Diſſolution of the Blood; for which Reaſon they are preferable to all other alexipharmic and antipeſtilential Medicines.

When the Diſeaſe is on the Decline, *Langius* purges the Patient by gentle Laxatives, which, as in the Beginning of the Plague, and other contagious Diſorders, it proves hurtful, by retarding the Motion of the Humours to the external Parts, ſo it is highly beneficial in the Decline of theſe Diſorders: For, by this means, the Sordes generated during the Diſeaſe are eliminated; whereas, if they were retain'd, the Appetite would be deſtroy'd, ſlow and purple Fevers induced, the Strength render'd languid, ſlow Heat brought on, and a new and violent Diſorder of the ſame Kind frequently produced again. Then he orders the Poiſon, in the peſtilential Tumors, to be extracted by Cupping-glaſſes, Scarification, and Veſicatories; in which he is, alſo, ſeconded by the beſt Authors: For *Riverius*, in *Obſervat. Cent.* 2. *Obſ.* 19. greatly recommends Cantharides made up with Leaven and Vinegar, and applied behind the Ears, or to the other uſual Emunctories; after this, the Patient is to be ordered to Bed; and, in twenty-four Hours, a black and ſerous Humour is diſcharged, by which means the Plague is in a few Days removed. *Langius*, alſo, juſtly adviſes, not to conſolidate the Ulcers too ſoon: But, the Matter being ſolicited to the external Parts, and a Suppuration brought on, the Tumor is rather to be open'd, and the Ulcer cleanſed with the uſual Digeſtives; but it is to be kept long open with a Tent, that the Poiſon may be ſufficiently eliminated, and the Ulcer, at laſt, brought to a Cicatrix.

Sanctorius, in *Aph.* 139. *Medicin. Stat.* affirms, "That "few of the Nobility are cured even by the Uſe of Medicines, "whereas many of the common People are cured without "them." For 'tis certain from Experience, that common People deprived of all the means of Relief, and who uſe a temperate Regimen, and large Draughts of light Liquors, ſooner recover in peſtilential and other contagious Diſorders, than thoſe in opulent Circumſtances, who are ruined by a Redundance of Medicines, and a Variety of Advice; for, in the former, Nature is robuſt and vigorous, to whom if the Cure is committed, it ſucceeds far better, than when attempted by Art, which ſometimes hinders and diſturbs it. But, in Perſons of opulent Fortunes, Nature is often diſturbed in her Operations, and the Diſeaſe terminates unluckily, on account of their irregular Method of Life, and their too liberal Uſe of Medicines, which are ſometimes highly improper.

In the Cure of a Plague, nothing is more prejudicial, than a liberal Uſe of the alexipharmic Roots turgid with an hot volatile Oil; ſuch as thoſe of the *Carline* Thiſtle, Angelica, Butterbur, Zedoary, *Virginia* Snake-root, Maſterwort, Swallow-wort, Burnet; the Eſſences and Elixirs prepared of theſe, Treacle, and Mithridate. But ſtill more prejudicial are the ſo much commended urinous and volatile Spirits; ſuch as thoſe of Hartſhorn, Vipers, and Soot, as, alſo, volatile Salts, and Balſam of Sulphur. For the peſtilential Miaſma is ſo far from being expelled by theſe means, that it is rather retained, and more deeply rooted in the Conſtitution: For it is a conſtant Law in the animal Œconomy, that the Secretions

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which precede the Excretion of the recrementitious Parts, succeed better, when the Humours are moderately and freely convey'd to the Emunctories, than when they are thrown into violent Commotions. Hot Medicines rather increase the Uneasiness about the Præcordia, augment the Heat, promote the Dissolution of the Blood, and easily force the malignant Miasma from the Stomach, and nervous Parts; in consequence of which, they cannot fail to prove prejudicial. This is sufficiently certain from all the Authors, who have liv'd where the Plague raged, and especially from *Hildanus*, *Chald. de Heredia*, and from *Thonerus*, who informs us, "That those who used hot "Alexipharmics, died of the Plague."

Nor are we, in a Plague, absolutely to condemn the Use of alexipharmic Roots and Herbs; for they are by no means prejudicial, when corrected with Acids and Nitre. Thus I have been informed, that in the Plague, which in the Year 1682. raged at *Hall*, nothing was more beneficial than a Mixture of the Water of Carduus Benedictus with four Spoonfuls of Wine-vinegar, and of Crabs-eyes and Treacle, each a Dram, frequently exhibited. In that Plague, also, which in the Year 1576. raged almost all over *Lombardy*, many, and especially the Inhabitants of *Milan*, were said to be cured by the Juice of Goats-rue mixed with Vinegar, Carduus-water, and a little Treacle, covering their Bodies afterwards, in order to sweat. *Thonerus*, in *Observat.* informs us, that in the Beginning of a Plague nothing prov'd so beneficial, as Treacle-vinegar, exhibited in order to provoke a Sweat; and that in the Year 1543. when a malignant Fever raged among the Soldiers, a whole Regiment of them was preserved by this Vinegar, every one recovering who used it, except a few, to whom it was exhibited too late. *Kircher*, also, in his Treatise *de Peste*, informs us, that in the *Roman* Plague so happy Effects were produced by an Infusion of Vinegar with Rue, the Root of Burnet, Betony, Garlick, and Juniper-berries, with the Addition of a little Camphire, that whoever used it, even tho' they liv'd among the Infected, escaped the Plague. Besides, in malignant Disorders, as well as in the Plague, the Aqua Prophylactica Sylvii has been always greatly esteemed, because the principal Ingredient of it is Vinegar: For this Reason, *Gesner*, in *Lib.* 3. *Epist.* 27. advises to exhibit all Alexipharmics in Wine mixed with Vinegar. But these Alexipharmics mixed with Acids are principally proper on the first Day of the Disorder, where Resolution and Sweat are necessary; for *Mindererus* asserts for a Truth, that, unless, twenty-four Hours after the Invasion of the Disease, alexiterial Medicines are exhibited, all Attempts to cure the Patient afterwards prove fruitless.

But 'tis universally allow'd by all who have wrote on this Disorder, that the most present and efficacious Medicines for a Plague, are those of the acid and earthy Kind. Thus *Fracastorius*, in *Lib.* 3. *de Morb. Contag.* both for preventing and curing the Plague, orders the following Medicine:

> Take of the Juice of Wood-sorrel, two Ounces; of the Juice of Citrons, one Ounce; of Diascordium one Dram; of the Cordial Spices, two Scruples; and of Vinegar, one Ounce.

Mindererus, *de Peste*, *Cap.* 15. has these Words: "There "is no Putrefaction, no Infection, no Depravation of the "Juices, which cannot be subdued by Acids; and, to speak "the Truth, if I was debarred the Use of vitriolic Medicines, "I should be but ill qualified for the Cure of a Plague." *Fonseca*, *de vera Rat. curand. Pest.* affirms the same: "For, "says he, *Johannes Crato*, *Augenius de Monte Sancto*, *Martinus* "*Rulandus*, and others, affirm, that in pestilential Fevers the "Spirit of Vitriol is highly beneficial; and I can from my own "Experience affirm, that I have with great Success exhibited "it not only with Syrups, but, also, with Conserve of Roses." Among earthy Substances, and those of the fixed bezoardic Kind, the most considerable are, diaphoretic Antimony, the Bezoardicum Minerale, Crabs-eyes, Hartshorn calcin'd, and philosophically prepared, Amber, Seal'd Earth, *Armenian* Bole, and Cinnabar. Of these various Medicines may be prepared, and used either alone, or in Conjunction with Acids. But, with respect to these, the Curious may satisfy themselves in *Antonius Schneeberg* in *Catal. Med. Simpl. adverss. Pest.* *Henricius*, *a Bra. Unzerus*, *Lib.* 2. *Antid. Pestil.* and *Mindererus de Peste*, *Cap.* 15.

Among the Medicines conducive to the Cure of a Plague, none are more considerable than Analeptics; for in this Disorder the Strength is greatly impaired, not only by the Consternation and Terror of Mind, but, also, by the Malignity of the Disease. Hence the Physician is carefully to remove every thing, whether of a moral or natural Kind, which is prejudicial to the Strength; and, in the Cure, he must diligently avoid Anodynes, as, also, highly vaporous and fetid Substances. For recruiting the Strength, nothing is better than a Cordial Water, which is prepared in the following manner:

> Take of *Turkish* Baum, four Handfuls; of Rose-leaves bruised with Salt, and of the Flowers of Lilies of the Valley, each one Handful; of recent Citron-peel, half an Ounce; of Cinnamon, one Ounce; and of Mace, half a Dram. Pour upon these, of *Rhenish* Wine, one Quart; of common Water, three Quarts; and, by a gentle Fire, draw off two Quarts and an half.

This Water, mixed with an equal Quantity of that of Carduus Benedictus, may either serve as a Vehicle for the other Medicines, or it may be exhibited alone with Syrup of Citron-juice, and acidulated with Spirit of Salt.

Nor are Emetics less beneficial in a Plague, since the first Intention of Cure is, with the utmost Expedition, to eliminate the received Poison from the Body. Now the contagious Miasma is first of all mixed with the Saliva, when it descends to the Stomach; whence it is convey'd to the Mass of Blood. Hence 'tis proper, with all Expedition, to eliminate the Poison by the same way it enter'd, and, at the same time, to evacuate, by Vomit, the Crudities of the Primæ Viæ, which greatly heighten its deleterious Quality. But this must be done as soon as any Person finds himself infected, and perceives a Languor and Cardialgia. Thus 'tis certain from Experience, that by these means, and the subsequent Use of Sudorifics, the Plague, and other malignant Disorders, may be checked in their Beginning. To this Purpose, there is a curious and memorable Observation in *Riverius*, concerning a certain Man, who, as soon as he found from the Symptoms, such as a Pain of the Head, and Nausea, that he was seized with the Plague, thrust the End of a Feather, immersed in Oil, into his Fauces; upon drawing which out, he evacuated, by Vomit, a Matter at first serous, then yellow, and at last porraceous. Then, betaking himself to his Bed, he took Broth, sweated, and was forthwith recovered.

The Use of Venesection is not equally agreed upon by all, since some condemn, whilst others approve of it. *Celsus*, in *Lib.* 3. *Cap.* 4. gives the following excellent Advice: "Pesti-"lential Fevers, says he, require a particular Consideration, "since, in these, Hunger, Medicines, or Purges, are by no "means useful. But, if the Strength of the Patient permits, "Venesection is highly beneficial, especially when the Dis-"order is accompanied with Pain." *Riverius*, also, affirms, that in a pestilential parotid Tumor, which destroy'd considerable Numbers, he preserved many by moderate and repeated Venesection; a few Ounces, for Instance, being only taken away. Venesection, however, is never to be used in the Beginning, or immediately after the Invasion, when the Patient is rack'd with Terror and Dread. But if there is a Plethora, and the Patient has sufficient Strength, it may be moderately used on the second or third Day. [Other Authors, however, recommend copious Bleeding in the very Beginning, as it should seem, upon very good Grounds.]

Neither are Physicians agreed about the Use of Nitre in a Plague: Those who condemn it think, that it refrigerates too much, and, for that Reason, resists the Expulsion of the Poison; and that the pestilential Poison is stupefactive and putredinous, and therefore fatal Diarrhœas are to be expected from its Use. Those, on the contrary, who approve of it, maintain, that, in Conjunction with Diaphoretics, it must be as beneficial in a Plague, as in other exanthematous, malignant, and inflammatory Fevers: But the Contest is easily decided; for the individual Nature and Constitution of the Patients are to be regarded, and the Symptoms of the Disease duly consider'd. If the Patient is plethoric, the Temperament choleric or sanguineous, the Heat violent, and the Fever intense, accompanied with Thirst, and an Head-ach, nitrous Substances exhibited in small Doses, with the bezoardic Powders, are highly beneficial. But where a Torpor and Drowsiness, a weak Pulse, a Coldness of the Extremities, and an excessive Fear, have preceded, Reason informs us, that nitrous Preparations are to be abstain'd from. But 'tis always safer to associate the Nitre with Camphire, by which Union the vaporous Nature of the Camphire, and the refrigerating Quality of the Nitre, are mutually corrected; by which means a Medicine is produced, which is not only alexipharmic, but, also, effectually resists Inflammation. I remember, when at *London*, to have heard an old Surgeon, who was at *Vienna* when the Plague raged in it, say, that he, with great Success, used what he called *The black Electuary*, composed of Elder-rob, and Honey, each half a Pound; of Gunpowder and Camphire, each a Dram. The Dose is one or two Drams. And, *Giselerus* affirms, that, in the Plague of *Brunswick*, he, also, with great Success, used Gunpowder.

Besides these, critical Tumors, which terminate a Plague, are to be skilfully treated. Buboes are a good Sign, when they soon appear, and are quickly maturated: But, when they immediately recede, Death is either to be dreaded, or, at least, a Train of terrible Symptoms. Thus, if inguinal Buboes disperse, a Palsy,

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a Palsy, or a Gangrene of the Side, ensues: If Tumors under the Chin recede, an intercepted Deglutition, both of solid and fluid Aliments, follows, with a Quinsey, which generally proves mortal. Tumors behind the Ears are dangerous; those with Carbuncles on them, still worse; and those surrounded with a livid Circle, mortal. Carbuncles are always worse than Buboes, but they are the more dangerous, the larger, the blacker, and the nearer the Heart they are. In both, Sudorifics, and such Medicines as force the Humours to the Circumference of the Body, are most proper. When Buboes come slowly forward, attracting Medicines, Cupping-glasses, and Vesicatories, are ordered to be applied. If the Buboes are protuberant, the Suppuration is to be promoted by Cataplasms of Figs, white Lily-root, Onions roasted under the Ashes, Meal of Linseed, Honey, and Saffron; or we are to apply suppurating and discutient Medicines at the same time, such as the simple Diachylon-plaister, or that made up with the Gums, the Mucilage-plaister, and the Melilot-plaister. When the Buboes are suppurated, they are to be laid open, and cleansed with the Liniment of *Arcæus*, sometimes mixed with Basilicon; then they are to be consolidated, but not too soon, since 'tis better the sanious Matter should be suffered to flow for a considerable time. To Carbuncles, because the Humour is already subject to Corruption, we are not to apply Suppurants; but we are to endeavour to procure the falling off of the Crust: For which Purpose, the Authors who write on the Plague, order the adjacent Parts to be anointed with a Digestive, and some acrid Plaister, to be laid upon the Carbuncle. When the Crust is fallen off, the Carbuncles are to be treated with the Unguentum Ægyptiacum, or the Unguentum Fuscum Wurtzii, with Honey of Roses. But if a sphacelous Corruption is present, and seems to spread, it is to be checked by a sufficient Scarification, and the Application of some Liquor which powerfully resists Inflammation and Putrefaction. A Liquor of this Kind, much recommended as highly effectual, may be prepared in the following manner:

Take of rectified Spirit of Wine, four Ounces; of Camphire, two Drams; of Saffron, one Dram; and a Dram of artificial Nitre, which is prepared of urinous Spirit of Sal Ammoniac, and Spirit of Nitre: And let this be perfectly dissolved in Spirit of Wine.

As to the Regimen, it is to be observed, that, as in all exanthematous Disorders, so, much more in a Plague, excessive Heat, both of the Bed and Room, is to be avoided, as highly prejudicial. On the contrary, Cold is to be guarded against; lest, by its means, the Eruption of the Tumors, and the Exhalation of the poisonous Matter through the Pores of the Skin, should be prevented. In this Disorder, all things ought to be temperate, since Danger attends both Extremes. *Hoffman.*

PETALA. Petals; that is, the Flower-leaves of Plants. See the Explication of Botanic Terms, under the Article BOTANY.

PETALODES, πεταλώδης. An Epithet for the Sediment of Urine, importing scaly, or resembling Leaves; which is a Sign of an unequal Colliquation of the Parts of the Body, and sometimes of an Erosion, or Exulceration, of the Bladder. In Botany *Petalodes* is an Epithet for those Plants, which are furnished with Flower-leaves, or Petals; whereas those, which have none, are called *Apetalous*, that is, without Petals.

PETASITES.

The Characters are;

The Root is large and perennial; the Leaves are grey, large, and orbicular. The Calyx is cylindrical, multifid, squamous, and contains many Floscules collected into a Flower. The Flowers are disposed in a Thyrsus, and appear before the Leaves; and the Ovaries are furnished with a Tube, which has a clavated, bifid Apex.

Boerhaave mentions four Species of *Petasites*; which are,

1. Petasites; major; & vulgaris. C. B. P. 197. *Tourn. Inst.* 451. *Boerh. Ind. A.* 118. *Petasites.* Offic. Ger. 667. Emac. 813. Raii Hist. 1. 260. Synop. 78. *Petasites vulgaris.* Park. 419. *Petasites vulgaris rubens rotundiori folio.* J. B. 3. 566. BUTTER-BUR.

The Roots of Butter-bur are about a Finger thick, long, smooth-branched, and creeping in the upper Part of the Earth, having but few Fibres; they have a strong Smell, and an hot, aromatic, bitterish Taste; from these, early in the Spring, arise thick, hollow, downy Stalks, a Span high, clothed with small purplish Flowers, which consist only of a fistular Thrum, without any Border of Petala, which turn into Down: When these are past, the Leaves appear, which are very large, and roundish, but hollowed in next the Stalks, indented about the Edges, whitish and woody underneath, and green above; it grows by River-sides, and in marshy Grounds. The Flowers appear in the Beginning of *March.*

The Roots of Butter-bur are sudorific, alexipharmic, and good for all kinds of Fevers, and malignant, infectious, and pestilential Distempers; they are cordial, prevent Fainting, and Shortness of Breath; they likewise provoke Urine, and are accounted good to destroy Joint-worms. They are outwardly applied, in the Form of a Cataplasm, to pestilential Buboes, and Plague-sores; a great Quantity of them are put into the Aqua Theriacalis. *Miller's Bot. Off.*

The Plant is extraordinary bitter, but not with an equal Degree of Acrimony. The *Germans* commonly call it the *pestilential Root*, because it is found, by Experience, to be of excellent Service in pestilential Fevers. They put the Roots, stripped of their Bark, in Vinegar, till it be sufficiently impregnated with their Virtues, and then exhibit it with the Juice of Rue and Theriaca; it is, also, recommended for an uterine Lipothymy, Difficulty of Breathing, Cough, and Asthma; and is effectual against the broad Worm, and provokes Urine, and the Menses. Used outwardly, it is said to be good for Buboes, and malignant Ulcers. *Raii H. P.*

2. Petasites; minor. *C. B. P.* 197.

3. Petasites; minor, alter; Tussilaginis folio. *H. R. Par.*

4. Petasites; Africanus; Calthæ palustris folio. *H. L.* 488. *Blitum Africanum, Calthæ palustris folio, caule nudo, cubitali spicam pedalem et amplius sustinente.* Plukn. Phytog. 182. Almag. 68. *Boerh. Ind. alt. Plant.*

The Name *Petasites* is from πέτ]ω *(petao)* to extend, because of the Largeness of its Leaves; or from πέτ]ος *(petasos)* an Hat, or Bonnet, because the Leaves have a sort of Cavity in the Middle, and have their Margin expanded horizontally round it.

The first Species, in particular, and, also, the second, are officinal. The Root, Leaves, Pedicles, Stalks, and Flowers, have a singular Taste, not to be found any-where else. Petasites is heating, aromatic, and balsamic, by which its Virtues are understood. It is aperitive, and, in Cases where a Poison is very moveable, expels it by means of Sweat; whence it cures the Pestilence, and, in all *European* Languages, has a Name from that Disorder. They infuse a Dram, or half an Ounce, of the Root in Water, or Vinegar, and sweeten it with Honey; this procures a profuse Sweat, and so expels the Poison. This Property principally belongs to the Root, which is, also, esteemed an Alexipharmic. The Leaves, stripped of their outer thin Membranes, and applied to the Feet of hydropic or leucophlegmatic Patients, dissipate the watry Matter; for, being of an attenuant, aperient, and resolvent Quality, they excite Sweat, increase Perspiration, and, by that means expelling every thing that is volatile, discuss putrid, alcaline Matter, and exterminate them out of the Body. Preparations of the Petasites are, a Powder, Syrup, and Decoction. The Leaves and Flowers have the same Virtues as the Root, which later is to be taken up, before the Leaves come forth, or when the Flowers begin to appear; otherwise its Virtues are exhausted. They scrape off the Bark of the Root, and infuse the Shavings of the rest; then mixing this Infusion with the Juice of Rue, and a little Theriaca, they exhibit it as a most effectual Remedy against the Plague. The Leaves, outwardly applied, discuss Contusions. The Roots are, also, proper in the Pleurisy, when the Pus is concocted, and in Disorders of the Breast. *Hist. Plant. adscript. Boerhaav.*

PETECHIÆ. Red, or purple Eruptions, resembling Marks excited by the Bites of Gnats, or Fleas, which frequently appear in Fevers, and the Small-pox; and are always of very bad Presage. *Sydenham*, with great Reason, apprehends, they are very often excited, and exasperated, by too warm Medicines, and an over-heating Regimen.

PETECHIALIS FEBRIS. A Petechial Fever.

Petechial Fevers of the genuine Kind are of an highly malignant and contagious Nature, greatly prejudicial to the Head and Strength, accompany'd with Spots of various Colours appearing on the Skin; they arise from a Corruption of the vital Juices, and, in consequence of their subsequent putrid Dissolution, prove mortal.

These exanthematous Fevers are justly call'd *malignant*, or *poisonous*, since, for the most part, they are produced and propagated by an highly subtile Vapour, or Miasma, of an active and virulent Nature, exhaling from the Bodies of those afflicted with them. Besides, they are not to be cured without the greatest Difficulty; and, in a short time, prove mortal to many. They, also, quickly and greatly impair and destroy that Strength, on which the Motions, which sustain and support Life, depend. And lastly, they at first appear to be of a mild and gentle Nature, and often impose so far upon Physicians and By-standers, as to be mistaken for catarrhal Fevers; but afterwards exert their pernicious Effects with so much the greater Violence.

But the deleterious Nature of Petechial Fevers may be known from the following Signs: At first the Patients generally complain of so great a Weakness, and Loss of Strength, that they can hardly stand upright, or walk, but immediately faint away; whereas such a Weakness is only to be observed in the Vigour and Height of other continued and acute Disorders. The Head is, also, in the Beginning of this Disorder, afflicted with Pain,

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Pain, Heat, and a Torpor; the Mind is dejected, anxious, uneasy, loses all Hopes of Recovery, and prognosticates the worst. A continual Watching torments the Patient, nor does he ever enjoy a refreshing Sleep; his Appetite is lost, and his Countenance dejected; his Pulse is languid, small, and unequal; his manner of lying in Bed is preternatural and irregular, since with his Limbs folded, as it were, together, he tosses his Body perpetually. His Breast is oppressed, and this Oppression is sometimes accompany'd with a dry Cough; the Fibres of the Muscles are convulsed by a kind of undulatory and tremulous Motion, whilst the Tendons are contracted, and are affected with Twitchings. Many Patients, labouring under Petechial Fevers, neither complain of Thirst, Heat, Pain, nor Anxiety; but rather affirm, that they are sensible of no Indisposition, except an unusual Languor, and want of Sleep. The Urine is, at first, thin, like that of sound Persons. On the fourth, fifth, or even the seventh Day, appear Spots, frequently of various Colours, especially on the Back and Loins, sometimes more, and sometimes fewer in Number; but, for the most part, without affording any Relief to the Patient; for which Reason they are rather to be esteemed symptomatic than critical.

The Antients gave these Spots the general Denomination of *Exanthemata*; but the *Italian* Writers have since called them *Petechiæ*, from the Word *Pedechio*, because they resemble the Bites of Fleas. The *French* Authors have call'd them *Purpuratæ*, from their purple Colour; the *Spaniards*, *Taberdillo*, from their rediſh-yellow Colour; and the *Germans*, *Puncticulares*, or *Lenticulares*, because in Figure and Colour they resemble a Lentil; whilst the *Hungarians* denominate this Disease from the Pain and Delirium which attend it. But, besides the Figure of the Spots, Petechial Fevers differ from other exanthematous Disorders in this, that the Spots in the former not only appear without any Degree of Heat, Itching, Elevation, Asperity, and Exulceration of the Skin, but, also, for the most part, without affording any Relief to the Patient, because the Matter of them is not of a saline and caustic, but rather of a putrid and corrupted Nature.

These Spots are so far from affording any Hopes of Recovery, that, on the contrary, the more numerous they are, the greater Degree of Corruption they discover; and when they are of a livid, leaden, or blackish-green Colour, they are plain Proofs of a sphacelous Corruption. It is, also, to be observed, that those, who escape the Fury of this Disease, are recovered, not by any cutaneous Eruptions, but either by profuse Sweats, of a fetid, acrimonious Smell, or by critical Fluxes. But such an happy Event only happens by the Strength and friendly Concurrence of Nature in those Persons, whose Juices are not as yet greatly corrupted, but are as yet temperate, and retain something of an alexipharmic Quality. Many Patients, labouring under Petechial Fevers, rather die, either of a sphacelous Corruption in the Stomach, Intestines, and other Viscera, or of a Phrenitis, or, which happens more frequently, of an anginous Inflammation of the Fauces and Oesophagus; the Carcases, in the mean time, of such Patients diffusing a most intolerable Stench immediately after their Death. This fatal and unlucky Event is prognosticated by the following Signs: If the Patient's Thirst is either none at all, or insatiable; if the Tongue is dry, furrowed, and blackish; if the Fauces are inflamed, and covered with *Sordes*, and the Deglutition is difficult; if, after the Eruption of the Spots, the Respiration becomes difficult, and the Uneasiness of the Breast not only continues, but is increased; if, after Sweat, or a Flux, the Delirium, and other Symptoms, are augmented, whilst the Urine is neither turbid, nor deposits a Sediment; if the Eyes become dim, the Mind totally delirious, and the Patient pick the Knaps of the Bedcloaths; if there is a subsultory Motion of the Tendons; if the Excrements are involuntarily discharged; if the Patient is covered with a cold Sweat; and, lastly, if Convulsions come on, which put an End to Respiration and Life.

The formal Cause of these pernicious Fevers consists in a putrid Dissolution or Colliquation of the Blood, and vital Juices, and especially in the Contamination, and totally peccant State, of that most subtile, elastic, and lymphatic Fluid, which, being originally contained in the Blood, secreted in the Brain and spinal Marrow, and distributed through the Nerves to the whole Body, conveys Sensation, and a Power of Motion, to all its Parts; for that this poisonous Vapour, by which even sound Bodies are infected, is of such a Nature and Power, as not gradually to induce a putredinous Fermentation on the Blood, and other Humours of the Body, but, also, penetrate immediately to the interior Recesses of the Brain, and nervous Parts, and there to corrupt the subtile nervous Fluid, is obvious from this; that, as soon as such a poisonous Vapour is received into the Body, the natural, vital, and animal Strength begins to languish, even in perfectly sound Habits, whilst the Crasis of the Blood and Humours as yet remains entire, and free from Corruption.

This virulent and contagious Miasma principally enters the Body by the Nostrils, Fauces, and Bronchia; for in no Part of the Body are there more open and less defended Nerves, than those in the Nostrils distributed from *the first and second Pairs*. Whilst, therefore, this deleterious Vapour passes with the Air through these Nerves, it is not surprising, that it should immediately reach the Nerves and Brain, and that the Persons, who have this Misfortune, should be immediately seized with a kind of Intoxication, a Torpor of the Head, a Languor of Strength, and a Vertigo. But this contagious Miasma, most of all, mixes itself with the Saliva, and, with it, descends to the Stomach; which, as being, also, a nervous Part, is generally the first Seat of these contagious Fevers. Hence the first bad Symptoms, for the most part, discover themselves first in the Stomach and Præcordia; such as a Nausea, accompanied with an Inclination to vomit; frequent Stools, accompanied with Gripes; or violent Costiveness; Loathing of the Food, Anxieties of the Præcordia, a Cardialgia, and frequent and copious Eructations of Lymph from the Stomach. And it is evinced by Anatomical Observations, that, in Persons who have died of Petechial Fevers, the Stomach has, beyond all other Parts, been found affected with a sphacelous Corruption. But whilst this Miasma is mixed, not only with the Saliva in the Mouth, but, also, with the Gastric Liquor, and the Pancreatic Juice in the Stomach, its contagious and propagating Force is much augmented; for it is universally agreed upon, that these salival Juices, subservient to the intimate Digestion of the Aliments, are of so subtile, spirituous, aereal, elastic, and fermentable a Nature, that sweet Substances, with which they are mixed, are forthwith put into a fermentative Motion. Hence these Juices, already in an intestine fermentative Motion, readily conspire with the subtile and putredinous Miasma, when conveyed to them; so that the latter propagates itself, and is increased, exactly in the same manner, as a small Piece of Leaven ferments a large Mass of Dough.

Hence the Reason is sufficiently obvious, why, in order to avoid the Contagion of Petechial Fevers, nothing has, by the most skilful Physicians, been observed to prove more effectual, than avoiding the Breath of the Infected, especially when the Disorder is at its Height, and the Putrefaction greatest; frequently discharging the Saliva, and holding such Substances in the Mouth, as have a Tendency to evacuate it; chewing the Roots of Angelica, Zedoary, Masterwort, and Burnet; or smoking Tobacco. Hence, also, the Reason is obvious, why this deleterious Miasma is far most easily received, and soonest exerts its pernicious Force, in a Stomach that is loaded with a large Quantity of Crudities, and pituitous or salival Sordes. Hence, also, the Reason appears, why gentle Emetics, in Conjunction with Alexipharmics, in Persons recently infected, are the most effectual Means of checking a Petechial Fever in its Beginning.

I am of Opinion, with *Hippocrates*, that these contagious Fevers derive their first Origin from some common and prevalent Intemperature of the Air; such as a long-continued, moist, rainy, cloudy, as also a close, hot, and moist State of the Atmosphere; which, by reason of the large Quantity of aqueous Vapours, obtund and depress the brisk, elastic, and expansive Force of the Air, which sustains such a Motion of the Solids and Fluids, as is necessary to Life. Hence the salutary Excretions, especially Perspiration, become languid and disturbed; whilst the useless, superfluous, and corrupted Parts are retained in the Habit; which, being accumulated in the Blood and Juices, must necessarily generate a strong Tendency to Corruption and Dissolution. Besides, under such a Constitution of the Weather, Vegetables and Grain acquire a kind of foreign Nature, which is unfriendly to the human Constitution; for it is certain from Experience, that, during a long Tract of moist and rainy Weather, there is found, especially in Rye, a large Quantity of the Darnel, which is of a noxious and almost poisonous Nature. Nor does Rye, produced in such rainy Seasons, yield so large a Quantity of Spirit, nor prove so salutary and nourishing Bread, as that which grows during dry and hot Weather; so that it is not surprising, that such unsalutary and corrupted Aliments should dispose the Body to Putrefaction.

Besides, the Air is rendered insalutary, and unfit for generating putrid Disorders, by frequent and long-continued Inundations; for, in this Case, the Water stagnating, especially by means of the Heat of the Sun, begins to grow putrid, and sends up many noxious Effluvia into the Atmosphere. Large Quantities, also, of various kinds of Insects are generated about stagnant Waters, from which a large Portion of caustic, saline, deleterious, and subtile Matter is exhaled into the Air. Now, that these things are highly prejudicial to Health, is certain from various Observations, which evince, that, after large Inundations,

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dations, contagious and almoſt peſtilential Fevers have been produced. See *Hoffman, de Temp. Ann. inſalub.* Of the ſame offenſive and inſalutary Nature is the Air, when impregnated with Exhalations ariſing from uninterred and putrefying human Carcaſes, or from the Excrements of Animals; and eſpecially when ſuch an Air is confined, and deprived of the Acceſs of a more pure Atmoſphere.

Not only an impure and inſalutary Air, but, alſo, the particular Habit and Diſpoſition of the Body, contributes to the Generation of Putrefaction, and, conſequently, to the Production of Petechial Fevers. Thus it is certain from Experience, that phlegmatic and ſanguineous Perſons, thoſe of lax and ſpongious Habits, thoſe of timorous and anxious Minds, and thoſe whoſe Strength is exhauſted by Luxury, the exceſſive Uſe of improper Aliments, Drunkenneſs, Venery, Hunger, protracted Sorrow, Watchings, Fatigue, or Hæmorrhages, are not only eaſily and frequently ſeized with Petechial Fevers, but alſo with Difficulty recover from them; for no other Reaſon, than that their impure and weak Bodies have a ſtrong Diſpoſition to Putrefaction and Corruption. Cachectic Women, alſo, and thoſe affected with a Suppreſſion of the Menſes, thoſe labouring under a Lues Venerea, and ſuch as have the dire Remains of it in their Habits, are not only readily ſeized with Petechial Fevers, but, alſo, eſcape with great Difficulty.

Hence we may eaſily judge, why theſe contagious Fevers rage ſo frequently in Camps, where all the Cauſes productive of this Diſorder generally concur; for the Soldiers are ſometimes expoſed to a dry and hot Air, and, immediately after, to a moiſt and cold Atmoſphere. They ſleep in the open Air, and often in moiſt and marſhy Places. The Excrements of Men and Animals are every-where to be found. Nor, on account of the Intrenchments, is there any Acceſs to the Wind, in order to diſſipate the fetid Exhalations. They eat improper, and ſometimes abſolutely corrupted, or half-boiled Aliments. They drink ſtagnant and putrid Waters, and have their Strength impaired by Hunger and Watchings. Hence, when, from this laborious and hard Courſe of Life, they retire to their Winter-quarters, indulge themſelves in Eaſe, and eat copiouſly, the internal Corruption, gradually contracted, at laſt increaſes ſo far, as to appear in a Petechial Fever; for which Reaſon Diſorders of this Kind are more frequently obſerved in the Winter-quarters, than in the Camps of Soldiers. For the ſame Reaſon theſe malignant and contagious Diſeaſes are more incident to poor Perſons, who live in Filth, and are confined, in ſmall Cottages, to a vapid and impure Air, than to opulent Perſons, who have better Opportunities of obſerving the Rules of Health, with reſpect to Air and Regimen. Theſe Fevers, alſo, frequently happen in Hoſpitals, Nurſeries for Orphans, and public Priſons, where many are kept together, and lead a miſerable Life, which poſes the Body for receiving the Contagion.

The CURE.

In order to preſerve ourſelves from Petechial Fevers, nothing is of greater Importance, than that, during inſalutary Seaſons of the Year, fit for generating malignant Diſorders, we ſhould carefully avoid an Air impregnated with noxious Vapours and Exhalations, and deſtitute of a briſk and elaſtic Expanſion. Beſides, ſince, under ſuch a Conſtitution of the Air, the Bodies of People are weak, and diſpoſed for contracting Diſeaſes, it is highly expedient, that, at ſuch Seaſons, we ſhould abſtain from every thing, which can either impair the Strength, or render the Excretions more languid; ſuch as violent Commotions of Mind, Grief, Terror, Care, intenſe Meditation, protracted Watchings, and expoſing the Body to Cold, eſpecially in the Night-time, or with thin Cloaths in cold Weather. Beſides, the Increaſe of Crudities in the Primæ Viæ is to be prevented; for which Reaſon we are to abſtain from eating exceſſively, eſpecially of inſalutary Subſtances, from Surfeits, the continual Smoking of Tobacco, and the profuſe Uſe of Coffee, which, as it is unfriendly to the Stomach, ſo it is much more the nervous Parts, and the Mixture of the vital Fluids. We are to take care to breathe a ſalutary and pure Air; for which Reaſon we are to avoid low Places, in which the Air readily becomes vapid; as, alſo, Houſes, which are not expoſed to a free and open Air. The exceſſive Humidity of the Air is, alſo, to be corrected by Fires, and Fumigations by Maſtich, Amber, and Juniper-berries.

But, among all the Preſervatives againſt Petechial Fevers, I know none more effectual, than the moderate Uſe of good Wine, eſpecially of the *Rheniſh* Kind; for this, drank moderately in the Morning, or even at Meals, ſurpriſingly ſuſtains and recruits the Strength; promotes the Circulation of the Blood, and the ſeveral Excretions; aſſiſts the Digeſtion of the Aliments; and excellently reſiſts Putrefaction, eſpecially when moderate Exerciſe, and ſome other diluting Liquor, are uſed in Conjunction with it. I can, from long Experience, affirm, that in epidemic Diſorders, ariſing from a moiſt Conſtitution of the Air, thoſe who obſerved a good Regimen, and daily drank a moderate Quantity of laudable Wine, eſcaped: Thoſe, alſo, who have written concerning the Plague, affirm, that Wine is one of the beſt Preſervatives againſt that Diſorder. And I venture to aſſert, that, after a Criſis happens in Petechial Fevers, there is no better Medicine, than Wine, for reinforcing the languid Strength, and promoting cutaneous Excretion.

In the Beginning of Petechial Fevers no Medicines are more beneficial than Acids, eſpecially Citron-juice put into Ptiſans to be drank, in order to extinguiſh the Heat, and remove the Putrefaction, as, alſo, Wine-vinegar either ſimple or diſtilled, joined with Mixtures of proper Waters, and fixed diaphoretic Powders. Beſides theſe, ſuch Medicines are, alſo, proper, as, without impairing the Strength, colliquate the Saliva, and free the Breaſt from Infections; for, with the celebrated *Cramerus*, I have often obſerved, that hardly any Perſons, who had a copious Diſcharge of Saliva and Spit, died of Petechial Fevers. For this Reaſon, the Phyſician now mentioned, in theſe Diſorders, made frequent Uſe of alexipharmic Mixtures, compoſed of diſtilled Vinegar, or Vinegar of Scordium and Cinnabar, and ſometimes of bezoardic Mineral, and Oxymel of Squills. But it is an horrid Practice, in the Beginning of Petechial Fevers, to exhibit volatile bezoardic and ſudorific Medicines, with an hot Regimen, and boiling-hot Infuſions; for by theſe means the inteſtine putredinous Motion is increaſed, an Orgaſm brought on, and a greater Loſs of Strength produced.

In the Decline of a Petechial Fever, no Excretion is more ſalutary, than that made by Stool coming on at a proper time: I have found from a Series of more than fifty Years Experience, that Fevers of this kind were rarely terminated by Sweats and Hæmorrhages alone, but more frequently by a Diarrhœa appearing on the ſeventh, the ninth, or the eleventh Day; and that nothing was more prejudicial, than ſtopping a violent Diarrhœa, or a critical Flux, in the Beginning. I have, alſo, found from Experience, that, in Caſes where catarrhal, malignant, and exanthematous Diſorders have been terminated by Fluxes, the Patients have eſcaped the white Purple Fevers, which, in the Decline of a Petechial Fever, when the Pulſe is become equal, frequently ſupervenes about the eleventh Day, not without great Danger to the Patient. The moſt ſkilful Phyſicians have long ago adverted to the Salubrity of Fluxes in Diſorders of this Nature. Thus *Hippocrates*, in his *Epidemics*, informs us, that thoſe who labour under acute Fevers of this kind, were cured by Fluxes. *Galen*, alſo, in his Treatiſe *de atra Bile, Cap.* 4. informs us, that, in a certain peſtilential Conſtitution, a Diarrhœa proved highly ſalutary. *Gerardus Columba*, alſo, in his Treatiſe *de Peſtil. Febr.* highly extols the beneficial Effects of Fluxes, in theſe Words: "All, who had copious "Fluxes, though with the Signs of Crudity, were at laſt "cured; for, as the Flux proceeded, the Signs of Concoction "appeared, the Diſeaſe became milder, and, the Flux ſtill "continuing, the Patients were totally and entirely cured." This Doctrine is, alſo, confirmed by *Valleriola*, in *Obſ. Lib.* 6. *de Febr. Schenkius*, *Obſervat. Lib.* 6. *de Febr. Riverius*, *Obſervat. Cent.* 1. *Obſervat.* 47 & 48. and *Cent.* 2. *Obſ.* 34 & 87. *Horſtius*, *in Obſervat.* 10. *Johannes Rhodius in Cent.* 2. *Obſ.* 85. *Screta*, *de Febre caſtrenſi maligna*, *Cap.* 4. and *Bonetus in Theſ. Pract. de Febr. putr.* as, alſo, in his Treatiſe *de Cauſo*, *Cap.* 2.

This is, therefore, the Method of Nature, with which the Phyſician ought to act in Concert, and which he ought to aſſiſt, if weak and defective. I am convinced from Experience, that whatever is to be expected in the Cure of putrid, malignant, peſtilential, and Petechial Fevers, conſiſts in a ſeaſonable Uſe of ſuch Medicines, as, with Safety, render the Body ſoluble; but theſe ought principally to be exhibited about the critical Days, that is, from the ſeventh to the fourteenth; for, if they are uſed in the Beginning, they do but little Service, becauſe the Matter is not then concocted, and fit for Excretion; but as, in order to render the Body ſoluble through the whole Courſe of Petechial Fevers, there is nothing more prejudicial, than thoſe Medicines, which act by a certain cauſtic Acrimony, Senaleaves not excepted; ſo nothing is more proper for this Purpoſe, than ſuch Subſtances, as have nothing in their Contexture capable of impairing the Strength, but render the Body ſoluble in a mild and gentle Manner. The moſt conſiderable of theſe is a due Doſe of Manna, mixed with a ſufficient Quantity of Cream of Tartar, which, on account of its grateful Acidity, is, alſo, beneficial in theſe Diſorders. This Intention is, alſo, anſwered by ſolutive Syrup of Roſes, mixed with a ſaline Stimulus, prepared of Cream of Tartar, Sal Polychreſt. or antimoniated Nitre; and exhibited in a due Doſe, at a proper Seaſon, and with ſome diluting Vehicle, ſuch as Whey duly prepared; or temperate mineral Waters, ſuch as the *Antonian* and *Wildungenſian* Springs. No leſs excellent for the ſame Purpoſe is the Pulp of Tamarinds, or Decoctions of them prepared

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with Manna, or Rhubarb. How excellent Effects are, in Petechial and malignant Fevers, produced by Laxatives, we are informed by *Moræus*, in his Treatise de *Malign. Febr.* where he gives us more than twenty Instances, in which he, with great Success, used Pulp of Tamarinds, and an Infusion of Rhubarb, Sena-leaves, Cream of Tartar, and Manna, in the Water of Wood-sorrel.

But, in the Cure of Petechial Fevers, Physicians are not agreed with respect to the Propriety of Venesection; and, indeed, it must be owned, that there is so great a Difference between malignant Fevers, that the most skilful Physicians are often lost and bewildered in investigating their Natures; but it is certainly true, that, when such Fevers afflict plethoric or plethorico-cacochymical Patients, Venesection is highly proper, as a Preservative; as, also, in those accustomed to Venesection, high and luxurious Living, or a sedentary Life; for I have found from Experience, that those, from whom Blood has been previously taken away, either were not seized with those Disorders at all, or were less affected, and more easily recovered, than those who had not the Advantage of Venesection.

But it is carefully to be observed, that both during Petechial Fevers, and in their Decline, the languid Stomach is not to be overloaded with Aliments, much less with those of an insalutary kind, and especially with large Quantities of Flesh. It is a vulgar Error, especially among the common People, to believe, that the Strength is restored by Aliments. But this is one of the principal Causes, why Patients, who sometimes think themselves past Danger, yet find themselves miserably mistaken; since, by this means, the former Disorder returns, and more effectually endangers Life; or a new Disease supervenes. *Hoffman.*

PETIA. A Rag formed into a *Nodulus*, or Bag, in order to contain Medicinal Ingredients. *Petia Oculi* is an Hæmorrhage from the Eye. *Castellus.*

PETICULÆ. The same as PETECHIÆ.

PETIGO; the same as *Impetigo*. See LEPRA.

PETIOLUS. The Pedicle, or Stalk, of a Fruit.

PETIVERIA. Guinea Henweed.

The Characters are;

It hath a Flower consisting of four Leaves, which are placed almost in the Form of a Cross, from whose Cup rises the Pointal, which afterwards becomes the Fruit, which is bordered and cut at the Top, resembling an inverted Shield, containing oblong Seeds.

Miller mentions but one Species of this Plant;

Petiveria solani foliis, loculis spinosis. *Pluk. Nov. Gen.*

This Name was given to this Plant by Father *Plumier*, who discovered it in *America*, in Honour to Mr. *James Petiver*, an Apothecary, who was a curious Botanist.

It is a very common Plant in *Jamaica*, *Barbadoes*, and most of the other Islands in the *West Indies*, where it grows in shady Woods, and all the *Savannahs*, in such Plenty, as to become a very troublesome Weed; and, as this Plant will endure a great deal of Drought, so it remains green, when other Plants are burnt up, which occasions the Cattle to brouse on it; and, having a most unsavoury strong Scent, somewhat like wild Garlick, it gives the Cows Milk the same Flavour; and the Cattle, which are killed soon after feeding upon this Plant, have a most intolerable Scent, so that their Flesh is good for little. *Miller's Dictionary.*

PETRÆ OLEUM. See NAPHTHA and PETROLÆUM.

PETRACORIUS LAPIS. Geoff. Præelect. Angl. Edit. 179. THE PERIGORD STONE.

This is a fossile ferruginous Substance, black, hard, and heavy, seeming to contain some Particles of Iron. It is dug in the Mountains of *Dauphiny*, and used only in painting earthen Vessels, and by the Enamellers. *Geoffroy.*

PETRELÆUM. See PETROLÆUM.

PETRIFICATIO. See ANCUBITUS.

PETROLÆUM. See NAPHTHA.

In *Brosely*, *Bently*, *Pitchford*, and other Places adjacent in *Shropshire*, there lies over most of the Coal-pits,, or Mines, a Stratum, or Layer, of a blackish Rock, or Stone, of some Thickness, which is porous, and contains great Quantities of bituminous Matter.

This Stone, being brought to the Workhouse, is ground small by Horsemills, such as are used for grinding Flints, to make Glass of; the Powder is thrown into great Coppers of Water, where, by Boiling, the bituminous Matter is separated from the stony, or gritty, this last sinking to the Bottom, the other swimming at the Top.

This bituminous Substance, being gathered together and evaporated, comes to the Consistence of Pitch, and, with the Help of an Oil distilled from the same Stone, and mixed with the Pitch, comes to be thinner, or like Tar; the Uses of both which Materials, either for Shipping, or otherwise, these Substances are said to supply, and even to excel. This has been tried on several Boats, and it does not crack, like the ordinary Pitch or Tar, but always keeps black, or soft; and therefore is proposed to hinder the Worms from getting into the Ships pitched with it.

There is, likewise, distilled from this Stone an Oil, which may be used for Oil of Petre, or Turpentine, and has been tried in Akes and Pains. *Philosophical Transactions.*

This Oil has lately been advertised as a secret and excellent Topic for Pains, by the Name of *Oil distilled from a flinty Rock.*

PETROMARULA. A Name of a *Cretan* Species of *Rapunculus*. *Raii Hist. Plant.*

PETROSELINUM. See APIUM.

PETROSUM OS. The hard Part of the Temporal Bone. See CAPUT.

PETUM. Tobacco. See NICOTIANA.

PEUCE. The Pine-tree, or *Larix*.

PEUCEDANUM.

The Characters are;

The Root is perennial, deeply sunk, and hairy. The Leaves are winged, narrow, grassy, and divided into three Parts. The Seed is flat, almost oval, slightly striated, and marginated.

Boerhaave mentions three Species of this Plant; which are,

1. Peucedanum; majus; Italicum. *C. B. P.* 149. *M. U.* 36. *Tab.* 9.

2. Peucedanum; majus; Italicum foliis longis, angustis. *An ferula Orientalis*, *Peucedani folio?* T. Cor. 22.

3. Peucedanum; Germanicum. *C. B. P.* 149. *Tourn. Inst.* 318. *Boerh. Ind. A.* 66. *Peucedanum.* Offic. Ger. 896. Emac. 1054. Raii Hist. 1. 416. Synop. 3. 206. *Peucedanum vulgare.* Park. Theat. 880. *Peucedanum minus Germanicum.* J. B. 3. 36. *Peucedanum*, *Pinastrella*, *Fœniculum porcinum.* Merc. Bot. 1. 58. HOGS-FENNEL.

The Leaves of this Plant are large and winged, observing a tripartite Division, and having three Leaves upon one Stalk, which are much broader and flatter than common Fennel. The Stalk grows to be about two Feet high, divided toward the Top, hollow and striated, on which grow broad flat Umbels of five-leav'd yellow small Flowers, which are succeeded by larger and flatter Seed, than that of Fennel. The Root is thick and long, of a dark-brown Colour, being somewhat hairy, or beset with small setaceous Villi on the Top, of a very strong sulphureous Smell: It grows in several Places by the Seashore, and flowers in *July*. The Root is the only Part used, and that not often.

Hog-fennel is accounted good to clear the Lungs of tough viscid Phlegm, and thereby to help old Coughs, and Shortness of Breath; it, likewise, opens Obstructions of the Liver and Spleen, and helps the Jaundice; it, likewise, provokes the Menses, and gives Ease in Labour-pains; the Juice, snuffed up the Head, is commended by the Antients, against the Lethargy, Apoplexy, Epilepsy, and other Disorders of the Head and Nerves. *Miller's Bot. Off.*

The Root, and the other Parts, of the *Peucedanum* are endued with a cathartic Virtue, as we are inform'd by the Antients; but, on account of its fetid and rank Smell, were not much used.

Peucedanum expectorates tartareous Mucus, and extracts Bile; it provokes Urine, and is said to be good for the Stone. Outwardly it is of Service in the Hemicrania, and other Pains incident to the Head, and proceeding from Catarrhs; in renitent Tumors; and for cleansing old Ulcers. *Raii Hist. Plant.*

The Name *Peucedanum*, is from Πεύκη, (*Peuce*) a Pine-tree, which it resembles in its Leaves.

It is commended by the Antients for discussing inflammatory Diseases; for which Purpose, they prescribe a Decoction of the Root in Water, sweetened with Honey, and drank warm. Hence it is very proper for resolving a Pleurisy and Peripneumony, when they may be remov'd by an Anacatharsis, or Expectoration. They prescribe it, also, for Bloody Urine, and the Stone or Gravel in the Kidneys. It provokes Urine, is an excellent Resolver of Phlegm, and cleanses the Kidneys of every thing which adheres to them; for which Purpose the Root is boiled in Wine. It is commended as of Service in the Beginning of a Cataract, and in a Redundance of Phlegm, and as an excellent Resolver and Discusser of all Obstructions. The Root is very good for the hysteric Passion; and is possessed of a balsamic, deterging, and gently heating Virtue; and is of extraordinary Use for cleansing Wounds and Ulcers. *Hist. Plant. adscript. Boerhaav.*

PEVETTI. *H. M. Baccifera Indica*, *Floribus ad Foliorum Exortus*, *Fructu sulcato decapyreno Solanum somniferum Antiquorum.* Alpin. Exot. *forte.* A bacciferous Tree growing in *Malabar*, of whose Leaves they prepare a vulnerary Ointment. *Raii Hist. Plant.*

PEXIS, πῆξις. Congelation, or Concretion.

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PEZA, πέζα. The Malleolus, or Sole of the Foot; and, according to some, the very Bottom of the Sole. *Pollux* says, that the Part under the Tibia is called *Sphuron*, and *Peza*. In *Galen*'s Exegesis, under Πέζαι, we read as follows: "In the "second Book *de Morb. Mul.* it is written, ᾗ ὀι πόδες οἰδίσ- "κοῦσαι, αἱ πέζαι μάλιστα [and the Feet swell, and especially "the *Peza*]. *Zenodotus*, in his *Gentilia Vocabula*, [Words pro- "per to certain Countries] says, that the *Arcadians* and *Do- "rians* call the Foot *Peza*; but *Hippocrates* seems to call by "that Name, either the Bottom of the Sole, called *Pedion*, or "the *Malleoli*." *Cornarius*, in his *Hippocrates*, renders it by *Pedum Extremitates*; and *Calvus*, by *Tali*.

PHACE, φακὴ or PHACOS, φακὸς. A Lentil.

PHACODES, φακώδης. Of the Colour of a Lentil.

PHACOIDES, φακοειδὴς. Of the Form of a Lentil; an Epithet for the Crystalline Humour of the Eye.

PHACOPTISSANA, φακοπτισάνη. A sort of Aliment prepared of Ptisan and Lentils. *Galen, de Aliment. Facultat.*

PHACOSIS, φάκωσις. A black Spot in the Eye, resembling a Lentil.

PHÆNOMENA. Appearances. Whatever happens to Bodies, and falls under the Cognizance of the Senses, either according, or contrary to Nature, is called *A Phænomenon*.

PHÆON COLLYRIUM. The Name of a *Collyrium*, described by *Scribonius Largus*.

PHAGEDÆNA, φαγέδαινα, from φάγω, to eat, feed upon, is taken sometimes in a general Sense, as signifying all Kinds of Ulcers, which corrode the sound Parts adjacent to it; and grow still worse as they spread; sometimes it means only a particular Sort of Ulcer, as distinguished from other Kinds, as an Herpes, Noma, and the rest, in which Sense it is defined to be a tumid and deep Ulcer corroding the subjacent Flesh, and the Parts around it. This is the Substance of what *Galen* says on the Subject, in his Comment on 6 *Aph.* 45. The same Author, in his Book of *preternatural Tumors*, makes the characteristical Difference between an *Herpes* and a *Phagedæna*, to consist in this; that the former spreads itself only by Corrosion and Exulceration of the Skin, but a *Phagedæna* by corroding, also, the subjacent Parts. *Celsus*, *Lib.* 6. *Cap.* 18. makes a *Phagedæna* in the Penis, a Species of *Cancer*.

Phagedæna is, also, used, in a kind of metaphorical Sense, to signify an Affection of the Stomach, much the same with the *Caninus Appetitus*, as appears by the Definition given of it, by the Author of the *Definitiones Medicæ*. *Pliny*, also, *Lib.* 26. *Cap.* 11. makes *Phagedæna* to signify sometimes a Disorder, under which the Patient eats immoderately, and sometimes a sort of Ulcer; and *Hesychius* gives the same double Exposition of the Term.

PHAGOS. A Name for the *Quercus*; *parva*; sive *Phagus Græcorum, & Esculus Plinii*.

PHAGRUS, or PAGRUS. The Name of a Sea Fish, about a Foot long, not unlike a Roach, but larger, and thicker.

The Stones found in the Head of this Fish, when reduced to a Powder, and exhibited internally, are of an aperient Quality, and proper for removing the Stone of the Kidneys, rendering the Body soluble, and correcting the acid and acrid Humours of the Stomach. The Dose of this Powder is from half a Scruple to half a Dram. *Lemery des Drogues*.

PHALACRA, φαλακραὶ σιδήρεια, in *Hippocrates*, are blunt and smooth iron chirurgical Instruments, as a Probe, or any other, with a Button at the End.

PHALACROCORAX. The Cormorant. The Skin is said to be good to fortify and warm a weak Stomach, if apply'd thereto. *Lemery des Drogues*.

PHALACROSIS, φαλάκρωσις. Baldness.

PHALÆNA. The same as *Balæna*, the Whale.

PHALAIA. A barbarous Term introduced by *Basil Valentine*, importing an universal internal Medicine, or *Panacea*: But *Rolfinkius* uses this Word to express a Tincture of Jalap.

PHALANGIA. A very large Sort of Spider, common in hot Countries, as *Italy*, *Spain*, and the *Indies*. They are said to cure an intermittent Fever, if they are bruised, and applied to the Wrists, a little before the Fit. *Lemery des Drogues*.

PHALANGITES, φαλαγγίτης. A Name for the *Liliastrum*; *Alpinum*; *minus*. It is thus called by *Paulus Ægineta*.

PHALANGIUM. A sort of Insect, of the Spider-kind, whose Bite is said to be venomous.

They who have written of venomous and noxious Animals, have described several Species of the *Phalangium*, as the *Rhagium*, *Lupus*, *Formicarium*, *Cranocolaptes*, *Sclerocephalus*, and *Scolecium*, in all six. The *Rhagium* is round and black, resembling the Stone of a black Grape, whence it has its Name; [ῥάγιον, *Rhagium*, signifying a Grape-stone]. Its Mouth is situated near the Middle of its Belly, and its Legs are very short on each Side. The *Lupus* kills Flies, and feeds on them; it has a broad and voluble Body; the Parts about its Neck are indented, and its Mouth has three Eminences. The third Species, called *Myrmecium*, or *Formicarium*, very much resembles an Ant; it is of a sooty Colour, and its Body is marked with a sort of Stars, especially about the Back. The fourth, or *Cranocolaptes*, is somewhat long and green, and has a Bristle near its Neck, and, in its Attack, aims at the Head. The fifth, called *Sclerocephalus*, has an hard and stony Head, and all the Lineaments of those Animals, which fly about lighted Candles by Night. The last, which is *Scolecium*, or *Vermicarium*, is somewhat long and spotted, especially about the Head.

The Bite of these Animals is so small, as hardly to be discerned; but is followed by a livid, and sometimes a red Tumor, attended by a Coldness about the Knees, Loins, and Scapulæ. Sometimes the whole Body is oppressed with a Sense of Weight, accompanied with a continual Pain, Trembling, Paleness, and Want of Sleep. In some there is an Erection of the Penis, and an Itching about the Head, and sometimes about the Calves of the Legs; the Eyes are hollow, watery, and shed Tears; the Belly is unequally swelled, and the whole Body and Face are tumefied, especially the Parts about the Tongue, so as to cause an Impediment in the Speech. Sometimes the Patients are afflicted with a Dysury, accompanied with an Erection of the Pudendum, and a Pain. If they make Water, their Urine is aqueous, and contains something like Spiders Webs; and their Vomit, and sometimes their Stools, are of the same Nature. By bathing in warm Water, they fansy themselves eased of their Pain; but afterwards it returns with more Violence, and a painful Erection of the Penis; but, in old Persons, far from being erected, that Part suffers a great Relaxation. These are the Symptoms in general, which are common to the Bites of all those Creatures. Those which proceed in particular from the Bite of the *Cranocolaptes*, are an extraordinary Pain of the Head, Vertigo, a continual Coldness, Delirium, Restlessness, and a pungent Pain of the Stomach. They, who are bit by these Animals, are relieved by bathing every Day, and washing the Wound with the Decoction of Trifolium bituminosum, mixed with Oil. It is good, also, to foment the Wound often with Sponges dipt in warm Vinegar, and to anoint the Body all over with the most liquid Kind of Cerate. Proper Cataplasms are prepared of Bulbs, Sanguinaria, Leeks, Bran boiled in Vinegar, Barley-meal boiled with Bay-leaves in Wine or Honey, Rue, unripe Figs, Goats-dung in Wine, Sampsuchus with Vinegar; also, Cyperus. *Asclepiades* advises the following Cataplasm, which he much commends:

> Take of the Seeds of Wild-rue, Rocket, Stavesacre, Cenchrys, and the Vitex, the Fruit or Leaves of the Cypress, of each equal Parts; bruise them in Vinegar, and make them into a Cataplasm with Honey: The same is good taken inwardly.

Another celebrated Receipt, to be used either inwardly or outwardly, is as follows:

> Take of native Sulphur, Galbanum, each four Drams; Succus Cyrenaicus, two Drams; or, for want of it, four Drams of Laser; of bitter Almonds blanched, two Drams: Steep them in Wine, and make them up with Honey.

Eating of Garlick, Bathing, and Wine, are, also, proper Remedies. *Actius*, *Tetrab.* 4. *Serm.* 1. *Cap.* 18.

PHALANGIUM.

The Characters are;

The Flower is naked, hexapetalous, furnished with six Stamina, and contains a roundish Ovary, full of angular Seeds; the Root is fibrous.

Boerhaave mentions six Species of *Phalangium*; which are,

1. Phalangium; parvo flore; non ramosum. *C. B. P.* 29. *M. H.* 2. 333.

2. Phalangium; parvo flore; ramosum. *C. B. P.* 29. *M. H.* 2. 333.

3. Phalangium; Africanum; floribus luteis, parvis. *Raii Hist.* 3. 564.

4. Phalangium; parvo flore; ramosum; foliis fistulosis; annuum. *H. L. Asphodelus, foliis fistulosis.* C. B. P. 29. T. 344.

5. Phalangium; Africanum; foliis cepaceis; floribus spicatis aureis.

6. Phalangium; Africanum; foliis Ficoidis; floribus spicatis, aureis. *Boerh. Ind. alt. Plant.*

PHALANGIUM is, also, a Name for several Sorts of EPHEMERUM.

PHALANGIUM ALLOBROGICUM. A Name for the *Liliastrum*; *Alpinum*; *minus*.

PHALANGOSIS, φαλάγγωσις. A Disease of the Eye, when the Margin of the Eye-lid turns inwards, so that the Hairs stimulate the Eye. See OCULUS. *Paul. Ægineta, Lib.* 6. *Cap.* 8.

PHALANX.

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PHALANX. The Bones of the Fingers are called *Phalanges*. See BRACHIUM.

PHALARIS.

The Characters are;

It has a thick Spike, which is compos'd of a squamous Congeries of Husks, containing Seeds; Pairs of these hollow, carinated Husks, containing in the middle between them a Seed involv'd in a Hull, have the Appearance of Scales.

Boerhaave mentions eight Species of *Phalaris*; which are,

1. Phalaris; major; semine albo. *C. B. P.* 28. *Theat.* 534. *Boerh. Ind. A.* 2. 158. *Raii Synop.* 3. *Phalaris.* Offic. Ger. 80. Emac. 86. J. B. 2. 442. Raii Hist. 2. 1248. *Phalaris vulgaris.* Park. Theat. 1163. *Gramen spicatum semine miliaceo albo.* Tourn. Inst. 518. CANARY GRASS.

It grows not only in the *Canary* Islands, but in *Tuscany*, among the Corn, and in *Spain*, and in *Languedoc* about *Montpelier*.

The Antients commend the Seed of *Phalaris*, the Juice of the Herb, and the Leaves, to be used inwardly under tormenting Pains of the Bladder. And we are inform'd by *Lobel*, that some have Bread made of it, which they frequently eat, in order to cleanse the Bladder from Stones, and all other Things which might incommode the free Discharge of the Urine. *Raii Hist. Plant.*

2. Phalaris; major; semine nigro. *C. B. P.* 28. *Theat.* 536. *M. H.* 3. 186. *J. B.* 2. 443. *Gramen, spicatum, semine miliaceo, nigro.* T. 528.

3. Phalaris; alter; semine griseo. *H. R. Par. Gramen spicatum, semine miliaceo, griseo.* T. 519.

4. Gramen; tremulum; majus. *C. B. P.* 2. *Theat.* 22.

5. Gramen; tremulum; majus perenne. *H. L.* 196.

6. Gramen; tremulum; maximum. *C. B. P.* 2. *Prodr.* 5. *Theat.* 24. *J. B.* 2. 470.

7. Gramen; paniculis elegantissimis; sive ἐράγρωσις. *C. B. P.* 2. *Theat.* 26.

8. Gramen; tremulum; minus, panicula parva. *Boerh. Ind. alt. Plant. Vol.* 2.

The Seeds are highly aperitive; for which Reason they are of Service in the Stone of the Kidneys and Bladder. *Hist. Plant. adscript. Boerhaav.*

PHALERÆ, φάλαραι. A sort of Bandage for the Nose, describ'd by *Galen*, in his Treatise of Bandages.

PHANION, φανίον. A Name of two compound Medicines, describ'd by *Galen*, *de C. M. S. L. Lib.* 4. *C.* 7.

PHANLEC. Iron. *Rulandus.*

PHARICUM. The Name of an excessive poisonous Medicine, which, by great good Fortune, is unknown to the Moderns. *Scribonius Largus*, N° 195. informs us, that it was said to be compounded of many Ingredients; but not one of them is known.

PHARMACEIA, φαρμακεία. Purgation of the Belly by the Exhibition of a Cathartic. *Hippocrates.*

PHARMACEUTICA, φαρμακευτική. Pharmaceutics, that Part of Medicine, which gives the Description of Remedies, and teaches the Method of rightly exhibiting them. *Gorræus.*

PHARMACIA. Pharmacy.

PHARMACITES, φαρμακίτης, see AMPELITES TERRA.

PHARMACOCHYMIA, that Part of the Chymical Art, which teaches the Preparation of Chymical Medicines, by way of Distinction from the Spagirical Part, which treats of the Transmutation of Metals. *Castellus.*

PHARMACON, φάρμακον, signifies Poison, Medicine, and Colours in Painting. It is one of those Terms which *Aulus Gellius, Lib.* 12. *Cap.* 9. calls *vox media*, a middle Word between two Contraries, which may indifferently signify either of them.

PHARMACOPOEUS, φαρμακοποιὸς, from φάρμακον, a Mecine; and ποιέω, to make, or prepare; is one well vers'd in the Art of preparing Medicines. *Castellus.*

PHARMACOPOLA, φαρμακοπώλης, from φάρμακον, a Medicine, and πωλέω, to sell, is properly one who sells Medicines. To illustrate the three preceding Articles, it may be proper to observe, with *Le Clerc*, that those who addicted themselves to Pharmaceutics, or Medicamentary Medicine, were called *Pharmaceutæ*, as says *Galen ad Thrasyb.* The Name *Pharmacopœus* was taken in an ill Sense, and signify'd a *Poisoner*, who was, also, called *Pharmacos* and *Pharmaceus*, from the Word *Pharmacum*, which signify'd indifferently all sorts of Drugs or Compositions, both good and bad, every Medicine or Poison, both simple and compounded. The *Latins*, in Conformity hereto used the Word *Medicamentum* for *Poison*, and *Medicamentarius* for *Poisoner*, tho' the last Word signify'd, also, an Apothecary, as the first did a Medicine. The Word *Pharmacopola*, among the Antients, signify'd one of another kind of Profession, whose Business was to sell Medicines; particularly it belong'd to such as are now called Mountebanks.

PHARMACOPOLIUM. An Apothecary's or Druggist's Shop.

PHARMACOPOSIA, φαρμακοποσία, from φάρμακον, a Medicine, and πόσις, a Potion, is either any liquid Medicine in general, or a liquid Cathartic in particular; in which latter Sense this Term, and φαρμακεῖν, are commonly used by *Hippocrates*, as *Galen* observes, *Com. ad 7 Aph.* 25. And thus are the Words used, 4 *Aph.* 19. and *Coac.* 251.

PHARMACOTA *Medicamenta.* Medicines which have a Mixture of Poison. *Castellus.*

PHARMACOTHECA, a Box, or Chest, for the Reception of Medicines. *Castellus.*

PHARMACUM. See PHARMACON.

PHARMACUM AD AURES. See ÆGYPTIUM PHARMACUM AD AURES.

PHARMIANUM. A Malagma so called. *Galen, Lib.* 7. *de C. M. P. G. Cap.* 6.

PHARYNGETHRON, φαρύγγεθρον, in *Hippocrates, Lib. de Dissect.* is the Pharynx, or Fauces.

PHARYNGÆUM SAL. An artificial Salt, of Use in the Quinsey, when the Pharynx, or Fauces, are incommoded with a Defluxion of impure and serous Humours; it is prepared of Cream of Tartar, and Nitre, each one Ounce, with half an Ounce of bunt Alum, dissolved in distilled Vinegar, which Solution is afterwards coagulated according to Art. This Salt, mixed with two Drams of Honey, and dissolved in five Ounces of Plantain-water, makes an excellent Gargarism for the Quinsey. *Frederic Hoffman* from *Lobelius.*

PHARYNX, φάρυγξ. See OESOPHAGUS.

PHASEOLUS.

The Characters are;

It has a long Pod, full of Kidney-shap'd or oval Seed; the Plant, as to its Habit, or outward Appearance, is flexible, scandent, and, for the most part, trifoliated, or has its Leaves growing by Threes.

Boerhaave mentions twenty-five Species of *Phaseolus*; which are,

1. Phaseolus; vulgaris. *Park. Parad.* 521. *Tourn. Inst.* 412. *Boerh. Ind. A.* 2. 28. *Smilax hortensis.* Offic. J. B. 2. 255. Raii Hist. 1. 884. *Smilax hortensis sive Phaseolus.* C. B. P. 339. *Phaseolus albus.* Ger. 1038. Emac. 1212. KIDNEY-BEANS.

It is cultivated in Gardens, and flowers in *July*. The Pods, which are the Parts in Use, are opening, digestive, and provoke Urine, and the Menses. *Dale.*

2. Phaseolus; vulgaris; fructu nigro.

3. Phaseolus; vulgaris; fructu rubro.

4. Phaseolus; vulgaris; fructu pallido.

5. Phaseolus; vulgaris; fructu luteo.

6. Phaseolus; hortensis; minor. *T.* 415. *Smilax hortensis minor.* C. B. P. 359.

7. Phaseolus; hortensis; siliquâ longissimâ.

8. Phaseolus; hortensis; siliquâ longissima, & latissima.

9. Phaseolus; peregrinus; hortensi similis; fructu timidiore, minore niveo. *C. B. P.* 340.

10. Phaseolus; hortensis; fructu albo, minore oviformi; Venereus dictus. *Hoffm. Cat. Altorf.*

11. Phaseolus; hortensis; minor; fructu incano, cujus hilum limbo fusco cingitur.

12. Phaseolus; puniceo flore. *Corn.* 184.

13. Idem (12); fructu ex nigro & Colossino variegato.

14. Phaseolus Indicus; floribus, & fructu, candidissimis. *Flor. Nor. Volk.*

15. Phaseolus Americanus; perennis; flore cochleato odorato, seminibus fuscis orbiculatis; Caracalla dictus. *H. L. Phaseolus Indicus, cochleato flore. Triumfett. Observ.* 92.

16. Phaseolus; octocaulis; Mungo Persarum; Turcarum Masc; Hispanorum Max. *Tab. Col. Annot. & Addit. in Nard. Ant. Rech. Ic. & Descr. Raii.*

It is a Plant with an erect Stalk, three Feet in Height, with Leaves and Flowers like those of our *Phaseolus*, and Pods containing Seeds the Size of dry Coriander-seeds.

The People of the Eastern Countries commonly eat the Seeds boiled, with Butter, as they do other leguminous Foods; and esteem it a Delicacy much preferable to the rest.

Garcias tells us, that the Seed, when ripe, is black, and is Food for Horses, and is sometimes eaten by Men: He gives us, also, the Method of using it, by the Inhabitants of *Guzarate* and *Decan*, in the Cure of a Fever. The Patient in this Case abstains from Food ten, and sometimes fifteen Days; after which they give him the Decoction of this Fruit, in which they have left some of the Pulp remaining; then they give him *Mungo* decorticated and boiled, like Rice, and suffer him to eat no Bread made of Wheat for many Days. *Raii H. P.*

17. Idem; semine albo.

18. Phaseolus; tenerrimus; suprâ & infrâ, terram fructus gerens, sicque perennans.

19. Phaseolus; Ægyptiacus; nigro semine. *C. B. P.* 341. *Phaseolus, niger Lablab vocatus*, Alpin. Ægypt. 39.

It is a sarmentous Tree, of the Bigness of the Vines, and spreads its Branches and Leaves after the same Manner. In Appearance, it is altogether like the common Phaseolus; bears Flowers twice in a Year, that is, in Spring and Autumn; these Flowers are somewhat like those of our Phaseolus, and are succeeded

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ceeded by long Pods, as those of Beans, and containing Seeds some black, some reddish, exactly like our Kidney-beans. The Tree lives an hundred Years, and more, and is always green. The *Egyptians* commonly eat the Seeds or Beans, which are as well tasted as ours. The Women use the Decoction with Saffron, to provoke the Menses; the same is good, also, for the Cough, a Dyspnœa, and a Suppression of Urine. *Prosper Alpinus de Plantis Ægypti.*

20. Phaseolus; Ægyptiacus; semine rufo. *C. B. P.* 341.

21. Phaseolus; Ægyptiacus; semine albo.

22. Phaseolus; Zeylanicus; folio longo; siliquâ tenui; semine parvo, pallido.

23. Phaseolus; Asiaticus; siliquâ albâ, longissimâ, articulata; semine rubro.

24. Phaseolus; Zeylanicus; folio longo; siliquâ tenui; semine violaceo, parvo.

25. Phaseolus; Indicus; minimus; folio magno; flore cœrulescente. *Boerh. Ind. alt. Plant. Vol.* 2.

The Pods of the Kidney-bean are esculent, but the Seeds yield a gross Nutriment; whence they are good for those who use much Exercise, but are prejudicial to Students, and sedentary Persons. *Hist. Plant. adscript. Boerhaav.*

Besides the foregoing Species of *Phaseolus*, *Dale* mentions the four following;

1. *Phaseolus.* Offic. *Phaseolus vulgaris Italicus humilis, seu minor, albus cum orbita nigricante.* J. B. 2. 358. Raii Hist. 1. 885. *Phaseolus erectus.* Park. Theat. 1057. *Phaseolus peregrinus fructu minore albo.* Ger. Emac. 1213. *Phaseolus minor siliqua sursum rigente, fructu albo.* Tourn. Inst. 413. *Smilax siliquâ sursum rigente, vel Phaseolus parvus Italicus.* C. B. P. 339. ITALIAN KIDNEY-BEANS.

It is cultivated in Gardens, and flowers in *July*. The Pod is used, which, as *Dioscorides* says, if boiled, whilst green, and eaten, is good to mollify the Belly, and proper to provoke Vomiting.

2. Soia. Offic. *Phaseolus Japonicus, ex quo Japonensium Soia, qui intinctus Species est, conficitur.* Herm.

This Species is a small, white Kidney-bean, brought from *Japan*, of which they make the Pickle called *Ketchup*; of this there are two Kinds, the liquid and the solid. *Dale.*

3. Phaseolus erectus siliquis Lupini, fructu Pisi majoris candido. *Kemph. Amœn. Exot.* 837.

We owe the Knowledge of this Species, says *Dale*, to the late learned *Paul Herman*, who communicated it, under the Title abovesaid, to the learned *William Sherrard*, LL. D. from whom we borrowed it.

4. The fourth sort of PHASEOLUS is the COUHAGE; which see.

PHASGANIUM, φασγάνιον. A Name in *P. Ægineta* and *Aetius* for the LAPPA.

PHAULUS, φαῦλος, according to *Galen*, *Com. in Lib. de Fract.* with the Antients, signify'd not only vitious and depraved, but plain and simple, in Opposition to ἀκριβὴς, "exquisite;" in which Sense it is apply'd by *Hippocrates* to Diet; and *Hypophaulos*, ὑπόφαυλος, in the same Author, is expounded in *Galen* by μέτριος (*Metrios*) moderate, or a Mean between simple and exquisite.

PHAUSINGES, φαύσιγγες, in *Galen's* Exegesis, are said properly to signify red Circles in the Legs, excited by the Fire; but, by an Abuse of the Word, it signifies other sorts of Spots. Some, who read σπίλοι, Spots, for κύκλοι, Circles, will have it to be red *Spots*, of any kind, excited by the Fire. Other Senses of the Word may be found in *Hesychius*, which are not material.

PHAUSTIANOS, φαυστιανός. The Name of a very acrimonious and corroding Pastil, described by *Aetius*, *Tetr.* 3. *Serm.* 1. *Cap.* 49.

PHAZALA. The Name of a Disease incident to Horses which wash in the *Red Sea*. *Castellus.*

PHEGOPYRUM. See FAGOPYRUM.

PHELLANDRIUM.

The Characters are;

The Root is fibrous, the Stalk very thick, the Leaves very large, and very finely jagged: the Petals of the Flowers are shaped like an Heart; and the Seeds are small, gibbous, and slightly striated.

Boerhaave mentions three Species of *Phellandrium*; which are,

1. Phellandrium. *Offic. Tourn. Inst.* 306. *Boerh. Ind. a.* 56. *Phellandrium vel Cicutaria aquatica quorundam.* J. B. 3. 183. *Phellandrium.* Raii Synop. 3. 215. *Cicutaria palustris.* Ger. 905. Emac. 1063. Raii Hist. 1. 452. *Cicutaria palustris tenuifolia,* Park. Theat. 933. C. B. P. 161. WATER HEMLOCK.

The Leaves are commended by *Blancard* in virulent Inflammations of the Penis; internally it is an Emetic.

This Hemlock has a thick, hollow, striated, and jointed Stalk, which arises not so high as the ordinary Hemlock; it is divided into several Branches, having large winged Leaves, much finer and tenderer than Hemlock; the Flowers grow in Umbels, which are but small in proportion to the Bigness of the Plant: They are white, with a Cast of Red. The Seed is small, and of a dark-brown Colour. The Root is compos'd of a great Number of white Strings, which shoot out from the Joints at the Bottom of the Stalk: It grows in Ditches and Ponds, and flowers in *June*.

It is suppos'd to be much like common Hemlock in its Nature and Qualities; but it is believ'd to be more poisonous, and therefore is very seldom made use of in the Shops.

Webster has wrote a whole Treatise concerning this Plant. *Miller's Bot. Off.*

2. Phellandrium; folio Thysselini; caule rotundo. *Ind.* 2.

3. Phellandrium; Thysselini folio; caule sulcato. *Ind.* 2. *Cicutaria Cassubica, Thysselini folio.* Breyn. Prodr. 1. Raii H. 1868. *Boerh. Ind. alt. Plant. Vol.* 1.

It is said to possess the Virtues of Hemlock; but is sweet-scented and aromatic, and of excellent Service, where a gentle Dissipation of Humours is required. The first Species is of Use in Surgery, for discussing inflammatory and cold Tumors; and is said to resist a Gangrene; and nothing can be more safely apply'd to scirrhous and cancerous Tumors; it is, also, commended for Diseases of the Breast, being apply'd in the Form of a Cataplasm. *Hist. Plant. adscript. Boerhaav.*

PHELLODRYS. Offic. *Phellodrys alba latifolia & angustifolia.* Park. Theat. 1399. *Phellodrys candicans latifolia, molliter aculeata & candicans, angustifolia, serrata.* C. B. P. 423. *Phellodrys Matthioli.* J. B. 1. 2. 100. *Phellodrys sive Cerro. Sugaro Matthiolo.* Raii Hist. 2. 1391. THE LAUREL-OAK.

It grows in *Dalmatia*, and, as some say, in *Greece*; the Leaves, Bark, and Acorns, which are the Parts used in Medicine, agree in Virtues with those of the *Quercus*, or common Oak. *Dale.* The *Phellodrys* of *Theophrastus*, which *J. Bauhine* proves to be the same with what he, also, calls *Aria*, *Pliny* seems to have taken for the *Suber*, called *Phellos*; for he ascribes to that Tree all the Properties which *Theophrastus* ascribes to the *Phellodrys.*

The *Phellodrys nigra* is distinguish'd by the Smoothness and Blackness of its Bark; the Leaves differ from those of the *Ilex*, as being rounder and broader; from those of the *Smilax*, as being much shorter in respect of their Breadth; and from those of the *Suber* just mention'd, as being harder, and more prickly. *Raii H. P.*

PHELLOS. A Name for the *Suber*; *latifolium*; *perpetuò virens.*

PHEMOS, φῆμος, the Name of a Medicine against the Dysentery, composed by *Martianus*, and described by *Aetius*, *Tetr.* 3. *Serm.* 1.

PHENGITES, φεγγίτης, a luminous Stone, capable of acquiring Light, and dispensing it again.

PHENULE, φένυλα, in *Myrepsus*, *Antidot.* 77. as *Fuchsius* observes in his Notes, is corruptly written for *Enula*, ἕνυλα; for *Phenula*, he says, is the same as *Fœniculum.*

PHESÆ. A kind of broad Fish, mention'd by *Oribasius*, *Med. Coll. Lib.* 2. *Cap.* 58. from *Xenocrates*, among Fishes whose Flesh is hard and difficult of Digestion.

PHIALA, a glass Vessel, with a big Belly, and long Neck, of frequent Use in Coagulations and Solutions. *Castellus.*

PHIBALIOS, φιβάλιος, in *Galen's* Exegesis, is expounded a Species of Fig; some take it for the *Carica*, or dry'd Fig. *Phibalean* Figs are commended by *Athenæus*, *Lib.* 3. Now *Phibaleos* is a Place in *Attica.*

PHIBIT, *rapax.* Rapacious. *Rulandus.* Perhaps *Amber.*

PHILADELPHUS. A Name for the APARINE. *Blancard.*

PHILADYNAMOS, φιλαδύναμος, in *Hippocrates de R. V. I. A.* is an Epithet of Water; expressing that Property of it, by which it diminishes the Strength.

PHILAGRIANON, φιλαγριανόν. The Name of a Malagma, described by *Ægineta*, *Lib.* 7. *Cap.* 18.

PHILALYSTES, φιλαλυστὴς, in *Hippocrates's* Book of Precepts, means one who is of an anxious and perplexed Mind.

PHILANTHROPOS. The Name of a compound antinephritic Medicine, in *Nicol. Antidot. Oper. Mesuæ. Castellus.*

PHILETÆRIUM, φιλεταίριον. A Name in *Dioscorides*, *Lib.* 4. *Cap.* 8. for the POLEMONIUM.

PHILETIS COLLYRIUM. The Name of a compound Medicine for the Eye, in *Celsus*, *Lib.* 6. *Cap.* 6.

PHILIPENDULA, the same as FILIPENDULA. *Blancard.* The Term occurs in *Myrepsus*, *Antidot.* 40.

PHILIPPI *Trochiscus*, the Name of a Troche, described by *Paulus Ægineta*, *Lib.* 7. *Cap.* 12.

PHILISTÆA. An obscure spagiric Term in *Basil. Valent. in Repetit. Lap. Philos. C. de Antim.* where he says, that, if Antimony should pass into *Philistæa*, it would of itself become Glass. *Castellus.*

PHILLYREA.

The Characters are;

The Leaves are conjugated, and always green. The Flower is monopetalous, Bell-shap'd, divided into four Parts, and contained in a quadrifid Calyx. The Ovary in the Bottom of the Calyx becomes a globular Fruit, full of round Seeds.

Boerhaave mentions eight Species of *Phillyrea*; which are,

1. Phillyrea; crasso; latissimo, atroviridi folio quasi Ilicis.

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2. Phillyrea; latifolia; lævis. *C. B. P.* 476. *Phillyrea, Mahaleb Serapionis.* Lugd. 154.

3. Phillyrea; latifolia, ſpinoſa. *C. B. P.* 416. *Phillyrea, folio Ilicis.* J. B. 1. 541.

4. Phillyrea; latifolia; ſpinoſa. *C. B. P. Longiori folio Alaterni. Ind.* 248.

5. Phillyrea; folio leviter ſerrato. *C. B. P.* 476.

6. Phillyrea; folio magis ſerrato, ſubrotundiori. *Ind.* 248.

7. Phillyrea; folio Liguſtri. *C. B. P.* 476. *Tourn. Inſt.* 596. *Boerh. Ind. a.* 2. 215. *Phillyrea.* Offic. *Phillyrea latiuſculo folio.* J. B. 1. 539. Raii Hiſt. 2. 1585. *Phillyrea latiore folio.* Ger. 1209. Emac. 1395. *Phillyrea latifolia foliis fere non ſerratis.* Park. Theat. 1443. MOCK PRIVET.

The Leaves are drying and aſtringent, and are very much commended for Ulcers in the Mouth. *Dale.*

8. Phillyrea; anguſtifolia; prima. *C. B. P.* 476. *Boerh. Ind. alt. Plant. Vol.* 2.

Many confound the *Phillyrea* of *Dioſcorides* with the *Philyra* of *Theophraſtus*; others, rightly in my Opinion, diſtinguiſh them. *J. Bauhine* proves the *Macaleb* of the *Arabians* to be the *Phillyrea* of *Dioſcorides*. But whether the *Mahaleb*, or *Phillyrea*, be the ſame Tree which is now commonly known by that Name, is a Queſtion. *Rauwolfius* writes, that he ſaw at *Aleppo*, in the Spicery-ſhops, ſmall white Seeds, which they call *Machaleb*, ſurrounded with an hard Cortex, ſomewhat long, and acuminated, and cover'd with a thin Membrane, after the manner of Piſtaches; theſe Seeds they uſe in the Compoſition of their ſweet-ſcented Soap. And the Monks who have commented on *Meſue*, write that *Mahaleb* is a very common Shrub in *Syria*, thorny, and with Leaves like the Olive-tree; that it bears Fruit in Cluſters on the Branches, like the Lentisk, but ſomewhat bigger; from whence the *Syrians* expreſs a very fragrant Oil, of which they prepare their ſweet-ſcented Soaps, and ſeveral other Things. But how all this can agree with the common *Phillyrea*, ſays *Ray*, I am at a Loſs to underſtand.

The Leaves of the *Phillyrea*, according to *Dioſcorides*, are aſtringent, like thoſe of the wild Olive-tree; and are therefore proper in thoſe Caſes, which require Aſtriction. Being chewed in the Mouth, they are very good for Ulcers therein; and a Collution of the Mouth with the Decoction has the ſame Effect. The Decoction drank provokes Urine, and the Menſes. What the *Arabians* write of the Virtues of the *Mahaleb*, which *J. Bauhine* ſuppoſes to be the *Phillyrea* of *Dioſcorides*, may be found in *Bauhine*. At preſent the *Phillyrea* is not uſed in Medicine, but, on account of its evergreen Leaves, is of good Ornament in Gardens, being diſpoſed in clipt Hedges, Plots of Evergreen, and by the Sides of Walks. *Raii H. P.*

PHILOCHYMICUS. A Lover of Chymiſtry.

PHILOCOTYCHE. The Name of a Plaiſter, in *Myrepſus, Cap.* 136.

PHILOCRATIS *Emplaſtrum.* A Plaiſter deſcribed by *Celſus, Lib.* 5. *Cap.* 19.

PHILOLAGNOS, φιλόλαγνος, in *Hippocrates de R. V. I. A.* means one addicted to Venery.

PHILOLUTROS, φιλόλϵτρος, from φιλὸς, a Friend, and λέτρον, a Bath. A Lover of Bathing. *Hippocrates de R. V. I. A.*

PHILOMEDICA. The Name of a Potion, preſcribed in burning Fevers, for allaying the Thirſt; and deſcribed in *Collectan. Chymic. Leidenſ. Cap.* 332.

PHILOMELA, the Nightingale. See LUSCINIA.

PHILONIUM. A kind of ſomniferous, anodyne Opiate; taking its Name from *Philo*, the Inventor. *Galen, de C. M. S. L. Lib.* 9. *Cap.* 4. ſays, that the Antidote of *Philo*, or *Philonium*, was in great Reputation for a long time paſt; and that this Medicine was one of the firſt and moſt antient of its Kind. By Medicines of this Kind, we can underſtand no other than Antidotes, ſuch as *Mithridate*, *Theriaca*, *Hiera*, and the like. I do not believe this Compoſition of *Philo* to be quite ſo antient as Mithridate; but it was, doubtleſs, coeval with the ſimple Hiera, invented by *Themiſon*, who lived under the Reign of *Auguſtus*. The Theriaca was of later Invention, and not begun to be compoſed till the Time of *Nero*. What makes me think, that *Philonium* was ſomewhat later than Mithridate, is, that, among the Virtues which *Philo* aſcribes to his Compoſition, he ſays, it is proper for the Colic. Now this Diſeaſe was not known by that Name, long before the Reign of *Tiberius*. I imagine then, that *Philo* lived under *Auguſtus*, near about the Time of *Themiſon*, and the firſt Diſciples of *Aſclepiades*. *Galen* may, however, ſpeak of the *Philonium*, as an antient Medicine, becauſe he did not write till about two hundred Years after the Time in which I ſuppoſe it to be invented.

Philo wrote it in *Greek* Elegiacs, and after an enigmatic Manner; ſo that it required to be well verſed in Mythology, or Fable, to be able to conjecture at his Meaning. "Take, ſays he, red "and odorous Hairs of the Youth whoſe Blood is ſtill freſh in "the Fields of *Mercury*; as many Drams as we have of Senſes "[five]; of *Euboic Nauplium*, one Dram; as much of the Killer "of the Son of *Menætius*, as is contained within the Bellies of the "Ewes. Add thereto twenty Drams of white Flame, and the "ſame Weight of Beans of the *Arcadian* Swine; with one Dram "of the Plant falſely call'd a Root, and which comes from the "Country celebrated on account of *Jupiter Piſſeus*. Write Pi- "*um*, and, to the Head of that Word, add the maſculine Ar- "ticle of the *Greeks*. Take ten Drams of this laſt Ingredient, "and carefully mix the Whole with the Works of the Daugh- "ters of the Bull of *Athens*." You may ſee, in *Galen*, an Explication of this Jargon, which amounts to this: Take of Saffron, Pyrethrum, white Pepper, Henbane, Spikenard, and Opium, the Weight aſſign'd to each Ingredient; and incorporate the Whole with *Attic* Honey. Not only *Galen*, but *Aretæus*, *P. Ægineta*, *Aetius*, *Oribaſius*, and other Authors, mention this Medicine, which is ſtill common at this Day. *Celſus*, alſo, quotes *Philo*, but it is only for a Collyrium, and ſays nothing of his Antidote; tho' it is probable, that it was this *Philo* of *Tarſus*, from whom he borrow'd that Collyrium. *Le Clerc Hiſt. de la Medecine.*

Philonium Perſicum is thus prepared. Take of white Pepper, and white Henbane, each ten Drams; of Opium, Terra Sigillata, each five Drams; Lapis Hæmatites, Saffron, each two Drams and an half; Caſtor, *Indian* Spikenard, Pyrethrum, Pearls, Amber, Zedoary, Doronicum, or elſe Elecampane, Troches of Ramich, each half a Dram; Camphire, a Scruple; Honey of Roſes, fifteen Ounces. Mix them together for an Opiate.

The Roots, the Seeds, the Caſtor, the Spikenard, the Saffron, and the Troches of Ramich, are to be reduced to a Powder together. Then the Seal'd Earth, and the Camphire, are to be pounded together; and the Blood-ſtone, the Pearls, and the Amber, are to be levigated on a Marble, till they are reduced to an impalpable Powder. The Opium muſt be of the beſt Kind, and cut down into ſmall Portions; after which, it is to be beat in a brazen Mortar, with a little Honey of Roſes, till it is reduced to a kind of liquid Paſte. Then boil Honey of Roſes to the Conſiſtence of a thick Syrup; with fifteen Ounces of which intimately mix the Opium, and the Powders, for an Opiate, to be kept for Uſe in a cloſe-ſtopt Veſſel.

This Preparation is proper for ſtopping Hæmorrhages and Fluxes; as, alſo, for preventing Abortion. The Doſe of it is from one Scruple to one Dram.

A Scruple of this Opiate contains Two-thirds of a Grain of Opium; and One-third of a Grain of the Seeds of white Henbane.

Half a Dram of the Opiate contains a Grain and half a quarter of a Grain of Opium, and two Grains and an half of the white Henbane-ſeeds.

Two Scruples of the Opiate contain a Grain and an half of Opium, and three Grains of the Henbane-ſeeds.

One Dram of the Opiate contains two Grains and a quarter of a Grain of Opium, and four Grains and an half of the Henbane-ſeeds.

The *Philonium Romanum* is thus prepared.

Take of white Pepper, and white Henbane-ſeeds, each five Drams; Opium, two Drams and an half; Caſſia-bark, one Dram and an half; Smallage-ſeed, one Dram; the Seeds of *Macedonian* Parſley, Fennel, and Candy Carrots, each two Scruples five Grains; Saffron, one Scruple and an half; Spikenard, Pellitory of *Spain*, and Zedoary, each fifteen Grains; Cinnamon, a Dram and an half; Myrrh and Caſtor, each a Dram; Syrup of white Poppies, a ſufficient Quantity, to make the Whole into an Electuary.

This is a Preſcription, originally, of *Nicolaus Myrepſus*; but the firſt Diſpenſatory of the College received it with Euphorbium, as does the *Auguſtan*, which the College has now rejected, it being an Ingredient too hot, and irritating, for inward Uſe. There are ſeveral other Compoſitions of this Denomination taken by the Diſpenſatory-writers from *Meſue*, *Galen*, and others; but they all nearly agree. *Zwelfer*, however, prefers the *Confectio Archigenis* to them all, as a warm Opiate, which is their main Intention. The former Preſcriptions of this were all with Honey, in three times the Quantity of the other Ingredients; but the *Syrupus de Meconio*, as here ordered, is vaſtly preferable, as agreeing ſo much better with the Intention of the Whole. It is a powerful Opiate, and given from ten Grains to two Scruples, to eaſe violent Pains, and procure Sleep. *Quincy.* But, perhaps, this Medicine, and all of this Claſs, may be much better, if prepar'd with Honey.

PHILOPARABOLOS, φιλοπαράβολος. An Epithet, apply'd by *Aſclepiades* to one of the two Methods uſed by him in the Cure of a Phrenſy, and ſignifying *violent* and *dangerous*, in Oppoſition to his other Method, which was ſafer, or, in the Language of *Cœlius Aurelianus*, *non meticuloſus*, and proper for moſt Patients. This *dangerous* and *violent* Method (for that Reaſon called *Philoparabolos*, which is uſed, by *Plutarch*, to ſignify one who deſperately throws himſelf into the midſt of Dangers) conſiſted in exhibiting, at the firſt Viſit, a large Draught of pure or undiluted Wine, mix'd with Sea-water; for, ſays *Aſclepiades*, giving a Reaſon for this Practice, all thoſe Helps and Benefits which accrue to the Sick, in a weak and ſlow Manner, from the Uſe of Muſſum, and ſorbile Liquors, are much more readily and plentifully procured by Wine; for the Exhibition thereof is ſucceeded by a vaſt Fervor, with a Lowering of the Pulſe, and a Repreſſion of the colliquative Sweats, the Wine performing the Office of an univer-

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universal Cautery. *Cœlius Aurelianus, Acut. Morb. Lib.* 1. *Cap.* 15.

PHILOXENIAS ANTIDOTUS. The Name of an Antidote, described by *Nicolaus Myrepsius, Sect.* 1. *C.* 239.

PHILTRON, φίλτρον. A Love Potion, or Medicine to excite Love. It, also, imports that Cavity, or Depressure, in the upper Lip, which is situated immediately under the *Septum* of the Nose.

PHILUMENI MEDICAMENTUM. The Name of a Medicine for the Eyes, described by *Oribasius, Collect. Medicinal. L.* 8. *C.* 45.

PHILYPOSTROPHA, φιλυπόστροφα. Whatever cause, or threaten, a Relapse, are thus call'd by *Hippocrates, Prorrhet.* and *Coac. Prænot.*

PHIMOSIS. Sometimes the Præputium, or Foreskin, is so contracted by a violent Inflammation, that it cannot be drawn backward behind the Glans. This Disorder is call'd Phimosis by the *Greeks*, and produces many dangerous Consequences; especially if a virulent Venereal Matter be lodged between the Glans and the Skin; for, by the Contraction of the Skin, those little Ulcers of the Glans, called Chancres, which proceed from impure Copulation, cannot be conveniently cleansed or healed. Nor is it surprising, as *Verduc* observed, that a Gangrene, or Cancer, or, at least, a violent Inflammation of the Glans and Foreskin should arise from this Cause; and, upon account of these Mischiefs, the Penis must either be consumed by the Ulcers, or removed by the Knife. The Patient, generally, cannot void his Urine without extreme Pain, because of the Corrosion of the Skin and Glans. The general Cause of a Phimosis is, by Physicians, rightly ascribed to impure Coition. For whilst the virulent Matter, which had been lodged in the Sinuses of the Vagina, continues between the Skin and Glans, the Foreskin, especially if it should be naturally long, or tight, can hardly escape being swell'd with an Inflammation, and a Phimosis must be induced. Some, however, have the Foreskin naturally so long, and so straiten'd, that the Glans can either be not at all, or very little uncover'd; but as this neither occasions Trouble in discharging the Urine, nor any Impediment in Procreation, it requires no Aid from the Surgeons, unless it be attended with an Inflammation, violent Pain, or any remarkable Inconvenience in Coition. Those who have their Foreskin naturally very long, are much more easily infected by impure Embraces, than others, as we learn both from Reason and Experience.

If this Disorder is occasion'd by no Venereal Taint, it is cured by bathing the Penis, a sufficient Time, in warm Water: But, if it proceeds from a Venereal Infection, proper internal Medicines must be exhibited; and the Pain may be alleviated, and the Ulcers heal'd, by the following Method. In order to wash out the acrimonious morbid Humours lodged under the Skin, let warm Water, or rather, a Decoction of Barley, mix'd with Honey of Roses, be frequently injected with a Syringe, between the Skin and the Glans. To discuss the Tumor, apply, externally, an emollient and digestive Fomentation, or Cataplasm, round the tumefied Part of the Penis; and, if the Inflammation be severe, Bleeding should not be omitted. After these Measures are duly taken, we may endeavour to draw back the Prepuce. But if the Tumor, and violent Exulceration, of the Glans render this Attempt impracticable, if the Disorder increases, or, lastly, if the Prepuce was naturally long, and could not be drawn back before the Infection, Recourse must be had to the Knife.

In this Case, there are two Methods of Operation. 1. Let the End of the Prepuce be drawn as far forwards as possible, and let an Assistant hold the cover'd Glans in his Fingers. Let the Operator, with his Left Thumb, press back the Glans cover'd with the Skin, and then, with a Knife, or Scissars, let him extirpate all that Part of the Skin which projects beyond his Thumb, much in the same manner with the *Jewish* Circumcision. Thus may the most straiten'd Part of the Skin be easily drawn back; and, the Glans being uncover'd, the Ulcer may more expeditiously be cleansed and heal'd.

2. The other Method is thus perform'd. The superior Part of the Prepuce must be drawn up by the Fingers, and a Pair of Probe-scissars introduced; then an Incision must be made so far in the contracted Skin, as may be sufficient for uncovering the Glans. *Guillemeau, Palfyn*, and others, prefer a particular Knife for this Use, represented *Tab.* XLVII. *Fig.* 4. But why this Knife should be crooked, or why a strait Knife may not as well serve the Purpose, I cannot understand. After this longitudinal Incision, some Surgeons cut off, with the Scissars, as much of the End of the Prepuce, as appears superfluous. A copious Discharge of Blood succeeds this Operation; nor should it be suddenly stopped, but rather suffer'd to flow, as long as the Strength of the Patient will permit, in order to prevent an Inflammation. Then dress with dry Lint, and apply a proper Compress and Bandage; and proceed, afterwards, as in the Cure of other Wounds. Besides the Cautions to be observed in the first Method of Cure, particular Care must be taken, that, in healing the Wound, the Extremity of the Prepuce be not too much contracted; by which means the Patient would be again exposed to the same Disorder. Sometimes, by dividing the Prepuce, the Glans is drawn back by the Frenum, and the Penis becomes incurvated; in which Case, the Frenum must be cut with the Knife, or Scissars. If a Gangrene affects the Glans, as in an Instance related by *Verduc*, it is necessary to penetrate to the sound Parts by frequent Scarification, and to apply a Fomentation of *Unguentum Ægyptiacum*, and Treacle, dissolved in camphorated Spirit of Wine, till the Gangrene disappears. But the stubborn Ulcers, or Chancres, can scarcely be removed without the Use of internal mercurial Medicines; and, sometimes, not without a slight Salivation. Nor must I omit to mention an Instrument contrived by my Friend, Dr. *Trew*, for this Purpose, and represented in *Tab.* XLVII. *Fig.* 5. whose Plates A A, being introduced under the Skin, and gradually distended by the Screw B, they, by their Elasticity, gently dilate the contracted Skin; and thus may the Glans be denudated, without the Help of a Knife. But I question whether this Instrument will always answer the Intention.

PHLASMA, φλάσμα. A Contusion, or Collision.

PHLEBION, φλεβίον. A small Vein.

PHLEBODONODEA, φλεβοδονώδεα, an odd, and sort of foreign, and, for that Reason, obscure Term in *Hippocrates*, 1 *Prorrhet.* 101. and *Coach.* 20. *Galen* explains it of the Veins or Arteries, agitated by the excessive Heat of the Blood; which happens under a great Effervescence of the Humours, or violent Pains of the Head, when the Veins and Arteries at the Temples, as well as the Jugulars, are subject to a sort of Concussion and Subsultus; so that the Word, by Etymology, imports as much as φλέβες δονεύμεναι (*Phlebes donumenai*) *Veins agitated.* Some, he says, read φλεβοδονώδεα (*Phlebotonodea*), understanding thereby a Distention of the Veins. Others, to avoid all Ambiguity, write it φλεδονώδεα (*Phledonodea*), deriving it from φλεδόνες (*Phledones*), expounding the Word by παραλήρημα (*paralerunta*), and apply it to Persons in a Delirium: For φλεδόνες are expounded in the *Exegesis*, by φλυαρίαι (*phluariæ*), *Trifles, Follies*, and λῆροι (*Leri*), *idle Amusements of delirious Persons.* In 4 *Epid.* we read, that *The Hypochondrium appeared distended,* φλεβονώδεα τεταθαι. But we ought, says *Foesius*, to read the Word φλεβοδονώδεα, or φλεβοδονώδεα, or φλεδονώδεα, and to understand it of a Distention of the Hypochondrium, after the manner of the Veins and Arteries, when under a Distention and Agitation, or Concussion from the Heat and Effervescence of the Blood.

PHLEBOPALIE, φλεβοπαλίη. The Vibration, or Pulsation, of an Artery.

PHLEBORRHAGIA, φλεβορραγία, from φλὲψ, a Vein; and ῥήγνυμι, to break. A Rupture of a Vein.

PHLEBOTOMIA, φλεβοτομία, from φλὲψ, a Vein; and τέμνω, to cut. Phlebotomy.

There is not a more excellent, instantaneous, and efficacious Remedy for removing various Diseases, both of the acute and chronical Kind, than Venesection, prudently and cautiously used; for some violent Disorders, of the most dangerous Nature, arise from a Redundance of Blood; from a Suppression of its critical Evacuations from the Uterus in Women; and a Defect or Interruption of the hæmorrhoidal Discharge in Men. A Phlethora, by retarding and stopping the free and equable Circulation, lays a Foundation for Impurities of the Humours, Stagnations, Infarctions, Obstructions, Extravasations, and Ruptures of the Vessels: For whilst the Blood, by its too great Quantity, strongly resists the contractile and elastic Force of the Heart, Arteries, and other Vessels, its progressive Motion through the whole Body is not only retarded, so that it becomes thick, and fit for generating Infarctions, and Obstructions, the fruitful Sources of chronical Disorders, but, also, in delicate Patients, and highly nervous Parts, by exciting spasmodic Strictures, it induces an Inequality in the Circulation of the Humours, and violent and impetuous Congestions, to some of the nobler Parts, which lay a Foundation for terrible Disorders in the Head, Breast, and Præcordia: These dangerous Disorders are not only prevented, but presently relieved, by Venesection seasonably and duly instituted, especially in Patients who abound with Blood, have large and full Vessels, or who labour under a Suppression of the Menses, or Hæmorrhoids: When in the Spring, and about the Equinox, the Air, on account of the Nearness of the Sun to our Climate, becoming thin and rare, produces a violent Expansion in the Blood, there is great Danger of those Diseases which arise from a Phlethora, as *Hippocrates* justly observes; so that, before these Seasons come on, it is expedient to lessen the Redundance of the Blood by Venesection, and by that means prevent the approaching Disorders: Nor is it absolutely necessary we should always accurately observe these equinoctial Seasons; for, when the Quantity of congested Blood requires a more speedy and expeditious Evacuation, or when, about the End of *February*, and Beginning of *March*, the serene and tepid State of the Atmosphere produces an Expansion and Turgescence of the Blood, which prove injurious to its progressive Motion, we are not to wait for, but, without Hesitation, to anticipate, the Equinox. I have known some, who from an ill-tim'd Adherence to their usual Custom, have delay'd Venesection till the Equinox, whilst in the mean time, the Phlethora increasing, they died of an apoplectic Fit before that time: Nor are we to listen to those who affirm, that Venesection is only proper at certain Periods of the Moon, or when certain Conjunctions of the Stars happen: But we are boldly,

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boldly, and without any Scruple, to take Blood from phlethoric Patients, under all Phases of the Moon, and every Conjunction of the Stars, especially if the Atmosphere is serene and calm: Those, also, who abound with Blood, ought to use Venesection about the autumnal Equinox, lest the Blood should, by the Winter Cold, be inspissated, and become sordid, the Excretions being disturbed by the Inclemency and Variation of the Weather; by which means a Foundation is laid for those Disorders which proceed from an Impurity and Stagnation of the Humours. Some, who greatly abound in Blood, ought to preserve themselves from Disorders, by using Venesection thrice a Year, that is, in the Beginning of *March*, and in the Ends of *May* and *September*.

As a Redundance of Blood indicates Venesection, a Penury of it, and a Defect of Strength, contra-indicate this Operation. A Redundance of Blood is sufficiently known, from the Repletion of the Vessels, the Largeness of the Pulse, the luxurious Diet, the quiet and calm Method of Life, and the Intermission of any critical, natural, or artificial Evacuation; for, when all these Circumstances concur, we may safely and boldly use Venesection. On the contrary, when the Body is infirm and emaciated, and the Pulse weak, in consequence of a Want of Blood and Strength, Venesection is absolutely to be condemn'd, unless we intend to do an immediate Mischief to the Patient; for the Strength of the Pulse depends upon the large and brisk Impetus, with which the Blood is convey'd from the Left Ventricle of the Heart into the large arterial Tube: Now the Strength of the Heart to perform this Expulsion, depends upon the free and sufficient Motion of the Blood through the Coronary Vessels into the Substance of the Heart, as, also, on the Influx of the nervous Fluid into the Fibres of the Heart: When, therefore, the Pulse is weak, small, and languid, from too scanty an Influx of the nervous Fluid, and a laudable Blood, and too weak an Impulse of the Blood into the Arteries, it is highly prejudicial to open a Vein in any Patient, or in any Disorder, because it more exhausts the Blood and Strength, which are already too much impaired.

Those Physicians, therefore, err, who order Venesection either in the Decline of the Disease, or in Cases where one Disease succeeds another, as it happens, sometimes, in Fevers, or violent Hæmorrhages. Nothing is more frequent in Practice, than to observe a Suppression of the Menses in Women, who surmount any Disorder which consumes their Blood and Strength. But, in this Case, we are not, in order to provoke the Menses, to prescribe Emmenagogues, or Evacuations of Blood; but we are rather by Analeptics, and a rich Diet, to generate a fresh Stock of laudable Blood and Humours.

A Defect of Strength, sometimes, arises not from a Penury, but from a Redundance, of Blood: We often perceive a Slowness and Weakness in phlethoric young Persons and Adults, who were before brisk and active. In phlethoric Patients we, also, observe an unusual Languor, both of Body and Mind, a Defect of Sleep, and a preternatural Expansion of the Arteries: In this Case, it is expedient to remove the superfluous Mass of Blood, which, by its Quantity, hinders the systaltic Motion of the Arteries, immediately after which the Pulse becomes more frequent and strong. But the skilful Physician must distinguish such an Oppression of the Strength, when present, and arising from a Redundance of Blood, from that Weakness which draws its Origin from a Penury thereof.

After Venesection, the salutary Excretions of Blood, and the Evacuations by Stool, Sweat, and Urine, succeed better, and more freely, than they did before; as all the salutary Excretions depend upon the quick or slow, the brisk or languid, Circulation of the Blood: Hence it is obvious, that if, by a Redundance of the Blood, its progressive Motion, together with the Excretions, is retarded, the diminishing the Plenitude of the Vessels must increase its Circulation, render it more fluid, free the Passages of the excretory Ducts, and convey the Blood more freely and copiously to the Emunctories, that thus the Excretions may be the better carried on.

Hence I have often observed, that a Suppression of the Menses has soon been removed, by opening a Vein in the Foot. I, also, know several Instances, in which the hæmorrhoidal Discharge, after having been a long time stopt, has been happily restored by Venesection.

It is certain, from Experience, that in plethoric Patients, and those labouring under spasmodic Disorders, an aqueous and limpid Urine is discharged with Difficulty; but, immediately after Venesection, it is evacuated more copiously, and more deeply tinctured. *Hippocrates*, also, in *Sect. 6. Aph.* 36. informs us, that "Phlebotomy removes a Difficulty of Urine; and, for that Purpose, opens the Veins of the inferior Parts of the Body." *Riverius*, also, in *Cent.* 1. *Obs.* 1. & 48. & 49. affirms, that, by Venesection, aqueous Urine has been render'd of a deeper Colour.

I have, also, frequently found, that in hypochondriac Patients, who are generally costive, the Body has been render'd soluble by Venesection: The Reason of which is certainly this; that in the hypochondriac Disorder, by reason of the difficult Passage of the Blood through the Mesentery and Liver, the Vessels are too copiously filled with Blood; and, by reason of their preternatural Distention, Spasms are produced in their Coats, and their peristaltic Motion is injured; in consequence of which, neither the Fæces, nor the Flatulencies, are duly evacuated by the Anus: But, by seasonably opening a Vein in the Foot, or, as I have often observed, by recalling the hæmorrhoidal Discharge, by the Application of Leeches to the Veins of the Anus, the Circulation of the Blood through the Vessels of the intestinal Coats is render'd free; a due Strength and Motion is restored to the Intestines themselves; and the Fæces are more regularly and naturally discharged.

Venesection is not only often useful to old Persons; but, also, powerfully contributes to Longevity, or the Protraction of their Lives: For it is a common, though a palpable Error, to affirm, that Venesection is absolutely improper in Old-age; as if Persons at this Period of Life were so far from labouring under a Redundance of Blood, that they were rather afflicted by a Deficiency of that Fluid, and a Want of Strength. We may indeed readily grant, that all old Persons are not phlethoric, and, consequently, do not stand in need of Venesection; nor does Age of itself contribute to the Repletion of the Vessels: But, at the same time, there are some vigorous, robust, and sound old Persons, furnished with capacious Vessels, who not only eat heartily, but are, also, capable of duly concocting and digesting the heaviest Aliments; in consequence of which, it is not to be doubted but a copious Chyle and Blood will be generated from well-concocted Aliments; and such a State is sufficiently apparent from the florid Colour of the Countenance, and the Turgescence of the Vessels with Blood: It, also, frequently happens, that not only Adults, but, also, Persons extremely old, discharge large Quantities of Blood from the hæmorrhoidal Veins, without any remarkable Loss of Strength: And I myself have known some Persons of eighty Years of Age, who have evacuated large Quantities of bloody Urine, without a perceptible Decrease of Strength. Besides, Age is not very fit for Motion and Exercise; and, for this Reason, the Excretions cannot bear a due Proportion to the Quantity of Aliments taken; and, as the Blood is little consumed by Heat and Motion, there must, necessarily, be produced a Redundance of Humours, and an Infarction and Plenitude of the Vessels, which, unless seasonably removed, lay a Foundation for those Disorders which are most familiar to old Persons, such as Wasting of the Flesh, Coughs, Coryzas, Hoarseness, Pains of the Joints, Palsies, a Difficulty of Urine, Stones of the Kidneys and Bladder, Itchings, and the dry Itch: Which Disorders do not proceed immediately from a Redundance of the Blood, but, rather, from an Impurity of the Serum; but, at the same time, this Impurity of the Serum derives its Origin from the Redundance of the Juices, by which the Excretion of the Sordes is prevented.

I know many Instances of old Persons who have lived sound, robust, and free from the ordinary Diseases incident to Old-age, by no other means than Venesection, used twice a Year. And that Venesection is not unfriendly to Old-age, is sufficiently obvious from this, that almost all the *Swiss*, even when eighty or ninety Years of Age, use Venesection every Year. See *Wepfer*, *Lib. de Apoplexia*. *Primrose*, also, *Lib.* 4. *de Vul. Error. Cap.* 23. evinces from three Instances, that Persons of eighty Years of Age may commodiously bear Venesection in the most violent Distempers, whether arising from internal or external Causes: This I have, also, found confirmed by frequent Experience. But we are by no means from this to conclude, that Venesection is proper in old Persons, who are weak and languid, whose Appetite is lost, or who labour under a Weakness of the Stomach and Intestines, and, especially, in those who have previously struggled with some long and chronical Disorder.

In continued and acute Fevers, Venesection is generally not only useful, but absolutely necessary: It is surprising, that some eminent Physicians, in other Cases remarkable Patrons of Venesection, should yet maintain, that in all acute Fevers, whether of the benign or malignant Kind, as, also, in exanthematous Fevers, and those that are not such, it is so far from being necessary, that it is rather pernicious, except in the Synocha, in which they do not think it absolutely necessary; but only when it is accompanied with a Phlethora, and an Orgasm: They assert, that it has been frequently observed, that Venesection, in the Beginning of such a Fever, has, about its State or Height, produced dangerous Translations and Congestions of Blood to the Head, which induce Convulsions, and a mortal Phrenitis: They are, also, of Opinion, that Nature, which always wisely governs the animal Oeconomy, does not in these Fevers intend an Evacuation of the redundant Blood; but only a Resolution of it into an excrementitious Serum, with a Secretion of the noxious Matter, by means of an intense Heat; and that, for this Reason, Venesection is, in these Cases, contrary to the Intention of Nature, since, by it, the salutary Work of Secretion is disturbed. But this Doctrine is overthrown, both by Reason and Experience: For I have known many robust Persons, both young and full-grown, who, being full of Blood, and seized with these Fevers, in consequence of the Omission of Venesection, have, in a few Days, died of a Phrenitis, an Inflammation of the Stomach or Fauces, or a Peripneumony. In such Cases, after Death, the whole

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whole Body has been found surprisingly tumid, and the sanguineous Ichor has been copiously discharged from the Nostrils: A prodigious Stench, also, accompanied with Putrefaction, has immediately succeeded; for no other Reason but the inflammatory Stagnation of the Blood. On the contrary, I have, from many Observations, found, that Venesection, only once performed, in Patients labouring under acute Fevers, has not only diminished, or absolutely removed, the Anxieties of the Patients, but, also, a Train of other terrible Symptoms. This Doctrine is, also, confirmed by the Practice of the *French*, who, in all Fevers, with great Success, use Venesection, not only once, but twice, or oftener, if the Condition of the Patient indicates its Propriety: But that Venesection, about critical Times, produces Translations of Blood to the Head, is an egregious Mistake; for though Phrensies and Convulsions frequently happen, in those who labour under acute Fevers, yet the same Misfortunes happen, and that too more frequently, when Venesection is omitted, than when it is used: And since almost all who die of acute Fevers, are seized with a Phrenitis and Convulsions, certainly, if Venesection is the Cause of these Symptoms, a Person labouring under an acute Fever, cannot readily die, if that Operation is neglected.

I, on the contrary, do not hesitate to affirm, that, in acute Fevers, Venesection is often not only useful, but necessary; for Persons seized with acute Disorders have always rather a Redundance, than a Penury, of Blood and Humours: Now it is certain, that the very Essence of a Fever consists in an Augmentation of the Tone, and a certain spasmodic Stricture, of all the Vessels and Fibres, upon which both the Circulation of the Blood, and the Increase of the Heat, depend: It is, also, known, that by Spasms the Diameters of the Vessels are lessened; and that, by Heat, the Humours are expanded, and possess a larger Space: For which Reason the redundant and raging Blood, being denied a free Passage through the Blood-vessels, is impetuously agitated hither and thither, and forced, as to improper Parts, thro' Vessels whose Diameters are naturally too small for the Admission of the Blood, where it remains, becomes stagnant, and lays a Foundation for dangerous Inflammations, which are most effectually prevented by seasonable Venesection. This is sufficiently confirmed by the Authorities of the most skilful Physicians; for *Hippocrates* himself, in his Treatise *de Ration. Vict. in Acut.* warmly recommends Venesection, in acute Disorders: Besides, the Antients, in these dangerous Diseases, used Venesection till a Deliquium was brought on, as we are informed by *Galen*, in *Lib.* 1. *de Rat. Vict.* where he tells us, that such Venesection as brings on a Deliquium is only to be used in the most acute Diseases, and in those Patients who are robust and vigorous, in the Flower of their Age, and abound in Blood, as, also, where the Climate, the Air, and the Season of the Year, are very temperate. The Diseases of this Kind are highly burning Fevers, intense Pains, considerable Inflammations of the Viscera, Carbuncles, a Synochus, an inflammatory Lassitude, and violent Pains of the Joints: For, in all these Disorders, when a large Quantity of Blood is evacuated, the Heat is immediately abated; in some of them the Body is render'd soluble, or Sweats are excited; by which means the Disease is either terminated, or at least diminished, according to *Hollerius*, in *Comment. ad Aphor.* 3. *Sect.* 1. *Hippocr.*

In Exanthematous Fevers, also, those of the Petechial and Purple Kind, the Measles, and Small-pox, and even the Plague, Venesection is so far from being unsafe, that, when prudently used, it proves highly beneficial. It is a Dispute of great Importance among Physicians, whether in those Disorders, in which the peccant Matter is forced to the Surface of the Body, Venesection may be properly and successfully used: Some espouse the Affirmative, and others the Negative, whilst both appeal to Experience: But a due Distinction is to be made, and Venesection is to be accommodated to the Nature and Variety of Circumstances: Thus, for Instance, when the Humours are defective; when, in the Beginning of a Disorder, the Strength is impaired; when the Pulse is weak, hard, and small, the Vessels numerous, but narrow; when the Strength is diminished by any Affliction of Mind, or by a Flux; in a Word, where-ever there is a Malignity of the Humours; Venesection is rather prejudicial than salutary: For, in order to eliminate a Matter which offends, not so much by its Redundance, as by its caustic, subtile, and virulent Quality, so prejudicial to the nervous Parts, a strong moving Force of the Heart and Arteries is required, which can only be expected from a sufficient Influx of the Blood, and nervous Fluid. Besides, this peccant Matter to be expelled can only be conveyed to the Surface of the Body, by the Assistance of the Blood and Humours; since, when the Diameters of the Vessels are small, they easily collapse, and are only filled by a brisk and lively Impulse of the Fluids: If, therefore, a Physician, by Venesection, diminishes the already defective Blood, Humours, and Strength, he does a terrible Injury to the Patient; since, by this means, the peccant Matter remaining within, like a Poison, perverts the Motion of the Solids and Fluids, and proves mortal.

But quite different Measures are to be taken, when, in consequence of the Redundance of the Blood, and its Rarefaction by the febrile Heat, the Coats of the Heart and Arteries are so distended, that their Systole is diminished, and almost suppressed; in consequence of which, the Blood is not freely convey'd to the small cutaneous Tubes, that the peccant Matter may be duly secreted and eliminated; for, in such a Case, Reason informs us, that, when a certain Quantity of the Blood is evacuated, the remaining Part circulates more briskly, the equable Resistance of the Coats to the Impulse of the Fluids, and the systaltic and diastaltic Motion, are restored, by which the Secretion and Evacuation of the peccant Matter is excellently carried on: This most frequently happens in young and phlethoric Persons of sanguineous Constitutions, who live high, or are accustomed to an indolent Course of Life; as, also, in those Constitutions, in which an immoderate Indulgence of boundless Passion has diminished the Excretions, and, consequently, generated a Redundance of Humours. Patients of this kind, when labouring under a purple, petechial, a catarrhous, benign, or malignant Fever, or the Small-pox, are exposed to the most certain and infallible Danger, by an Omission of Venesection; whilst, on the contrary, those Disorders are happily removed, when, by diminishing the Plethora, the free Circulation of the Blood is restored.

In Exanthematous Fevers already appearing on the Skin, Venesection is so far from being prejudicial, that it is sometimes highly beneficial. It is a common Opinion, that upon the Efflorescence of Petechial and Purple Fevers, the Measles, and Small-pox, it is neither proper to use Venesection, nor Purgatives, lest the malignant Matter, being by these means recalled into the Habit, should produce an irreparable Loss. But though it is an Observation of great Importance, and supported by Experience, that Venesection is not to be used, when Nature is employ'd in the Work of Excretion, and when the exanthematous Eruptions have not had a long and fixed Seat in the Skin; yet there are Cases, in which, after the Appearance of the Efflorescences, Venesection is both useful and necessary: For I have observed, in those who have died of a Purple Fever, whether of the primary or secondary Kind, or of the Measles, or Small-pox, violent Spasms, not only of the Joints and Extremities, but, also, of the Abdomen, which, in consequence of the Contraction of the Skin, were succeeded, not only with a Retrocession of the Efflorences, but, also, with a violent Anxiety, a Tossing of the Body, and frequently a Delirium, accompanied with a Deliquium; all which mortal Symptoms are not, as is commonly believed, so much produced by the Retrocession of the exanthematous Matter to the internal Parts, as by the Impetus and Congestion of the Blood to the Heart and Brain: Hence, induced by the Reason of the Thing alone, in one Year's Time, I, by Venesection in the Arm, saved four Childbed Women labouring under so violent Purple Fevers, that their Lives were despair'd of; for, as soon as a Vent was given to the Blood, the Anxiety about the Præcordia, and the Deliquiums, were removed, and the Patients forthwith became better, to the great Surprize of the Surgeon and Bystanders, who predicted the Death of the Patients, under the very Operation which could only afford them Relief. In a young Man, also, dangerously ill of the Small-pox, when an imminent Delirium, and a violent Anxiety about the Præcordia, threaten'd Death, I successfully order'd Venesection in the Arm. Nor does this Piece of Practice want the Authority of some of the most celebrated Physicians to support it: Thus *Botallus*, that noted Patron of Venesection, in *Lib. de Venæsect.* informs us, that, with great Success and Advantage, he order'd Venesection in pestilential Buboes, and other exanthematous Disorders, if the Fever did not remit. *Muraltus*, also, not to mention others, in *M. N. C. Dec.* 2. *An.* 7. *Obs.* 115. observes, that Venesection proved salutary in an epidemical Fever, in which a large Number of Papulæ appeared on the Body.

In the Paroxysms and Exacerbations of Fevers, and other Diseases, Venesection is dangerous; but is beneficially used on the intervening Days: In the Paroxysms of intermittent Fevers, under an immediate Fit of an Epilepsy, or the hysteric or hypochondriac Disorders, and in Cases where the Extremities are cold, or internal Heat and Anxieties rack the Patient, Venesection not only augments the Violence of the Symptoms, but, also, endangers the Life of the Patient. The Reason of this is obvious; for the Exacerbation of Symptoms and Diseases is accompanied with Spasms, especially of the external Parts, as, also, of the Stomach and Intestines; by which the free Circulation of the Blood is intercepted, and the Blood itself forced, with a greater Impetus, to the large Vessels, and especially to the Breast and Heart: If, therefore, any one attempts Venesection in the Arms or Feet, when all the Parts are spasmodically constricted, he will in these Parts infallibly augment the Spasms; for the larger Quantity of Blood is taken from these Parts, the more the spasmodic Contraction of the Fibres is increased; since nothing more powerfully resists this spasmodic Stricture, and the Regurgitation of the Blood to the internal Parts, than a strong Impulse of the Heart and Arteries, and a liberal Afflux of the resisting Blood to the Parts: Hence it is expedient to delay Venesection till the Day of Intermission or Remission, when the Spasms are remitted, and the free Afflux of the Blood to the Parts is restored.

But there are some Cases, in which it is expedient, even under the spasmodic Paroxysms, though not in the Parts spasmodically affected, but in those to which the Blood is conveyed with the greatest

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greateſt Impetus: Thus it often happens, that, in conſequence of Spaſms of the Parts of the Abdomen, or of the Legs and Feet, which are extremely cold, either on account of a Fright, or any other Cauſe, the Blood is impetuouſly convey'd to the Breaſt and Head, and threatens an Apoplexy, or a Suffocation; in which Caſe, a Vein opened, not in the inferior, but ſuperior Parts, is highly uſeful, and affords preſent Relief.

There is, therefore, a ſlight Species of Apoplexy, which may be removed by Veneſection alone, when, either by the Violence of ſome Paſſion, eſpecially a Fright, or by terrible Spaſms of the inferior Parts, the Blood being with ſuch an Impetus convey'd to the Head, as, by its Quantity, to diſtend the Veſſels of the Membranes of the Brain, their ſyſtaltic Motion is checked, and a ſlight Species of Apoplexy produced. This Species of Apoplexy is very familiar to hyſteric Women, to Perſons of plethoric Habits, and thoſe of delicate Conſtitutions and Minds; and is, by the unskilful and unthinking Part of Mankind, taken for a Deliquium; from which, however, it is widely different; For, in a Deliquium, there is no Pulſation of the Heart and Arteries, the Face is pale, and the Breathing imperceptible; but, in this ſlight apoplectic Paroxyſm, the Uſe of all the Senſes, whether external or internal, is totally deſtroyed, the Limbs remain immoveable, there is a violent Palpitation of the Heart, the Pulſe is large and quick, and the Face tumid and red: Nor does this ſlight Apoplexy ariſe from a Rupture of the Veſſels, which is an incurable Diſorder; nor from a Secretion of the Serum, which terminates in a Palſy; but only from a Stagnation of Blood in the Cavities of the preternaturally diſtended Veſſels; for it is certain from anatomical Diſcoveries, that the carotid and vertebral Arteries, as ſoon as they enter the Cranium, and run through the Membranes of the Brain, lay aſide their thicker Coats, with which all their other Parts are covered: For which Reaſon it is not to be wonder'd at, if, by the Quantity and Impetus of the Blood convey'd to the Brain, their contractile and elaſtic Force, by the Aſſiſtance of which the Blood is farther protruded into the venous Sinuſes of the Head, is diminiſhed or deſtroyed; by which means the Syſtole of the Carotids being deſtroyed, the Blood ſtagnates in the too much diſtended Veſſels of the Membranes of the Brain, and in the Plexus Choroides: Hence the Secretion and Influx of the nervous Fluid, on which Senſation and Motion depend, are intercepted and deſtroyed: Hence it is obvious, that, in order to reſtore the due Syſtole of the Veſſels, the free Circulation of the Blood through the Head, and the Influx of the nervous Fluid into the Nerves, there can be no more proper and efficacious Remedy, than taking a ſufficient Quantity of Blood from a large Orifice made in one of the Veins of the Arm; for, by this means, in a ſhort time, Reaſon, Senſation, and Motion, are reſtored.

But thoſe Phyſicians ill conſult the Safety of their Patients, who, for want of a ſufficient Knowledge of the Cauſes of this Misfortune, order Veneſection in the inferior Parts, becauſe theſe are, in ſuch a Paroxyſm, generally ſpaſmodically conſtricted, cold, and too remote from the Part affected, by which Circumſtances the Derivation of the Blood is rendered leſs expeditious and commodious. Beſides, I have often obſerved, in Patients whoſe whole nervous Syſtems were diſpoſed to ſpaſmodic Contractions, and whoſe Extremities were always cold, that by Veneſection, even when ſcanty, the Violence of the Spaſms in the inferior Parts has been in a few Hours increaſed: In conſequence of which, the Blood, being afterwards impetuouſly convey'd to the Brain, produces the apoplectic Fit above deſcribed, and which, in Proceſs of Time, becomes ſo violent, as to cut off the Patient, or, at leaſt, leave behind it a Palſy, or Loſs of Memory, unleſs removed by a ſpeedy and ſeaſonable Veneſection.

Diſorders of the Head ariſing from a Congeſtion of Blood, and a Diſtention of the Veſſels, require a Veneſection, which, however, is to be performed in the adjacent Parts. A violent and obſtinate Head-ach, a frequent Hæmorrhage from the Noſe, melancholic Madneſs, a Vertigo, an Ophthalmia, an Eryſipelas of the Head, and Inflammations of the Larynx and Pharynx, very frequently draw their Origins from Spaſms, too great a Congeſtion of Blood to the ſuperior Parts, and a violent Diſtention of the Veſſels; eſpecially in hypochondriacal Patients, and in Caſes where the Stomach and Inteſtines are turgid with Flatulencies and Sordes, or are ſpaſmodically conſtricted; as, alſo, in Caſes where the free and equable Circulation of the Blood is ſo intercepted, that, ruſhing copiouſly and impetuouſly to other Parts, eſpecially the Head, it there produces theſe Diſorders. In ſuch Caſes, for preventing Danger, and deriving the Impetus of the Blood elſewhere, it is expedient to open a Vein, either in the Forehead, the Temples, under the Tongue, or in the Neck.

In violent Cephalalgias, Ophthalmias, and Quinſeys, Veneſection under the Tongue is always highly beneficial; but, in a Phrenitis, Melancholy, and an Head-ach, ariſing from internal Cauſes, it is moſt expedient to open the external Jugular Vein; and, if this cannot be found, the Vein which runs longitudinally along the Forehead, and is a Ramification of the external Jugular, is to be open'd; the Neck being previouſly tied with a Ligature under the Chin, and the Breath retain'd. The Opening of this frontal Vein was very common among the Antients. Thus *Hippocrates*, in *Sect.* 5. *Aph.* 68. informs us, "that a Pain in the poſterior Part "of the Head is relieved by opening the Vein running along the "Forehead." And *Hollerius*, in his Commentary on this Aphoriſm, tells us, "that 'tis certain from Experience, "that many "have been inſtantaneouſly freed from Head-achs, by opening "the ſame Vein." *Alexander Trallian*, in *Lib.* 1. *Cap.* 13. greatly recommends the opening of the frontal Vein in a Phrenitis; and affirms, that he ſuddenly cured a phrenitic Patient by that Means; and in the 16th Chapter of the ſame Book, *de Melancholia*, he has theſe Words: "If a ſanguineous Matter is impacted in the Brain, we are boldly to open the frontal Vein; "for, in conſequence of the Evacuation of the whole other "Parts of the Body, there is no Harm produced by immediate "Applications to the Part affected."

Tho' we are certain from Experience, that in violent Diſorders of the Head, opening the frontal Vein, thoſe behind the Ears, the external Jugulars, and the ſublingual Vein, are of great Service, yet this Practice is not to be univerſally recommended; nor is it proper in all Caſes, ſince we are to have a particular Regard to the State and Conſtitution of the Patient; for if ſuch Diſorders of the Head are accompanied with a Plenitude of the Veſſels, or if violent Spaſms of the inferior Parts convey the Blood copiouſly and impetuouſly to the Head, it is to be dreaded, leſt opening a Vein in the Head ſhould invite a larger Quantity of Blood to it. For this Reaſon the moſt skilful of the Antients unanimouſly adviſe, that, at the ſame time, a Vein ſhould be open'd in the Arm, or in the Foot. Thus *Alexander Trallian*, in *Lib.* 1. *Cap.* 16. tells us, "that if we attempt any Cure on the Head, before the Body "is freed from its recrementitious Juices, we do Harm rather "than Good; ſince by that means a larger Quantity of Humours is attracted to the Part affected." *Hollerius*, alſo, in *Comment.* in *Aph.* 68. *Sect.* 5. of *Hippocrates*, informs us, "that, "if a Pain of the Head is accompanied with a Plethora, we "muſt firſt open a Vein in the Cubit, and then the frontal Vein; "but, if there is no Plethora, we may forthwith ſafely open the "frontal Vein; and if the Pain of the Head is produced by Conſent, if, for Inſtance, it ariſes from a Suppreſſion of the Menſes, "we are firſt to open the Vein in the Ancle, then that of the "Cubit, and then the frontal Vein. If the Head-ach ariſes "from ſome Diſorder of the Diaphragm, or Liver, we are firſt "to open the cubital, and then the frontal Vein."

With reſpect to opening the ſublingual Veins, in an Angina, it is, alſo, to be obſerved, that in a plethoric Habit, this Practice is dangerous, unleſs the Plethora is previouſly removed, by opening a Vein in the Arm. We are, therefore, to follow the Directions of *Alexander Trallian*, who, in *Lib.* 4. *Cap.* 1. *de Angina*, uſes theſe Words: "In Caſes of Neceſſity, I have, in the Morning, "open'd the cubital Veins, and then the frontal; after which, "by exhibiting Cream of Piſan in the Evening, I have perfectly "cured a Quinſey. I have, alſo, with great Succeſs, open'd the "jugular, when I could not find the ſublingual Veins."

In Diſorders of the Breaſt, ſuch as a genuine Pleuriſy, and a Peripneumony, Veneſection in the Arm is often highly neceſſary. Tho' a ſpurious Pleuriſy, which is a Species of Rheumatiſm, or arthritic Pain, and which ariſes from an acrid Serum contain'd within the Pleura, and ſurrounding the Ribs, does not always require Veneſection, but is often happily remov'd by a Diaphoreſis; yet quite different Meaſures are to be taken, in a true Pleuriſy and Peripneumony, the former of which is only a ſlight, and the latter a more profound Inflammation of the Lungs, ariſing from a Stagnation of Blood, firmly impacted in their Veſſels; for, in theſe, Veneſection is not only neceſſary, but, if there is a Plethora, muſt be repeated, in order to prevent the Increaſe of the Inflammation; which End is obtained, when the Blood, which is too copiouſly congeſted in the Veſſels, ſtagnant, and incapable of a free Circulation, is, for the ſake of a better Derivation, drawn from the moſt contiguous Part, making a large Inciſion in the Vein, that thus the Blood may be the more quickly and impetuouſly deriv'd from the Lungs.

Veneſection is of ſingular Uſe for the Purpoſes of Evacuation, Revulſion, and Derivation: The evacuating Uſe of Veneſection is to diminiſh the Quantity of the Blood; and, when this Intention alone is purſued, it is of no Importance, from what Part of the Body the Blood is taken. The derivatory Uſe of Veneſection is to attract the Flux of the Blood from any Part affected to other Parts, from which it may be more commodiouſly evacuated. Thus, in violent ſpaſmodic and flatulent Diſorders of the Abdomen, and in Diſeaſes ariſing from a Suppreſſion, or retarded Diſcharge, of the Menſes or Hæmorrhoids, 'tis ſafer for the Purpoſes of Derivation to open a Vein in the Foot, rather than in the Arm. Hence *Hippocrates*, in *Lib. de Nat. Hum.* juſtly informs us, "that, in Pains "of the Back and Coxendices, we are to uſe Veneſection in the "Hams and Ancles." And *Severinus*, in his Treatiſe *de efficaci Medic. Cap.* 26. informs us, that, for preventing nephritic Pains, promoting the hæmorrhoidal and lochial Diſcharges, as, alſo, in Inflammations and Fallings down of the Anus, in Vomitings of Blood, and Schiatic Pains, a Vein is with great Succeſs opened in the Foot: On the contrary, in Diſorders of the Head, ſuch as an Apoplexy, a Lethargy, Madneſs, Melancholy,

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a Phrenitis, a ſuffocative Catarrh, a ſanguineous Aſthma, a Spitting of Blood, a Pleuriſy, a Peripneumony, a ſpurious Inflammation of the Liver, the too great Quantity and Influx of the Blood, which ought ſpeedily to be deriv'd to other Parts, are more happily remov'd by opening a Vein in the Arm, which is far nearer the Part affected: But Revulſion, or rather Avulſion, is made, when the Impetus of the Blood is recal'd, or, as it were, drawn upwards, from the inferior to the ſuperior Parts. Thus, in too profuſe a Diſcharge of the Menſes or Hæmorrhoids, a Vein is ſucceſsfully open'd in the Arm. The ſame Practice is, alſo, expedient in pregnant Women, in order to prevent Abortion, if the Veſſels of the Uterus are ſo much infarcted and diſtended with Blood, that the Weight of the Uterus, preſſing downwards, becomes burdenſome and uneaſy to the inferior Parts.

Veneſection is to be prudently us'd for the Purpoſes of Derivation and Revulſion; for, if Obſtructions of the Veſſels ariſing from impacted Blood are to be remov'd, it is expedient not to take a large, but a moderate Quantity from the moſt contiguous Part; becauſe, by this means, the Remainder of the Blood is more impetuouſly convey'd to the Part affected, and carries off the ſtagnant Blood lodg'd in the ſmall Veſſels, ſince moderate Veneſection accelerates the too languid Motion of the Fluids in the Veſſels. Hence, opening the Vena Saphena often inſtantaneouſly reſtores the menſtrual Diſcharge; and the hæmorrhoidal Diſcharge, when too ſlow, is happily promoted and accelerated by opening a Vein in the Foot; whereas theſe Effects are often not produc'd, by taking a large Quantity of Blood from the Arm, or the Foot; but, if the Diſorder is inveterate, and the Obſtructions of the Veſſels ſo great, that it cannot be remov'd, in ſuch a Caſe, if the Patient is plethoric, opening of the Vena Saphena is more hurtful than beneficial; becauſe it invites the Blood more copiouſly to the Uterus, by which means a greater Obſtruction of the Veſſels is produc'd. Nor in an Hemicrania, or obſtinate Head-ach, in a chronical Vertigo, or in Melancholy, does Veneſection in the frontal Vein afford any Relief; becauſe by that means a greater Afflux of Blood to the Head is produc'd, and the obſtructed Veſſels of the Membranes of the Brain more infarcted. 'Tis, therefore, better, in ſuch Caſes, to take Blood from the inferior Parts: In recent Iſchiadic Pains, Veneſection in the Foot often affords immediate Relief; whereas, when the Diſorder is inveterate, it rather increaſes it. In Bodies, therefore, full of Blood and Juices, 'tis far more ſafe, according to the Advice of *Hollerius*, in *Comment.* in *Sect.* 4. *Aphor.* 36. firſt to open a Vein in the Arm, and then the Schiatic Vein, that there thus may be a Revulſion of the Blood in various Places, at one and the ſame time. The ſame Author, alſo, juſtly informs us, that in Dyſuries proceeding from Infarctions of the Kidneys with Blood, as, alſo, in Inflammations of the Bladder, we are firſt to open a Vein in the Arm, and then the Vena Saphena, in the Ham or Ancle. From what has been ſaid, 'tis ſufficiently obvious, that Veneſection may be us'd in a Part very contiguous to that affected, if the Diſeaſe is recent, its Cauſe moveable, and the Plenitude of the Veſſels not very great; but when the Diſeaſe is of a long Standing, and the Body abounds with too much Blood, we are firſt to uſe Veneſection in the more remote, and then in the more contiguous Parts of the Body.

It is of great Importance to take away only a due and proper Quantity of Blood; and ſometimes there is a neceſſity for reiterated Veneſection. Young Perſons, thoſe of tender Habits, ſuch as have ſmall Veſſels, and Women who readily fall into *Deliquiums* by means of large and copious Veneſection, ought to abſtain from it, if poſſible; but, if it ſhould be abſolutely neceſſary, the Orifice ſhould in ſuch Perſons be made ſmall, and the Blood but gradually evacuated, compreſſing the Inciſion at proper Intervals with the Finger. But Women, after fifty Years of Age, when their Menſes generally ceaſe, require a larger Extraction of Blood, which, alſo, holds in robuſt Men with large Veſſels, and in Perſons, who, being accuſtom'd to rich and delicate Living, begin to have the hæmorrhoidal Diſcharge ceaſe. In the Spring, eſpecially in *May*, People can bear larger Evacuations of Blood, than in the Summer, or Autumn; but a moderate Quantity of Blood is only to be taken away in exceſſive Hæmorrhages, ſuch as ſpitting of Blood; as, alſo, enormous Diſcharges of the Menſes, and Hæmorrhoids: Nor is it expedient to deprive the Body of a large Quantity of Blood, before the ordinary Time of the Menſes, leſt the ſubſequent Diſcharge ſhould either totally ceaſe, or be conſiderably diminiſhed.

In all inflammatory and exanthematous Fevers, if, in conſequence of a Plethora, there is a Neceſſity for Veneſection, we are to be very careful, that only a due Quantity of Blood be taken away; for, if, in caſe of a Redundance of Blood, too ſmall a Quantity of it, ſuch as an Ounce or two, is taken away, the orgaſtic Expanſion of the Blood is often augmented; ſo that it is ſo far from being beneficial, that it rather does Injury by increaſing the Inflammation, and preventing the Eruption of the exanthematous Matter. In like manner, if too large a Quantity of Blood is taken away, more Harm than Good is done, ſince by this means the Expulſion of the exanthematous Matter, which ought to be conveyed to the Skin by the Blood, is hinder'd, and the peccant matter, to the great Detriment of the Patient, retain'd in the Habit. In a Peripneumony and Pleuriſy, too copious Veneſection hinders the Expectoration and Diſcuſſion of the inflammatory Matter, which ought, alſo, to be evacuated, and carried off, by means of the Blood. In Rheumatiſms, an Eryſipelas, and arthritic Pains, both of the fix'd and wandering Kind, it is, alſo, neceſſary to leave a Quantity of Blood ſufficient for the Cure of theſe Diſorders; that is, we are neither to take away too large, nor too ſmall a Quantity.

If a Plethora not only oppreſſes the Veſſels, but, alſo, impairs the Strength, a large Quantity of Blood, ſuch as a Medical Pound, for Inſtance, is to be taken away; for, if only a ſmall and inconſiderable Portion is evacuated, the Blood finding a greater Space, its Elaſticity is more increas'd, it becomes more expanded, and often acts with a greater Impetus on the Part affected. I have known Inſtances, ſays *Hoffman*, where, in conſiderable Plethoras, the Extraction of a ſmall Quantity of Blood, an Ounce or two, for Inſtance, has a few Hours after been ſucceeded by an apoplectic Fit, which has been happily remov'd by liberal Veneſection in the Arm, from which eight Ounces, for Inſtance, have been taken. I, alſo, remember, ſays he, that, in a certain plethoric Perſon, violent Anxieties of the Præcordia were produc'd by a Suppreſſion of the hæmorrhoidal Diſcharge, ariſing from Cold. Upon opening a Vein in his Foot, and taking away only four Ounces of Blood, all the Symptoms were augmented, ſuch as the Anxiety of the Præcordia, the Watchings, the Inquietudes, and Difficulties of Breathing, which, however, forthwith ceas'd upon taking ſeven Ounces of Blood from his other Foot.

Rheumatiſms, Catarrhs, Coryzas, and Coughs, are often generated by a prepoſterous and unskilful Veneſection, which, however, when ſeaſonably us'd, proves an excellent Means for preventing and removing theſe Diſorders. I have frequently obſerv'd, ſays *Hoffman*, in the Courſe of my Practice, that a few Days after Veneſection, eſpecially in the Spring and Autumn, when the Weather is not calm and ſerene, many have fallen into violent Catarrhs, Coryzas, Coughs, rheumatic Diſorders, and catarrhal Fevers; and this happens very frequently, eſpecially when Perſons, not ſufficiently clothed, expoſe themſelves to the cold and moiſt Air, particularly in the Evenings; for it almoſt always happens, that the Perſpiration is diminiſh'd by a pretty copious Veneſection, in conſequence of which, the Humours uſually carried off thro' the Pores of the Skin, in the Form of Vapours, are, in ſome meaſure, retain'd in the internal Parts; and this happens moſt frequently in Perſons of ſpongious Habits, and ſmall Veſſels. Nor is this Phenomenon hard to be accounted for: When a large Quantity of Blood is taken away, the Veſſels, eſpecially ſuch as are ſmall and near the Extremities, being before diſtended with Blood, begin to be flaccid and empty. And as there is an exquiſite and highly ſenſible Tone in the ſubcutaneous Integuments, hence it happens, that, on the Acceſs of a cold Air, the elaſtic Fibres of the Skin are contracted, and the ſudoriferous Ducts by that means block'd up; in conſequence of which, recrementitious Sweat not only remains in the Habit, but, alſo, is forced from the external to the internal Parts, eſpecially to the glandulous Parts of the Fauces and Bronchia, or to the mucilaginous Glands of the Joints, or to their glandular Ligaments, where an highly acrid, ſaline, and ſtagnant Serum, exciting violent Irritations and Conſtrictions of the Veſſels, hinders the free Circulation of the Humours; by which means, Secretions of Serum, Pains, intenſe Heats, and a copious Afflux of Humours, are excited.

But as an unskilful, or too copious, Veneſection lays a Foundation for Catarrhs, ſo it is frequently obſerved in Practice, that Veneſection prudently us'd in the Spring and Autumn, and repeated every Year, has freed many of Coryzas, Stuffings of the Head, and annual Coughs, and eſpecially, thoſe who before abounded in Blood, and have never had a Vein opened before. In the Spring, in conſequence of the Rarefaction and Expanſion of the Air, the Veſſels are turgid, on account of the Expanſion of the Blood, by the Acceſs of a ſubtile Ether: If therefore, an Evacuation of Blood, either natural or artificial, is not made, Stagnations of Blood, and Humours, and Secretions, and Depoſitions of Serum, readily happen in the moſt lax, ſoft, and glandular Parts: all which Misfortunes may be happily prevented by ſeaſonable and prudent Veneſection.

As the flatulent Colic is ſometimes augmented by Veneſection, ſo thoſe of the convulſive and hæmorrhoidal Kind are often alleviated, and totally remov'd, by it. Thoſe Flatulencies which violently diſtend the Inteſtines, moſt frequently depend upon a want of due Tone in them, or a Weakneſs of their periſtaltic Motion; for ſince, by the Force of this Motion, not only the Flatulencies, but, alſo, the other Contents, of the Inteſtines are carried downwards, ſo when it is either diminiſh'd, or totally deſtroy'd, Flatulencies are copiouſly generated, and become ſtagnant, eſpecially in the Flexures of the Colon about the Hypochondria; but this want of Tone in the Inteſtines principally ariſes from the Defect of a laudable Blood, and ner-

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vous Fluid; for which Reason old Persons, People after Recovery from a Disease, those weaken'd by any long-protracted Disorder, or Indisposition of Mind, those abounding in Phlegm, or who feed upon very refrigerating Aliments, are frequently subject to a particular Species of Colic, which is happily cur'd, not by Venesection, or diminishing the Quantity of Blood, but by carminative Medicines, possess'd of a balsamic and aromatic Principle. But other Measures are to be taken with the spasmodic or convulsive Colic, which arises from Blood lodg'd in the intestinal Coats, and violently distending them; for seasonably opening a Vein in the Foot not only proves a Preservative against this terrible Misfortune, but, also, affords present Relief under it, as *Riverius*, in *Cent.* 1. *Obs.* 44. has justly observ'd.

Both before and after Venesection, some Cautions are to be observ'd as useful: For,

1. We are not, except in Cases of urgent Necessity, to open a Vein in the Equinox or Solstice themselves, at full or new Moon, or in a rainy and gloomy Day. But 'tis expedient, a few Days before these Seasons, and on a clear and serene Day, to use Venesection as a Preservative; because about these Seasons the Discharge of the Menses generally happens, and various Disorders of the spasmodic Kind, epileptic Paroxysms, and the Diseases familiar to hypochondriac and melancholic Patients, generally return; and before the Paroxysms of these Diseases it is expedient, by Venesection, to free the Body from its superfluous and redundant Blood.

2. It is always expedient, in Persons who readily faint, to constitute Venesection, not with an empty Stomach, but after taking a little Broth, making the Orifice at the same time but small.

3. After Venesection, it is highly improper to load the Stomach with Meat or Drink; and much more, to drink to Excess, or expose the Body to a cold or moist Air; for 'tis certain, from frequent Experience, that by these means many, especially in the Months of *March* and *October*, and particularly if they are of a spongious Habit of Body, fall into Coryzas, Coughs, Rheumatisms, catarrhous Fevers, and spurious Pleurisies; for by Venesection, especially when copious, the Perspiration is considerably diminish'd, because the exhausted Blood no longer keeps the subcutaneous and sudoriferous Ducts so open as they were before. Hence the cold Air, by closing them up, and repelling the Humours from the Surface of the Body to the interior Parts, produces the now-mention'd Disorders.

4. Before Venesection, it contributes to Health to free the Primæ Viæ and Stomach from Crudities and Sordes, not by a drastic Purgative, but by a gentle Laxative; for we are by no means to exhibit strong Purgatives to plethoric Persons, because, by exciting Spasms of the Intestines, they by that means disturb the free Circulation of the Blood, and produce prejudicial Congestions in various Parts of the Body.

5. In Women, on account of the menstrual Discharge, and in Men subject to the Hæmorrhoids, it is always expedient to open a Vein in the Foot, lest the Blood should be derived from these Emunctories. But Men free from the Hæmorrhoids ought not to accustom themselves to Venesection in the Foot; for I have by that means seen blind Hæmorrhoids, without any Discharge excited, for removing of which Venesection in the Arm ought to be instituted.

6. After Venesection, a careful Regimen is to be observ'd; nor must the Patient forthwith return to his former Diet, and Method of Life. Hence we cannot forbear condemning the Custom of the *Germans*, who never eat and drink more plentifully than after Venesection.

Cupping with Scarification is often us'd as a Succedaneum for Venesection. Thus *Celsus*, in *Lib.* 2. *Cap.* 10. informs us, "That the principal Use of Cupping-glasses is when any Fault "is lodg'd, not in the Whole, but in some particular Part, of "the Body, to which, for the Purposes of Health, they need "only be applied: And this is a Proof, that, in order to relieve "any Part, we are, with the Knife or Lancet, principally to "take Blood from the Part affected, since no one applies Cup-"ping-glasses to a distant Part, unless when he intends to derive "the Blood from it, but to the Part affected, and which is to "be reliev'd." For this Reason, in Rheumatisms, especially such as affect the Back, Scapulæ, and Arms, and in Pains of the Gout, a profound Scarification is with great Advantage made; as, also, in Parts affected with a pressory and constrictory Pain; but it is observable, that a smaller Quantity of Blood is always obtain'd from the injured, than from a sound Part. In order to prevent Gout-pains, some, every Month, with great Success, use Scarification, either on the Sole, or on the upper Part, of the Foot. In Efflorescences, and Defedations of the Face, Cupping with Scarification is, also, useful, in order to derive the Blood from that Part. In fat and spongious Habits, this Practice is, also, useful, for removing Itches, and cutaneous Deformities.

In acute Disorders, where the Strength does not admit of a quick and speedy Evacuation of Blood by Venesection; it is expedient, gently, and by degrees, to procure this Evacuation, if necessary, by Cupping, with Scarification. Thus *Celsus*, in *Lib.* 2. *Cap.* 11. informs us, "That Cupping, with Scarification, is to be "used in some acute Disorders, when the Body is to be relieved, "and the Strength does not admit of an Evacuation of Blood "from the Veins. And this Practice is not only less violent, but "more safe, and never dangerous, tho' used when the Fever is at "its Height, and when the Crudities abound. For this Reason, "when immediate Danger attends the opening of a Vein, or "when the Disorder is lodged in some of the more noble Parts "of the Body, we ought rather to have recourse to Cupping, "with Scarification, especially when we know, that it is a safe "and gentle Method, and that violent Disorders must only be "cured by violent Remedies." I have found this Caution of *Celsus* to be founded on Experience; for I have observed, that Disorders of the Head, such as Epilepsies, Vertigoes, Madness, and Convulsions of the Joints, have been increased, and their Paroxysms rendered more frequent, especially in young Persons, and those of delicate Constitutions, by a quick and pretty copious Evacuation of Blood from a Vein; whereas they were very able to bear the Extraction of Blood by Cupping-glasses, which greatly alleviated their Disorders. The Reason of this seems to be, that, in the Parts affected, the Violence of the Spasms, to which the Blood in the Vessels greatly resists, is increased, if that Blood is suddenly taken from them. In acute Fevers, when, in consequence of a Congestion of Blood in the Head, a Phrenitis is to be dreaded, it is, also, more safe and expedient to lessen the Quantity of Blood, by applying Cupping-glasses to the Occiput, than by opening a Vein in the Cubit. *Prosper Alpinus*, in his Treatise *de Medicin. Ægypt.* informs us, that it was a common Practice among the antient Physicians of that Nation, in all acute Fevers, where, from a Redness of the Face, and continual Watchings, they dreaded a Phrenitis, to scarify the internal Veins of the Nostrils; and, by tepid Baths of sweet Water, procure an Evacuation of Blood from them. But when, in any Disorder, instantaneous Relief is necessary, and a speedy Derivation of the Blood from the Part affected, in an apoplectic Fit, for Instance, a Peripneumony, an Inflammation of the Uterus, or a cardiac Syncope, proceeding from an Infarction of the Blood in the Heart, or in Cases where there is Danger of a Suffocation, Cupping-glasses are but of little Service; for 'tis rather expedient to make quick and speedy Evacuation of Blood, by making a large Orifice in some proper Vein near the Part affected.

Cupping-glasses are to be used, when, in consequence of Blood or Serum, stagnating in some external Part, Pains, Tumors, Inflammations, or other Disorders, are produced. This Doctrine is confirmed by *Celsus*, in the former of the Passages before-quoted from him; for the Use of Scarification is either evacuatory or derivatory; the former, in order to diminish the Plethora; and the latter, in order to extract the corrupted and impacted Matter. Many of the Antients, and especially among the *Egyptians*, denied, that Cupping was of any Service in order to remove a Plethora; and, for that Reason only, applied Cupping-glasses to certain Parts. But when these are applied to any Part of the Body, such as the Back, Arms, Thighs, or Legs, and the Incisions made frequent and deep, twelve Ounces of Blood are often evacuated, of the same Weight and Consistence with that which is taken from the Veins; for I have often convinced myself of this, by drying the Blood extracted by Cupping-glasses, and found three Parts fluid to one of the solid, as in the Blood taken from the Veins; so that it may justly be class'd among the vulgar Errors of Medicine, to affirm, that the Blood, extracted by Cupping-glasses, is thinner than that obtained from the Veins. However, in order to evacuate and divert the peccant Matter, Cupping is preferable to Venesection; for I remember some Instances, where, in violent Pains of the Scapulæ, Pains and acrid Defluxions of the Eyes, a Gutta Rosacea, erysipelatous Swellings of the Head, Venesection in the Feet or Arms, was of no manner of Service; but Scarification in the Neck, Occiput, and behind the Ears, and the Application of Cupping-glasses to the Back, afforded great Relief. *Prosper Alpinus*, in his Treatise *de Medicin. Ægyptior.* informs us, that in Pains and Defluxions of the Head and Eyes, Ophthalmias, Lippitudes, and in order to procure Sleep, the *Egyptians* applied Cupping-glasses to the Occiput, Neck, and behind the Ears, and, by profound Scarifications, extracted the Blood, but first ordered a Vein in the Arm to be opened. This Advice is carefully to be followed in plethoric Patients, even where the Veins of the Face or Nostrils are to be scarified in violent Pains of the Head, or Madness, lest Space being afforded, a greater Afflux of Blood to these Parts should be excited. In order to prevent Gout-pains, Scarification made in the Soles of the Feet, every Month, is of great Service. And *Cardan.* in *Lib. de Art. Parv.* recommends Scarification under the very Paroxysm of the Gout. And *Platerus*, *Lib.* 2. *Prax. Med.* confirms this Doctrine, by giving us some Instances of Persons cured by this means. Besides, *Severinus*, in his Book *de Efficac. Medic. Lib.* 1. greatly recommends the Use of Scarification, in order to prevent the spreading of a Sphacelus, and cure malignant Ulcers. *Galen*, also, in his Treatise *de Sang. Missione*, greatly recommends Scarifications of the Legs in Suppressions of the Menses and Hæmorrhoids, which may be, also, used in those who have an Aver-

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ſion to Veneſection; who, from a languid Strength of the Heart, are ſubject to Faintings; or thoſe who, on account of the Tenderneſs of their Age, cannot bear a ſudden Extraction of Blood from an opened Vein.

Blood may be, alſo, extracted from the Body by Leeches, which are greatly commended by ſome Phyſicians. Tho' this Method ſeems to have been little known to the moſt antient Phyſicians; yet *Pliny*, in *Hiſt. Nat. Lib.* 32. *Cap.* 10. ſpeaks of them thus: "The Uſes of Leeches for extracting Blood are various, and "the ſame with thoſe of Cupping-glaſſes, which are to relieve "the Body, when oppreſſed with a Redundance of Blood, and "to open the Pores." Among the *Arabians*, *Rhaſes* knew the Uſe of Leeches; and, among the Phyſicians of the laſt Age, *Zacutus Luſitanus*, *Amatus Luſitanus*, and *Mercatus*, greatly commend the Application of them, eſpecially in thoſe Diſorders which are generally incident to the Head, ſuch as the Gutta Roſacea, Puſtules of the Face, and Head-achs, eſpecially of the rheumatic Kind; as, alſo, in Vertigoes, Melancholy, Quinſeys, and Tooth-achs, in which theſe Phyſicians applied them to the Occiput, Neck, and behind the Ears. Tho' I do not at all doubt of the Salubrity of the Evacuation of Blood made by Leeches, yet I have good Reaſon to ſuſpect, that no greater Advantage is to be obtain'd from them, than from the Evacuation procured by Cupping with Scarification.

The Application of Leeches to the Anus in a Suppreſſion of the Hæmorrhoids, and Diſorders ariſing thence, is generally greatly recommended. This Method of extracting Blood from the Veins of the Anus, by the Application of Leeches, is, by ſome, preferred to others, in Diſorders ariſing from a Suppreſſion of the Hæmorrhoids; ſuch as hyſteric Symptoms, and in thoſe Diſorders which, according to *Hippocrates*, are terminated by the hæmorrhoidal Diſcharge, ſuch as phrenitic, melancholic, hypochondriac, nephritic, and iſchiadic Diſorders; becauſe theſe Diſeaſes ariſe from Blood ſtagnating in the Veſſels of the Inteſtines, which terminate in the hæmorrhoidal Veins; in conſequence of which, this Blood is more eaſily evacuated, and the Part affected reliev'd, by applying Leeches to the Veins of the Anus, than if Blood was extracted from any other Parts of the Body. I cannot deny, but, in theſe Diſorders, Leeches may be of ſome Uſe, eſpecially if we may believe the Obſervations of *Zacutus Luſitanus*, *Amatus Luſitanus*, and *Mercatus*. But, whether an happier Effect may be produced from them, than from opening a Vein in the Foot, or from profound Scarifications in the Legs, I cannot aſſert, ſince I have not Experience to authorize me: For, in violent and inveterate Spaſms of the Hypochondria, I have often ſeen Leeches applied without any Effect; I have, on other Occaſions, ſeen them afford Relief for a time; and, by their Application to blind Hæmorrhoids, I have ſeen malignant Ulcers and Fiſtulas produced. Beſides, there is Reaſon to doubt, whether Leeches draw the Blood from the Part affected, becauſe they ſuck it from the external hæmorrhoidal Veins, the internal being concealed. Now the internal hæmorrhoidal Veins have little or no Communication with the inteſtinal Veſſels, the meſaraic Veins, and the Ramifications of the Vena Portæ, in which, however, the Seat of ſpaſmodic and hypochondriac Diſorders is placed. But, in an hæmorrhoidal Diſcharge, the internal hæmorrhoidal Veins evacuate the Blood; for which Reaſon, if the Hæmorrhoids flow duly, and at proper Times, they afford great Relief in the Diſorders ariſing from a Stagnation of Blood in the Ramifications of the Vena Portæ. *Hoffman.*

Phlebotomy, uſed in ſuch a Degree as not to impair the Strength, produces the following Effects.

1. It diminiſhes the Redundance of the arterial and venous Humours.

2. For this Reaſon it renders the Reſiſtance of the Fluids to be moved leſs.

3. In conſequence of this, it leſſens not only the Plenitude of the Veſſels, but, alſo, their mutual Compreſſion on each other.

4. Hence it reſtores a due Degree of Contraction, or Elaſticity, to the preternaturally diſtended Veſſels.

5. It rarefies the Fluids.

6. It attenuates the Humours.

7. It reſolves the Juices.

8. It removes Obſtructions.

9. It promotes the Circulation of the Blood, together with the ſeveral Secretions and Excretions ſo neceſſary to Life and Health.

10. It produces a Revulſion.

11. It refrigerates and cools.

Hence it removes many Diſorders of very different Natures, and induces ſurpriſing Changes on the State and Condition of the human Body.

Phlebotomy is indicated as expedient,

1. By a Redundance, or exceſſive Quantity, of Blood.

2. By too powerful a Reſiſtance made to the Action of the Heart by the Humours.

3. By a ſuffocated Motion of the Heart, in conſequence of too turnid a State of the Arteries, ariſing from a Redundance or Rarefaction of their Contents.

4. By the Motion of the Heart beginning to be ſuffocated, in conſequence of a preternatural Extenſion of the Veſſels, by which their Elaſticity is deſtroy'd.

5. By too great a Condenſation of the Blood.

6. By too great a Concretion of the Parts of the Blood.

7. By too great an Inſpiſſation of the Blood.

8. By the Signs of a violent and inflammatory Obſtruction found every-where in the Body; the moſt conſiderable of which are Pain, Tumor, Redneſs, intenſe Heat, and Anxiety, accompanied with a Suppreſſion of the Sweat, Spit, and Urine.

9. By too accelerated a Motion of the Humours through the Veſſels; or, alſo, a too ſlow and languid Circulation of the Humours, ariſing from a Redundance of the Humours; a Plenitude, and preternatural Diſtention, of the Veſſels; a Rarefaction, Attenuation, or Reſolution, of the Humours; and Obſtructions of the Veſſels.

10. By too intenſe an Heat in all the Veſſels.

11. By too violent an Impetus of the Blood forced into one particular Part, as in Hæmorrhages and Defluxions.

12. By epidemic Diſorders, whoſe Natures are underſtood.

13. By the Age, the Sex, the Method of Life, and the Conſtitution, of the Patient.

14. By a Cacochymy: And,

15. Phlebotomy is indicated, when the Intention is to make Medicines enter the Veſſels, to procure their due Mixture with the Fluids, and to augment their Efficacy in performing Cures of great Importance.

Phlebotomy is beſt and moſt advantageouſly performed,

1. By making a large Orifice with ſome cutting Inſtrument.

2. In a Vein that is diſengaged, large, eaſily diſcovered, and remote from Arteries, Nerves, and Tendons.

3. By accelerating the Velocity of the Blood, whilſt it flows, by means of a ſtrong Reſpiration.

4. By the Motion of the Muſcles contiguous to the opened Vein. And,

5. 'Tis moſt proper to perform Phlebotomy on Patients, whilſt they lie in Bed.

That Phlebotomy may be the more happily and ſucceſsfully performed, the Patient may be prepared for it,

1. By Frictions. And,

2. By Fomentations.

Phlebotomy is contra-indicated, and rendered improper,

1. By many chronical Diſorders, in which there are many Obſtructions, and only a very ſmall Quantity of fluid Blood remaining in the Veſſels.

2. By Old-age.

3. By particular Temperaments, or Habits, of Body.

4. By the known Nature of any epidemic or endemic Diſorder.

5. By a Criſis already made in another manner.

6. By the Deficience of red Blood, and the conſequent Weakneſs of the Patient. And,

7. By recent Childbirth.

Hence 'tis obvious, that an irreparable Injury muſt be done to Mankind, by uſing Phlebotomy in all Caſes, according to the Advice of *Leonhartus Botallus*; and by baniſhing it entirely from the Practice of Medicine, according to *Johannes Baptiſta Van Helmont.*

The Extraction or Evacuation of Blood from the hæmorrhoidal Veins is indicated,

1. By an atrabilarious Habit of Body.

2. By Diſeaſes accompanied with irregular and diſorderly Workings of the Fancy.

3. By a Suppreſſion of the uſual Diſcharge of Blood from theſe Veins.

4. By an Eruption of Blood from other Parts, which was before more happily evacuated from the hæmorrhoidal Veins.

Blood is evacuated from the hæmorrhoidal Veins,

1. By ſoftening theſe Veſſels by an emollient and warm Fomentation prepared of Water, Oil, Honey, and other emollient Ingredients; and applied by way of Clyſter, Vapour, or Fomentation.

2. By opening theſe Veſſels by Friction, with rough Subſtances, or by means of Leeches. And,

3. By the Uſe of Preparations of Aloes.

Scarifications act by ſtimulating, and by evacuating. Hence we are enabled thoroughly to underſtand the Action of Leeches.

But Setons and Fontanels ſtimulate with leſs Pain, agitate the nervous Syſtem, evacuate Serum, and procure a Vent, or Diſcharge, for preternatural Repletion.

Hence we may learn in what Parts, and on what Occaſions, theſe are indicated.

Stimulating Medicines, or ſuch as create Pain, Heat, and Redneſs, act by procuring Motion to the Nerves, and by determining Blood to particular deſigned Parts.

Hence they undoubtedly perform an unconceiveable Number of happy Effects, by the known Neceſſity of which they are, alſo, indicated.

Stimulating Medicines are generally reduced,

1. To highly adheſive, and, at the ſame time penetrating Dropaxes, applied warm in the Form of a Plaiſter, and torn off, repeating

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peating this, till the Part affected becomes red, tumid, and hot. The Ingredients proper for these Dropaxes are, Pitch, Oil, Bitumen, the Ashes of Twigs of Vines, Galbanum, Pepper, Pellitory of *Spain*, Sal Gemmæ, and Sal Ammoniac.

2. To gentle Sinapisms, called *Phœnigmi*, applied by way of Cataplasm, and left till Redness, Heat, Itching, and Tumor, appear in the Part. The Materials for these are Mustard, Bryony, Garlick, Onions, Water-cresses, Squills, Euphorbium, Crow-foot, and the deadly Carrot.

3. To Vesicatories, which are only stronger Sinapisms used in the same Form, but producing more violent Effects. The Diversity only consists in the augmented Quantity of the acrid Substances. Thus, for Instance, three Parts of Figs, mixed with one Part of acrid Substances, yield a Phœnigmus; one Part of Figs, mixed with one Part of acrid Substances, yields a Vesicatory; and one Part of Figs, mixed with three Parts of acrid Substances, yields a strong Vesicatory.

4. To the potential Caustic, applied either in the Form of a Poultice, or with Lint. The Materials for this are Crow-foot, the Esula, the Tithymalus, fixed alcaline Salt, alcaline volatile Spirits, and Salts. The Effects produced by this Species of Remedy are Inflammation, and an Eschar. And,

5. To the actual Cautery, which is ignited Iron. *Boerh. Inst.*

Phlebotomy, or Bleeding by the Veins, is performed by making an Incision in a Vein, with a fine sharp-pointed Instrument, or Lancet, by which as much Blood is taken away, as may be proper for restoring or preserving the Health of the Patient.

This Operation may not improperly be called Venesection, and is not only extremely beneficial, but of a very antient Date, having been commended and practised about three thousand Years, as we learn from the Writings of *Hippocrates*, *Celsus*, and other antient Authors upon Surgery. Yet some Physicians, both antient and modern, such as *Erasistratus*, *Paracelsus*, *Helmont*, *Portius*, *Bontekoe*, *Gehema*, and others, have asserted it to be a most pernicious and unlawful Operation, and have termed the Practisers of it no less than the Destroyers and Butchers of Mankind. But Experience shews us, that all their Objections are trifling and unjust; and that there is no Remedy in the whole Art of Medicine, more ready, or more serviceable, in curing or preventing the generality of Diseases, than Phlebotomy. Some relate, that Physicians took the Hint of this Operation from the *Hippopotamus*, or Sea-horse, who, at certain Seasons, used to open a Vein with a sharp-pointed Reed. See *Polydore Virgil de Rer. Inventor.*

Bleeding, according to the vulgar Opinion, is a very easy Operation. In some Persons I own that the Veins are so large and conspicuous, that they may be opened by Novices, without Danger or Difficulty. But, in others, they are so small, or so deeply seated, that they cannot be discovered by the most expert Surgeon without Difficulty, nor opened without Danger. For the Arteries, or the Nerves and Tendons adjacent to the Veins, are very liable to be wounded by the Lancet; a Misfortune which is generally attended with violent Pains, Convulsions, Inflammations, profuse Hæmorrhages, Aneurisms, Gangrenes, and sometimes a most miserable Death; and, therefore, this Operation, as well as others, requires Caution and Attention, since the Reputation of young Surgeons, especially, may suffer as much by a timorous Introduction of the Lancet, so that the Blood follows not, as when, by affecting to perform easily and expeditiously, a Misfortune should ensue.

An expert Phlebotomist should have an active, gentle, and steady Hand, a clear Sight, and an intrepid Mind; for, without these Qualifications, he will be subject either to miss the Vein, or to occasion some Mischief, which may be fatal to the Patient. This is the Reason, why the Dexterity of Surgeons, in Bleeding, gradually declines, as they advance in Years; for, as Age increases, the Eyes become weak, and the Hands unsteady.

The Instrument now commonly used in opening a Vein, is called a Lancet, and is represented in *Tab.* XXII. *Lit.* A. and *Tab.* XXXII. *Fig.* 5. A Surgeon should always be provided with several of these Lancets, of different Sizes, and in good Order. Some Surgeons in *Germany*, particularly in *Franconia*, *Bavaria*, and the *Lower Saxony*, bleed with a Fleam (see *Tab.* XXXII. *Fig.* 3.) in this manner: With the Fingers of one Hand, they hold the Part B, and place the Point A upon the Vein; with a Finger of the other Hand, they strike the Part C, by which means the Point pierces the Vein, as Farriers do in bleeding Horses. Others use a sort of elastic Fleam, called by the *Germans*, *Schnapper*, or *Schnapperlein*, (see *Fig.* 4.) thus: Having raised the Point A, they apply it to the Part; and, by pressing at B, force down the Point into the Vein: Others use an Instrument shaped like a Dart. But, as these Instruments cannot be always adapted to the different Position and Figure of the Veins of different People, the Lancet seems to be more proper; tho' many of the *Germans* are very expert in the Use of their *Schnapper*.

Tho' Phlebotomy is used in various Parts of the Body, as in the Arm, Hand, Foot, Forehead, Temples, Neck, Tongue, Penis, and others; yet, as it is most frequently performed in a Vein of the Arm, which is near the Joint of the Elbow, we shall, therefore, begin with this Operation, and enlarge a little upon it.

Of bleeding in the Arm.

It is commonly known, that Bleeding in the Arm is performed on the Veins placed on the Inside of the Cubit. In this Operation several Circumstances are to be considered: 1. What is to be done preparatory to the Bleeding. 2. How the Operation itself is to be performed. 3. and lastly, What is necessary to be done, in consequence of it. With regard to the preparatory Circumstances, the Surgeon must necessarily have in Readiness a Linen Fillet, about an Ell in Length, and of the Breadth of two Fingers. 2. Two small square Compresses. 3. Porringers, or Vessels, proper for receiving the Blood. 4. A Sponge, with warm Water. 5. A small Quantity of Vinegar, Wine, or *Hungary* Water, for relieving the Patient, if he should be inclinable to faint. 6. Two Assistants, not fearful, one to hold the Porringer, and the other to bring what may be wanted. 7. A small Wax-candle, when this Operation is necessary to be performed in the Night, or in a dark Place. 8. The Patient should be placed in a Chair a little reclined, or, if timorous, in a Bed, that he may not be in Danger of dropping off his Seat in a Swoon. 9. Lastly, The Surgeon should take care, that no Cloaths, and the like, should lie in the Way. The Patient should banish all Concern, and be by no means apprehensive of any Danger from the Operation. The Operator should be as expert in performing with his Left, as with his Right Hand; for the Vein in the Right Arm must be opened with the Right Hand, and in the Left Arm, with the Left Hand. Some will insist on being blooded in the Left Arm; and sometimes the Vein in the Right is not conspicuous, or proper to be opened.

With regard to the Operation itself, though it may be performed by a single Puncture, yet many Circumstances are necessary to be observed, for the better Execution of it. The Surgeon should narrowly inspect the Arm whence Blood is to be taken, in order to observe the Veins; then he must take hold of the Arm, and extend it towards his Breast. The Sleeve being tucked about an Hand's-breadth above the Elbow, he should make a tight Ligature about three Fingers-breadth above the Elbow, with a Fillet of the Breadth of a Thumb and a Yard in Length, rolling it twice, and fastening it with a Knot (See *Tab.* XXXII. *Fig.* 1. D); by which means the Veins, being compressed, and the Reflux of the Blood obstructed, are swelled, and rendered more conspicuous. This Fillet is generally made of a Piece of thin scarlet Cloth, though any other Colour may do. The Surgeon may now let go the Arm, and, taking out his Lancet, open it to an obtuse Angle, and hold it in his Teeth, at the Joint A, *Tab.* XXXII. *Fig.* 5. In the mean while the Veins grow more turgid, and more conspicuous. The Surgeon must now again lay hold of the Arm, and extend it towards his Breast, the Assistant being ready with the Porringer, and in the most convenient Situation, for receiving the Blood. The Surgeon must next examine, which Vein is most conspicuous, and, therefore, most proper for Incision. It is necessary to be observed here, that three principal Veins appear in the Arm: The first is called the *Vena Cephalica*, and lies towards the exterior Part of the Arm; the second is termed the *Basilica*, and is found towards the interior Part of the Arm; see *Tab.* XXXII. *Fig.* 1. A; it is, also, denominated, in the Right-arm, *Hepatica*, and, in the Left, *Splenetica*, as at B; the third, being situated in the Middle, obliquely, between the other two, is named *Mediana*, as at C. The Mediana and Basilica, being larger, generally emit the Blood more copiously, than the Cephalica, but they are opened with greater Danger; for, under the Basilica, lie the great Artery of the Arm, and the Brachial Nerve; and, under the Mediana is a Tendon, of the Musculus Biceps. But, as these two are most conspicuous, they are most frequently opened; though it is safer, especially for young Surgeons, to make the Incision in the Cephalic Vein, or, at least, in the Median. But, when the Veins are so situated, that only one of them can be made to appear, then there is no Choice left, and there is nothing to be depended upon, but the Skill and Care of the Surgeon.

When the Vein is already pitched upon, the Incision must be made where it is appears largest and conspicuous. If any Marks of former Wounds remain, it will be proper to open the Vein rather below, than above the Cicatrix; which generally straitens the superior Part. For this Reason, whenever you open a Vein for the first Time, begin as high as you can; by which means you may gradually descend in repeated Bleedings.

Before the Lancet be applied, if the Veins do not sufficiently rise, it will be proper to stroke the Arm from the Hand upwards, which will compress the Blood towards the Elbow, and make the Veins become more turgid. If the Incision is to be made in the Right Arm, the Surgeon is to hold the Arm in his Left Hand, in such a manner, that his Thumb may be placed upon the Vein which is to be opened, in order to prevent the Reflux of the Blood, and the Vein from sliding out of its Place. The

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The Vein being thus firmly held, the Surgeon must keep his Eyes fixed upon that Part, where he intends to introduce the Lancet. Then, taking the Lancet out of the Mouth with his Right Hand, he must hold it about the Middle of the Blade, between his fore Finger and Thumb, suffering the other Fingers to rest gently upon the Patient's Arm, that his Hand may not slip.

Then the Lancet must be softly and carefully pushed by the fore Finger and Thumb, till it penetrates the Coats of the Vein; and the Point must be immediately turned a little upwards, by which the Wound may be enlarged, and the Discharge of the Blood may soon be rendered plentiful. Those Orifices are reckoned most convenient, whose Length is equal to twice the Thickness of the Back of a small Knife. The Lancet must be introduced, not with Rashness, lest, by penetrating too deep, an Artery, a Nerve, or Tendon, should be wounded; nor with Timidity, lest you should only divide the common Integuments, without reaching the Vein. The Vein may be opened in three Directions: Some make the Wound lengthwise, as at *Tab.* XXXII. *Fig.* 2. A; others make it transverse, as at B; but most Surgeons make it oblique, as at C and D. If the Incision is to made in the Left Arm, the Operator must hold the Arm in his Right Hand, and all must be done with the Left Hand, which was before proposed to be done with the Right. If the Fleam at *Fig.* 3. be used in this Operation, the Point A must be applied to the Vein; and, the End B being held in the Left Hand, the Point must be driven into the Vein by the Stroke of a Finger of the Right Hand. If the elastic Fleam is to be used, let the Point A, placed above the Vein, be raised towards the Hook C; by a slight Pressure at B, the Point is plunged into the Vein.

The Vein being thus opened, and the Instrument immediately drawn back, the Blood will either vigorously spring out, or flow gently. The Lancet must now be put into a Bason, and never thrown upon the Bed, lest it should be accidentally lost, or the Patient should wound himself by it. In the mean time, the Blood should be suffered to run, till a sufficient Quantity is discharged. But if it should stop too soon, as often happens from the Stricture of the Ligature above the Elbow, the Bandage may then be untied, or rather a little relaxed; by which means, the compressed Artery is again enlarged, and the Discharge of Blood is continued. If the Wound should be stopt by too great a Tension of the Skin, or by Fat, the Piece of Fat should be pressed back with the Finger, or a warm Sponge, or the Skin may be relaxed by bending the Arm. If the Orifice should be obstructed by thick coagulated Blood, that Impediment may be removed by wiping the Wound with a Sponge dipt in warm Water.

That the Patient's Arm may not tire by being long extended, the Surgeon ought to support it about the Elbow. A small Stick, or Cylinder, should be put into the Patient's Hand, which he should continually turn round, by this Method accelerating the Motion of the Blood towards the Wound; which will be further promoted, if the Patient urges a little voluntary Cough. The Attendants should be ready, with empty Vessels for receiving the Blood, to remove such as are filled, and to administer the Compresses, Bandages, Cordials, and other Necessaries.

The Quantity of Blood to be taken away must be regulated by the Physician, according to the Nature of the Disease, the Temperament, Strength, and other Circumstances, of the Patient. But, when the Surgeon attends his Patient without a Physician, he may determine the Quantity himself, according to the Nature of the Disease, the Strength, Age, Constitution, and other Circumstances, of the Patient. If the Patient retains his natural Complexion, and neither grows languid nor faint, the Blood may be suffered to flow longer, than in those who are soon affected with Paleness and Swooning.

When a sufficient Quantity of Blood is discharged, the Bandage above the Elbow must be removed; and the fore and middle Finger of the Left Hand must be gently drawn over the Orifice, stroking the Skin on each Side of the Wound; by which means the Lips of the divided Vein are more easily pressed together. Then let the Surgeon take the smaller Compress in his Right Hand, and apply it to the Wound, having first removed the Fingers of his Left Hand, that the Blood, between the Vein and the Skin, may be discharged, before the Compress be applied. Over this, lay another larger Compress, which must be retained with the Thumb, till the Whole be secured by the Bandage.

The Patient's Sleeve may now be drawn down over the Arm, which he should keep bent towards his Breast; and the Patient should be ordered not to use any Motion too soon, lest a new Hæmorrhage, Inflammation, or Suppuration, should be occasioned. If the Patient should faint away after the Operation, it will be proper to apply to the Nostrils and Face some Cordial Water, as *Hungary* Water, or Vinegar, or Wine; or cold Water may be sprinkled on the Face; or, if in the Summer-

time, the Window may be opened, and the Spirits and Strength of the Patient restored by the Admission of fresh Air. A small Glass of Cordial Water, or generous Wine, should, likewise, be given to the Patient.

It is customary for the Surgeon, or the Physician, if there is one present, to look at the Blood, and give his Opinion of it. In this Case, the Surgeon should never discourage the Patient, whether the Blood be good or bad, or whether he retains his Senses, or falls into Faintings. Favourable Accounts here greatly contribute to the Recovery of Health; but to dishearten the Patient by a severe Prognostic, may occasion very fatal Consequences. If, therefore, the Blood appear florid, the Surgeon should declare it a Sign of immediate or approaching Health; if the Blood be of a bad Colour, or vitiated, he must pronounce, that the Bleeding will be extremely serviceable. If the Patient should fall into a Swoon, the Surgeon intimates, that this Weakness is an Evidence of the speedy and salutary Effects of the Remedy. The Blood should be set by in a cool Place, till the Physician, or Surgeon, renews his Visit.

If, after Bleeding, the Patient should be affected with Thirst, he may be allowed to quench it, especially if he can drink small thin Liquors. It is a Custom among the *French*, immediately after Bleeding, especially if the Remedy is used to prevent Disorders arising from the Heat of the Blood, to take a Draught of cold fresh Water: Which Method, in hot Habits, may be very serviceable; but in cold, infirm Constitutions, very prejudicial; for whom a little warm Tea, or Coffee, would be much more proper. The Patient may either be forbid or allowed to sleep after the Operation, according to Circumstances. If the Patient used Bleeding only by way of Prevention, it would certainly be more proper for him to divert his Drowsiness by some agreeable Conversation, Amusement, or Exercise; for, if Sleep be indulged, the Bandage may slip, and a violent Hæmorrhage be occasioned. But those who are extremely weak, or labour under some Indisposition, should by no means be hindered from Sleep, especially if they have been troubled with tedious Watchings; for, by Sleep, the weak wearied Body is often wonderfully refreshed. In the mean time, an Attendant should carefully observe, that the Bandage continues fast, or, if it should slip, to stop the Flux of Blood, by compressing the Wound with the Fingers, till the Surgeon be called.

If, at the next Visit, the Blood, as is usual, should be again brought to the Surgeon, and his Opinion of it asked, he should, as we before observed, say nothing, but what may tend to encourage the Hopes of the Patient. The Surgeon should, likewise, inspect the Dressing; and, if the Bandage be relaxed, he should untie it, and apply it afresh; if the Compresses adhere to the Wound, they should not be removed; but, if they are loose, they should be again applied, and secured by the Bandage; which, being suffer'd to continue a Day or two, till the Wound be healed, may then be taken away. Some People, of an hot Constitution, will have the Blood run into cold Water, imagining, that by some secret Sympathy the Heat of the Blood may be by this means allayed. But, however trifling and false such a Notion may be, yet as it may be complied with without Danger, and as it may have some good Effect upon the Imagination of a credulous Person, it ought not to be rejected, but permitted.

Of Bleeding at the Hand.

Phlebotomy is sometimes practised on two Veins of the Hand, one of which is called the *Salvatella*, and the other *Cephalica*. The Salvatella extends on the exterior Part of the Back of the Hand towards the little Finger, being sometimes named *Splenica* in the Left Hand, because many antient Physicians believed, that the Opening of it was beneficial in Diseases of the Spleen. The Cephalica runs between the fore Finger and Thumb, and was so denominated by the antient Physicians, because they fansied, that Bleeding from it was an excellent Remedy against Disorders of the Head. Although it is plain, that Bleeding at the Hand is more difficult than in the Arm, and that all these Notions of the Antients are without Foundation, yet, since the Effect is the same with that of Bleeding in the Arm, it may be sometimes proper for the Operation to be performed on the Hand; especially if the Patient be prepossessed with a good Opinion of that Operation; or if the Veins of the Hand are more conspicuous, then those of the Arm. Some Women, too, in the last Months of their Pregnancy, or near the Time of their Delivery, prefer Bleeding at the Hand, which, they imagine, does not so much debilitate the Fœtus, as in the Arm.

In this Operation, therefore, it is proper for the Patient to bathe and rub his Hand in warm Water, that the Veins may swell, and become conspicuous. The Bandage must be fix'd immediately about the Carpus, to keep the Veins turgid; then the Hand must be dried, and the Incision made in the most convenient Place, as was before directed. If the Blood flows but slowly, the Hand must be again dipped in warm Water, and

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continue there, till a ſufficient Quantity is diſcharged. Then the Hand may be dried, the Wound contracted by the Fingers, and the Compreſſes and Bandages applied as above directed.

Of Bleeding in the Foot.

Bleeding in the Foot is a very antient Operation, which has been obſerved by Phyſicians to be a moſt efficacious Remedy for various Diſeaſes of the Head and Breaſt, and, alſo, againſt thoſe Diſorders which proceed from an Obſtruction of the Menſes, or Hæmorrhoids. Hence the Veins of the Feet have long ago been called *Cephalica*, and *Saphena*. The Vena Cephalica extends towards the great Toe; and the Saphena towards the leſſer Toes. But, notwithſtanding the Difference of the Names, in Bleeding, they have both the ſame Effect; and, therefore, I think, the more conſpicuous of the two ought always to be preferred. However, when the Veins of the Feet do not ſufficiently appear, it will be more proper to open a Vein about the Ancles, the Calf of the Leg, or the Knees, as I have frequently done, eſpecially as the Nerves and Tendons of thoſe Parts are not ſo liable to be wounded, as thoſe of the Foot. But it is proper to adviſe the Surgeon here, to be cautious in bleeding ſingle Women at the Feet, without the Advice of a Phyſician; for ſome, under the Pretence of an Obſtruction of the Menſes, endeavour by this Method, to procure a Miſcarriage.

In order to facilitate the Performance of this Operation, let the Patient bathe his Feet in warm Water, till the Veins become tumid; and the Surgeon ſhould chooſe that Foot, in which the Veins are moſt conſpicuous. The Bandage ſhould be tied about the Breadth of two Fingers above the Ancle; and, whilſt the Surgeon is taking out his Lancet, the Patient ſhould keep his Foot in the warm Water, in order to increaſe the Riſing of the Vein. Then the Surgeon, kneeling on one Knee, and having dried the Foot, lays it on the other Knee, or on a Stool, or on the Edge of the Veſſel which holds the Water. He then takes the Foot in his Left Hand, and keeps the Vein fixed, as was directed for bleeding in the Arm. If the Veins appear not ſufficiently below the Ancles, it will not be improper to open them above, or in the Calves; and then the Ligature muſt be made at the Diſtance of the Breadth of two Fingers above the Place of Inciſion, and the Veins may be rendered conſpicuous by the Method already directed. We muſt, alſo, obſerve, with regard to the Surgeon's Poſture, that he may place himſelf before the Patient on a low Seat, and put the Foot on either Knee. When the Spring-fleam is uſed, as is often done in *Germany*, it will be then moſt convenient for the Patient to put his Foot on a low Stool.

The Vein being thus opened, the Blood may be received into proper Veſſels; and, if the Blood does not flow freely, let the Foot be again put into the warm Water, which will, alſo, prevent the Blood from congealing and ſtagnating in the Wound; an Accident which frequently happens. When a ſufficient Quantity of Blood has been thus diſcharged, which may be diſcovered, not only from the Time, but, alſo, from the Quickneſs or Slowneſs of the Evacuation, from the Redneſs of the Water, and eſpecially from the Strength of the Patient, the Orifice is to be ſtopt by a proper Compreſs and Bandage. The Advantages reſulting from this Operation may be ſeen in *Verduc*, *Caſpar Cadera de Heredia*, a *Spaniſh* Phyſician, *Stahl*, and others. Theſe Authors have been oppoſed by *Hecquet* of *Paris*, in his Book *ſur la Saignée du Pied*, and again defended by *Jo. Bapt. Sylva*, alſo, a Phyſician of *Paris*, in his Treatiſe *de l'Uſage des differentes Sortes de Saignées*, *Amſterdam*, 1729. He was anſwered in 1730, by *Chevalier*, a Phyſician, and, alſo, by *Queſnay*, a Surgeon, both of *Paris*.

Of Bleeding in the Forehead, Temples, and Occiput.

Some are of Opinion, that Bleeding at the Veins of the Forehead and Temples is more efficacious and expeditious in the Cure of violent Pains of the Head, of Vertigos, Melancholy, Madneſs, Deliriums, and the like obſtinate Diſorders of the Head, than the like Evacuation by Veins more remote from the Part affected; judging, that the morbid Matter may more readily be extracted by the Veins of the Forehead and Temples, by reaſon of their Vicinity. But, in my Opinion, the Situation of theſe Veins contributes very little towards haſtening the Cure, becauſe they have little or no Communication with the internal Parts of the Head, and they generally yield but a ſmall Quantity of Blood. The Jugular Vein ſeems to me much better adapted to this Purpoſe, as it is ſituated very near the Veins of the Forehead and Temples, which terminate in it, as it is larger and more conſpicuous, and as it communicates with the internal Parts. But if this Operation muſt be performed, either by Order of the Phyſician, or at the Requeſt of the Patient, the following Directions are neceſſary to be obſerved. Let an Handkerchief or Napkin, be drawn tight about the Neck; by which means the Jugular Vein being compreſſed, thoſe Branches of it may be become more conſpicuous. The Vein being open'd, the Patient ſhould incline his Head downwards, that the Blood, which is diſcharged ſlowly and gently, may not flow into his Eyes or Mouth. A ſufficient Quantity of Blood being evacuated, unleſs it ſtops ſpontaneouſly, as is often the Caſe, let the Wound be compreſſed with the Fingers, the Forehead and Face be waſhed, and afterwards let one or two Compreſſes, with a Bandage, be properly applied.

Bleeding at the occipital Veins, which communicate with the lateral Sinuſes of the Dura Mater, is proved, both by Reaſon and Experience, to be very beneficial in many Diſtempers of the Brain, eſpecially when it is neceſſary to avert and evacuate the Blood from that Part. The celebrated *Morgagni* particularly recommends it in obſtinate lethargic Diſorders, by Cupping and Scarifications; and *Zacutus Luſitanus* gives an Inſtance of an deſperate Apoplexy being cured by Cupping, and deep Scarification in the Occiput. *De Medic. Princip. Hiſt. Lib.* 1. *Hiſt.* 33. If the Inciſion is to be made with a Lancet, the ſame Method is to be uſed, as in opening the Veins of the Forehead and Temples.

Of Bleeding at the greater Canthus of the Eye.

Anatomiſts have obſerved, between the Noſe and the greater Canthus, on each Side of the Face, a Vein, proceeding partly from the Eye, and partly from the Forehead, which, like the Frontal Vein, deſcends to the external Jugular Vein. Bleeding in this Vein has been recommended by almoſt all Oculiſts, and particularly *Dionis*, as extremely ſerviceable in violent Inflammations of the Eye; tho', in my Opinion, with no better Reaſon than in the Veins of the Temple and Forehead. But, when this Operation is to be performed, let the Ligature be made about the Neck, as before directed, and let the Lancet be carefully introduced into the Vein. The Patient ought, likewiſe, to hold down his Head to prevent the Blood from flowing into his Mouth; and, as much Blood being diſcharged as may be neceſſary, apply a thick triangular Compreſs with proper Bandages. For Bleeding in the Eye itſelf, ſee Oculus.

Of Bleeding at the Jugular Veins.

The Operation of Bleeding at the external Jugular Vein, in violent Inflammations of the Neck or Quinſey, in Inflammations of the Brain, in Madneſs and Melancholy, in Inflammations of the Eyes, in Apoplexies, Head-achs, lethargic Diſorders, and violent Diſeaſes of the Head, is very antient; and many of the Moderns have recommended this Practice, becauſe, by it, the violent Influx of the Blood into the Part affected, and the Collection and Stagnation of the Humours, may be moſt expeditiouſly prevented. Beſides, there is no Danger in the Operation, as theſe Veins, extending on each Side of the Neck from the Head to the Clavicles, lie immediately under the Skin, and are ſufficiently large and conſpicuous. But, before the Inciſion, it will be proper to make a Ligature tighter than ordinary about the lower Part of the Neck, which muſt be ſtraitened by the Patient, or an Aſſiſtant, till the Veins become turgid; or, a looſe Bandage being thrown about the Patient's Neck, it may be drawn down towards his Breaſt by himſelf, or an Aſſiſtant. By this means the Jugular Veins, being compreſſed on each Side, will become more turgid, without obſtructing Reſpiration.

When the Veins are ſufficiently tumid, that is to be choſen which is moſt conſpicuous, when the whole Head or Fauces are affected; but when the Diſeaſe lies only on one Side of the Head, or in one of the Eyes, that Vein is, in my Opinion, to be preferred, which is ſituated on the morbid Side. A ſufficient Quantity of Blood being drawn, the Ligature muſt be removed, the Wound compreſſed by the Finger, and Compreſſes with a circular Bandage muſt be applied; and thus the Bleeding is ſtopt without any Danger of a freſh Hæmorrhage, as I have often experienced. It is, indeed, true, that the Patient is very ſubject to faint in this Operation; but that Circumſtance is attended with no bad Conſequence. *Tralles*, a learned Phyſician of *Breſlaw*, publiſhed in 1735. an excellent Treatiſe on the Uſefulneſs of this Operation.

The Method of Bleeding in the Venæ Raninæ.

Bleeding in thoſe Veins, under the End of the Tongue, is by ſome eſteemed beneficial in a Quinſey, or Inflammation of the Neck, eſpecially if a Vein has been before opened ſeveral times in the Foot, Arm, or Neck; for, by theſe means, the inſpiſſated and ſtagnant Blood is gradually diſcharged. The Operation may be thus performed: Make a Ligature about the Neck, as was already directed; then, raiſing the End of the Tongue with the Left Hand, carefully open both theſe Veins with the Lancet, one after another; for one of them will never diſcharge

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discharge a sufficient Quantity of Blood. When it becomes necessary to stop the Hæmorrhage, unbind the Ligature, and it commonly ceases spontaneously; but, if it should still continue, let the Patient hold a little Vinegar, or *Pontac* Wine, in his Mouth; or, if necessary, apply to the Wound a little Vitriol, or Alum, or a Compress dipt in some astringent Medicines, till the Bleeding stops. But there is seldom any Danger of a violent Hæmorrhage here; and, unless the Discharge be copious, in Diseases of the Fauces, little Effect can be expected from it.

The Method of Bleeding by the Veins of the Penis.

In some violent Inflammations of the Penis, this Operation has a wonderful Effect, and is sometimes more successful than almost every other Remedy. Introduce your Lancet about the Middle or back Part of that large Vein, which runs along the superior Side of the Penis, and is already sufficiently tumefied from the Nature of the Disorder; let the Evacuation be continued, till the Penis becomes flaccid, or till a Quantity is discharged proportionable to the Degree of the Disease. Then the Wound may be closed with the Finger, and Compresses are to be applied, with a Bandage proper for the Penis. Particular Care must be taken in this Operation, to avoid wounding the adjacent Nerves and Arteries, which might produce fatal Effects; and not to make the Bandage too tight, which might increase the Inflammation.

Of the Accidents which arise from Bleeding.

The Method of treating an Ecchymosis.

An Ecchymosis is an Extravasation of the Blood, from the Vein, between the Flesh and the Skin. Of this Disorder there are different Degrees; as when a great Part of the Arm is so violently affected, that it not only becomes livid, black, and swelled, but is, likewise, affected with Inflammations, Pains, Suppurations, and a Gangrene.

This Disorder is produced, either when the Surgeon has cut the Vein entirely through, or, which is more frequently the Case, when the Patient has used some violent Exercises, especially of the wounded Arm, too soon after the Operation; for by these means it may very readily happen, that the Blood may be extravasated from the wounded Vein, between the Flesh and Skin, more or less in proportion to the Violence of the Exercise.

When the Quantity of extravasated Blood is but small, little Danger is to be apprehended; for the stagnant Blood may be easily discussed, by applying a Compress dipt in Vinegar and Salt, or in Spirit of Wine. Sometimes the Blood degenerates into Pus, and then the Suppuration should be promoted by a Diachylon-plaister; and when the Matter is once ripened, it will spontaneously make its Way by Degrees, without Incision. As long as any Pus appears to be discharged, it should be daily expressed with the Fingers, and the Wound may be healed with a Diachylon-plaister.

If the Quantity of stagnating Blood be very considerable, there is little or no Hope of a Discussion: For the vitiated Blood generally degenerates into a violent Inflammation and Suppuration, and sometimes into a Gangrene. In order to prevent these Consequences, let the Surgeon make frequent Incisions in the livid Part, for evacuating the stagnating Blood. He may then apply a Diachylon-plaister, or Fomentations proper for Contusions, or Phlegmons. But if, as often happens, a violent Inflammation, or even a Gangrene, affects the Arm, it ought to be frequently scarified, and digestive Fomentations, or Cataplasms, should be applied. But, in these Cases, it is often necessary to take a sufficient Quantity of Blood from another Part of the Body, and to exhibit resolvent Medicines internally, till the Violence of the Inflammation, or the Gangrene, abates; or till it entirely ceases.

The Method of treating a Nerve or Tendon wounded in Bleeding.

A Nerve or Tendon may be certainly known to be wounded in Bleeding, if the Patient, at the time of Incision, feels most acute Pains, so that he can scarcely refrain from a vehement Outcry; especially if the Pains continue, and are followed by Tumors, Inflammations, Spasms, or, likewise, a Rigor and Convulsions of the Limb: Which Symptoms, if not timely relieved, are succeeded by most dangerous Convulsions, a Gangrene, and Death itself.

Among the various Methods of remedying this Malady, that seems the most excellent, which was formerly performed by *Paré* on the *French* King *Charles* IX. No sooner had the King signified his Pain, by crying out at the Instant that the Vein was opened, than *Paré* justly suspected, that a Nerve had been wounded. Immediately the Arm began to swell, and grow rigid, with the Acuteness of the Pain. Hereupon the King's Physicians, in Consultation with *Paré*, agreed upon the following Method: They first injected into the Wound, Oil of Turpentine with rectified Spirit of Wine; then they applied to the whole Arm the Emplastrum Diachalciteos, dissolved in Vinegar and Oil of Roses; then they used the expulsive Bandage, beginning at the Hand, and ascending gradually in continued spiral Turns to the Shoulder; by which means, the violent Impulse of the Blood, and the Inflammation, were not only abated, but the Pain, also, diminished by degrees. In order to complete the Cure, they applied to the Arm the following Cataplasm, till the Pain entirely ceased.

> Take of the Meal of Barley, and Vetches, each two Ounces; of the Flowers of Chamomile, and Melilot, each two Handfuls; of fresh Butter, an Ounce and an half: Boil them in Soap-suds into a Cataplasm.

Thus, though the natural Activity of the Arm was impaired for three entire Months, yet it gradually recovered its former Strength.

However, it may not be improper, in this Method of Cure, to substitute, instead of the Oil of Turpentine, and Spirit of Wine, the *Peruvian* Balsam, or *Hungary* Water, which may be for some Days instilled into the Wound, till the Pain diminishes. As the Emplastrum Diachalciteos is rarely to be found in the Shops, in room of it, the Emplastrum Diapompholygos, or the Plaister of red Lead, may be used. But great Care must be taken, whilst the Remedies are preparing, that the Wound be not exposed to the Air. It will, therefore, be proper, immediately to apply any Sort of Plaister, which is the readiest, to the Wound, and to wrap up the whole Arm in Linen Cloths moisten'd in Oxycrate, which will both lessen the Inflammation, and defend the Wound from the Injuries of the external Air. If the Patient be of a vigorous plethoric Habit, Bleeding in another Part may tend to prevent the Inflammation. *Scultetus*, in *Obs.* 87. gives a certain Ointment, which he commends as an excellent Remedy in Punctures of the Nerves; where he, also, informs us, that he has successfully divided entirely, or cut through, some of these wounded Nerves. *Heister's Surgery.*

PHLEBOTOMUS. A Lancet, or a Fleam: Instruments used for Bleeding.

PHLEDONODES, φλεδονώδης. See Phlebodonodes.

PHLEGMA, φλέγμα. Phlegm. Every Humour, says *Galen*, *Lib.* 2. *de Diff. Feb. Cap.* 6. which is both cold and humid, comes under the Denomination of *Phlegma*, "if we "would speak in the Language of *Hippocrates*, and accord- "ing to the usual Custom, not only of the antient, but modern "*Greeks*; or," as he says a little after, "if you please, you "may call it *Scindapsus*." Of Phlegm there are four Species, the vitreous, sweet, acid, and salt: These are reduced by *Galen*, *de Diff. Feb. Lib.* 2. *Cap.* 6. to three. But, in his Book *de Plenitud.* he makes five Species of it.

Phlegma, also, in *Hippocrates*, as *Galen* says in his *Exegesis*, signifies not only a white and cold Humour, but, also, an Inflammation [φλέγμονην]. Instances to this Purpose are innumerable.

Phlegmasia, φλεγμασίη, in the same Author, signifies not only an Inflammation in the common, but is sometimes to be understood of the violent Heat excited by a Fever; as *Lib. de R. V. I. A.* But φλεγμασίη τῆς ὄρης is a pituitous Sort of Urine, abounding with a gross and cold Humour.

Phlegmainon, φλεγμαίνων, signifies not only inflamed, but sometimes imports tumid, and increased in Bulk; as may be shewn from many Places in *Hippocrates*, in which ἰσχναίνειν, *to extenuate*, and φλεγμαίνειν, *to induce a Tumor*, are set in Opposition: Many Instances of this Sense of the Verb may be given from the Book *de Locis in Homine. Foesius.*

PHLEGMAGOGUS, φλεγμαγωγὸς, Phlegmagogue. An Epithet for such Cathartics as purge off Phlegm.

PHLEGMASIA, φλεγμασία. An Inflammation.

PHLEGMATIÆ, φλεγματίαι. Persons abounding with Phlegm are thus called, by *Hippocrates.*

PHLEGMATORRHAGIA. *Salmuthus*, *Observat.* 37. *Cent.* 1. gives an Account of a Disorder, which he calls by this Name. This was a very considerable Flux of thin Phlegm from the Nostrils, which continued for three Days, and was cured by the Use of the Cephalic Pills.

PHLEGMONE, φλεγμονή. A Phlegmon, or Inflammation. See Inflammatio.

PHLEGMONODES. Resembling an Inflammation.

PHLEPS, φλὲψ. A Vein. But among the Antients it signified both the Arteries and Veins.

PHLIÆ, φλίαι, in the Scamnum of *Hippocrates*, or other Machines of that Kind, are the upright wooden Posts, which are bored to receive the Ends of the Axes, and in which they turn. *Oribasius de Machinamentis*, *Cap.* 24. Or, as *Galen* explains

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plains it, in his *Exegesis*, ſtrait Pieces of Wood, fixed oppoſite to each other, like the Poſts of a Door.

PHLOGINON, φλογινόν. The Name of a liquid Collyrium, deſcribed by *Galen*, *Lib.* 4. *de C. M. S. L. Cap.* 7.

PHLOGISTOS, φλογιστός. Inflammable. The Liquor called *Æther*, is called, alſo, *Phlogiſton*, on account of its great Inflammability.

PHLOGIUM. A Name for the *Viola*; *tricolor*; *hortenſis*; *repens*.

PHLOGODES, φλογώδης. Of a Flame-colour, intenſely red, inflamed.

PHLOGOEIDES, φλογοειδής. The ſame as PHLOGODES.

PHLOGOSIS, φλόγωσις. An Inflammation; or an Heat and Exeſtuation of any Part, without an inflammatory Tumor. *Willis* ſpeaks frequently of a Phlogoſis of the animal Spirits; but, I am afraid, no juſt Idea can be framed of ſuch a Phlogoſis, till ſuch time as we know, that animal Spirits really exiſt, and we are better acquainted with their Natures.

PHLOMIS.

The Characters are;

The Root is perennial; the Leaves thick; the Galea large, hollow, falcated; the Beard trifid, the middle Segment being large, broad, marginated, and extended beyond the Galea, which cloſely preſſes upon the Beard: The Calyx is a ſhort, wide, pentagonal Tube, ſometimes indented: The Seeds are oblong.

Boerhaave mentions eight Species of Phlomis; which are,

1. Phlomis; Narbonenſis; folio Hormini; flore purpuraſcente. *T.* 178. *Marrubium*, *nigrum*, *longifolium*. C. B. P. 230. *Herba venti*, *Monſpelienſibus*. J. B. 3. App. 854.

2. Phlomis; fruticoſa; Salviæ folio latiore, & rotundiore. *Tourn. Inſt.* 177. *Boerh. Ind. A.* 160. *Phlomis*. Offic. *Salvia fruticoſa lutea latifolia*, *ſive Verbaſcum ſylveſtre quartum Matthioli*. Park. Theat. 51. Raii Hiſt. 1. 511. *Verbaſcum latis Salviæ foliis*. C. B. P. 240. *Verbaſcum Matthioli*. Ger. 625. Emac. 767. YELLOW SAGE.

It is cultivated in Gardens, and flowers in *June*: It is aſtringent, and reckon'd among vulnerary Plants.

3. Phlomis; fruticoſa; Salviæ folio longiore, & anguſtiore. *T.* 177. *Verbaſcum ſylveſtre*. Dod. *Pſeudo-ſalvia*, *fruticoſa*, *minor*, *lutea*, *Verbaſci foliis incanis*. M. H. 3. 397.

4. Phlomis; fruticoſa; folio ſubrotundo, breviore, flore luteo. *Verbaſculum*, *ſalvifolium*. Alpin. Exot. 109. *Pſeudo-ſalvia*, *minor*, *Cretica*, *lutea*. M. H. 3. 397.

Dioſcorides ſays, that the Flowers are good to dye Hairs of a Gold-colour; and that the Leaves cure Ambuſtions. *Galen* writes, that the Leaves are moderately drying, and digeſtive. *Proſper Alpinus de Plantis exoticis*.

5. Phlomis; Samia; herbacea; folio Lunariæ. *T. Cor.* 10.

6. Phlomis; Orientalis; foliis laciniatis. *T. Cor.* 10.

7. Phlomis; Orientalis; anguſto & longiori folio; flore luteo. *T. Cor.* 10. *Boerh. Ind. alt. Plant. Vol.* 1.

The *Phlomis fruticoſa* was called by the Antients *Verbaſcum*; for which Reaſon *Tournefort* makes it belong to that Kind. The medicinal Virtues are not known; only it is recommended with the Lamium and Galeopſis: The Juice, however, is emollient. *Hiſt. Plant. adſcript. Boerhaav.*

PHLUS, φλῦς. This Word occurs, *Lib. de intern. Affect.* where we read, ᾗ ἐν τῇ κεφαλῇ ὑπὸ τὰς τρίχας οἷον φλῦς ὑπέστι. *And on the Head, under the Hairs, there is, as it were, a Cortex.* In this Paſſage φλῦς ſignifies the ſame as φλοῦς (*phloos*), or φλοιὸς (*phloios*), that is, a Cortex, or ſcaly Skin, like the Exuviæ or Slough of a Serpent: For which Reaſon *Calvus* renders the Word *ſquamulas*, "ſmall Scales." *Heſychius*, alſo, expounds φλῦς by φλοιὸς, λεπύχανον (*Lepychanon*), and λεπυρὸν (*Lepyron*), Words much of the ſame Import.

PHLYCTÆNÆ, φλυκταῖναι, from φλύζω, to boil. Small Eruptions on the Skin, ariſing from an hot or acrimonious Humour. *Hippocrates* ſometimes repreſents them, as reſembling thoſe Puſtules which appear after Ambuſtions.

PHLYCTÆNOIDES. An Epithet of Puſtules which reſemble *Phlyctænæ*. *Blancard.*

PHLYCTIDES, φλυκτίδες. The ſame as PHLYCTÆNÆ.

PHLYSIS. An Eruption on the Skin, from a Redundance of Humours. *Caſtellus* from *Galen*.

PHLYZACION, φλυζάκιον. A Puſtule, or Veſication on the Skin, excited by Fire or Heat. Sometimes it imports the ſame as PHLYCTÆNÆ.

PHOCA, or *Vitulus Marinus*. The Sea Calf. An amphibious Animal, which lives ſometimes in the Sea, and ſometimes on Shore, but moſt in the Sea. It is ſaid, that the Fins of this Animal, eſpecially thoſe taken from the Right Side, excite Sleep, when applied to the Head: Its Fat has an emollient Quality, and, if rubbed on the Region of the Uterus, is thought proper to provoke the Menſes, and remove Vapours: Shoes made of the Skin of it are, alſo, thought to be a good Preſervative againſt the Gout. *Lemery, Traité des Drogues.*

PHOCÆNA. A Species of Dolphin, ſomewhat thicker and ſhorter than the ordinary Kind; the Fat of which is eſteemed reſolutive, and good for the Nerves. *Lemery des Drogues.*

PHODES, or PHOIDES, φῶδες, or φοῖδες. The ſame as PHAUSINGES.

PHOENICITES. A Name for the *Judaicus Lapis*.

PHOENICIUM EMPLASTRUM. The *Emplaſtrum Diachalcites*, or *Diapalma*.

PHOENICIUS MORBUS. The *Elephantiaſis*. See LEPRA.

PHOENICOPTERUS, φοινικόπτερος. The Name of a Bird, frequently mentioned by the Antients, whoſe Tongue and Brains were eſteem'd great Delicacies. I don't know, that it is certain what Bird this was; but, by the Derivation, it ſhould have red Wings.

Lemery deſcribes the Phœnicopterus, as a Bird as large as an Heron, of an Aſh-colour, with a crooked Bill, and very long Neck, which lives upon ſmall Fiſh, and Shell-fiſh: He ſays it is eſteem'd aperitive, and good for the Epilepſy; and that the Fat is reſolutive, and good for the Nerves.

PHOENICURUS. The Name of a Bird called, alſo, *Rubecula*, *Ruticilla*, and *Erithacus*. *Lemery* ſays, it is about the Size of a Cuckow, and has a red Tail, as the Derivation of the Name imports. It is eſteem'd good for the Epilepſy, either eaten, or in Broth. The Fat is reſolutive, and anodyne.

PHOENIGMUS, φοινισμὸς, from φοινίξ, a red Colour. A Rubification, or Rubefaction, of the Skin; that is, an Excitement of a Redneſs of the Skin, by means of acrid Applications.

PHOENIX. A Name for the *Gramen*; *Loliaceum*; *folio & Spica anguſtiore*. See LOLIUM.

PHOLAS. The Name of a Sea Shell-fiſh, ſomewhat like a Muſſel, which grows to the Rocks at the Bottom of the Sea, and is ſaid to be good Food. The Shell, powder'd, and taken internally, is ſaid to be aperitive, and good for the Stone.

PHOLIS, φολὶς. A Scale of Metal.

PHOLLIDODES, φολλιδώδες, *Lib.* 4. *Epid.* is apply'd to Tumors in the Legs, and ſignifies ſoft, lax, and fungous, as in thoſe who labour under an *Anaſarca*, and eſpecially, a *Leucophlegmatia*. All the Copies, indeed, read φολιδώδες, which *Calvus* renders *ſquamous*, becauſe φολὶς is the ſame as λεπὶς (*lepis*) a Scale like that of Fiſhes, or Serpents. Whence the Paſſage in *Hippocrates* above-mention'd, ſuppoſing this to be the true Reading, may be underſtood of ſuch Tumors in the Legs, as, by reaſon of the Drineſs and Corrugation of the Skin, and the want of Aliment, are cover'd with a ſcaly ſort of Subſtance, as with a Cortex, as is often obſervable in the Legs and Feet, and other Parts, under a Cachexy or Dropſy. But perhaps for φολιδώδες we are to read φολλικώδες (*Phollicodes*) which ſignifies fungous, lax and empty like Husks, void of Seeds, as *Galen* expounds the Word in his Exegeſis, with an Eye, it is probable, to the Place in *Lib.* 4. *Epid.* where it is ſaid, τὰ φολλικώδεα φλυζαινύμενα, "the puſtulous Eruptions were ſoft "and lax." *Erotian* expounds φολλικώδη by ἐφηλώδη and λεπράδη, ſquamous and ſcabrous, as if exaſperated by the *Lepra*; for the Antients, he ſays, called the Aſperities of the Skin, proceeding from the *Pſora*, and the like Affections, by the Name of φόλλικες, *Phollices*. And this affixes a very different Idea to the Word, which muſt then be underſtood of thoſe Tumors, which are exaſperated with a ſort of ſquamous Cruſt, as is ſometimes obſervable in cachectic Bodies.

PHORACIODES, φορακιώδες, from φορὰς (*phoras*), which in the Exegeſis is expounded by εὐσύλλεπτος (*eyſylleptos*), diſpoſed for Conception, *Lib.* 2. *γυναικ.* is ſpoken of the Orifice of the Uterus, as open and duly qualified in order for Conception. But *Foeſius* ſuſpects, that the Word ought to be read φαρκιδώδες (*pharcidodes*), which *Galen* and *Erotian* expound by ῥυτιδώδες (*rutidodes*) corrugated. But he ſhould rather like to read, he ſays, φοργανώδες (*phorgandes*), becauſe φόργανη (*Phorgane*) is expounded, in *Heſychius*, by ἀραιότης (*Araeotes*), as importing the Orifice of the Uterus to be lax, rare, and open; which, *Lib. de Muliebr. Nat.* and *Lib. de Morb. Mul.* on the ſame Occaſion, is expreſſed by εὐρὺ (*eury*), wide, expanded.

PHORIMOS, φόριμος. An Epithet for that Species of Alum, which is call'd in the Shops, Roch-alum.

PHORINE, φορίνη. The Skin of a Man or Beaſt, or, according to *Pollux*, an Hog's-skin. Thus, *Lib. de R. V. I. A.* ſpeaking of Swines-fleſh, it is ſaid, that it ought to be eaten ἄνευ τῆς φορίνης, that is, as *Galen* ſays, in his Commentary, ἄνευ τοῦ δέρματος, "without the Skin." Φορίνη is, alſo, ſpoken of the human Skin, which by ſome, too, is called πυρίνη (*Pyrine*), as *Heſychius* obſerves.

PHOS, φῶς. Light; but it, alſo, ſignifies the black Circle, which ſurrounds the Pupil of the Eye.

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PHOSPHORUS, from φῶς, Light, and φέρω, to bring. The Name of a *Collyrium*, in *Galen*, *L.* 4. *de Comp. M. S. L. Cap.* 7. It is the same as the DIACROCU.

There are several Chymical Preparations call'd by this Name, which shine in the Dark, some of which I have taken Notice of under the Article ALUMEN.

HISTORY OF PHOSPHORUS.

The *Phosphorus igneus* differs from other naturally shining Bodies, in this, that it is in reality nothing but a kind of concealed Fire, which discovers itself by its Light and Smoke; but, if you rub it harder, it will break out into a Flame. This Discovery appeared about the Year 1677; but was preceded by *Baldwin*'s Phosphorus, which is an artificial Imitation of the natural *Bolognian* Stone. *Christopher Adolphus Baldwin*, Governor of a certain Place in *Misnia*, happened to dissolve Chalk in Aqua Fortis, or Spirit of Nitre, which last he again brought over by the Fire; and he found the remaining Body to imbibe the Light, when exposed thereto, and retain it for some time, and carry it along with it into a dark Place, as a Sponge does the Water it has imbibed. This Experiment did not a little startle the *Cartesians*, (very few of whom had seen the *Bolognian* Stone) that Light should of a sudden become a gross and portable Thing, whose Rays they supposed to consist in Pression only, and to be propagated in an Instant of Time. *Baldwin*, in an obscure manner, described his Experiment in a Treatise intituled *Aurum Aureæ*.

To this succeeded *Brand* of *Hamburgh*'s Invention, named the Phosphorus igneus, the Pyropus, and afterwards, by way of Eminence, the Phosphorus, which was discovered in this manner. *Brand* had fallen on a Chymical Process, extant in a printed Book, which taught how to prepare from Urine a Liquor fit to ripen a Particle of Silver into Gold; and in labouring on this he found out his Phosphorus. He had some Acquaintance with *Jo. Daniel Kraft*, of the Council of Commerce to the Elector of *Saxony*; and, by his means, with *Jo. Kunkel*, one of the said Prince's Bed-chamber; but who, under that Character, performed Chymical Processes. On persuading *Brand*, that this Arcanum might be sold to the Great at an high Price, and offering him their Assistance, they obtained the Composition from him. And, upon going from *Dresden* to *Hamburgh*, they both saw and learned from him the Process of the Phosphorus. But *Kunkel*, upon his Return Home, had committed some Mistake in the Process, and for a long time could not hit upon the Phosphorus; and he sent a Letter to *Brand*, complaining that the Secret was not sincerely communicated to him. But *Brand*, repenting that he had been so easy in imparting the Secret, delayed to satisfy him. *Kunkel*, in the mean time, after various Trials, corrected the Error himself: Whence he pretended to be the Inventor; and of this *Brand* bitterly complained.

Kraft, who was a Man of a good Address, undertook to vend the Discovery among the Great; and, in his Way to *England*, he made me a visit at *Hanover*; and ingenuously mentioned to me, both the Matter of the Process, and its Author *Brand*; and he likewise shewed the Experiment of the Phosphorus, to the great Surprize of Duke *John Frederic*; and afterwards in *England* to K. *Charles* II. Prince *Rupert*, the illustrious Mr. *Boyle*, and others, of which there is an Account by Dr. *Hook*. But he never, as far as I know, mentioned himself as the Inventor. The Phosphorus was first sent into *France* by me to *Huygens*; and at length the Composition it self was, by the illustrious *Tschirnhausen*, upon his Return from *Germany* into *France*, communicated from me to the Royal Academy, to whom *Huygens* had already shewn the thing. That *Boyle* had got but an imperfect Description of it, appears from his Dissertation on Phosphorus; for his Phosphorus differs from *Brand*'s only in this, that it is more imperfect.

But Duke *John Frederic*, as he was a magnificent and generous Prince, ordered that I should send for the Inventor: *Brand*, therefore, came to *Hanover*, and faithfully communicated to us the Process; for, whatever he did, I imitated in another Laboratory. Upon collecting a large Quantity of Urine, *Brand* came to us, and went through the Process. Upon *Brand*'s Return to *Hamburgh*, the Duke settled an annual Pension upon him, which was punctually paid him till the Duke's Death; and this probably was the only considerable Encouragement which he reaped from his Phosphorus.

I myself shewed to the same Prince, who was very curious in these Matters, another kind of Phosphorus, which we may call the *Thermophosphorus*, which does not acquire its shining Quality from Light, as the *Bolognian* and *Baldwin*'s Phosphorus, but from Heat. There is a kind of Substance found in Mines, capable of being dissolved by Fire, with the Powder of which if you draw Letters and Figures on an iron Plate, and lay the Plate upon burning Coals, the Strokes shine, though the Plate be not ignited, and though the Rays of Light cannot penetrate from the Coals to the Figures.

It is a thing commonly known, that hard Bodies acquire Heat, and at last take Fire, by Motion; and the Flame produced by the Attrition of two Pieces of Wood was, by the antient *Saxons*, regarded as a religious Ceremony. But we are not so well acquainted with the Manner, in which Smiths at our Mines kindle the Fire extinguished in their Forges. They strike, with an Hammer, an iron Bar on its very Edge, and which is wont to come from the Mines, in the Form of a quadrangular Prism. This Bar they shift, that the Edge may be alternately struck, now on the Right, and again on the Left: Thus it immediately becomes hot, and, after repeated Blows, glowing hot, so as to set on Fire any inflammable Matter.

We have, besides, other kinds of Phosphori, in which there are no Traces of Fire, the principal of which we owe to *Joh. Bernouilli*, who has improved the Observations of others on Mercury shining in Vacuo, and carried it so far, that now it may be produced at Pleasure; whereas before Mercury was rarely, and by chance, made to shine. It is credible, that this Phosphorus always retains its shining Quality, or, at least, for a long time; because it does not stand in need of the free Air to make it shine, like the Phosphorus igneus, but emits a Light by only shaking it in a Glass, hermetically sealed; and with this the King of *Prussia* was so well pleased, that he rewarded the Inventor with a Gold Medallion. I understand, that M. *Dutal* at *Paris*, and others, have laboured with remarkable Success in establishing and promoting this Phosphorus. It would be worthy Inquiry, what Quantity of Light might be produced by many such Phosphori, continually shook; for a continued Shaking may easily be effected by means of a Machine, and the Light of many Phosphori may be collected either by Refraction or Reflexion, an Experiment which I wonder has not been hitherto attempted. *Leibnitz*, in the *Miscellanea Berolinensia*.

DR. SHAW'S ACCOUNT OF PHOSPHORUS.

We took half a Dram of Camphire, and ground it in a glass Mortar, with three Grains of the solid Phosphorus of Urine; then added as much essential Oil of Cloves, as served to reduce the Whole to a fluid Form. The Mixture thus made may be rubbed upon the Clothes, the Hair, or the Hands, without Danger of Burning.

The successful Method of making it is this: Evaporate any Quantity of fresh Urine over a gentle Fire, to a black, and almost dry Substance; then with two Pounds thereof thoroughly mix twice its Weight of fine Sand. Put the Mixture into a strong-coated Retort of Stone; and, having poured a Quart or two of clear Water into a large Receiver with a long Neck, join it to the Retort, and work in a naked Fire; let the Heat be small for the two first Hours; then increase it gradually to the utmost Violence, and continue thus for three or four Hours successively. At the Expiration of which Time, there will pass into the Receiver a little Phlegm, and volatile Salt, much black fetid Oil, and, lastly, the Matter of the Phosphorus in form of white Clouds; which either stick to the Sides of the Receiver, like a fine yellow Skin, or fall to the Bottom in form of a small Sand. Now let the Fire go out; but take not away the Receiver, before it is cold, for fear of setting the Phosphorus on Fire by admitting the Air. To reduce these small Grains into one Piece, put them into a little Tin Ingot-mould, along with Water; heat the Ingot to make the Grains melt together; then add cold Water, till the Matter is congealed into one solid Stick, like Bees-wax; which, being cut into little Pieces, fit to enter the Mouth of a Phial, may be preserved by Water, and keeping the Glass close stopped. If the Glass were not to be stopped, the Phosphorus would turn black on its Surface, and at length be spoiled.

The Cautions required to make the Process succeed are; 1. To evaporate the Urine, while it is recent. 2. To prevent its boiling over, and so losing the most unctuous Part. 3. To let the Matter afterwards ferment in the Cold. 4. To mix the black Matter with Sand, to prevent its melting and running together. 5. To use a Stone Retort, those of Earth being too porous, and suffering the Phosphorus to transude sooner than pass into the Receiver. 6. To have the Receiver very large, and with a very long Neck, to prevent its breaking and over-heating; which would either evaporate the white Vapour, wherein the Phosphorus consists, or else prevent its coagulating. 7. To put Water into the Receiver for keeping it cool, and quenching the Phosphorus, as it falls to the Bottom. 8. To make the Fire small at first, that the Retort may be preserved, and the black Matter gradually dried; which would otherwise swell and come over in a black Froth. Lastly, it

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it is found neceſſary, that the Urine for the Operation be of ſuch as uſe Malt Liquors, rather than Wine. All theſe Circumſtances being required for obtaining the Phoſphorus to Advantage, no wonder if ſo many of thoſe who attempted it miſcarried.

This Operation may be greatly ſhortened, by freezing and concentrating freſh Urine; afterwards evaporating it with Care; then digeſting it *per ſe*, in the manner above-mentioned. When thoroughly digeſted, commit the Matter, in a large Quantity, to an iron Pot, with an earthen Head, as the Chymiſts uſually do, for making Spirits of Hartſhorn, or the Spirit and Salt of Urine. When thus all the Salt and Oil are obtained, let the *Caput Mortuum* be taken out, and mixed with twice its own Weight of Alum. The Matter may now be put into a well-coated long Neck, and worked with Care in a reverberatory Furnace, into very large Receivers filled with Water, and connected to the Necks by Adapters; the lower Ends whereof may enter the Water, as in diſtilling of Quickſilver; the Operation being continued for eight or ten Hours. And this we apprehend to be the beſt way hitherto known of procuring Phoſphorus to Advantage. Dr. *Wall* informs us, that Mr. *Boyle*, being concern'd to find how ſmall a Proportion of Phoſphorus was afforded by Urine, deſired him to look out for another Subject, that might afford it in greater Plenty. The Doctor afterwards cauſing a Piece of dry Matter to be dug up in the Fields, where Night-men emptied their Carts, he obſerved a great Number of ſmall Particles of Phoſphorus therein. This Matter the Doctor immediately carried to Mr. *Boyle*; who ſet *Bilgar* the Chymiſt to work upon it: But he could obtain very little Phoſphorus from it, till another Material was added to it in Diſtillation; and then he procured Phoſphorus in ſuch Plenty, that, ſelling large Quantities at ſix Guineas the Ounce, he ſoon became rich, and left *England*. The Matter which thus fixes and increaſes the Phoſphorus, we apprehend to be Alum; which is itſelf not only prepared from Urine, but appears to afford the ſame kind of Acid that Phoſphorus yields by burning. For, upon its Analyſis, Phoſphorus appears to be a Compoſition of a ſtrong acid and an inflammable Matter, exactly in the manner of common Brimſtone; whence it may not improperly be called an animal Sulphur. Accordingly, like common Brimſtone, it will burn under a Glaſs-bell, and afford Flowers, that become an acid Liquor, like *Oleum Sulphuris per Campanam*, by attracting the Moiſture of the Air.

And in this manner it has been uſed, ſo as to produce extraordinary Changes upon Metals, eſpecially in the philoſophical View; the Acid itſelf, even without Heat, proving a Menſtruum to perhaps all the Metals. But when this Acid is driven into the Pores of the Metal, by the Action of the Flame in burning the Phoſphorus, it ſeems productive of much greater Effects; as is known to thoſe acquainted with the ſublimer Metallurgy. This Phoſphorus, of all the kinds hitherto diſcovered, ſeems the moſt uſeful.

This Phoſphorus has been ſeveral Ways diſguiſed, ſo as to make it appear under various Forms; ſometimes as a Solid, ſometimes as a Liquid, ſometimes as an Ointment, and ſometimes as a running Mercury. There are, alſo, others of different Kinds; of which we ſhall only mention two, diſcovered by M. *Homberg*: The firſt is that uſually called the *black Phoſphorus*, now commonly prepared with Alum and Wheat-flour, by taking four or five Parts of Alum, to one of Wheat-flour, and calcining them together to a brown or blackiſh Maſs; which being powder'd, and put into a Phial, looſely ſtopped with Paper, and ſet in a Sand-heat, ſo as to continue glowing hot for ſome time; then removing the Whole from the Fire, and ſuffering it to cool gradually, and at laſt ſtopping the Bottle cloſe. A little of this Powder, being poured out of the Bottle, and expoſed to the open Air, immediately takes Fire, and appears like a glowing Coal. But the Powder muſt be freſh made, to have a ſtrong Effect; for the Sun's Rays, or the Moiſture of the Air, being gradually admitted to it, deſtroy its Virtue; whence it ought to be kept in a dark and dry Place. 'Tis remarkable of this Phoſphorus, that it may be made almoſt from any animal or vegetable Subſtance, inſtead of Wheat-flour; but that no Salt whatever can be ſubſtituted inſtead of Alum.

M. *Homberg*'s other Phoſphorus is made of one Part Sal Ammoniac, and two Parts Lime ſlaked in the Air: Theſe being mixed well together, a Crucible is to be filled with them, and ſet in a ſmall Fire of Fuſion; where, as ſoon as the Crucible becomes red-hot, the Mixture will melt, and ſhould be ſtirred with an Iron Rod, to prevent its running over. When the Matter is entirely fuſed, it may be poured into a Braſs Mortar; and, when cold, it will appear of a grey Colour, and almoſt as if it were vitrified. If now it be ſtruck upon with any hard Body, it appears as on Fire, in the whole Extent of the Stroke: But, the Matter being brittle, it may be proper, for the Experiment's Sake, to dip little Bars of Iron, or Copper, into the melted Matter in the Crucible; for thus they will be enamel'd, as it were, with the Matter, and theſe Bars may be ſtruck upon, ſo as commodiouſly to repeat the Experiment ſeveral times before the Matter falls off. The Bars are to be kept in a dry Place, to prevent the Phoſphorus upon them from running, by the Moiſture of the Air.

Both theſe Phoſphori were diſcover'd by Accident. The firſt was obtained by ſearching for a limpid Oil, from the common ſtercoraceous Matter, that ſhould fix Quickſilver; and the ſecond by endeavouring to calcine Sal Ammoniac with Lime, ſo as to render it fuſible like Wax; which End was obtained, but not the other.

There have been no very conſiderable Uſes of theſe two Phoſphori hitherto diſcovered; but the Phoſphorus of Urine has been employed for making many curious Experiments; a few whereof we ſhall here exhibit.

1. The Light of this Phoſphorus appears greater in Vacuo, than in the open Air.

2. In hot Weather it is obſerved to dart Flaſhes of Light through the Water wherein it is contained, ſo as exactly to reſemble Lightning; which thus darts unextinguiſhed through watery Clouds and Vapours.

3. Theſe Flaſhes are not liable to kindle or burn any combuſtible Matter, in which they reſemble the harmleſs Kind of Lightning; but, in a condenſed State, this Phoſphorus burns very furiouſly, and with a moſt penetrating Fire, ſo as to melt and diſſolve Metals: In which reſpect it again reſembles the more deſtructive Kinds of Lightning, which are found to have the ſame Effects.

4. If a little Piece of this Phoſphorus be view'd through a Microſcope, the internal Parts appear in a conſtant Ebullition.

5. A little Piece of it being put into a Silver Spoon, and held over the Fire, it burſts out into a ſhining Flame, leaving a red Spot in the Spoon, of a corroſive acid Taſte; and, being diluted with Water, the Mixture makes a Conflict with Oil of Tartar *per Deliquium*.

6. If a little of it be ground in a Glaſs Mortar, with twenty times its own Weight of Nitre, it does not take Flame, but only diſperſe a ſhining Property through the Body of the Nitre; but, if ground in the ſame manner, with Iron Filings reduced to Powder, a bright Flame immediately enſues.

7. Though this Phoſphorus appears to be a kind of Sulphur, yet it does not diſſolve in highly rectified Spirit of Wine, but communicates ſome ſulphureous Parts thereto: For if this Spirit be poured to Water in the Dark, it yields a faint Degree of Light.

8. The Nature of this Phoſphorus is conſiderably changed, by being long digeſted with Alcohol; for thus it becomes a kind of white tranſparent Oil, that does not coagulate without an extreme Degree of Cold, nor afford any manner of Light; and, when freſh Spirit of Wine is pour'd thereon, it does not, like other Oils, mix therewith, nor diſſolve therein.

9. If this Phoſphorus be ſeparated from the Spirit of Wine, wherewith it was digeſted, and be afterwards well waſhed in common Water, it, by degrees, recovers its former Conſiſtence, and coagulates into a tranſparent Matter whiter than before; but neither affords ſo much Light, nor recovers its primitive ſhining Virtue, nor its yellow Colour.

10. The Spirit of Wine ſo ſeparated becomes yellowiſh, and ſmells ſtrong of the Phoſphorus; though it ſhines not, except when poured upon Water.

11. This Phoſphorus, being mixed with a large Quantity of Pomatum, makes, as well as with Camphire, and the Oil of Cloves, a ſhining Unguent, that may be rubbed on the Hands and Face, without Danger of burning, ſo as to render them luminous in the Dark.

12. If a Piece of Paper, or Linen, be dipt at one End in Spirit of Wine, and a Bit of Phoſphorus be cruſhed on the other End that remains dry, the Spirit will be fired by the Phoſphorus, without immediate Contact. But the ſame thing will not happen, if the Paper were dipt in Oil of Turpentine, nor if a Bit of Phoſphorus were rubbed upon the End dipt in the Spirit of Wine; only, when the Spirit is entirely evaporated, the Phoſphorus will burn, though with Difficulty, and ſlowly.

There are many of theſe odd kind of Experiments, that might be made with Phoſphorus; which is a Subſtance that ſeems in Chymiſtry to be much ſuch a thing, as the Load-ſtone in Natural Philoſophy; and its Effects almoſt as odd, and difficult to be explain'd, for want of knowing the latent Properties of Bodies.

Axioms.

We learn from the preceding Experiments, that the Phoſphorus of Urine is applicable to many extraordinary Purpoſes, particularly

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particularly to the introducing of uncommon Changes in metalline Bodies.

That, as moſt Diſcoveries of chymical Exploſions and Phoſphori were accidental, greater Things may be expected from a ſagacious Experience, and by a further Diſcovery of Cauſes and Axioms.

That the Phoſphorus of Urine may be made in large Quantities, and with ſmall Expence; ſo as to afford deſirable Opportunities for the farther Improvement of Chymiſtry and Metallurgy.

PHOTEL, by ſome called *Ficus Pharaonis Thevet*, is a Tree nearly reſembling the *Banana-tree*, growing in the Kingdom of *Catay*, according to *C. Bauhine*; which is all we know of it.

PHOXINOS SQUAMOSUS. The Name of a River-fiſh, about half a Foot long, pretty thick, and covered with yellow and blue Scales, with a red Tail. It is eſteem'd apetitive. *Lemery des Drogues.*

PHOXOS, φοξός. One with an acuminated or faſtigiated Head, that is, ſharpen'd towards the Top, the Eminences either of the Forehead or Occiput, or both, being depreſſed, or one or both of thoſe Parts beyond meaſure prominent. Or, as *Galen* expreſſes it *Com.* 1. in 6 *Epid.* ἡ φοξὴ κεφαλὴ, &c. "An acuminated Head, with one or both the Eminences "[of the Forehead and Occiput] indecently prominent, or "having one Eminence, and wanting the other:" And again, "Acute Heads want either the Eminence of the Forehead, or "Occiput; or elſe have it produced beyond a juſt Degree." But *Phoxoi* are properly thoſe who have the Top of their Head very much faſtigiated and turbinated, and conſequently deformed. *Therſites* is deſcribed by *Homer* with ſuch a Head. Φοξὸς, in *Heſychius* and *Erotian*, is expounded by ὀξυκέφαλος, "ſharp-"headed." The Word occurs twice 6 *Epid.*

PHRAGMITES, φραγμίτης. A Name in *Dioſcorides*, for the common *Arundo*.

PHRAGMOS, φραγμὸς, from φράσσω, to incloſe as with an Hedge. An Anatomical Term for the double Series, or Cage, of Teeth.

PHRASIUM *viride*. Flos Æris. *Rulandus*.

PHRENES, φρένες, was the Name by which *Hippocrates*, and the antient Phyſicians, called the *Diaphragma*.

PHRENESIS, PHRENETIASIS. The ſame as PHRENITIS; which ſee.

PHRENITICI NERVI. The Nerves belonging to the Diaphragm. See PHRENES.

PHRENITIS, φρενῖτις, from φρὴν, the Mind. A Phrenſy.

There is no Inflammation, or particular Fever, of ſo great Importance in Medicine, as that which is lodged in the Brain, the nobleſt of all the Parts; and not only totally deſtroys the Uſe of Reaſon, but, alſo, induces a ſudden Danger of Death, and is, by the *Greeks*, call'd *Phrenitis*. Now this Diſorder is an acute inflammatory Fever, ariſing from too great a Congeſtion of Blood, and its interrupted Circulation, eſpecially thro' the moſt minute Arteries of the Membranes of the Brain; and accompanied with intenſe Heat, a Delirium, and Danger of Death.

The Signs of an approaching Phrenitis are, by *Alexander Trallian*, in *Lib.* 1. *Cap.* 13. accurately and compendiouſly deſcribed in the following manner: "An approaching Phrenitis, "ſays he, is preceded by intenſe and continual Watchings; or, if "the Patients ſleep, their Reſt is troubled and interrupted. They, "alſo, ſtart, and are afflicted with terrible Dreams. They ſoon "forget what is ſaid to them; and if, at any time, they re-"turn an Anſwer to a Queſtion, they appear more fierce and "angry, than juſt before they ſeem'd to be. Their Pulſe is "hard and ſmall, whilſt they are frequently afflicted with a Pain "of the Occiput. When the Diſorder increaſes, their Eyes be-"come more fix'd and red; Tears, at the ſame time, flowing "from both of them." But the Signs and Symptoms of a preſent Phrenitis are by none of the Antients ſo well ſpecified and characterized, as by *Cœlius Aurelianus*, in *Lib.* 1. *Cap.* 2. in the following manner: "In a Phrenitis, the Patient is afflicted "with an acute Fever; his Pulſe is hardly perceptible on the "Surface of the Body; or, if it is, it is low and tenſe; his Face "is inflated and full; the Blood drops from his Noſtrils; he is "afflicted with continual Watchings; or, if he ſleeps, his Reſt is "diſturb'd; he is ſeized with a kind of turbulent Madneſs, a "preternatural Solicitude of Mind, and a Privation of Reaſon; "he frequently changes his Poſture in Bed, and his Head is in a "continual Commotion. He is ſometimes chearful, without "any apparent Cauſe; his Eyes are red; he weeps gently, and "toſſes his Arms about him, but has no Pain in his Head. His "Joints are cold, but without any Tremor. His Urine is co-"pious, yellow, aqueous, thin, and diſcharged by little and little. "Some phrenitic Patients are afflicted with a Noiſe in their "Heads, a Ringing of their Ears, and an inceſſant Head-ach. "Their Looks are, alſo, fix'd and ſtern, and their Eyes frequently "wink."

All theſe injured Functions of the Body, accompanying a Phrenitis, ariſe from too copious and impetuous a Conveyance of Blood to the Head; its interrupted Circulation thro' the minute Veſſels of the Brain; its Stagnation; and its quick Conveyance thro' other unuſual Ways. Hence Diſtentions of the Veſſels of the Brain and Face happen; a ſerous Humour is ſecreted, and every-where obſtructs the Veſſels. The Brain is totally diſturb'd, and eſpecially in thoſe Functions which are ſubſervient to the Uſe of Reaſon; for *Hippocrates*, in his Book *de Flatibus*, and in many other Parts, juſtly obſerves, that Prudence and Reaſon depend upon a laudable State of the Blood in the Brain; or, in the modern Stile, upon its equable Circulation thro' it; ſo that, when this is diſturb'd, Prudence and Reaſon are deſtroy'd. And that the true Seat of a Phrenitis is in the Brain, is ſufficiently evinced by diſſecting thoſe who have died of that Diſorder; in whom, not only the Veſſels of the Dura Mater, with its Sinuſes, but, alſo, thoſe of the Pia Mater, are infarcted with a thick and coagulated Blood; whilſt theſe Membranes themſelves are ſo dry and parch'd, that the Pia Mater can be eaſily ſeparated from the cortical Subſtance of the Brain. Beſides, the medullary Subſtance of the Brain appears cover'd with a large Quantity of a ſerous Humour. Theſe Circumſtances are confirm'd, in many Inſtances, by *Blancard*, in *Anatom. Pract. Obſ.* 3. *Schenckius*, *Lib.* 1. and *M. N. C. Decad.* 2. *An.* 5. *Obſ.* 62.

Among the antecedent Cauſes of a Phrenitis, *Cœlius Aurelianus*, in the Part before quoted, juſtly reckons, drinking Wine too copiouſly; Watchings; remaining long expoſed to the Sun; a Mind naturally giddy and inconſtant; Anger; a Weakneſs of the Head, brought on by Study; and Youth. Now 'tis certain, that all thoſe Things diſpoſe to a Phrenitis, which render the Head weak and infirm; in conſequence of which, there may eaſily happen a Stagnation of the Blood, and a too long Continuance of the Humours in its Veſſels. Thoſe Things, alſo, diſpoſe to a Phrenitis, which forcibly convey the Blood from the inferior Parts to the Head. Hence 'tis confirm'd by practical Obſervations, that a Phrenitis, and delirious Fevers, are highly incident to thoſe afflicted with long Grief, or Care, who fatigue their Minds by profound Meditation and Study; to thoſe who are ſtrong and vigorous; who are of melancholic and choleric Conſtitutions; who are often under the Influences of Anger or Hatred; who are rack'd by violent Paſſions; who are afflicted with Watchings and Inquietudes; who ſurfeit themſelves with ſtrongly hopt Malt-liquors; who are addicted to Wine and Women; to thoſe who lead a ſedentary Life, free from Motion and Exerciſe; and to ſuch as, in conſequence of a bad and prepoſterous Regimen, contain a large Quantity of impure Blood in their Veins. 'Tis, alſo, certain from Experience, that a Ceſſation, or ſpeedy Suppreſſion, of an uſual hæmorrhoidal Diſcharge, of the Menſes, or Lochia, in Child-bed Women, eſpecially when ſuch Patients are coſtive, lay a Foundation for a Phrenitis. For, in ſuch a State, in conſequence of the Stagnation of Blood in the abdominal Viſcera, ſpaſmodic Strictures are excited in the nervous Parts, which render the Circulation of the Blood unequal, and convey it impetuouſly to other Parts, where it is too copiouſly congeſted. A Phrenitis is, alſo, frequently induced by external Violence. This eaſily happens in Wounds and Contuſions of the Head, eſpecially in plethoric and cacochymic Habits; unleſs ſuch a Misfortune is ſpeedily prevented by Veneſection and Diſcutients. In a Phrenitis, ariſing from ſuch a Cauſe, the Event is generally fatal, according to *Hippocrates*, in *Sect.* 7. *Aph.* 14.

A Phrenitis is juſtly to be diſtinguiſh'd into that of the idiopathic, and that of the ſymptomatic Kind. In both of theſe, there is, indeed, an acute Fever, but with this Difference, that, in the latter, it precedes; whereas, in the former, it is the inſeparable Concomitant of the Diſorder. An idiopathic Phrenitis is rarely found in temperate Climates, but occurs more frequently in hot, dry, and ſoutherly Countries; for which Reaſon the antient *Greek* Phyſicians, eſpecially *Aetius*, and *Alexander Trallian*, have, in their Works, treated accurately and copiouſly concerning a Phrenitis. There are, however, in temperate Climes, Inſtances of a Phrenitis ariſing, without any previous Diſorder; eſpecially from Surfeits, continual Anger, and a Weakneſs of the Brain, produced by profound and continual Meditation, Watchings, and Fatigue; in ſanguineous, or choleric and melancholic Perſons; thoſe addicted to a ſedentary Life; hypochondriacal Perſons; and thoſe ſubject to the Hæmorrhoids, eſpecially if that Evacuation is imprudently ſtopt. But *Willis*, in *Pathol. Cerebri*, *Cap.* 10. juſtly informs us, from his own Experience, that unleſs this Species of Phrenitis is ſoon removed by proper Medicines, it degenerates into a Mania, or a furious Delirium. An idiopathic Phrenitis, which degenerates into a Mania, alſo, frequently happens after burning, purple, exanthematous, and catarrhous Fevers, improperly treated by a too hot Regimen; by volatile Medicines, which throw the Blood into too violent Commotions; by Opiates; by too forcible Repellents; by Refrigerants; and unſeaſonable Veneſections. And this Diſorder happens the more infallibly and violently, when the Patient is much and frequently ſubject to Anger.

A ſymptomatic Phrenitis is much more frequent in our Country; for it frequently happens, and proves mortal, in the Height of

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of malignant Fevers, acute exanthematous Fevers, petechial Fevers, the Small-pox, malignant catarrhous Fevers, especially such as rage in Camps, and most of all in the *Hungarian* Fever, particularly when the Disorders are ill treated; for in these Diseases a Phrenitis, of the symptomatic Kind, generally appears about the critical Days, and is attended with Rigor and Tremor of the Joints, a Tension of the Præcordia, a Refrigeration of the Extremities, and a Thinness of the Urine, which is discharged either in too small, or in too large a Quantity. But because, in consequence of the preceding Disease, and the continual Watchings, the Strength is almost totally lost, and the Tone of the Vessels distributed through the Membranes of the Brain too much weaken'd, irresolvable Stagnations of Blood happen in them, which generally prove mortal on the third Day.

But, though a Phrenitis frequently degenerates into a Mania, according to the Antients, especially *Hippocrates*, *Cælius Aurelianus*, and *Aretæus*, who for this Reason join, or rather confound, the one with the other, there is yet a great Difference between them; for in a Phrenitis there is always a Fever, accompanied with a quick, hard, and small Pulse. There is, also, a Delirium, not absolutely intermitting, but sometimes remitting, at which time every thing which happened under the Delirium, is forgotten. But a Mania is a chronical Disorder without an acute Fever, though accompanied with a preternaturally hard and unequal Pulse, which is sometimes small, and at others large and quick. A Mania has, also, its lucid Intervals, and is generally accompanied with great Pride, Anger, and Hatred to the Patient's Friends and Neighbours. And, when the Paroxysm ceases, the Maniacs have generally a surprising Remembrance of what happened under it. A Phrenitis is, also, different from that slight Alienation of Mind, which is frequently observed in acute Fevers, before the critical Expulsion of the exanthematous Matter; for such a slight Alienation of Mind goes more easily off, nor is it accompanied with thin and watery Urine, nor a Rigor and Refrigeration of the external Parts: Sometimes, also, after the Decline of an acute Fever, we observe, for some Days or Weeks, a certain Foolishness, or Inconstancy of Mind, which is different from a Phrenitis, arises from the Loss of the Strength, and Weakness of the Brain produced by the Disease; and, as the Strength returns, it either spontaneously ceases, or is easily removed by proper Medicines.

The CURE.

Since the violent and terrible Symptoms, which accompany a Phrenitis, depend upon an Inflammation of the Meninges, which is their immediate Cause, the principal Intention of the Physician ought to be, either to prevent, or remove, such a Misfortune. But as the Cause of this Inflammation is a Stagnation of the Blood in the Vessels of the Meninges, and a sudden Conveyance of it to other Parts accompanied with Pain, a spasmodic Tension, and Heat, Reason informs us, that those Medicines are, of all others, the most proper, which check the fierce Impetus of the Blood to the Head, derive the congested Humours from it, disengage and discuss the stagnant Blood, and relax the spasmodically constricted Meninges.

Now, both in preventing and curing a Phrenitis, both antient and modern Physicians unanimously recommend Venesection, as near as possible to the Part affected. *Trallian*, and the *Arabians*, in a Phrenitis, often open'd the Jugular Vein; but this laudable Practice is too much neglected, since 'tis certain from Experience, that in all Disorders of the Head, arising from a Congestion and Stagnation of the Blood, opening this Vein is preferable to an Incision of any other, because both the external and internal Jugular Veins derive the Blood from the Carotid and Vertebral Arteries. Nor is the Incision of this Vein either so difficult, or dangerous, as 'tis commonly thought, since by applying a Ligature about the Neck, in such a manner, as to render the Vein turgid, it may be easily performed. Besides, opening the Sublingual Veins is a Practice highly esteemed by Physicians, not only in a Phrenitis, but, also, in other Disorders of the Head. Thus, *Ammannus*, in *Paræn.* informs us, that in the Year 1664. among all the Soldiers who return'd from the *Hungarian* Expedition, and labour'd under the *Hungarian* Fever in the Hospitals, none of those died, who, in due Time, had the Venæ Raninæ open'd, whilst those were carried off by the Disorder, who had not that Advantage. I have, also, known the Opening of these Veins highly useful in acute Fevers, for preventing a Delirium, when performed on the sixth or seventh Day, whilst the Patient's Reason yet remained. But, if a Delirium is already present, it is with Difficulty performed. Besides, if the Incision is large, a terrible and fatal Hæmorrhage is to be dreaded, in consequence of the Impetus of the Blood to the Head. On the contrary, from too small an Orifice, but little Blood is evacuated; and, a Space being there procured, the Blood is rather more solicited to the Brain. Others, after the proper Application of a Ligature to the Neck, recommend opening the Frontal Vein; and *Trallian* informs us, that by this means he cured a Person afflicted with a violent Phrenitis. Some prefer Arteriotomy in the Temples. Thus *Panarolus*, in *Pentec.* 1. *Obs.* 19. informs us, that in a violent Phrenitis he found this Practice so successful, that the Patients were immediately relieved by it. In a Phrenitis, *Cælius Aurelianus*, after shaving the Head, orders the Whole of it to be scarified. But the *Egyptian* Method of scarifying the Nostrils is far more commendable; and, if a proper Instrument for this Purpose cannot be had, the End may be obtained by thrusting a Straw, or any other thing of the like Nature, up the Nostrils, in such a manner, as to procure an Hæmorrhage, which I have often seen productive of immediate Relief. These Methods of Venesection in the Parts contiguous to that affected are to be used not only in the idiopathic, but, also, in the symptomatic Phrenitis. But, when, from a Retention or Suppression of the Menses, or Lochia, a Phrenitis is dreaded, a Vein is quickly to be open'd in the Foot, and a large Quantity of Blood must be taken away. If from any Fault, or Interception, of the Hæmorrhoids, a Delirium is dreaded, the best and most proper Method of affording Relief is, to open the hæmorrhoidal Veins by the Application of Leeches.

After a due Evacuation of Blood, the Body is to be render'd soluble; since, when the Patient is costive, the Afflux of the Humours is directed to the superior Parts, whereas, when his Body is sufficiently soluble, they are derived to the inferior Parts. *Hippocrates*, in *Lib.* 3. *de Morbis*, *Sect.* 9. justly advises, that, in the Cure of a Phrenitis, the Body is to be rendered soluble by moistening Potions, which relax the spasmodically constricted Coats of the Intestines, because Spasms of the Primæ Viæ are frequently the Causes of Deliriums. But, for answering this Intention, I, above all other Medicines, recommend Potions prepared with Manna. Thus,

> Take four Ounces of Manna; dissolve it in a Pint of Whey; and add one Dram of Cream of Tartar, half a Dram of Nitre, and one Ounce of the Oil of sweet Almonds.

Baglivi, in *Prax. Lib.* 1. recommends the Pulvis Cornachini in the following manner: "Since, says he, it has often "been observed, that Deliriums are terminated by Fluxes, I "have therefore, in Imitation of the Method pointed out by "Nature, found the Pulvis Cornachini effectual for this Pur"pose; drinking after it diluting Decoctions prepared of Bar"ley, Sal Prunellæ, and other Ingredients calculated for sweet"ening the Humours, especially if there is a preternatural Heat "of the Viscera, and an internal Inflammation." But, if the Case calls for speedy Relief, the Body is to be rendered soluble by a lenient, paregoric, and domestic Clyster.

Among the internal Medicines against a Phrenitis, we must, also, class diluent, demulcent, and moistening Potions drank in large Quantities, if the Patient is very thirsty, which, according to *Aretæus*, rarely happens. But, among all other Drinks, none is more proper and expedient than Whey, either acidulated with Citron-juice, and prepared with Julap of Roses, or edulcorated with Syrup of white Poppies. In a Quart of this Whey, we may, with Advantage, dissolve a Dram of depurated Nitre, or Sal Prunellæ. Phrenitic Patients, also, with Advantage, use Emulsions prepared of Decoctions of Barley, Shavings of Hartshorn, and the Four cold Seeds, with Julap of Roses; especially if to a Quart of such an Emulsion two Scruples of Nitre are added. Ptisans, and Milk mixed with the *Selteran* or *Antonian* Waters, are very proper for those who labour under this Disorder; for the more copiously these Liquors are drank, the more efficacious they are in diluting the Humours, relaxing the constricted Vessels, removing Obstructions, and extinguishing the Heat. The diaphoretic and discutient Mixture, described under the Article ANGINA, is, also, of singular Service, not only in a Phrenitis, but, also, in all other Inflammations.

Among the external Means of freeing the Head from the Afflux of Humours, we may justly reckon bathing the Feet, or wrapping them up in a moist and warm Linen Cloth, or, which is still better, temperate Baths of fresh Water. The remarkable Use of these is not only confirmed by daily Experience, but, also, supported by the best Authorities. Thus *Alexander Trallian*, in *Lib.* 1. tells us, "That those who have "sufficient Evacuations made, whilst the Quantity of the Hu"mours is prejudicial to no Part of the Body, but are afflict"ed with a Driness of the Body, and an obstinate Watching, "ought to bathe and anoint; and, even if the Patient is fever"ish, it will do him no Harm to bathe in this manner, espe"cially if the Bath is tepid, and neither the Air, nor the "Bathing-tub, too hot. But those who do not bathe for Fear "of

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" of the Fever, are greatly miſtaken, ſince, by abſtaining from " the Bath, the Patients have their Watching, and Perturbation " of Mind, increaſed. Such Patients are, therefore, to be " bathed in the manner directed, ſince by this means they are " reſtored to a due Temperament, and freed from their De- " lirium, and the Diſorder which excited the Fever." The Antients, alſo, and eſpecially *Alexander Trallian*, and *Aretæus*, after Veneſection and Purgation, fomented the Head with an *Oxyrrhodinum* of Vinegar of Roſes, leſt, as they ſaid, the Head ſhould attract a large Quantity of Humours, and be filled with them. Nor is this Piece of Practice to be contemn'd. In all Deliriums, however, I with great Succeſs order the Head to be ſhaved, and fomented with the following temperate Epithem:

Take of Roſe-vinegar, two Ounces; of the Spirit of Roſes, in which ten Grains of Camphire are diſſolv'd, two Drams; of pure Nitre, two Scruples; and of the Oil of Roſewood, twenty Drops. Mix all together for Uſe.

This Method of curing not only an idiopathic, but, alſo, a ſymptomatic Phrenitis, and eſpecially that inveterate Species of the Diſorder, which ſeems to degenerate into a Mania, is founded upon my own Experience; nor can any other Meaſures be well invented, or found out: But the Uſe of theſe muſt be for a conſiderable time perſiſted in. *Alexander Trallian*, in *Lib.* 1. gives an accurate Account of the Regimen proper for phrenitic Patients, in the following manner: " The Place, ſays he, " in which the Patient lives, is to be duly conſider'd, ſince he " ought to be expoſed to an Air, which is neither too thick, too " moiſt, nor too cold, leſt the Pores of his Head ſhould be by " that means obſtructed, or a Repletion of it produced. But " let the Atmoſphere be temperate, that by its laudable Qua- " lity the animal Spirits may be revived and relaxed. Let " his Chamber be rather light than dark, that by this means " he may gradually arrive at the Perception and Remembrance " of ſuch Objects as he was formerly accuſtomed to. For " this Reaſon, let ſome intimate Acquaintances attend him, " and reprove him for what he does, and exert a due Autho- " rity over him. Nor ought any Servant or Friend, on whoſe " account he is ſometimes grieved, or at whom he is angry, " to enter the Room; for this generally irritates the phrenitic " Patient, and lays a Foundation for his greater and more " manifeſt Perturbation. Nor ought great Numbers of his " Friends and Acquaintances to enter his Chamber, ſince " they not only form a Croud about him, but, alſo, render " the Air thick by their Breaths. He is not to be re- " moved in Bed with Violence, but gently, leſt, in conſe- " quence of his Weakneſs, he ſhould be hurt; for this, above " all things, irritates the Patient, and prevents Sleep. Let " the By-ſtanders hold all his Limbs without Violence, and " gently rub them, eſpecially the inferior Members: And his " Limbs are to be ſecured with Cords, principally when his " Convulſions ſeize him; for this ſolicits the Matter to the " inferior Parts, and allays the Convulſions. It is, alſo, ex- " pedient, when the inferior Parts are rub'd, to foment " them, and apply Ligatures to them in ſuch a manner, that " the Matter by Fomentation and Friction convey'd to them, " may be derived ſtill farther downwards."

With reſpect to Veneſection, we are to obſerve, that phrenitic Patients often abſolutely refuſe to ſubmit to it: In which Caſe, I know no more expeditious and effectual Method of Relief, than ſuddenly and unexpectedly to thruſt a Quill or Straw into the Noſtrils; by which means a large Quantity of Blood is ſometimes commodiouſly evacuated. But, if the Phrenitis is idiopathic and chronical, we are not to open the Frontal Vein, eſpecially in plethoric Habits, till we have previouſly opened a Vein either in the Arm or Foot, leſt the Impetus of the Blood to the Head ſhould be augmented. Neither, in performing this Operation, are we to uſe too ſharp an Inſtrument, leſt, paſſing it through the Vein, we ſhould wound the Pericranium.

A Phrenitis ariſing from any Diſorder of the Menſes and Hæmorrhoids, and the violent Spaſms by that means produced, is beſt and moſt commodiouſly alleviated by Baths, drinking Mineral Waters, and the Application of Leeches to the Veins of the Arms, uſing, at the ſame time, a proper Regimen and Diet; for I have known a long-continued Phrenitis happily removed by the Eruption of the menſtrual or hæmorrhoidal Diſcharge. But when a Phrenitis does not ſo much proceed from a Redundance of Blood congeſted in the Veſſels of the Brain, as from a ſubtile, acrid, and virulent Matter, which is either repel'd from the Surface of the Body, as in exanthematous Diſorders, or, being, by too hot and volatile Medicines, too much exalted, is firmly impacted in the Dura Mater, which is a nervous Membrane, excites Spaſms, hinders the free Circulation of the Blood, and intercepts its Return to the Heart, beſides opening the Veins contiguous to the Head, we are to ſhave the Head, and apply to it the warm Parts of Animals juſt killed, ſuch as the Lungs, the Liver, and the Omentum, which, becoming cold, are to be immerſed in warm Water, in order to heat them again.

In *Poland*, a melancholic and maniacal Phrenitis is very frequent, in conſequence of a latent *Plica*; and, when the latter appears, the former ceaſes. For this Reaſon, 'tis expedient to ſolicit and forward the Egreſs of the Plica; for which Purpoſe, the Inhabitants of that Country generally uſe a Decoction of two Handfuls of Club-moſs, prepared with two Quarts of Water. When with this Decoction they waſh their Head and Hairs twice a Day, the Plica generally appears in a Week's time, and removes the Delirium. When in a Plica Polonica the Hairs are cut off, there frequently enſues a violent Head-ach, which is ſucceeded by a Phrenitis, a Fever, and ſometimes a Mania; which, however, are ſoon removed by uſing the Decoction of Club-moſs, or the Liniment of Club-moſs, deſcribed in *M. N. C. Dec.* 1. *An.* 2. *Obſ.* 54. by which means the Plica is recalled.

But as in all Inflammations, ſo, alſo, in a Phrenitis, we are carefully to abſtain from acrid Subſtances, and ſuch as put the Humours into a Commotion; from ſpirituous Liquors; from violent Exerciſe, both of Body and Mind; and from all Aliments capable of putting the Blood into a preternatural Motion. The Patients are by no means to be irritated and provoked to Anger: For which Reaſon, no Perſon who has injured them, or whom they cannot endure, is to be admitted to them. Opiates and Narcotics are by no means to be uſed in a Phrenitis, eſpecially where the Strength is already impaired; for 'tis certain from Experience, that, in Fevers, Deliriums are ſometimes brought on by Opiates and Narcotics. Hence, *Alexander Trallian*, in *Lib.* 1. juſtly adviſes, " That in a " Phrenitis, where the Strength is low, we are to exhibit " nothing which induces Sleep, and a Torpor; ſince, by ſuch " Medicines, a great Injury is done to the Patient." Veſicatories, alſo, by ſome much uſed in a Phrenitis, are to be condemned; for the Cantharides, by their acrid Stimulus, irritate the already tenſe and ſpaſmodically conſtricted Fibres; by which means they increaſe the Delirium, and bring on Convulſions, as *Baglivi*, in *Lib.* 1. *Prax.* informs us, in the following manner: " In *Rome*, ſays he, I obſerve more Men killed than " cured by Veſicatories, which, however, are more benefi- " cial, and leſs dangerous, to Women:" And, a little after, he ſubjoins, " If Veſicatories are applied to Patients labouring " under a Delirium, accompanied with an acute Fever, a Dri- " neſs of the Tongue, and the Signs of a violent Inflamma- " tion of the Viſcera, all the Symptoms become worſe, and " the Patient, for the moſt part, dies of Convulſions." *Frederic Hoffman.*

When a violent and perpetual Delirium ariſes from a primary Diſorder of the Brain, accompanied with a continual Fever, it is called *A true Phrenitis.*

When a Phrenitis ariſes from a Diſorder communicated to the Brain from ſome other Parts, in Fevers and Inflammations, it is called *A ſymptomatic Phrenitis*, a Diſorder which correſponds to the *Greek* παραφρόνη, and the *Latin Deſipientia.*

A true Phrenitis is preceded by Heat; a violent internal and inflammatory Pain of the Head; a Redundance of Blood; an inflammatory Diſpoſition; a Redneſs of the Eyes and Face; turbulent Sleeps; a ſlight Degree of Folly; Youth; the Uſe of hot Subſtances; remaining in the Sun; Haughtineſs, or Fierceneſs; ſudden Forgetfulneſs; a Drineſs of all the Parts; and eſpecially of the Brain; and picking the Knaps of the Bedcloaths.

A ſymptomatic Phrenitis is preceded by almoſt every acute Diſeaſe, accompanied with a Fever; as a Pain of the Side, which is not pleuritic, but accompanied with a ſlight Perturbation of Mind, and Inflammation of the Pleura, Lungs, and Diaphragm, which is a very bad Sign: Such an Inflammation is prognoſticated by a Blackneſs of the Tongue, a Suppreſſion or Whiteneſs of the Fæces, and a Retention of the Urine, which Symptoms never fail to prove mortal: A thin, pale, and ill-colour'd Urine; a Want of Thirſt; Redneſs; Urine with black Matter ſuſpended in it; and Watchings; are Signs of an approaching Inflammation of the Head.

Both a true and ſymptomatic Phrenitis, have the following Symptoms:

1. A Depravation, not only of the ſenſible Ideas, but, alſo, of the internal Senſes, of Reaſon, and of the Affections of the Mind.

2. An increaſed violent and reſtleſs Fierceneſs, or often turbulent Sleep.

3. An hard Pulſe, and a rare and large Reſpiration.

4. A Countenance, for the moſt part, highly red, ſtern and ghaſtly; fierce and protuberant Eyes; and a ſlight Hæmorrhage of the Noſe.

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As for the Prognoſtic, a true Phrenitis generally carries off the Patient on the third, fourth, or ſeventh Day, which it rarely ſurpaſſes; and when it does, and happens to be violent, it degenerates into a Mania, or, when riſing ſomewhat higher, it becomes intolerable. It, alſo, often terminates in a Lethargy, a Coma, and a Catoche.

An æruginous Vomiting, in conſequence of an inflamed Brain; a frequent and indecent Spitting; a Tremor; the Fæces and Urine intercepted, or white; crude Urine; Convulſions; catching at flying Flakes; muddy Eyes; a Gnaſhing of the Teeth; a Want of Thirſt, the general Forerunner of Convulſions; a perpetual Change of Symptoms; and the Subſiding of a tumid Ulcer; are frequent Preſages of great Danger, and of Death.

A true Phrenitis is mortal after a Peripneumony, and the Iliac Paſſion; and very bad after the Small-pox.

An Inflammation ſomewhat fixed, and a Roughneſs of the Fauces tending to the ſuperior Parts, produce a mortal Phrenitis; and the Patients labouring under it grope for Objects which have no Exiſtence, and are greatly oppreſſed.

That Phrenitis is the worſt, which prevents the Patient from ſubmitting to what is neceſſary for him.

Upon laying open the Bodies of ſuch as have died of a Phrenitis, the Meninges have been found inflamed. Gangrenes, Abſceſſes, and a Sphacelus of the Brain, are, alſo, found; or acrid and corroding Ichors are diſcovered.

From what has been ſaid, 'tis obvious, that the immediate Cauſe of a true Phrenitis is a primary Inflammation of the Pia and Dura Mater; whereas the Cauſe of a ſymptomatic Phrenitis is a like Inflammation ariſing from the Conveyance of an hot and phlogiſtic Matter to the Meninges of the Brain.

Whatever is capable of producing ſuch Inflammations, may be conſidered as immediate Cauſes of a Phrenitis.

Hence the true Diagnoſtics, both of a true and ſymptomatic Phrenitis, are to be taken.

In the Cure of a Phrenitis, the following Circumſtances ought to be adverted to:

Varices, and hæmorrhoidal Diſcharges, are beneficial to phrenitic Patients; as is, alſo, a *Diarrhœa*. A Pain of the Breaſt and Feet, or a violent Cough ſupervening, often terminate a Phrenitis; as does, alſo, an Hæmorrhage.

A true Phrenitis requires the ſpeedy Uſe of the ſtrongeſt Medicines, calculated for removing the Inflammation in the Arteries of the Brain, which are found under the Article INFLAMMATIO: Only it is to be obſerved, that Veneſection is to be copiouſly inſtituted, either making one very large Orifice, or opening, at one time, a Vein in the Foot, and the Jugular and Frontal Vein. Diluting, antiphlogiſtic, and nitrous Decoctions are copiouſly to be exhibited: Then antiphlogiſtic Purgatives are to be uſed, in Conjunction with a large Quantity of a diluting nitrous Drink. Clyſters of the like Nature, with an Addition of proper laxative Ingredients, are to be uſed: The Anus is to be fomented, and the hæmorrhoidal Veins either rubbed with Fig-leaves, or evacuated by the Application of Leeches. Gentle Collutions and Gargariſms for the Mouth are to be frequently uſed: The Noſtrils, Eyes, and Ears, are to be fomented; and the Head is to be ſhaved. If theſe Meaſures are taken without removing the Diſorder, we are to uſe Opiates, waſh the Feet, and apply gentle Epiſpaſtics and Cupping-glaſſes to the inferior Parts. The Patient is to be refreſh'd in a moderately cool Air, and held in an erect Poſture.

But if a Phrenitis is of the ſymptomatic Kind, and ariſes from ſome other inflammatory Diſorder, we are carefully to conſider, whether the Nature of this primary Diſorder will admit of the Meaſures now recommended: If not, it is to be cured by the Manner uſually appropriated to itſelf; taking care always to uſe deriving and topical Medicines. *Boerhaav. Aph.*

PHRICE, φρίκη. See HORROR.

PHRICODES *Febris*, φεμώδης πυρετός. A Fever attended with an Horror, or Shivering, not only in the Beginning of a Fit, but during a good Part of it; of which Nature is a ſemitertian Fever. *Galen, de Diff. Febr. Lib.* 2. *Cap.* 9. The Author of the *Definitiones medicæ* deſcribes it as attended with an Heat, mixed with a Rigor, and a remarkable Lowneſs of the Pulſe, which is inſenſible to the Touch, and recedes, as it were, inwards: The Belly, in this Caſe, is tumefy'd, and a Rumbling is heard: The Tongue is extremely tumid, and irrigated with an acid Humour, as with the Saliva. *Foeſius.*

PHRONTIS, φρόντις, properly ſignifies intenſe Cogitation, or painful Exerciſe of the Mind: But in *Hippocrates*, *Lib.* 1. *de Morb.* it is taken in a particular Senſe for a Diſeaſe, where he ſays, φρόντις νοσῶ χαλεπή, *Phrontis is a troubleſome Diſorder*; in which, as he deſcribes it, the Patient feels, as it were, a Thorn pricking the abdominal Bowels; is extremely reſtleſs; avoids the Light and Company; is only pleaſed in Obſcurity; and is afraid of every thing: The Membrane, which ſeparates the Abdomen from the Thorax, ſwells outwards; the Patient is very fearful of being touched, and ſuffers greatly thereby. He is moleſted with terrible Dreams; and imagines that he ſees frequently frightful Objects, or dead Perſons. This Diſorder may be reduced to the Claſs of melancholy Affections. *Le Clerc. Hiſt. de la Med.*

PHRYCTE, φρυκτή, in *Latin*, *Fricta*, ſimply, or without its proper Subſtantive, is *Reſina Colophonia*, *black Reſin*, ſo called by way of Diſtinction from the liquid Sort, named ὑγρὰ. *Hygra:* It is called φρυκτή, from φρύγω, to torrefy, becauſe it is burnt, or torrefy'd, as *Dioſcorides* ſhews, *Lib.* 1. *Cap.* 93.

PHRYGANON, φρύγανον. A dry Twig, or Branch fit for Burning. *Varinus.* A Bundle of theſe dry Sticks, or *Phrygana*, is directed by *Hippocrates*, *Lib.* 1. *de Morb. Mul.* to be placed under the Bed of a Woman in Travail, in order to prevent its Feet from coming to the Ground, when it was let fall backwards, from the erect Poſture to which it was before raiſed. This kind of Operation was called σεισμὸς (*Seiſmos*), *Concuſſion*, and order'd to be uſed for the Promotion of Delivery in difficult Caſes.

PHRYGIUS LAPIS. Offic. Boet. 406. De Laet. 134. Matth. 1380. Aldrov. Muſ. Metall. 689. Calc. Muſ. 385.

THE PHRYGIAN STONE.

The *Phrygian* Stone, ſo called, becauſe it is uſed by the Dyers in *Phrygia*, is produced in *Cappadocia*. The beſt is pale, moderately ponderous, of no ſolid Contexture, and diſtinguiſhed by white Lines, like the Cadmia: They burn it in the following manner; they firſt waſh it over with the beſt Wine, then cover it with live Coals, and blow them continually; when they perceive it has changed its Colour, and is become redder, they take it out, and extinguiſh it in the ſame Wine; they put it under the Coals a ſecond time, and do as before; and even burn it a third time, but take care, that it does not crumble away, nor paſs into Soot.

The *Phrygius Lapis*, whether crude or burnt, is an efficacious Aſtringent: It moderately cleanſes, alſo, and has an eſcharotic Virtue, and with Cerate cures Ambuſtions: It is waſh'd like the Cadmia. *Dioſcorides*, *Lib.* 5. *Cap.* 141.

It is good in Diſeaſes of the Eyes, and for Ulcers, and other Purpoſes. *Galen.* It is at preſent unknown in the *Engliſh* Shops. *Dale.*

PHRYMION. A Name in *Oribaſius*, *Collect. Medicinal. Lib.* 12. for the *Poterium* of *Dioſcorides*. See POTERIUM.

PHTHARTICOS, φθαρτικὸς, from φθείρω, to corrupt. Deleterious, deadly; an Epithet applied to Poiſons, and their Qualities. *Galen*, *de S. F. Lib.* 5. *Cap.* 18. It is oppoſed to ἀλεξιτήριος, *alexiterius*. See ALEXITERIA.

PHTHEINAS, φθειναὶ, from φθίω, to corrupt, ſignifies tabific: Thus φθειναὶ διὰ νόσου are Diſeaſes cauſing a Tabes, by a Defluxion from the Head upon the Lungs. *Lib.* περὶ ἀδένων. Again, φθειναὶ put ſubſtantively, with the Epithet ξηραὶ (*xeræ*), ſignify dry Conſumptions, which owe their Original to Tophi, or a Concretion and Induration of Humours in the Lungs, and ſeem to be oppoſed to φθινώδεες (*phthinodees*); which means thoſe who are in a Conſumption, proceeding from a Suppuration, or Collection of Pus in the Lungs. See PHTHINODES.

PHTHEIRIASIS. See PHTHIRIASIS.

PHTHEIROCTONON. A Name for the Staveſacre, ſo called from φθεὶρ, a Louſe, and κτείνω, to kill, becauſe it deſtroys Lice.

PHTHINICE, φθινικὴ. *Hippocrates*, 2 *Prorrhet.* mentions a Diſeaſe called νοῦσος φθινικὴ, *The* Phthinic *Diſeaſe*. The near Affinity between *phthinic* and *phthiſic* has induced ſome Interpreters to believe that he there ſpeaks of a Phthiſis: But the moſt learned are convinced, that there is a Fault in the Text, and that, inſtead of φθινικὴ, we are to read φοινικὴν (*Phœnicie*), *A Diſeaſe of* Phœnicia: They found their Opinion on their meeting with the Word *Phœnicie*, in the antient Gloſſaries on *Hippocrates*, where it is added, that *By this Word is to be underſtood a Diſeaſe common in* Phœnicia, *and other Eaſtern Countries, and probably the very ſame with the Elephantiaſis.* What confirms this Explication is, that *Hippocrates*, in the ſame Place, treats of the Impetigo, Lepra, and Leuce. I ſhall only obſerve, that *Galen*, who is the Author of the Gloſſary above cited, might be miſtaken in that reſpect, ſo far only as in ſuppoſing the Diſeaſe of *Phœnicia* to be what they called the *Elephantiaſis*, whereas it is poſſible, that it might have no more than a bare Relation to it; and that, by this *Diſeaſe of* Phœnicia, *Hippocrates* might mean the Leproſy of the *Jews*, which was a Sort of Leuce, and might have ſomething in common with the Elephantiaſis, without being exactly the ſame Diſtemper. *Le Clerc, Hiſt. de la Med.*

PHTHINODES, φθινώδης. Tabid, or conſumptive. An Epithet for Diſeaſes, and Perſons labouring under ſuch Diſeaſes. In *Hippocrates*, it ſometimes ſignifies a Tendency to a Conſumption.

PHTHINOPORON, φθινόπωρον. The Autumn.

PHTHI-

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PHTHIRIASIS. The lousy Evil, from φθεὶρ, a Louse. The Phthiriasis is a lousy Distemper, to which Children are particularly subject, and sometimes Adults. *Swammerdam*, in his History of the Generation of Insects, tells us, that what we commonly call the *Nit*, is the true Egg from which the Louse is hatched; this Egg requires a moist and warm Place for its Matrix, and then its Multiplication is incredible, in a short Space; and some even suggest, that, in twenty-four Hours, a Louse is not only *Abavus* but *Tritavus*, that is, not only Great Grandfather's Father, but Great Grandfather's Great Grandfather. But if they miss this kindly Repository for their Eggs, as being exposed to the cold Air but for one Day, they are kill'd before they are hatched.

There are reckon'd four Kinds of Lice which molest human Bodies. 1. The *Pediculi*, so called, says *Isidore*, because they are more troublesome by the Motion of their Feet, than their Bite. These generally breed in the Heads of Children, especially if sore or scabby, and often in those of Adults, who are slothful and nasty.

2. *Crab-lice*, so called from their Resemblance to the Crab-fish, which lodge in the Arm-pits, Eye-lids, Eye-brows, and Pudenda of grown Persons. See MORPIONES.

3. *Body-lice*, which infest the Bodies, and breed in the Cloaths, of the Slothful and the Nasty: These are of a large Size, oblong, thick, and ending with an acute Point towards the Head.

4. Those generated, according to some, under the Cuticle, being found in the Hands and Feet, of a round Form, like the small Eggs of Butterflies; some of them so minute as to escape the Sight: By their creeping under the Scarf-skin, they excite an intolerable Itching; and sometimes, bursting the Skin, they discover themselves in Clusters; but they generally keep themselves concealed: They are named by some Authors, *Acari*, *Cyrones*, and *Pedecelli*.

The Cause of their Production is, by some, ascribed to the plentiful eating of Figs. *Galen* says, that the Flesh of Vipers breeds them; but, undoubtedly, Slovenliness and Nastiness are the chief Promoters of their Propagation, as affording fit Matrices for hatching their Eggs, and, also, proper Food for their Nourishment.

The lousy Evil is best prevented by wholsome Food, keeping the Body clean, and the Head carefully combed.

When they breed in the Head, let it be well combed, and washed with the following Lixivium.

Take of Wormwood, Staveſacre, Rue, and Horehound, each an Handful; lesser Centaury, half an Handful; Oak-ashes, five Ounces: Make them into a Lixivium, with Spring-water; in which dissolve, of common Salt, two Ounces; Salt of Wormwood, one Ounce: With which let the Head be washed.

Or anoint it with the following Ointment.

Take of the Oils of bitter Almonds, Rue, and Bays, each an Ounce; the Powders of Staveſacre, and Myrrh, each two Drams; Powder of Aloes, one Dram; salted Lard, two Ounces: Mix them with a little Vinegar. Or,

Take of Hogs-lard, Oil of Bays, and black Soap, each half an Ounce; Quick-silver, extinguished with Spittle, a Scruple; Myrrh, and Aloes, each half a Dram; Staveſacre, two Scruples; *French* Soap, two Drams: Reduce them, in a Mortar, to the Form of an Ointment.

For Body-lice, the wiping the Body with Gilders Cloths is reckon'd an efficacious Remedy, on account of the Quicksilver which they contain. Or,

Take of Staveſacre, and the Powder of red Arsenic, each an Ounce; common Salt, Olive-oil, and Vinegar, each a sufficient Quantity: Mix them together. Or,

Take of Staveſacre, and Powders of Nitre, and white Hellebore, each equal Parts; Oil of bitter Almonds, a sufficient Quantity: Mix them.

Take of Wormwood, and lesser Centaury, each an Handful; Lupins, one Ounce; Staveſacre, and Birthwort, each half a Pound: Boil them in a Lixivium, to which add two Ounces of Salt.

Take of Oil of bitter Almonds, one Ounce; Oils of Rue, and Staveſacre, each half an Ounce; the Powders of lesser Centaury, Myrrh, and Aloes, each a Dram; Quick-silver, half a Dram; rancid salt Lard, two Drams: Make them, with a little Vinegar, into a Liniment.

The following Lotions and Ointments are taken from *Sennertus*.

Take of long Birthwort, Lupins, and the Leaves of the Pine and Cypress, each equal Parts: Boil them in a sufficient Quantity of Spring-water, for a Lotion for the Head.

Take of the Root of Elecampane, two Ounces; of Bryony, half an Ounce; Beet, and Mercurial Soap, each an Handful; Lupins, an Ounce; Nitre, half an Ounce: Boil them for a Lotion for the Head.

Take of the Powder of Staveſacre, three Drams; Meal of Lupins, half an Ounce; white Agaric, three Drams; native Sulphur, two Drams; of the Gall of a Bull, half an Ounce; Oil of Wormwood, enough to make them into a Liniment.

Take of Staveſacre, an Ounce; Wormwood, and Rue, each half an Ounce; Sulphur, and Nitre, each two Drams: Mix and make them into a Powder, which reduce to the Form of a Liniment, with Oil of Bays.

Much stronger is this;

Take of the Powder of the Seeds of Staveſacre, an Ounce; white Hellebore, three Drams; Quicksilver, extinguish'd with Spittle, two Drams; Hogs-lard, and Oil of Bays, each a sufficient Quantity to make them into an Ointment.

In Infants and Children the Quicksilver must be omitted, as too hazardous, since milder Medicines will answer the Intention.

All the Bitters, sour, and salt Things are here recommended, as, also, Mercury, which, by a singular Property, is said to destroy these Vermin, beyond all other Medicines; but it must be used with very great Caution. *Turner de Morbis Cutaneis.*

Ettmuller advises the Head to be wash'd with a Lixivium, in which have been boiled the Seeds of Staveſacre; and anointed with the following Ointment:

Take of the Oil of Spike, two Drams; the Oil of bitter Almonds, half an Ounce; the Ointment of Tobacco, six Drams: Mix and make them into a Liniment.

This will destroy all those Animals in one Night's time.

The Powder of the *Indian* Berries, sprinkled on the Head, infallibly destroys them. *Codrochius* (who has wrote a particular Treatise of these Animals) says, he has a thousand times experienced the Use of this Powder; and that, in small Quantities, mix'd with Hogs lard, a boiled Apple, or the like, applied to the Head, it miraculously destroys Lice, more effectually than the Staveſacre, and more safely than Quicksilver.

To destroy the Crab-lice lodging in the Groins of Adults, the anointing the Parts with black Soap is an infallible Remedy, neither is there Occasion to seek for any other. *Turner* proposes Lac Sublimatum; but that is a Medicine not so safe to be used about the Genital Parts. See MORPIONES.

Sennertus says, that the Lousiness of the Eye-lids is no contemptible Disorder; for it occasions sharp Fluxions, and the Eyes are at last much prejudiced by it: The same Author enumerates a great many Medicines for it; but there is no Occasion to mention them here; for these and all other Sorts of Lice are easily killed by anointing with black Soap.

Those who would see more relating to this Subject, may consult the following Writers; *Mercurialis*, *Lib.* 1. *Cap.* 7. *Lusitan. Cent.* 3. *Cur.* 58. *Zwinger. Theatrum Vit. Hum. Fol.* 525. *Tulp. Obs. Lib.* 3. *Cap.* 40. *Forest. Schol. Lib.* 8. *Obs.* 15. *Cardan. Lib. de Subtilitate*, 9. *Scaliger*, *Exercitat.* 94.

PHTHIRION. The same as PHTHIROCTONON. *Blancard.*

PHTHISICUS. The same as PHTHINODES.

PHTHISIS.

Except the Heart, no Part of the human Body is so useful and necessary for the Preservation of Life, as the Lungs, the genuine Instrument of Sanguification, in which the chylous and nutritive Lymph is intimately mixed with the Blood, and assimilated to it: It is, also, by means of the Lungs we draw that vital Air, or ethereal and elastic Fluid, which communicates Strength to the solid Parts, and a due Systaltic Motion to the Heart: But, as the Lungs are of more Use and Importance, than most other Parts of the human Body, so they are subject to more terrible Disorders, which we shall endeavour to account for, from their Fabric and Texture. The Lungs, then, consist of membranaceous Vesicles, which receive the Air; of Nerves, which contain an highly subtile Fluid; and of various Kinds of Vessels,

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Veſſels, appropriated for the Blood and Lymph; ſo that, in conſequence of ſo many ſmall Veſſels, it is not to be wondered at, if there ſhould happen frequent Congeſtions, Stagnations, and Obſtructions of the Blood in them, which lay a Foundation for various Diſorders, among which one of the moſt conſiderable is a Phthiſis, which is a Conſumption or Waſting of the Body, accompanied with a ſlow Fever, a Difficulty of Breathing, a troubleſome and continual Cough, and a copious Expectoration of corrupted and purulent Phlegm and Matter. This Diſorder ariſes from an injured State of the Lungs, by means of an Abſceſs, or a ſcirrhous or ulcerous Corruption.

There are various Species of Conſumptions accompanied with a Fever, an uneaſy Cough, and an Expectoration of peccant and corrupted Matter, which, with reſpect to their Prognoſtics and Cure, are widely different from a Phthiſis, and ought not, by the Phyſician, to be confounded with it, ſince they happen without any conſiderable Injury to the Lungs. Thus it is certain from Experience, that a Conſumption frequently ariſes from a ſimple Gonorrhœa, or nocturnal Pollutions long-continued, as we are informed by *Hippocrates* in *L.* 6. *Ep. Sect.* 8. 47. Nor is it uncommon to obſerve a Conſumption ariſing from exceſſive Venery, and a Cacochymy, or depraved State of the nutritious Juices in ſcorbutic Habits, whilſt the Texture of the Lungs is as yet ſound and entire. Almoſt the ſame thing may be obſerved in the Atrophy of Children, in which, on account of a ſcirrhous Induration of the meſaraic Glands, the Chyle cannot eaſily and freely paſs to the Blood; in conſequence of which, Nutrition is prevented; and, by this means, the ſuperior Parts are conſumed and waſted, the Belly inflated, the Patient afflicted with a ſlow Fever, a Difficulty of Breathing, a Cough, and a preternatural Solubility of Body. Nor is that Species of Conſumption always to be accounted a Phthiſis, in which there is an Extenuation of Body, a ſlow Fever, a Cough, and more or leſs ſanious Stools; for it frequently happens, that, whilſt the Compages of the Lungs is ſound, a Sanies is conveyed to the Breaſt from other Parts, ſuch as the Meſentery, the Uterus, and Kidneys, when labouring under an Abſceſs, or Ulcer. A Phthiſis is, alſo, to be accurately diſtinguiſhed from a chronical Cough, accompanied by a copious Expectoration of Phlegm, and ſucceeded by a Conſumption, Loſs of Strength, and preternatural Heat, ſince this laſt Species of Conſumption in the Autumn and Spring frequently ſeizes Perſons ſubject to catarrhous Diſorders, and afflicts them for a conſiderable time; but may be happily removed by the Force of Nature, and the Aſſiſtance of Art.

But, that there may remain no Miſtake in diſtinguiſhing a Phthiſis from other Diſorders, we ſhall here give the Signs of it from *Cœlius Aurelianus*, who, in *Lib.* 2. *Cap.* 14. has the following Paſſage: "A Phthiſis is frequently produced by a previous Spitting of Blood, and ſometimes by a gentle, but long-continued Catarrh, or Cough, by which the Lungs are, at firſt, gently lacerated, and then ulcerated. A Phthiſis is accompanied with a latent Fever, which begins in the Evening, is alleviated in the Morning, and attended with a violent Cough at thoſe times. At firſt a ſmall, but afterwards a large Quantity of ſanious Spit is expectorated. Thoſe who fall into a Phthiſis, in conſequence of an Hæmorrhage, diſcharge, at firſt, a bloody Spit, which, afterwards, becomes feculent, and then livid, or green, and, laſt of all, white and purulent, ſometimes ſalt, and, at others, ſweet; whilſt the Voice is hoarſe, and ſhrill, the Breathing difficult, the Cheeks red, and the reſt of the Body of a cineritious Colour. A Phthiſis is, alſo, accompanied with a Loathing of Food, and a preternatural Thirſt. Some Patients have, as it were, a Senſe of a Wound in their Lungs, and even expectorate Fibres of them. The Pulſe is weak, hard, and formicular. A Phthiſis is, alſo, accompanied with an Inflation of the Feet. As the Diſorder increaſes, a Flux is brought on; and the Phlegm diſcharged, when thrown upon live Coals, is of a fetid and diſagreeable Smell." *Hippocrates*, in *Lib. de Morbis*, delivers the Signs of an approaching Phthiſis in the following manner: "A Patient, ſays he, is rendered Phthiſical, when the Phlegm falls down from the Head upon the Lungs; at firſt, for the moſt part, inſenſibly; and excites a gentle Cough: The Spit is, alſo, bitterer than uſual, and ſometimes there is a gentle Heat of the Body. But, in Proceſs of Time, the Lungs, and eſpecially their internal Parts, are exulcerated by putrid Phlegm; the Breaſt is oppreſſed by a Senſe of Weight, and acute Pain is perceived both in the anterior and poſterior Parts, and the Heat of the Body becomes more intenſe. The farther a Phthiſis proceeds, the more unmixed Pus is diſcharged, the more intenſe the Fever becomes; the Cough is more violent and continued; the Patient is racked with a Senſe of Hunger, and a Diarrhœa comes on."

Having thus ſpecified the Marks and Characteriſtics of a Phthiſis, we now come, from a Conſideration of the Phænomena obſervable in the Bodies of thoſe who have died of that Diſorder, to inveſtigate the Cauſes of the ſeveral Symptoms with which it is accompanied. Firſt, then, in all Perſons, who have died of a Phthiſis, either the Right, or Left, or both Lobes of the Lungs adhere ſo firmly to the Pleura and Ribs, or to the Vertebræ of the Back, that they cannot, without great Difficulty, be ſeparated with the Knife; and the Part, in which they adhere, is generally full of a putrid Serum, or Ichor. In ſome Phthiſical Patients, eſpecially ſuch as have been afflicted with an Empyema, I have obſerved one Lobe of the Lungs totally conſumed by the previous long-continued Diſorder of the Breaſt, and the other inflamed; which Circumſtances prove the Cauſe of the Patient's Death. For the moſt part, there are, alſo, in one of the Lobes of the Lungs, Impoſtumations, or cloſed Ulcers, of different Bulks, and ſometimes more, ſometimes fewer in Number; which, when laid open, contain partly a thick, and partly a fluid Pus. When an Inciſion is made, eſpecially in the ſuperior Part of either of the Lobes of the Lungs, there are found pretty large Cavities filled with Pus and Phlegm, almoſt of the ſame Kind and Colour with that before evacuated by the Mouth. Sometimes, alſo, in the Lungs, when become knotty and ſcirrhous, there are found ſpreading and fiſtulous Ulcers, like Cancers, which prey upon the adjacent Parts, and contain a ſanguineous and fetid Ichor. There are, alſo, Inſtances of ſcirrhous Tubercles, hard, like the Stones of Fruit, and containing a tophaceous, calculous, and putrid Matter, found in the Lungs. It is, alſo, to be obſerved, that, in Phthiſical Patients, the Heart is, for the moſt part, flaccid, and its Veſſels infarcted with polypous Concretions; a memorable Inſtance of which is found in *M. N. C. Decad.* 2. *Obſ.* 35. In the Pericardium, alſo, and frequently in the Cavity of the Breaſt, there is a large Quantity of impure and fetid Serum. As for the Abdomen, and other Parts, the Veſſels are generally without Blood, the Liver large and pale, the Glands of the Meſentery tumefied, the Omentum deſtroyed, and all the Fat, both of the internal and external Parts, appears to the View: Thoſe, who deſire a farther Knowledge of the Phenomena obſerved in diſſecting Phthiſical Patients, may conſult *M. N. C. Decad.* 1. *An.* 1. & 2. *Decad.* 2. *An.* 4. *Obſ.* 45. 118. *An.* 8. & 9. *Cent.* 3. & 4. *Obſ.* 118. *Cent.* 8. *Obſ.* 105. *Cent.* 9. *Obſ.* 16. & 26. *Cent.* 10. *Obſ.* 143. *Vorzaſcha. Obſ.* 100. *Loſſius*, *Obſ.* 11. *Pawius*, *Obſ.* 22. *Platerus*, *Lib.* 3. *Obſ.* 189. & 690. and *Pezoldus*, *Obſ.* 63, 64. 74. and 92.

Hence it is ſufficiently obvious, how violent the Injury done to the Lungs muſt be in a Phthiſis, in order to induce Death. We now come to inquire into the Cauſes productive of ſuch an Injury; among which the moſt conſiderable are ſchirrous Stagnations in the vaſcular, veſicular, and membranous Subſtance of the Lungs; which, if conſiderable, are not, without the greateſt Difficulty, to be removed, on account of the continual and reciprocal Paſſage of the Air. *Hippocrates*, in *Lib. de intern. Affect. Cap.* 4. ſpeaks concerning this in the following manner: "When the Lungs receive Blood, or a ſalt Phlegm, without again diſcharging them, but retain them impacted in them, Tubercles are formed, and come to a Suppuration in the Lungs. From the Beginning of the Diſorder, through its whole Courſe, there is an acute, dry Cough, a Rigor and Fever, a Pain in the Back and Breaſt; and ſometimes in the Sides. The Breathing, alſo, is ſo violent, as to force the Patient to ſit in an erect Poſture. Then the Pus is corrupted, and expectorated in large Quantities." *Aretæus*, alſo, in *Chron. L.* 1. *Cap.* 8. has given us nearly the ſame Deſcription of Phthiſical Patients: "Before, ſays he, Phthiſical Patients can diſcover their Diſorder by manifeſt Signs, eſpecially by putrid and purulent Spit, they have Tubercles, or ſcirrhous Knots, formed of a viſcous and toughiſh Matter, which gradually becomes hard in their Lungs. Thus they live in a conſumptive State for ſeveral Years before theſe Tubercles are corrupted, and formed into Abſceſſes. If there are ſuch Tubercles in the Lungs, the Patient is afflicted with a dry, ſtrong, and ſonorous Cough, an acute and pungent Pain of the Breaſt, a Difficulty of Breathing, and a kind of Uneaſineſs and Reſiſtance in the Breaſt, from the profound Attraction and Inſpiration of the Air. Then the Cough becomes more violent, eſpecially after ſtrong Exerciſe."

Though this Doctrine of *Hippocrates* and *Aretæus* is ſtrictly agreeable to Truth, yet we ſhall, for the better Illuſtration of the Subject, add ſome Obſervations. Theſe Tubercles, filled with a viſcid Matter, conſtitute the Beginning of the Abſceſſes, which are nothing elſe, but Ulcers of different Bulks, ſurrounded in a peculiar Membrane. Theſe Impoſtumations, when ſmall, are ſometimes expectorated by Cough; but when they become large, and break internally, Abſceſſes and Cavities are formed; a purulent copious Spit, mixed with Phlegm, is expectorated; and then a true Phthiſis is preſent. Sometimes, alſo, theſe ſcirrhous Knots, which are long

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long so latent, as to produce only a dry Cough, in consequence of their acrid Matter retained and pent up, degenerate into cancerous, fistulous, spreading, and fetid Ulcers; which so consume and putrefy the adjacent Parts, that, according to *Foreſtus*, in *Lib.* 16. *Obſ.* 14. and 53. Portions of the Aſpera Arteria have been ſpit up; and, according to *Sylvius*, in *Obſ. Lib.* 2. *Cap.* 12. Ramifications of the Pulmonary Vein have been evacuated in Coughing.

There are, alſo, other Beginnings of a Phthiſis, eſpecially an Hæmoptyſis, when ill-treated, or when a large Quantity of Blood is loſt; for then the Blood is eaſily extravaſated from the ſmall Veſſels of the Lungs into their Air-bladders; and, becoming ſtagnant, it putrefies, corrodes the adjacent Parts, forms Sinuſes, or is reduced into Nodes and Tubercles. And I can, from my own Experience, affirm, that almoſt half of the Phthiſical Patients, who have ſubjected themſelves to my Care, received the Origin of their Diſorder from a previous ill-cured Spitting of Blood. Among the Beginnings of a Phthiſis we may, alſo, with the Antients, reckon a ſalt Catarrh for a long time affecting the Breaſt, and which is frequently ſucceeded by a Phthiſis.

We now come to inquire into the Origin of theſe Cauſes. The Stagnation, then, of the Blood firmly impacted in the Veſſels is the Origin, not only of a Phthiſis, but, alſo, ſeveral other Diſorders; for when the Fluids do not circulate, they loſe their former temperate Nature, become impure, ſaline, and acrid; or, by filling the minute Veſſels too full, produce Obſtructions, Indurations, and Scirrhuſes. Now theſe fatal Stagnations of Blood and Humours, in the minute Veſſels of the Lungs, proceed from too impetuous and copious Congeſtions of the Humours to a Part already too faint and languid, ſo that the Veins cannot return ſo much as they received from the Arteries.

But there are various other Cauſes, which are capable of inducing ſuch a fatal Stagnation of the Blood and Humours in the Lungs, and, conſequently, contributing, in a remote manner, to the Production of a Phthiſis. The moſt conſiderable of theſe Cauſes is, an hereditary Diſpoſition, conveyed from Parents to Children; in conſequence of which they readily fall into a Phthiſis, when any ſlight Cauſe occurs. This is confirmed, not only by Experience, but, alſo, by the Authority of the moſt celebrated Phyſicians. Thus *Fernelius*, *in Patholog. Lib.* 5. *Cap.* 10. informs us, "That ſuch as are ſprung from "conſumptive Parents, by a kind of hereditary Right, become "conſumptive; and we often obſerve, that a Phthiſis rages in "ſuch Families." The Reaſon of this is obvious; for ſince this Proclivity to Diſeaſes received from the Parents principally conſiſts in a bad Conformation of the ſolid Parts, or ſuch a Laxity of the Fibres and Veſſels, as is inſufficient, with a proper Effort, to promote the Motion of the Fluids conveyed to them, the Reaſon is plain, why thoſe, who have naturally weak and flaccid Lungs, ſhould be more ſubject than others to Diſorders of the Breaſt, and eſpecially to a Phthiſis. Among the Perſons ſubject to this Diſorder, we may, alſo, with *Hippocrates*, reckon thoſe of narrow and depreſſed Cheſts, whoſe Scapulæ are prominent, like Wings, whoſe Ribs are protuberant, whoſe Necks are oblong, or who are gibboſe.

It is, alſo, certain, not only from Experience, but, alſo, from the Authority of *Hippocrates*, in *Aph.* 9. *Sect.* 5. that Perſons of ſlender and tender Habits, of tall Statures, and between the eighteenth and thirty-fifth Years of their Age, are highly ſubject, not only to a Spitting of Blood, but, alſo, to a Phthiſis; for no other Reaſon, but becauſe, at this Period of Life, the Veſſels are more tender, and eaſily expanded, than in Perſons farther advanced in Years. But generally a Spitting of Blood and Phthiſis happen moſt readily to full-grown and young Perſons, who, being of a ſanguineous and choleric Habit, are eaſily ſubject to Commotions of Mind, and have had frequent Hæmorrhages from the Noſe, in their Childhood, eſpecially when they are over-heated by too violent Exerciſe; for then the Blood, being copiouſly and impetuouſly conveyed to the ſuperior Parts and Breaſt, cannot return freely to the Heart through the minute Veſſels of the Pulmonary Artery and Vein. Hence, in the larger Ramifications, the ſtagnant Blood muſt neceſſarily produce Expanſions, Ruptures, and Extravaſations.

This Diſorder is, alſo, frequently produced by an unſeaſonable Drinking of ſpirituous Liquors. Nor is it difficult to prove this, ſince it is almoſt univerſally known, that, in the Countries productive of Wines, all the Diſorders incident to the Breaſt, and eſpecially a Spitting of Blood, and a Phthiſis, are far more frequent, than in other Climates. Hence *Hoefferus*, *in Hercule Med. Lib.* 1. *Cap.* 3. juſtly concludes, that a Phthiſis being ſo endemial, and deſtroying ſuch Numbers in *Lower Auſtria*, is owing to nothing, but their exceſſive Uſe of generous Wine, eſpecially in the Morning.

We now proceed to conſider thoſe Cauſes which produce the Defluxion of ſaltiſh Humours in the Breaſt. This Humour the Antients in general aſſerted to come from the Head, as if all Humours conveyed to the Breaſt proceeded from it: But this Opinion is not ſufficiently perſpicuous, and founded on Experience. Too copious a Congeſtion of ſerous Blood to the Breaſt, and eſpecially to the Fauces, and Whole of the Aſpera Arteria, which is covered with an internal glandular Coat, is rather to be accuſed, eſpecially in ſerous Patients, and thoſe, who, during their whole Lives, have been ſubject to Stuffings of the Head, Coryzas, and frequent Catarrhs; for if more Blood and Serum is conveyed to the glandular Parts through the Arteries, than can return through the Veins, there is a great Secretion of the Serum, which, increaſing in Quantity, is coagulated by the Admiſſion of the free Air, and, at laſt, often expectorated in large Quantities. In Proceſs of Time, when the Diſorder continues, and other Cauſes concur, ſuch as Crudities ariſing from a bad Diet, or Indigeſtion, an obſtructed Perſpiration, or profound Grief, the Serum acquires a ſaline and corroſive Nature; in conſequence of which, in Proceſs of Time, it corrodes the Veſicles and tender Veſſels of the Lungs.

From what has been ſaid, we may eaſily underſtand, how injurious cold and northerly Winds, rainy, cloudy, and cold Weather, which, by relaxing the Tone of the Pulmonary Veſſels, accumulate the Sordes in them, muſt neceſſarily be to conſumptive and phthiſical Patients; ſo that, with *Hippocrates*, in *Aph.* 10. *Sect.* 3. we may juſtly affirm, that the Autumn is prejudicial to conſumptive Patients. And, indeed, the Influence of the Air is not more conſiderable in producing any Diſorders, than thoſe of the Breaſt, and eſpecially a Phthiſis. Hence *Tulpius*, in *Obſ. Med. Lib.* 2. *Cap.* 10. juſtly aſſigns the State of the Air, as the Cauſe why Impoſtumations, and Phthiſical Indiſpoſitions, are ſo frequent in *Holland*, in marſhy Places, and ſuch as are expoſed to an Air perpetually impregnated with putrid Vapours.

We now come to inveſtigate thoſe Diſorders, which generally diſpoſe to a Phthiſis, among which we may juſtly reckon the Small-pox. I know many Children, and young Perſons, who, after the Small-pox, have been ſubjected to various Diſorders of the Breaſt, which have laſted for ſeveral Years, ſuch as a dry Cough, an acute Senſe of Pain, a Difficulty of Breathing, a Conſumption, and a ſlow Fever, who, at laſt, upon the Formation of an Abſceſs, have died, among whom was the Prince of *Saxony*. Almoſt the ſame Misfortunes are produced after the Meaſles; for, in theſe exanthematous Diſorders, the Serum is highly acrimonious, and, not only in the Beginning of theſe Diſorders, remaining firmly in the nervous Membranes of the Lungs, excites a dry and uneaſy Cough, but, alſo, leaves a conſiderable Weakneſs in the Lungs, an Expulſion of the peccant Matter being made to the Surface of the Body. Now, if the Patients, before the whole peccant Matter is carried off by Tranſpiration, expoſe themſelves to the free Air, eſpecially in the Spring or Autumn, it readily happens, that the Remains of the peccant Matter, receding to the internal Parts, acts upon, irritates, and exulcerates the weakened Lungs: See *Thomas Bartholine*, *Cent.* 4. *Inſt.* 43. and *Michaeli*, in *Prax. Clin. Part.* 1. *Lib.* 3. *Cap.* 5.

It, alſo, frequently happens, that, after Efferveſcences of the Skin, ſuch as the Itch, the Gutta Roſacea, ſcorbutic and purple Spots, are repelled, a Phthiſis is often produced. The ſame Diſorder is, alſo, frequently cauſed by the Suppreſſion of copious Sweats, by the unſeaſonable Treatment of Ulcers of the Head and Feet, and by the too ſpeedy Conſolidation of Fontanels. Nor are there wanting Inſtances, in which a Phthiſis has been produced by the Repreſſion, or unſkilful Treatment, of an Eryſipelas, and Gout-pains; for ſince, by this means, the acrid and cauſtic Matter is retained in the Habit, and reſorbed through the Veins by the Maſs of Blood, hence it happens, that, being conveyed to the nervous and tender Membranes of the Lungs, it is firmly impacted in them, and, by irritating, conſtricts them. Hence the conſtricted Veſſels muſt, at laſt, be obſtructed and corroded. I, alſo, remember to have ſeen a Phthiſis produced, in conſequence of curing Tumors under the Axillæ, and behind the Ears; ſo, alſo we may readily, ſuppoſe a Phthiſis frequently generated by a Suppreſſion of the hæmorrhoidal and menſtrual Diſcharges.

There are, alſo, other Inſtances, though not common, in which, beſides a Spitting of Blood, a Phthiſis may, in ſome Patients, be induced by other Hæmorrhages; and this principally happens in thoſe Patients, who, either from hereditary Diſpoſition, or from other Cauſes, having brought on a Want of due Tone in the Lungs, are diſpoſed to this Diſorder. This Doctrine is, alſo, confirmed by Experience, which informs us, that not only a Redundance, but, alſo, a Defect of Blood has a ſtrong Tendency to produce Stagnations. Hence thoſe, who place the proximate Cauſe of a Phthiſis in a Plethora, only palpably contradict Reaſon and Experience.

It is diſputed, among Phyſicians, whether a Phthiſis is contagious: But I do not heſitate to affirm, that it is; or, at leaſt, to aſſert, that, if the Miaſma of this Diſorder is not ſufficient to

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to induce a Phthiſis, it is, nevertheleſs, capable of promoting it, if there is already a Diſpoſition to it; for all ulcerous and corrupted Matter is of ſo ſurpriſing and contagious a Nature, that many malignant and contagious Diſorders, ſuch as the Itch, the Leproſy, the Small-pox, old ſordid Ulcers, peſtilential Carbuncles, and Dyſenteries, are to be accounted for from hence. Nor am I of Opinion, that the Nature of the Phthiſical Miaſma is ſo maligmant, as ſuddenly, and, at a Diſtance, to prove infections; but that it only does ſo to ſuch as continually converſe with Phthiſical Patients. This Doctrine is confirmed to us by ſome of the moſt celebrated Phyſicians. Thus *Riverius*, in *Cent.* 1. *Obſ.* 99. gives us an Inſtance of a Maid, who became Phthiſical by attending her Miſtreſs, who was in that State, Day and Night; and, in *Cent.* 4. *Obſ.* 92. he mentions a Girl infected by her Siſter, who had become Phthiſical by giving the Breaſt to a Man in that Condition. *Schenckius*, alſo, in *Lib.* 3. *Obſ.* 133. informs us, that the Spit of Perſons labouring under a confirmed Phthiſis is ſo contagious, that a Phyſician, only by ſmelling it, became Phthiſical. A Phthiſis, produced by Contagion, is, alſo, deſcribed in *M. N. C. Cent.* 9. *Obſ.* 26.

As for the Prognoſtic of this Diſorder, that a true Phthiſis is a violent Diſeaſe, and not to be cured without the greateſt Difficulty, is not only known to the Vulgar by many fatal Inſtances, but, alſo, confirmed by long Experience to the Phyſician. Thus *Hippocrates*, in *Lib.* 1. *de Morb.* informs us, "That "when Conſumptions happen, they neceſſarily prove mortal." He is ſeconded in this by *Galen*, in *Lib. de Locis affect. Cap.* 8. and 5 *Meth. Medend. Cap.* 1. & 8. *Celſus*, in *Lib.* 3. *Cap.* 22. informs us, "That a true Phthiſis ought to have proper "Meaſures taken with it in the Beginning, ſince, when it be-"comes inveterate, it is not eaſily cured." Among latter Authors, ſee, with reſpect to the Difficulty of curing a Phthiſis, *Foreſtus*, in *Obſerv.* 45. *Lib.* 16. *Rodericus a Fonſeca*, *Tom.* 1. *Conſult.* 58. *Tom.* 2. *Conſult.* 48. and *Timæus a Guldenklee*, in *Epiſt. Lib.* 3. *Cap.* 2. where theſe Words occur: "I in-"genuouſly confeſs, that, during the whole Courſe of my Pra-"ctice for thirty-ſeven Years, I could never totally reſtore ſuch "as had their Lungs ulcerated; though I left no Means un-"tried, which could in the leaſt contribute to the Cure of this "Diſorder: Nor have I ſeen any one in this Condition totally "recovered by the moſt celebrated Phyſicians."

But tho' the Cure of a Phthiſis is very difficult, and even impoſſible, when the Diſorder diſcovers itſelf by ſuch manifeſt Signs, as to appear to the Vulgar, yet I would not affirm the like of every Phthiſis, eſpecially when as yet in its Beginning; for I know ſeveral Inſtances, in which, after Wounds of the Lungs, a Spitting of Blood, a Rupture of the Veſſels, a Pleuriſy, and Peripneumony, the Patients have laboured under an Abſceſs and Impoſtumation of the Breaſt, but have, nevertheleſs, been totally cured, by taking due Meaſures in time. Beſides, I, and others, have frequently obſerved many ſprung from Phthiſical Parents, who have had their Breaſts depreſſed, and their Scapulæ prominent, like Wings; who, being addicted to Anger, had in their Youth frequent Hæmorrhages from the Noſe, without any external Cauſe; who have had ſaline Defluxions on the Breaſt and Fauces, accompanied with a dry and violent Cough, even in the Summer; who have ſurpriſingly loſt their Fleſh, and perceived a Heat in the Palms of their Hands, whilſt their Cheeks as yet remain florid; totally cured by proper Medicines, and a due Regimen. I have, alſo, ſeen Abſceſſes of the Lungs, where a large Quantity of white equal Pus, of one Colour, has been expectorated, but where the other Parts of the Lungs have not as yet been corrupted, nor ſpoiled, with ſcirrhous Indurations, and ulcerous Fiſtulas, and where the Veſſels of the Heart and Lungs have not been infarcted with polypous Concretions, happily cured by proper Remedies, and a due Regimen.

But it may here be aſked, by way of Objection to my Doctrine, Why is it, that even beginning Phthiſical Diſorders are ſo rarely cured? But this is frequently brought about by various Cauſes, the moſt conſiderable of which ſeems to be, that we are not always ſufficiently aſcertained of the Preſence, Nature, and genuine Cauſes, of a true Phthiſis, by evident diagnoſtic Signs. Thus *Fernelius*, in *Pathelog. Lib.* 5. *Cap.* 10. informs us, "That a latent Abſceſs, at firſt, neither known "to the Phyſician, nor Patient, is often the Cauſe of this "Diſorder; in conſequence of which, the Patient neither de-"ſiſts from his uſual Buſineſs, nor thinks himſelf afflicted with "any Diſeaſe; but bears the ſecret Cauſe of his Death in his "Breaſt, without knowing it. However, ſome have, in a "Quarter of an Hour, died unexpectedly of this Diſorder, in "whom, when diſſected, no other Cauſe of their Death could "be diſcovered, than the ſudden Breaking of an Impoſtu-"mation in the Lungs; by which the Patient was ſuffocated. "But all ſuch Patients are, before the Rupture of the Abſceſs, "afflicted with a Cough, a Spitting of Blood, an Heavineſs of "the Body, a ſlight Oppreſſion of the Breaſt, and a Difficulty "of Breathing, which rarely accompany a Conſumption, but "are Signs frequently common to other Diſorders." Beſides, we may be convinced of the difficult Diagnoſtics of a Phthiſis, by the frequent Errors committed, in this reſpect, by the moſt celebrated Phyſicians. Thus many are accounted Phthiſical, who, labouring under a chronical Cough, accompanied with a catarrhal Defluxion, diſcharge a thick Matter of a whitiſh-green Colour; or who are afflicted with a ſtomachic, or hypochondriac Cough, ariſing from the Sordes of the Primæ Viæ falling upon the Lungs. A moiſt Aſthma, eſpecially, when it ariſes after a Suppreſſion of the Menſes, or Hæmorrhoids, and a conſequent Regurgitation and Congeſtion of the Humours to the Breaſt, is frequently taken for a Phthiſis. It is, alſo, certain, that a ſlow Fever, accompanied with a Cough, a ſudden Extenuation of the Body, and colliquative Sweats, which ſometimes ſucceed Arthritic Pains, the Gout, or Scurvy, is, alſo, confounded with a Phthiſis; whereas, in the former of theſe Diſorders, there is no Solution of Continuity in the Lungs. Since, therefore, the Knowledge of a Pulmonary Conſumption is ſo difficult, hence we may infer, how uncertain and precarious the Cure of this Diſorder muſt be.

There is, alſo, another equally important Cauſe, which hinders the Cure of a Phthiſis, and of an Hectic ariſing from it; which is, that there are few Phyſicians, who know, with due Caution and Circumſpection, to uſe proper Medicines for this Diſorder; for, if in any Diſorder, certainly in a Phthiſis, the Caution of the Phyſician is neceſſary, on account of the ſo great Contra-indication of Remedies; for a Phthiſis requires laxative and moiſtening Medicines, gentle Traumatics and Aſtringents, and ſometimes mild Anodynes, which, unleſs exhibited with due Caution, at a proper time, and with ſufficient Regard to the Circumſtances of the Patient, are ſo far from affording any Relief, that they rather increaſe the Diſorder.

Having taken a general View of the Prognoſtics of a Phthiſis, we now come to conſider its Terminations or Events, whether ſalutary or fatal. Firſt, then, 'tis a very bad Sign, when the hectic Heat is more and more increaſed; when, in the Morning, the Pulſe is quicker than uſual, and when the Fleſh and Strength are conſumed, without being in the leaſt recruited by Sleep. Which Misfortunes generally the rather happen, if, when there is a large Quantity of Pus, there is only a ſmall Portion of it expectorated; for then it becomes more acrid and filthy, and, when thrown on the Coals, diffuſes a fetid Smell, the more the Fever is, alſo, increaſed. If, beſides, there is a great Difficulty of Breathing, accompanied with a Dread of Suffocation; if the Patient cannot lie on that Side, where the injured Lobe of the Lungs is; if his Breath is of a cadaverous Smell, and his Voice hoarſe; if he is afflicted with colliquative Sweats, a Diarrhœa, and a Swelling of his Feet, ſometimes accompanied with Pain; 'tis certain that Death is not far off. If the Expectoration is totally ſuppreſſed, the Patients gradually, but eſpecially in an erect Poſture of the Head, die, retaining their Reaſon.

But greater Hopes are to be entertained, if there is ſtill a conſiderable Degree of Strength, and the Reſpiration free, if the Appetite and Digeſtion are entire, if the Spit expectorated is white and equal, and if there is no hectic Fever. The Hopes of Recovery are ſtill the greater, if the Patient is of a good Habit of Body; if he has a large Cheſt; has no hereditary Diſpoſition to the Diſorder; and if his Heat becomes more mild, and the Subſtance of his Stools is compact; for, by means of theſe Circumſtances, Phthiſical Patients, eſpecially when they uſe a proper Regimen and Medicines, may often protract Life for a great many Years. Thus *Willis*, in *Lib. de Medicament. Operat. Sect.* 1. *Cap.* 6. *de Tabe ſeu Phthiſi*, ſpeaks in the following manner: "It ſometimes happens, ſays he, that a Cavity, or, perhaps, "two are formed in the Lungs with callous Sides every-where, "ſo that the Matter collected in them is not convey'd to the "Maſs of Blood, but is every Day totally expectorated, tho' its "Quantity ſhould be very large. Perſons in this Situation have "only, as it were, a Fontanel in their Lungs; and, although they "ſhould every Morning expectorate a large Quantity of thick, "or yellow, and even, as it were, purulent Spit, and a ſmall Quan-"tity of the ſame throughout the Day, yet in other reſpects, "they enjoy ſufficiently good Health, breathe freely and eaſily, "eat and ſleep well, have a due Quantity of Fleſh, or, at leaſt, "are bleſſed with a good Habit of Body, and are frequently cured. "Hence ſome are ſaid to have laboured under a Phthiſis for "thirty or forty Years, and even not to have had their Lives "ſhortened by this Diſeaſe." And, with reſpect to Ulcers of the Lungs, 'tis obſervable, that they may continue for ſeveral Years without any conſiderable Decay of the Body, whilſt the other Viſcera remain ſound and entire. See *Kerkringius*, in *Specileg. Anatom. Obſ.* 72. and *Barthol. Cent.* 2. *Hiſt.* 14. Nor is this difficult to be conceived; for as Nature ſometimes advantageouſly expels peccant and recrementitious Matter by an Ulcer of the Extremities, or by an artificial Ulcer, ſuch as a Fontanel, ſo I ſee no Reaſon, why the ſame Circumſtance ſhould not ſometimes happen in Ulcers of the Lungs.

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The Physician ought, also, to be well acquainted with the particular Signs which manifest the Recovery of phthisical Patients, which are, by *Aretæus*, in *Lib.* 3. *Cap.* 1. excellently enumerated in thefollowing manner. "When phthisical Patients begin to grow better, the Cough seizes less frequently, and at longer Intervals; a larger Quantity of sanious and more moist Spit is expectorated; much aqueous Matter is evacuated by Stool; the Urine is copiously discharged, tho' it has as yet no Sediment; the Voice becomes more clear and sonorous, the Sleeps are sufficiently long, the Præcordia relieved, and the Pain remitting is, sometimes, transferred to the Scapulæ; the Difficulty of Breathing is gentle and less frequent, but accompanied with an Asperity of the Voice; and, when these Things happen, the Patients recover."

The CURE.

The Application of proper Remedies, in a Phthisis, is widely different, according to the different State of the Patient, with respect to Strength, the Time and Causes of the Disorder. The Method of treating a Phthisis in general, may be divided into curative, mitigative, and preservative. The first is to be taken when there are such Causes, such Circumstances, and such a Condition of the Patient, as to lay a Foundation for expecting a Recovery, by means of proper Medicines. The mitigative Method is to be taken, when the Force of the Disease is so great, that it will not yield to the best Medicines; in which Case we are to mitigate the most urgent Symptoms, prevent such as are worse, and, by that means, protract Life as long as possible. And as the preservative Method is the best, the most easy and safe, against all terrible Disorders, so it is of the highest Importance in a beginning Phthisis.

As for the curative Method, it is principally to be used, when, in consequence of a broken Impostumation, an open Abscess is formed, and a large Quantity of Pus expectorated; which most generally happens after the unlucky Termination of a Pleurisy, or Peripneumony; after a Spitting of Blood; after Wounds of the Lungs, whilst the rest of their Substance is found, and neither corroded, nor scirrhous. In this Case, the best and safest Cure is Milk duly used, by which I have known many phthisical Patients brought from the Gates of Death, and restored to perfect Health; for no Medicine has longer, or more universally, been found efficacious in the Cure of a Phthisis, than Milk.

The most antient Physicians warmly recommended Milk for the Cure of this Disorder, as is obvious from various Passages of *Hippocrates*. And *Galen*, who greatly extols Milk for a Phthisis, in *Lib.* 5. *Meth. Medend. Cap.* 12. mentions a Place called *Stabiæ*, to which, on account of the Purity of the Air, the fine Pasturage for Cattle, and the consequent salubrious Quality of the Milk, there was a great Conflux of phthisical Patients, just as, in our Days, the Valetudinary and Infirm resort to the medicinal Springs. This Method of Cure was known in *Italy* above an hundred Years ago; for the celebrated *Andreas Baccius*, in *Lib.* 4. *de Thermis*, informs us, "That the *Neapolitan* Physicians, as the last Resource, send phthisical Patients, such as spit Blood, or those afflicted with any Ulcers of the Thorax to *Stabeæ*, with so great Success, that some remain in that healthful Part all their Lives."

Aretæus, also, one of the most skilful of the antient Physicians, in *Lib.* 6. *de Morb. Chron.* does not hesitate to affirm, that phthisical Patients stand in need of no other Thing for their Recovery, but the liberal Use of Milk. *Trallian*, also, who, in his Work *de Re Medica*, greatly extols Milk in all Disorders of the Breast, in *Lib.* 7. has the following remarkable Passages: "If the whole Body, not having Nourishment convey'd to it, begins to decay manifestly, and if there is not much Pus in the Thorax, Milk alone ought to be exhibited to them; and, for this Purpose, that of Asses is best, because it is an excellent Purgative." In another Place he speaks in the following manner: "I have frequently seen those afflicted with a Difficulty of Breathing, relieved by the due and proper Use of Milk, which removes the peccant Matter lodged in the Cavities of the Lungs." And, in the Part already quoted, when speaking of an Hæmoptysis, he says, "Let all those afflicted with a Spitting of Blood, use Milk; for no Medicine nor Aliment is so useful and beneficial to them as Milk; and those, who, in the Beginning of this Disorder, use Milk alone for a long time, are totally recovered. Thus, says that Author, I knew a certain Man, who, by using Milk for a whole Year, and abstaining from Wine, was totally freed from a Spitting of Blood, and Pus, so that he did not afterwards fall into a Phthisis."

It may, also, be shewn from Reason, without the Evidence of Experience, that Milk is an efficacious Remedy in Disorders of the Breast. But 'tis to be observed, that all Milks are not of the same Kind, and of the same Efficacy for all Purposes; since, according to the Diversity of Animals, and their respective Foods, they are possessed of different and peculiar Qualities, which are to be considered apart. First, then, Asses Milk, which was always greatly esteemed by the Antients, contains a great deal of sweet Serum, but a very small Quantity of earthy, caseous, and pinguious Substance; for which Reason, it is not easily coagulated, and consequently but very unfit for Butter and Cheese. Its Whey is abstergent, laxative, moistening, and proper for correcting the Acrimony of the Humours. Goats Milk does not contain so large a Quantity of Whey, as that of Asses; nor is it of so laxative and abstergent a Nature, but of a thicker Consistence. And as Goats eat the Leaves of Trees, which contain something of a resinous Quality, their Milk is very efficacious for the Consolidation of suppurated Parts. Cows Milk is more pinguious, contains a large Quantity of Earth, but less Whey; for which Reason it generally yields a great deal of Butter and Cheese. This Species of Milk is of a temperating, nutritive, and consolidating Virtue. Womens Milk, for medicinal Purposes, is preferable to all others; for it is the sweetest of them all, and its nutritive Quality is sufficiently observable in Infants. The Virtues of Milk are, also, different, according to the Diversity of Herbs and Pasturage, which Animals eat. Hence Milk, in the Spring, is highly salutary, because, at that time, the Vegetables abound with temperate Juices; whereas Milk in the Winter is accounted less salutary, because then Animals feed on Hay and Straw.

Hence we may easily judge, that in all Disorders of the Breast, and an universal Decay or Wasting of the Body, Milk may be accounted a Medicine proper for answering all Intentions: For, first, we find nothing more efficacious than Milk, especially that of Cows, for correcting, mitigating, and allaying the Acrimony of the Humours, which is the principal Cause of the Irritation, the violent Cough, and the Corrosion; for as this Species of Milk is capable of breaking the noxious Force of corrosive arsenical Poison, so 'tis much more efficacious in sheathing up and obtunding the saline Spicula lodged in the Fluids of the human Body. But when the Intention is to deterge viscid Humours, to cleanse Ulcers, to render the Body soluble, to provoke Urine, and derive the Afflux of the Humours from the Part affected, Asses Milk is of all others the most efficacious, on account of the large Quantity of sweet abstergent Whey it contains. When wounded Parts are to be consolidated and conglutinated, Goats Milk is best for answering the Intention. For nourishing wasted Parts, and restoring Strength, nothing is more effectual than Womens Milk, especially when suck'd immediately from the Breasts, without any Access of the Air, by which its spirituous Principle is exhaled, and flies off. With respect to this Milk, the learned *Wepfer*, in *Epist. ad Verzascham*, speaks thus: "There is certainly a divine Quality both in Womens and in Asses Milk, which I could not have believed, if I had not had the Evidence of my Senses for it; for by their means I have, with my own Eyes, seen Persons rendered, as it were, entirely new; and, by a due Use of these two Species of Milk, many have acquired not only a sounder Habit, but, also, a better Colour, and more Strength."

Not only Milk, but, also, Whey, when duly prepared, is highly efficacious, and even sometimes more powerful than Milk, in curing the chronical Disorders of the Lungs, and the other Viscera: For if the Obstructions of the small Vessels of the Viscera, which generally lay a Foundation for chronical Disorders, are to be removed; if the viscid and tenacious Humours are to be dissolved; if the Emunctories are to be kept open, and the Heat of the Parts allay'd by proper Moisture; Whey, prepared of whatever Milk, is preferable to the Milk itself. See LAC.

Hence the Reason is obvious, why not only in the Cure of Disorders of the Breast, but, also, in that of the most terrible and obstinate Diseases, the most skilful Physicians, both among the Antients and Moderns, have always greatly recommended Milk. But the whole Secret consists in the due Use of it, both for mitigating and curing Diseases; for, if either Aliments or Medicines should be improperly used, they prove more detrimental than beneficial. This should be adverted to, especially by those of the Moderns, who strenuously endeavour to destroy and discredit the medicinal Use of Milk.

But tho' the Use of Milk and Whey is sufficient to answer many Intentions in the Cure of a Phthisis, yet 'tis equally certain, that its divine Energy, in producing different Effects, may be assisted and augmented by various means: For, first, the Efficacy of Milk is surprisingly increased, and rendered truly Medicinal, if the Animals, whose Milk we use, are fed with Substances accommodated to the Intention of Cure; for, from the different Aliments which Animals and Women use, the Milk they afford, also, acquires a different Quality, since 'tis certain from Experience, that a Purgative exhibited to the Nurse is, with the Milk, convey'd to the Child upon whom it operates. The Antients are, therefore, to be commended, who, in order to render their Milk more efficacious, gave their Asses and Goats, among their Food, such Herbs as were possessed of a specific Virtue against the Disease they intended to cure. Hence *Galen*, in the Part before-quoted, mentions the Herbs growing in *Stabiæ*, such as Grass, Knot-grass, Bastard-baum, the Bramble, Ivy, Shrub-trefoil, the Mastich-tree, and some others, by eating which the Milk of the Animals was rendered highly salutary. This Custom I have successfully used, when, in order to the Abstersion and Depuration of any Part affected, I have ordered Barley, Scabious, Scordium, Chervil, *German* Leopard's-bane, Hyssop, Paul's Betony, and white Horehound,

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to be mixed with the Food of the Animals, from which the Milk was to taken. But, when the Intention was to conſolidate, I have ordered their Food to be mixed with the ſeveral Species of Plantain, Ground-ivy, Agrimony, Yarrow, Sanicle, the greater Conſound, and Lungwort.

But there are ſtill other Methods of augmenting the medicinal Virtues of Milk, according to various Intentions; the moſt conſiderable of which is the mixing Milk with mineral Waters; a Practice, by me, firſt introduced into *Germany*; for when, upwards of thirty Years ago, I was, by a chymical Analyſis, inveſtigating the Principles of the mineral Waters in *Germany*, both hot and cold, and found no acid and truly vitriolic Salt in them, but rather one of an alcaline and neutral Kind, together with a ſubtile Earth, and fine Particles of Steel, I mixed Milk with theſe Waters, and that with ſuch Succeſs, as, in curing and alleviating many chronical Diſorders, to find happy Effects, which could neither be obtained by Milk alone, nor by the Waters exhibited ſeparately from Milk. Hence 'tis ſurpriſing, and even to be lamented, that there formerly were, and ſtill are, Numbers of Phyſicians, who, in a Phthiſis and Exulcerations of the Lungs, think cold mineral Waters highly prejudicial; and dare neither to preſcribe them alone, nor in Conjunction with Milk. Before our Times, however, two celebrated Phyſicians recommended cold mineral Waters in Diſorders of the Lungs. The moſt antient of theſe is *Raymundus Joannes Fortis*, in *Cent.* 2. *Conſil.* 20, 27, 28, 30. and eſpecially in *Conſil.* 34. where he ſpeaks in the following manner: "At a proper Seaſon of the Year, cold mineral Waters I have found to be highly uſeful in Ulcers of the Lungs; and to them I have ordered the Patients to have recourſe, as the laſt and moſt effectual Expedient; ſince, if the Diſorder did not yield to them, I could hardly think, that it could be removed by Decoctions, Milk, and other Things of a like Nature." And the celebrated *Morton*, a later Phyſician of the *Engliſh* Nation, in his *Phthiſiologia*, recommends medicinal Waters in Diſorders of the Lungs, and when they are afflicted with ſteatomatous Tumors, accompanied with a gentle hectic Heat, on which Occaſion, he ſpeaks in the following manner: "I have ſeen, during a Courſe of ſeveral Years, many Phthiſical Patients have their Appetites and Strength reſtored, their Cough and hectic Heat leſſened, their Reſpiration rendered freer, and, at laſt, their Diſorder totally removed, without any Relapſe, by means of theſe Waters."

But though I would not preſcribe ſtrong mineral Waters in Diſorders which ariſe from a Solution of Continuity in the Lungs, eſpecially if very conſiderable, yet I can from Experience affirm, that mild mineral Waters, abounding with an alcaline Salt, ſuch as the *Selteran* and *Caroline* Springs, mix'd either with the Milk of Aſſes, or that of Goats, afford ſurpriſing Relief, not only in a chronical and obſtinate Cough, accompanied with an oppreſſive Pain of the Breaſt, a Difficulty of Breathing, a ſlow Hectic, and a Conſumption, but, alſo, in a deep Suppuration of the Lungs, and a true Phthiſis; for, by this Admixture of the mineral Waters, the Milk is render'd more efficacious and powerful in diſſolving the tough and viſcid Matter, removing the Obſtructions of the capillary Veſſels, and deterging and cleanſing the Ulcers. But uſing this Mixture of Milk with medicinal Waters is ſtill more indicated, when ſuch Diſeaſes of the Lungs are ſupported by hypochondriac, ſcorbutic, arthritic, or calculous Diſeaſes, which frequently happens.

This Method of correcting Milk by various Admixtures was not only known, but, alſo, practiſed, by the antient Phyſicians. Hence, in *Hippocrates*, *Trallian*, *Aetius*, and *Aretæus*, there are ſeveral Inſtances in which they preſcribed Milk mixed with Water, for Phthiſical Patients; or Hydromel, mixed with Milk; to which *Hippocrates*, in *Lib.* 2. *de Diæta*, aſcribes a ſurpriſing Efficacy, affirming, that it ſoftens the Lungs, allays the Cough, procures an Expectoration of the Spit, and promotes a Diſcharge of the Urine. The celebrated *Sponius*, in *Aphoriſm. novis*, *Sect.* 5. *Aph.* 99. not only extols the external and vulnerary, and, alſo, the internal Uſe of Lime-water, in curing an Impetigo, and Leproſy; but, alſo, commends the Mixture of the ſame Water with Milk in the following manner: "Beſides, ſays he, this Water, mixed with Milk or Whey, produces ſurpriſing Effects in internal Ulcers, Diarrhœas, and Dyſenteries, as I was informed by Mr. *Deloſure*, a celebrated practical Phyſician in *Gaſcony*." Nor ſhall I condemn this Method, ſince in Dyſenteries, accompanied with an Exulceration of the Inteſtines, I have always found Milk, mixed with the *Selteran* Waters, an incomparable and highly efficacious Medicine.

But let us inquire with what other Remedies Milk may be commodiouſly joined: For curing, therefore, violent Diſorders of the Lungs, in a true Phthiſis, Infuſions and Decoctions, prepared of vulnerary and pectoral Herbs, have not only been highly eſteemed by Phyſicians, but, alſo, by the common People. The Herbs moſt recommended for this Purpoſe, are the greater Conſound with its Roots, Saracens Conſound, Coltsfoot, ſharp-pointed Plantain, ſpotted Lungwort, Sanicle, Spleenwort, Scabious, Paul's Betony, Agrimony, Ground-ivy, white Horehound, Yarrow with its Tops, St. John's-wort with its Flowers, Roſe-flowers, and others of a like Nature, which are to be boil'd either in Ale or Water, adding Figs, Honey, and the Seeds of Fennel, and ſtellated Aniſe. Nor are there wanting Inſtances of conſiderable Benefit done to Phthiſical Patients by theſe means; ſince when there is only a ſimple Abſceſs without a ſcirrhous Induration, or a polypoſe Concretion, they contribute much to the Conſolidation of the affected Parts. It muſt, however, be own'd, that theſe Decoctions, in conſequence of their aſtringent Quality, have produced very unhappy Effects; eſpecially, when, in the Beginning of the Diſorder, the Lungs are affected with hard Tubercles, or when they are unſeaſonably uſed to ſtop a Spitting of Blood; for by this means the extravaſated Blood is eaſily coagulated, and the minute Veſſels obſtructed; ſo that there happens a far greater Stagnation of the Blood and Humours in the Lungs, a Circumſtance which has the ſtrongeſt Tendency to produce a Phthiſis. But, in order to prevent theſe Dangers, ſuch Infuſions and Decoctions may properly be mixed with an equal Portion, or only half the Quantity, of Milk; by which their aſtringent Quality is, in ſome meaſure, deſtroy'd, and the Acrimony of the Humours corrected.

If the Primæ Viæ are to be cleanſed of any Sordes, Senaleaves, Rhubarb, and Manna, may be commodiouſly infuſed, and gently boil'd either with Milk alone, Milk and Water, or Milk diluted with temperate mineral Waters; ſince, otherwiſe, Phthiſical Patients, eſpecially of delicate Habits, are eaſily injured even by mild Purgatives. I have, alſo, obſerved, eſpecially when there was a large Quantity of acid Sordes in the Primæ Viæ, that a Dram or two of the Magneſia, which is nothing elſe but an highly ſubtile Flour of Quick-lime elutriated, mixed with a few Ounces of Goats Milk, proved a ſafe and excellent Purgative.

In order to alleviate a violent Cough, which deſtroys the Strength and Sleep, to correct the Acrimony of the Humours, and relax the conſtricted Parts, the Antients, with great Succeſs, uſed their various Diacodiums, the Principal of which are compoſed of the Juice and Seeds of the Poppy. But the Moderns, for the ſame Purpoſes, uſe the Pilulæ de Cynogloſſo, and the Pilulæ de Styrace, which, when exhibited in a ſmall Doſe, are ſufficiently efficacious: But all theſe Medicines are render'd ſtill more efficacious, if they are exhibited about Bed-time, in a Draught of Milk. It is, alſo, ſometimes expedient, when there is a great Afflux of the Humours to the Breaſt, and when, in protracted and phthiſical Coughs, a great Corruption is to be dreaded, to make moderate Uſe of ſuch Remedies as provoke Urine, in order to derive the Impetus of the Humours from the Breaſt: For anſwering which Intention, we may uſe Milk and Whey, the diuretic Virtues of which are in ſome increaſed, by making them into an Infuſion with Seeds of Seleri, Parſley, *Cretan* Daucus, Gromwell, and Violets, well bruiſed together.

Beſides thoſe already mentioned, there are ſtill other Remedies highly beneficial, not only for the Depuration, but, alſo, for the Conſolidation, of thoſe Ulcers of the Lungs, which conſtitute a Phthiſis. The moſt conſiderable and celebrated of theſe are, the pectoral and vulnerary Balſams, of which, tho' there are various Kinds in the Shops, yet we ſhall only mention thoſe invented by the moſt celebrated Phyſicians. The beſt, then, is the juſtly celebrated Balſam of *Meibomius*, prepared in the following manner:

Take of the old Oil of St. John's-wort, two Ounces; of Sperma-ceti, ſix Drams; of the beſt *Venice* Turpentine, three Drams; of Dragon's-blood, one Dram; and of Laudanum Opiatum, ſix Grains: Mix all together, and let the Doſe be from one to two Drams.

Nor have I found the following Balſam leſs efficacious:

Take of the Oil of ſweet Almonds, two Ounces; and of the Flowers of Sulphur ſublim'd by Quick-lime, two Drams: Boil over a gentle Fire: Then add, of the Balſam of Capivi, one Dram; of Sperma-ceti, and Bees-wax, each half an Ounce; of the Extract of Saffron, half a Dram; and of the Oils of Aniſe, Fennel, and Mace, each ten Drops.

Another Balſam for anſwering the ſame End may be prepared thus:

Take of the beſt *Pruſſian* Honey, and Mountain Diacodium, each one Ounce; of the aqueous Eſſence of Myrrh, inſpiſſated, half an Ounce; of the Flowers of Sulphur, and the

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the Extract of the Tops of Yarrow, each two Drams; of the Extract of Saffron, half a Dram; and of the Oils of Mace and Safafras-wood, each eight Drops.

These noble and efficacious Balfams, when their Ufe is indicated, cannot be exhibited in a better, or more proper Vehicle, than a fufficient Quantity of the Milk of Affes, Goats, or Cows.

Having confidered the curative Method in a Phthifis, we now come to treat of the palliative, or mitigative Method, by which we endeavour to render Phthifical Patients free from the moft terrible and deplorable Symptoms, and to protract their Lives as long as poffible. This Method is principally to be ufed in thofe Patients, in whom there is an intenfe Heat, gradually confuming the Flefh and Strength, which is generally excited by a Mixture of the purulent Matter with the Blood, and by which the Blood, being contaminated, is put into an Effervefcence, and becomes more acrid and faline. In order, therefore, to extinguifh this preternatural Heat, and correct the Acrimony of the Humours, nothing is more effectual than due Dofes, either of Affes, or Womens Milk, exhibited in Conjunction with a proper Regimen. For anfwering the fame Intention, Emulfions of the Four cold Seeds, and white Poppies, Decoctions of Barley, or Hartfhorn, the Waters of Rofes, Lilies of the Valley, and black Cherries, and Julap of Rofes, may be frequently exhibited. The Virtue of thefe is greatly increafed, if they are exhibited with the temperate nitrous Powders, which are of great Efficacy in a beginning Hectic. Thefe Powders may be prepared in the following manner:

Take of Mother of Pearl, and Crabs-eyes, each two Drams; of purified Nitre, one Dram; and of the diftilled Oil of Mace, four Drops: Mix all together, and exhibit one Dram for a Dofe.

Nor, in order to allay the Violence of the Symptoms, are we to neglect Baths of fweet Water mixed with a fufficient Quantity of Cows Milk, and purified Nitre; by which means the conftricted, tenfe, and dry Parts, are relaxed and moiftened, the Cough allayed, the Heat leffen'd, and the Sleeps rendered more fweet and gentle; for which Reafon fuch Baths are fometimes highly proper in the curative Method.

When the Lungs are affected with a callous and inveterate Ulcer, and a Spit, mixed with Pus, is daily expectorated, by which the Flefh and Strength are confiderably impair'd, the principal Intention is, by correcting the acrid and faline Dyfcrafy of the Blood and Humours, to prevent the farther Exulceration of the Lungs: This End is excellently anfwer'd by temperate Infufions of Ground-ivy, the Herb Coftus, Chervil, Paul's Betony, Scabious, Coltsfoot, and Lungwort. But fuch Infufions muft be frequently, and for a long time, ufed. In ferous Perfons, and fuch as are fubject to Catarrhs, when the Diforder is brought on, and fupported by a large Quantity of impure Humours falling on the Lungs, in order to prevent the greater Congeftion of the Humours to the Breaft, for ordinary Drink the Patient may ufe a Decoction of China-root, and of Red-faunders prepared with Raifins, a Drink highly recommended by Authors for this Purpofe.

In fuch a Condition of the Patient, we are, as much as poffible, to endeavour to preferve the Tone of the Lungs. This Intention is excellently anfwered by Sugar of Rofes frequently exhibited in the foregoing Decoction. This fimple Remedy was not only known and commended by the *Arabians*, and efpecially *Avicenna*, but, alfo, fome of the Moderns think, that this alone is fufficient to mitigate, and even to remove, a Phthifis. See *Zacutus Lufitanus*, in *Prax. Admir. Lib.* 1. *Obf.* 139. and *M. N. C. Decad.* 2. *Ann. Obf.* 19. and *Sylvaticus*, in *Confil.*

We are now come to confider the prefervative Method of Cure, which confifts in preventing a Phthifis in thofe who are fubject to it by Nature, Age, Habit, or Errors in Regimen, by a feafonable Removal of its Caufes, or in removing it, or preventing its further Progrefs, by proper Medicines, when it is already prefent. We have already fufficiently fhewn, that in fanguineous, choleric, and flender Habits of Body, from the Age of eighteen to thirty-four, a Phthifis, or purulent Spitting, accompanied with a violent Cough, and a Difficulty of Breathing, is not only generally produced by a Spitting of Blood, but, alfo, frequently recurs; in which Cafe, the principal Intention of the Phyfician ought to be, to remove this Spitting of Blood, or, at leaft, fo to mitigate it, as that it may not degenerate into a Phthifis.

In order, therefore, to remove a Spitting of Blood, befides the Efforts of Nature, there is no more fafe and efficacious Remedy, than Venefection, duly repeated, till the End is obtained. This is confirmed, not only by Experience, but, alfo, by the Authorities of the greateft Phyficians. Thus the celebrated *Boerhaave*, in his *Praxis Medica*, informs us, "That, "if we intend to cure a Perfon naturally difpofed to a Phthi- "fis, we are carefully to prevent his having a Spitting of Blood; "otherwife we cannot cure him. Hence, about the feven- "teenth Year of his Age, Venefection is to be twice or thrice "ufed; Geftations are, alfo, to be ufed; and in this Method "we are to continue till the twenty-fifth Year of his Age. "I know a Family, the Father, Mother, and all the Chil- "dren of which, died Phthifical, except one Son, whom I "preferved by this Method, who is now above fifty Years of "Age, has lived above the Time afcribed by *Hippocrates* for "the Acces of a Phthifis, and has no bad Symptoms attend- "ing him."

Befides Venefection, great Moderation, with refpect to the Non-naturals, is to be ufed; for which Reafon, 'tis neceffary, that fuch Patients fhould carefully guard againft violent Commotions, both of Body and Mind, and abftain from fpirituous Liquors, and every thing which is capable of throwing the Blood into an Orgafm. And, fince a Spitting of Blood, prepofterouffly treated with ftrong Aftringents, eafily degenerates into a Phthifis, fuch Medicines are to be as carefully abftained from, as if they were as much Poifon. In fuch a Cafe, it is rather expedient to ufe Milk and Water for Drink; gentle Laxatives of Manna and Sena-leaves; Powders, which allay the Ebullition of the Blood, prepared of Shells, Mother of Pearl, Crabs-eyes, and Nitre; with each of thefe we may commodioufly join the Decoctions or Infufions above-mentioned.

But there is nothing fo effectual either for preventing a Phthifis, or removing it, when begun, as a due Regimen and Method of living; which, among the Antients, *Celfus*, in *Lib.* 3. *Cap.* 22. has elegantly prefcribed in the following manner: "A "Phthifis is, in the very Beginning, to be attacked by proper "Remedies: If the Patient's Strength admits, a long Voyage is "to be made, and a Change from a rare, to a more denfe, At- "mofphere is highly beneficial; for which Reafon it is ex- "pedient, phthifical Patients in *Italy* fhould fail to *Alexan- "dria*. If any Circumftance forbids Sailing, the Patient is "to be removed in a Bed, or fome other manner. He muft, "alfo, abftain from Bufinefs, and every other thing which has "a Tendency to difcompofe his Mind; he is, farther, to indulge "himfelf in Sleep; Defluxions are to be carefully guarded "againft, left, perhaps, being fomewhat relieved, his Condi- "tion fhould again become worfe. For this Reafon Crudities, "the Influence of the Sun, and the Acces of Cold, are to "be prevented. The Mouth and Fauces are to be co- "vered, and the Cough removed by Medicines appropriated to "that Purpofe. In fuch a State Water is to be drank, and "Milk may, alfo, be commodioufly exhibited."

Celfus, in prefcribing a dietetic Regimen proper for the Cure of a Phthifis, juftly and principally recommends Exercife, and Choice of Air: Of almoft the fame Opinion is our juftly celebrated *Sydenham*, who tells us, that he has prevented many Phthifes, and cured many Phthifical Patients, by prefcribing Riding. He, alfo, thinks, that 'tis of no fmall Importance what Air they breathe: "For, fays he, Phthifical Patients are "much more happily cured in the Country, than in the Town, "fince the Air of the former purges their Lungs, and contri- "butes more to their Recovery, than any other Remedy." We are more effectually convinced of this, by confidering by what Caufes it principally happens, that in *Holland* and *England* fo many die of a Phthifis; and that, in half of thefe, this Diforder is brought on by a Spitting of Blood. For, certainly, this is to be afcribed, not only to the grofs Aliments, fince thefe Nations ufe rich Food, eat much Flefh, and Sea-fifh with high Sauces, by which is generated a crude Chyle and Blood, which, eafily ftagnating in the Lungs, difpofe to a Phthifis; but this is rather principally to be afcribed to the Impurity of the Air, which is much impregnated with Smoke, by which the Bronchial Glands and Membranes, together with the minute Capillary Ramifications of the Pulmonary Artery, are dried; by which means a Confumption of the Lungs is, in Proceffs of Time, brought on. The fame Misfortune is, alfo, frequently produced by cold Weather, and Northerly Winds, which almoft always prove offenfive to the Lungs, efpecially of old Perfons, and fuch as are difpofed to a Phthifis; fo that a confiderable Number of Perfons are deftroy'd by this means. But nothing is more prejudicial, than exercifing the Body ftrongly by Walking or Running againft fuch a Wind; for by this means, I have frequently known Abfceffes produced in the Lungs both of Men and Horfes.

If any Diforder requires not only an accurate dietetic Regimen, but, alfo, a cautious and circumfpect Ufe of Medicines, 'tis certainly a Phthifis, of which there is fo great a Contra- indication of Remedies, that, unlefs they are all duly confider'd, the Phyfician may eafily fall into an Error, and, inftead of relieving, injure his Patient. Thus, in order to promote Expectoration,

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pectoration, ſweet and pinguious pectoral Syrups, incraſſating Subſtances, and Preparations of Honey, are requiſite; by the immoderate Uſe of which, however, we deſtroy not only the Tone of the Lungs, but, alſo, that of the Stomach; and by that means produce a larger Quantity of Crudities, and a greater Congeſtion of Humours in the Breaſt. The ſlow, drying, hectic Heat requires Diluents, moiſtening Liquors, and Milk; which, however, in a moiſt Cough, increaſe the Afflux of the Humours to the Breaſt. The ſordid putrid Ulcers require balſamic reſinous Medicines, ſuch as Myrrh, *Venice* Turpentine, Balſam of Capivi, *Peruvian* Balſam, and the other conſolidating and vulnerary Balſams; which, however, by increaſing the inteſtine Motion and Heat of the Fluids, generally produce bad Effects.

We find the ſame Difficulty in thoſe uneaſy, and almoſt convulſive Commotions of the Breaſt, which, in long and violent Coughs, are excited by the Acrimony of the Humours; for theſe require to be alleviated by Anodynes, Preparations of Poppies, oleous and ſomniferous Subſtances; which, however, when frequently exhibited, ſurpriſingly deſtroy the Strength: The corroded, diſſolved, and ulcerated vaſcular Subſtance of the Lungs requires conſolidating and gently aſtringent Medicines; but ſince they retain in the Habit the extravaſated Humours, which ought to be eliminated, and ſuppreſs Expectoration, they, by theſe means, increaſe the Corruption: Beſides, if any one intends the Conſolidation of Ulcers, he ought to prevent the Afflux of the Humours to the Part affected; which is obtain'd both by vulnerary Subſtances, and Decoctions of the Woods, and by Powders compoſed of *Armenian* Bole, Sealed Earth, and Blood-ſtone; but, when there are Tophs, Tubercles, and Indurations of the Lungs, theſe are enlarged by ſuch Medicines. In order to extinguiſh the hectic Heat, nothing is more beneficial and efficacious, than the nitrous Powders: But even theſe do not at all times produce the deſired Effect; ſince they readily prove purgative, and leſſen the Syſtaltic Force of the Stomach and Inteſtines. Milk is, alſo, of ſingular Efficacy in the Cure of theſe Diſorders: Yet, in young and plethoric Habits of Body, where there is a beginning Phthiſis, and many acid Crudities, accompanied with a ſlow Fever, I have often obſerved it highly prejudicial.

As Veneſection is highly uſeful, not only for the Cure of a beginning Phthiſis, but, alſo, for preventing it in young Perſons, ſo it is very improper, with a curative Intention, when the Strength is greatly exhauſted by the Diſeaſe, and the Heat; unleſs, perhaps, we ſhould take away an Ounce, or an Ounce and an half, of Blood, for the ſake of Ventilation. Draſtic Purgatives, ſuch as Preparations of Aloes, Scammony, and Hellebore, but more eſpecially Emetics, are highly prejudicial, not only by impairing the Strength, but, alſo, by carrying off the temperate Moiſture of the Body: Hence, when the Humours are to be derived from the Breaſt, and gently evacuated by Stool, theſe Ends are moſt commodiouſly obtain'd by Laxatives prepared of Manna, Tamarinds, Rhubarb, Agaric, and Sena-leaves: But if, when exhibited in a ſmall Doſe, theſe ſhould not be ſufficient for diminiſhing the Redundance of Humours, or if the groſs and viſcid Humours, which obſtruct the minute Veſſels, are to be reſolved and eliminated, we may, inſtead of theſe, ſubſtitute the Pilulæ de Succino Cratonis, or Pills prepared of Gum Ammoniac, Saffron, Mercurius Dulcis, Extract of Rhubarb, and Aloes.

Motion and Exerciſe, and eſpecially Riding, is highly commended for the Cure of a Phthiſis and Hectic, by the moſt ſkilful Phyſicians, both antient and modern. But in the Beginning of the Diſorder, where the Patient is young, and the Habit plethoric, it often does more Harm than Good, by exciting a Spitting of Blood. Nor is it expedient, where the Lungs are violently injured, and a Vomica is ſuſpected, ſince, by the briſk Motion of the Horſe or Chariot, a fatal Inflammation may readily be brought on. But 'tis far otherwiſe in hypochondriac Conſumptions, in which moderate and often repeated Exerciſe is highly beneficial.

The more temperate, pure, and ſerene the Air is, the more beneficial it is to Phthiſical Patients; for a moiſt Intemperature of the Atmoſphere is ſurpriſingly injurious to the Lungs, which are already relaxed, tumid, and infarcted. 'Tis, alſo, highly expedient, to impregnate the Air ſurrounding the Patient, with the balſamic Particles ariſing from Fumigations of Maſtich and Amber; or to render the Air drawn in balſamic, by holding a Piece of the beſt Myrrh in the Mouth, till it is diſſolved by the Saliva.

Since the Beginning of a Phthiſical Exulceration is frequently produced by a ſaline Catarrh, or a certain acrid cauſtic Matter, convey'd, by Tranſlation, from other Parts to the Lungs, in order to derive this Afflux elſewhere, and evacuate the Humours, we may ſafely and advantageouſly uſe the actual Cautery; by the Application of which, between the Scapulæ, and in the Neck, we read of an imminent Phthiſis happily removed, in *Riverius*, in *Obſ. Cent.* 2. *Obſ.* 67. 78. *Cent.* *Obſ.* 92. and in *Schenkius*, *Obſ.* 56.

In order the more effectually to inſtitute the Cure of a Phthiſis by Milk, either alone, or mixed with mineral Waters, the following Cautions are to be obſerved:

1. We ought diligently to inquire, whether the Strength of the Stomach is ſufficient to digeſt, and again expel, this Species of Medicine.

2. 'Tis expedient, that, before the Uſe of the Milk, the Primæ Viæ ſhould be well cleanſed from viſcid and acid Humours; which Intention is moſt effectually anſwer'd by a laxative Infuſion of Manna, whoſe Virtue is augmented by the Addition of a ſufficient Quantity of Tartar.

3. On the firſt Days, it is expedient, every Morning about ſix or ſeven, and every Afternoon about five o'Clock, to drink ſix or eight Ounces of Womens, or Aſſes Milk, and afterwards gradually to increaſe the Quantity.

4. After the Patient has for ſix or eight Days drank the Milk in this manner, a gently laxative Medicine, and ſuch as has a Tendency to evacuate the Sordes, is to be interpoſed, and repeated every ſixth Day.

5. He ought never to uſe Wine, nor Malt-liquors, for Drink, but rather Ptiſans of Barley, Hartſhorn, and Citron-peel. He muſt, alſo, carefully abſtain from Aliments of hard Digeſtion, and ſuch as generate bad Juices. On the contrary, Broths prepared of Tortoiſes, Cray-fiſh, Veal, Fowls, Lettuce, and Garden Succory, are of ſingular Service.

6. In order to augment the concoctive Force of the Stomach, which in a Phthiſis is very languid, 'tis expedient, between Meals, to exhibit ſome balſamic, pectoral, and ſtomachic Elixir, ſuch as that made of the beſt Myrrh, Saffron, Nutmegs, Orange-peel, Marſh-trefoil, and Liquorice-root.

In thoſe exceſſive and colliquative Sweats, which, in phthiſical and hectic Diſorders, exhauſt the Strength, beſides Whey and Emulſions, the Species de Hyacintho, mixed with a ſmall Quantity of Nitre, and half a Grain of Laudanum Opiatum for a Doſe, afford ſingular Relief. But, if, in conſequence of the Violence of the Cough, by which the Maſs of Blood and Humours is greatly exagitated, an exceſſive Profuſion of Sweat ſhould be produced, a gentle and corrected Opiate, ſuch as the Pilulæ de Styrace, or the Pilulæ Wildeganſii, may be commodiouſly exhibited with ſome temperating Powder, ſince, by removing the Cough, it checks and leſſens the Sweats. But, if, beſides the Cough, a colliquative Heat of the Blood ſhould, alſo, prove the Cauſe of the Sweat, *Morton* and *Pitcairn* are not afraid to preſcribe the *Peruvian* Bark, with one Grain of Laudanum Opiatum. *Hoffman.*

If an Ulcer has ſo corroded the Subſtance of the Lungs, that the whole Habit of the Body is by that means waſted and conſumed, the Patient is ſaid to labour under a Pulmonary Phthiſis, or Conſumption of the Lungs.

The Origin of ſuch an Ulcer may be deduced from any Cauſe capable of ſo ſtopping and detaining the Blood in the Lungs, that it muſt neceſſarily degenerate into a purulent Matter.

Theſe Cauſes may be reduced,

1. To that very Habit and Temperament of Body, in conſequence of which, the Patients firſt begin to ſpit Blood, and are afterwards afflicted with an Eroſion and Exulceration of the Lungs. This Habit or Temperament of Body conſiſts, firſt, in the Tenderneſs of the arterial Veſſels, and the Impulſe of the Blood, when in any Degree acrimonious. Such a Conſtitution is known by the Sight of the ſmall and tender Veſſels, and of the whole Body; by the Length of the Neck; a flat and narrow Thorax; depreſſed Scapulæ; an highly red, thin, diſſolved, acrid, and hot Blood; a very white, and ſometimes a roſy blooming Complexion; a bright and ſhining Skin, Chearfulneſs of Temper, and an early Ripeneſs and Subtilty of Genius. Secondly, in ſuch a Weakneſs of the Viſcera, as to occaſion thoſe Aliments, which are in their own Nature too tenacious to create Obſtructions, Putrefactions, and Acrimony; and in conſequence of theſe unhappy Circumſtances, to exulcerate the corroded Veſſels after a previous Spitting of Blood. This Weakneſs of the Veſſels is known by a ſlight Fever, a dry and gentle Cough, a preternatural Heat, an increaſed Redneſs of the Lips, Fauces, and Cheeks, appearing about the time the new Chyle enters the Maſs of Blood; by a Propenſity to Sweat, during Sleep; by a Weakneſs and great Difficulty of Breathing upon the ſmalleſt Motion. Thirdly, it appears at that Age, when the Veſſels, having acquired their full Growth, reſiſt the farther Efforts of the Fluids to lengthen them, whilſt the Blood, in the mean time, is increaſed in Quantity, Acrimony, and Impetus; ſo that it appears between the ſixteenth and thirty-ſixth Year of the Patient's Age, and earlier in Girls than in Boys; becauſe the former ſooner arrive at

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at their full Growth, than the latter. Fourthly, in an hereditary Diſpoſition to the Diſorder: What is ſaid under the Article FIBRA, compared with the Circumſtances juſt now mentioned, are ſufficient to explain, aſcertain, and prognoſticate the Nature, Cauſes, and Effects of Blood-ſpitting. Now, this Effect, or a Spitting of Blood, is brought on, and accelerated,

1. By an Interception of the uſual Evacuations, eſpecially of Blood, ſuch as the Hæmorrhoids, Menſes, or Lochia; a Suppreſſion of Hæmorrhages of the Noſe, and Neglect of uſual Veneſection, eſpecially in plethoric Habits, and thoſe who have loſt any of their Limbs.

2. By any great Violence or Force apply'd to the Lungs in Coughing, Crying, Singing, Running, violent Efforts of the Body, Anger, or any Wound inflicted, by whatever Cauſe or Inſtrument.

3. By acrid, ſaline, or aromatic Aliments; by Drink of the like Qualities; by a particular Manner of living, or by any other Diſeaſe, which have a Tendency to increaſe the Quantity, Acrimony, Velocity, Rarefaction, and Heat of the Blood. Hence it is, that this Symptom happens ſo frequently after acute Fevers, the Plague, the Small-pox, and Scurvy.

Hence it ariſes accompanied with a ſlight Pain, a moderate Heat, a Difficulty of Breathing, and an Oppreſſion of the Thorax. The Blood diſcharged from the Lungs is generally florid, ſcarlet-coloured, and frothy, full of ſmall Fibres, Membranes, arterial, venous, or bronchial Veſſels; a Cough, a Noiſe, or Rattling of the Lungs, a ſoft, ſmall, and undulating Pulſe, a Difficulty of Breathing, and a ſaltiſh Taſte in the Mouth, having preceded.

It is cured, firſt, by liberal Veneſection, repeated every third Day, for four times, till the inflammatory Cruſt entirely diſappears. Secondly, by refrigerating, inſpiſſating, ſtyptic, and lenient Medicines, long perſiſted in, and ſometimes intermixed with very mild Balſamics. Thirdly, by managing the ſix Non-naturals in ſuch a manner, as that they may be contrary to the Cauſes of the Diſorder already enumerated; and eſpecially by a moderate Regimen, and mild Aliments, continually perſiſted in, to which a Milk-diet peculiarly belongs. And, fourthly, by correcting the ſpecific Nature of the Cauſe, or particular Diſeaſe, which has produced it.

When a Spitting of Blood has happen'd, and is removed, the Patient is to have Blood taken from him every ſix Months for ſome ſucceeding Years; but the Quantity is to be gradually leſſen'd each time, that at laſt the Practice may be left off, without any Detriment.

But, if, in conſequence of the Violence of the Diſorder, the preposterous Uſe of Styptics, or a Neglect of the Method of Cure already preſcribed, there ſhould, after the Spitting of Blood, ariſe a continually increaſing Difficulty of Breathing, a wandering Horror, an Heat and Redneſs of the Cheeks, a dry and gentle Cough, a ſlight hectic Fever, a preternatural Thirſt, a Weakneſs and Senſe of Weight in the Thorax; theſe Symptoms import, that the Wound from which the Blood was expectorated, has already begun to change the Matter collected about its Lips, and under the Cruſt of dried Blood, into Pus; and this Collection is degenerating into a conceal'd Vomica, which, breaking, terminates in an open Ulcer of the Lungs.

This Collection of Matter, beſides the Cauſes already mentioned, alſo, ariſes from any Peripneumony terminating in an Apoſtem; which may be known from the Signs ſpecified under the Article PERIPNEUMONIA.

Beſides, an Empyema may corrode, waſte, and conſume the Lungs; in which Caſe, the ſame Diſeaſe is produced with that occaſioned by an Ulcer primarily formed in their Subſtance. This is known to be the Caſe by the Signs ſpecified under the Article EMPYEMA.

Hence 'tis obvious, what Signs diſcover an Ulcer of the Lungs, even of the conceal'd Kind; how many Cauſes and Sorts there are of ſuch Ulcers; and conſequently, how many different Kinds of Phthiſes, or Conſumptions, there may be.

Now the Effects of an Ulcer of the Lungs already formed, but concealed, and commonly called a *Vomica*, are generally theſe following: The Acrimony, Quantity, and Putrefaction of the Pus, are daily increaſed; the Membrane containing it is dilated, corroded, and macerated; the Blood-veſſels, and thoſe of the Bronchia, are converted into Pus; the whole Subſtance of the Lungs, or at leaſt, of one of their Lobes, is converted into a purulent Matter; the Patient is afflicted with a continual dry Cough, or ſuch an one as, only by the Concuſſion in Coughing, produces an Abraſion and Expectoration of the Spit; the Blood convey'd into the Ulcer, is converted into Pus; the Vomica in the Lungs ſpreads, and is propagated; then it breaks at laſt into the Ducts of the Larynx. Sometimes there is a ſuffocating Secretion, and ſometimes a daily and copious Expectoration, accompanied with a Cough of a Pus, which ſubſides in Water, is of a thick Conſiſtence, ſweet, pinguious, fetid, white, red, yellow, livid, cineritious, full of Strigments, and which, when put upon a live Coal, ſmells like ſtale roaſted Fleſh. Then the Vomica breaks into the Cavity of the Thorax. Hence the Reſpiration becomes highly difficult, and the Symptoms of an Empyema appear. Then the Reſpiration is moſt difficult; the whole Blood and Chyle are converted into Pus; the Preparation of the nutritive Juice is totally deſtroy'd; the Solids are almoſt totally conſumed; there is an hectic Fever, accompanied with a ſmall and languid Pulſe; an intenſe Heat of the ſuperior Parts; an Hippocratic Face, and a Redneſs of the Cheeks. There is an unaccountable Uneaſineſs, eſpecially towards the Evening, a preternatural Thirſt, profuſe Sweats in the Night, red Puſtules on the Face, Neck, and Breaſt, œdematous Swellings of the Hands and Feet, great Weakneſs, Hoarſeneſs of the Voice, a Falling of the Hairs, an Itching all over the Body, accompanied with watery Puſtules, a Griping, a frequent and weakening Diarrhœa, the Stools diſcharged in which are yellow, fetid, purulent, and cadaverous; a Suppreſſion of the Spit; and at laſt, Death.

Hence we may draw the following Rules:

1. An hereditary Phthiſis is the worſt of all, and not to be cured, but by preventing a Spitting of Blood.

2. A Phthiſis, ariſing from a Spitting of Blood, produced by external Cauſes, without any previous inward Defect, is, of all others, the mildeſt, if all other Circumſtances are alike.

3. A Phthiſis, in which the Vomica is ſuddenly broken, and the expectorated Pus white, well concocted, ſmooth, and in Quantity correſponding to the Largeneſs of the Ulcer, without Thirſt, but with a good Appetite, due Digeſtion, laudable Secretion and Excretion, is curable, though with Difficulty.

4. A Phthiſis, produced by an Empyema, is incurable: And,

5. A Phthiſis, accompanied with an Expectoration of heavy, ſolid, fetid, ſweet Spit, together with the Symptoms laſt enumerated, is to be deſpaired of.

When a Vomica is already formed in the Lungs, the Intention of the Phyſician ought to be, to maturate and break it with all Expedition; which is done by a Milk-diet, Riding on Horſeback, tepid Steams, and expectorating Medicines: And, when it is broken, it is requiſite,

1. To guard and defend the Blood againſt the purulent Contagion.

2. As ſoon as poſſible, to evacuate the Pus from the Ulcer, and to cleanſe and conſolidate its Lips. And,

3. To uſe ſuch Aliments as are of eaſy Digeſtion, that they may not only paſs through, but, alſo, be changed and duly aſſimilated by the remaining Force of the Lungs. They ought, nevertheleſs, to be capable of nouriſhing the Body, and unfit for generating new Pus.

The firſt of theſe Intentions is anſwer'd by mild and grateful acid and ſaline Medicines, vulnerary Herbs, and mild Balſamics exhibited in all Forms, in large Doſes, and long perſiſted in.

The ſecond Intention is anſwered by liquid and diuretic Medicines; together with ſuch as promote Coughing, whether internal or external; by Exerciſe, Riding, and the Country Air, which expel the Pus; by Abſtergents, and Balſamics, both internal and external, which depurate; and, laſtly, by conſolidatory Paregorics. And,

The third Intention is anſwer'd by Ptiſans, Broths, and a Milk-diet.

The palliative Cure of a Phthiſis principally regards the Cough, the Oppreſſions, and the Flux: And

Theſe Symptoms are remov'd by a proper Regimen, Opiates cautiouſly exhibited, and proper warm Liquors.

As a Phthiſis is moſt generally produced by an Ulcer of the Lungs, ſo it may ſometimes ariſe from an Ulcer of ſome of the other Viſcera, ſuch as the Liver, Spleen, Pancreas, Meſentery, Kidneys, Uterus, and Bladder; the Knowledge, Prognoſtics, Effects, total and palliative Cures of which may eaſily be deduced from what has been ſaid, by the Phyſician who knows the natural Effects of each particular Bowel. *Boerhaav. Inſtitut.*

The following Obſervations of Dr. *Bennet*, relative to the Subject of this Article, are of Importance ſufficient to deſerve Notice.

Omitting all Conſideration of that Moiſture, which, when it ſuperabounds in the Stomach, by the Aſſiſtance of the Oeſophagus, and the Membrane common to that and the Tongue, flows into the Mouth without Coughing or Hauking; as, alſo, that Rheum which ouſes out of the capillary Arteries, and their Coats, from the Brain upon the Palate, and ejected with the ſame Eaſe, the Nature of that Expectoration is to be examined, which proves injurious to the Breaſt. This is nothing elſe than a Portion of Fluid derived from the Blood by Suffuſion into the Cavity of the Thorax through the pectoral Arteries, and thrown up through the Trachea into the Mouth, in order to its final Ejectment, by the contractile Motion of the Lungs, either in

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in Coughing or Hauking. As the Blood, therefore, is conſtituted in Conformity to its Aliment, ſo the Matter of this Excretion is as the Blood, from which it is derived. The Truth of this will appear, upon conſidering the Manner of this Excretion, and the Largeneſs of its Quantity, in thoſe who are not troubled with a Defluxion from the Brain upon the Trachea.

Whoever ſhall uſe proper Medicines for purifying the Blood, although Pectorals be omitted, yet the Matter expectorated will become better, in proportion to the Rectification of the Maſs of Blood. Thus, when the State and Colour of the Matter is bad, if ſuch Sweats be promoted, as ſerve to clear the Blood from its Impurities, the Matter brought up will mend, in Conformity to the Blood's Depuration.

That the Pulmonary Artery, with its Ramifications, receives the Recrements of the Blood, and thence detaches them into the Branches of the Windpipe, is a matter beyond all Diſpute: Some are more, and ſome leſs, affected with this Lodgment, according to its Nature and Quantity; and ſooner or later diſcharge it by Expectoration; according to the Circumſtances of its Adheſion. Every body has not the ſame Freedom in the Organs of Breathing: Some are fatigued with a ſevere Cough without any Expectoration; whilſt others, with a ſlight Hauking or Coughing, diſcharge the irritating Matter. Some have it ſo much diluted with *Ichor* or *Serum*, that the Lungs endeavour in vain to bring it up; others have the Defluxion ſo hardened into Clots, that it yields with great Difficulty. Some, through a cold Laxity of the Breaſt, can evacuate but little Matter; while others, of a firmer and warmer Conſtitution in the ſame Parts, diſcharge it with little Uneaſineſs. Some, by the Freedom of the Motion of the Lungs, when they do not adhere to the adjacent Parts, eaſily expel the Matter, while others, either through Plenitude or Conſtriction, natural or adventitious, have ſuch a Diſlodgment either retarded, or rendered impracticable.

In Expectoration, the Matter that ſettles about the upper Parts of the Trachea, is evacuated with little Labour of Hawking and Coughing; but what is deeply ſituated is with great Difficulty expelled.

Matter of a moderate Conſiſtence is eaſily expectorated; but when it is too thin, or formed into hard Clots, it is not diſlodged without great Trouble and Difficulty.

Nature then carefully conſults her own Security, when the Matter, in Phthiſical Patients of a more healthy Conſtitution, is ſupplied from the Blood, and when the Times of Formation and Expulſion are determined. For, when crude, it cannot be naturally or ſpontaneouſly diſcharged; but it is prepared for Evacuation, when it comes to Maturity, and is, as it were, ſhaped to the Capacity of the Veſſels, through which it is to paſs. Thoſe who are accuſtomed to this ſort of Expectoration, are under the ſalutary Directions of Nature, to which the Means are to be accommodated; but if the Matter be interrupted in its Courſe, ſo that it does not proceed according to the Inclinations of Nature, it occaſions a Neceſſity for more vigorous Efforts. The Treatment, therefore, of ſuch Patients is a Matter of great Importance.

Whoever attempts to haſten Expectoration by violent Exerciſe, or any voluntary Anticipations of Hawkings, extremely fatigues the Contents of the Thorax; when Nature at her appointed Time would eaſily have relieved them. Thoſe who expectorate the Rheum freely and copiouſly, will ſoon find themſelves eaſed of the Burden upon the Lungs. On the contrary, at the Beginning of a Cough, every thing is difficult and fatiguing; but in its Progreſs, as the Matter ripens, every thing becomes eaſier.

In my Opinion, the white frothy Spit is produced by a thin ſort of Rheum, ouſed out into the Lungs or Fauces, and there agitated. For a Defluxion, proceeding from a Coldneſs of the Brain, is thicker, and, unleſs it be retained and agitated ſome time in the Mouth, is not ſo white, is more mucous, and froths not up ſo much into Bubbles; whence it ſeldom or never hurts the Lungs; but, if it froths, I believe it proceeds from ſome Motion of the Parts, from Heat, and a Mixture of Air. Beſides, if this Matter riſes unmixed, it indicates no more, than that there is ſome internal Exſudation, occaſioned by a more vigorous Action of the Parts than uſual.

A frothy Spittle is increaſed by Exerciſe, in thoſe eſpecially who perſpire but little; and that the Motion of the Mouth and Lungs conduces to it, is manifeſt, becauſe it always happens to thoſe who cough or talk much.

This Spittle is very light, conſiſting principally of a watery Pellicle inflated with Air.

Nature has given the ſame Laws to Plants, and to Animals; and, according to *Hippocrates*, implanted in both what is four, bitter, ſweet, ſalt, and of all Taſtes. Nor does the Microcoſm want its inſipid Fluids, a moderate Proportion of which is neceſſary to dilute the Blood; but, if a Superfluity be contained in the Veſſels, it loads the Conſtitution, as does that which is extravaſated, if it collects upon particular Parts, eſpecially the Organs of Reſpiration. But at preſent it is of no great Importance, whether ſuch inſipid Humidities collect in their proper Veſſels, or are thrown upon them after the Diſcharge of their proper Offices, ſo that they have been circulated with the Blood, and are found inſpiſſated upon Protruſion into the large Cavities of the Body. The Excretions, however, which conſiſt of a mild Humour, are more troubleſome than dangerous; but thoſe which do not readily paſs into the Trachea, in a liquid Conſiſtence, harden into a thick viſcid Conſiſtence, and are expectorated with great Difficulty.

A Lady of forty-ſeven Years of Age, fleſhy, but valetudinary, who had all the Capillaries in the Liver, Spleen, and Meſentery, obſtructed, was frequently affected with unequal Shiverings, attended with a Coldneſs, in one or other of the Parts, which ſeemed to her to reſemble the pouring on of cold Water; which Symptoms, notwithſtanding our Endeavours, continued; but when a Ptyaliſm, or Diarrhœa, aroſe, it then ceaſed. At laſt, after the Exhibition of ſome Cathartics, by ſweating in dry Baths, and a ſparing dry Diet, ſhe was quite cured.

In many Perſons, a thin Lymph ariſing from the Blood is at firſt copiouſly diſcharged upon the Trachea, upon which the Coldneſs will diſappear; but the Spit will then grow thick, pellucid, and be evacuated with violent Reaching. With this Matter we have often obſerved the Breaſt to be extremely obſtructed.

Pleuritic Patients, after the purulent Matter has been expectorated, caſt up Spit of this kind for ſome Days; and the more the other Veſſels are affected with it, the leſs will the Organs of Reſpiration be obſtructed by it; and not at all, when it is tranſlated upon the Bowels. I am of Opinion, that this Mucus, being unequally ſupplied from the Blood, ſerves in the place of Nouriſhment to thoſe who have the Rickets; and I take it for granted, that the ſame, ſtagnating in the Ureters, and hindering the Paſſage of Urine, regurgitates into the Stomach and Bowels, and occaſions Pains of the Back, Vomiting, Gripes, and a baſtard Iſchury. It is ſometimes to be obſerved, that the like Viſcoſity hinders the Circulation of the Blood, by lodging in the greater Veſſels. An Inſtance of this I once met with in a Child, who was taken off in the third Fit, it having obſtructed the Pulmonary Artery, or that which is called the Arteria Venoſa. Laſtly, if theſe thick Rheums are unequally depoſited upon ſome of the extreme Parts, they generate œdematous Swellings; but if upon the whole Habit, an univerſal *Oedema* or a *Leucophlegmatia*, and an *Anaſarca*, very difficult to be cured.

This Mucoſity, which is the Cauſe of obſtinate Obſtructions in the Bowels, increaſes in the Female Sex, or in Men of a cold Temperature; and even in a State of Recovery, where the natural Heat is defective, or is waſted, and grown languid, by the long Continuance of any Diſeaſe.

Of Yellow-coloured Spit.

Yellow Spit is probably derived from the bilious Juice, the Blood being ſo weakened before Secretion, that it is, at leaſt, deprived of its Taſte. Salts make Ulcers by Eroſion, ſo putrefying Bodies by penetrating, inciting, and raiſing the Parts into a Tumor; but I have always been of Opinion, that ſaline Serofities prepare the way for Putrefaction, by too much relaxing and ſoftening the Parts; but both together make an internal compound Ulcer, which cannot be cured without great Difficulty. It is not ſurpriſing, that a Fluid, otherwiſe thin, clear, and agreeable, while it flows in the Blood-veſſels, ſhould be changed into a yellow Colour; for, as the Blood, at its Source, and before it is diſtributed into its proper Veſſels, is deſtitute of Tincture and Conſiſtence, ſo the Spit, which is its Recrement, is changed by the Alteration of Heat in the Parts thro' which it paſſes, and retains no diſtinguiſhing Quality that it poſſeſſed, whilſt it was carried about in the Circulation. It is ſtill leſs ſurpriſing, that yellow Spit ſhould loſe its Taſte, when it has not only been blended with the whole Maſs of Blood, but ſtrained, alſo, thro' the fleſhy Subſtances of the Parts, and the Pores of the Membranes; for that Subſtance in which its Bitterneſs conſiſts, may not be able to penetrate through ſuch fine Strainers.

The whole Maſs of Blood is impregnated with Bile, or bitter Particles, which ſerve to preſerve it. However, no Part of that, or of any other Fluid of the Body, is ſo affected with Bitterneſs, as to communicate, by the Tongue and Palate, any conſiderable Senſation to the Nerves, except that Part ſecreted from the common Maſs, which is of a remarkable bitter Taſte, and is diſcharged in extreme Vomitings, when it is drained from its natural and appointed Receptacle.

In Phlebotomy, when the Blood happens to fall upon the Skin, it commonly feels hot; and yet the Heat of this Blood, whilſt

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whilſt in the Veſſels, might, as far as could be conjectured, be moderate and benign.

Once, in a diſſected Subject, I ſaw the Neck of the Gall-bladder filled with Tophs; but the Bladder itſelf was filled with a pellucid Lymph, ſtrained through thoſe Tophs, as through a Filtre of a thick Contexture. Theſe Tophs reſembled candied Coriander-ſeeds; but the Lymph was inſipid, and coagulated upon the Fire into a Mucilage like the White of an Egg.

Theſe yellow Excretions are not produced, except by a continued Incaleſcence of the Blood, or by an Heat concentrated by Cold, or from a Corruption or Redundance; which different Cauſes may be known by Phyſicians from the Nature of the Complaints of the Patient.

That ſome Portion of this yellow Humour penetrates through the Skin under the Arm-pits in ſweating, appears from the Linen.

The conſiſtent fleſhy Subſtance of none of the Viſcera could give the Blood its red Colour, without the Aſſiſtance of a proper Heat; but the Spit owes its Subſtance, and Variations of Colour, to the Blood, and Juices of the Viſcera, and alſo, to the Aliments. The moſt remarkable Sorts of Spit, that frequently occur, are the bluiſh, the ruſt-coloured, and blackiſh; which, are not, as many imagine, produced by what is drawn in with the Breath, either by the Noſtrils or Mouth; but from a Taint lodged in the Viſcera and Veſſels, and formed, perhaps, in the Spleen, its principal and peculiar Laboratory: This Taint, being received into the Blood, is expelled in the Courſe of Circulation. But I do not imagine, that it receives its deep Colour immediately, as it is diſcharged from the Veſſels; but as it muſt diſtil from the ſuſcipient Viſcera and Veſſels, where it condenſes, there it is endowed with its dark Tincture. However the Degrees of Heat, in themſelves, are not the effectual Cauſe of the different Colours; yet, where they increaſe or diminiſh, the Spit is more or leſs coloured. But for theſe Diverſities which I have enumerated, an Heat more gentle, but of longer Continuance, is requiſite.

Expoſe to the intenſe Heat of the Sun, or of a culinary Fire, a Portion of bluiſh Spit, and it will immediately change to a white Colour; which would not happen, if the bluiſh Colour proceeded from any Mixture of extraneous Particles, drawn in with the Breath. This bluiſh kind of Spit has, I believe, never been obſerved to be of a thin Conſiſtence, but always mucilaginous.

This Species of Expectoration is increaſed by exhibiting things that cool the Breaſt, as Barley and Apples; but is leſſened by the Uſe of ſudorific or mercurial Medicines. Thoſe, alſo, ſpit but little, whoſe natural Heat has been much exhauſted by long Sickneſs; thoſe who are accuſtomed to ſlender Diets, Exerciſe, and Faſting; thoſe who have the Breaſt of an hot Temperature, or who are much uſed to Smoaking; and thoſe who are agitated with frequent Coughing. Whence it appears, that the Matter of this ſort of Expectoration is formed by a more gentle Heat, and longer Concoction, and by a Breaſt of a cold flaccid Temperature.

I remember an Inſtance of this kind, in a middle-aged Woman, under a violent Catarrh, whoſe Spleen ſo filled the Head with noxious Vapours, that every Morning ſhe diſcharged a vaſt Quantity of a Ruſt-coloured Spit, which reſembled the Threads of a Cobweb; a Portion of which was ſometimes diverted, by the hot Catarrh, into the upper Part of the Aſpera Arteria; but, upon opening and deterging the Veſſels of the Spleen, both the Catarrh and Excretion ceaſed.

If the White of an Egg be long, though gently, kept warm, it will change its white into a bluiſh Colour.

At the End of a Fit of accidental Coughing, from Congeſtion, or of a thick periodical Expectoration, I have obſerved this ſort of Spit to riſe more white and depurated; and I have obſerved, that ſuch Kinds generally proceed from Diſorders of the Spleen or Womb; nor does the Mucus of the Noſe become diſcoloured from any other Cauſe.

Though a ſalt Spit is produced by a ſalt Blood, and may give ſome Commotion to the Humours, yet I imagine, that it ſeldom burſts the Membranes and Coats of the Veſſels by its inciſive Quality; but, after the Blood has ſtrained out its ſaline Serum, like a Dew, through the Membranes and Coats of the Breaſt, it occaſions a Cough, by ſtimulating the contractive Motion of the Lungs. By this ſudden Concuſſion and Contraction, the tender Parts, through which the ſaline Particles of the Blood are conveyed, being rendered weaker, are ſoon corroded. So that the ſaline Particle, lodged upon any of the Viſcera, does not immediately, like a Needle, penetrate the Part itſelf; but, by remaining long upon it, it diſſolves its Texture, and aſſimilates it to its own Nature; ſo that this Effect rather proceeds from a Power of Solution, than of Inciſion; for, by inſinuating into the very Subſtance of the Part, it is mixed and united with its moſt intimate Combinations, and ſo changes its Subſtance into a kind of middle State between Mixture and Diſſolution: When it has continued in this neutral State ſome time, it, at laſt, diſſolves, and is, by an induc'd Friability, entirely deſtroyed. Thus, if a ſaline Fluid be extravaſated, perhaps, like a Vapour, and depoſited upon a particular Part, by its penetrating Acrimony, it intimately unites with the Subſtance of the Part, and endangers its Corroſion and Diſſolution. And if the acid and ſaline Particles ſhould even be depoſited on the extreme Parts, great Trouble and Danger are occaſioned to the Patient.

Many whoſe pectoral Veſſels have been burſt by a turgeſcent Blood, perhaps of a ſaline Nature, have been cured by uſing Phlebotomy once or twice; but I have known none whoſe Lungs have been corroded, that could be recovered without an entire Edulcoration and Change of the Maſs of Blood.

Some have been affected with Luxations of the Vertebræ, by an acrid Defluxion upon the Spine; and I have, alſo, ſeen the Joints of other Bones diſtorted by the ſame Means. But if the Qualities of the Fluxion are entirely offenſive to Nature, as in the Venereal Diſeaſe, Protuberances will be raiſed on the Bones, eſpecially the Tibia; and they will be entirely render'd friable, ſpongious, and ſoft. The ſame Caſe happens in the Elephantiaſis. And, if we may believe ſome, the Bones are ſo diſſolved, as to become flexible, like Wax.

I have ſeen many almoſt entirely emaciated, whoſe whole Maſs of Blood abounded with Salt; and who uſed, periodically, to expectorate a briny Matter, diſcharged into the Breaſt from the pulmonary Veins, which, however, has not corroded the Lungs. Among theſe, I knew a Merchant of *London* almoſt reduced to a Skeleton, in whom the ſaline Matter was tranſlated from the Lungs into the Palms of the Hands, Feet, and Ancles, where it produced moſt malignant conſuming Ulcers, whilſt the Lungs continued entire.

I have, more than once, ſeen the conſtituent Subſtance of the Lungs ſo uniformly diſſolved, that they ſeem'd reduced into a kind of putrid Mud.

I have, alſo, met with Patients, whoſe Lungs have been torn away in pieces, by a ſharp and unequal Corroſion; and appear'd, upon Diſſection, as if they had been gnaw'd by a Rat. A redundant Acrimony of the Blood, which is frequent in melancholic Habits, not only occaſions a general Tenderneſs, but expoſes the Parts to ſuffer by external Injuries, and deſtroys the Nouriſhment of the muſcular Fleſh. And the Rheumatiſm, which is nearly related to the Gout, both in its Cauſes and Seat, produce very intenſe Pains.

The conſtituent Matter of all Spit is different, and aſſumes various Appearances, according to the Part from which it derives its Source; for the Serum of the Blood is not the only Matter which is tranſlated into the Cavity of the Thorax, but, ſometimes, that dewy Subſtance, which is deſtined for Adheſion and Nouriſhment, riſes into the Mouth. The Blood is firſt deprived of its thin Serum, and thereby becomes heated; and the Increaſe of this Heat throws its more glutinous Parts upon the Lungs, which have been already relax'd and weaken'd by the Tranſlation of watery Humours; and Patients, in this Situation, are, I think, in the greateſt Danger. For Nature greedily embraces this Juice, till her attractive and aſſimilating Qualities are entirely loſt.

When I practiſed at *Briſtol*, where Conſumptions are very frequent, I met with ſome who eaſily expectorated a ſweet Spit for three Months together, and were totally waſted and enervated: Some of theſe were ſeized with a violent Cough; and, having entirely loſt their vital Moiſture, they expired, pale, dry, and entirely emaciated. In one Inſtance of this Kind, who, for our Information, was open'd, and who, ſometimes, expectorated Blood after the ſaline Excretions of Spit, the Lungs had entirely loſt their Tone; and yet the other Organs of Reſpiration, and all the Viſcera, were ſound to Appearance. Nor is this ſurpriſing to thoſe who know how unfit Blood, that is too much attenuated, is for Nutrition; or who have obſerved too much, colliquated and rarefied by intenſe Heat, flow through the capillary Arteries, particularly of the Noſe, and produce Fainting. For it is inevitable Deſtruction to the animal Oeconomy to deprive it of that contemperating glutinous Juice, which, by a moderate Warmth, gives a due Smoothneſs and Conſiſtence to the whole Maſs.

This ſweet Spit, in all the Patients that I remember to have ſeen, happens after a tedious and generally ſaline Ptyaliſm.

This Spit, put upon the Fire, becomes of the Conſiſtence of a white Gelly, like other nutritious Juices.

Of all ſorts of Spit, the moſt vapid and feculent is of a cineritious dirty Colour, like moiſt Clay, which is, alſo, the leaſt adheſive, that is excreted by conſumptive Perſons, and is a Symptom of the Defect of natural Heat, and of the Approach of Death. All the other Sorts are, in ſome meaſure, affected by Warmth, and from it derive their Figures and Conſiſtences; this only ſtagnating in its Lodgments, can ſcarcely be expectorated unleſs forced up by the Greatneſs of its Quantity; it is produc'd by extreme Corruption, and natural Decay.

If you fill two Acorn Cups, of equal Bigneſs and Weight, one with the dirty Spit, and the other with any other Species, the dirty Spit will weigh down the other, as it is heavier than any of the other Sorts.

This

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This Clay-like Spit happens only to those who are hastening to their latter End, and are out of all Hopes: Their Lungs, upon Dissection, have been found only a Mass of stinking Corruption. *Bennet. Theat. Tabid.*

OBSERVATIONS RELATING TO THE DIAGNOSTIC SIGNS.

The Approach of this Distemper may be discovered, when the saline Blood is carried towards the Breast with a slower or quicker Motion.

Its slower Afflux is discernible,

1. By bloody and saline Spittings, at stated Periods, about four, five, or six, in the Morning, or Afternoon, sooner or later, and more or less, according to the Irritations they occasion, or as they are determined by the Exercise of the Body. That which is inspissated out of the Vessels, is not excreted at the accustomed Periods, because they abound in the Body at those Times, as is the common Opinion of Physicians; but because, in some measure, it transpires through the Skin, while the thicker Parts are deriv'd to the larger Vessels.

2. By more frequent Spitting and Hauking.

3. By an Interception of the cutaneous and other Excretions.

4. By Spit of a light unequal Substance.

5. By globular Spit convolved like Hail-stones, and expel'd at the above-mention'd Hours, by sudden Coughing or Hawking.

6. The Truth of these Symptoms is confirmed, when, from any Cause, there happens a Defluxion of a saline Matter upon the Joints or Extremities of the Body, and the Breath in that time gets Strength.

More violent and copious Affluxes are known,

1. By a more plentiful Expectoration of frothy Blood of a Clay-colour, with Hauking and Coughing, less painful, if from the Lungs; but of a blackish or reddish Colour, if from the Cavity of the Thorax; if from the great Arteries, it is attended with regurgitating Repletions of the Mouth at Intervals; but gradually, and with a Sense of Titillation, if from the Fibres.

2. By an heavy Pain in the Breast, which is periodically pungent.

3. By a periodical Difficulty of Breathing.

4. By a manifest Relief of the other Parts.

The Signs of a Phthisis from a thick and cold Phlegm, falling from the Head, and collecting in the Breast, is apparent, when the like Matter being secreted, in some manner, at the Extremities of the Carotid Arteries, and contaminated by a cold Brain, makes its Way into the Aspera Arteria, which is always accompanied with the Discharge of a similar Matter into the Thorax from the common Vessels; of which a distinguishing Symptom is an Erection or Opening of the Larynx, with its alternate Closure, or falling again, and causing a Sound like the Ticking of a Watch beating Seconds, to which daily are joined the following Symptoms.

1. A Torpor of the Spirits.

2. An Heaviness of the Head, with Pain, increasing periodically at the full Moon.

3. Longer Sleeps, with Dreams of Drowning.

4. A general Coldness of Temperature.

5. The Pores contracted with Cold.

6. A Flaccidity of the Lungs, and all the pectoral Muscles, and a slow Expectoration, which is known by a frequent Endeavour to hauk up something in vain.

7. A thicker Spit, which is easily evacuated after a good Meal, when the Breast has been warmed with suitable Food.

8. An heavy and oppressive Pain of the Breast.

9. A Cough which, at Intervals, threatens Suffocation, and is aggravated by Exercise, and drinking cold Liquors.

10. A frequent Difficulty of breathing.

11. A Catarrh slowly, but continually, moistening the Aspera Arteria.

12. Difficult Expectoration in a cold Air, but a Readiness to sweat.

13. The Flesh becomes flaccid and soft in a moist State of the Air, and hardens in dry Weather; which is a Symptom that almost always attends a consumptive Patient. Whence,

14. A Disposition to be affected with every Inclemency of Air or Wind; the moist, or cold, being most injurious.

The Signs of a Phthisical Consumption, from what Source soever derived, but deeply rooted, and eluding all the Art of Medicine, with regard to a perfect Cure, are,

1. A severe Cough, the Violence of which streaks the Spit with Blood; then a nasty Pus of a cineritious Colour, which, put into Water, easily mixes with it, and falls to the Bottom; there are, also, expectorated Fragments torn off from the Lungs themselves, the Vessels, and Membranes.

2. A fetid Breath, and the greatest Difficulty in Respiration.

3. A Pain of the Breast, and a pricking Soreness of the Nipples; especially in the time of Coughing.

4. A Defect in all the Functions.

5. A putrid Fever from the Blood, universally tainted by the Pus, and inducing preternatural Motions, as Fermentation. Whence the Fluids of the Body are discharged by colliquative Sweats, especially in the Morning.

6. A Diarrhœa, and at last, a Lientery, occasioned by a weak State of the Liver, and all the Parts subservient to Nutrition.

These are necessarily attended with,

7. A Driness of the Flesh, from the Defect of a due Degree of Moisture.

8. A Scurf upon the Extremities, and whole Epidermis, from the same Cause.

9. A Pain accompanied with Tension, in lying down on the Right or Left Side, occasion'd by the Adhesion of the Lungs to one Side or other of the Pleura.

10. A weak, small, and frequent Pulse, from a languid Motion of the Blood to the extreme Parts.

11. A shedding of the Hair, and the Nails dead-coloured and hooked.

To which, lastly, may be added,

The *Facies Hippocratica*, or the very Image of Death; the Face ghastly, the Eyes sunk, the Nose pinch'd, the Cheeks hollow, the Temples collapsed, and the whole Body stiff, and resembling a Skeleton.

A Fluxion, of whatever kind, from the whole Body into the Breast, is more dangerous than one from any particular Part.

A Fluxion from a Stagnation of the Blood, or a Diminution of its Motion near the Heart, is more dangerous than one proceeding from a more distant Part.

There is less Danger from Blood gushing by fits into the Breast, than when it flows slowly and constantly; for though there is a greater Flux upon a periodical Bleeding, there is a time of Refection.

Extravasation of Blood from Redundance and Tension is much more easily cured, than one proceeding from its Distemperature and Acrimony.

There is greater Danger to the Lungs from the Pressure occasioned by an Obstruction in the Liver, than from a Regurgitation by the broken Vessels.

If a Spitting be critical, and from Translation, it often goes off with Safety and Advantage.

Those who have had the Pulmonary Vessels continually enlarged, by the Afflux of Blood, and Expressions of viscid Matter, accompanied with an Asthma admitting of no Remissions, have mostly, either, by a Rupture of the Lungs, thrown up Blood into the *Trachea*, mixed with sordid Matter; or have died with a sudden Aggravation of the Asthma.

In all Fluxions, if, upon the Use of Remedies, the Intervals are lengthened, and Paroxysms remitted, it promises Recovery, and *vice versa*.

A larger Intermission, between milder Fits, is still more encouraging.

Phthisical Patients bear long, and easily, the Afflux and Expectoration of mild watery Humours; but of bilious Excretions, with Difficulty, and for a short time; but by a Discharge of thick, saline, fetid Matter, they are immediately destroyed.

From a Suffusion there is the greatest Danger, but from an Instillation the least.

Those who are crooked, and have had Limbs cut off, are most subject to Fluxions, and in greatest Danger from a Phthisis.

After the Spitting of Blood has ceased, if the Lungs are less sensible, or the torpid State of the Parts prevents a total Discharge, the Putrefaction of the retained Blood, and of the Lungs themselves, will endanger a Phthisis.

A free Respiration, a Cessation of Coughing, and a Continuance of Strength, after Bleeding, are good Symptoms, and *vice versa*.

If after Blood-spitting, a mucilaginous, blue, and light Spit succeeds, and if it continues, it foretels a Return of the *Hæmptysis* in young and hot Constitutions; but, if purulent, a Phthisis, both to Young and Old; if none at all, and other Circumstances be favourable also, it denotes Recovery.

Spitters of Blood are most uneasy in Snow, Hail, or Rain.

The Bronchia are least obstructed by an extravasated Blood, that putrefies; by a nutritious Juice, when it becomes mucilaginous, more; and mostly by Phlegm falling down the Trachea, if it be concocted into a tough Viscidity.

Lastly, if the Organs of Respiration retain Matter, of any Kind, long upon them, it forebodes a difficult Cure.

That Languor which slowly steals upon consumptive People, without any Decay of the Lungs, or other Bowels, is most dangerous to *English* Constitutions; and, unless Remedies immediately take Place, which they seldom do, is mortal.

A Phthisis which sinks a Person suddenly, when attended with Coldness of the Extremities, especially of the Feet, is most dangerous, although it does not so severely affect the Lungs; for it is a Symptom, that the nutritious Juice is very much vitiated, and the Strength exhausted.

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Phthisical Patients are in a most desperate State, who have stony and osseous Concretions of unequal Surfaces lodged upon their Lungs.

In those who are accustomed to Intemperance, if they are seized with a Phthisis productive of Languor, they are in the last Extremity of Danger.

A copious and frequent Flux of Matter upon a corroded Part is dangerous; for internal Ulcers are seldom cured when they emit a plentiful Discharge of Sanies, as those externally are hardly ever healed.

Persons of lax Habits, though they sooner droop and languish, yet they soonest feel the Benefit of Medicines, if they be timely applied at the Beginning of the Disease.

Those who are phthisically inclined, and frequently spit insipid Matter, are longer in wasting, although from the Beginning the Lungs were affected.

Those who labour under an hereditary Phthisis, though they are incurable, yet their Life may be of some Continuance.

The Lives of Phthisical Patients are prolong'd by frequent, but moderate, Hæmorrhages at the Nose.

The Danger of an Effusion of Blood from the Pulmonary Artery is lessened, when it is attended with an Hæmorrhage from the Nose.

If, after a protracted Phthisis, there appears a chylous Flux, it is a fatal Symptom.

If an Ephemera, or Hectic, often returns at unequal Periods, it indicates dismal Consequences.

When Phthisical Patients have a keen Appetite, and acquire no Strength from their Food, their Case is desperate; for it shews, that the vital Juice is degenerated to a corrosive Fluid.

When Virgins, who are pretty far advanced, but never had the menstrual Flux, are affected with a Phthisis from a Translation of the menstrual Matter to the Breast, it produces a most dismal Alteration, and a sudden Wasting, which are followed by Death.

If a Contraction of the Nostrils, a Straitness and Sinking in of the Breast, happen suddenly, they prognosticate immediate Death.

Oedematous Swellings of the Feet, in a Phthisis of long Duration, is a mortal Symptom.

Almost all Phthisical Patients perish, who are seized with a putrid or malignant Fever, occasioned by the Taint of the Matter lodged in the Breast.

When a freer Respiration is obtained by the Assistance of Remedies, and a Change of Air, then the Patient feels himself enlivened, his Strength is increas'd, and his Colour becomes florid; lastly, Health returns, and the vital Heat is rekindled all over the Body.

When, in Phthisical Patients, a copious Discharge of slimy and saline Sordes is procured by Cathartics, the Breast is greatly relieved, and there appear Hopes of a Recovery.

If Pectorals of a thin Substance, which stimulate, are exhibited in a long-continued Phthisis, without exciting a Cough, the Sign is fatal.

If, by the Assistance of Art, the Spit, which was variegated, be brought to one Colour; if from nasty it becomes depurated; if, from having an unequal Surface, it becomes smooth; from saline, insipid; from fetid, inodorous; and lastly, if it be easily expectorated; all these are Signs of Recovery. *Bennet Theat. Tabid.*

PHTHOE, φθόη. The same as PHTHISIS.

PHTHOIS, φθοῖς. A Pastil, or Troche.

PHTHORA, φθορά. Corruption. In *Hippocrates*, it imports a Miscarriage.

PHTHORIAS. An Epithet of a Medicine producing Abortion.

PHTHOROPOEOS, φθοροποιὸς. Deleterious, or destructive.

PHU. A Name for several Species of *Valeriana*. It generally imports the Garden *Valerian*.

PHUSCA, φῦσκα. The same as *Posca*. There are several compound *Poscas* describ'd by *Aetius*, *Tetrabib.* 1. *Serm.* 3. C. 80, 81. and by *Paulus Ægineta*, *L.* 7. *C.* 11.

PHYCIS, *Phycida*, *Fuca*, a Sea-fish resembling the Sea Perch, with a long sharp Snout, thick Head, large Teeth, and his Body covered with Scales. It is of several Species and Colours, and is taken among the Sea-weeds near the Shore, in the Sand and Mud, where it brings forth its Young; it is good to eat, and easy of Digestion; purifies the Blood, and provokes Urine. *Lemery des Drogues.*

PHYGETHLON, φύγεθλον, is a broad, but not much elevated Tumor, in which there is some Resemblance of a Pustule. The Pain and Distention with which it is attended, are violent, and greater than in proportion to the Bigness of the Tumor; and sometimes there is a small Fever. This Tumor is slow in ripening, and is not much converted into Pus; it generally rises in the Neck, in the Armpits, and in the Groins. Our Countrymen call it *Panus*, from some Similitude in its Figure [spoken with relation to *Panis*, a Loaf of Bread]. *Celsus*, *Lib.* 5. *Cap.* 28.

In the Account above given, *Celsus* describes a bilious Tumor, agreeably to what *Galen* says of it, *Lib.* 2. *ad Glauc.* "An inflammatory Erysipelas, or an erysipelatous Inflammation, is "called a *Phygethlon*." The same Author, in other Places, reckons this Tumor among Inflammations and Affections of the Glands; and distinguishes it from other Tumors by its Heat, and speedy Generation; and says it arises in the Armpits, and in the Groins, from an Inflammation of the indurated Glands in those Parts. *Foesius.*

PHYTICA. A Name for the ALATERNUS.

PHYLLIREA. The same as PHILLYREA.

PHYLLITIS. A Name for several Sorts of LINGUA CERVINA.

PHYLLON. A Name for the *Mercurialis*; *fruticosa*; *incana*; *testiculata.*

PHYMA, φῦμα, from φύομαι, to grow, or be generated from, in its general Signification, comprehends all Kinds of preternatural Tumors, in whatever Part of the Body they appear; and especially such as affect the external Parts, and Superficies of the Skin, and arise without an external Cause, and are generated, increased, inflamed, and suppurated, in a short Period of Time. *Galen*, *Com. in 6 Epid.* Agreeably to this Description, those Eruptions of Tubercles, which are generated of vicious Juices, and excited by an heated Blood, are called *Phymata*, 2 *Aph.* 15. 3 *Aph.* 20. and *Lib. de Alim. Phymata*, φύματα, are, also, Inflammations of the Glands, which suddenly break forth, and hasten to a Suppuration, *Gal. Lib.* 2. *ad Glauc. & Paulus*, *Lib.* 3. *Cap.* 22. and are reckoned among Affections and Inflammations of the Glands, *Lib. de Tum. præternat.* differing from a *Furunculus* only in Hardness. In *Prorrhet.* 2. we also we meet with τὰ χειρώδεα φύματα, "scrophulous Tumors," incident to Children. Φῦμα sometimes signifies an Abscess, or vitiated Juices lodged in some Part of the Body; as 4 *Aph.* 44, 45. & 7 *Aph.* 65. & *Coac.* 118. So *Celsus*, *Lib.* 2. *Cap.* 7. renders φύματα, from 4 *Aph.* 44. by *Abscessus.* Φῦμα, also, takes the Signification of ἐμπύημα, and every Inflammation which is converted into Pus, as 7 *Aph.* 8. according to *Galen*'s Comment on the Place. So we read of φύματα ἔμπυα, *Prorrhet.* 2. And, *Coac.* 404. we read of *Phymata* in the Lungs discharging Pus, which are opposed to hard and undigested *Phymata*. *Celsus* renders φύματα, sometimes, *orientia Tubercula*, and sometimes *Tubercula*, as in *Lib.* 5. *Cap.* 18. & 28. *Seneca de Beneficiis* renders φῦμα by *Tuber*, where he relates, that a Person had a *Tuber* opened by the Sword of a Tyrant, who aimed to take his Life. *Pliny*, relating the same Story, calls it *Vomica.*

PHYMATA, in *Celsus*, *Lib.* 2. *C.* 8. seems to imply a Caruncle in the Urethra.

PHYMOSIS. The same as PHIMOSIS; or as PHYMA. *Blancard.*

PHYMUS. The same as PHYMA. *Blancard.*

PHYPELLA. The same as PANUS.

PHYRAMA, φύραμα, from φυράω, to mix, is a Species of Ammoniacum, so called from its being mixed with Earth, Sand, and Gravel. *Gorræus.* See AMMONIACUM. But it signifies any Mass whatever, moistened with a Fluid, and worked.

PHYSA, PHYSE, φύσα, φύση, signifies a Flatus, or gross Wind in the Body, or the fetid Wind discharged by the Anus, according to *Erotian*, from several Places in the Aphorisms, and from 1 *Epid.* where we read of φύσαι σιγώδεες (*Physæ sigodes*) and ψοφώδεες (*psophodees*) Flatuses discharged with and without Noise; the Word bears the same Sense in the *Prognost.* and *Coac.* Φύσα, also, is very often used by *Hippocrates*, to signify a gross Wind, or Flatulence, collected in any Cavity of the Body. Thus, *Lib.* περὶ παθῶν, he says, that Meats, light of Digestion, generate no Flatulences (φύσας); and, *Lib. de Flatibus*, it is said, πνεύματα δὲ τὰ μὲν ἐν τοῖσι σώμασι φύσαι καλέονται, τὰ δὲ ἔξω τοῦ σώματος ἀήρ. "The Winds which are in Bodies, are called *Physæ*; those without the Body, Air."

PHYSALIS. The Hop, or rather its Flowers, which are boiled in Beer. It is, also, a Name for the ALKEKENGI. *Blancard.*

PHYSALOS. The Toad. *Blancard.*

PHYSEMA, φύσημα. The same as PHYSA. It, also, signifies the Resin of the Fir.

PHYSESIS. The same as PHYSA; that is, an Inflation.

PHYSICA REMEDIA are Remedies which do Service without any manifest Reason.

PHYSINX, φύσιγξ, is a little Bladder; but σκορόδου φύσιγξ, in *Hippocrates*, *Lib. de Fistulis*, is the Stalk or Stem of Garlick, which he uses instead of a Probe for searching the Depth of a Fistula. *Galen*, in his Exegesis, where we read φύσιγγα (*Physigra*) corruptly for φύσιγγα (*Physinga*), as, also, in *Varinus*, makes the *Physinx* to be what we call the Stalk, and especially its Cavity. The Scholiast of *Aristophanes* makes the *Physinx* to be the outer Rind of Garlick; and so does *Erotian*, on *Hippocrates*, contrary to *Galen*, tho' with relation to the same Place. *Hesychius* makes the *Physinx* a Species of Garlick, or an Head of Garlick: Whence some, by *Physinx*, in *Hippocrates*, understand an Head or Clove of Garlick, and expound it by a Probe with a Button at the End of it, in the Figure of a Clove of Garlick; but *Hippocrates*, in that Place, directs the Use of a fresh Stalk of Garlick in the Search of a Fistula. Some, for φύσιγγα, in the Exegesis, read φύσηνα, (*Physeta*) others φύσίξα (*Physitra*).

PHY-

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PHYSIOGNOMIA, φυσιογνωμία. The Art of judging of a Person's Nature, Fortune, or Disorders, by the Lineaments of his Face; from φύσις, Nature, and γινώσκω, to know.

PHYSIOLOGIA, φυσιολογία, from φύσις, Nature, and λέγω, to treat of Physiology. That Branch of Medicine, which considers Nature, with respect to the Cure of Diseases, particularly the human Body, its Parts, Structure, Health, Life, Functions, and Oeconomy.

PHYSOCELE, from φύσα, a Flatus; and κήλη, a Tumor. A Wind-rupture.

PHYSTE, φύστη. A Mass of Meal macerated, in a Vessel, in Wine, but not worked.

PHYTALIA, φυταλία. The latter Part of the Winter. But it, also, signifies, a Place where Vines are planted.

PHYTEUMA. A Name for the *Reseda*; *minor*; *vulgaris*.

PHYTOLACCA.

The Characters are;

The Flower is rosaceous, polypetalous, and disposed in Bunches; the Berry is soft, globular, and full of Seeds disposed in orbicular Order.

Boerhaave mentions two Species of *Phytolacca*; which are,

1. Phytolacca; Americana; majori fructu. *Tourn. Inst.* 299. *Boerh. Ind. A.* 2. 70. *Phytolacca* Offic. *Solanum racemosum Americanum.* Raii Hist. 1. 662. *Solanum magnum Virginianum rubrum.* Park. Theat. 347. *Solanum racemosum Indicum.* Hort. Reg. Par. 167. PORK-PHYSIC.

It was brought from *Virginia* and *New England*, and is cultivated with us in Gardens. The Leaves are used in Medicine, and esteemed an excellent Anodyne. *Dale.*

2. Phytolacca; Americana; fructu minori. *T.* 299. *Solanum Barbadense, racemosum, minus, tinctorium, Circææ foliis mollibus & incanis.* Plukn. Alm. 353. Phytogr. T. 112. Fig. 2. M. H. 3. 522. *Boerh. Ind. alt. Plant. Vol.* 2.

This Kind of Plant is called *Phytolacca*, from φυτὸν (*Phyton*), a Plant; and *Lacca*, because it gives a red Colour like *Lacca*. The Virtues are yet unknown. *Hist. Plant. adscript. Boerh.*

PHYTOLOGIA, φυτολογία, from φυτὸν, a Plant, and λέγω, to treat of. That Part of Pharmacy which treats of Plants.

PHYXIMOS, φύξιμος. An Epithet of Diseases in *Hippocrates*, importing salutary, or of which a Person is likely to recover.

PIA MATER. The thin Membrane which immediately involves the Brain. See CAPUT.

PIANTERIA, πιαντήρια. Aliments which increase Fatness, and Corpulence.

PIATTONES. Crab-lice.

PICA. Offic. Schrod. 5. 323. Schw. A. 333. Mer. Pin. 172. Charlt. Exer. 75. *Pica varia cordata.* Will. Ornith. 87. Raii Ornith. 127. Ejusd. Synop. A. 41. Aldrov. Ornith. 1. 784. Gesn. de Avib. 628. Jonst. de Avib. 27. THE MAGPYE, or PIANET.

This Bird is very much commended against Dimness, Redness, and Pains of the Eyes, being eaten, or incinerated, and the Ashes put into the Eyes, or any other way apply'd; the Ashes are, also, exhibited in the Mania, Epilepsy, and Melancholy. *Dale.*

PICA GLANDANA, or *Glandaria*, is another Species of Magpye, supposed to be the *Pica Græca*; to which the same Virtues are ascribed, as to the preceding.

PICA is, also, the Name of a Distemper, in *Greek*, κίτλα, (*Citta*) being a depraved Appetite principally incident to Women with Child, to the End of the second or third Month of their Pregnancy. They who are affected, have absurd Longings after sour, sharp, or acrimonious Things, and sometimes after Earth, Shells, Coals, old Rags, rotten Pieces of Leather, and other things abhorrent to Nature. Men are sometimes molested with the like vitiated Appetite, which is supposed to proceed from a Collection of depraved Humours in the Stomach.

The Disease is called *Pica*, either from the Variety of absurd Longings, which bears Analogy to the Variety of Feathers observed in the *Pica*, or Pye, or because, perhaps, that Bird is subject to the same Disorder. The Scholiast of *Aristophanes* gives another Reason; for he says, the Pye is a Bird of a voracious and universal Appetite, and difficult to be pleased; that he longs after Fruits, but is soon disgusted; and, when he has eaten of this or that kind of Apple or Berry, he is presently satiated with it, and flies from Tree to Tree in Search of new Varieties: So that Women are properly said to be affected with the *Pica*, when they long for this and that kind of Food, and, when they have tasted it, conceive an Aversion to it; which Kind of Loathing is called ἀφηκοΐα, *Hapsicoria*. But however κίτλα may signify the Bird *Pica*, as well as a Disease, we have no Authority for affixing that double Signification to the Word *Pica*; for none ever called a Disease, in proper *Latin*, *Pica*. *Pliny*, therefore, always calls this Disorder *Malacia Gravidarum*, in *Greek* μαλακία, from μαλακὸς (*Malacos*), soft, languid. It is defined, like the κίτλα, or *Pica*, to be a languishing Disorder incident to pregnant Women, in which they long sometimes for one thing, sometimes for another; some desire to eat Earth, dead Coals, or Terra Cimolia, as *Paulus* says, *Lib.* 1. *Malacia* is, also, a Disorder or Weakness of the Stomach; in which Sense it is used by *Pliny*, *Lib.* 28. *Cap.* 7. *Lib.* 23. *Cap.* 6. Μαλάκια (*Malacia*) are expounded in *Galen*'s Exegesis, aquatile Animals having no Spine, as the Polypus, Loligo, Sepia, and Urtica; these have neither Blood nor Viscera; and, *Lib.* 3. *de Alim. Fac.* he describes them as having no Scales, nor rough or testaceous Skin, but soft like the human. *Pliny*, *Lib.* 9. *Cap.* 18. calls them *Mollia*, by a literal Translation of the *Greek*, and gives the same Description of them. The Place in *Hippocrates*, to which *Galen*, in his Exegesis, had a respect, since we can only conjecture, in this Case, appears to me, says *Foesius*, without all doubt, to be that, *Lib.* περὶ γυναικ. φύσ. where we read, ἢ σιτίοισι μαλθακοῖσι, ἢ τοῖσι πολύποισι, ἢ τοῖσιν ἄλλοισι μαλθακοῖσιν, "with "soft Foods, as Polypuses, and other soft (aquatile Animals)."

The *Pica*, according to *Riverius*, in *Lib.* 9. *Cap.* 3. *Prax. Med.* is such a Depravation of the Appetite, as excites the Patients to an uncommon and preternatural Fondness for absurd, useless, and hurtful Aliments.

This Disorder is produced by depraved and corrupted Juices, either generated in the Stomach, in consequence of an undue Concoction, or convey'd to it from other Parts.

Humours of this Kind are, for the most part, generated in Persons of phlegmatic and melancholic Habits, and especially in Women, to whom this Disorder seems, in a manner, peculiar, tho' Children and Men are sometimes, tho' very rarely, afflicted with it. Humours of this Kind are principally generated by the Use of bad Aliments; a Suppression of some natural Evacuation, and especially of the Menses, Grief, Disorders, Obstructions, and Weakness of the Liver and Spleen, and various Diseases of the Uterus.

These corrupted Humours are of various Natures and Qualities, according to the various Degrees of their Corruption and Intemperature. Hence arise various Inclinations to various, absurd, and improper Aliments; for since some of these Humours are crude and unconcocted, and others of an hot and inflammatory Quality, so some are fond of acid, austere, bitter, and highly-cold Substances, such as unripe Fruits, Vinegar, Verjuice, the Juice of Oranges, Pomegranates, and Lemons, cold Water, Snow, and Ice; whilst others covet earthy, dry, and hot Substances, such as Cloves, Cinnamon, Nutmegs, and other Aromatics, Salt, Ashes, and Plaster.

This Disorder is familiar to young Women labouring under a Chlorosis, and to pregnant Women, on account of the Suppression of the Menses; which, by remaining long in the Body, assume a peccant Quality; and being convey'd to the superior Parts, load the Stomach with that corrupted Humour which depraves its Actions, and perverts the Appetite. Sometimes Children, especially those born of Mothers labouring under a Chlorosis, are subject to this Disorder. Nor are Men totally exempted from this Misfortune, tho' they are but rarely afflicted with it, and those Men are most subject to it, who are of a melancholic Habit, labour under Obstructions, or a Suppression of the hæmorrhoidal Discharge.

The Diagnostic of this Disorder is sufficiently easy; for by the bare Relation of the Patient, 'tis certain, that the Part principally affected is the Mouth of the Stomach, which may be said to be the Seat of Appetite. The Cause may, also, be conjectured at from their being fond of Substances of a similar Nature with the peccant Humours in the Stomach; for if they are fond of Coals, Salt, and other Things of a like Nature, we may conclude, that saline and hot Humours produce the Disorder. But this Conjecture will be converted into Certainty, if any Quantity of these Humours is thrown up by Vomit, or discharged by Stool, or if acid, or nidorous Eructations are present, or a bitter acid, or saline Taste perceived in the Mouth.

As for the Prognostic of this Disorder; it is of the chronical Kind, but not very dangerous; since, in Process of Time, the peccant Humour is removed by frequent Vomits, or other proper Medicines, and the Menses, or hæmorrhoidal Discharge, a Suppression of which, laid the Foundation of the Disorder, are at last restored. But if these are neglected till Nature is too much weakened, terrible Disorders may succeed; for when the first Concoction is vitiated, the second and third must necessarily be so too. Hence violent Obstructions, Cachexies, and Dropsies happen. Or if the Quantity of the peccant Humour, lodged in the Stomach, is very great, or its Quality highly malignant, it sometimes produces terrible Cardialgias, which terminate in Deliquiums, Syncopes, and sometimes in Death.

If Women, labouring under this Disorder, begin to abstain from the improper and absurd things they were fond of, and with less Reluctance use laudable and wholsome Aliments, it is an infallible Sign of a beginning Cure, and approaching Health.

Pregnant Women are generally freed from the Malacia about the fourth Month, because the Fœtus, becoming at that time larger, consumes a greater Quantity of the Humours, and the Mother, by frequent Vomitings, throws up the Sordes lodged in her Stomach. But if the Disorder continues any longer, it is dangerous; for 'tis a Sign, that the peccant Humours are deeply rooted, and cannot be eliminated without Difficulty.

'Tis better that Persons, labouring under this Disorder, should be fond of acid and sharp-tasted Substances, than of such as are directly unfriendly to Nature, as *Avicenna* informs us, in *Fen.* 1. *Lib.* 2. *Tract.* 2. *Cap.* 20. for a Fondness for the latter indicates a greater

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greater Recess from a natural State, not to be cured without great Difficulty.

The Cure of this Disorder is to be varied according to the different Constitutions of the Patients.

In pregnant Women, very few Medicines are recommended as proper, for fear of Abortion. However, even in these, gentle Medicines may be used for evacuating and corroborating the Stomach. Nor is moderate Venesection, frequently repeated, to be neglected, if there is a Necessity for it, since it is of great Efficacy in the Cure of this Disorder.

In young Women labouring under a Chlorosis, this Disorder is cured by the same Medicines which are proper for removing the Chlorosis.

As the Pica in Men, which, however, rarely happens, proceeds from Obstructions of the Liver and Spleen, it must of course be removed by every thing which removes these Obstructions.

According to Doctor *Pitcairn*, in his *Element. Med. Lib.* 2. *Cap.* 18. in this Disorder, such Things as obtund Acids, are to be prescribed; fixed Salts; mucilaginous, oleous, and pinguious Substances; the Effects of all which are to hinder the free Contract of the Coats of the Stomach with each other. For answering this Intention, he himself orders viscid Substances, and such as remain long in the Stomach.

Thus, for Aliments, he prescribes Gellies of Hartshorn, Broths of gelatinous Fleshes, and other things of a like Nature.

For Drink, he orders *Spanish* and *Canary* Wines, moderately drank; and especially *Brunswick* Mum, or *Dutch* Hydromel, prepared of one Part of Honey, and six Parts of Water.

PICACISMUS. The same as PICATIO.

PICANS. An Epithet for Wine, importing, that it is of a sweet delicious Flavour.

PICATIO. Pication. A Species of *Dropax*. For this Purpose, dry Pitch is melted with a very small Quantity of Oil, and applied to the Skin whilst warm. This Preparation adheres strongly to the Parts previously shav'd, and is to be pull'd off, before 'tis perfectly cold. Then it is to be warm'd at the Fire, applied in the same manner, and pull'd off, before 'tis entirely cold. This Method is to be repeated very often. This *Picatio*, or *Dropax*, is highly beneficial to Patients afflicted with continual Vomitings, Crudities of the Stomach, Indigestion, and the Cœliac Passion. It is, also, properly applied to Parts not duly nourished by the Aliments. When 'tis requisite this common Dropax should be heating, we add to it Pepper, Pellitory of *Spain*, Rosemary-seeds, and Bitumen: When we want it of a drying Quality, we add to it native Sulphur, Salt, and the Ashes of Vine-twigs. If we intend it should be of a stimulating Nature, we add *Limnestis*, commonly call'd *Ardace*, or Euphorbium. All these Ingredients, when triturated, are to be sprinkled into the melted Pitch and Oil. *Aetius*, *Tetr.* 1. *Serm.* 3. *Cap.* 180.

PICATIO, also, implies the same as PICA.

PICATUM VINUM. See PISSITES.

PICEA. See ABIES.

PICERION, πικέριον. Butter. *Hippocrates*, *Galen.*

PICINUM OLEUM. The same as PISSELÆUM.

PICOTA. A Distemper, consisting of an Eruption of very minute red Pustules. *Castellus.*

PICRIS. A Name for the *Cichoreum Sylvestre*, *sive Officinarum.*

PICHROCHOLOS, πικρόχολος, from πικρὸς, bitter; and χολὴ, Bile. A Person abounding with bitter Bile. *Hippocrates.* Sometimes it signifies a Person very subject to Anger.

PICTONUM COLICA, or COLICA PICTONIA, or PICTAVIENSIS. The Name of a nervous Colic, generally called, in the West-Indies, *the dry Belly-ach*. This is so popular a Disease in the *Leeward* Islands, that it may, very justly, be reckon'd an Endemic in them, most People there, at one time or other, having felt its Cruelty.

There is not, in the whole Compass of Infirmities, to which Flesh is liable, any one that afflicts human Nature in a more exquisite Degree, than this unmerciful Torture. The Belly is seized with an intolerable piercing Pain, sometimes in one Point only, and sometimes in several Parts of the Intestines. In a short time, the Affliction becomes more diffusive, and stretches itself from the Point where it was first felt, to a greater Distance; which is done in such a manner, that the Fibres of the Bowels seem to be contracted, and drawn up from the Anus, and the Pylorus, towards the Part primarily affected, as into the Centre of Misery: During this Scene of the Distemper, which sometimes lasts eight, ten, or fourteen Days, the Patient is upon a perpetual Rack, with scarce any Remission from Pain. He undergoes all the various Modifications of Torment; and the burning, lancinating, and biting Pain, by turns afflict him with a Diversity of grievous Sensations. The Belly continues, all this time, obstinately costive; very little Urine is made; the Strength is greatly impair'd; the Habit exceedingly wasted; the extreme Parts are cold; and the Patient frequently falls into clammy Sweats and Deliquia. The Affections of the Mind are much disorder'd; Grief, Anger, Rage, and Despair, usurp the Place of Reason; the vital, natural, and animal Functions, are perverted; and the miserable Patient, at length, sinks under the Agony of his Affliction.

The principal Causes concurring to the Production of this Colic are, immature, austere, and astringent Fruits, eaten in too great Quantities; debauching in strong Punch, highly acidulated with the Juice of Lime; and travelling in the Night, after too free Ingurgitation of spirituous Liquors.

When the Extremity of the Pain begins to abate, the sick Person often observes a sort of tingling Uneasiness through the spinal Marrow; which propagates itself from thence to the Nerves of the Arms and Legs, which, at this time, are very weak and debilitated. This Weakness and Inability increases daily; till, in a short time, it terminates in a confirm'd Palsy of the Extremities. The sudden Transition from the Colic to a Palsy made Dr. *Willis* conjecture, that the Nerves of the Mesentery were principally affected in this Disease.

In order to subdue this dire Distemper, and prevent the paralytic Consequences of it, we must employ our utmost Endeavours to remove the Constipation of the Bowels, and solicit them to a Discharge. But this is not, upon any account, to be attempted by strong stimulating Cathartics, which, by their forcible and repeated Irritations, would vellicate and contract the Fibres of the Guts, enrage the Pain, create convulsive Motions of the Bowels, hasten on the Palsy, or change the Disease into a *Miserere Mei*. The mild, lenitive, detergent Purges are, therefore, to be relied on in this Exigency, and they ought to be given in liquid Forms, small Quantities, moderately warm, and frequently repeated, till they slide through the Intestines, and procure a Stool.

But it is almost impossible, that this should be effected, so long as the Bowels continue under such spasmodical Disorders as they are now in: We must, therefore, have a due Regard to the mitigating this Inconveniency. There is not any Preparation of Opium so effectual in this Case, as the *Pil. Matthæi*, which receives a prodigious Advantage from the aperient Quality of the *Sapo Tartareus.*

It has been a received Opinion, that Opiates, in this Distemper, have often proved the Occasion of the paralytic Consequences which have ensued; but I am fully convinced from undoubted Experience, that this Observation is erroneous, having always found the desired Success from the Administration of them, tho' given with a liberal Hand. However, it may not be improper, in these Cases, to add three or four Grains of Castor to each Dose of the *Pil. Matthæi.*

The Method by which I have relieved many in this dreadful Distemper, is as follows. As soon as I came to the Patient, I order'd eight or ten Grains of the *Pil. Matthæi* to be given him; and, about half an Hour after, half an Ounce of Manna, two Drams of Cream of Tartar, and one Ounce of solutive Syrup of Roses, in warm Water-gruel; and this is to be repeated every three Hours, allowing four Grains of *Pil. Matthæi* to be administer'd in the Intervals. But if the great Propension to vomit should render the Stomach incapable of retaining the laxative Draught, so that no Operation is to be expected from it, then it will be necessary to appease that Symptom with the following, or some other Mixture of the like Kind, before we proceed any farther.

Take of Salt of Wormwood, one Scruple; pure Opium, a Grain, or a Grain and half; strong Mint-water, an Ounce; Syrup of Lemons, a Spoonful. Mix them together.

A Clyster is, also, to be injected once in four Hours, till the Body becomes soluble. These Clysters should always admit of Balsamics in their Composition, and may be made in the following manner.

Take of common Decoction, eight Ounces; Balsam of Capivi, dissolved in Yolks of Eggs, two Drams; Soap of Tartar, one Dram; Oil of Anise, two Drams. Mix them together.

In the mean time, warm Fomentations are to be applied all over the Region of the Abdomen, with Flannel Cloths.

Take of Chamomile-flowers, three Ounces; Juniper and Bay-berries, each an Ounce; boil them in five Pints of Spring-water, to three. At the End, add of Carraway, Fennel, and Anise-seed, each half an Ounce; dissolve in the strain'd Liquor, a Dram of Opium; and add a Pint of Rum.

A Semicupium, or Bath, made with the Leaves of wild Sage, Lavender, Rosemary, Chamomile, and other warm, nervous Plants, often help to alleviate the Pain, and afford considerable Relief to the distress'd Patient.

When the Pains begin to be mitigated, and the Body is somewhat open, it will be time to proceed to Purges of greater Efficacy; and chiefly, such as are composed with a Mixture of Mercurial Preparations.

Take of Calomel, a Scruple; the smaller Pil. Cochiæ, a Scruple; Opobalsamum, enough to make them into four Pills; to be taken in the Morning, and repeated every Day, till the Pain remits, and the Body becomes soluble.

Opiates

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Opiates may now be laid aſide, unleſs the Urgency of the Symptoms ſtill require the Continuance of them; or, at leaſt, their Quantity may be leſſened; and, in their ſtead, the Patient is to take two Scruples of Balſam of *Peru*, with Loaf-ſugar, or in any other convenient Form, every ſix Hours: This Medicine will rarely be found to fail, when given at a proper Time of the Diſeaſe, and in a ſufficient Doſe; which has been too long neglected in Practice.

There is another Production of Nature, which Providence has plentifully beſtowed on this Iſland, I mean the *Piſſelæum Indicum*, or the *Barbadoes* Tar, as it is commonly called: This indeed is not ſo elegant to the Taſte and Smell, as the forementioned Balſam; but, where the Stomach can comply with it, I am ſure it is of much greater Efficacy in this Diſtemper. I need not, ſurely, uſe many Arguments, to prevail with any Perſon under theſe Circumſtances, to diveſt himſelf of Prejudices to a Remedy, which will ſo powerfully conduce to his Eaſe and Safety; for a Man muſt be ſtrangely Palate-ridden, who will endure the higheſt Aggravations of Torture, and run the Riſk of diſabled uſeleſs Limbs, for the Gratification of Taſte. I would, therefore, adviſe, that two Drams of this Piſſelæum be given three times a Day, till the Diſeaſe be totally vanquiſhed.

Upon the firſt Apprehenſion of the tingling Uneaſineſs along the Spinal Marrow, or the Numbneſs and Inability of the Limbs, the whole Length of the Vertebræ, as well as the Limbs, ought to be well chafed with a Mixture of this Tar, in double-diſtilled Rum, which will (if any thing in Nature can) avert the impending Paralyſis.

This is a Method which I have ſucceſsfully uſed, in a Malady which was generally attended with ſuch fatal Conſequences, under a different Management; and I could not forbear making it public, for the Benefit of an Iſland which has laid me under the ſtrongeſt Obligations of Gratitude.

When the Palſy has been actually formed, either from injudicious Treatment, or the Violence of the Diſtemper, I have not been able to diſcover any means effectual enough to remove it, unleſs the Patient would be prevailed upon to leave the Iſland, and repair to *England*, where *Bath* Waters taken inwardly, and applied to the affected Parts by Pumping, with other proper Remedies, have often perfected the Cure. *Towne's Diſeaſes of the Weſt-Indies.*

PICUS MARTIS. The Woodpecker: A Bird of which there are many Species, beſides that commonly known in *England*. It has the Reputation of being good for the Eyes, and to preſerve and improve Viſion: For this Purpoſe it is eaten dreſſed, or boiled in Soop: It is, alſo, applied to the Eyes; and the Blood is dropped into them, with the ſame View.

PIERRE DE COLIQUE. See UMBRA.

PIESMA, πίεσμα, from πιέζω, to preſs. The *Magma*, or Reſiduum, which remains after the fluid Part is preſſed out: Thus, in the Expreſſion of Oils, the Cake, or what remains in the Bag, is called the *Pieſma*; and in this Senſe it is uſed by *Hippocrates*. But *Dioſcorides*, *Lib.* 1. *Cap.* 106. ſpeaking of Bay-berries, calls their expreſſed Juice *Pieſma*: And it is uſed by *Galen*, in the ſame Senſe.

PIESTER, πιεστὴς, or πιεστήριον, a Preſs; from πιέζω, to preſs.

PIESTRON, πιεστρον, from πιέζω, to preſs. An Inſtrument recommended by *Hippocrates*, for breaking the Bones of the Head of a Fœtus, when too large to be otherwiſe extracted: It ſhould ſeem to be a Sort of Forceps.

PIGMENTARIUS. A Vender of Ointments. *Rhodius ad Scribon. Largum.* An Apothecary, or Druggiſt.

PILA. A Ball. See SPHÆRA. It, alſo, ſignifies a Mortar, or a Peſtle.

PILA MARINA. This is a Species of Alcyonium, or a round ſpherical Ball, found on the Sea-coaſt, among the Wrack. It is generally as large as a Perſon's Fiſt, but ſometimes larger, and ſometimes leſs: It is lanuginous, of a dark Colour, and formed by a Collection of Hairs, Sand, and other Impurities of the Sea, united by means of ſome glutinous Liquor. It is ſaid to be proper for killing Worms, and preſerving the Hairs, when applied externally. *Lemery des Drogues.*

The Pila Marina cannot be reduced to a Powder, till it is thoroughly calcined. Authors are of Opinion, that this Subſtance is good againſt ſcrophulous and ſtrumous Diſorders, not only on account of its drying Nature, but, alſo, in conſequence of ſome other latent Quality. Neither can I totally reject this Opinion, ſince it is a Subſtance, whoſe ſaline Quality is not deſtroy'd by Calcination. *Zwelfer.*

PILARELLA. The ſame as PELADA.

PILARIS MORBUS. The ſame as TRICHIASIS.

PILATIO. A minute Fiſſure of the Cranium, not larger than an Hair.

PILEUS, or PILIOLUS. See CUCUPHA. In Anatomy, the Coif with which ſome Children are born, is called *Pileus*, *Pileolus*, *Galea*, and *Vitta*.

PILI ZENII. The Hairs which grow about the Scut of an Hare. *Rulandus.*

PILIMICTIO. A Diſcharge of Subſtances reſembling Hairs, with the Urine. See TRICHIASIS.

PILIPOC *Philippinarum Inſularum.* Nieremb.

This Plant is of two Kinds, the Male, and the Female: The firſt is the greater, and has larger Leaves, and grows among Rocks; the other, or Female, is leſs, and grows in Plains: On the Roots of them both grow dark-coloured Tubercles, of the Bigneſs of a Man's Fiſt: The Trunks, which are of a dark-brown Colour, and without Joints, being cut athwart, are divided into a ſort of Pellicles, like the Membranes or Coats of Onions: The Leaves are like thoſe of Bay, and are remarkably acuminated; are produced in a moiſt and ſhady Situation, and roll themſelves about the Trees. The Root is of Uſe for venomous Bites, and in Potions; but is ſlow in Operation. *Raii H. P.*

PILORIS. A very large Species of Rat, found in *Martinico*, which ſmells like Muſk. The Inhabitants eat them: But they are of no Uſe in Medicine.

PILULA. Pill.

The Form of Pills is principally deſigned for ſuch Things as are too nauſeous to be taken any other Way; or are moſt readily fitted, by their natural Texture, to this Kind of Management: Of the firſt Kind are the Aloes, Colocynth, and the like, which are thus beſt concealed from the Taſte; and of the latter are moſt Gums, which, with very little Trouble, are reduced into Pills.

But this Form being generally the moſt troubleſome to take, as few Things ſhould be contrived into it as poſſible; that is, ſuch only as, by their Irkſomeneſs in going down any other Way, make it neceſſary to conceal them by this means. But this Reaſon ought to extend only to ſuch Things, which are of ſufficient Efficacy, not to make above four or five ſmall Pills for a Doſe. Thus, the Bark, in Powder, and all the lighter Species, which are given in the Quantity of half a Dram, or upwards, for a Doſe. If, to avoid the Irkſomeneſs of other Forms, Recourſe ſhould be had to this, a neceſſary Quantity of Moiſture, to reduce them into it, would make one Doſe into ten, twelve, or fifteen ordinary Pills, which are more than any one can be imagined well to get down; for half a Dram in the Maſs makes five middle-ſized Pills, and half a Dram of dry Powder will take up above double its Quantity of Syrup, to bring it into a Maſs of due Conſiſtence. The gummy Subſtances, indeed, are thus reducible by Liquor, which will but little increaſe their Bulks; and for this Reaſon, alſo, they have a peculiar Fitneſs for this Form.

But there are ſome Things abſolutely unfit for Pills, by reaſon of their natural Texture and Properties, except in ſmall Quantities; and theſe are all the volatile Salts, and moſt of the fixed ones. The firſt heave and ferment them into unreaſonable Bulks; and the laſt render a Maſs ſo brittle and crumbly as make it almoſt impoſſible to be worked into Pills; though both theſe Inconveniencies may, in ſome meaſure, be avoided, by contriving to mix with either of theſe Salts other Things which are very tenacious, as ſome of the Extracts and Gums; and this makes the Pilulæ Ecphracticæ, now directed in the Diſpenſatory, at firſt of a tolerable Conſiſtence.

One very material Thing, likewiſe, to be conſider'd in this Form, whether officinal or extemporaneous, is, that the Liquor or Moiſture, wanted to give a Conſiſtence, have the moſt convenient Fitneſs to the Thing requiring it. Thus dry light Powders will not make up with any thing thinner than Syrup; and ſome of the heavy ones, as Cinnabar, and moſt of the Mercurials, will hardly do with any Moiſture of a lower Conſiſtence than Honey or Conſerve. But the gummy Subſtances, eſpecially thoſe which moſt approach to an oily or reſinous Texture, as Galbanum, Opopanax, Myrrh, and the like, will not ſo well make up with Syrups or Conſerves, not only on account of increaſing their Bulks too much, but becauſe they will not ſo well incorporate with them, as with ſpirituous and more penetrating Liquors. As this Form, therefore, muſt have ſomewhat in it adheſive and tenacious, where it is not in the dry Subſtances, it muſt be ſought for in a proper Moiſture to hold them together; and where it is ſufficiently already in thoſe Subſtances, as in the Gums, the thinner Liquors are beſt, to give them a Conſiſtence, or ſuch as are better ſuited to incorporate with them, than aqueous Moiſtures, as the terebinthinous Balſams; for ſome fat Subſtances will refuſe a Syrup, at the ſame time that they will readily take in Turpentine, or any thing of like Diſpoſition.

Among the officinal Pills, there are but few that do not take in ſomething purging, and thoſe are as follow: The Pilulæ Gummoſæ were never in the *London* Diſpenſatory before, tho' long ago in ſome others; ſo that it may not, perhaps, be yet much brought into the Shops; but it is a very uniform Compoſition; only the Mithridate will not ſo readily incorporate with

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with such Materials as Spirit of Castor, or any terebinthinous Substance. Such things are, likewise, sooner brought into a Mass, with a Mortar a little warmed. The Storax-pill has stood long approved for an excellent Composition, by the frequent Prescription of it in Catarrhs, and such-like Defluxions; but the Texture of its Materials, though most of them gummy, partake so little of an oily Principle, that they readily make up with a Syrup into a very good Consistence. The Pilulæ de Cynoglosso are calculated for the same Intentions, and hardly to be known from this in the Mass, the Ingredients being nearly the same in both; but the Storax-pill is generally preferred, as a shorter and more uniform Composition. The Laudanum is subject to grow brittle, and sometimes a little mouldy at the Top; both which are prevented by keeping it close from the Air. The Quantity of Opium is much better ascertained in this, than in any liquid Forms; and, with a little Trouble, this may be dissolved into Draughts for extemporaneous Uses, though it is the most ready for a Bolus, or Pills.

Among those which take in Cathartics, some do it so sparingly, that they ought rather to be deemed Alterants than Purgers; such as the Aloephanginæ Fœtidæ, and Stomachicæ cum Gummi; all which so abound with Ingredients of other Intentions, that the purging ones are almost lost in them. *Sasonus* finds great Fault with the first of these; but it is so very little used now, that it is hardly worth a critical Examination here; and especially as the Tinctura Sacra is a Medicine much better contrived for the same Intentions, on all Accounts, both for Taking and Efficacy. The Pilulæ Fœtidæ cannot be justified for a very uniform Composition; but, in the main, it takes in so many Things which are efficacious in hypochondriacal, hysterical, and other nervous Disorders, that it is generally used with Success; but if so much of the Juice of Leeks be applied in dissolving the Gums, that it wants but little of the Syrup to bring it to a Consistence, it will be very subject to grow mouldy with keeping. In this, and all other Compositions which take in Ingredients so different in Textures, all that will powder, ought to be so reduced together; and, when the Gums are strained, after dissolving them with a moderate Heat, in the Liquor directed, they are put together in a Mortar, and beat into a due Consistence, with a proper Quantity of Syrup. The Oil of Amber, or any thing else of like Nature, is best rubbed first into the dry Powders. The Pilulæ Stomachicæ cum Gummi continue to be sometimes ordered; but they are not so much esteemed as they were formerly; the Tinctura Sacra, also, taking place of it to better Advantage. There are, likewise, some other Cathartics of weak Efficacy, from their Mixture with other Things, which are so little used, that they deserve not much Examination; as the Pilulæ de Agarico, de Aloe Iota, de Ammoniaco Magistrales, Cochiæ majores, Diambræ, and Mechoacanna; all which are hardly ever made or prescribed. The Pilulæ Ecphracticæ, for the Reasons already given about Salts contained in Pills, are of so brittle a Consistence, that they, likewise, are seldom to be met with in the Shops, or in Prescription. The same Disadvantage, also, have the Pilulæ de Rhabarbaro, de Scammonio, and Tartareæ.

The Pilula Ruffi is the only one in this Rank, which is much approved in common Practice; and indeed its Ingredients are so few, and those so good in the Intention of a gently purging Stomachic, that they very well deserve this Preference: This, and the Elixir Proprietatis, take in the same Ingredients, and differ in little else than their respective Forms: This Pill, as to its Goodness, is so much judged of by its Colour, which is coveted of a bright yellow, that most, if not all, Compounders bring it to a Consistence with Syrup of Lemons, which much improves it in that respect, instead of Syrup of Wormwood, which would greatly hurt it.

Among the most efficacious Purges, and those most commonly in Use, are the Pilulæ Cochiæ minores, e duobus, and Pilulæ Rudii. The two first differ in little else, than in one's having the Aloes, and the other not, which makes the latter stronger, the Colocynth and Scammony being most powerful Cathartics. The Goodness of both is judged by the strong Scent of the Oil of Cloves, which, being the most chargeable Ingredient, is most likely to be limited in its Quantity. The Pilula Rudii is of the same Contrivance as the Aloephanginæ; but is not so crouded with unnecessary Ingredients, and, therefore, takes in the efficacious ones in larger Quantities, so that its Operation is brisk enough in a Dose of half a Dram. But, in the common Way of making the Spirit, necessary to extract the Spices, and other hard Ingredients, most of it is drawn over before the Scammony and Aloes are put in; and after that it is distilled, so that the Remainder is near in the State of an Extract, or about the Consistence of a Syrup, the Aloes is melted in it, and the Scammony sifted in, when powder'd. The Pilulæ de Gutta Gamandra have nothing difficult in their Composition, but are of a more brittle Consistence, and more liable to gripe in their Operation, upon account of the vitriolated Tartar, than they would be without it: Though this seems to be put into many of this Class, which abounds with resinous Ingredients, as a means to divide them; but it is extremely racking to the Stomach and Bowels, and seems to be well supplied by the common Salt of Tartar.

There is not much to be learned from Examples of occasional Prescription in this Form, besides what is common to every Form; for there is required nothing particular here, more than what hath been already taken notice of, concerning a proper Consistence, and the not exceeding a certain Number in a Dose.

Pilulæ de Agarico: *Pills of Agaric.*

Take of the Troches of Agaric, one Ounce; the Species of Hiera, half an Ounce; Myrrh, six Drams; Syrup of Buckthorn, a sufficient Quantity to make into a Mass for Pills: The Dose is from a Scruple to a Dram.

Pilulæ Aloephanginæ. See Aloephanginæ.
Pilulae de Aloe Lota. See Aloe.
Pilulae de Ammoniaco Magistrales. See Ammoniacum.
Pilulae Balsamicae. See Cytiso-Genista.
Pilulæ Cochiæ Majores et Minores. See Cochia.
Pilulae de Cynoglosso. See Cynoglossum.

Pilulæ Diambræ: *Pill Diambra.*

Take of new Gum Guaiacum, and the rosated Aloes, each three Drams; simple Hiera Picra, a Dram and half; Mastich, a Dram; the Species Diambræ, without the Perfumes, half a Dram: Let these all be reduced into a fine Powder; and, with a sufficient Quantity of Peruvian Balsam, be made into a Mass of a due Consistence for Pills.

Pilulæ e duobus: *Pills of two Things.*

Take of Colocynth and Scammony, each an Ounce; Oil of Cloves, half a Dram; Syrup of Buckthorn, a sufficient Quantity to make into a Mass of a due Consistence for Pills. The Dose is from fifteen Grains to half a Dram.

Pilulæ Ecphracticæ: *Ecphractic Pills.*

Take of Gentian, Rhubarb, Gum Guaiacum, Salt of Steel, and Salt of Wormwood, of each one Ounce; of the Pilulæ Aloephanginæ, two Ounces; Syrup of Buckthorn, a sufficient Quantity, to make all together into a Mass of a due Consistence for Pills. The Dose is from fifteen Grains to half a Dram.

Pilulæ Foetidæ: *The fetid Pills.*

Take of Aloes, Trochisci Alhandal, Opopanax, Ammoniacum, Sagapenum, Myrrh, and the Seeds of Rue, of each five Drams; of Scammony, and Asa-fœtida, of each three Drams; of Turpeth-root, half an Ounce; of the lesser Spurge prepared, and Hermodactyls, of each two Drams; of Ginger, one Dram and an half; of Spikenard, Cinnamon, Saffron, and Castor, of each one Dram; of Euphorbium prepared, one Scruple; of rectified Oil of Amber, half a Dram: Let the Gums be dissolved in the Juice of Leeks, and strained; then add the Powders, and mix them well together, and make into a Mass, with a sufficient Quantity of Syrup of Buckthorn.

These are the *Pilulæ fœtidæ majores* of *Mesue*, and which our College transcribed exactly into their first Dispensatory, as, also, it is in the *Augustan* in the same manner; but, on a Review, the Bdellium hath been expunged, as having no Virtues corresponding to the Intention of the Whole; the Euphorbium hath been, also, lessened by half its Quantity, because of its excessive Heat and Pungency. Some other small Alterations are, also, made, that are not of Moment enough for any particular Notice. *Quercetan* hath a Composition under the Title of *Pilulæ de Euphorbio*, not greatly unlike these, and which are transcribed by *Schroder*, who hath, in Book 4. taught many Ways how to correct the Euphorbium, as by baking it in a Citron or Lemon, or dissolving and washing it with various Acids; which Means are imagined to abate its caustic, fiery Nature. The *Augustan* Dispensatory, also, orders it, for the same End, to be reduced to a kind of Pulp, or Mass, with Oil of sweet Almonds, and then macerated warm in any acid Juices; but the Quantity it is here so reduced to, requires no such great Trouble. *Zwelfer* greatly recommends this Composition in arthritic Affections, and cutaneous Foulnesses, besides many other Cases;

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Cases; and the present Practice gives some Reputation to its Virtues, by directing it sometimes in nervous and hysteric Disorders, to which last Intention the College seem to have had a particular Regard, by the Addition of Asa-fœtida, which was never in it before: But the Mass is somewhat difficult to keep, without moulding; which seems owing to the Juice of Leeks used for dissolving the Gums, and not giving Body enough to keep it from drying: The best way is, to confine it in an oily Bladder, and a leaden Pot. This is a well-contrived Purge, of all kind of Humours which lay a Load upon the Nerves, and the principal Spring of the Animal Machine; for it is full of hot and penetrating Parts; and, as the Scammony acts as a Cathartic in the more open Passages, others carry the same Quality into the remotest Recesses, and clear away watry and pituitous Humours from all the Glands and Capillaries; but particularly those mucous Foulnesses, which frequently disorder the Womb. For these Reasons this is a notable Purge in all Distempers of the Head, as Apoplexies, Epilepsies, Palsies, and the like, for hypochondriacal and splenetic Affections; and promotes the uterine Cleasings, so as to assist in the Cure of most Complaints from that Quarter. Rheumatisms, Schrophulas, and the Gout, it is calculated for; and the most extreme Parts will be drained of their Superfluities by it. But, for these extraordinary Purposes, it is to be frequently repeated, and to be given in small Doses, that it may not run off too fast by Stool; for the more such things are brought to the Operation of Alteratives, the more effectual are they to answer any Intentions of Moment; an Alterative in the Blood-vessels operating by the same Means as a Cathartic in the Bowels: The general Dose is from one Scruple to four Scruples.

PILULÆ GUMMOSÆ: *The Gum-pill.*

Take of Opopanax, an Ounce; of Gum Ammoniacum, Galbanum, and Sagapenum, of each half an Ounce; of Myrrh, two Drams; of Asa-fœtida and Castor, of each three Drams; of Oil of Amber, one Scruple; of Mithridate, a sufficient Quantity to make into a Mass of a due Consistence for Pills: The Dose is from fifteen Grains to half a Dram every Night, or oftener.

PILULAE DE GUTTA GAMANDRA: *The Gamboge-pill.*

Take of Rosin of Jalap, Scammony, Gamboge, and Calomel, of each half an Ounce; of Gum Ammoniacum, dissolved in the Juice of the English Orrice, three Drams; of vitriolated Tartar, two Drams; of Mastich, one Dram; of Saffron, one Scruple; of the Spirit of Turpentine, forty Drops: And make the Whole into a Mass of a fit Consistence for Pills, with a sufficient Quantity of Syrup of Buckthorn.

This is a very rough Purge, and cannot safely be given from above ten Grains to half a Dram. It is reckoned a great Purger of Water, and is therefore principally given in Dropsies, and such-like Cachexies, that are attended with too great an Excess of Bulk; in which Case it is a powerful Medicine, but is not often prescribed.

PILULAE MECHOCANNAE: *Pills of Mechoacan.*

Take of Mechoacan-root, half an Ounce; of Turpeth, two Drams; of the Leaves of Mesereon, macerated in Vinegar, and dried, of Dwarf-elder-seed, and the Troches of Agaric, of each two Drams; of the Spurge-root prepared, and Mastich, of each one Dram and an half; of Mace, Cinnamon, and Sal Gem, of each two Scruples: Let all these, clean-powdered, be made into a Mass, with White-wine, and that dried and powdered again; and lastly, be beat up into a Mass, of a Consistence fit for Pills, with a sufficient Quantity of Syrup of Buckthorn.

PILULAE DE RHABARBARO: *The Rhubarb-pills.*

Take of Rhubarb, one Ounce; of Resin of Jalap, and Tartar of Vitriol, of each two Drams and an half; of the chymical Oil of Nutmegs, half a Dram; of the thinner Extract of Gentian, a sufficient Quantity to make them into a Mass of a fit Consistence for Pills.

PILULAE RUDII.

Take of Colocynth, six Drams; of Agaric, Scammony, black Hellebore-root, and Turbeth-root, of each half an Ounce; of Succotrine Aloes, one Ounce; of Cinnamon, Mace, and Cloves, of each two Scruples: Let the Colocynth be cleared from its Seed, and cut small, the Agaric shaved into Chips, and the Hellebore, Turbeth, and Spices, be grossly bruised; and, pouring upon them four times as much Spirit of Wine, let them macerate four Days together in a moderate Heat; then strain and press out hard the Liquor, in which dissolve the Scammony and Aloes, after they have been before duly cleansed; last of all, put the Whole into an Alembic of Glass, and draw off so much of the superfluous Moisture, as will leave the Remainder as thick as Honey, for a Mass to be made into Pills.

It may be given from fifteen Grains to two Scruples, and is effectual for all the Purposes the *Aloephanginæ* stand recommended for. This, at present, is in great Esteem in the Shops for an Head-purger; and it is, indeed, the principal Pill in Use in most Cases where Cathartics are prescribed in this Form.

PILULAE RUFFI sive COMMUNES: *Ruffy's, or the Common Pill.*

Take of the best Aloes, two Ounces; of choice Myrrh, one Ounce; of Saffron, half an Ounce: And make them all together into a Mass, of a Consistence fit for Pills, with a sufficient Quantity of Syrup of Wormwood.

This is accounted a good Stomach-purge, and with good Reason; for it greatly warms and strengthens it, and but very gently purges. It is peculiarly good in cold Constitutions and Indigestions, and will many times, without other Help, cure a Green Sickness; in which Case it greatly promotes the menstrual Discharges, and opens uterine Obstructions. It may be given from fifteen Grains to one Dram, but this is not so fit for a Catarrh, as an Alterative; and therefore ought rather to be given in moderate Doses, and be long continued.

PILULAE DE SCAMMONIO: *Pill of Scammony.*

Take of Jalap-root, one Dram; of Scammony, and Vitriol of Tartar, of each one Scruple; of the chymical Oil of Nutmegs, six Drops; the more liquid Extract of Gentian, a sufficient Quantity to make into a Mass for Pills. Its Dose is from one to two Drams.

PILULAE STOMACHICAE CUM GUMMIS: *Stomachic Pills with Gums.*

Take of the finest Aloes, one Ounce; of Sena-leaves cleansed, five Drams; of Gum Ammoniacum, dissolved in Vinegar of Squills, half an Ounce; of Mastich and Myrrh, of each one Dram and an half; of Saffron, and Salt of Wormwood, of each half a Dram: Make them into a Mass for Pills, with a sufficient Quantity of Syrup of Buckthorn.

PILULAE DE STYRACE: *Storax-pill.*

Take of Storax, Olibanum, Myrrh, the inspissated Juice of Liquorice, and Opium, of each half an Ounce; of Saffron, one Dram: Make them all into a Mass for Pills, with a sufficient Quantity of Syrup of white Poppies.

Schroder says, that *S. Clossæus* used it, with great Success, to breeding Women, who were in Danger of Miscarriage from the Trouble of frequent Coughing. It is much, that the *Augustan* Dispensatory, as well as the *Pharmacopœia Regia*, hath omitted it; as it is a very good Medicine, and now much used in common Prescription against Catarrhs. There is one Grain of Opium in every six Grains of this Mass; and therefore it ought, in the extreme Dose, not to exceed twelve or fifteen Grains. It has all the Virtues of the *Pilulæ de Cynoglosso*, but has somewhat more than double the Quantity of Opium in that. It is much more used, than any other of this Intention; but it ought to be with Caution.

PILULAE TARTAREAE: *The Tartar-pill.*

Take of the best Aloes, three Drams; of Gum Ammoniacum, cleansed in Vinegar of Squills, half an Ounce; of Tartar of Vitriol, half a Dram: Make them together into Pills.

PILUM. A Pestle.

PILUS. An Hair. See CAPILLUS.

PIMENTA. *Jamaica* Pepper. See CARYOPHYLLUS.

PIMPINELLA.

The Characters are;

The Flower is monopetalous, rotated, and generally cut into four Segments, to the very Centre, and adorned with four or more very long Stamina, and herbaceous, minute, and scarce visible Bracteæ; for which Reason some pronounce it Apetalous. The Ovary becomes a Fruit, which is generally quadrangular, acuminated at both Ends, and consisting sometimes of one, sometimes of two Capsules, full of oblong Seeds.

Boerhaave mentions eight Species of Pimpinella; which are,

1. Pimpinella; maxima; Canadensis; alba; spicata. *Cornut.* 175.

2. Pim-

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2. Pimpinella; spicâ brevi, rubrâ. *M. U.* 57. *Sanguisorba major, flore spadiceo.* J. B. 3. 120. *Sideritis*, II. *Dioscoridis, major.* Col. 1. 124.

3. Pimpinella; sanguisorba; minor; lævis. *C. B. P.* 160. *Tourn. Inst.* 157. *Boerh. Ind. alt.* 2. 99. *Pimpinella & Sanguisorba.* Offic. *Pimpinella hortensis.* Ger. 889. Emac. 1045. *Pimpinella vulgaris sive minor.* Park. Theat. 582. Raii Hist. 203. *Sanguisorba minor.* J. B. 3. 113. Raii Synop. 3. 1. 401. BURNET.

It grows in hilly Pastures, and flowers in *June*, and the Leaves are in Use. The Plant is alexipharmic, vulnerary, and pulmonic; and is principally used in Catarrhs, Affections of the Lungs, a Phthisis proceeding from Erosion, in malignant Diseases, Loosenesses, and Hæmorrhoids: It prevents Abortion, and is a Strengthener: Outwardly it is of Service in all Kinds of Hæmorrhages. *Dale* from *Schroder.*

There grows to the Root of this Plant, in some Places, a red Grain, which is used in dying a crimson Colour: Whence some take it for the Coccus, and call the Root by that Name, as we are informed by *Lacuna* and *Anguillara.*

What is related of the Virtues of this Plant, may be reduced to two Heads; first, That it is cardiac and alexipharmic: Hence the green Herb is put into Wine, to exhilarate the Heart, and to improve the Wine itself, by communicating to it an aromatic Flavour and Taste, much like that of a Melon: It preserves, also, from the Pestilence, and other contagious Diseases. In the second Place, it is an Astringent: Whence it is of excellent Service in an immoderate Flux of the Menses, Fluxes of the Belly, all Sorts of Hæmorrhages, and in drying, conglutinating, and healing Wounds and Ulcers. Mr. *Boyle* used to exhibit the Powder of the dried Herb or Root, with Sugar of Roses, for an Hæmorrhage of the Nose, Spitting of Blood, and a Consumption of the Lungs; the same, without the Sugar, sprinkled on cancerous Ulcers, restrains them from spreading. *Solenander, Lib.* 3. *Consil.* 27. recommends a Conserve of the Leaves, with a Draught of the simple Water afterwards, for Pissing of Blood; for which Purpose, also, the candied Root, he says, may be used. An Huntsman belonging to *Henry* the Second, King of *France*, solemnly affirm'd, that Pimpinella was of such Efficacy for preventing an Hydrophobia, that whoever should eat it for some Mornings together, either in a Salad, or any other way prepar'd, would never be visited with the least Symptom of that Distemper. *Palmar. de Morsu Canis rabidi. Panchorius* relates, that a King of *Chabam*, after a Battle, cured fifteen thousand wounded Men with the Use of Pimpinella. *Raii Hist. Plant.*

4. Pimpinella; Sanguisorba; eleganter laciniata. *H. R. Par.*

5. Pimpinella; Sanguisorba; minor; semine majore, & crassiore. *Bot. Monsp.*

6. Pimpinella; Agrimonioïdes; odorata. *H. R. Par.*

7. Pimpinella; spinosa; seu sempervirens. *M. U.* 57. *Poterio affinis, foliis Pimpinellæ, spinosæ.* C. B. P. 388. *Poterium quibusdam, sive Pimpinella spinosa.* J. B. 1. 2. 410. Χαλαζιον *Anguillaræ, Poterium Dalechampii.* Clus. H. 108. T. Voy. 1. 158.

8. Pimpinella; major; Hispanica, altera; conglomerato flore. *H. R. Par. T.* 157. *Boerh. Ind. alt. Plant. Vol.* 2.

These Pimpinellas have the Appellation of *Sanguisorba*, to distinguish them from the Pimpinellæ Saxifragæ, which are of a very hot Nature; but the Pimpinellæ Sanguisorbæ are astringent. The Plant is aromatic, gently astringent, and of excellent Service in a Relaxation of the Fibres, and a too thin and fluid State of the Blood: It is prescribed in an immoderate Flux of the Menses, to be eaten with Bread and Butter, or drank like Tea; so used, it renders all manner of Poison of no Effect. The five first Species are commended as Preservatives against the Pestilence. Pimpinella is infused, also, in Wine, to be used where a Laxness of the Part requires Astrictions; and there is scarce, among Vulneraries, a better Plant for repressing the Flux of Blood in an Hæmoptoe: It is of singular Virtue in the Dysentery, both by correcting the Acidity of the dysenteric or peccant Matter, and by gently astringing the relaxed Fibres of the Intestines. There is prepared a Conserve of the Flowers, which is of extraordinary Efficacy in the above-said Disorders. The Leaves infused in Wine, or common Water, are good for the Stone and Gravel in the Kidneys. *Hist. Plant. adscript. Boerhaav.*

PIMPINELLA is, also, a Name for several Sorts of TRAGOSELINUM; which see.

PIMPINICHI, *Arbor lacteſcens.* J. B. On all the Coasts of the *Indian* Continent, says *Monardes*, there grows a small Tree, like an Apple-tree; the *Indians* call it *Pimpinichi*, from whose Branches being cut off, there immediately flows a milky Humour, somewhat thick and viscous.

Three or four Drops of this Juice, being taken inwardly, purge very strongly, Bile and Water, by Stool: It is drank in Wine; or the Powder of it, inspissated, is swallow'd, but in a small Quantity, because of its Violence. Upon taking some Wine or Broth, its Operation is checked, and ceases on a sudden: And the same is reported of the *Indian* Ricinus. *Hernandez. Raii H. P.*

PINASTER. See PINUS.

PINDAIBA *nonnullis Ibira.* Pison. *Arbor baccifera Brasiliensis Fructu Piper respiente.* A very tall Tree growing in *Brasil*, which, on account of its acrimonious Fruit, and other Qualities, much resembles the *Brasilian* Pepper: The Leaves are small, acuminated, and like those of the Olive-tree: The Berries are green in the rainy Months, but turn red in *December* and *January*, when they ripen, and fall off; but, being dried, they turn black, and burn the Tongue, and have an aromatic Taste, being separated from the black oblong Seed contained in them, which smells of Juniper.

The Berries, eaten fasting, corroborate a weak Stomach, and discuss Flatulencies; bruised and applied, they heal the Bites of Serpents: Of the same, dried and pulverized, they prepare a Gargarism against cold Affections of the Throat: They are boiled, in order to be kept in Shops, and serve instead of Pepper, for culinary Purposes. *Raii H. P.*

PINDOVA. The Name of a Species of Palm.

PINEA. A Name for the *Ananas aculeatus*; *fructu pyramidato*; *Carne Aurea.*

PINEALIS GLANDULA. The Pineal Gland. See CEREBRUM.

PINEATUM. A Name for various Compositions, the Basis of which are Pine-nut-kernels.

PINEI *Nuclei Maluccani sive purgatorii.* J. B. *Pinus Indica Nucleo purgante.* C. B. *Pinei Nuclei Maluccani.* Park. There grows, says *Acosta*, in some Gardens of *Malabar*, and, also, wild in some Woods, a Tree of the Bigness of a Pear-tree, whose Leaves are of a Watry-green beneath, and of a Deep-green on the upper Face, and are very tender and soft: They are of a very acrid Taste, and vellicate the Tongue for a long while afterwards: The Fruit is triangular, of the Size of a Filberd, and divided into many Capsules, containing each a round Sort of white Seed, equal to a Pine-kernel, when taken out of its Shell.

We are to consider, says *J. Bauhine*, whether these are the cathartic Pine-nuts, of which *Monardes* gives the following Account: There is exported, he says, from *New Spain*, a Sort of Pine-kernels, with which the *Indians* purge themselves; whose Example is imitated by very many in these Countries: They are like our Pine-kernels, growing in large *Strobili*, like the beardless Ears of Mayz, with a softer and blacker Shell than ours, round, white on the Inside, fat, and sweet in Taste.

The *Indians*, as *Acosta* says, take a couple of the Kernels, peel them, and then pound them, and mix them in Clysters, against Difficulty of Urine, and the Pain of the Sciatica; or exhibit them in Cock-broth, for the Evacuation of putrid, slimy, gross, and cold Humours, and particularly for the Cure of an Asthma: They anoint the Impetigo with these Kernels, bruised in Water; and so cure it; but they are very burning. The cathartic Pine-kernels, as *Monardes* says, purge very strongly Bile, Phlegm, and Water; and, though milder than Filberds, excite Vomiting: When roasted, they operate with less Violence, and fewer Gripes: They are exhibited in chronic Diseases, and have a peculiar Virtue of evacuating gross Humours. *Raii H. P.*

PINGUEDO, πιμέλη, πίαρ, πίειρα, λίπος. Fat. See ADEPS. Officinal Fats are, also, called *Axungiæ.*

Fats in general are heating, moistening, emollient, abstergent, digestive, generative of Pus, and more or less anodyne. Every Fat in particular partakes of the Nature of the Animal whence it was taken; the weakest is the Fat of Swine, because that Animal is of a cold and humid Nature: The Fat of a Calf is somewhat stronger, next that of the gallinaceous Kind, and the strongest of all is the Fat of a Goose. It is to be observed, that whenever Fat is mention'd simply, or without any Note of Distinction, we are to understand it of the recent unsalted Fat of Swine.

Pinguedo mineralis; what it is, see *Theat. Chym. Vol.* 4.

PINGUICULA. A Plant so called by *Gesner*, because its Leaves are fat to the Touch, as if rubbed over with Oil, or Butter. Of this *Ray* makes four Species; which are,

1. *Pinguicula Gesneri.* J. B. *Pinguicula sive Sanicula Eboracensis.* Ger. Park. *Sanicula montana Flore calcari donato.* C. B. BUTTERWORT, YORKSHIRE SANICLE.

The Leaves, which are six or seven in Number, and sometimes more, spread themselves upon the Ground, and are about two Inches long, and one broad, of a yellow Colour, inclining to a pale Green, fat to the Touch, and shining as if they were rubbed over with Butter or Oil. From amidst the Leaves arise Pedicles, a Palm or more in Height, and bearing at the very Top a single purple, violet, or white Flower, like a Violet, but mono-

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monopetalous, furnished with a long Spur, and divided into five Segments: It grows in moist and marshy Places, and on plashy Downs, where Springs of Water abound.

2. *Pinguicula Flore albo minore, Calcari brevissimo.* This was observed by *Ray*, in moist Places on the Tops of Mount *Jura*.

3. *Pinguicula Flore amplo purpureo, cum Calcari longissimo.* This is found in the same Places as the preceding.

4. *Pinguicula Cornubiensis Flore minore carneo.* The Leaves of this Species have their Margin reflexed, and, as it were, convolved; are almost pellucid, and striated with red Veins. *Ray* observed this Species to grow in marshy Places, about *Kilkhamton*, and other Places in *Cornwall*.

The Leaves, bruised, and applied, are said to cure recent Wounds and Bruises: It is usual for the Country-people to cure Chaps in their Hands, and Tumors and Fissures in the Udders of their Cows, with the Fat and buttery Juice of this Herb: Hence it took the Name of *Yorkshire Sanicle*. The common Sort of People in *Wales* prepare from it a Syrup, with which they purge themselves, and those who belong to them; and, also, boil the Herb in Broths, for the same Purpose; for it purges Phlegm briskly enough: They make, also, an Ointment of the same, which is of great Use in Obstructions of the Liver. *Dalechampius* affirms, that the Root baked, and applied in Form of a Malagma, cures the Sciatica on the third Day, and that the same bruised and applied, cures all Sorts of Pains. *Camerarius* assures us, that it is a vulnerary Herb, and is of excellent Service in Hernias of Children. It dyes Hairs yellow, and serves Women instead of Gum for curling their Hairs. *Raii H. P.*

PINIPINICHI. The same as PIMPINICHI.

PINNA. A Wing. But the lateral and inferior Parts of the Nose are called the *Pinnæ* thereof; and the superior broad Part of the external Ear is, also, called the *Pinna* thereof.

PINNA, or PINNA MARINA, is a Sea Shell-fish of a conical Form, and separated into two Parts, which are rough without, and of a darkish Colour, but smooth, green, and resplendent within: Some of them are two Feet in Length, and about half a Foot in Circumference, towards the Middle. This Shell is found upon the Coast of the Sea, either among the Wrack, or the Sand. There are various Species of them, which contain a small Fish, which is an excellent Aliment, and in which there are sometimes found large Pearls.

From the superior Part of the Shell, which terminates in a very obtuse Point, arises a sort of Cord, or small Portion of reddish or dark-colour'd Silk, by some Naturalists, though, perhaps, not very properly, called *Byssus*. This Cord helps the Animal sometimes to fix itself to the Rocks: This Silk, when taken from the Fish, and prepared, is made into Stockings, and other Cloaths. The Fish, when eaten, excites Urine; and the Shell, when reduced to a Powder, provokes Urine, and renders the Patient costive. *Lemery des Drogues.*

PINNACULUM FORNICIS GUTTURALIS. The UVULA.

PINO. The Name of a sort of Nettle, which grows in *Brasil*.

PINOGUACU. A Name for the two Species of MAMOERA.

PINUS.

The Characters are;

The Leaves are longer than those of the Fir-tree, and always grow by Pairs, out of one common Sheath: The Flower is male, amentaceous, consists of Stamina, and is produced at a Distance from the Fruit of the same Tree. The Fruit is a Cone, consisting of tetragonal Tubercles. Among the Squamæ, which are excavated into two Pits, are two Stones, frequently winged, inclosing an oblong Kernel.

Boerhaave mentions three Sorts of Pinus; which are,

1. Pinus; sativa. *C. B. P.* 491. *Raii Hist.* 2. *Tourn. Inst.* 585. *Boerh. Ind. alt.* 2. 179. *Pinus.* Offic. *Pinus sativa sive domestica.* Ger. 1173. Emac. 1355. *Pinus urbana sive domestica.* Park. Theat. 1354. *Pinus officulis duris, foliis longis.* J. B. 1. 248. THE PINE-TREE.

This is a large spreading Tree, whose Branches are clothed with long, slender, sharp-pointed, green Leaves, two growing together in a common Sheath, which are somewhat hollow on the Inside; on the larger Branches grow large, loose, yellow Catkins, which come early in the Spring; and, after them, large, oblong, round-pointed Cones, heavy and firm, composed of several high, brown, hard Scales, between which lie the Kernels, which are longish and white, of a pleasant Taste, included in an hard Shell, and covered immediately with a thin brown Skin. The Pine-tree grows wild in several Parts of *Italy*, and is usually planted here in Gardens.

The Nuclei, or Kernels, which are principally used, are of a balsamic nourishing Nature, good for Consumptions, Coughs, and Hoarseness, restorative, and serviceable after long Illness; and, likewise, help the Strangury, Heat, and Sharpness of Urine. *Miller's Bot. Off.*

It has been a Subject much disputed among the Learned, by what Name the *Pinus* of the *Latins* was called among the antient *Greeks*. *J. Bauhine* is persuaded, that πεύκη (*Peuce*) is the antient *Greek* Name for the Pinus; and his Brother *Caspar*, with *C. Clusius*, *Bodæus a Stapel*, and other learned Men, are of the same Opinion. For my part, I am inclined to think, with our Countryman *Turner*, that the πεύκη of *Theophrastus* is indeed the Tree which the *Latins* call *Pinus*; but that *Pliny* took the πίτυς (*Pitys*) of the *Greeks*, for the Pinus, because that Author renders πιτυοκάμπαι (*Pityocampæ*) by *Erucæ Pinorum*, *The Caterpillers of Pine-trees*, not of the *Picea*, or Pitch-tree. As for the πίτυς (*Pitys*) of *Theophrastus*, we are not certain what Tree it was; but *J. Bauhine* thinks it likely to be the *Pinaster*, or Mountain-pine. The Occasion of this Uncertainty, and Mutation of Names, seems to be owing to the *Arcadians*, who, as *Theophrastus* writes, called πίτυς what the other *Greeks* called πεύκη; and gave the Name of πεύκη to what the rest called πίτυς.

The Bark and Leaves of all the Species of Pine-trees are refrigerating and astringent; whence they are of Service in Dysenteries, and an immoderate Flux of the Menses. The Decoction or Infusion of Pine-tree-tops in Beer, or any other proper Liquor, is supposed to be very effectual for the Stone in the Kidneys or Bladder, and for the Scurvy, and other Affections of the Thorax. *Hoffman*, *Meth. Med.* relates how a thousand Persons were cured of scorbutic Affections, by the young and tender Shoots of the Pine-tree.

Pine-kernels are of a most delicious Taste, and even preferable to Almonds; whence, in *Italy*, they are served in at a second Course: They are moderately hot and moist, maturating, lenitive, and fattening; their principal Use is in a Phthisis and Tabes, because they are very nutritive, though not very easy to be digested, as *Dodonæus* thinks: Taken either alone, or in Honey, or in any other Eclegma, they are good for a Cough, and inveterate Disorders of the Breast, because they are lenitive in Exasperations; they are, also, of Service in nephritic Disorders, the Strangury, Acrimony of Urine, and the like, because they mitigate and remove Pains: They increase Milk, and the Semen; on which Account they revive languishing Nature, and excite to Venery, especially when they are preserved in Sugar. The whole Cone, or Strobilus, boiled with fresh Horehound, and afterwards boiled a second time, with a moderate Addition of Honey, to a melleous Consistence, is a proper Medicine, as *Galen* says, to promote Expectoration, is good for an old Cough, and consumptive Disposition, as we are assured, also, by *Dioscorides*. The Water of the Cone is astringent, and, therefore, good to remove Wrinkles in the Face, to repress the Growth of the Breasts, and for the Falling out of the Matrix, and other Disorders of that Kind.

Coccalus, κόκκαλος, according to *Galen*, *Com.* 4. *in Lib. de R. V. I. A.* though used by *Hippocrates*, was not the Name for the Pine-nut, among the antient *Greeks*, but κῶνος (*Conos*); the modern Physicians, he says, almost universally call it στρόβιλος (*Strobilos*). The Coccalus, together with Myrrh, made into an Eclegma with Honey, is advised by *Hippocrates*, in the Book before-mentioned, for a Pleurisy: And in the same Treatise, he directs an Eclegma to be prepared of the Coccalus and Galbanum, with *Attic* Honey, for a Peripneumony; to which last Place *Galen* had, undoubtedly, a respect in his Exegesis, where he writes, *That most take the Coccalus to be the Kernel of the Strobilus.* But *Dioscorides*, by way of Diminution, will have it to be the *Granum Cnidium.* Κόκκαλος, in *Hesychius*, is expounded by ῥόμβος (*Rhombus*) στρόβιλος (*Strobilus*), and πεύκη (*Peuce*). Pine-kernels are called by *Dioscorides*, *Lib.* 1. *Cap.* 88. πιτυίδες (*Pityides*); by *Menesithus*, in *Athenæus*, *Lib.* 2. ἀστρακίδες (*Astracides*); also, πίτυναι κῶνοι (*pityini Coni*), and πίτυνα κάρυα (*pityina Carya*), from *Alexander Myndius*, and *Diocles Carystius*. *Foesius.*

2. Pinus; sylvestris. *Ger.* 1175. *Emac.* 1356. *C. B. P.* 491. *Raii Hist.* 2. 1399. *Boerh. Ind. A.* 2. 179. *Pinus sylvestris, Pinaster.* Offic. *Pinus sylvestris vulgaris Germanensis & Tæda.* J. B. 1. 253. THE MOUNTAIN PINE.

This Tree grows to be as tall, and as large, as the former; but differs from it, in having shorter and slenderer Leaves, smaller and sharper Cones, including smaller Kernels, much of the Nature and Virtue of the former: It grows in great Plenty in divers Parts of *Germany*.

From this Tree is gotten what is called *common Turpentine*, (See TEREBINTHINA) which is whitish, thick, and opaque, like Honey, of a strong Smell, and used principally by Farriers: From this is distilled the Oil of Turpentine, the finer and more volatile Part thereof, and what comes first, being called the

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the *Spirit*: What is left at the Bottom of the Still is the common Rosin, which, if taken out, before it be drawn too high, and then washed in Water by a peculiar Method, is what we call *white*, or *yellow Rosin*. The black Rosin is the same, more evaporated, and not washed at all. See COLOPHONIA. The common Frankincense is reputed to be the native Rosin of this Tree, or the *Resina Pini*, which is of a whitish-yellow Colour, whereof some Pieces are fat, soft, and whitish, and others hard, brittle, and more yellow. There is but little of this to be got pure at present, being adulterated by common yellow Rosin, by some way that crafty Knaves have found out. See THUS. The black and yellow Rosin are much of a Nature, being used in Ointments and Plaisters. Mr. *Dale*, in the second Part of his *Pharmacologia*, affirms, from Dr. *Kreig*, that the *Pix Burgundica*, or *Burgundy* Pitch of the Shops, is made of this Turpentine, after it has been boiled some time, and before it has arrived to the Hardness of Rosin: This is done, says he, in *Saxony*, where the white Rosin is made by boiling the Turpentine in large Vessels, without Distillation. See PIX BURGUNDICA. *Miller's Bot. Off.*

3. Pinus humilis; Iulo purpurascente. *T.* 585. *Pinaster Austriacus, tenuifolius.* J. B. 1. 255.

The Kernels, dried by the Fire, are good for an Asthma, and deterge Ulcers in the Kidneys. The Decoction of the thin Leaves is commended in the Scurvy, where the Acrimony of the Humours requires Demulcents, and where the Vessels are to be strengthened, as the Case is in a Phthisis. The expressed Oil of the Kernels has the same Virtues, as Oil of Almonds. *Hist. Plant. adscript. Boerhaav.*

PINUS AFRICANA. A Name for the *Conocarpodendron*; *foliis argenteis, sericeis, latissimis.*

Besides the foregoing Species of *Pinus*, *Dale* mentions the following;

Pinus maritima. Offic. *Pinus sylvestris montana.* Ger. 1175. Emac. 1357. *Pinus maritima major.* C. B. P. 492. *Pinus sylvestris maritima, conis firmiter ramis adhærentibus.* J. B. 1. 243. Tourn. Inst. 586. Raii Hist. 2. 1400. *Pinus maritima major fructifera.* Park. Theat. 1535. SEA PINE.

It grows in *Provence* and *Languedoc* in *France*; and the Bark, Leaves, and Resin, which are the Parts in Use, agree in Virtues with those of the *Pinus sylvestris*, or Mountain Pine.

Besides these, the following Species are mentioned in *Ray*;

1. *Pinus cui Osficula fragili Putamine sive Cembro.* J. B. *Pinus sylvestris montana tertia.* C. B. *Pinus sylv. altera fructifera, Tæda arbor forte. Pin. syl.* 2. Ger. descr.

It grows plentifully in the Country of the *Grisons*, where the Peasants feed on the Fruit, which, though, in the Judgment of *Bellonius*, it has a softer, and more savoury Kernel, than the common Pine, it is yet so cheap, as not to be worth the Exportation; it grows frequently, also, on the Mountains of *Geneure*, and Mount *Cenis*, in the Passage from *France* to the Duchy of *Milan*, where it is known by the Name of *Elvi*. *Gesner* says, that it grows on the high Mountains of the *Grisons*, and of *Wallisserland*; and that no Trees grow in higher Places.

2. *Pinaster latifolius Iulis virescentibus aut pallescentibus.* C. B. *Niger, latiore folio, Iulis pallescentibus.* Park.

3. *Pinaster Austriacus tenuifolius.* J. B. *Pinaster tenuifolius, Iulo purpurascente.* C. B. *Tæda, seu Pseudo-Pinus.* Ger. *Pinaster* 3. *Austriacus.* Clus.

4. *Pinaster conis erectis.* C. B. *Pinaster Austriacus.* Ger. Emac. *Pumilus montanus.* Park. *An Pinus sylvestris.* Mugho *sive* Krein. J. B. *Pinus tibulus seu tubulus.* Plin? *Sylv. Mugo.* Matth.

It grows on the Tops of the highest *Alps* in *Austria* and *Stiria*, among Stones and Rocks, where hardly any other Trees will appear.

5. *Pinaster tertius Hispanicus humilis.* J. B. *Pinus maritima minor.* C. B. Park. *Pinaster marit. minor.* Ger. Emac. *Clusius* observed this Species only in the Kingdom of *Murcia* in *Spain*, and that very rarely.

6. *Pinus sylv. maritima, conis firmiter ramis adhærentibus.* J. B. *Sylv. altera maritima.* Lob. Obs. *An Pinaster* 2. *Hispanicus.* Clus.?

7. *Pinus maritima major.* C. B. *Maritima major fructifera.* Park. *Sylvestris montana.* Ger. *Pinus maritima Theophrasti. Lobelio.* J. B. In Trunk, Branches, and Leaves, it appears very like the *Pinaster montanus*; only the Branches are glabrous, and blacker than the Trunk; and the Cone is of a scarlet Colour, and shorter and broader at the Top.

8. *Pinastrum alterum Hispanicum, vel minus Hispanicum.* Clus. *Pinus maritima major fructifera altera.* Park. *Marit. major.* This grows frequently in the Kingdoms of *Murcia* and *Valentia*, in *Spain*.

9. *Pinus sylv. foliis brevibus glaucis, cum parvis albentibus, Hortulanis nostris.* THE SCOTCH FIR, *i. e. Abies Scotica perperam dicta.* It grows spontaneously in the *Stirian Alps*.

This is now frequently cultivated in our Gardens and Groves, on account of its noble and beautiful Appearance.

10. *Pinus sylvestris, sive, ut Bellonius, Picea sylvestris Idæ Troadis, cujus coni facile decidunt.* J. B. *Raii H. P.*

PIPA *arbor & fructus Sinensis.* Michael Boym. *in Flora Sinensi.* Jonston. Dendrolog. The Name of a Plum-tree, which grows in *China*.

PIPER ALBUM. Offic. Ger. 1353. Emac. 1538. Park. Theat. 1603. J. B. 2. 181. *Piper rotundum album.* C. B. P. 411. Raii Hist. 2. 1342. *Piper album, Leucopiper.* Mont. Exot. 9. WHITE PEPPER. See PIPER NIGRUM.

PIPER NIGRUM. Offic. Ger. 1353. Emac. 1538. Park. Theat. 1603. J. B. 2. 181. *Piper rotundum nigrum.* C. B. P. 411. Raii Hist. 2. 1341. *Lada, aliis Molanga sive Piper aromaticum.* Pis. Mant. A. 492. *Piper rotundum ex Malabara foliis latis quinque nerviis albicantibus.* Herm. Mus. Zeyl. 52. *Molagocodi.* Hort. Mal. 7. 23. Tab. 12. BLACK PEPPER.

The Plant which bears Pepper climbs and twists itself about any thing that is put for its Prop or Support, bearing alternately large, oval, but sharp-pointed Leaves, full of large Nerves, opposite to which grow long Spikes of small monopetalous Flowers, cut into three Parts, succeeded by Bunches of the Grains of Pepper, which are round, of a dark-brown Colour, having a wrinkled Bar on the Outside. There has been a Dispute among the Writers of the Materia Medica, whether the white and black Pepper are the Fruit of one and the same Plant, or whether they be two distinct Species. The more antient, as *Garcias ab Horto*, *Parkinson*, *C. Bauhine*, were of Opinion, that they were different; but *Piso*, in his *Mantissa aromatica*, and since his Time, *Herb. de Jager*, in the twenty-sixth Epistle of the *India literata*, in the Appendix to the *Museum Valentini*, plainly demonstrate, that they are but one Species; and that the white is made of the ripest black Pepper, of which they put a Quantity in a deep Trench, where it lies for two or three Days, till the Bark is rotted, when they pour in a Quantity of Water, and, stirring it about, separate the Bark which swims a-top, and dry the Fruit with white Ashes, which they separate from, when dry, with large Fans, as we with new Corn.

Pepper is heating and drying, expelling Wind, and of great Use against Coldness and Windiness of the Stomach, and the Colic; it strengthens the Nerves and Head, and helps the Sight; outwardly it is good for the Tooth-ach, and for cold Affections of the Nerves, and Pains in the Limbs. Pepper ought not to be powdered fine, but only grossly broken, when it is eaten with any Food, or used to season it. *Miller's Bot. Off.*

Pepper is an aromatic Fruit, of an heating and drying Quality, produc'd in Grains commonly, and us'd in Sauces and Seasonings.

This Fruit, so well known in *Europe*, is produc'd by a Plant or Shrub, which grows in various Parts of the *East Indies*.

The Plant which bears it, is weak and creeping; a Circumstance which obliges those who cultivate it to plant it at the Foot of large Trees, such as the Areca, and Coco-nut-tree. Its Leaves, in Figure, resemble those of Ivy, but are less green, more yellow, of a strong Smell, and pungent Taste.

The Pepper comes forth in small Clusters, like our Gooseberries; and the Grains of which these Clusters are compos'd, at first appear green; then they become red, in proportion as they ripen; and at last black, or such as they come to us, after they are left expos'd to the Heat of the Sun for some time.

There are not two Species of Pepper, one white, and the other black; and we have good Reason to embrace this Opinion notwithstanding what Mr. *Pomet*, in his *Histoire des Drogues*, has said to the contrary, since Mr. *Dillon*, a celebrated Physician, and Author of the History of the Inquisition of *Goa*, assures us, that all the Difference between the white and black Pepper is, that the latter has its Skin, whereas the former wants the Skin; which is taken off by beating it before it is entirely dry, or by suffering it, after it is dry, to soak for some time in Water.

Tho' Pepper is produc'd in various Parts of the *Indies*, yet it grows most copiously between *Rajapour*, and the Cape of *Camarin*. The Pepper of *Malabar*, or that produc'd between Mount *Eli* and the Southern Extremity of the Coast, is somewhat smaller than the other; but produc'd in such large Quantities, that *Europe* is principally supplied with it.

The black Pepper, consumed in *Europe*, is of three Sorts; that of *Malabar*, and that of *Jamby*, and that of *Belipatham*. But this last is least esteem'd in *Europe*, on account of its Smalness and Driness; two Circumstances which recommend it to the *Indians*, who think small Pepper less hot than the large Kind.

The white Pepper ought to be chosen large, well-nourish'd, weighty, and without Mixture of black Grains or Rubbish; which when reduc'd to a Powder, is of a beautiful grey or a whitish Colour.

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As for black Pepper, which ought to be poſſeſs'd of almoſt all the Qualities of the white already enumerated, we muſt, alſo, take care that the Grains be not wrinkled; that there be a large Quantity of white Grains among them; and that the largeſt Grains have not been ſeparated, in order to be whiten'd, a Practice very common in *Holland*, *Rouen*, and *Paris*.

As a great Part of the Pepper, whether white or black, is ſold beaten, it is eaſy for Perſons of a fraudulent Diſpoſition to ſophiſticate it, which Retailers generally do by mixing, with the black Pepper, the grey Spices of *Auvergne*; *Maniguette*, a Species of *African* Pepper; the Duſt of Pepper; and the Cruſt of Bread. With the white Pepper they mix white Spices, or black Pepper whiten'd; ſo that it is very difficult to diſtinguiſh the ſophiſticated from the genuine Kind; for which Reaſon we ought to buy from Perſons of Honeſty and Skill.

Druggiſts and Spice-merchants ſell various other Kinds of Pepper, deſcrib'd by Travellers in their Relations; ſuch as the Pepper of *Madagaſcar*, that of *Maſcarine*, or the Iſland of *Bourbon*; the Pepper of *China*; the Long-pepper of the *Indies*, *Ethiopia*, and *America*; *Guinea* Pepper, *Jamaica* Pepper, the Pepper of *Thevet*, and that of *Africa*.

The Pepper of *Madagaſcar* is white, and grows on a Plant, which creeps on the Ground, and whoſe Stalk and Leaves have the ſame Smell with the Fruit, which ripens in the Months of *Auguſt*, *September*, and *October*.

The Pepper of *Maſcarenne*, which is, alſo, produc'd in the Iſland of *Java*, is call'd Cubebs, or Pepper with a Tail. It exactly reſembles the black Pepper, except that it is larger, and has a Tail. The Plant which produces it, creeps on the Ground; and its Fruit, which ought to be choſen large, well nouriſh'd, and without Wrinkles, adheres to it in the Form of Cluſters.

The *China* Pepper, deſcrib'd by Father *le Compte* in his Memoirs, has the ſame Proportion with that of the *Indies*. The Tree which produces it, is as large as a Nut-tree. Its Fruit is as large as a Pea, and of a greyiſh Colour, mix'd with red Streaks. When it is ripe, it opens ſpontaneouſly, and contains a ſmall Nut, as black as Jet; after it is gather'd, it is expos'd to the Sun, in order to be dried. The Nut, which is of a very ſtrong Taſte, is thrown away, and the Huſk or Bark only kept. The Smell of the Pepper-tree is ſo ſtrong, that the Fruit muſt be gather'd at different Times, leſt thoſe employ'd in that Work ſhould be injur'd by it.

The Long-pepper, which is a kind of Congeries of many ſmall Grains, ſtrongly united to each other, grows upon a Shrub, whoſe Leaves are ſlender, green, and placed upon a ſhort Stalk.

This Pepper is of three kinds, that of the *Eaſt Indies*, that of *America*, and that of *Ethiopia*, which is call'd Grains of *Zelim*. But that of the *Indies* is the only true Long-pepper, ſince the others bear but little Reſemblance to it.

Good Long-pepper ought to be recent, well-nouriſh'd, large, weighty, difficult to be broken, not rotten, without Rubbiſh or a Mixture of Earth. It is us'd in Medicine, in various *Galenical* Compoſitions, and is an Ingredient in the Theriaca. It is, alſo, ſometimes mixed with Spices.

The *Guinea* Pepper is of a red Colour, reſembling that of Coral. It is cultivated in *Languedoc*, and eſpecially in the Villages about *Nimes*. It is commonly found in the Shops of the Druggiſts and Grocers. The Vinegar-makers uſe it for making their Vinegar. Some, alſo, preſerve it with Sugar; it ought to be choſen recent, in Pods, which are beautiful, dry, ſound, and very red.

There are four Sorts of this Pepper: The firſt is call'd *Chilchotes*; the ſecond, which is very ſmall, is call'd *Chilterpin*; and theſe two Kinds are of an acrid and highly pungent Taſte. The third is call'd *Tenalchiles*, which is moderately hot, and which the *Indians* eat, like other Fruit, with Bread. The fourth is call'd *Chilpelagua*: This laſt is neither ſo pungent as the two firſt, nor ſo mild as the third; this is the Species ſo much eſteem'd by the *Spaniards*, and generally us'd by them in preparing their Chocolate.

There is, alſo, another Species of this Pepper, which only grows about *Peru*, where it is call'd *Agy*. A large Quantity of this Species is cultivated in a ſmall Plain, about ſix Leagues in Circumference, near the Village of *Arica*, on the Coaſt of *Peru*, and in the Valleys of *Sama*, *Tacna*, and *Cocumba*. Tho' theſe four Places are of a ſmall Extent, and there is a great Demand for this Kind of Pepper, yet they furniſh every Year, as much as draws more than ſix hundred thouſand Piaſters; which would appear incredible, if the Excrements of the Bird call'd *Guana*, with which the *Peruvians* dung their Land, did not render it ſo fertile, that the Grains ſown in it, and eſpecially the *Agy*, yield four or five hundred for one.

The *Jamaica* Pepper is the Fruit produc'd by the Tree which furniſhes us with the *Indian* Wood.

The Pepper of *Thevet*, which the *Dutch* call *Amomi*, on account of its Reſemblance to the *Amomi*, or *Jamaica* Pepper, is a ſmall round Fruit, as large as the white Pepper, a little roundiſh, and with a Species of ſmall Crown at one of its Ends. It is, alſo, called the ſmall round Clove, becauſe its Taſte reſembles that of the true Clove. *Savary. Dict. de Comm.*

As for the *African* Pepper, which is call'd *Maniguette*, *Malaguette*, or *Cardamoms*, ſee the Article CARDAMOMUM.

PIPER JAMAICENSE. *Jamaica* Pepper. See CARYOPHYLLUS.

PIPER INDICUM. *Guinea* Pepper. See CAPSICUM.

PIPER LONGUM. Offic. Ger. 1355. Emac. 1539. Park. Theat. 1604. Ogilb. Chin. 1. 226. J. B. 2. 185. Raii Hiſt. 1343. *Piper longum orientale*. C. B. P. 412. *Piper longum Piſtolochiæ foliis abſque pediculis*, *Maderaſpatana*. Pluk. Phytog. Tab. 104. *Pimpilim*. Piſ. Mant. A. 182. *Tlatlancuaye ſive Piperis longi Species* II. Hern. 126. *Catta-tripali*. Hort. Mal. 7. 27. Tab. 14. *Arbor Piperifera fructu longo*. Jonſ. Dendr. 178. *Acapatli*. Laet. 231. LONG-PEPPER.

This is a long Fruit, ſomewhat reſembling the *Iulus* or Catkin of the Haſel, but hard and firm, conſiſting of ſeveral ſmall roundiſh Grains, ſet together in a ſpiral Order, of a browniſh Colour, and an hot biting Taſte; they grow upon a Plant, which twiſts and winds itſelf about any thing, that is in its Way, having large, oblong, round-pointed Leaves, ſet alternately on the Stalks; and oppoſite to them grow monopetalous Flowers, divided into five Segments, which are ſucceeded by this Fruit. It grows in *Java* and *Malabar*, and other Parts of the *Eaſt Indies*.

As in Taſte, ſo in Virtue, it imitates the black Pepper; warming and comforting the Stomach, expelling the Wind, and promoting Digeſtion. It is, likewiſe, accounted alexipharmic, and is an Ingredient in the *Theriaca Andromachi*. *Miller's Bot. Off.*

PIPERELLA. A Name for the *Marum*; *Hiſpanicum*; *nigrum*; *flore purpureo*.

PIPERITIS. A Name for the *Lepidium*, Dittander.

PISCATORIS EMPLASTRUM. The Name of a Plaiſter deſcrib'd in *Aetius*, *Tetrabiblos*, 4. *Serm.* 3. *C.* 18.

PISCATORIS MEDICAMENTUM. The Name of a compound Medicine deſcrib'd by *Actuarius*, *L.* 6. *C.* 9.

PISO. A Mortar. *Caſtellus*.

PISONIA. Fingrigo *vulgo*.

The Characters are;

It is male and female in different Plants; the male Flowers conſiſt of a great Number of Stamina, and have no Petals: The female Flowers conſiſt of one Leaf, which is Bell-ſhaped, and divided at the Top into five Parts; from whoſe Cup ariſes the Pointal, which afterwards becomes an oblong, angular, channel'd Fruit, containing oblong Seeds.

Miller mentions two Species.

1. *Piſonia aculeata mas*. Houſt.

2. *Piſonia aculeata, fructu glutinoſo, & racemoſo*. Plum. Nov. *Gen.*

Theſe Plants are ſeminal Variations, which ariſe from the Seeds of the ſame Plant, but as they were not diſtinguiſhed by any of the Botaniſts, till the late Dr. *Houſtoun* obſerved their Difference; and therefore the different Sexes are here mentioned as ſeparate Plants.

The Name of this Plant was given by Father *Plumier*, in Honour to Dr. *William Piſo*, who publiſhed a Natural Hiſtory of *Braſil*. The Name of *Fingrigo* is what the Inhabitants of *Jamaica* know it by.

Theſe Plants are very common in the *Savannahs*, and other low Places, in the Iſland of *Jamaica*, as, alſo, in ſeveral other Places of the *Weſt Indies*; where it is very troubleſome to whoever paſſes through the Places of their Growth, by faſtening themſelves by their ſtrong crooked Thorns, to the Cloaths of the Perſons; and their Seeds, being glutinous, alſo, faſten themſelves to whatever touches them: So that the Wings of the Ground-doves, and other Birds, are often loaded with the Seeds, ſo as to prevent their flying; by which means they become an eaſy Prey.

It riſes about ten or twelve Feet high, with a pretty ſtrong Trunk; but the Branches are long and ſlender, whereby being unable to ſupport themſelves, they generally twiſt about whatever Plants are near them. *Miller's Dictionary.*

PISSANTHOS. The ſame as ORRHOPISSA.

PISSASPHALTOS. See BITUMEN.

PISSE. πίσσα. Pitch.

PISSELÆUM, πισσέλαιον, (from πίσσα, Pitch, and ἔλαιον, Oil) Oil of Pitch, is prepared of Pitch by Separation of its watry Part, which ſwims thereon like Whey upon Milk. It is taken off while the Pitch is in boiling, by ſpreading over it clean Wool, which, as ſoon as it is throughly moiſten'd with the aſcending Vapour, is wrung into a Veſſel; and this is repeated as long as the Pitch is in boiling.

The *Piſſelæum* is effectual for the ſame Purpoſes as Tar. A Cataplaſm thereof, prepared with Meal of Barley, reſtores the Hairs in an Alopecia; Tar has the ſame Effect; and, beſides, cures Scabs and Ulcers in Cattle. *Dioſcorides*, *Lib.* 1. *Cap.* 95.

PISSELÆUM INDICUM. Offic. *Bitumen Barbadenſe*. Boerh. Chem. *Pix liquida Barbadenſis*, Pharmacopolis. Lond. *Pix Berbados*. Boerh. Theſaur. Pharm. 108. BARBADOES-TAR.

This is brought from the Iſland, whoſe Name it bears; where it floats on the Surface of the Water: It is of a blackiſh-red Colour, of a diſagreeable Smell, and of the Conſiſtence of liquid

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liquid Pitch. It is poſſeſs'd of a ſudorific Quality, and is good for Diſorders of the Lungs and Stomach. By adding a ſmall Quantity of the Oil of Aniſe, to this Bitumen, the *London* Apothecaries prepare a Balſam, which they ſell for the *Balſam of Chili*. *Dale*.

Boerhaave, in his Chymiſtry, ſeems to think *Barbadoes* Tar a vegetable Preparation, ſince, like the *Oleum Terræ* of the *Indies*, it conſiſts of the expreſs'd Oil of Coco-nuts mix'd with medicated Earths.

This, ſays *Quincy*, ſeems to be what paſſes in the Shops by the Name of *Barbadoes* Tar. It has a ſtrong Scent, not unlike the common Tar, and is not very pleaſant to the Sight or Taſte; but 'tis certainly a good Balſamic, and where the Stomach will diſpenſe with it, will do great Service in ſome Diſorders of the Breaſt. It is effectual in obſtinate tickling Coughs, and ſometimes ſucceeds where more elegant Medicines have failed. Some commend it in Burns, Scalds, and Inflammations; but the regular Practice does not much juſtify ſuch Uſe externally. Among the Country-people, it is in great Requeſt for ſcal'd Heads, which is a Diſeaſe troubleſome to cure, and often puzzles a good Phyſician. It is with ſome, alſo, a Secret to apply to the Soles of the Feet in Agues, and, alſo, to the Wriſts; and I have known Inſtances where it has ſucceeded. That Medicine commonly ſold by the Name of Oil of Spike, is nothing but Oil of Turpentine tinged with this Simple. See PICTONUM COLICA.

PISSEROS, πισσηρὸς, from πίσσα, Pitch, is an Epithet of a Cerate, called by *Hippocrates* πισσηρὴ κηρωτὶς (*piſſere cerotes*), pitchy Cerate, and order'd by him to be apply'd to Ulcers affected with an Inflammation, and as an Anodyne. It was prepared, as *Galen* writes, *Comment. 1. in Lib. de Fract.* of Wax melted with Oil, or Oil of Roſes, and dry Pitch. *Hippocrates* ſometimes expreſſes it ſimply by πισσηρὴ (*Piſſere*), and ſometimes with the Addition of κηρωτὶς (*Cerotes*), πισσηρὴ κηρωτὶς.

PISSITES, πισσίτης, Wine of Pitch, is prepared of Tar and Muſt. The Tar is firſt to be waſhed with Sea-water, or Brine, till it becomes white, and the Sea-water runs off pure; after which it is to be waſhed with ſweet Water. Then to eight *Congii* of Muſt, put an Ounce or two of this Tar, and ſuffer it to ferment, and then to ſettle, after which pour it into Veſſels.

This ſort of Wine is of an heating Quality, helps Concoction, is abſterſive and pectoral; on which account, it is of Efficacy in Pains of the Thorax, Belly, Liver, Spleen, and Uterus, if unattended with a Fever; alſo, in inveterate Defluxions, and deep Exulcerations. It is, alſo, good againſt a Cough, Slowneſs of Digeſtion, Inflations, and an Aſthma; and is of Service in Luxations, eſpecially if applied in raw Wool [οἰσυπηρὸς]. *Dioſcorides, Lib. 5. Cap.* 48.

PISSOCEROS, πισσόκηρος. The Wax with which Bees line their Hives, and which is the Foundation of their Combs.

PISSOSIS. Pication. See PICATIO.

PISTACHIA. A Name for the *Terebinthus*; *Indica*; *Theophraſti*.

PISTATIO, according to *Caſtellus*, is the covering any Materials, included in a proper Veſſel, with Paſte, in order to their being bak'd, or boil'd.

PISTILLUM. A Peſtle.

PISTOLOCHIA. See *Ariſtolochia*, and *Serpentaria Virginiana*.

PISUM.

The Characters are

It has a long inflated Pod, full of roundiſh Seeds; the lower Part of the Stalk is fiſtulous; the Leaves are ſome of them, as it were, perforated by the Stalk; the other are pinnated, and end in a Tendril.

Boerhaave mentions twenty-ſix Species of *Piſum*, none of which have any medicinal Virtues aſcrib'd to them at preſent, that I know of, except the ſixth; which is,

Piſum; arvenſe, fructu albo. *Tourn. Inſt.* 394. *Boerh. Ind. A.* 2. 40. *Piſum*. Offic. *Piſum arvenſe flore candido, fructu rotundo, albo*. C. B. P. 342. *Piſum minus*. Ger. 1045. Emac. 1219. *Piſum vulgare parvum album arvenſe*. J. B. 2. 297. Raii Hiſt. 1. 891. *Piſum ſylveſtre primum*. Park. Theat. 1057. Raii Synop. 3. 318. COMMON WHITE PEAS.

Peas are more uſed in the Kitchen, than in the Shop, being known to every body to have whitiſh-green Leaves, conſiſting of two or three Pair of large oval Pinnæ, with Claſpers at the Ends; the Stalks are weak, angular, and not able to ſupport themſelves. The Flowers are white and papilionaceous; and the Peas, when ripe, round and white: They are planted in Fields and Gardens, flowering in *May*, and the Fruit is eat in *June*.

Peas, when green, are a pleaſant grateful nouriſhing Food, but ſomewhat flatulent and windy, as well as when dry. They are good to ſweeten the Blood, and correct ſalt ſcorbutic Humours, either eaten raw, or boiled. *Miller's Bot. Off.*

Peas are a Puls much uſed for Food; the ſmaller and greener they are, the better is their Taſte. They are, alſo, dried for keeping; but then they have not the Taſte they had before.

They produce the greateſt Part of their good Effects by the Help of their oily balſamic Parts, which, ſheathing up ſharp Humours of the Breaſt, ſtop Coughs; and, by eaſily condenſing in the Vacuities of the ſolid Parts, repair and nouriſh them. The firſt Porridge, or boiling of Peas, is ſoftening and laxative, becauſe 'tis filled with the more diſſoluble Salts of this Pulſe; theſe Salts, irritating and pricking the inteſtinal Glands, cauſe them to let paſs through their Pores a greater Quantity of ſerous Matter. Peas contain a viſcous and thick Juice, which cauſes Wind, and produces groſs Humours; and, therefore, they are not good for thoſe that are troubled with Gravel. *Lemery on Foods*.

Broth of Peas, not only renders the Body ſoluble, but, alſo, procures a more free and copious Evacuation of the Lochia. It is, alſo, beneficial in nephritic Pains, according to *Simon Paulli*, in his *Quadripartitum Botanicum*. Some, alſo, with Succeſs, uſe a Decoction of Peas, in order to cure cutaneous Diſorders, and Pimples. *Hoffman. Præſt. Remed. Domeſt.*

PITACIUM. A large Cloth, impregnated, or ſpread over, with ſome Medicine, in order to be applied to a Part affected.

PITHA. A Name in *Boerhaave* for the *Cereus*; *ſcandens*; *minor trigonus*; *articulatus*; *fructu ſuaviſſimo*.

PITINE. A Name for the APHACA; which ſee.

PITOMA. The Name of a large Tree, which grows in *Braſil*, bearing a kind of Apple, of an aſtringent, bitter Taſte, but not eatable, and of no Uſe in Medicine.

PITTONIA.

The Characters are;

It hath a globular bell-ſhaped Flower, conſiſting of one Leaf, which is cut into ſeveral Segments at the Brim; from whoſe Cup ariſes the Pointal, which afterwards becomes a ſoft ſpherical Berry full of Juice, incloſing two Seeds, which are, for the moſt part, oblong.

Miller mentions ſeven Species, all of which grow in the warmeſt Parts of *America*, where the firſt Sort grows to the Height of twelve or fourteen Feet, and divides into many Branches, ſo as to form a ſmall Tree. The ſecond, fifth, and ſeventh Sorts grow to the Height of eight or nine Feet, and produce many Branches near their Roots, ſo as to form thick Buſhes. *Miller's Dict.*

PITTOSIS. The ſame as PICATIO.

PITUITA. Phlegm. See PHLEGMA.

PITUITARIA GLANDULA. The Pituitary Gland.

PITYIDES, πιτυίδες, a Name for the Fruit, or Kernels, contained in the Cones of the *Pinus*, and *Picea*. Theſe Kernels are of an aſtringent and ſomewhat heating Quality, and are good for a Cough, and other Affections incident to the Region of the Thorax, whether taken alone, or with Honey. *Dioſcorides, L. 1. C.* 87.

PITUINA, πιτυίνη. The Reſin of the Pitch-tree.

PITYLISMA. A Species of Exerciſe mentioned by *Galen*, *de Sanitate tuenda*, *Lib. 2. Cap.* 10. It conſiſted in walking on Tiptoes, lifting up the Hands above the Head, and moving them ſwiftly in different Directions.

PITYOCAMPE, πιτυοκάμπη. A Species of Caterpiller, which is found on the Pitch-tree, and to which *Galen* aſcribes the Virtues of Cantharides, *de Simpl. Facult. L.* 11.

PITYRIASIS. A ſcurfy Diſorder of the Head, Chin, and Eye-brows, called, alſo, *Porrigo*. See LEPRA. From πίτυρον, Bran.

PITYROIDES. An Epithet for a ſort of Sediment in the Urine, reſembling Bran.

PITYS, πίτυς. The Pine.

PITYUSA. See TITHYMALUS.

PIX. Pitch. This is a Species of Gum obtained from the Pine-tree, by making Inciſions in it. It receives different Names according to its different Preparations, Colours, and Qualities. When it firſt flows from the Tree, it is called *Barras*, but is afterwards diſtinguiſhed into two Sorts, which have different Names: That which is moſt beautiful and clear, is called *Galipot*; and that which is more full of Fæces, and of a worſe Colour, is called *Marbled Barras*. The former of theſe, or the Galipot, ſerves to make all the different Species of Pitch deſcribed in this Article.

The pinguious Pitch, which is, alſo, called *White Burgundy Pitch*, is *Galipot* melted with Oil of Turpentine. Some, however, aſſert, that the *Burgundy* Pitch flows naturally from reſinous Trees, in the Mountains of *Franche-Comté*.

Reſin is, according to ſome Authors, a Gum diſcharged from the Turpentine-tree, the Larch-tree, the Maſtich-tree, or the Cypreſs: But the Opinion of others is far more probable, who, from Experience, aſſert, that it is Galipot, boiled to a certain Conſiſtence, and reduced to a Maſs of any determinate Weight.

The beſt Reſin comes from *Bayonne* and *Bourdeaux*. It ought to be choſen dry, white, free from Water and Sand.

Black Pitch, which is properly that known by the Name of *Pitch*, is only *Galipot*, prepared in a particular manner, by put-

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ting into it, when it is quite warm, a certain Quantity of Tar, in order to render it black. There are two Kinds of it, one hard, and another soft, which only differ in this Circumstance.

Mr. *Wheler*, in his Voyages, has given another Method of preparing black Pitch, used in the *Levant*, and which is not much different from that given by *Furetiere* in his Dictionary.

He orders us to prepare a Heap of Earth, in which we are to make as Hollow two Ells in Diameter at the Top, but which becomes gradually narrower, as it approaches to the Bottom. This Hollow is to be filled with small Portions of such Branches of the Pine-tree, as contain most Gum, laid above each other till the Hollow is full. Then the upper Part is to be covered with Fire, which burns to the Bottom: By which means the Pitch is discharged from a small Hole made at the Bottom for that Purpose.

The best black Pitch comes from *Norway* and *Sweden*, to which that made in *France* is by no means comparable.

The Goodness of hard black Pitch consists in being of a shining black Colour, brittle, dry, and forming, as it were, a Rays, when it is broken.

What is called the *Pix Navalis* in Medicine, ought to be the Pitch scraped off from Ships; but 'tis certain, that most Apothecaries use the common black Pitch in its stead.

From the black Pitch there is obtain'd an Oil, which, on account of its singular Virtues, is called the *Baum of Pitch*. *Diction. de Commerce.*

PIX LIQUIDA. Tar.

Dr. *Berkeley*, Bishop of *Cloyne*, having lately published an Account of the Virtues of Tar-water, which has considerably raised the Attention of the Public, I think myself obliged to give a short Abstract of his Book upon this Subject, especially as the Author is a Person well known in the learned World.

In certain Parts of *America*, Tar-water is made by putting a Quart of cold Water to a Quart of Tar, and stirring them well together in a Vessel, which is left standing till the Tar subsides to the Bottom. A Glass of clear Water, being poured off for a Draught, is replaced by the same Quantity of fresh Water, the Vessel being shaken, and left to stand as before. And this is repeated for every Glass, so long as the Tar continues to impregnate the Water sufficiently, which will appear by the Smell and Taste. But as this Method produceth Tar-water of different Degrees of Strength, I choose to make it in the following manner: Pour a Gallon of cold Water on a Quart of Tar, and stir and mix them throughly with a Ladle, or flat Stick, for the Space of three or four Minutes; after which, the Vessel must stand eight-and-forty Hours, that the Tar may have time to subside; when the clear Water is to be poured off, and kept for Use; no more being made from the same Tar, which may still serve for common Purposes.

This cold Infusion of Tar hath been used in some of our Colonies, as a Preservative, or Preparative, against the Small-pox; which foreign Practice induced me to try it in my own Neighbourhood, when the Small-pox raged with great Violence. And the Trial fully answered my Expectation; all those within my Knowledge, who took the Tar-water, having either escaped that Distemper, or had it very favourably. In one Family there was a remarkable Instance of seven Children, who came all very well through the Small-pox, except one young Child, which could not be brought to drink Tar-water, as the rest had done.

Several were preserved from taking the Small-pox by the Use of this Liquor; others had it in the mildest manner; and others, that they might become susceptible of the Infection, were obliged to intermit drinking the Tar-water. I have found it may be drank with great Safety and Success for any Length of Time, and this not only before, but, also, during the Distemper. The general Rule for taking it is, to drink about half a Pint Night and Morning on an empty Stomach; which Quantity may be varied, according to the Case and Age of the Patient, provided it be always taken on an empty Stomach, and about two Hours before or after a Meal.

It seemed probable, that a Medicine of such Efficacy, in a Distemper attended with so many purulent Ulcers, might be, also, useful in other Foulnesses of the Blood: Accordingly, I tried it on several Persons infected with cutaneous Eruptions and Ulcers, who were soon relieved, and soon after cured. Encouraged by these Successes, I ventured to advise it in the foulest Distempers, wherein it proved much more successful than Salivations and Wood-drinks had done.

Having tried it in a great Variety of Cases, I found it succeed beyond my Hopes, in a tedious and painful Ulceration of the Bowels, in a consumptive Cough, and (as appeared by expectorated Pus) an Ulcer in the Lungs, in a Pleurisy and Peripneumony. And, when a Person, who for some Years had been subject to erysipelatous Fevers, perceived the usual forerunning Symptoms to come on, I advised her to drink Tar-water, which prevented the Erysipelas.

I never knew any thing so good for the Stomach as Tar-water: It cures Indigestion, and gives a good Appetite. It is an excellent Medicine in an Asthma. It imparts a kindly Warmth, and quick Circulation, to the Juices without heating, and is therefore useful, not only as a Pectoral and Balsamic, but, also, as a powerful and safe Deobstruent in cachectic and hysteric Cases. As it is both healing and diuretic, it is very good for the Gravel. I believe it to be of great Use in a Dropsy, having known it cure a very bad Anasarca in a Person, whose Thirst, though very extraordinary, was in a short time removed by the drinking of Tar-water.

The Usefulness of this Medicine in inflammatory Cases is evident, from what has been already observed. And yet some, perhaps, may suspect, that as the Tar itself is sulphureous, Tar-water must be of an hot inflaming Nature. But it is to be noted, that all Balsamics contain an acid Spirit, which is, in Truth, a volatile Salt. Water is a Menstruum that dissolves all Sorts of Salts, and draws them from their Subjects. Tar, therefore, being a Balsam, its salutary Acid is extracted by Water, which yet is incapable of dissolving its gross resinous Parts, whose proper Menstruum is Spirit of Wine. Therefore, Tar-water, not being impregnated with Resin, may be safely used in inflammatory Cases; and, in fact, it hath been found an admirable Febrifuge, at once the safest Cooler and Cordial.

The volatile Salts, separated by Infusion from Tar, may be supposed to contain its specific Virtues. Mr. *Boyle*, and other later Chymists, are agreed, that fixed Salts are much the same in all Bodies. But it is well known, that volatile Salts greatly differ; and the easier they are separated from the Subject, the more they possess of its specific Qualities. Now the most easy Separation is, by Infusion of Tar in cold Water, which to Smell and Taste shewing itself well impregnated, may be presumed to extract and retain the most pure, volatile, and active Particles of that vegetable Balsam.

Tar was by the Antients esteemed good against Poisons, Ulcers, and the Bites of venomous Creatures; also, for phthisical, scrophulous, paralytic, and asthmatic Persons. But the Method of rendering it an inoffensive Medicine, and agreeable to the Stomach, by extracting its Virtues in cold Water, was unknown to them. The Leaves, and tender Tops, of Pine and Fir are, in our Times, used for Diet-drinks, and allowed to be anti-scorbutic and diuretic. But the most elaborate Juice, Salt, and Spirit of those Ever-greens, are to be found in Tar, whose Virtues extend not to Animals alone, but, also, to Vegetables. Mr. *Evelyn*, in his Treatise on Forest-trees, observes with Wonder, that Stems of Trees, smeared over with Tar, are preserved thereby from being hurt by the invenom'd Teeth of Goats, and other Injuries, while every other thing of an unctuous Nature is highly prejudicial to them.

It seems that Tar and Turpentine may be had, more or less, from all Sorts of Pines and Firs whatsoever; and that the native Spirits, and essential Salts, of those Vegetables are the same in Turpentine, and common Tar. In Effect, this vulgar Tar, which Cheapness and Plenty may have render'd contemptible, appears to be an excellent Balsam, containing the Virtues of most other Balsams, which it easily imparts to Water, and by that means readily and inoffensively insinuates them into the Habit of the Body.

The resinous Exsudations of Pines and Firs are an important Branch of the Materia Medica, and not only useful in the Prescriptions of Physicians, but have been, also, thought otherwise conducive to Health. *Pliny* tells us, that Wines, in the Time of the old *Romans*, were medicated with Pitch and Resin; and *Johnstonus*, in his *Dendrographia*, observes, that it is wholsome to walk in Groves of Pine-trees, which impregnate the Air with balsamic Particles. That all Turpentines and Resins are good for the Lungs, against Gravel, also, and Obstructions, is no Secret. And that the medicinal Properties of those Drugs are found in Tar-water, without heating the Blood, or disordering the Stomach, is confirmed by Experience; and, particularly, that phthisical and asthmatic Persons receive speedy and great Relief from the Use of it.

Balsams, as all unctuous and oily Medicines, create a Nauseating in the Stomach. They cannot, therefore, be taken in Substance, so much, or so long, as to produce all those salutary Effects, which, if throughly mixed with the Blood and Juices, they would be capable of producing. It must, therefore, be a thing of great Benefit to be able to introduce any requisite Quantity of their volatile Parts into the finest Ducts and Capillary Vessels, so as not to offend the Stomach; but, on the contrary, to comfort and strengthen it in a great Degree.

According to *Pliny*, liquid Pitch, (as he calls it) or Tar, was obtained by setting Fire to Billets, or old fat Pines or Firs. The first Running was Tar, the latter, or thicker Running, was Pitch. *Theophrastus* is more particular: He tells us, the *Macedonians* made huge Heaps of the cloven Trunks of those Trees, wherein the Billets were placed erect beside each other. That

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That such Heaps or Piles of Wood were sometimes a hundred and eighty Cubits round, and sixty, or even an hundred, high; and that, having covered them with Sods of Earth, to prevent the Flame from bursting forth, (in which Case the Tar was lost) they set on Fire those huge Heaps of Pine or Fir, letting the Tar and Pitch run out in a Chanel.

From the manner of procuring Tar, it plainly appears to be a natural Production, lodged in the Vessels of the Tree, whence it is only freed and let loose (not made) by Burning. If we may believe *Pliny*, the first Running, or Tar, was called *Cedrium*, and was of such Efficacy to preserve from Putrefaction, that in *Egypt* they embalmed dead Bodies with it. And to this he ascribes their Mummies continuing uncorrupted for so many Ages.

Some modern Writers inform us, that Tar flows from the Trunks of Pines and Firs, when they are very old; that Pitch is Tar inspissated; and both are the Oil of the Tree grown thick and black with Age, and the Influence of the Sun. The Trees, like old Men, being unable to perspire, and their secretory Ducts obstructed, they are, as it were, choked and stuffed with their own Juice.

The Method used by our Colonies in *America*, for making Pitch and Tar, is, in Effect, the same with that of the antient *Macedonians*, as appears in the Account given in the Philosophical Transactions. And the Relation of *Leo Africanus*, who describes as an Eye-witness, the making of Tar on Mount *Atlas*, agrees, in Substance, with the Methods used by the *Macedonians* of old, and the People of *New England* at this Day.

Tar, and all Sorts of Exsudations from Ever-greens, are, in a general Acceptation, included under the Name *Resin*. Turpentine is a Resin, and on all hands allowed to have great medicinal Virtues. Tar, and its Infusion, contain these Virtues. Tar-water is extremely pectoral and restorative; and, if I may judge from what Experience I have had, it possesseth the most valuable Qualities ascribed to the several Balsams of *Peru*, of *Tolu*, of *Capivi*, and even to the Balm of *Gilead*; such is its Virtue in Asthmas and Pleurisies, in Obstructions, and ulcerous Erosions, of the inward Parts.

The Folly of Man rateth things by their Scarceness, but Providence has made the most useful things most common. Among liquid oily Substances, which are termed *Balsams*, and valued for medicinal Virtues, Tar may hold its Place as a most valuable Balsam. Its Fragrancy shews, that it is possessed of active Qualities; and its Oiliness, that it is fitted to retain them. This excellent Balsam may be purchased for a Penny a Pound, whereas the Balsam of *Judea*, when most plenty, was sold, on the very Spot that produced it, for double its Weight in Silver, if we may credit *Pliny*. Now, comparing the Virtues I have experienced in Tar, with those I find ascribed to the precious Balm of *Judea*, of *Gilead*, or of *Mecha*, (as it is diversly called) I am of Opinion, that the latter is not a Medicine of more Value or Efficacy than the former.

The medicinal Virtues of Amber are to be found in the balsamic Juices of Pines and Firs. Particularly the Virtues of the most valuable Preparation, I mean Salt of Amber, are in a great Degree answered by Tar-water, as a Detergent, Diaphoretic, and Diuretic.

It is remarked both by *Theophrastus* and *Johnstonus*, that Trees growing in low and shady Places, do not yield so good Tar, as those which grow in higher and more exposed Situations. And *Theophrastus* further observes, that the Inhabitants of Mount *Ida* in *Asia*, who distinguish the *Idæan* Pine from the Maritime, affirm, that the Tar flowing from the former is in greater Plenty, as well as more fragrant, than the other. Hence it should seem, the Pines and Firs in the Mountains of *Scotland* might be employed in that way, and rendered valuable; even where the Timber, by its Remoteness from Water-carriage, is of small Value. What we call *Scotch Fir*, is falsly so called, being, in Truth, a wild Forest-pine; and, as Mr. *Ray* informs us, agreeing much with the Description of a Pine growing on Mount *Olympus* in *Phrygia*, probably the only Place where it is found out of these Islands; in which, of late Years, it is so much planted and cultivated with so little Advantage, while the Cedar of *Lebanon* might, perhaps, be raised with little more Trouble, and much more Profit and Ornament.

At present the *Norwegian* Tar is the most liquid, and best for medicinal Uses, of any I have experienced. Those Trees that grow on Mountains exposed to the Sun, or the North Wind, are reckoned by *Theophrastus*, to produce the best and purest Tar: And the *Idæan* Pines were distinguished from those growing on the Plain, as yielding a thinner, sweeter, and better scented Tar; all which Differences, I think, I have observed between the Tar that comes from *Norway*, and that which comes from low and swampy Countries.

The less Violence is used to Nature, the better its Produce. The Juice of Olives and Grapes, issuing by the lightest Pressure, is best. Resins, that drop from the Branches spontaneously, or ouse from the Trees upon the slightest Incision, are the finest, and most fragrant. And Infusions are observed to act more strongly than Decoctions of Plants; the more subtile and volatile Salts and Spirits, which might be lost or corrupted by the latter, being obtained in their natural State by the former. It is, also, observed, that the finest, purest, and most volatile Part is that which first ascends in Distillation. And, indeed, it should seem the lightest and most active Particles required least Force to disengage them from the Subject.

The Salts, therefore, and more active Spirits, of the Tar are got by Infusion in cold Water; but the resinous Part is not to be dissolved thereby. Hence the Prejudice, which some, perhaps, may entertain against Tar-water, as a Medicine, the Use whereof might inflame the Blood by its Sulphur and Resin, appears not well grounded; it being, indeed, impregnated with a fine acid Spirit, which is balsamic, diuretic, and possessed of many other Virtues. Spirits are supposed to consist of Salts and Phlegm, and probably too somewhat of a fine oily Nature, differing from Oil, because it mixeth with Water; and agreeing with Oil in this, that it runneth in Rivulets by Distillation. Thus much is allowed, that the Water, Earth, and fixed Salt, are the same in all Plants: That, therefore, which differenceth a Plant, or makes it what it is, the native Spark, or Form, in the Language of Chymists and Schools, is none of these things; nor yet the finest Oil, which seemeth only its Receptacle or Vehicle. It is observed by Chymists, that all Sorts of balsamic Wood afford an acid Spirit, which is the volatile oily Salt of the Vegetable. Herein are chiefly contained their medicinal Virtues, and by the Trials I have made it appear, that the acid Spirit in Tar-water possesseth the Virtues, in an eminent Degree, of that of Guaiacum, and other medicinal Woods.

Qualities, in a Degree too strong for human Nature to subdue and assimilate to itself, must hurt the Constitution. All Acids, therefore, may not be useful or innocent. But this seems an Acid so throughly concocted, so gentle, mild, temperate, and withal possessed of a Spirit so fine and volatile, as readily to enter the smallest Vessels, and be assimilated with the utmost Ease.

If any one were minded to dissolve some of the Resin, together with the Salt or Spirit, he need only mix some Spirit of Wine with the Water. But such an entire Solution of Resins and Gums as to qualify them for entering and pervading the Animal System, like the fine acid Spirit that first flies off from the Subject, is, perhaps, impossible to be obtained. It is an Apophthegm of the Chymists, derived from *Helmont*, that whoever can make Myrrh soluble by the Action and Powers of the human Body, has the Secret of prolonging Life; and *Boerhaave* owns, that there seems to be Truth in this, from its resisting Putrefaction. Now this Quality is as remarkable in Tar, with which the Antients embalmed and preserved dead Bodies. And tho' *Boerhaave* himself, and other Chymists before him, have given Methods for making Solutions of Myrrh, yet it is by means of Alcohol, which extracts only the inflammable Parts. And it does not seem, that any Solution of Myrrh is impregnated with its Salt, or acid Spirit. It may not, therefore, seem strange, if this Water should be found more beneficial for procuring Health and long Life, than any Solution of Myrrh whatsoever.

Certainly divers Resins and Gums may have Virtues, and yet not be able for their Grossness to pass the Lacteals, and other finer Vessels, nor yet, perhaps, readily impart those Virtues to a Menstruum, that may with Safety and Speed convey them throughout the human Body: Upon all which Accounts, I believe Tar-water will be found to have singular Advantages. It is observed, that acid Spirits prove the stronger, by how much the greater Degree of Heat is required to raise them. And, indeed, there seems to be no Acid more gentle than this, obtained by the simple Affusion of cold Water, which carries off from the Subject the most light and subtile Parts, and, if one may so speak, the very Flower of its specific Qualities. And here it is to be noted, that the volatile Salt and Spirit of Vegetables, by gently stimulating the Solids, attenuate the Fluids contained in them, and promote Secretions, and that they are penetrating and active, contrary to the general Nature of other Acids.

It is a great Maxim for the Preservation of Health, that the Juices of the Body be kept fluid in a due Proportion. Therefore the acid volatile Spirit in Tar-water, at once attenuating and cooling in a moderate Degree, must greatly conduce to Health, as a mild salutary Deobstruent, quickening the Circulation of the Fluids without injuring the Solids, thereby gently removing or preventing those Obstructions, which are the great and general Cause of most chronical Diseases, and in this manner answering to antihysteric Medicines, such as Asa-foetida, Galbanum, Myrrh, Amber, and, in general, to all the Resins and Gums of Trees or Shrubs useful in nervous Cases.

Warm Water is itself a Deobstruent: Therefore the Infusion of Tar, drank warm, is easier insinuated into all the nice Capillary Vessels, and acts not only by virtue of the Balsam, but, also,

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alſo, by that of the Vehicle. Its Taſte, its diuretic Quality, its being ſo great a Cordial, ſhew the Activity of this Medicine. And, at the ſame time that it quickens the ſluggiſh Blood of the Hyſterical, its balſamic oily Nature abates the too rapid Motion of the ſharp thin Blood in thoſe who are Hectic. There is a Lentor and Smoothneſs in the Blood of healthy ſtrong People; on the contrary, there is often an Acrimony and Solution in that of weakly Perſons. The fine Particles of Tar are not only warm and active; they are, alſo, balſamic and emollient, ſoftening and enriching the ſharp and vapid Blood, and healing the Eroſions occaſioned thereby in the Blood-veſſels and Glands.

Tar-water poſſeſſes the ſtomachic and cardiac Qualities of Elixir Proprietatis, *Stoughton*'s Drops, and many ſuch Tinctures and Extracts; with this Difference, that it worketh its Effect more ſafely, as it hath nothing of that Spirit of Wine, which, however mixed and diſguiſed, may yet be well accounted a Poiſon in ſome Degree.

Such Medicines are ſuppoſed to be diaphoretic, which, being of an active and ſubtile Nature, paſs through the whole Syſtem, and work their Effect in the fineſt Capillaries, and perſpiratory Ducts, which they gently cleanſe and open. Tar-water is extremely well fitted to work by ſuch an inſenſible Diaphoreſis, by the Fineneſs and Activity of its acid volatile Spirit. And ſurely thoſe Parts ought to be very fine, which can ſcour the perſpiratory Ducts, under the Scarf-ſkin, or Cuticle, if it be true, that one Grain of Sand would cover the Mouths of more than an hundred thouſand.

Another way wherein Tar-water operates, is by Urine, than which, perhaps, no Method is more ſafe and effectual for cleanſing and carrying off the Salts of the Blood. But it ſeems to produce its principal Effect as an Alterative, which is ſure, eaſy, and much ſafer than thoſe vehement purgative, emetic, and ſalivating Medicines, which do Violence to Nature.

An Obſtruction of ſome Veſſels cauſeth the Blood to move more ſwiftly in other Veſſels which are not obſtructed. Hence ariſe manifold Diſorders. A Liquor that dilutes and attenuates, reſolves thoſe Concretions which obſtruct the Veſſels. Tar-water is ſuch a Liquor. It may be ſaid indeed of common Water, that it attenuates; alſo, of Mercurial Preparations, that they attenuate. But it ſhould be conſider'd, that mere Water only diſtends the Veſſels, and thereby weakens their Tone; and that Mercury, by its great Momentum, may juſtly be ſuſpected of hurting the fine Capillaries; which two Deobſtruents, therefore, might eaſily over-act their Parts, and (by leſſening the Force of the elaſtic Veſſels) remotely produce thoſe Concretions they are intended to remove.

Weak and rigid Fibres are looked on by the moſt able Phyſicians, as Sources of two different Claſſes of Diſtempers; a ſluggiſh Motion of the Liquids occaſions weak Fibres, therefore, Tar-water is good to ſtrengthen them, as it gently accelerates the Motion of their Contents. On the other hand, being an unctuous bland Fluid, it moiſtens and ſoftens the dry and ſtiff Fibres; and ſo proves a Remedy for both Extremes.

Common Soaps are Compoſitions of lixivial Salt and Oil. The corroſive Acrimony of the ſaline Particles being ſoftened by the Mixture of an unctuous Subſtance, they inſinuate themſelves into the ſmall Ducts with leſs Difficulty and Danger. The Combination of theſe different Subſtances makes up a very ſubtile and active Medicine, fitted for mixing with all Humours, and reſolving all Obſtructions. Soap, therefore, is juſtly eſteemed a moſt efficacious Medicine in many Diſtempers.

Alcaline Salt is allowed to be cleanſing, attenuating, opening, reſolving, ſweetening; it is pectoral, vulnerary, diuretic, and hath other good Qualities, which are, alſo, to be found in Tar-water. It is granted, that Oil, and acid Salts, combined together, exiſt in Vegetables; and that, conſequently, there are acid Soaps as well as alcaline. And the ſaponaceous Nature of the acid vegetable Spirits is what renders them ſo diuretic, ſudorific, penetrating, abſterſive, and reſolving. Such, for Inſtance, is the acid Spirit of Guaiacum. All theſe Virtues ſeem to be in Tar-water in a mild and ſalutary Degree.

It is the general Opinion, that all Acids coagulate the Blood. *Boerhaave* excepts Vinegar, which he holds to be a Soap, inaſmuch as it is found to contain an Oil as well as an acid Spirit. Hence it is both unctuous and penetrating, a powerful Antiphlogiſtic, and Preſervative againſt Corruption and Infection. Now, it ſeems evident, that Tar-water is a Soap as well as Vinegar. For though it be the Characteriſtic of Reſin, which is an inſpiſſated groſs Oil, not to diſſolve in Water, yet the Salts attract ſome fine Particles of eſſential Oil; which fine Oil ſerves as a Vehicle for the acid Salts, and ſhews itſelf in the Colour of the Tar-water; for all pure Salts are colourleſs. And though the Reſin will not diſſolve in Water, yet the ſubtile Oil, in which the vegetable Salts are lodged, may as well mix with Water as Vinegar does, which contains both Oil and Salt. And as the Oil in Tar-water diſcovers itſelf to the Eye, ſo the acid Salts manifeſt themſelves to the Taſte. Tar-water, therefore, is a Soap, and as ſuch, has the medicinal Qualities of Soaps.

It operates more gently, as the acid Salts loſe their Acrimony being ſheathed in Oil, and thereby approaching the Nature of neutral Salts, and are more benign and friendly to the Animal Syſtem; and more effectually, as by the Help of a volatile, ſmooth, inſinuating Oil, thoſe ſame Salts are more eaſily introduced into the Capillary Ducts. Therefore, in Fevers, and epidemical Diſtempers, it is, (and I have found it ſo) as well as in chronical Diſeaſes, a moſt ſafe and efficacious Medicine, being good againſt too great Fluidity as a Balſamic, and good againſt Viſcidity as a Soap. There is ſomething in the fiery corroſive Nature of lixivial Salts, which makes alcaline Soaps a dangerous Remedy in all Caſes where an Inflammation is apprehended. And as Inflammations are often occaſioned by Obſtructions, it ſhould ſeem, an acid Soap was much the ſafer Deobſtruent.

Even the beſt Turpentines, however famous for their vulnerary and detergent Qualities, have yet been obſerved, by their Warmth, to diſpoſe to inflammatory Tumors. But the acid Spirit, being in ſo great Proportion in Tar-water, renders it a cooler and ſafer Medicine. And the ethereal Oil of Turpentine, though an admirable Drier, Healer, and Anodyne, when outwardly applied to Wounds and Ulcers, and not leſs uſeful in cleanſing the urinary Paſſages, and healing their Ulcerations, yet is known to be of a Nature ſo very relaxing, as ſometimes to do much Miſchief. Tar-water is not attended with the ſame ill Effects, which I believe are owing, in a great meaſure, to the ethereal Oil's being deprived of the acid Spirit in Diſtillation, which, vellicating and contracting as a Stimulus, might have proved a Counterpoiſe to the exceſſive lubricating and relaxing Qualities of the Oil.

Woods in Decoctions do not ſeem to yield ſo ripe and elaborate a Juice, as that which is depoſited in the Cells, or Locuſts Terebinthiaci, and ſpontaneouſly ouſes from them. And, indeed, though the Balſam of *Peru*, obtained by boiling the proper Wood, and ſcumming the Decoction, be a very valuable Medicine, and of great account in divers Caſes, particularly Aſthmas, nephritic Pains, nervous Colics, and Obſtructions, yet I verily think, (and I do not ſay this without Experience) that Tar-water is a more efficacious Remedy in all thoſe Caſes, than even that coſtly Drug.

It has been already obſerved, that the reſtorative, pectoral, and antihyſterical Virtues of the moſt precious Balſams and Gums are poſſeſſed in an high Degree by Tar-water. And I do not know any Purpoſe anſwered by the Wood-drinks, for which Tar-water may not be uſed, with at leaſt, equal Succeſs. It contains the Virtues even of Guaiacum, which ſeems the moſt efficacious of all the Woods, warming and ſweetening the Humours, and being diaphoretic, and uſeful in Gouts, Dropſies, and Rheums, as well as in the Foul Diſeaſe. Nor ſhould it ſeem ſtrange, if the Virtues obtained by boiling an old dry Wood, prove inferior to thoſe extracted from a Balſam.

There is a fine volatile Spirit in the Waters of *Geronſter*, the moſt eſteemed of all the Fountains about *Spa*, but whoſe Waters do not bear tranſporting. The ſtomachic, cardiac, and diuretic Qualities, of this Fountain ſomewhat reſemble thoſe of Tar-water, which, if I am not greatly miſtaken, contains the Virtues of the beſt chalybeate and ſulphureous Waters; with this Difference, that thoſe Waters are liable to affect the Head in taking, which Tar-water is not. Beſides, there is a Regimen of Diet to be obſerved, eſpecially with chalybeate Waters, which I never found neceſſary with this. Tar-water layeth under no Reſtraint either as to Diet, Hours, or Employment. A Man may ſtudy, uſe Exerciſe, or repoſe, keep his own Hours, paſs his Time either within or without, and take wholſome Nouriſhment of any Kind.

The Uſe of chalybeate Waters, however excellent for the Nerves and Stomach, is often ſuſpended by Colds, and inflammatory Diſorders, in which they are acknowledged to be very dangerous; whereas Tar-water is ſo far from hurting in thoſe Caſes, or deſerving to be diſcontinued on that Account, that it greatly contributes to their Cure.

Cordials, vulgarly ſo called, act immediately on the Stomach, and, by a Conſent of the Nerves, on the Head. But Medicines of an Operation too fine and light to produce a ſenſible Effect in the *Primæ Viæ*, may, nevertheleſs, in their Paſſage through the Capillaries, operate on the Sides of thoſe ſmall Veſſels, in ſuch a manner as to quicken their Oſcillations, and conſequently the Motion of their Contents, producing, in Effect, all the Benefits of a Cordial much more laſting and ſalutary than thoſe of fermented Spirits, which, by their cauſtic and coagulating Qualities, do incomparably more Miſchief than Good. Such a cardiac Medicine is Tar-water. The tranſient Fits of Mirth, produced from fermented Liquors, are attended with proportionable Depreſſions of Spirit in their Intervals. But the

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the calm Chearfulneſs ariſing from this Water of Health (as it may juſtly be called) is permanent. Tar-water is ſo far from hurting the Nerves, as common Cordials do, that it is highly uſeful in Cramps, Spaſms of the Viſcera, and paralytic Numbneſs.

Emetics are on certain Occaſions adminiſtered with great Succeſs. But the over-ſtraining and weakening of Nature may be very juſtly apprehended from a Courſe of Emetics. They are, nevertheleſs, preſcribed and ſubſtituted for Exerciſe. But, in *Plato's Timæus*, Vomits and Purges are ſaid to be the worſt Exerciſe in the World. There is ſomething in the mild Operation of Tar-water, that ſeems more friendly to the Œconomy, and forwards the Digeſtions and Secretions in a way more natural and benign, the Mildneſs of this Medicine being ſuch, that I have known Children take it for above ſix Months together, with great Benefit, and without any Inconvenience; and, after long and repeated Experience, I eſteem it a moſt excellent Diet-drink, fitted to all Seaſons and Ages.

It is, I think, allowed, that the Origin of the Gout lies in a faulty Digeſtion. And it is remarked by the ableſt Phyſicians, that the Gout is ſo difficult to be cur'd, becauſe heating Medicines aggravate its immediate, and cooling its remote Cauſe. But Tar-water, although it contain active Principles, that ſtrengthen the Digeſtion beyond any thing I know, and, conſequently, muſt be highly uſeful, either to prevent or leſſen the following Fit, or, by invigorating the Blood, to caſt it upon the Extremities, yet it is not of ſo heating a Nature as to do harm even in the Fit. Nothing is more difficult or diſagreeable to Men, than to argue them out of their Prejudices: I ſhall not, therefore, enter into Controverſies on this Subject; but, if them diſpute and object, ſhall leave the Deciſion to Time and Trial. In the modern Practice, Soap, Opium, and Mercury, bid faireſt for univerſal Medicines. The firſt of theſe is highly ſpoken of. But then thoſe who magnify it moſt, except againſt the Uſe of it in ſuch Caſes where the Obſtruction is attended with a putrefactive Alcali, or where an inflammatory Diſpoſition appears. It is acknowledged to be very dangerous in a Phthiſis, Fever, and ſome other Caſes, in which Tar-water is not only ſafe, but uſeful.

Opium, tho' a Medicine of great Extent and Efficacy, yet is frequently known to produce grievous Diſorders in hyſterical or hypochondriacal Perſons, who make a great Part, perhaps the greateſt, of thoſe who lead ſedentary Lives in theſe Iſlands. Beſides, upon all Conſtitutions dangerous Errors may be committed in the Uſe of Opium.

Mercury has, of late become a Medicine of very general Uſe; the extreme Minuteneſs, Mobility, and Momentum of its Parts, rendering it a powerful Cleanſer of all Obſtructions, even in the moſt minute Capillaries: But then we ſhould be cautious in the Uſe of it, if we conſider, that the very Thing which gives it Power of doing Good above other Deobſtruents, diſpoſes it, alſo, to do Miſchief; I mean its great Momentum: The Weight of it being about ten times that of Blood, and the Momentum being the joint Product of the Weight and Velocity, it muſt needs operate with great Force. And may it not be juſtly feared, that ſo great a Force, entering the minuteſt Veſſels, and breaking the obſtructing Matter, might alſo break or wound the fine render Coats of thoſe ſmall Veſſels, and ſo bring on the untimely Effects of old Age, producing more, perhaps, and worſe Obſtructions than thoſe it removed? Similar Conſequences may juſtly be apprehended from other mineral and ponderous Medicines: Therefore, upon the Whole, there will not perhaps be found any Medicine more general in its Uſe, or more ſalutary in its Effects, than Tar-water.

To ſuppoſe that all Diſtempers ariſing from very different, and, it may be, from contrary, Cauſes, can be cured by one and the ſame Medicine, muſt ſeem chimerical; but it may with Truth be affirmed, that the Virtue of Tar-water extends to a ſurpriſing Variety of Caſes very diſtant and unlike. This I have experienced in my Neighbours, my Family, and myſelf; and as I live in a remote Corner among poor Neighbours, who, for want of a regular Phyſician, have often recourſe to me, I have had frequent Opportunities of Trial, which convince me it is of ſo juſt a Temperament as to be an Enemy to all Extremes. I have known it do great good in a cold watry Conſtitution, as a Cardiac and Stomachic, and at the ſame time allay Heat, and feveriſh Thirſt, in another. I have known it correct coſtive Habits in ſome, and the contrary Habit in others: Nor will this ſeem incredible, if it be conſidered, that middle Qualities naturally reduce the extreme; warm Water, for Inſtance, mixed with hot and cold Waters, will leſſen the Heat in that, and the Cold in this.

They who know the great Virtues of common Soap, whoſe coarſe lixivial Salts are the Product of culinary Fire, will not think it incredible, that Virtues of mighty Force and Extent ſhould be found in a fine acid Soap, the Salts and Oil whereof are a moſt elaborate Product of Nature, and the ſolar Light.

It is certain Tar-water warms, and therefore ſome may perhaps ſtill think it cannot cool. The more effectually to remove this Prejudice, let it be farther conſidered, that, as, on the one hand, oppoſite Cauſes ſometimes produce the ſame Effects, for Inſtance, Heat by Rarefaction, and Cold by Condenſation, both increaſe the Air's Elaſticity; ſo, on the other hand, the ſame Cauſe ſhall ſometimes produce oppoſite Effects: Heat, for Inſtance, in one Degree thins, in another coagulates the Blood: It is not therefore ſtrange, that Tar-water ſhould warm one Habit, and cool another; have one good Effect on a cold Conſtitution, and another good Effect upon an inflamed one; nor, if this be ſo, that it ſhould cure oppoſite Diſorders; all which juſtifies to Reaſon, what I have often found true in Fact. The Salts, the Spirits, and the Heat, of Tar-water are of a Temperature congenial to the Conſtitution of Man, which receives from it a kindly Warmth, but no inflaming Heat. It was remarkable, that two Children in my Neighbourhood, being in a Courſe of Tar-water, upon an Interminſion of it, never failed to have their Iſſues inflamed by an Humour much more hot and ſharp than at other times. But its great Uſe in the Small-pox, Pleuriſies, and Fevers, is a ſufficient Proof, that Tar-water is not of an inflaming Nature.

I have dwelt the longer on this Head, becauſe ſome Gentlemen of the Faculty have thought fit to declare, that Tar-water muſt inflame; and that they would never viſit any Patient in a Fever, who had been a Drinker of it: But I will venture to affirm, that it is ſo far from increaſing a feveriſh Inflammation, that it is, on the contrary, a moſt ready Means to allay and extinguiſh it. It is of admirable Uſe in Fevers, being at the ſame time the ſureſt, ſafeſt, and moſt effectual, Paregoric and Cordial; for the Truth of which I appeal to any Perſon's Experience, who ſhall take a large Draught of it Milk-warm in the Paroxyſm of a Fever, even when plain Water or Herb Teas ſhall be found to have little or no Effect. To me it ſeems, that its ſingular and ſurpriſing Uſe in Fevers of all Kinds, were there nothing elſe, would be alone ſufficient to recommend it to the Public.

The beſt Phyſicians make the Idea of a Fever to conſiſt in a too great Velocity of the Heart's Motion, and too great Reſiſtance at the Capillaries. Tar-water, as it ſoftens and gently ſtimulates thoſe nice Veſſels, helps to propel their Contents, and ſo contributes to remove the latter Part of the Diſorder; and, for the former, the irritating Acrimony, which accelerates the Motion of the Heart, is diluted by watry, corrected by acid, and ſoftened by balſamic Remedies; all which Intentions are anſwered by this aqueous, acid, balſamic Medicine. Beſides, the viſcid Juices coagulated by the febrile Heat, are reſolved by Tar-water as a Soap, and not too far reſolved as it is a gentle acid Soap; to which we may add, that the peccant Humours and Salts are carried off by its diaphoretic and diuretic Qualities.

I found all this confirmed by my own Experience, in the late ſickly Seaſon of the Year one thouſand ſeven hundred and forty-one, having had twenty-five Fevers in my own Family cured by this medicinal Water, drank copiouſly. The ſame Method was practiſed on ſeveral of my poor Neighbours with equal Succeſs; it ſuddenly calmed the feveriſh Anxieties, and ſeemed by every Glaſs to refreſh, and infuſe Life and Spirit into the Patient. At firſt, ſome of thoſe Patients have been vomited; but afterwards I found that without Vomiting, Bleeding, Bliſtering, or any other Evacuation or Medicine whatſoever, very bad Fevers could be cured by the ſole drinking of Tar-water Milk-warm, and in proper Quantities, perhaps a large Glaſs every Hour taken in Bed; and it was remarkable, that ſuch as were cured by this comfortable Cordial, recovered Health and Spirits at once, whilſt thoſe who had been cured by Evacuations often languiſhed long, even after the Fever left them, before they could recover of their Medicines, and regain their Strength.

In Peripneumonies and Pleuriſies I have obſerved Tar-water to be excellent, having known ſome pleuritic Perſons cured without Bleeding, by a Bliſter early applied to the Stitch, and the copious Drinking of Tar-water, four or five Quarts, or even more, in four-and-twenty Hours; and I recommend it to farther Trial, whether, in all Caſes of a Pleuriſy, one moderate Bleeding, a Bliſter on the Part affected, and Plenty of tepid Tar-water, may not ſuffice, without thoſe repeated and immoderate Bleedings, the bad Effects of which are perhaps never got over. I even ſuſpect, that a pleuritic Patient, betaking himſelf to Bed betimes, and drinking very copiouſly of Tar-water, may be cured by that alone, without Bleeding, Bliſtering, or any other Medicine whatever. Certainly I found this ſucceed by exhibiting a Glaſs every Half-hour.

I have known a Bloody-flux of long Continuance, after various Medicines had been tried in vain, cured by Tar-water; but that which I take to be the moſt ſpeedy and effectual Remedy in a Bloody-flux, is a Clyſter of an Ounce of common brown Reſin, diſſolved over a Fire in two Ounces of Oil, and added to a Pint of Broth; which not long ago I had frequent Occaſion of trying, when that Diſtemper was epidemical: Nor can I ſay, that any to whom I adviſed it, miſcarried. This Experiment I was led to make by the Opinion I had of Tar as a Balſamic; and Reſin is only Tar inſpiſſated.

Nothing that I know corroborates the Stomach ſo much as Tar-water: Whence it follows that it muſt be of ſingular Uſe to Perſons afflicted with the Gout. And from what I have obſerved in five or ſix Inſtances, I verily believe it the beſt and ſafeſt Medicine either to prevent the Gout, or ſo to ſtrengthen Nature againſt the Fit,

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Fit, as to drive it from the Vitals. Doctor *Sydenham*, in his Treatise of the Gout, declares, that whoever finds a Medicine the most efficacious for strengthening Digestion, will do more Service in the Cure of that and other chronical Distempers, than he can even form a Notion of; and I leave it to Trial, whether Tar-water be not that Medicine, as I myself am persuaded it is, by all the Experiments I could make. But in all Trials I would recommend Discretion; for Instance, a Man with the Gout in his Stomach ought not to drink cold Tar-water.

It is evident to Sense, that Blood, Urine, and other animal Juices, being let to stand, soon contract a great Acrimony. Juices, therefore, from a bad Digestion, retained and stagnating in the Body, grow sharp and putrid; hence, a fermenting Heat, the immediate Cause of the Gout: The curing this by cooling Medicines, as they would increase the antecedent Cause, must be a vain Attempt. On the other hand, Spices and spirituous Liquors, while they continue to remove the antecedent Cause, or bad Digestion, would, by inflaming the Blood, increase the proximate or immediate Cause of the Gout, the fermenting Heat: The Scope therefore, must be to find a Medicine that shall corroborate, but not inflame. Bitter Herbs are recommended; but they are weak in Comparison of Tar-water.

The great Force of Tar-water to correct the Acrimony of the Blood, appears in nothing more than in the Cure of a Gangrene, from an internal Cause; which was performed on a Servant of my own, by prescribing the copious and constant Use of Tar-water for a few Weeks. From my representing Tar-water as good for so many Things, some perhaps may conclude it is good for Nothing; but Charity obliges me to say what I know, and what I think howsoever it may be taken; Men may censure and object as they please, but I appeal to Time and Experiment. Effects misimputed, Cases wrong told, Circumstances overlooked, perhaps, too, Prejudices and Partialities against Truth, may for a time prevail, and keep her at the Bottom of her Well; from whence, nevertheless, she emergeth sooner or later, and strikes the Eyes of all who do not keep them shut.

Boerhaave thinks a Specific may be found for that peculiar Venom which infects the Blood in the Small-pox, and that the Prospect of so great a public Benefit should stir up Men to search for it. Its wonderful Success in preventing and mitigating that Distemper, would incline one to suspect, that Tar-water is such a Specific. Some think an Erysipelas and the Plague differ only in Degree: If so, Tar-water should be useful in the Plague; for I have known it cure an Erysipelas.

Tar-water, as cleansing, healing, and balsamic, is good in all Disorders of the Urinary Passages, whether obstructed or ulcerated. Doctor *Lister* supposes, indeed, that Turpentines act by a caustic Quality, which irritates the Coats of the Urinary Ducts to expel Sand or Gravel. But, it should seem, this expelling diuretic Virtue consisted rather in Salts than the Resin, and consequently resides in the Tar-water gently stimulating by its Salts, without the dangerous Force of a Caustic. The violent Operation of Ipecacuanha lies in its Resin, but the saline Extract is a gentle Purge and Diuretic, by the Stimulus of its Salts.

That which acts as a mild Cordial, neither hurting the Capillary Vessels as a Caustic, nor affecting the Nerves, nor coagulating the Juices, must in all Cases be a Friend to Nature, and assist the *Vis Vitæ* in its Struggle against all Kinds of Contagion; and, from what I have observed, Tar-water appears to me an useful Preservative in all epidemical Disorders, and against all other Infection whatsoever, as well as that of the Small-pox. What Effects the Passions of the Mind, have in human Maladies, is well known; and consequently the general Benefit of such a Cardiac cannot be doubted.

As the Body is said to clothe the Soul, so the Nerves may be said to constitute her inner Garment. And as the Soul animates the Whole, what nearly touches the Soul relates to all: Therefore the Asperity of tartarous Salt, and the fiery Acrimony of alcaline Salts, irritating and wounding the Nerves, produce Passions and Anxieties in the Soul, which both aggravate Distempers, and render Mens Lives restless and wretched, even when they are afflicted with no apparent Distemper. This is the latent Spring of much Woe, Spleen, and Uneasiness of Life. Small imperceptible Irritations of the minutest Fibres or Filaments, caused by the pungent Salts of Wines and Sauces, so shake and disturb the Microcosms of high Livers, as often to raise Tempests in Courts and Senates; whereas the gentle Vibrations, that are raised in the Nerves, by a fine subtle Acid, sheathed in a smooth volatile Oil, softly stimulating and bracing the nervous Vessels and Fibres, promotes a due Circulation and Secretion of the animal Juices, and creates a calm, satisfied Sense of Health; and accordingly I have often known Tar-water procure Sleep, and compose the Spirits, in cruel Watchings, occasioned either by Sickness, or by too intense Application of Mind.

In Diseases sometimes Accidents happen from without by Mismanagement, sometimes latent Causes operate within, jointly with the specific Taint, or peculiar Cause of the Malady. The Causes of Distempers are often complicated, and there may be something in the Idiosyncrasy of the Patient that puzzles the Physician. It may, therefore, be presumed, that no Medicine is infallible, not even in any one Disorder: But as Tar-water possesses the Virtues of fortifying the Stomach, as well as purifying and invigorating the Blood, beyond any Medicine that I know, it may be presumed of great and general Efficacy in all those numerous Illnesses, which take their Rise from foul or vapid Blood, or from a bad Digestion. The Animal Spirits are elaborated from the Blood: Such, therefore, as the Blood is, such will be the Animal Spirits; more or less, weaker or stronger. This shews the Usefulness of Tar-water in all hysteric and hypochondriac Cases; which, together with the Maladies from Indigestion, comprise almost the whole Tribe of chronical Diseases.

The Scurvy may be reckoned in these Climates an universal Malady, as People in general are subject to it, and as it mixes, more or less in almost all Diseases. A Cachexy, or ill-Habit, is much of the same Kind with the Scurvy, proceeds from the same Causes, and is attended with the like Symptoms, which are so manifold and various, that the Scurvy may well be looked upon as a general Cachexy, infecting the whole Habit, and vitiating all the Digestions.

The Cure of the Scurvy is no more to be attempted by strong active Medicines, than Pitch on Silk is to be removed by Force. The viscid Humour must be gently resolved and diluted, the Tone of the Vessels recovered by a moderate Stimulation, and the tender Fibres, and Capillary Vessels, gradually cleared from the concreted Stuff that adheres to and obstructs them; all which is in the properest manner performed by a watry Diluent containing a fine vegetable Soap. And altho' a complete Cure by Alteratives, operating on the small Capillaries, and by insensible Discharges, must require Length of Time; yet the good Effect of this Medicine on cachectic and scorbutic Persons is soon perceived by the Change it produces in their pale discoloured Looks, giving a florid healthy Countenance in less Time than, perhaps, any other Medicine.

It is well known how extremely difficult it is to cure an inveterate Scurvy; how many scorbutic Patients have grown worse by an injudicious Course of Evacuations; and how difficult, tedious and uncertain the Cure is, in the Hands even of the best, who are obliged to use such Variety and Change of Medicines, in the different Stages of that Malady; which, nevertheless, may be cured (if I may judge by what I have experienced) by the sole, regular, constant, and copious Use of Tar-water.

Tar-water moderately inspissates with its balsamic Virtue, and renders mild the thin and sharp Part of the Blood; the same Water, as a soapy Medicine, dissolves the grumous Concretions of the fibrous Part. As a Balsam, it destroys the ulcerous Acrimony of the Humours, and, as a Deobstruent, it opens and cleans the Vessels, restores their Tone, and strengthens the Digestion, whose Defects are the principal Cause of a Scurvy and Cachexy.

In the Cure of the Scurvy, the principal Aim is to subdue the Acrimony of the Blood and Juices. But as this Acrimony proceeds from different Causes, or even opposite, as acid and alcaline, what is good in one Sort of Scurvy proves dangerous, or even mortal, in another. If I may trust what Trials I have been able to make, this Water is good in the several Kinds of Scurvy, acid, alcaline, and muriatic; and I believe the only Medicine that cures them all without doing Hurt in any. As it contains a volatile Acid with a fine volatile Oil, why may not a Medicine cool in one Part, and warm in another, be a Remedy to either Extreme? I have observed it to produce a kindly genial Warmth without Heat, a Thing to be aimed at in all Sorts of Scurvy. Besides, the Balsam in Tar-water sheaths all scorbutic Salts alike; and its great Virtues, as a Digester and Deobstruent, are of general Use in all scorbutic, and, I may add, in all chronical Cases whatsoever.

I cannot be sure, that I have tried it in a scrophulous Case, tho' I have tried it successfully in one that I suspected to be so. And I apprehend it would be very serviceable in such Disorders. For altho' Doctor *Gibbs*, in his Treatise of the *King's Evil*, derives that Disease from a coagulating Acid, which is, also, agreeable to the Opinion of some other Physicians, and altho' Tar-water contain an Acid, yet, as it is a Soap, it resolves instead of coagulating the Juices of the Body.

For hysterical and hypochondriacal Disorders, so frequent among us, it is commonly supposed, that all Acids are bad. But I will venture to except the acid Soap of Tar-water, having found, by my own Experience, and that of many others, that it raises the Spirits, and is an excellent Antihysteric, nor less innocent than powerful; which cannot be said of those others in common Use, that often leave People worse than they found them.

Many hysteric and scorbutic Ailments, many Taints contracted by themselves, or inherited from their Ancestors, afflict the People of Condition in these Islands; which Ailments might be safely removed, or relieved, by the sole Use of Tar-water.

As the Nerves are the Instruments of Sensation, it follows, that Spasms in the Nerves may produce all Symptoms; and, therefore, a Disorder in the nervous System shall imitate all Distempers and occasion, in Appearance, an Asthma, for Instance, a Pleurisy, or a Fit of the Stone. Now, whatever is good for the Nerves in general, is good against all such Symptoms. But Tar-water, as it includes, in an eminent Degree, the Virtues of warm Gums and Resins, is of great Use for comforting and strengthening the Nerves, curing Twitches in the nervous Fibres, Cramps,

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also, and Numbness of the Limbs, removing Anxieties, and promoting Sleep; in all which Cases I have known it very successful.

This safe and cheap Medicine suits all Circumstances, and all Constitutions, operating easily, curing without disturbing, raising the Spirits without depressing them; a Circumstance that deserves repeated Attention, especially in these Climates, where strong Liquors so fatally and so frequently produce those very Distresses they are designed to remedy; and, if I am not misinformed, even among the Ladies themselves, who are truly much to be pitied. Their Condition of Life makes them a Prey to imaginary Woes, which never fail to grow up in Minds unexercised, and unemployed. To get rid of these, it is said, there are some who betake themselves to distilled Spirits. Thus are many Lives rendered wretched. But the tender Nerves, and low Spirits of such poor Creatures, would be much relieved by the Use of Tar-water, which might prolong and chear their Lives.

I verily think, there is not any Medicine whatsoever, so effectual to restore a crazy Constitution, and chear a dreary Mind, or so likely to subvert the gloomy Empire of the Spleen.

It must be owned, that Tar-water is not so violent and sudden a Medicine, as always to produce its Effect at once, (such, by irritating, often do more Mischief than Good) but a safe and mild Alterative, which penetrates the whole System, opens, heals, and strengthens the remote Vessels, alters and propels their Contents, and enters the minutest Capillaries, and cannot, therefore, otherwise, than by degrees, and in time, work a radical Cure in chronic Distempers. It gives, nevertheless, speedy Relief in most Cases; as I have found by myself, and many others. I have been surprised to see Persons fallen away, and languishing under a bad Digestion, after a few Weeks, recover a good Stomach, and with it Flesh and Strength, so as to seem renewed by the drinking of Tar-water. The Strength and Quantity of this Water to be taken by each individual Person, is best determined from Experience. And, as for the Time of taking, I never knew any Evil ensue from its being continued ever so long; but, on the contrary, many and great Advantages, which sometimes would not, perhaps, begin to shew themselves, till it had been taken two or three Months.

Sir *John Floyer* remarks, that we want a Method for the Use of Turpentine: And again, he who shall hit, says he, on the pleasantest Method of giving Turpentine, will do great Cures in the Gout, Stone, Catarrhs, Dropsies, and cold Scurvies, Rheumatisms, Ulcers, and Obstructions of the Glands. Lastly, he subjoins, that, for the Use of altering and amending the Juices and Fibres, it must be given frequently, and in such small Quantities at a time, and in so commodious a manner, as will agree best with the Stomach, stay longest in the Body, and not purge itself off; for large Doses, says he, go thro' too quick, and, besides, offend the Head. Now the Infusion of Tar, or Turpentine, in cold Water, seems to supply the very Method that was wanted, as it leaves the more unctuous and gross Parts behind, which might offend the Stomach, Intestines, and Head; and, as it may be easily taken, and as often, and in such Quantity, and in such Degree of Strength, as suits the Case of the Patient. Nor should it seem, that the fine Spirit, and volatile Oil, obtained by Infusion of Tar, is inferior to that of Turpentine, to which it superadds the Virtue of Wood-soot, which is known to be very great, with respect to the Head and Nerves; and this appears evident from the manner of obtaining Tar. And as the fine volatile Parts of Tar, or Turpentine, are drawn off by Infusion in cold Water, and easily convey'd throughout the whole System of the human Body; so, it should seem, the same Method may be used with all Sorts of Balsams, or Resins whatsoever, as the readiest, easiest, and most inoffensive, as well as in many Cases the most effectual Way of obtaining and imparting their Virtues.

After having said so much of the Uses of Tar, I must farther add, that, being rubbed on them, it is an excellent Preservative of the Teeth and Gums; that it sweetens the Breath, and that it clears and strengthens the Voice. And as its Effects are various and useful, so there is nothing to be feared from the Operation of an Alterative so mild and friendly to Nature. It was a wise Maxim of certain antient Philosophers, that Diseases ought not to be irritated by Medicines. But no Medicine disturbs the animal Oeconomy less than this; which, if I may trust my own Experience, never produces any Disorder in a Patient, when rightly taken.

I knew, indeed, a Person who took a large Glass of Tar-water just before Breakfast, which gave him an invincible Nausea and Disgust, altho' he had before received the greatest Benefit from it. But if Tar-water be taken and made in the manner prescribed at the Beginning of this Essay, it will, if I mistake not, have enough of the Salt to be useful, and little enough of the Oil to be inoffensive. I mean my own Manner of making it, and not the *American*. Persons more delicate than ordinary, may render it palatable, by mixing a Drop of the chymical Oil of Nutmegs, or a Spoonful of Mountain-wine, in each Glass. It may not be amiss to observe, that I have known some, whose nice Stomachs could not bear it in the Morning, take it at Night, going to Bed, without any Inconvenience; and that, with some, it agrees best warm, with others cold. It may be made for brute Beasts, as Horses, in whose Disorders I have found it very useful; I believe, more so, than that bituminous Substance, called *Barbados Tar*.

In very dangerous and acute Cases, much may be taken, and often, as far as the Stomach can bear. But in chronical Cases, about half a Pint, Night and Morning, may suffice; or if so large a Dose should prove disagreeable, half the Quantity may be taken at four times, in the Morning; at Night going to Bed, and about two Hours after Dinner and Breakfast. A Medicine of so great Virtue in so many different Disorders, and especially in that grand Enemy, the Fever, must needs be a Benefit to Mankind in general. There are, nevertheless, three Sorts of People, to whom I would peculiarly recommend it; Sea-faring Persons, Ladies, and Men of studious and sedentary Lives.

To Sailors, and all Sea-faring Persons, who are subject to scorbutic Disorders, and putrid Fevers, especially in long *Southern* Voyages, I am persuaded, this Tar-water would be very beneficial. And this may deserve particular Notice in the present Course of marine Expeditions, when so many of our Countrymen have perished by such Distempers contracted at Sea, and in foreign Climates; which, it is probable, might have been prevented, by the copious Use of Tar-water.

This Water will, also, give charitable Relief to the Ladies, who often want it more than the Parish-Poor; being many of them never able to make a good Meal, and sitting pale, puny, and forbidden, like Ghosts, at their own Table, Victims of Vapours and Indigestion.

Studious Persons, also, pent up in narrow Holes, breathing bad Air, and stooping over their Books, are much to be pitied. As they are debarred the free Use of Air and Exercise, this I will venture to recommend as the best Succedaneum to both. My own sedentary Course of Life had long since thrown me into an ill Habit, attended with many Ailments, particularly a nervous Colic, which rendered my Life a Burden, and the more so, because my Pains were exasperated by Exercise. But, since the Use of Tar-water, I find, tho' not a perfect Recovery from my old and rooted Illness, yet such a gradual Return of Health and Ease, that I esteem my having taken this Medicine, the greatest of all temporal Blessings; and am convinced, that, under Providence, I owe my Life to it.

In the distilling of Turpentine, and other Balsams, by a gentle Heat, it has been observed, that there rises, first, an acid Spirit that will mix with Water; which Spirit, except the Fire be very gentle, is lost. This grateful acid Spirit that first comes over, is highly refrigeratory, diuretic, sudorific, balsamic, or preservative from Putrefaction, excellent in nephritic Cases, and for quenching Thirst; all which Virtues are contained in the cold Infusion, which draws forth from Tar only its fine Flower or Quintessence, if I may so say, or the native vegetable Spirit, together with a little volatile Oil. *Siris*.

PLACENTA. A Cake. In Anatomy, *Placenta* is a Congeries of Blood-vessels, adhering to the Uterus, during Gestation, which, together with the Membranes, and *Funis Umbilicalis*, is excluded generally after the Fœtus. See SECUNDINÆ.

PLACENTULA. A Diminutive of the preceding Word.

PLACIANUM COLLYRIUM. The Name of a *Collyrium*, described by *Aetius*, *Tetrabib. 2. Sect. 4. Cap.* 113.

PLACITIS, πλακίτις. A Species of CADMIA; which see. It is, also, a Name for a crustaceous Sort of Alum.

PLADAROTES, πλαδαρότης. A Disorder of the Eye-lids, consisting in an Eruption of small, soft, discoloured Tubercles, on their internal Surface.

PLADOS, πλάδος. A redundant and superfluous Humidity, rendering any Part lax and weak.

PLAGULÆ. Compresses, or Bolsters.

PLANETES PYRETOS. An erratic Fever; that is, one which is anomalous, and preserves no regular Period, or Type. The Word is, likewise, apply'd to other Distempers, as the Gout, when irregular.

PLANITIES. The Sole of the Foot.

PLANTA. A Plant, or Vegetable. See BOTANY. *Planta Noctis* is a minute itching Pustule, which breaks out in the Night. *Castellus*. The Sole of the Foot.

PLANTAGINELLA. A Name for the *Plantago*; *aquatica*; *minima*.

PLANTAGO.

The Characters are;

The Calyx is monophyllous, quadrifid, tubulous, and very tender. The Flower in it is monopetalous, shaped somewhat like a Bason, quadripartite, and expanded in form of a Star: The Ovary is guarded by four long Stamina; whence some take the Flower to be apetalous. The Fruit is a Shell, almost of an oval, or conic Form, when ripe, opening transversly into two Parts (one of which rests upon the other); and is divided by an Interclosure into two Capsules, full of oblong Seeds.

Boerhaave mentions seventeen Species of *Plantago*; which are,

1. Plantago; latifolia; rosea; flore expanso. *C. B. P.* 189. *J. B.* 3. 703.

2. Plantago; latifolia; rosea; floribus quasi in Spica dispositis. *C. B. P.* 189. *Plantago, rosea.* J. B. 3. 503.

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3. Plantago; latifolia; ſinuata. *C. B. P.* 189. *Tourn. Inſt.* 126. *Boerh Ind. A.* 2. 100. *Plantago vulgaris, Septinervia.* Offic. *Plantago latifolia vulgaris.* Park. Theat. 493. Raii Hiſt. 1. 876. Synop. 3. 314. *Plantago latifolia.* Ger. 338. Emac. 417. *Plantago major, foſo glabro, non laciniato, ut plurimum.* J. B. 3. 502. GREAT PLANTAIN.

The Root of the Plantain is thick at the Head, having many whitiſh Fibres growing from it. The Leaves are pretty broad, large and oval, ſomewhat waved about the Edges, and having ſeven large Nerves running through the whole Length of the Leaves, and even the broad hollow Foot-ſtalks, into the Root. The Flowers grow in long Spikes, above half the Length of the thick Foot-ſtalk, being ſmall and ſtaminous, cut into four Parts, which are ſucceeded by two ſmall oblong ſhining brown Seeds, hollowed in on the one Side, growing in little roundiſh Capſulæ, which open horizontally, when the Seed is ripe. It grows everywhere by the Way-ſide, and flowers in *May*. The whole Plant is uſed.

Plantain is cold, dry, and binding, and uſeful in all Kinds of Fluxes and Hæmorrhages, as ſpitting and vomiting of Blood, bleeding at the Noſe, the Exceſs of the Catamenia, or Lochia, as, alſo, for the involuntary making of Urine, its Heat and Sharpneſs, and the Gonorrhœa. It is, likewiſe, good to ſtop the Bleeding of Wounds, and to conſolidate their Lips.

The only officinal Preparation is the ſimple diſtilled Water. *Miller's Bot. Off.*

Its Leaves are bitter, aſtringent, and give a faint red Colour to the blue Paper; the Roots give it a deeper, and are only aſtringent; which ſhews, that in the Leaves the Sal Ammoniac, and the terreſtrial Parts of this Plant, are clogged with a great deal of Sulphur; thus the Plantain is vulnerary, reſolving and febrifugous. *Tragus* commends it very much for the Phtiſic. In the Country they drink the Juice, from two Ounces to four, at the firſt Acceſs of the Paroxyſm of intermitting Fevers; two Drams of the Extract of this Plant, or a Dram of its Seed, reduced to Powder, cure a Looſeneſs, and all Sorts of Hæmorrhages. The Ptiſan and Water of Plantain have the ſame Virtues. They are preſcribed in the Dyſentery, ſpitting of Blood, in the immoderate Flux of the Piles, or Terms, for the Whites, and Loſſes of Blood. In fine, the Plantain is uſed in all vulnerary and deterſive Potions. In the Inflammation of the Eyes, *Camerarius* made a Collyrium, with the Juice and Leaves of this Plant mixed with Roſe-water and Sugar. *Simon Paulli* uſed the Extract of Plantain, and the Decoction of Sarſaparilla, to cure a young Man that made bloody Urine, after a Gonorrhœa. The Gargariſm of Plantain is excellent for the Diſeaſes of the Throat; this Plant is an Ingredient in the Powder which *Julian Paulmier* has preſcribed to cure Madneſs. *Martyn's Tournefort.*

4. Plantago; latifolia; incana. *C. B. P.* 189. *Tourn. Inſt.* 126. *Boerh. Ind. A.* 2. 100. *Plantago incana.* Offic. Ger. 338. Emac. 419. Raii Hiſt. 1. 877. *Plantago major incana.* Park. Theat. 493. Raii Synop. 3. 314. *Plantago major hirſuta, media à nonnullis cognominata.* J. B. 3. 504. HOARY PLANTAIN.

It grows in gravelly Places, and flowers in *June*. The Leaves are in Uſe, and agree in Virtues with thoſe of the *Great Plantain*, and may be ſubſtituted in their ſtead. *Dale.*

5. Plantago; latifolia; hirſuta; minor. *C. B. P.* 189.

6. Plantago; lato, ſanguineo folio. *H. R. Monſp.*

7. Plantago; latifolia, glabra; pedunculi foliis, & Spica, longiſſimis.

8. Plantago; latifolia; Spica multiplici, ſparſa. *C. B. P.* 189.

9. Plantago; anguſtifolia; major. *C. B. P.* 189. *Tourn. Inſt.* 127. *Boerh. Ind. A.* 2. 100. *Plantago anguſtifolia, Quinquenervia.* Offic. *Plantago Quinquenervia.* Ger. 341. Emac. 422. Raii Hiſt. 1. 877. Synop. 3. 314. *Plantago Quinquenervia major.* Park. Theat. 495. *Plantago lanceolata.* J. B. 3. 505. RIBWORT.

This Plantain has longer and much narrower Leaves than the common Plantain, ſharp-pointed, and having five remarkable Ribs, or Nerves, running quite thro' them, to the Root, which is leſs, and more ſtringy, than the common Plantain. The Flowers grow at the End of long ſlender Stalks, in oblong Spikes, about an Inch long; they are ſmall and ſtaminous, with white Apices. The Seed grows like that of the common Plantain, but is ſomewhat larger. It grows in Fields and Meadows, and flowers in *May* and *June*; the Leaves are uſed.

They are reſtringent and vulnerary, and may be uſed to the ſame Purpoſe with the common Plantain. Some commend the Juice of it, given before the Fit of an Ague, to prevent its coming. *Miller's Bot. Off.*

Mr. *Boyle* highly recommends a Dram of the Powder of the Leaves given in the Conſerve of red Roſes, for a Tertian.

10. Plantago; trinervia; folio anguſtiſſimo. *C. B. P.* 189. *Prodr.* 98.

11. Plantago; anguſtifolia; paniculis Lagopi. *C. B. P.* 189. *Prodr.* 98.

12. Plantago; anguſtifolia; albida; Hiſpanica. *Tourn. Inſt.* 127. *Boerh. Ind. A.* 2. 101. *Holoſtium.* Offic. *Holoſtium Salmanticum.* Ger. 342. Emac. 423. Park. Theat. 498. *Holoſtium hirſutum albicans majus.* C. B. P. 190. *Holoſtium Plantagini ſimile.* J. B. 3. 508. Raii Hiſt. 1. 880. SPANISH PLANTAIN.

This Species grows in ſandy Places, and flowers in *April* and *May*. It is a vulnerary Plant, and is principally of Uſe in Hernias.

13. Plantago; anguſtifolia; minima; Maſſilienſis, Lagopi capitulo. *T.* 127.

14. Plantago; Orientalis; folio Scorzoneræ. *T. Cor.* 5.

15. Plantago; anguſtifolia; ſerrata; Hiſpalenſis. *C. B. P.* 189.

16. Plantago; Cretica; minima; tomentoſa; caule adunco. *T. Cor.* 5. *Holoſteum, ſeu Leontopodium, Creticum.* C. B. P. 190. *Leontopodium.* Alpin. Exot. 114.

Proſper Alpinus takes this for the *Leontopodium* of *Dioſcorides*, and deſcribes it as a ſmall Plant, two Digits in Height; which, from a long ſlender Root, produces five or ſeven hairy Leaves, three or four Digits in Length, which, near the Root, are covered with a thick Down. Among the Leaves, near the Root, are little Heads bending downwards from their Stalks, in a wreathed Poſture, and bearing black Flowers, which are ſucceeded by Seeds, involved in ſo thick a Down, that they can hardly be taken out of it. I have often, ſays *Proſper Alpinus*, received this Plant dry'd from *Candy*; and, having produced it from the Seed, found none of its Characters diſagreeable with thoſe of the *Leontopodium*. But one thing, he thinks, ought to be obſerved, which is, what *Dioſcorides* has written of the *Catanance*, that when it is dry'd and withered on the Ground, it ſhrinks and contracts itſelf into the Figure of the Claws of a dead Kite. Now this Plant *Bellus* plainly proves to be the *Leontopodium*, and not the *Catanance*, ſince it has neither the Leaves of the *Coronopus*, nor the Seeds of the *Orobus*, which are aſcribed to the *Catanance*, but rather of the *Pſyllium*. But, I am inclined to believe, he ſays, that either the *Leontopodium*, and *Catanance*, are the ſame Plant, or, at leaſt, are not different in Species; and the rather, becauſe *Dioſcorides* ſays of both of them, that they are employ'd as Philtres, or Medicines to procure Love. *Proſper Alpinus de Plantis exoticis.*

17. Plantago; anguſtifolia; major; foliis non dentato, rigidiori, ac radice repente. *H. C. Suppl* 3. *Boerh. Ind. alt. Plant Vol.* 2.

Plantain has an aſtringent Virtue, without any manifeſt Acrimony. It is of Service in piſſing or ſpitting of Blood, and under an immoderate Flux of the Lochia; in which Caſes it never fails the Hopes of the Phyſician. Externally, it is of Uſe in Inflammations, being apply'd to the Parts affected. It is a Plant of excellent Uſe in a Diarrhœa, Hæmorrhages, and Diſeaſes of the Eyes. The bruiſed Leaves are good to cleanſe and conſolidate old Wounds and Ulcers. Their Juice is very proper in intermitting Fevers, and in a Phthiſis; the diſtilled Water, mixed with Roſe-water, is a good Remedy for Inflammations of the Eyes; the Water injected is of Service in a Gonorrhœa, and the Decoction of the Leaves makes a proper Gargariſm in Diſeaſes of the Fauces. *Hiſt. Plant. adſcript. Boerhaav.*

PLANTAGO AQUATICA.

The Characters are;

The Root is very full of Fibres, which unite in a Bulb; the Leaves are like thoſe of the *Plantago*; the Stalk is erect, and bears ſomething like an Umbella. The End of the Pedicle is unfolded into a monophyllous trifid Calyx, which is firſt expanded like a Star, and, afterwards, retracted backwards. The Flower is impetalous, roſaceous; the Petals proceeding from the Margin of the reflexed Calyx; the Stamina are ſix in Number, two from the Origin of each Petal. The Ovary becomes a Fruit, conſiſting of a Congeries of Seeds, collected, in the large Species, into a triangular Form; in the leſſer, into an echinated, or prickly Ball, each Seed furniſhed with its proper Tube.

Boerhaave mentions three Species of *Plantago Aquatica*, which are,

1. Plantago; aquatica; latifolia. *C. B. P.* 190. *Boerh. Ind. A.* 45. *Plantago aquatica.* Offic. J. B. 3. 787. Raii Hiſt. 68. Synop. 3. 257. *Plantago aquatica major.* Ger. Emac. 417. Park. Theat. 1245. *Plantago aquatica major, Limonium verum Dioſcoridis & Antiquorum.* Phyt. Brit. 94. *Aliſma.* Dill. Cat. Giſſ 126. *Aliſma, Doronicum Pannonicum.* Mont. Pluar. Var. Ind. 36. *Ranunculus paluſtris Plantaginis folio ampliore.* Tourn. Inſt. 292. WATER PLANTAIN.

It grows in watry Places, and flowers in *June*, and the Root is in Uſe.

Schwenchfield ſays, that it cures the falling down of the Anus, and mitigates the Redneſs and Inflammation of the Gout, and the Pain of the Head, proceeding from a cold Cauſe; and is a Remedy for piſſing and ſpitting of Blood. The Juice, as *Roſſeus* ſays, conſumes the Milk in the Breaſts. *Dale.*

2. Plantago; aquatica; anguſtifolia. *C. B. P.* 190. *Ranunculus paluſtris, Plantaginis folio anguſtiori.* T. 292.

3. Plantago; aquatica; minima. *Cluſ. H.* 110. *Plantaginella, paluſtris.* C. B. P. 190. *Ranunculus aquaticus, Plantaginis folio anguſtiſſimo.* T. 292. *Boerh. Ind. alt. Plant.*

It is called *Plantago aquatica*, becauſe its Leaves are like thoſe of the *Plantago terreſtris*. Many think it the *Damaſonium* of the Antients; but what is ſaid of the *Damaſonium*, does not ſeem, to me, to agree with this Kind. As for M. *Vaillant*, he thought it the *Damaſonium*, becauſe *Lobel* calls one Species of the Plant

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tago by that Name. *Tournefort* refers the whole Kind to the *Ranunculus*, but I know not for what Reason; for their Leaves and Flowers are different.

The Taste shews this to be an acrimonious Plant, tho' the Generality of Botanists, among whom is *Matthiolus*, say, it is of a cold Quality. But this Error is corrected by *Gesner*, *Bauhine*, and others, who make it a Plant of a very heating Nature. The Reason why it was thought to be cold was, I conceive, because the *Plantago* is refrigerating; whence they thought the *Plantago aquatica* to be of the same Nature. The Plant then is acrimonious and penetrating, whatever may have been said of its cooling and drying Qualities. The Leaves bruised, and applied to the Breasts, are a sovereign and approved Secret, as *Timach* assures us, for suddenly consuming and drying up the Milk therein. *Hist. Plant. adscript. Boerhaav.*

PLANTARIS MUSCULUS, or TIBIALIS GRACILIS.

This is a small pyriform Muscle, situated obliquely in the Ham, below the external Condyle of the Os Femoris, between the *Popliteus* and *Gastrocnemius Externus*; and its Tendon, which is long, flat, and very small, runs down on the Side of the *Gastrocnemius Internus*, all the way to the Heel.

The fleshy Body, which is only about two Inches in Length, and one in Breadth, is fixed by a short, flat Tendon, above the outer Edge of the exterior Condyle of the Os Femoris, on one Side of the *Gastrocnemius Externus*. From thence the fleshy Body runs obliquely over the Edge of the *Popliteus*, and terminates in a very small, long, flat Tendon.

This Tendon runs between the Body of the *Gastrocnemius Externus* and *Soleus*, all the way to the inner Edge of the upper Part of the *Tendo Achillis*, and from thence continuing its Course downward, it joins this Tendon, and is inserted together with it, in the Outside of the posterior Part of the Os Calcis, without communicating with the *Aponeurosis Plantaris*.

Sometimes this Muscle is wanting, and sometimes it is situated lower down.

From the Description of the *Tibialis Gracilis*, we see evidently, that it can have no Use with relation to the Sole of the Foot. The Use assigned to it by others, of extending the Tarsus, and thereby assisting the *Gastrocnemii* and *Soleus*, seems to me to be very uncertain; both because of the great Disproportion in its Size, and the Obliquity of its Course. If the *Soleus* were not cover'd by the *Gastrocnemii*, the *Tibialis Gracilis* might be imagined to serve as a *Frænum*, in bracing down that Muscle, and hindering it from swelling too much; but the small Number and Direction of its Fibres would still render it unfit for that Function.

Till its true Use is evidently discover'd by some lucky Observation, there is, in the mean time, some Ground to think, that it hinders the Capsular Ligament of the Knee from being compress'd in the Flexion of that Joint; both because of its Adhesion to that Ligament, and because of the Obliquity of its Course; especially since the neighbouring Portion of the same Ligament seems to receive the same Assistance from a tendinous Expansion of the *Semi-membranosus*. *Winslow's Anatomy.*

PLASTICUS, πλαστικὸς, from πλάσσω, to form. Formative, or endued with a Faculty of forming.

PLATÆ, πλάται. The *Scapula*.

PLATAMON, πλαταμών. A smooth low Rock, prominent out of the Sea. *Galen*, *Exeg.*

PLATANARIA. A Name for the *Sparganium*; *ramosum*.

PLATANUS.

The Characters are;

The Leaves are large, and laciniated; the Flower is amentaceous, form'd into a globular Figure, and consisting of a Multitude of Stamina. The Fruit, which is produced at a Distance from the Flower, is spherical, and contains vast Numbers of long, apiculated Seeds, intermix'd with much Down.

Boerhaave mentions two Species of *Platanus*; which are,

1. Platanus; Orientalis; verus. *Park. Theat.* 1427. *Raii Hist.* 1706. *Tourn. Inst.* 590. *Boerh. Ind. A.* 2. 209. *Platanus. Offic. C. B. P.* 431. J. B. 1. 170. Ger. 1304. Emac. 1489. THE PLANE-TREE.

The *Platanus Orientalis*, so much celebrated by *Herodotus*, and other Writers, is, also, called *Platanus latus*, because it extends its Branches to such a Compass, as to be able to cover more than a thousand Men under its pleasing Shade. Under this Tree, *Hippocrates* found *Democritus*, and saluted him. *Hist. Plant. adscript. Boerhaav.*

The tender Leaves of the *Platanus*, boil'd in Wine, and apply'd as a Cataplasm, stop Defluxions upon the Eyes, and give Relief under Tumors and Inflammations. The Bark, boil'd in Vinegar, makes a Collution for the Tooth-ach. The green Balls or Fruit, drank in Wine, cure the Bites of Serpents; and made into an Ointment with Fat, are a Remedy for Ambustions. The Dust, or Down, of the Fruit, or Leaves, falling into the Eyes, or Ears, injures the Sight and Hearing. *Dioscorides*, *Lib.* 1. *Cap.* 107.

2. Platanus; Occidentalis; aut Virginiensis. *Park. Theat.* 1427. *Boerh. Ind. alt. Plant.*

PLATANUS is, also, a Name for the *Papaya*; *fructu Melopeponis effigie*.

PLATEA. The Pelican.

PLATIASMOS, πλατιασμὸς. A Fault in Pronunciation, when a Person opens his Mouth too wide, which hinders him from speaking distinctly. *Gorræus.*

PLATYCORIA, πλατυκορία. A preternatural Dilatation of the Pupil of the Eye, from a paralytic Cause. *Aretæus de Sig. et Caus. diuturn. L.* 1. *C.* 7.

PLATYOPHTHALMON. A Name for Antimony; so call'd, because it was used by Women, for rendering their Eyebrows and Eye-lashes black and beautiful.

PLATYPHYLLOS. A Name for the *Quercus*; *latifolia*; mas; quæ brevi Pediculo est. And for the *Quercus*; *latifolia*; *fœmina*.

PLATYSMA, πλάτυσμα. Any thing which is flat, and broad. Thus a Piece of Cloth, or Plaister, or Plate of Metal, are call'd by this Name.

PLATYSMA MYOIDES is the Name by which *Galen* calls the muscular Expansion, call'd *Quadratus Genæ*. See CAPUT, and LABIA.

PLATYSTERNOS. Broad-chested. An Epithet for a Person possess'd of a broad STERNUM.

PLECHAS, πληχὰς. The Region of the Body, which is terminated on each Side by the Thighs; forward by the *Pudenda*, and backwards by the Anus. *Hippocrates.*

PLECTANE, πλεκτανὴ, or πλέγμα. A *Plexus*, or Complication of Vessels. Plectanæ, πλεκτάναι, are the *Cornua* of the *Uterus*.

PLECTRUM. A Name for the Styloide Process of the *Os Petrosum*; for the *Uvula*; and, in some Authors, for the Tongue.

PLEGMA. The same as PLECTANE.

PLEGMARIA. See SELAGO.

PLEIAS, πλειὰς, or πλειὰς, in the Plural Number *Pleiades*, in Latin *Vergiliæ*, is a Constellation of seven Stars in the Sign *Taurus*; but, in *Hippocrates*, it signifies the Fall of these Stars, which is at the End of Autumn, or about the latter End of *October*. This is what *Galen* intimates, *Com.* 1. *in* 1 *Epid.* where he says, "that *Hippocrates* plainly shews, that he knew the Fall of the "*Pleiades* to be the End of Autumn; which, therefore, by a "compendious way of Expression, he calls πλειάς." Thus *Galen*. And in Confirmation of what he says, we may often observe, that *Hippocrates* uses the Words ὑπὸ πλειάδος, to signify the End of Autumn.

PLEMMYRIS, πλημμυρὶς, is, properly, the same as πλημμύρα, and signifies the flowing of the Tide, as *Hesychius* expounds it; but is, by a Metaphor, used to express a Redundance, or Overflowing, of Humidities, or, as *Galen* expounds it, πλῆθος ὑγρότητος, "Plenty of Moisture."

PLEMNE, πλήμνη, is expounded, in *Galen's* Exegesis, by τροχοῦ χοινικὶς, "the Nave of a Wheel." The Word frequently occurs, *Lib. de Fract.* *Plemnæ*, πλήμναι, in the plural Number, as expounded by *Hesychius*, are the Perforations round the Nave, or Axis, into which the Spokes of the Wheel are inserted. *Foesius.*

PLENILUNUM. The Full Moon. At this Time, many Distempers are said to be exasperated; as Madness, the Epilepsy, and Disorders arising from Worms. See ASTRONOMIA.

PLENNA, πλέννα, the same as BLENNA, Mucus.

PLERES ARCHONTICON. The Name of a compound cephalic Powder. *Lemery Pharmacopée Universelle. Blancard.*

PLEROSIS, πλήρωσις. Repletion; or a recruiting a Body, worn out, or reduced, by Sickness, or Evacuations.

PLESMONE, πλησμονὴ. Plenitude, Satiety, or Repletion.

PLETHORA. πληθώρα, from πλῆθος, Plenitude. A Plenitude, or Redundance of Blood, and Humours.

The Disorders arising from a Defect of the Circulation of the Humours, are, in Nature, pretty much the same with those spontaneously produced by their Stagnation. In this Case the Air is of great Importance, since, when admitted, it accelerates spontaneous Corruptions, which would otherwise be brought on more slowly; so that the Knowledge and Cure of the former, are the same with those of the latter; and from all these, the Nature, Cause, Effects, Signs, and Remedies of a Plethora may be duly understood, provided the following Circumstances are adverted to.

The Fluids of the human Body, are either crude, and, in some measure, partake of the Nature of the Aliments; or they have acquired those Qualities which are peculiar to the human Fluids: Now, if we consider what happens both to the crude and assimilated Fluids of the human Body, whilst the Circulation is diminished, it will evidently appear, that nearly the same Changes will happen to the Fluids, as if they had been left to themselves, and in a State of Rest; for the human Blood, when suffered to rest for a few Moments, is separated into Serum, and a red coagulated Substance. Now, when the Circulation is considerably diminished, a Misfortune of the like Nature, of course, begins to be formed; and hence it is, that polypose Concretions are so frequently observed after chronical Disorders. But all crude Aliments

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ments are, by the Efficacy of the Circulation of the Blood, assimilated to the human Fluids. Now if the Circulation of the Humours is diminished, the Aliments longer retain their original Quality, and are spontaneously corrupted.

It must be observed, that a free Access of the Air accelerates all spontaneous Degenerations of the Humours; for no Fermentation happens without the Approach of the Air, and whilst the Atmosphere is excluded, a Putrefaction of the Humours is far more slowly formed, than it would otherwise be. Thus, in dropsical Patients, stagnant Water often remains for some Months in the Abdomen, with scarce any Degree of Corruption; but it soon becomes putrid upon the Access of the Air.

Whilst, during the last Months of Gestation, the Blood becomes almost stagnant in the distended Vessels of the Uterus, it does not become corrupted; but, after Delivery, upon the Approach of the Air, the Lochia are highly fetid. After violent Contusions, when the Blood remains under the sound Skin, it hardly becomes putrid; but, being gradually attenuated and absorbed, as it were, disappears. But when Blood taken from the Veins is exposed to the free Air, it quickly becomes putrid. Hence, whilst, in the interior Parts of the Body, the Humours either become stagnant, or move slowly, they do not suddenly degenerate into a putrid State, when the Air has not a free Access to them.

But as a Plethora, or increased Quantity of Fluids, retards their Circulation, so its Nature, Causes, Signs, and proper Remedies, are to be deduced from the following Considerations:

A Plethora is a larger Quantity of laudable Blood, than is capable of undergoing those Changes, which must necessarily happen for the Purposes of Life, without inducing Diseases.

A Redundance of laudable Blood is what we call a Plethora: Hence this Circumstance can never, in its own Nature, be a Disorder; since it only supposes a preternatural Quantity of laudable Humours, whilst, in every other respect, the Patient is sound. Hence *Helmont* imagined, that a Plethora was unjustly classed among the Number of Diseases, since, according to him, what is laudable, cannot be peccant in Quantity. Now a Plethoric Patient is such an one, as is not as yet sick, but at the same time is in such a State of Plenitude, that, if the Humours are more increased or rarefied by Heat, or any other Cause, the natural Functions are, by these means, injured. Hence a Plethoric Person may be sound, though at the same time in the greatest Danger; for, by an increased Heat of the circumambient Atmosphere, the smallest Error with respect to the Non-naturals, or any violent Passion of the Mind, this sound State may be changed into the most dangerous Disease. But it is impossible to prevent such a Misfortune sometimes happening to the most healthy Person. Hence *Hippocrates*, in *Aphor.* 3. *Sect.* 1. informs us, "That Persons in a good Habit of Body "are in a State of Danger; and that, since they cannot long "continue in the same State, nor change for a better, they "must, of course, decline into a worse; for which Reason "such a State ought, with the greatest Expedition, to be re-"moved."

A Plethora, therefore, does not import every Increase of the Humours, but only an Augmentation of the laudable Juices. Hence *Galen*, in *Meth. Medend. Lib.* 13. *Cap.* 6. informs us, "That a mutual and equable Increase of the Fluids is called a "Plethora; whereas, when the Body abounds with yellow or "black Bile, Phlegm, or serous Humours, the Disorder is "called a *Cacochymy*, and not a Plethora.".

A Plethora was, by the Antients, distinguished into that affecting the Vessels, and that influencing the Strength. When the Vessels are so preternaturally turgid with the laudable Juices, that they are ready to break, the Misfortune is called simply a *Plenitude*, or *Plethora of the Vessels*. But when the Vessels are not too full of laudable Humours, but yet contain more than the weak vital Force is able to put into a due Circulation, the Disorder is called a *Plenitude*, or *Plethora, with respect to the Strength*. Thus *Galen*, in his Treatise *de Plenitudine*, *Cap.* 3. informs us, "That there are two Species of Ple-"thoras, one affecting the Strength and vital Powers; and the "other the Vessels." And in his Treatise *de Curandi Ratione per Venæsectionem*, *Cap.* 6. he tells us, "That the more heavy "a Person perceives himself, the more a Plethora, with re-"spect to the Strength, is increased; whereas a Plethora, with "respect to the Vessels, is discovered by a Sense of Tension."

But a Plethora, in the common Acceptation of the Word, is confined to the Vessels, and in this Sense we now consider it.

This Species of Plethora, then, is generated by every Cause which produces a large Quantity of laudable Chyle and Blood, and at the same time hinders their Attenuation, Consumption, and Perspiration.

By the Functions of Life, the Solids are necessarily worn, and the Fluids dissipated. Hence what is lost, ought to be recruited by Aliments. If every Day as much is restored to the Body as is lost, there remains a perfect Equilibrium, the most perfect Sign of confirmed Health; for *Sanctorius* has shewn, by his Experiments, that the Body is in the most perfect State of Health, when daily, after the Digestion of the Aliments, it returns to its usual Weight. Now the Restitution of what is lost, is produced by laudable Chyle, and the Blood formed of it. If, therefore, by whatever Cause, there is a larger Quantity of laudable Chyle and Blood, than is sufficient for restoring what is lost, generated, there will be an Accumulation of superfluous Juices gradually produced, and such an Accumulation will be greatly increased, if the Efficacy of those Functions is diminished, by which the Fluids ought to be attenuated, consumed, and dissipated, by the usual Ways of Excretion.

Among the other Causes of a Plethora, we may justly reckon the great contractile Force of the chylopoetic Organs, Heart, and Arteries; a lax Texture of the Veins, and other small Vessels; mild Aliments, easily convertible into Chyle; much Sleep; an easy Mind; a Want of due muscular Motion, and habitual Evacuations of Blood, whether natural or artificial.

As for the contractile Force of the chylopoetic Organs; whilst the Viscera, subservient to the Change of the Aliments into laudable Chyle, are sound and strong, there is a large Quantity of Chyle prepared from the Food and Drink; and whilst the like Strength remains in the Heart and Arteries, a laudable Blood is generated from this large Quantity of Chyle; whilst at the same time the Veins, being naturally lax, easily yield to the distending Fluid, and receive its superfluous Quantity, unless a Depletion of them is produced by proportionably greater Motion and Exercise; for the more languid the Circulation is, the more Humours are accumulated in the Veins: Whereas, on the contrary, the brisker the Motion of the Blood is, the Arteries become the fuller, and the Veins the more empty: Whilst Drunkards often destroy large Quantities of Liquor, they would be suffocated, unless the Veins were capable of receiving the superfluous Liquor; for which Reason their Veins are, at such times, greatly inflated. When, therefore, the chylopoetic Organs prepare a large Quantity of Chyle; when the Viscera, subservient to Sanguification, convert this Chyle into Blood, and there is, at the same time, a Laxity of the Veins, there must necessarily be a Redundance of laudable Blood accumulated.

As for mild Aliments; all acrid Substances, by their stimulating Quality, increase the Circulation of the Blood; and an increased Motion of the Blood diminishes the Quantity of the Juices: Mild Aliments, therefore, of the ripe, farinaceous kind, Broths prepared of Flesh, the tender Fleshes of young Animals, and soft Pot-herbs, from all which a large Quantity of laudable Chyle is generated, have a Tendency to produce a Plethora.

As for much Sleep; it is shewn, under the Article FIBRA, how plentiful Sleep conduces to the Relaxations of too rigid Fibres. Now the relaxed Vessels easily yield to the distending Fluids, for which Reason they are the more filled. Besides, during Sleep, what was lost by the Functions of Sensation, and voluntary Motion, is restored. On the contrary, whilst we are awake, what was accumulated during Sleep, is consumed. Hence those, who are fatigued by the Labours of the Day, rise brisk and vigorous, after a salutary Sleep. When, therefore, any Person indulges himself in a great deal of Sleep, the more the Humours are daily accumulated, and the less of them is dissipated. Hence arises a Plethora. Hence, also, it is, that Habits exhausted by violent Disorders are so happily restored by long Sleep; and Bears sustain Life all the Winter by sleeping, without any manner of Food.

As for an easy Mind; that Serenity of Mind contributes greatly to the Preservation of Life, is sufficiently obvious. Now the Effect of the best Health is a Plethora: Besides, violent Passions, and racking Cares, palpably prey on the Body. And *Galen*, in his *Method. Medend. Lib.* 14. *Cap.* 15. mentions the Cares of the Mind, among the other Methods of curing Obesity or Fatness.

As for a Want of due muscular Motion; after Man, for the Punishment of his Sin, was sentenced to earn his Bread by the Sweat of his Brow, bodily Exercise became necessary for the Preservation of Health: Accordingly Persons, who led delicate and idle Lives, are afflicted with the most terrible Disorders. *Hippocrates*, in his Treatise *de Victus Ratione Sanorum*, *Lib.* 1. informs us, "That a Person, who eats heartily, cannot be "sound, without Exercise; for though Aliments and Exercise "have different Effects, yet they mutually concur to the Pre-"servation of Health; since Labour consumes what is super-"fluous, whilst Aliments and Drink recruit what is lost." And in the same Treatise, *Lib.* 3. he orders us to consider, "Whe-

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" whether the Aliments surpass the Exercise, or the Exercise " the Aliments, since, when either happens, Diseases are " produced; whereas, when they are equal, and duly pro- " portioned to each other, Health is preserved.

Such an Equilibrium, therefore, is requisite between the Aliments and Exercise, that as much may be daily dissipated, as is taken in by way of Aliment. Whilst the same Quantity of Food is used, and the Exercise lessened, a Plethora begins to be formed. When Horses are well-fed in Stables, they soon become fat, but when exercised in hard Running for some Days, the additional Fat is soon dissipated.

As for usual Evacuations of Blood, whether natural or artificial; it is certain from Experience, that the oftener a Man is blooded, provided he is not quite weakened by it, his Vessels are afterwards rendered more turgid with Blood. Women have every Month a natural Evacuation of superfluous Blood; and Men, accustomed to repeated Venesections, are, about the usual times of Venesection, afflicted with the same Disorders Women labour under, in consequence of a Retention of the Menses: Thus at last the Strength of such Men degenerates into the lax and feeble State of Woman. Mr. *Dodart*, in *Hist. de l'Academie des Sciences, An.* 1707. observes, that in a Man, not weakened by Venesection, sixteen Ounces of Blood taken from the Veins were restored in five Days time. Hence it is obvious, that repeated Venesection disposes to a Plethora, whilst the Blood is, by that means, so soon regenerated, though the Body is rendered less firm, more lax, and consequently its Vessels more easily filled. I saw a Woman, who, on account of violent and often-returning Passions of Mind, was blooded above sixty times in a Year, and became so fat, that in a few Months she weighed one hundred and fifty Pounds more, than in her natural State; but the Blood, being daily regenerated, laid a Foundation for repeated Venesections, till, her whole Strength being destroyed, she fell into a Dropsy. It doth not, therefore, seem to be a laudable Custom for healthy Persons to bleed frequently every Year, by way of Caution and Prevention; since, by that means, the Body is weakened, and disposed for the more easy Repletion. *Galen*, who, in *Meth. Medend. Lib.* 9. *Cap.* 5. in certain Disorders, recommends frequent and bold Venesections, till the Patient faints away, condemns this Custom in the following manner: " I hardly think it expedient to open a Vein often " every Year; because, in conjunction with it, the vital Spi- " rits are evacuated; and, if these are greatly diminished, the " whole Habit is refrigerated, and all the natural Operations " worse performed."

All the Effects of a Plethora depend upon that Rarefaction of the Blood, which is to be ascribed to its increased Velocity, and the Heat arising therefrom, or to other Causes, only to be known from Observation. Hence arises a Dilatation of the Arteries, both sanguiferous and lymphatic, a Change of the Secretion, a Compression of the sanguiferous and lymphatic Veins, a Suffocation of the Circulation, an Inflammation, a Rupture of the Vessels, a Suppuration, a Gangrene, and Death.

All the Effects of a Plethora depend on the Rarefaction of the Fluids. When the Vessels are furnished with too large a Quantity of laudable Blood, there may still be a State of Health preserved: But when, by whatsoever Cause, the Blood contained in the Vessels is rarefied, then the Functions begin to be injured and impaired; and when, on such an Occasion, certain Changes appear in the Body, these are called the Effects of a Plethora; though they do not depend upon this Cause alone, since the Plethora is only the predisposing, and the Rarefaction the exciting or occasional Cause of them. From these two Causes, therefore, united, is formed the proximate Cause of these Phenomena; and as the exciting Cause, that is, the Rarefaction, puts the Plethora in Action, which alone, except in an high Degree, would not soon prove hurtful, hence, in that Sense, the Effects of a Plethora are said to depend upon the Rarefaction of the Fluids.

The Rarefaction of the Blood is to be ascribed to its increased Velocity, and the Heat arising from that Circumstance. When, in the same Time, a larger Quantity of Blood flows thro' the Vessels, its Velocity is said to be increased; but this cannot happen, without an increased Attrition of the Fluids on the Vessels. Hence arises Heat, and the Heat produces Rarefaction: But all the Causes, which, from Experience, seem to rarefy the Blood, seem to produce this Effect, by increasing the Celerity of its Motion, and the Heat arising from that Circumstance. Now a Rarefaction of the Blood is alone sufficient to produce all those Effects, which arise from a Plethora; for if the Blood was doubly rarer than it is, it would be the same thing, with regard to the Vessels, as if its Quantity was doubly increased. If, therefore, to a Plethora a Rarefaction of the Blood is added, all the Symptoms, capable of arising from a Plethora, will be augmented. Hence it is obvious, why all those Medicines and Diseases, which, in consequence of an increased Velocity of the Blood, induce Heat, and consequently Rarefaction, produce the Symptoms of a distending Plethora. When a pale and chilly Girl is affected with the Small-pox, there forthwith arise a Heat, Redness, and inflammatory Tension of the Vessels, together with an intolerable Head-ach; not from an increased Quantity of the Blood, but from its Rarefaction, produced by an Acceleration of its Motion, and a consequent greater Heat.

Hence arises a Dilatation both of the sanguiferous and lymphatic Arteries. The Blood, when either increased in Quantity, or by Rarefaction, possessing more Space than it did before, will necessarily dilate the Vessels in which it is contained, more than before; and hence both the Arteries and Veins will be distended, and the Blood cannot be so easily propelled from the Arteries into the too much distended Veins: Hence a greater Resistance is made about the Extremities of the Arteries: For this Reason the Arteries will be more distended, by the Blood forced into them from the Heart. Now since, among the Causes enumerated by Physicians, why, from the same Blood, so various Liquors are secreted in various Parts, we may justly reckon the various Proportions which the secreting Ramifications bear to their Trunks, hence it is obvious, that, when this Proportion is disturbed by a Dilatation of the Arteries, all the Secretions may, also, be disturbed by that means.

As for a Compression of the sanguiferous and lymphatic Veins; in most Parts of the Body, Veins run along with the Arteries; and, when the Arteries are too tumid, they compress the adjacent Veins, which are furnished with weaker Coats: The compressed Veins convey their contained Blood to the Heart; the Heart forces it into the Arteries, and the Veins being compressed, are capable of receiving a smaller Quantity of it: Hence a still greater Dilatation of the Arteries succeeds; and, at last, almost the whole Blood is accumulated in them, whilst the Veins are more compressed and emptied.

As for a Suffocation of the Circulation of the Humours; this must necessarily happen, since, by these means, the Resistance made to the Blood, to be conveyed out of the Left Ventricle of the Heart, is every Moment increased. Hence the Pulmonary Veins cannot so easily convey the Blood into the Left Ventricle of the Heart: For this Reason the Blood will begin to be accumulated in the Vessels of the Lungs; the Resistance made to the Right Ventricle of the Heart will be increased, and, at last, the Circulation of the Blood suffocated. Hence we observe, highly plethoric Persons very red, with their small Arteries dilated, and receiving the red Blood. At last such Persons, being, as it were, suffocated, begin to assume a livid Colour, and often die suddenly; unless, either by Nature or Art, the Vessels are relieved, by lessening the Quantity of Blood, and, consequently, diminishing its Heat and Rarefaction.

As for an Inflammation; this must necessarily happen, on account of the gross Humours which have entered the too much dilated Orifices of the minute Vessels, and which cannot pass through the narrowest Parts of them.

As for a Rupture of the Vessels; this happens principally in those Parts where the Vessels are most tender: Hence it is, that, in plethoric Patients, Arteries breaking in the Brain so often produce mortal Apoplexies: Hence, also, it is, that Spittings of Blood are so frequently observed to arise from a Rupture of the Pulmonary Vessels, by the distending Blood in plethoric Patients.

As for a Suppuration and a Gangrene; these are the common Terminations of an Inflammation, which cannot be resolved.

As for Death; this seems to happen, because the too much distended Vessels make so great a Resistance to the Heart, that it cannot discharge its Contents. Hence the Circulation is suffocated: Or, because the large Vessels, being too turgid with Blood, compress the minute Vessels in the Brain, Cerebellum, and Nerves; or, when, in consequence of a Rupture of the Vessels, the Humours necessary to Life are evacuated; or, lastly, when, in consequence of a Rupture of the Vessels, the extravasated Fluids destroy the Actions of the Viscera, more immediately subservient to Life.

A Plethora then, when present, is easily known; and its future Effects readily foreseen.

A present Plethora is known, if the Causes which generate too large a Quantity of laudable Blood, and which are already enumerated, have preceded; if there is a great Redness in the whole Body, especially in those Parts in which the Vessels appear naked, and uncovered with Skin, as in the Corners of the Eyes, the Tunica Adnata, the internal Parts of the Eye-lids; the internal Parts of the Nostrils, the Mouth, Fauces, and Lips; if a great Heat is perceived, even at the Extremities of the

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the Body; if the Veins are inflated, and the Pulse strong and full; if, after violent Exercise, an increased Heat of the Atmosphere, Wine, or any other heating Substances, the Patients perceive, in all their Muscles, a soft, full, distending Tumor, together with a certain Immobility, so that they can hardly clinch their Fingers; then they begin to be sluggish, lethargic, and have a Discharge of Tears from their Eyes.

In forming the Prognostic of a Plethora, we foresee, that all the Symptoms already enumerated will happen; and particularly, that the Functions of the whole Brain will be disturbed, because, in the Head, all the Parts are naturally full. Hence, when the large Vessels full of red Blood are distended, the other smaller Vessels will be compressed; because the Bones of the Cranium cannot yield. Hence all the Disorders of the Brain, from the slightest Vertigo to the most fatal Apoplexy, may arise from a Plethora.

A Plethora is cured by Venesection, Exercise, Watchings; a sharp and acrid Diet, after due Evacuations; and by a gradual Omission of these Evacuations.

By Venesection. A Redundance of laudable Blood is the Cause of all the Misfortunes already enumerated. Every thing, therefore, which diminishes this Redundance, is beneficial. But this is best done by Venesection, immediately after which all the Symptoms are relieved. A Physician never practises more rationally, than when he imitates the Ways and Methods, which Nature herself takes, in relieving Disorders. Now we see, that both in Health, and under Diseases, a Plethora, arising either from a Redundance or Rarefaction of the Blood, is happily removed by a salutary Hæmorrhage, especially from the Nostrils. Hence, in young Persons, in a perfect State of Health, at that Period of their Lives, when their Vessels, now becoming stronger, begin more forcibly to resist the Fluids, such Evacuations of Blood are so frequently salutary, especially in the Spring, when the Heat increases. For the same Reason, also, Hæmorrhages from the Nose have often proved salutary in the most violent and acute Disorders: Now Physicians, imitating these Efforts of Nature, order the Quantity of Blood to be lessened by Venesection; and if Symptoms indicate, that the Arteries are only highly distended, and the Veins collapsed, because the Blood cannot pass from the Arteries to the Veins, which frequently happens in acute, inflammatory Disorders, then some of them venture to order Arteriotomy; and, as in large Arteries this cannot be done without Danger, the same Effect may more safely be produced by opening many small Arteries by Scarifications. Hence *Prosper Alpinus*, in his Treatise *de Medicina Ægyptiorum*, informs us, that the *Egyptians*, among whom these acute Disorders are frequent, greatly esteem such Scarifications.

Some, especially of the Followers of *Helmont*, condemned Venesection, as a Practice both cruel and useless: They believed, that, by Abstinence from Aliments and Drink, the Redundance of the Humours was more effectually lessened, since, by insensible Perspiration, and the other Excretions, several Pounds of Humours are daily evacuated; which, however, are restored by Aliments and Drink. Hence they maintained, that since the natural Excretions continued to diminish the Fluids, whilst what was lost was not restored by Aliments and Drink, there was a greater Diminution of the Fluids, by Abstinence for twenty-four Hours, than by the boldest Venesection: But by this Method the most subtile Humours are only dissipated from the Body, whilst the red, thick Blood, distending the larger Vessels, is hardly diminished; which is the Circumstance most required; and all the Humours become more acrid, whilst no new Chyle is mixed with the Blood.

But tho' Venesection lessens the Redundance of the Blood, yet it not only leaves the Body equally subject to Repletion, but even disposes more to the Generation of a fresh Plethora, as we have already observed. Hence it is necessary the Body should be rendered so firm, as that it may not easily, for the future, accumulate a Redundance of Blood.

As for Exercise; this not only dissipates what was retained during a State of Rest, but, also, to corroborate the Solids, that they do not easily yield to the Fluids they contain. Thus we rarely find Persons daily accustomed to hard Labour, plethoric, even though they should be highly voracious: But Exercise is not proper, till by Venesection the Vessels are emptied; otherwise, being distended, a Rupture of them would very readily happen.

As for Watchings; much Sleep is reckon'd among the Causes of Plenitude; so that Watching must produce the opposite Effect.

As for a sharp and acrid Diet after due Evacuations; soft Aliments easily changed by the Chylopoetic Organs, afford a large Quantity of Chyle. Hence the Quantity of Blood is daily increased, unless, by violent Exercise, the superfluous Humours are dissipated. Hence Nature has supplied new-born Infants with an highly soft Milk, already changed in the Mother's Body, because, in that Age, a very quick, and daily Increase of the Humours is requisite. But when the contrary is required, as in the Cure of a Plethora, for Instance, then harder Aliments of a more difficult Digestion, and acrid, aromatic, and stimulating Substances, prove beneficial; because, by this means, less Chyle, and, consequently, all other Circumstances being alike, less Blood will be generated; and the Motion of the Humours being increased by acrid stimulating Substances, an Accumulation of them will not so easily happen. But before the Quantity of the distending Fluids is lessened by Evacuants, acrid Substances are highly pernicious, lest a Rupture of the too full Vessels should happen upon an Increase of the Motion of the Blood by means of stimulating Substances.

As for the gradual Omission of usual Evacuations; we have already observed how much frequent Venesections dispose to a frequent Plethora. Hence these Evacuations are to be omitted; but this is not to be done all at once, because all sudden Changes from usual to unaccustom'd things are bad, especially in this Case; for by frequent Venesections the Body is habituated to accumulate a large Quantity of Blood, which unless removed, will produce all the Effects of a Plethora: For this Reason, such usual Evacuations are to be gradually lessened as to their Quantity, and a greater Interval of Time put betwixt them, that they may be gradually diminished without any Danger. In taking such Measures, we imitate the salutary Method of Nature, about the Time when the Menses begin to prove defective in Women; for then this Evacuation is naturally and gradually diminished in Quantity, and its Returns appear at longer Intervals, till it at last totally ceases. But, when the Menstrual Discharge ceases suddenly, it is generally productive of terrible Consequences. *Van Sweiten.*

PLETHORICUS. An Epithet for a Person abounding with Blood, or labouring under a *Plethora*.

PLETHRON. The sixth Part of a *Stadium*.

PLEURA. The Pleura is a Membrane which adheres very closely to the inner Surface of the Ribs, Sternum, and Muscuſi Intercostales, Sub-costales, and Sterno-costales, and to the convex Side of the Diaphragm. It is of a very firm Texture, and plentifully stored with Blood-vessels and Nerves, in all which it resembles the Peritonæum, and, likewise, in that it is made up of an inner true membranous Lamina, and a cellular Substance on the Outside, which is a Production or Continuation of the Lamina.

The cellular Portion goes quite round the inner Surface of the Thorax, but the membranous Portion is disposed in a different manner. Each Side of the Thorax has its particular Pleura, entirely distinct from the other, and making, as it were, two great Bladders, situated laterally with respect to each other, in the great Cavity of the Breast, in such a manner, as to form a double Septum, or Partition, running between the Vertebræ and the Sternum, their other Sides adhering to the Ribs and Diaphragm.

This particular Duplicature of the two Pleuræ is termed *Mediastinum*. The two Laminæ, of which it is made up, are closely united together near the Sternum and Vertebræ; but in the Middle, and toward the lower Part of the fore Side, they are separated by the Pericardium and Heart. A little more backward they are parted in a tubular Form, by the Œsophagus, to which they serve as a Covering; and in the most posterior Part, a triangular Space is left between the Vertebræ and the two Pleuræ from above downward, which is filled principally by the Aorta.

Before the Heart, from the Pericardium to the Sternum, the two Laminæ adhere very closely, and there the Mediastinum is transparent, except for a small Space near the upper Part, where the Thymus is situated; so that in this Place there is naturally no Interstice, or particular Cavity. The apparent Separation is owing entirely to the common Method of raising the Sternum, as was plainly demonstrated by *Bartholinus*, in his Treatise of the Diaphragm, published at *Paris* in 1676.

The Mediastinum does not commonly terminate along the Middle of the Inside of the Sternum, as the common Opinion has been. I demonstrated, says *Winslow*, in 1715. to the Royal Academy of Sciences, that, from above downward, it inclines toward the Left Side; and that if, before the Thorax is opened, a sharp Instrument be run through the Middle of the Sternum, there will be almost the Breadth of a Finger between the Instrument and the Mediastinum, provided that the Sternum remain in its natural Situation, and the Cartilages of the Ribs be cut at the Distance of an Inch from it, on each Side.

From all this we see, not only that the Thorax is divided into two Cavities, entirely separated from each other, by a middle Septum without any Communication; but, also, that, by the Obliquity of this Partition, the Right Cavity is greater than the Left; and hence we may judge of the Uncertainty of Tre-

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panning the Sternum, which the Antients have recommended in some Cases.

The cellular Portion of the Pleura connects the membranous Portion to the Sternum, Ribs, and Muscles; to the Diaphragm, Pericardium, Thymus, and Vessels; and, in a Word, to whatever lies near the convex Side of the membranous Portions of the Pleura. It, likewise, insinuates itself between the Laminæ of the Duplicature, of which the Mediastinum is formed, and unites them together. It even penetrates the Muscles, and communicates with the cellular Substance in their Interstices, all the Way to the Membrana Adiposa on the external convex Side of the Thorax. In this the Pleura resembles the Peritonæum.

The Surface of the Pleura, turned to the Cavities of the Breast, is continually moisten'd by a lymphatic Serosity, which ouses through the Pores of the membranous Portion. This Fluid is said to be secreted by imperceptible Glands; but the Existence of these Glands has not been hitherto demonstrated.

The Arteries and Veins of the Pleura are principally Ramifications of the Intercostals; and these Ramifications are exceedingly numerous, and, for the most part, very small. The Mammariæ Internæ and Diaphragmaticæ, likewise, send Branches hither, which communicate very frequently with those that come from the Intercostals.

The Mediastinum has particular Vessels called the *Arteriæ* and *Venæ Mediastinæ*, which are commonly Branches of the Subclaviæ. The Mammariæ Internæ send, likewise, Ramifications to the fore Part of it, the Diaphragmaticæ to the lower Part, and the Intercostales and Œsophagææ to the back Part.

The Nerves are Ramifications of the true Intercostales, call'd otherwise *Costales*, and *Dorsales*. Near the Vertebræ, they communicate with the great Sympathetic Nerves, improperly called *Intercostales*, and but very little with the middle Sympathetici, or those of the Eighth Pair.

The Pleura serves in general for an inner Integument to the Cavity of the Thorax. The Mediastinum cuts off all Communication between the two Cavities, and hinders one Lung from pressing on the other, when we lie on one Side. It, likewise, forms Receptacles for the Heart, Pericardium, and Œsophagus; and is continued over the Lungs.

Before we leave the Pleura, it must be observed, that these Portions of it which adhere immediately to the Ribs, may be looked upon as the Periosteum of their inner Sides. This Adhesion keeps the Pleura stretched, and hinders it from slipping or giving way. It, also, renders this Membrane extremely sensible of the least Separation caused by a coagulated Lymph, or accumulated Blood; the nervous Filaments being, likewise, in this Case, very much compressed in Inspiration, by the Swelling of the Intercostal Muscles. *Winslow's Anatomy.*

PLEURITIS, πλευρῖτις, from πλευρὰ, the PLEURA. A Pleurisy, or Inflammation of the PLEURA. See PERIPNEUMONIA.

PLEURON, πλευρὸν. The same as PLEURA.

PLEUROPNEUMONIA. The Name of a Distemper, consisting of a Complication of a Pleurisy, and Peripneumony.

PLEURORTHOPNŒA, according to *Blancard*, is a Pleurisy, in which the Patient cannot breathe without keeping his Neck erect.

PLEXUS, in Anatomy, is a kind of Net-work, or Complication of Vessels. Thus a Congeries of Vessels within the Brain is call'd *Plexus Choroides*, *Reticularis*, or *Retiformis*. A *Plexus* of Nerves is an Union of two or more Nerves, forming a sort of Ganglion, or Knot.

PLICA POLONICA. In *Poland* and *Lithuania*, this Disorder is endemial, and well known. It consists in a preternatural Bulk of the Hairs, which, being firmly conglutinated and wrapped up in inextricable Knots, afford a very monstrous and unseemly Spectacle. When these are cut, the Blood is discharged from them, the Head racked with Pain, the Sight impaired, and the Patient's Life frequently endangered. This Misfortune is principally incident to the *Jews* who live in those Countries. Though it seems difficult to account for this Disorder, and assign its true Causes, we shall, nevertheless, make an Attempt of this Kind. What, therefore, contributes not a little to its Production, is the sordid and nasty manner of Life to which these People are addicted; for they rarely comb their Hairs, sleep in low, moist Rooms, and drink large Quantities of Brandy. The Waters, also, concur and assist in the Generation of this Disorder. Hence *Gehema*, in *Epist. ad Bontekoe de Plica Polonica*, is justly of Opinion, that the Causes of this Disease is lodged in some particular Waters of *Poland*, which, if either drank, or used for washing the Body, produce the *Plica*; which he confirms by the Fate of two Soldiers, who, when intending to wash their Bodies, had scarce immersed their Heads in the Water of a certain Pond, before their Hairs were contracted into many Folds. Besides these Causes, we suppose an hereditary Fault convey'd from the Parents, and which consists in too great a Bulk of the Pores and bulbous Hairs under the Skin of the Head. Hence the thick and glutinous nutritious Juice, produced by their coarse Aliments, and impure Waters, is, by the Heat excited by their drinking Brandy, forced into the Cavities of the Hairs, and, sweating through their Pores, produces this terrible Disorder. *Hoffman. de Morb. cert. Reg. propr.*

This Disorder, unless the peccant Matter is convey'd to the Hairs, is very dangerous; and violent Symptoms are produced in almost all the Parts of the Body, where it is deposited and lodged.

But if Nature, in a salutary and critical manner, throws the peccant Matter to the Hairs, an unseemly Twisting of them is produced, whilst the Patient remains free from every other Symptom; since Nature generally throws the Remains of the peccant Matter to the Hairs, the Disorder of which is, by many, supported to the Ends of their Lives, without any inconsiderable Inconvenience.

If the folded or twisted Hairs are rashly cut off, Blindness, and other terrible Symptoms, are excited, not because, as some think, the Head is by this means exposed to Cold, which might be prevented by wearing a Cap; but because the Substance, in which Nature used to lodge the peccant Matter, is removed, and a free Evacuation of the sordid Humours by that means prevented. And in this Disorder the same happens as in old Ulcers, which, unless the Body is first well cleansed, cannot be healed up without the greatest Danger. Nor is it safe to close Fontanels, which have been kept open for a considerable time.

When the peccant Matter is no longer lodged in the Body, the Plicæ, or Twistings of the Hair, are spontaneously removed; and if we are absolutely certain, that such a Matter is no longer in the Body, which, however, is hard to be known, the Plicæ, or Twistings, may be cut off.

A perfect Method of curing this Disorder is, in my Opinion, unknown; undoubtedly, because in those Parts of *Poland* in which this Disease is endemial, there have been few Physicians, who, from what is commonly known of the Nature and Cure of the *Plica Polonica*, have been able to lay down a rational and judicious Plan for treating it.

'Tis certain, that Purging and Venesection are so far from being beneficial in this Disorder, that they often prove hurtful. Thus the Rector of the Academy of *Zamosca* informs the Physicians of *Padua*, that, if they attempt the Cure of this Disorder by common Purgatives, the Patient will be render'd worse, because these, instead of correcting and subduing the peccant Humours, throw them into violent Commotions, and more effectually distribute them through the whole Body; in consequence of which, intense Pains are produced in all its Members. *Hercules Saxonia* is of the same Opinion, and confirms this Doctrine by various Instances of Persons rendered blind, lame, and subjected to other Misfortunes, by using Purgatives in the Beginning of the *Plica Polonica*, as, also, in the Scurvy.

'Tis, therefore, most safe and expedient, as soon as possible, to solicit the peccant Matter to the Hairs, to which it naturally tends. And this Intention, as we learn from Experience, is, of all others, the most effectually answered by Lotions prepared of Bears-breech. *Sennertus.*

PLICHAS, πλιχάς. The same as PLECHAS.

PLINIA.

The Characters are;

It hath a Bell-shaped Flower, consisting of one Leaf, which is divided into five Segments at the Margin; from whose Cup rises the Pointal, which afterward becomes a globular, soft, chaneled Fruit, in which is included one Seed of the same Form.

Miller mentions but one Sort of *Plinia*; which is,

Plinia fructu croceo odorato. *Plum. Nov. Gen.*

This Plant was discovered by Father *Plumier*, in the *West Indies*, who gave it this Name, in Honour to *Pliny* the famous Natural Historian. *Miller's Dict.*

PLINTHIUM, πλινθίον. A Name of several Machines for making Extension. One of these is described by *Oribasius*, *de Laqueis*, *Cap.* 13. He, also, describes two more, in his Treatise *de Machinamentis*, *Cap.* 8. one of which he calls *Nilei Plinthium.*

PLINTHITIS, πλινθῖτις. A Species of Alum, called, also, PLACITIS.

PLOTES. A Name for the *Mugil*, in *Oribasius*, *Collect. Medicinal. Lib.* 2. *Cap.* 58.

PLUMACEOLUS. A Pledget, Bolster, or Compress.

PLUMACEUS. An Epithet for certain Magisteries in *Zwelfer*, importing their being extremely fine, and soft as Feathers, or Down.

PLUMBAGO.

The Characters are;

The Root is fibrous, thick, fleshy, hot, and perennial; the Leaves

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Leaves are alternate and entire. The End of the ſhort Pedicle unfolds itſelf into a monophyllous, quinquefid, and very hairy Calyx, ſhaped like a Tube, in whoſe Centre is ſeated the Ovary furniſhed with its proper Tube. On the Apex of the Ovary, grows a monopetalous Flower, conſiſting of a long Tube, which has its upper Part expanded into a Circle, ſo as to reſemble the Flower of Jeſſamin; theſe Flowers are diſpoſed in Spikes. The Seed is oblong and acuminated.

Boerhaave mentions two Species of *Plumbago*; which are,

1. Plumbago quorumdam. *Tourn. Inſt.* 140. *Boerh. Ind. A.* 77. *Dentellaria.* Offic. *Plumbago Plinii.* Ger. 1069. Emac. 1254. Raii Hiſt. 1. 394. *Dentellaria Rondeletii.* J. B. 2. 941. *Lepidium Dentellaria dictum.* C. B. P. 97. *Lepidium Monſpeliacum Dentellaria dictum.* Park. Theat. 885. LEADWORT.

The Stalks of this Leadwort are but weak and ſlender, clothed with long, narrow, whitiſh, green Leaves, which encompaſs them. The Flowers grow in ſhort thick Spikes, ſmall and purple, of a ſingle Leaf cut into five Segments, which are ſucceeded by rough, hairy, naked, ſolitary Seeds. The Root is large and thick, and the whole Plant is hot and biting, like Lepidium.

This is a Plant ſeldom or never uſed. It is of an hot, and even a cauſtic Nature, like Pellitory of *Spain*; and has been made uſe of, like that, for the Tooth-ach; it is ſaid, that, even held in the Hand, it will cure the Pain of the Teeth. *Miller's Bot. Off.*

2. Plumbago Ceylanenſis, folio ſplendente Ocymaſtri, flore lacteo.

PLUMBAGO. *Plumbage.* The ſame as MOLYBDÆNA.

PLUMBUM. Lead.

The *Greek* Authors frequently uſe the ſame Name to expreſs both Lead and Tin; and, accordingly, their *Latin* Tranſlators interpret κασσιτερος, both by Plumbum and Stannum. *Geo. Agricola* mentions three Kinds of Plumbum, one white, which we call *Tin*; another of an Aſh-colour, which we call *Biſmuth*; and the third livid, which is our Lead.

THE FORMS OF ITS ORE.

Lead is ſeldom found pure in the Mines, and has different-coloured Ores, *viz.* black, yellow, and aſh-coloured; it is, alſo, found in red, or white rocky Stone, and ſometimes in the Form of Dice, with ſhining Lead-coloured Surfaces; and, ſometimes mixed with white, yellow, or green Fluors. There are many Lead Mines in *Spain*, *Italy*, and *Germany*; but the richeſt are thoſe of *England*.

The Ore is of a poiſonous Quality, eſpecially with regard to Brutes. "They who live near where it is waſhed, ſays "Mr. *Beaumont*, can neither keep Dog nor Cat, nor any "Sort of Fowl, but they all die in a ſhort time." He adds, that, "not only Calves, but even Children, have been known "to be kill'd, by only being in Houſes where Lead-ore had "been kept ſome time; and that if any Sort of Cattle fed "often on the Graſs, on which the Steam which riſes from "the Smelting of Lead, falls, they all die ſoon after." *Phil. Collect.*

DIFFERENCES OF ITS ORE.

There is a very conſiderable Difference between the Ores of different Mines. Some is ſo like Steel, that the Workmen call it Steel-ore; which being of more difficult Fuſion than ordinary, they mix other Ore with it. There is another, which, from its Readineſs to vitrify, and its Uſe in glazing the Potters Veſſels, is called *Potter's Ore*.

Our *Engliſh* Lead-ores are reducible to three Claſſes; the firſt, thoſe which, in the ordinary ways of Melting, afford from thirty to forty Pounds of Metal, for every hundred Weight of Ore. The ſecond, from forty-five to ſixty. The third, from ſixty to eighty.

LEAD CONTAINS SILVER.

The Lead found in ſome Parts of *England*, contains from five to ten Pounds of Silver in a Tun Weight; which they get out by teſting, and recover the Lead without any great Waſte.

The Lead of many Mines, being ſkilfully treated, affords Silver; but the Quantity of Silver in the Ore, does not hold in Proportion to the Quantity of Lead. Mr. *Boyle* cauſed ſome Lead-ore to be tried, which, being the moſt promiſing he had ever known, gave him Hopes of ſome conſiderable Quantity of Silver: But though it proved ſo rich in Lead, as to afford after the Rate of ſeventy Pounds to the Hundred; yet one of the moſt expert Artiſts in *Europe* could not extract one Grain of Silver from it. Yet a Piece of Lead-ore was brought from *Ireland*, which ſeemed ſo light in the Lump, that he thought it ſcarce deſerved to be wrought for Lead; which, however, was found upon Trial, ſo well ſtored with Particles of Silver, that he encouraged the Owner of the Mine to work it.

HOW SMELTED.

Some Lead-ore requires no previous Preparation to its being ſmelted, unleſs by grinding. They barely throw it upon a Wood-fire, or a Forge-hearth, where the Metal running into a Baſon in the Hearth, they ladle it out, and caſt it into an iron Mould, which gives it the Form of what we call *Pigs*.

In the Lead-works at *Mendip*, in *Somerſetſhire*, the Method of procuring the Metal is thus delivered by Mr. *Glanvil*, in *Phil. Tranſact.* No. 39. "When they have got the Ore they "beat it ſmall, then waſh it clean in a running Stream, and "then ſift it in iron Rudders. They next make an Hearth, or "Furnace, of Clay, or Fire-ſtone; and therein build their "Fire, which they light with Charcoal, and keep up with "young oaken Gads, blown with Bellows. After the Fire is "lighted, and the Fire-place hot, they throw the Lead-ore "on the Wood, which melts down into the Furnace; and, "then with an iron Ladle they take it out, and caſt it in "Sand into any Form they pleaſe."

Lead is the heavieſt Body, after Mercury. Hence melted Lead conſtitutes a Fluid of the third Order of Gravity; wherein all Bodies, whether metalline or not, excepting Gold and Mercury, might float, if there were no other Cauſe to the contrary.

If all the Impurities of Lead could be perfectly purged away, its Weight might nearly approach to that of Mercury. Accordingly, in analyſing this Metal, it is ſaid to yield a conſiderable Quantity of Mercury; though what the other Ingredient is, united with the Mercury, ſeems hard to ſay. Lead, though a cheap and common Metal, has yet a great Affinity with Gold, at leaſt in point of Weight, which ſeems to be the moſt diſtinguiſhing and immutable Character of Gold; and what makes the Reſemblance ſtill cloſer is, that Lead does not mix with any Metals, except thoſe allowed to be Mercurial ones.

Lead proves extremely ſimple in all Kinds of Trials.

It is not fixed, but fumes in the Fire; and, after continuing long in Fuſion, penetrates moſt of the Veſſels hitherto uſed.

It is the ſofteſt of all Metals, eaſily ductile, and the leaſt elaſtic or ſonorous. There is no Metal whoſe Figure is ſo eaſily changed; and hence it proves very ductile, and eaſily flexible, though not capable of being drawn out into ſuch ſimple, fine, coherent Parts, as Gold.

It diminiſhes the Sound of other Metals, when mixed with them. This Property follows from its Softneſs; for, if two equal leaden Balls be ſtruck with equal Velocities againſt each other, they will both remain fixed in the Point of Contact, without any Vibration or Reſilition; ſo that of courſe no Sound can be produced. 'Tis on account of this Unelaſticity of Lead, that it has been uſed by Dr. *Wallis*, Mr. *Huygens*, and others, for determining the Laws of Percuſſion. By this Property, alſo, Lead ſhould appear to be nearly allied to Gold, which is the next leaſt ſonorous or ſpringy of all Metals. Accordingly ſeveral Experiments have been produced, to prove that Lead, melted, always either contains, or generates, ſome Portion of Gold. M. *Homberg* aſſures us, that taking a Quantity of Silver, and ſeparating it from all heterogeneous Matter by teſting with Lead, then putting a Piece of it in Aqua-fortis, a little Gold fell to the Bottom. And, upon adding Copper to the Aqua-fortis, the Silver was precipitated.

Lead melts the ſooneſt of all Metals, except Tin, even long before it ignites; and thus grows ſcurfy, readily vitrifies, and, being now fuſed, it paſſes through any Veſſel. A Quantity of Lead, being ſet over the Fire in an iron Ladle, no ſooner begins to run, than its Surface appears exceedingly bright, and ſhines like Mercury; but its Face ſoon alters, and you diſcern a Cloud in it, which gradually increaſes, till the whole Surface appears darkened with a duſky Scoria. This Duſt being blown away with Bellows, there ſtrait ariſes a new Supply; and ſo on till the whole Lead is thus converted into Scoriæ, which are only the Matter of the Lead gently calcined. A more violent Fire vitrifies them; that is, converts them into an heavy, brittle, pellucid, elaſtic, ſonorous Matter, called *Glaſs*; into which other Metals are indeed convertible, but Lead the eaſieſt; and which is of ſuch a penetrating Nature, that it runs through all the common Crucibles, almoſt as Water through a Sieve.

The Calx of Lead has nothing of the Appearance of Lead; and yet by only expoſing it to a ſtrong Fire, and adding a little Iron-filings, or any unctuous inflammable Matter, the Lead is eaſily recovered.

And if, while the Lead is in Fuſion, it be kept continually ſtirring with a Spatula, it turns into a red Powder, called *Minium*, or *Red-lead*; in which Operation this is farther obſervable, that the Lead augments in Weight.

Lead throws up light Bodies that are caſt into it; vitrifies with the baſer Metals; and, having ſo done, carries them along

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with it from the Cavity of the Teſt; thus leaving only Gold and Silver behind, ſeparated from the reſt. After Fuſion, it quickly returns, in the Cold, to a ſolid Maſs, though more ſlowly than Tin. Lead diſſipates all Metals teſted with it, on the Cupel, except Gold and Silver; which is a Property, that had we been unacquainted with, all our Treaſures of Gold and Silver had lain in little Compaſs; this being of principal Uſe in obtaining thoſe Metals.

The Foundation of the Proceſs is this: Any Maſs, of what Kind ſoever, whether Metal or Stone, Salt or Sulphur, Gold and Silver only excepted, being mixed with Lead, and expoſed to the Fire, ſeparates, and flies off.

Upon the Whole, there are three way's whereby all the Matters mixed with Gold and Silver are deſtroy'd and loſt, when cupel'd with Lead. 1. By volatilizing and evaporating. 2. By turning to Scoriæ, and retiring to the Sides of the Teſt. 3. By penetrating the Pores of the Cupel; which only happens to ſuch Bodies as can neither fly off in Fumes, nor work to the Sides in the way of Scoriæ.

Lead diſſolves in Aqua-fortis, not in Aqua-regia, and thus yields a ſweet Salt. It diſſolves in moſt of the weak Acids; but very difficultly in the ſtronger, unleſs they be diluted with Water. Thus in Aqua-fortis it diſſolves ſlowly; but very readily in Vinegar, ſmall Aqua-fortis, *Rheniſh* Wine, Spirit of Vinegar, and the like; and even in Oil of Vitriol well diluted with Water. Add, that, in whatever Acid it is diſſolved, the Solution becomes conſiderably ſweet like Sugar. The Fumes of Wine or Vinegar diſſolve it into a white Powder, or Calx, called *Ceruſs*, or white Lead.

It is found plentifully in various Mines of *Europe*; being cheap, and the Conſumption of it large: But 'tis in its Nature very ſurpriſing, and for certain Purpoſes exceedingly uſeful. In the fabulous way, it is called, the *Origin* and *Father*, as well as the *Devourer of other Metals*.

Its Ore is uſually ponderous and ſhining, of a Lead-colour, which yield half the Quantity of Metal. Sometimes it is white, red, or yellow, which are poorer Kinds: It often contains a little Silver, by which the Aſſayers, if not on their Guard, are liable to be deceived.

Its Medicinal Virtues.

Both in its crude State, and in all its Preparations, Lead ſeems to be cooling, thickening, repelling, abſorbing, and contracting, ſo as to retard the Circulation of the Blood, hinder all the Secretions, and hurt the Nerves, by cauſing Spaſms, Convulſions, Tremblings, Difficulty of Breathing, and Suffocation. Whence it appears unfit for internal Uſe in any large Doſe; and, accordingly, its medicinal Uſes are principally external.

Its other Uses.

Its Uſes in the Hands of the Plumber, Glazier, Shot-maker, white and Red-lead-maker, Potter, Aſſayer, Jeweller, Painter, and others, need not be mentioned, as being commonly known. A Mixture of it with Tin is the Foundation of enamelling; and counterfeit Gems are made by its means.

Hints for its Alchymical History.

Let the Saturnus Cornuus be examined for Mercurification.

What Veſſel will hold the Glaſs of Lead in Fuſion?

Let the talky Nature of Litharge be examined.

As Lead fulminates with Nitre, and flaſhes in the Flame of a Candle, and burns blue, it may ſeem to contain a Sulphur.

Is not the ſulphureous Principle in Lead ſmall in Quantity, and but looſely joined; ſince a ſmall Degree of Fire is able to ſeparate them?

Expoſed upon a Tile to the Focus of a Burning-glaſs, it fumes and turns to a yellow or red Calx; then melts into a yellow Fluid, which ſoon evaporates in Smoke; but, if removed before this happens, it hardens to a yellow Maſs like Orpiment, conſiſting of Laminæ like Talc. This being again expoſed to the Focus, on a Piece of Charcoal, recovers the Form of Lead. But if the Lead be laid upon Charcoal, it thus totally diſſipates in Fume, and leaves no Glaſs behind. Hence what Relation has it to Mercury, Gold, *&c.*?

Is it not compoſed of a ſoft, talky, vitrifiable Earth, and a ſmall Proportion of a Sulphur, or inflammable Subſtance, lightly joined therewith?

The Calx of Lead by the Vapour of Vinegar.

Take a large glaſs Body, cut ſo as to have a wide Mouth, with an Alembic-head anſwering to it; in this Head put thin Plates of Lead, ſo as to ſtand ſomewhat erect, without falling, all around the hollow Part of the Ledge; put Vinegar into the Body; ſet it in a Sand-heat, put on the Head with its Lead-plates, apply a Receiver, and diſtil with a gentle Fire for twelve Hours; then leave off, and let all cool for twelve Hours; the Plates, being now gently dried, grow white, or appear covered with a white Powder, which, being bruſhed off with a Hare's-foot, is called Ceruſs, or White-Lead. If the Operation be ſeveral times repeated, the whole Body of the Lead will be turned into the like perfectly, inſipid, ſcentleſs, white Powder; the Vapour of the Vinegar raiſed in the Operation condenſes into a whitiſh, turbid, ſweet, nauſeous, ſtyptic Liquor, called the Vinegar, or the Solution of Lead.

Remarks.

Hence we may ſee how eaſily Lead is diſſolved by a very mild Acid, and ſoon changed from its malleable State into a looſe Powder, or brittle ſcaly Plates; but the diſtilled Liquor, impregnated with diſſolved Lead, is a true Solution of Lead, which, being inſpiſſated, affords the true Salt of Lead. This Operation is continually made in Lead expoſed to the Air, that abounds with Acids; whence Coverings of Lead, that are expoſed to the Air, reſolve into a white Calx, and this the ſooner, the more the Air abounds with Acids. If the ſame Operation be performed upon Iron or Copper, theſe Metals, alſo, are diſſolved on their Surfaces; the Iron into a red Calx of Iron called Ruſt, and the Copper into a green Subſtance called Verdegriſe; the Iron into a gold-coloured Liquor, and the Copper into one that is perfectly green. The Ceruſs thus prepared is likewiſe compounded of the Acid of Vinegar, and the diſſolved Body of the Lead, but the Acid is here latent. This Ceruſs is of Uſe in watry, ulcerous, running Sores, or Diſeaſes of the Skin, being ſprinkled thereon. If this fine Powder be drawn along with the Breath into the Lungs, it cauſes a violent and almoſt incurable or mortal Aſthma: If received into the Mouth, and ſwallowed along with the Spittle, it occaſions inveterate Diſtempers in the Viſcera, intolerable Faintings, Weakneſs, Pains, Obſtructions, and at length Death itſelf. Theſe terrible Effects are daily ſeen among thoſe who do any Work in Lead, but principally among the Makers of White-lead. Let Men, therefore, beware of this Poiſon, which being both without Smell and Taſte, proves the more pernicious as it is the leſs diſcovered, and does not ſhew itſelf 'till it has deſtroyed the Body. Hence we learn alſo how eaſily Lead may be demetallized, and turned to a Calx; and this appears upon all Experiments. If Lead be melted over a gentle Fire, in a clean unglazed earthen Veſſel, it runs pure like clean Quickſilver, but ſoon grows dark upon its Surface, and gathers a Skin, which being carefully taken off with an iron Ladle, proves a kind of Calx: Now, again, the Surface appears white, and again generates a Skin, that may be taken off, 'till at length, the whole Body of the Lead is changed into this Calx, which alſo is poiſonous. This Calx, and the former Ceruſs, being long calcined, and ſtirred over the Fire, at length increaſe in Weight, and turn of a bright-red Colour; and the like is found in Lead-ore long calcined. In the Smelting of Copper, there riſes a Scum, which principally conſiſts of Lead; and, if of a Colour betwixt Red and Yellow, it is called Litharge of Gold; if paler, the Litharge of Silver; tho' both of them are nearly the ſame thing, and of the ſame Virtue. Lead-ore does not much differ from the former. Hence the ſame Lead may exiſt under various Colours, Gravities, Maſſes, and Forms, and may be diſſolved in the ſame Liquors, and thus afford the ſame Productions; nor is it of much Significance, whether Ceruſs, Litharge, Red-lead, or Lead-ore be thus corroded by Vinegar; for in each Caſe the ſame Salt of Lead is produced; they have all of them the ſame medicinal drying Virtue, and poiſonous Quality. Red-lead gains conſiderably in Weight from the Fire; this may, perhaps, proceed from the Acid of the Fewel, imbibed by the Lead from the Fire.

The Vinegar of Lead.

1. Boil Ceruſs in a tall Bolt-head, with twenty times its Weight of ſtrong diſtilled Vinegar, in a little wooden Furnace, often ſhaking the Veſſel for four Hours; then let all cool, ſtrain off the pure Liquor, add more diſtilled Vinegar to the Remainder, repeat the Operation as before, and continue thus, till the Ceruſs is almoſt diſſolved: Mix the ſeveral Solutions together, they will be found to have loſt the Sharpneſs of the Vinegar, and to have become ſweet, nauſeous, and ſtyptic. This is called the Vinegar of Lead, as alſo Virgins Milk, becauſe it cures red Spots, Pimples, and little Ulcers in the Face. If this Vinegar be filtred, and diſtilled with a gentle Fire to a Fourth, there comes over a nauſeous Water, that is not acid, but of a diſagreeable and particular Odour. All the Acid of the Vinegar is retained below, in the reſolved Ceruſs. Let it be preſerved under the Title of Vinegar of Lead, and it is to be eſteemed of the ſame Virtue with Vinegar of Litharge.

2. If inſtead of Ceruſs we take the Litharge of Gold, or Silver, Red-lead, or Lead-ore, reduce them to Powder, and boil them with Vinegar as above, they will afford the ſame undiſtinguiſhable Vinegar of Lead. This only is particular of it, that, when cold, it filtres with Difficulty, as then blocking up the Paper; but, when hot it runs through eaſier.

3. When freſh-diſtilled Vinegar is pour'd to this inſpiſſated Solution, and boiled, and again reduced almoſt to the Conſiſtence of Honey, the Vinegar diſtilled off loſes much of its acid Virtue, leaving the acid Part in the metallic Liquor; the Part that floats

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floats above, being somewhat oily, unctuous, and saccharine, is called Oil of Lead, and consists of the Metal and the Vinegar. The oftener this Addition of Vinegar is repeated, the more unctuous the Liquor becomes, and the harder to dry.

REMARKS.

Hence we have a new Method of calcining and dissolving a very ponderous Metal, and bringing it into a Liquor. Here we see a new Taste and Odour produced, by Acid and Metal; and an Attraction and Separation of the Acid by the Metal, till it is fully saturated and impregnated. This Vinegar of Lead long preserves uncorrupted the Bodies of Animals that are plunged therein, or penetrated and dried therewith; it coagulates the animal Juices, and preserves them from Putrefaction; if diluted and rubbed upon the Skin, it cures Breakings out, Redness, Inflammations, and the Erysipelas; it gives a Whiteness and Beauty to the Skin, but proves pernicious to the Body; at length occasioning a Consumption, as appears by many melancholy Examples. If the inspissated Oil of Lead be mixed with an equal Quantity of Oil of Roses, it makes a white Balsam highly commended by the Surgeons.

THE SALT OF LEAD WITH VINEGAR.

1. Inspissate a Quantity of the Vinegar of Lead in a low glass Body, with a very wide Mouth, till it becomes almost as thick as Oil; set it in a quiet cold Place, and a whitish-grey Mass will shoot to the Bottom, in small erect Spiculæ; pour off all the Liquor, and with a gentle Fire slowly dry the Remainder; which will now be white like Sugar, and is called the Sugar of Lead.

2. Dissolve this Sugar of Lead in fresh and sharp distilled Vinegar; let it stand to depurate; inspissate the Liquor to the Thickness of Oil; set it in a cold quiet Place, and there will shoot at the Bottom thick solid Crystals, perfectly resembling the Form of vegetable Candy-sugar, and having nearly the same Taste.

3. If these Crystals be again dissolved in fresh-distilled Vinegar, and the Solution be depurated by standing, then inspissated by a soft Fire to the Thickness of Oil, a Liquor will be obtained which can hardly be dried, and rendered hard by a small Fire; but it remains somewhat fixed, and may be liquified like Wax, with a gentle Heat. The oftener this Impregnation is repeated with fresh Vinegar, and the Matter dried, the more fixed it becomes in a small Fire, so as not to smoke, but easily run. If now it be committed to a moderate Heat, and afterwards suffered to cool, but, while it remains fluid, it be poured into another cold Vessel in the cold Air, it strongly coagulates in the pouring, and concretes into fine Threads, like Cobwebs, perfectly resembling silver Thread, and affording a very agreeable Sight. This was published as a Secret by a Jesuit, though somewhat disguised in the Delivery.

4. As soon as this Body, coagulated into Threads, is exposed to a greater Heat, it presently runs again, so that it may be again poured out. And if this Resolution and Inspissation be carefully and patiently repeated, each time separating the Fæces, and then, if the Matter be long, digested with a gentle Heat, till it grows thick, and concretes, a Mass is at length formed, which to the unwary Eye resembles Silver. *Isaac Hollandus* deserves to be read on this Subject, where he speaks concerning the Stone from Lead. The Process, also, may be continued at Pleasure, by those who desire to see unusual Appearances of Bodies.

REMARKS.

The Production is called the Sugar, Salt, Magistery, or Vitriol of Lead. It shews how a fermented vegetable Acid may be combined with Lead, into a Substance soluble in Water. It is astringent, styptic, and presently coagulates the Blood. Being dissolved in Water, it affords the Vinegar of Litharge, good against Inflammations, when externally used. Internally, it is recommended for a safe Remedy against Spitting of Blood, Bleeding at the Nose, making bloody Urine, the Gonorrhœa, the Fluor Albus, and the like, as, also, for a mollifying Remedy against the Acrimony of the Blood; but I never durst make Trial of it, because I never saw it successfully used by others; and because there is scarce a more deceitful and destructive Poison than this Lead, which presently returns to Ceruss, as soon as the Acid is absorbed from it, by any thing it may meet with; whence it afterwards proves an exceeding dangerous and almost incurable Poison to the Body. If the Salt of Lead be gradually distilled in a Retort, and at length urged with a violent Fire, there comes over a flat inflammable Spirit, perfectly changed from the Nature of the Vinegar employ'd; and there remains at the Bottom a Substance like Glass, which, when urged by a strong Fire, penetrates almost all the Vessels that are known, vitrifying all Bodies, and carrying them through with it, except Gold and Silver.

THE SALT OF LEAD WITH SPIRIT OF NITRE.

1. Put an Ounce of granulated Lead, Ceruss, Litharge of Red-lead, into a tall Bolt-head; pour thereon fifteen Ounces of Spirit of Nitre, or Aqua-fortis, diluted with ten times their Weight of Water; there arises a great Ebullition with a white Froth; which being over, set the Glass in a little wooden Furnace, to boil for five or six Hours. Let the Liquor rest and cool, then filtre it, and distil to a Pellicule; a nauseous, but not acid, Water will come over. Put the remaining Liquor in a cold Place, and there will shoot white, solid, and very ponderous Crystals, that do not run in the Air, but continue solid; they are of a sweetish Taste, and more austere than those of the preceding Process; the Liquor, also, after the Solution, or both before and after the Crystallization, has a saccharine Sweetness like the Salt. 2. If fresh Aqua-fortis be poured to this Salt, so as to dissolve it, and the Liquor be again inspissated, an Oil of Lead may thus, also, be prepared, which coagulates with Difficulty, but gradually fixes, so as to run like Wax, with a gentle Heat. 3. This Salt, being dried, and thrown upon live Coals, does not take Flame, but crackles violently in the Fire, and flies all around, with great Danger to the By-standers; but, if red, used to fine Powder, it may be melted in a strong Fire.

REMARKS.

Hence we have a new Method of producing a metallic Salt and its Oil; a sweet Taste from an acid and an insipid Body; a Glass from a Metal; and of shewing, that Spirit of Nitre will not make an inflammable Salt with every Metal, as it does with Silver. The Salt here has the same Virtues as that of the preceding Process, but it is more sharp and astringent.

THE SALT OF LEAD TREATED WITH ALCALIES.

To two Ounces of the crystalline Salt of Lead, made according to either of the two last Processes, thoroughly dried and reduced to fine Powder, add four Ounces of Oil of Tartar per Deliquium; set them in Digestion, where the longer they stand, the better; then add an Ounce of Sal Ammoniac; mix them well, and digest again in a close Vessel; pour back the saline Liquor that comes over in the Digestion, and digest again; which being twice or thrice repeated, dry the Matter thoroughly by a gentle Fire, and expose it to a moist Air, that it may dissolve; dry it again, and distil it in a coated glass Retort, with Degrees of Fire to the highest that Sand will give, into a large Receiver containing a little fair Water. Three Kinds of Matter will thus come over, which seems surprising, while another of a particular Nature, and strangely changed, remains at the Bottom of the Retort.

REMARKS.

Many very particular Things are learned from this Experiment, and such as are pleasant to behold; for the Metal thus successively opened, and dissolved by opposite Salts, then coagulated, and dissolved in the Air, is highly changed, opened, subtilized, divided, and separated from all that is not purely Mercurial, or metallic; and may thus exhibit its pure, metallic, Mercurial Part, separated from the rest, if the Industry of the Operator can reach so far.

THE CALX OF THE VITRIOL OF LEAD.

Take the Vitriol of Lead, made according to the two last Processes but one; dry it thoroughly with a gentle Fire, grind it to fine Powder; put into a glazed earthen Dish; set it over the Fire, and keep it continually stirring with a Tobacco-pipe, till it yields no more Fumes with a great Heat; a fine and almost insipid Powder will thus be obtained, which is another Calx of Lead, made in the moist Way.

REMARKS.

All the Acid which was united with the Lead, in the Form of the Vitriol of Lead, is here again separated from it by the Fire, except that Part, which, intimately adhering thereto, does not appear externally, and was therefore much more closely united with it in this Operation.

THE BALSAM OF LEAD WITH EXPRESSED VEGETABLE OILS.

1. Put granulated Lead, any Calx thereof, Ceruss, Litharge or Red-lead, into a glazed earthen Vessel; add to it twice its Weight of any expressed Oil; then gradually raise the Fire, and the Lead will begin to melt at the Bottom, before the Oil boils; but if the Fire be gradually increased, so as to make the Lead boil, the Body of the Lead, or Calx, will begin to disappear, and mix so intimately with the Oil, as to make a true Balsam, which, by longer boiling, may be brought to a Substance that is solid in the Cold, semi-metallic, will melt in the Fire, and is ductile. 2. If instead of Lead or its Calx, we use that Calx prepared in the last Process, or the Salt of Lead first dried, and treat it with expressed Oil, in the Manner above delivered, the like Balsam will be obtained as from the true Metal, and the Oil.

REMARKS

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REMARKS.

Hence we see, that true and very ponderous Metals may, by the means of Fire, be dissolved in vegetable Sulphur, and so mixed, as to lie perfectly concealed therein: Whence we are often ignorant, whether Metals are concealed in certain Bodies or not; how wonderfully they may be disguised; and how often they may proceed from Matters not thought to contain them, when they have been often falsely supposed to be obtained from them by Transmutation. All these Particulars admonish us to be cautious of the Impositions of the fraudulent Alchemists. These emplastic Preparations of Lead are of Use to strengthen and warm the Parts, whereto they are applied; they, also, discuss, mollify, and absorb acrimonious Humours; in particular, they are excellent for lining Vessels designed to contain Water; for if Red-lead be boiled in Oil to a proper Thickness, and be exactly spread over a Stone Wall made almost red-hot, so as intimately to penetrate and stick therein, it will cause the Wall to resist Water, as well as if it was built with Cement. This Mixture we use to prevent Worm-tubs from leaking.

The Balsam of Lead with distilled vegetable Oil.

Gently dry the Sugar of Lead, prepared according to the third of these Processes; put it into a tall Bolt-head, and add to it four times its Weight of the ethereal Oil of Turpentine; boil it for some time; which is easily done, if the Glass with this Mixture be put into a Vessel, in which Linseed-oil grows just hot enough for the Purpose, which happens long before Linseed-oil of it self will boil: Thus the Oil of Turpentine will almost wholly dissolve the Sugar of Lead, whereby the Balsam is obtained.

REMARK.

This Process has the same Use with the former.

The Glass of Lead.

1. Mix two Parts of Red-lead, with one of clean Sand, reduced to fine Powder, by grinding them long together; then put them into a clean Crucible; set it in the Fire, so that the Matter may melt, and continue in Fusion for some time, till, when examined by dipping a Tobacco-pipe therein, what sticks thereto appears transparent; then pour it out upon a Marble: A brittle, yellow, transparent, inodorous, insipid Mass will be thus obtained, that proves hard in the Cold, and melts in the Fire; whence it is called Glass of Lead. This Matter, when fused in the Fire, passes through all the known Vessels, as Water through a Sponge; and converts almost all Bodies into Glass, with itself in Fusion, carrying them through the Pores of the Vessels, except Gold and Silver. In order to make the Mixture of the Red-lead and Sand run sooner into Glass, some add Nitre, and others Sea-salt, and keep the Crucible in the Fire till the Salt is melted. 2. If the Sugar of Lead be put into a Crucible, and urged with a gentle Fire, successively increased, the Vinegar flies off, and the Matter is so changed, as to run into a yellow Glass, at the same time that wonderful pleasing Colours appear in the middle, like those of the Rainbow, or the Peacock's Tail. 3. If Lead itself be long kept melted in the Fire, it becomes drossy at Top, which increases till the Lead is almost wholly converted into the same kind of Matter; and this, being again urged with a strong Fire, turns of itself into Glass; but this is a laborious Operation, and requires much Caution. The easiest Method appears to be the following. 4. Take four Parts of Red-lead, one Part of Sand, and two Parts of dry decrepitated Sea-salt; grind them together, the longer the better; put them into a close-covered Crucible; melt them together, and suffer the Whole to Rest; the Salt will be found melted in a Glebe at Top, and the Glass below, when the Crucible is broke, and should be separated from the rest, for the Purposes of Metallurgy, where it is extremely useful. 5. These Glasses, being mixed with a little powdered Charcoal, and melted in the Fire, easily turn to Lead again.

REMARKS.

We have a wonderful Change of this Metal (by means of Fire and the Discharge of a metallic highly poisonous Vapour) from a perfectly malleable State, to an extremely brittle, and true glassy Matter. Whence we see how wonderfully, and under what various Forms, Metals may lie concealed, and how easily they may again appear. And hence, perhaps, Metals vitrify in the Fire, after being separated from a certain sulphureous Part. This seems to appear from the making of the Glass of Antimony, and other Experiments. And, upon restoring this Sulphur, the metallic Form begins to return, as may be seen in many Instances, especially in Lead. This Glass of Lead is the true Test of Metals, and destroys every thing in the Fire, except Gold and Silver, which it leaves untouched, without any Diminution

of their Weight. And upon this Foundation depends the whole Art of Assaying and Refining, which is of so great Use in Civil Affairs. Whoever would know more of the Subject, may consult *Boyle*, *Bohn*, *Homberg*, and *Geoffroy*. But let it be carefully remember'd, that the Fume, the Powder, and all the Parts of Lead are carefully to be avoided, as highly poisonous. *Boerhaave's Chymistry.*

The burning Spirit and Oil of Lead are obtained from the Sugar or Salt by Distillation; but the Virtues of these inflammable Substances are the same with those of Spirit of Wine, whatever Chymists may pretend to the contrary; for the Spirit is only the Spirit of Wine, concentrated in the Vinegar disengaged by this Preparation, and the red Oil is likewise extracted from the Vinegar.

The mineral Mummy of Lead of *Poterius* is the Calx of Lead and Quicksilver amalgamated together, made in this manner:

Take of Mercury revivified from Cinnabar, two Parts; and one Part of Lead. Amalgamate them together, and continue to shake them strongly in an earthen Vessel over a Charcoal-fire, till the Whole be reduced to a black Powder. Bake this Powder in a Sand-heat, in a glass Matrass, till it turns yellow; and keep it for Use.

This Mummy cures, in a very small time, the Itch, Tetters, and other Diseases of the Skin, cleanses callous Ulcers, and dissolves the Callus, and dissipates Swellings in the Glands of the Breasts, being mixed in any Ointment or Plaister. It is, likewise, of Service in Cancers, which are not arrived at their last Stage. It must, however, be cautiously and sparingly used, lest the Suppuration prove too great. But, if a Carcinoma, for Instance, be not ulcerated, a Dram of this Mummy, accurately mixed with an Ounce of Emplastrum Magneticum of *Angelus Sala*, and applied to the Tumor, will gradually dissolve it. But, if there be an Ulceration, then a small Pencil of Lint dipped either in the Mummy alone, or mixed with Powder of Myrrh, is to be thrust into the Ulcer, the Emplastrum Magneticum being applied upon it. By this means the hard Tumor gradually resolves by a gentle Suppuration; and, by proper internal Remedies used at the same time, the Carcinoma is healed. *Geoffroy.*

PLUMIERIA.

The Characters are;

It has the Appearance of the *Apocynum*, and abounds with a lacteous Juice. The End of the Pedicle passes into a little short monophyllous Calyx, out of which grows the Flower, as in the *Nerium*, but wants the petaloid Crown. The Ovary, which grows in the Bottom of the Calyx, becomes a long, siliquous, double Fruit, when opening lengthwise, and pregnant with a Multitude of Seeds, placed as in the *Apocynum*, but foliated.

Boerhaave mentions but one Sort of *Plumieria*; which is,

Plumieria; flore roseo, odoratissimo. *T.* 659. *Boerh. Ind. alt. Plant.*

Besides the foregoing Sort of *Plumieria*, *Miller* mentions the five following;

1. Plumieria flore majore odorato & incarnato.
2. Plumieria flore niveo, foliis longis angustis & acuminatis. *Inst. R. H.*
3. Plumieria flore niveo, foliis brevioribus & obtusis. *Inst. R. H.*
4. Plumieria foliis longissimis, minus succulentibus, flore pallido. *Houst.*
5. Plumieria folio latiore obtuso, flore luteo minore.

This Name was given to this beautiful Species of Plants, by Dr. *Tournefort*, in Honour to Father *Plumier*, who was Botanist to the late King of *France*, and a long time in *America*, searching after new Plants; and who has published a Catalogue of the Plants, with the new Genuses he constituted; and two Volumes in Folio, with Figures and Descriptions of many of the Plants.

These Plants grow wild in the *Spanish West Indies*, from whence some of the most beautiful Kinds were brought into the *English* Settlements in *America*, and are cultivated in their Gardens for Ornament. The first Sort here mentioned is the most common Kind, which is preserved in the Gardens of the Inhabitants of *Jamaica* and *Barbadoes*. The Flowers of this kind nearly resemble those of the red Oleander, but are larger, and have an agreeable Odour. These are produced in small Bunches, at the Extremity of the Shoots, and generally appear in *July* and *August* in this Climate; but in the *West Indies* they flower a great Part of the Year.

The milky Juice of these Plants is very caustic, and reckoned very poisonous. In cutting off any of the Branches of the Plants, if the Knife be not immediately cleaned, the Juice will corrode it, and turn the Blade almost black in a very little time, so as not to be cleaned off again; and, if dropped on Linen, will cause it to wash in Holes, equal to Aqua Fortis. *Miller's Dictionary*, *Vol.* 2.

PLUMOSUM. An Epithet for a Species of Alum.

PLUTEA, in *Avicenna*, is a Reduplication of the Dura Mater, as in the Formation of the Longitudinal Sinus.

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PLUVIALIS. The Plover; of which there are two Sorts. The first is the *Glottis*. Offic. Genſ. de Avib. 450. *Limoſa Venetorum*. Ejuſd. *Pluvialis major*. Aldrov. Ornith. 3. 535. Will. Ornith. 220. Raii Ornith. 298. Charlt. Exer. 114. Jonſ. de Avib. 114. *Chloropus Germanis Gult ſeu Gluttis*. Aldrov. 3. 452. THE GREAT PLOVER.

The Gall of this Bird is recommended as a Remedy for Diſorders of the Eyes. A Jelly of the Fleſh is recommended as a good Analeptic, or Reſtorative.

The other Species is the *Vanellus*. Offic. Charlt. Exer. 113. Mer. Pin. 182. Geſn. de Avib. 692. Jonſ. de Avib. 113. *Capella ſive Vanellus*. Aldrov. Ornith. 3. 523. Raii Ornith. 307. Ejuſd. Synop. *A.* 110. Will. Ornith. 228. *Vaneau*. Bellon. des Oyſe. 209. THE LAPWING, or BASTARD PLOVER.

This Animal delights in marſhy Places; and its Aſhes, Heart, and Skin, are us'd for medicinal Purpoſes. The Aſhes drank in Wine, are beneficial in Colics; and, when applied by way of Cataplaſm, cure the Bite of a Mad-dog. The Heart alleviates Pains of the Loins, and the Skin is eſteem'd good in Cephalalgias. *Dale*.

They create an Appetite, yield pretty good Nouriſhment, digeſt eaſily, and are look'd upon to be good to provoke Urine, to ſtrengthen the Brain, purify the Blood, and for the Falling Sickneſs.

They are not very ſolid Food, but ſoon waſte; and therefore Perſons accuſtomed to great Exerciſes, or hard Labour, are not to uſe them. *Lemery on Foods*.

PLUMA, πλῦμα. The Water wherein any thing is waſh'd.

PNEUMA, πνεῦμα, in *Hippocrates*, ſometimes imports Spirit, Air, or Vapour; and frequently it ſignifies the Breath, that is, the Air drawn in by Inſpiration, and expel'd during Expiration. But *Pneuma*, by the above quoted Author, is often us'd to expreſs a difficult, ſhort, and laborious Reſpiration.

Pneuma haliſomenon, πνεῦμα ἁλιζόμενον, from ἁλίζομαι, to be coacervated, crouded, means a rarified, denſe, and full Reſpiration. *Coac*. 339.

Pneuma hoſper anacalumeno, πνεῦμα ὥσπερ ἀνακαλεμένῳ, from ἀνακαλέω, to recal, 1 *Epid. Æg*. 1. imports a broken Reſpiration, as when a Perſon, after a ſhort Expiration, ſeems to call back his Breath, and to expire with a renewed Force, in order to ſupply the Defects of the former Expiration. The ſame is called πνεῦμα πρόσκοπον (*proſcopton*), and προσπλαῖον (*proſptæon*), an impinging Breath, which ſtrikes in its Paſſage, and is interrupted by the Eliſion. It is otherwiſe deſcribed, 2 *Epid*. and *Coac*. 260. by διπλῆ ἔσω ἀνάκλησις οἷον ἐπεισπνεῦσιν, a double Revocation inwards, as in thoſe who fetch their Breath double;" and by πνεῦμα ἐνεδιπλασιάζετο, "the Breath was double," that is, as *Foeſius* endeavours to explain it, was doubled, or ſounded double, by ſuffering an Eliſion in its Paſſage.

Pneuma anapherein, πνεῦμα ἀναφέρειν, from ἀναφέρω, to exalt, is to have a great and full Reſpiration, or to expire vaſt Quantities of Breath; which is eſteemed a Symptom of an internal Inflammation, 2 *Prorrhet. Coac*. 486. But πνεῦμα ἀνω φερόμενον, in *Lib. de R. V. I. A*. is no more than the Breath diſcharged by Expiration.

Pneuma anelcomenon, πνεῦμα ἀνελκόμενον, from ἀνέλκω, to draw upwards, to raiſe, or elevate, in 1 *Porrhet*. 87. imports a Reſpiration performed with a great Elevation of the Thorax, in ſuch a manner, that even the Scapulæ ſeem to be moved thereby, as *Galen* explains the Word; who, alſo, takes it to be uſed by *Hippocrates* in the ſame Senſe as μέγεθος and πρόχειρον, which ſee below.

Pneuma aneſpaſmenon autica, πνεῦμα ἀνεσπασμένον αὐτίκα (from ἀναπάω, to retract) the Breath immediately or at every Turn retracted, imports an interrupted or intercepted kind of Reſpiration, which fails on a ſudden. It ſeems to be much the ſame with the πνεῦμα οἷον συσπωμένος τινος, *Coac*. 266. and *Prorrhet*. 87. a ſhort and convulſive kind of Reſpiration, as is uſual with thoſe who fetch their Breath under Convulſions.

Pneuma araon, mega, πνεῦμα ἀραιὸν, μέγα, is a rare and great Reſpiration, or a full Reſpiration perform'd at long Intervals (ſee ARÆON); ſuch as is proper to thoſe who labour under a Delirium, as *Galen* obſerves, *Lib*. 2. *de Dyſpn*. and *Com*. 1. in *Prorrhet*. and as it is confirmed by many Inſtances in the firſt and third Books of the *Epidemics*.

Pneumata aſema, πνεύματα ἄσημα, ſignifies an obſcure Reſpiration, or ſuch as is ſmall, interrupted, and hardly perceptible; which is uſual in Hyſterics, a Syncope, and in dying Perſons. See ASEMOS.

Pneuma bechodes, πνεῦμα βηχώδες, from βῆξ, a Cough, is a Reſpiration attended with Coughing, from ſomething derived into the Aſpera Arteria. *Coac*. 62. 632.

Pneuma dia pollou Chronou, πνεῦμα διὰ πολλοῦ χρόνου, as explain'd by *Galen*, *Lib*. 2. *de Dyſpn*. is the ſame as the *Pneuma araeon* before. The πνεῦμα διὰ χρόνου, 3 *Epid*. imports the ſame.

Pneuma manoteron, πνεῦμα μανότερον, from μανὸς, rare, looſe, *Coac*. 211. imports an Alteration from a ſhort, difficult, and turbulent, to a more remiſs, rare, and eaſy Reſpiration.

Pneuma mega, πνεῦμα μέγα, a great Reſpiration, *Coac*. 126. and 290. is when, in breathing, the Thorax is very much enlarged in its Dimenſions.

Pneuma meteoron, πνεῦμα μέτεωρον, a ſublime and elevated Reſpiration, imports ſuch a Reſpiration as is performed with an Elevation of the whole Thorax, and an Erection of the Neck, under a great Straitneſs and Oppreſſion, as is often the Caſe in a Quinſy, Peripneumony, Pleuriſy, and Aſthma. Thus *Galen*, *Com*. 1. in *Prorrhet*, explains the Epithet; and tells us, that πρόχειρον and φαινόμενον πνεῦμα are uſed by *Hippocrates* in much the ſame Senſe. And, *Com*. 2. *in* 3 *Epid*. he further obſerves, that τὸ μέτεωρον πνεῦμα may import, that the Patients under the fore-mentioned Diſorders deſire and endeavour μετεωρίζειν ἑαυτούς, to raiſe themſelves up: Whence he ſays, μέτεωρον πνεῦμα, in 3. *Epid*. is the ſame as ὀρθόπνοια (*Orthopnœa*) in *Prognoſt*. There is another Signification of μέτεωρον πνεῦμα quoted by *Galen* from *Sabinus*, who deſcribes it by τὴν ἄκραν ῥῖνι γινομένην ἀναπνοήν, "Reſpiration performed at the Top of the Noſe;" that is, when the Paſſages for Reſpiration being almoſt ſtopped, the Patient, in drawing his Breath, moves the Pinnæ of the Noſtrils, as in the Caſe with thoſe who are ſuffocated by a Quinſy, Peripneumony or *Empyema*; or when the Strength is quite exhauſted, as in dying Perſons. This Senſe of the Phraſe, tho' criticiſed by *Galen*, ſeems, to be in ſome meaſure, imply'd in that of *Hippocrates*, in 7 *Epid*. where, ſpeaking of the Wife of *Olympiades*, as almoſt expiring, he ſays πνεῦμα μέτεωρον καὶ ῥῖνα σπώμενα, "Reſpiration was ſuch as is called ſublime, and perform'd through the Noſe." *Galen*, at the End of *Lib*. 3. *de Dyſpn*. proves this μέτεωρον πνεῦμα, or ſublime Reſpiration, to be, alſo, ſmall and quick, or ſhort.

Pneuma minuthodes, πνεῦμα μινυθῶδες, from μινύθω, to diminiſh, is a ſmall and weak Reſpiration, *Lib*. 2. περὶ γυναικ.

Pneuma mychthodes, πνεῦμα μυχθῶδες, *Coac*. 519. and 549. is a broken, and moſt painful Reſpiration, which is interrupted in the midſt of Expiration, as is obſervable in the ſobbing Reſpiration of Children.

Pneuma proſcopton, πνεῦμα πρόσκοπον, from προσκόπτω, to impinge, 4 *Aph*. 67. is expreſſed in *Celſus*, *Lib*. 2. *Cap*. 7. by *Spiritus in Faucibus eliſus*, Breath ſuppreſſed or intercepted by Eliſion in the Fauces. This impinging kind of Reſpiration is explain'd by *Galen*, *Lib*. 4. *de Loc. affect*. in the following manner: "There is another Species of Dyſpnœa, he ſays, "which is, when the Action of the Thorax is interrupted by a "ſhort Reſt, ſometimes in Inſpiration, and ſometimes in Expi"ration, whether this Symptom proceeds from a ſpaſmodic "Diſpoſition of the Muſcles of the Thorax, or from an Abun"dance of Heat, which conſtrains the Patient to continue his "Inſpiration or Expiration".

Pneuma proſptaon, πνεῦμα προσπλαῖον, from πλαίω, to impinge or ſtrike againſt, *Lib. de R. V. I. A*. is the Breath impinging or interrupted in Expiration, as *Galen*, in his Comment in the Place, explains it.

Pneuma prochiron, πνεῦμα προχειρον, *quaſi* πρὸς χεῖρα, ready at hand, or obvious, is a conſpicuous Reſpiration, ſuch as is the ſublime and elevated Reſpiration accompany'd by an Elevation of the upper Parts of the Thorax and the Scapulæ, as may be obſerv'd in Aſthmatic Patients, and thoſe who die of a Suffocation. Hence it appears to be the ſame as μέτεωρον. See 1 *Prorrhet*. 25. It is alſo called φαινόμενον (*phænomenon*) viſible, apparent; becauſe the Patients, as *Galen* obſerves, are plainly perceived, through their Clothes, to move the whole Scapulæ, when they draw their Breath.

Pneuma pycnon, πνεῦμα πυκνὸν, is a quick and frequent Reſpiration, and a kind of Dyſpnœa, which in *Hippocrates* is often accompany'd with a Greatneſs or Smalneſs of Reſpiration, as is obſerved by *Galen*, *Lib*. 3. *de Dyſpn*. See RESPIRATIO.

PNEUMATIÆ, πνευματίαι. See PNEUMATODES.

PNEUMATICI. An Appellation of certain Phyſicians, who conſtituted the Pneumatic Sect. See the PREFACE.

PNEUMATOCELE, from πνεῦμα, wind, and κήλη. A Tumor. A flatulent Hernia, or Wind-rupture.

PNEUMATODES, πνευματώδης, in *Hippocrates*, is one who fetches his Breath ſhort and quick, otherwiſe called *Pneumatias*, πνευμάτιας, as in *Lib. de R. V. I. A*. This is the Explication which *Galen*, *Lib*. 3. *de Dyſpn*. gives of the Word; where he alſo obſerves, that it ſometimes ſignifies one who has his Belly or Ilia diſtended with Flatulences; and proves it from the fourth of the *Epidemics*. *Pneumatias* and *Pneumatumenos*, πνευματ'ιάμενος, are uſed in the ſame double Senſe. *Foeſius*.

PNEUMATOMPHALOS. An umbilical flatulent Rupture.

PNEUMATOSIS, πνευμάτωσις. An Inflation of the Stomach; or a Collection of Flatulences in the Stomach.

PNEUMENOS, πνεύμενος. Aſthmatic, or breathing with Difficulty.

PNEUMON, πνεύμων. The Lungs.

PNEUMONANTHE. A Name for the *Gentiana, anguſtifolia, Autumnalis, major*.

PNEUMONICUS. An Epithet for Medicines deſtin'd to the Lungs.

PNEUMOPLEURITIS. The ſame as PLEUROPNEUMONIA PNIGALION, πνιγαλίον. The *Incubus*, or *Ephialtes*.

PNIGITES. Offic. Charlt. Foſſ. 3. Worm. 5. *Terra Pnigites*. Aldrov. Muſ. Metall. 259. Matth. 1592. BLACK EARTH.

CCO, Gurukul Kangri Collection, Haridwar, Digitized by eGangotri

It is a fat, denſe, ſoft, black, aſtringent, and very acrimonious Subſtance, of the Taſte of Vitriol. To theſe Marks *Dioſcorides* adds, that in Colour it ſomewhat reſembles the *Eretria Terra*, is cold to the Touch, and ſo glutinous as to adhere to the Tongue. The ſame Author ſays, that it has the ſame Virtues as the Cimolia, only is weaker: Some, he ſays, ſell it for *Eretria Terra*. *Dioſcorides*, *Lib.* 5. *Cap.* 177.

PNIGMOS, πνιγμός. The ſame as PNIX.

PNIGOS, πνῖγος. A ſultry ſuffocating Heat.

PNIX, πνιξ. Any Suffocation; particularly that which happens in hyſteric Fits. With an Addition of the Epithet *Hyſteric*, it implies an hyſteric Fit.

POA. A Name for the *Gramen*; *pratenſe*; *majus*; *latiore folio*. See MILIUM.

POCAN. A Name for the *Phytolacca*; *Americana*; *majori fructu*.

POCATSJETTI. H. M. The Name of a ſmall Shrub which grows in *Malabar*. The Leaves powder'd, and ſprinkled upon Ulcers, repreſs luxuriant and fungous Fleſh; and, taken internally, they excite a Sweat, and diminiſh the Paroxyſm of an intermitting Fever.

Of the Bark, and Root, powder'd, and mixed with Oil, an Unguent is made, ſaid to be good for the Itch, and other cutaneous Diſorders. *Raii Hiſt. Plant.*

POCO SEMPIE. The Down or Moſs growing upon the *Agnus Scythicus*. This is eſteemed good for ſtopping of Blood, if given in the Quantity of ſix Grains. See AGNUS SCYTHICUS.

PODAGRA, ποδάγρα, from πούς, a Foot; and ἄγρα, a Prey. The Gout in the Feet. See ARTHRITIS.

PODAGRARIA. See ANGELICA. It is, alſo, a Name for the *Myrrhis*; *folio Angelicæ rugoſo*; *hirſuto*.

PODEON, ποδεών, is the prominent part of a Veſſel, or Bottle, made of a Skin, by which the Liquor is poured in and out, and which uſed to be tied with a String, in order to keep in the contained Fluid: Thus (*Lib.* περὶ παθῶν) πρὸς ποδεῶνα ἀσκὸς, &c. To the Extremity, or prominent part of the Veſſel, or Bottle, a Pipe is tied, for introducing the Air, and diſtending the Inteſtines, in order for their being waſhed with a Clyſter, in the Cure of the Ileos. *Foeſius*.

POERINSII. A Name for the ARBOR SAPONARIA.

POINCIANA. Flower-fence.

The Characters are;

The Calyx is pentaphyllous; the Flower polypetalous, and furniſhed with numerous Stamina; the Pod is flat, hard, gaping into two Parts, and divided into Capſules, or Cells, containing roundiſh Seeds.

Boerhaave mentions but one Sort of Poinciana; which is,

Poinciana; flore pulcherrimo. *T.* 619. *Frutex*, *Pavonius*, *ſive Criſta Pavonis*. Breyn. Cent. 1. 61. *Acacia Orbis Americani*, *altera*, *flore pulcherrimo*. H. R. Par. *Criſta Pavonis*. H. L. *Erythroxylon*, *Indicum*, *minus ſpinoſum*, *Coluteæ foliis*, *ſiliquis anguſtioribus*, *flore ex luteo & rubro eleganter variegatis*. Par. Bat. Prodr. 383. *Boerh. Ind. alt. Plant. Vol.* 2.

Beſides this Sort, *Miller* mentions three more;

1. Poinciana flore luteo. *Houſt.*

2. Poinciana flore rubente. *Houſt.*

3. Poinciana ſpinoſa, vulgo *Tara*. *Feuil.*

The Seed-pods of the laſt Sort are uſed by the Dyers in the *Spaniſh Weſt-Indies*, for dying of Black; and they are, alſo, uſed for making of Ink. The Infuſion of theſe Pods with Galls affords the moſt beautiful black Ink in the World.

POLEMONIUM.

The Characters are;

The Leaves are alternate, and pinnated; the Flower is monopetalous, rotated or wheel-ſhaped, and pentapetaloidal; the Fruit is round, tricapſular, gaping, and full of oblong Seeds.

Boerhaave mentions four Species of Polemonium; which are,

1. Polemonium; vulgare; cœruleum. *Tourn. Inſt.* 146. *Boerh. Ind. A.* 252. *Raii Synop.* 3. 288. *Polemonium*. Offic. *Valeriana Græca*. Ger. 918. Emac. 1076. Park. Theat. 122. Raii Hiſt. 2. 1102. *Valeriana Græca quorundam flore cæruleo*. J. B. 3. 212. *Valeriana cærulea*. C. B. P. 164. *Vulneraria alata Blattariæ flore cæruleo*. Hiſt. Oxon. 3. 605. GREEK VALERIAN, or JACOB'S LADDER.

This Plant is produced in Woods, and flowers in Summer: The Herb itſelf, and its Root, are uſed. The Root, drank in Wine, is good againſt the Bites of venomous Animals, and Dyſenteries. When drank in Water, it is beneficial in Dyſuries, and iſchiadic Pains. A Dram of it exhibited in Vinegar, proves ſerviceable to Patients labouring under Diſorders of the Spleen; When chew'd, it mitigates Tooth-achs. *Dioſcor.*

The Herb is vulnerary. *Sim. Pauli.*

This Plant is ſo imperfectly deſcribed by the Antients, that we are as yet ignorant what it really is; ſince ſome of them make it a Species of the Valerian; and others of the Lychnis. But I have choſen to follow *Tournefort*, who aſcribes this Name to this Plant, which is deſcribed by *Dioſcorides* in the following manner: "The Polemonium is a Plant, with ſmall Branches, "pinnated on both Sides: Its Leaves are a little larger and "longer than thoſe of Rue; greatly reſemble thoſe of Cala- "mint, or Bloodwort; and have Cluſters, in which are con- "tained black Seeds, hanging from their Tops." *Dale*.

2. Polemonium; vulgare; album. *T.* 146. *Valeriana Græca quorundam*, *flore albo*. J. B. 3. 212. *Valeriana alba*. C. B. P. 164.

3. Polemonium; vulgare; flore variegato. *T.* 146. *Valeriana Græca*, *flore ex albo & cæruleo variegato*. H. L.

4. Polemonium; vulgare; foliis eleganter variegatis. *Boerh. Ind. alt. Plant. Vol.* 1.

POLEMONIUM is, alſo, a Name for the *Lychnis*; *ſylveſtris*; *quæ Been album vulgo*. See BEHEN.

POLEMONIUM, *Monſpelienſium*. A Name for the *Jaſminum*; *luteum*, *vulgo dictum bacciferum*.

POLENTA. See ALPHITA.

POLETIS SAL. A compound Salt, deſcribed by *Aetius*, *Tetrabib.* 3. *Serm.* 1. *Cap.* 24.

POLIATER. A Phyſician in ordinary to a Town.

POLIUM.

The Characters are;

The Leaves are, for the moſt part, hoary; the Stamina ſupply the Place of the Galea; the Beard is quinquefid, like that of the Chamædrys; the Flowers grow in Heads, on the Tops of the Stalks and Branches.

Boerhaave mentions ten Species of Polium; which are,

1. Polium; Lavendulæ folio. *C. B. P.* 220. *Tourn. Inſt.* 206. *Boerh. Ind. alt.* 183. *Polium alterum*. Offic. *Polium montanum*. Offic. *Polium montanum Lavendulæ folio*. Park. Theat. 25. Raii Hiſt. 1. 525. *Polium Lavendulæ folio flore albo*. Ger. Emac. 635. *Ajuga folio integro*. Rivin. Irr. M. POLEY-MOUNTAIN WITH LAVENDER-LEAVES.

This Plant is found in the Gardens of Botaniſts, and flowers in *June*. The Herb is only uſed, and is ſaid to agree in Virtues with the other Species, though in a lower Degree. *Dale*.

2. Polium; montanum; luteum. *C. B. P.* 220. *Raii Hiſt.* 1. 525. *Ger.* 528. *Emac.* 653. *Tourn. Inſt.* 206. *Boerh. Ind. A.* 183. *Polium montanum*. Offic. Chom. Pl. Uſu. 352. *Polium montanum vulgare*. Park. Theat. 24. YELLOW POLEY-MOUNTAIN.

This Plant is produced in *Provence* in *France*, and in *Spain*: It flowers in *June*. The Herb is uſed; and is ſaid to agree in Virtues with the white Poley-mountain. *Dale*.

3. Polium; Lavandulæ folio anguſtiori. *C. B. P.* 220.

4. Polium; montanum; repens. *C. B. P.* 221.

5. Polium; Pyrenaicum, ſupinum; Hederæ terreſtris folio. *T.* 206. *An Chamædrys montis Sumani*. J. B. 3. 289.

6. Polium; montanum; luteum; daſyphyllum; ſerratum; tomentoſum. *M. H.* 3. 355.

7. Polium; montanum; luteum; ſerratis, anguſtioribus, incanis, foliis. *Barrel. Ic.* 34.

8. Polium; montanum; album; ſupinum; folio ad ſuprema crenato; capitulis multis, globoſis.

9. Polium; maritimum; ſupinum; Venetum. *C. B. P.* 221. *Polium Venetum*. J. B. 3. 300.

10. Polium; Hiſpanicum; fruticoſum; maritimum; Roriſmarini folio; flore rubro. *T.* 207. *Boerh. Ind. alt. Plant. Vol.* 1.

This Plant reſiſts Putrefaction, and with it the Sea-ſkink is, for that Reaſon, preſerved; becauſe Vinegar and Salt are not thought good enough for the Preſervation of ſo delicious and coſtly an Animal: This Plant is bitter, and approaches much to the Nature of Germander: It provokes Urine, removes Obſtructions of the Menſes, and cures the Jaundice. An Infuſion of the Leaves and Flowers is beneficial in lethargic Diſorders, and, conſequently, in Epilepſies: What the Polium of the Antients was, we know not. This Plant is an ingredient in various Confections, Opiates, and in the Theriaca. It is ſaid to be beneficial againſt the Bites of poiſonous Animals. *Hiſt. Plant. adſcript. Boerh.*

POLIUM CRETICUM. A Name for the *Teucrium*; *calice campanulato*; *ſtœchados facie*.

POLIUM GNAPHALODES. A Name for the *Gnaphalium*; *maritimum*.

Beſides the foregoing Species of Polium, *Dale* mentions the two following,

1. *Polium montanum*. Offic. *Polium montanum album*. C. B. P. 221. Ger. 528. Emac. 653. Raii Hiſt. 1. 524. Tourn. Inſt. 206. *Polium montanum Monſpeliacum*. Park. Theat. 24. WHITE POLEY-MOUNTAIN.

This Plant is produced in *Italy* and *France*, and flowers in the Summer: The only Part of it uſed is the Herb itſelf, which ought to be choſen recent and odorous: It provokes Urine and the

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the Menſes, aſſiſts dropſical and icteric Patients, and is beneficial in the Bites of venomous Animals. *R. H.* It is, alſo, of an inciding and aperient Quality.

Dioſcorides makes two Kinds of Polium; one of which is the Poley-mountain, which he deſcribes in the following manner: "It is, *ſays he*, a ſmall white Shrub, nine Inches long, "and full of Seeds; which, on their Tops, bears a ſmall "Head, reſembling a certain Species of Cluſters, or the grey "Hairs of a bald Perſon: This Head has a diſagreeable Smell, "but is ſomewhat ſweet to the Taſte. The other Species of "Polium is more of the Nature of a Shrub, and is not ſo "ſtrong, with reſpect to its Smell, and other Qualities." The above-quoted Deſcription of Poley mountain is ſo ſhort, that Botaniſts, in different Countries, have taken it, ſome for one Plant, and ſome for another. *Tournefort* and *Chomel* have given the Poley-mountain, both white and yellow, of *C. B. P.* a Place in the Materia Medica. *Herman* and *Rockerus* think, that the white is the *Polium Officinale*; and *Commelin* and *Philip Miller* take the yellow *Polium* to be the *Polium Officinale*. But *Ruppius* takes the *Polium Lavendulæ Folio.* Pin. for the *Polium Montanum*. And *Joſeph Miller*, and *Rand*, take the *Polium Maritimum erectum Monſpeliacum* of *C. B.* for the Poley-mountain: Concerning which *Magnol* informs us, that the *Polium montanum album* of *C. B.* is much ſmaller, and not of ſo grateful a Smell. For this Reaſon, tho' the *Polium montanum album* ought to be preferred in the Shops, yet I have not omitted the other Species.

Beſides the Species already mentioned, there is another, tho' not ſo frequently found in the Shops: It grows in *Crete*; and, becauſe it is of a more grateful Smell, and more efficacious, than the others, is, therefore, preferable to them. *Dale.*

2. *Polium montanum.* Offic. Mill. Bot. Offic. 352. Rand. Ind. Plant. Offic. 69. *Polium maritimum erectum Monſpeliacum.* C. B. P. 221. Raii Hiſt. 1. 524. Tourn. Inſt. 206. *Polium Monſpeſſulanum.* J. B. 3. 299. *Polium montanum minus.* Park. Theat. 23. ERECT, or MOUNTAIN POLEY.

This Polium grows to be about a Foot high, much branched with ſquariſh woolly Stalks, having two ſmall, white, woolly Leaves at a Joint, not above half an Inch long, and ſcarce half ſo broad, blunt-pointed, indented about the Edges towards their Ends: The Flowers grow at the Ends of the Branches, in roundiſh, woolly, thick Spikes, ſmall, and of a white Colour, labiated, but having no Galea, being ſet in white, hoary, five-pointed Calyces. Both Leaves and Flowers have a pleaſant aromatic Scent. It grows in *Italy*, and the Southern Parts of *France*, and flowers in *July*. The Tops and Heads are uſed.

Mountain-poley is opening and attenuating, good for Obſtructions of the Liver and Spleen, helps the Dropſy and Jaundice, provokes Urine and the Menſes, and is good againſt the Bites of venomous Creatures; and is an Ingredient in the Theriaca Andromachi. *Miller's Bot. Off.*

POLLEX. The Thumb. *Pollex Pedis*, is the great Toe.

It often happens, that the Nail of the great Toe, on one Side, turns in, and enters the Fleſh, thereby occaſioning violent Pains and Inflammation, ſo that the Patient cannot walk without the greateſt Difficulty. The moſt general Cauſe of this Diſorder is wearing ſtrait Shoes: Whence it is plain, that the propereſt Method of preventing it is to wear Shoes ſufficiently wide and eaſy. If the Nail is already fixed in the Fleſh, let the Patient keep his Foot in warm Water for half an Hour, till the Nail begins to ſoften; and, to make it yield the more eaſily, ſcrape it with a Knife, or Piece of Glaſs; then, gently raiſing the Nail with the Finger, or a proper Probe, interpoſe, between the Nail and the Fleſh, a little ſcraped Lint, and dreſs with warm Spirit of Wine. This muſt be repeated, till the Pain is removed.

If this Method proves ineffectual, we muſt have recourſe to the Knife. For this Purpoſe, let the Foot be ſome time bathed in warm Water, for the Reaſon already given; then place it upon a Seat, where it muſt be firmly held by an Aſſiſtant: Then let the Operator carefully inſinuate a Pair of ſtrong Nail-ſciſſars (ſee *Tab.* LVII. *Fig.* 12. 13.) under the injurious Part of the Nail, to cut it off; and, if it does not fall off of itſelf, it muſt be extracted by the Forceps. Though the Patient will feel the Operation extremely painful, yet he will ſoon be ſenſible of the Eaſe it has procured him. Let the Part be then dreſſed with ſcraped Lint, or Compreſſes moiſten'd in Oxycrate, or warm Spirit of Wine, or Lime-water; and it may be fomented twice or thrice a Day, till the Inflammation and Pain ceaſe. In the mean time, the Patient ſhould reſt for ſome Days, till all Danger of the Pain and Inflammation be removed. Sometimes proud Fleſh ſprouts up, which may be ſafely conſumed with burnt Alum. In order to prevent the Nail from growing again into the Toe, and producing the ſame Trouble, *Dionis* recommends, that the Shoes ſhould be made eaſy; and the Nail ſhould be every Month ſcraped ſo thin, with a Piece of Glaſs, or ſharp Knife, that it may not have Strength

to run into the Fleſh, by the Preſſure of the Shoe. *Heiſter's Surgery.*

POLLINCTURA. The embalming of dead Bodies.

POLLUTIO. An Incontinence of the ſeminal Juices; a Species of GONORRHOEA; which ſee.

POLPHOS, πόλφος. A Bulb, or bulbous Root.

POLYÆMIA, πολυαιμία, from πολὺς, much; and αἷμα, Blood. A Redundance of Blood, or PLETHORA.

POLYANTHOS. A Name for the PRIMULA VERIS.

POLYANTHUS. A Name for the Acarna. See CARDUUS.

POLYARCHION. The Name of a Malagma; thus called from *Polyarchus*, its Author. It is deſcribed by *Galen*, *Lib.* 8. *de Comp. M. S. L. Cap.* 5. and *Lib.* 7. *de Comp. M. S. Gen. Cap.* 7. From whence *Aetius* and *Paulus Ægineta* have tranſcribed it.

POLYCHRESTOS, πολύχρηστος. An Epithet for many Medicines, importing their being good, or uſeful for many Diſorders; from πολὺς, much, and χρηστὸς, uſeful.

The BALSAMUM POLYCHRESTON is deſcribed under the Article BALSAMUM.

In *Lemery's Pharmacopée Univerſelle*, we find the following Pills deſcribed:

Pilulæ Polychreſtæ. Meſue.
— *Polychreſtæ.* Quercetani.
— *Polychreſtæ.* Quercetani Reformatæ.
— *Polychreſtæ Majores.* Meſue.
— *Polychreſtæ Majores Reformatæ.*
— *Polychreſtæ Minores.* Meſue.
— *Polychreſtæ Minores Reformatæ.*

POLYCLONOS. Ramoſe, or abounding with Branches. An Epithet for the *Artemiſia*, Mugwort.

POLYCNEMON. See CALAMINTHA PALUSTRIS.

POLYETES ANTIDOTUS. The Name of ſeveral Antidotes deſcribed by *Nicolaus Myrepſus.*

POLYGALA.

The Characters are;

The Leaves are alternate; the Calyx conſiſts of five Leaves, the two larger of them expanded like Wings, and the three leſſer acute; the Flower is monopetalous, anomalous, perforated, with its hinder Part perforated, and its fore Part bilabiated, the upper Lip bifid, and the lower beautifully fimbriated, or fringed: It is furniſhed with eight Stamina, and diſpoſed in looſe Spikes. The Fruit, which is embraced by the quinquephyllous Calyx, as with Wings, is compreſſed, gaping into two Parts, and divided into two Capſulæ, or Cells.

Boerhaave mentions ſix Species of Polygala; which are,

1. Polygala; vulgaris. *C. B. P.* 215. *Tourn. Inſt.* 174. *Boerh. Ind. A.* 236. *Polygala.* Offic. Ger. 448. Emac. 589. Raii Hiſt. 2. 1335. Synop. 3. 287. *Polygala minor.* Park. Theat. 1332. *Polygalon multis.* J. B. 3. 386. *Flos Amarvalis vulgo.* Herm. Cat. 500. MILKWORT.

Geſner, who, in his Letters, calls this Plant *Amarelle*, affirms, that an Handful of it, infuſed in a Glaſs of Wine, purges very well, and without any ill Conſequence. *Martyn's Tournefort.*

This Plant is moſt frequently found in dry Meadows, and flowers in *July*. The Herb itſelf is only uſed. Its bitter Taſte proves it to be of an hot and drying Quality: Its Leaves, boiled in Wine, purge Bile, by Stool. *Geſn.*

This is the Polygala of the Shops of *England*, and of the modern Botaniſts: But that it is the Plant to which *Dioſcorides* gives the ſame Name, neither its Deſcription nor Virtues will ſuffer us to believe; ſince it has neither the Leaves of the Lentil, nor a Power of increaſing Milk, both which are aſcribed to the Polygala. *Dale.*

2. Polygala; flore rubro; purpuraſcente. *H. Eyſt. Vern.* 0. 6. *F.* 11. *Fig.* 2.

3. Polygala; alba. *Tabern. Ic.* 831.

4. Polygala; carnea.

5. Polygala; violacea.

6. Polygala; fruteſcens; folio Buxi; flore maximo. *Oldenl. T.* 175. *Chamæbuxus, flore Coluteæ ex purpura rubeſcente.* C. B. P. 471. *Anonymos, flore Coluteæ.* Cluſ. H. 105. *Pſeudo-Chamæbuxus.* H. Eyſt. Vern. 0. 6. F. 12. F. 3. *Boerh. Ind. alt. Plant. Vol.* 1.

POLYGALA is, alſo, a Name for ſeveral Sorts of CORONILLA; which ſee.

Beſides the foregoing Species of Polygala, *Dale* mentions the following;

POLYGALA VERA. Offic. *Polygala major Maſſiliotica.* C. B. P. 349. *Polygala Valentina maritima.* Park. Theat. 228. *Colutea caule Geniſtæ fungoſo.* J. B. 1. 383. Raii Hiſt. 1. 925. *Coronilla caule Geniſtæ fungoſo.* Tourn. Inſt. 654. *Aſtragalus Matthioli.* Ger. 1059. Emac. 1239. MILK-VETCH.

This Plant is cultivated in Gardens, and flowers in Summer. The only Part of it uſed is the Herb itſelf, which, according to

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to *Dioscorides*, increases the Quantity of Milk, if drank in some proper Liquor.

The *Polygala* was so common and well-known a Plant among the *Greeks*, that *Dioscorides* has only given a very short Description of it, which has laid a Foundation for various Disputes among the Botanists. The *Polygala* here spoken of, seems to be the genuine *Polygala* of *Dioscorides*; because, as *Matthiolus* justly observes, it exactly agrees with the Description of that Plant. *Calceolarius* affirms, that he has often found from Experience, that it augmented the Milk of Nurses. *Dale.*

POLYGALON. A Name for the *Coronilla*; *minima*; and, also, for the *Polygala vulgaris.*

POLYGANON. A Name for the *Polygala*; *vulgaris*; and, also, for the *Onobrychis major*; *siliculis echinatis, cristatis, in Spica digestis.*

POLYGLOTTA. The Name of a beautiful *Indian* Bird, remarkable for its Song, but of no Use in Medicine.

POLYGONATUM.

The Characters are;

The Flowers are monopetalous, Bell-shaped, tubulated, naked, divided into six Segments, and furnished with six Stamina, which grow out of the Insides of the Divisions. The Ovary, which grows in the Centre of the Flower, produces a long Tube, furnished with a fimbriated Apex; and becomes a soft, globular Fruit, full of roundish Seeds.

Boerhaave mentions seven Species of *Polygonatum*; which are,

1. Polygonatum; latifolium; vulgare. *C. B. P.* 303. *Tourn. Inst.* 78. *Boerh. Ind. A.* 2. 63. *Polygonatum, Sigillum Solomonis.* Offic. *Polygonatum.* Ger. 756. Emac. 903. Raii Hist. 1. 664. Synop. 3. 263. *Polygonatum vulgare.* Park. Theat. 696. *Polygonatum, vulgo Sigillum Solomonis.* J. B. 3. 529. SOLOMON'S SEAL.

The Root of *Solomon's Seal* is about a Finger thick, white and woody; full of flat, seal-like Impressions, creeping upon the Surface of the Earth, with many pretty large Fibres. The Stalks grow to be about a Foot high; single, and not branch'd; round and slender; cloathed with pretty large, oval, nervous Leaves, of a bluish-green shining Colour, set alternately on the Stalks, and inclining all to one Side, and having the Top bowing that way. The Flowers come from the Bosoms of the Leaves, on pretty long Foot-stalks, generally two together; being hollow and cylindrical; of one Leaf; parted, at the Ends, into five Segments; these, also, hang all one Way, and are of little or no Scent. They are succeeded by round Berries, green at first, and black when ripe; divided into three Parts; containing small oblong Seeds. It grows in Woods and Copses, in divers Parts of *England*, and flowers in *May*. The Leaves and Root are used.

Solomon's Seal is vulnerary and restringent; good to stop all Kinds of Fluxes and Hæmorrhages; helps to consolidate Wounds, Fractures, and Ruptures; especially the Root, which, preserved in Sugar, is commended by *Matthiolus*, as of great Service against the Fluor Albus. A Cataplasm of the Root is good to take away black and blue Marks, arising from Contusions. *Miller's Bot. Off.*

The Fruit of the Polygonatum is black, and cover'd with a Meal like fresh Plums; which, perhaps, deceived *Cæsalpinus*, who affirms it to be whitish.

Fuchsius, to accommodate himself to *Dioscorides*'s Description of the Polygonatum, fancied he found something like the Taste of Pomegranates in this Species. It might be so, perhaps, in *Greece*; but *Galen* found nothing in it, save an unpleasant Bitterness.

The Leaves of our Solomon's Seal are insipid. They have something glutinous in them, which gives slight Nauseas. The Roots are sweet, a little acrid, and glutinous; they give a faint red Colour to the blue Paper; and the Leaves more faint. This Plant seems to contain a viscous Phlegm, mix'd with a great deal of Oil. For, by the chymical Analysis, it yields little besides some acid Liquor and Oil; a little Earth, and fix'd, but no volatile Salt.

Schroder affirms, that fourteen or fifteen Berries of Solomon's Seal provoke Vomiting; and they say, that one Dram of its Root has the same Effect. Some macerate half an Ounce of it all Night in a Glass of White-wine, and give the Infusion of it to drink, for several Months together, to those that have Ruptures. The Patients never vomit, and find great Relief; especially if the Roots are applied to the Part at the same time. They are very good, also, for all sorts of Contusions. The distil'd Water clears the Face, and beautifies the Complexion. The Decoction of the whole Plant cures the Itch, and the like cutaneous Disease. *Martyn's Tournefort.*

2. Polygonatum; latifolium; vulgare; cauliculis rubentibus.
3. Polygonatum; latifolium; maximum. *C. B. P.* 303.
4. Polygonatum; latifolium; flore duplici; odoro. *H. R. Par.* 303.
5. Polygonatum; latifolium; Hellebori albi foliis. *C. B. P.* 303.
6. Polygonatum; latifolium; minus; flore majore. *C. B. P.* 303.
7. Polygonatum; angustifolium; non ramosum. *C. B. P.* 303. *Polygonatum, angustifolium.* J. B. 3. 531. *Polygonatum, alterum.* Dod. p. 345. *Boerh. Ind. alt. Plant.*

POLYGONUM.

The Characters are;

The Root is creeping, and very fibrous; the Stalks and Branches are very full of Joints. The Calyx is deeply cut into five Segments, which, in their lower Part, are herbaceous; but, above, of a flosculous Colour; when ripe, the Calyx becomes a Capsule of Seed. The Flowers are produced at the Wings of the Leaves, and are conceal'd, in their first Rise, under a very thin Membrane; the Seed is exactly triangular.

Boerhaave mentions two Species of *Polygonum*; which are,

1. Polygonum; latifolium. *C. B. P.* 281. *Tourn. Inst.* 510. *Boerh. Ind. A.* 2. 88. *Centinodium, Polygonum.* Offic. *Polygonum mas vulgare.* Ger. 451. Emac. 565. Raii Hist. 1. 184. *Polygonum mas vulgare majus.* Park. 443. *Polygonum sive Centinodia.* J. B. 3. 374. COMMON KNOT-GRASS.

The Stalks of this Plant recline pretty much to the Earth, being smooth, and finely chaneled, slender, and branched, full of Knots or Joints, at which grow long oval sharp-pointed Leaves, set alternately on short Foot-stalks. In some Plants these will be broader, and more oval, in others longer and sharper; whence Authors have made two Sorts. At the Joints, with the Leaves, grow several small, staminous, blinking Flowers; sometimes of a white, and sometimes of a redish Colour; in each of which grows a small black triangular Seed. The Root is long and large, and strikes deep in the Earth. It grows every-where by Ways-sides, and in waste Places; flowering in Summer; the Herb is used.

Knot-grass is cooling, drying and binding, a good Vulnerary, and helpful against all Kinds of Bleedings, either external or internal, as against Fluxes; and outwardly applied, is good for Blood-shot, inflamed Eyes. *Miller's Bot. Off.*

This Plant has an herby, glutinous Taste, and a little Acid; it gives a deep Tincture of Red to the blue Paper; it is likely, that the Salt of Knot-grass resembles Alum, but is mixed in this Plant with a little Sal Ammoniac, and a great deal of Sulphur. For,

By the chymical Analysis, it yields a great deal of Acid, Earth, and Oil, a little volatile, concrete, and very lixivial fixed Salt.

Knot-grass is very vulnerary and astringent; the Juice, Ptisan, or Infusion of it in Wine, is given to drink for the Dysentery, Piles, Spitting of Blood, and all Sorts of Hæmorrhages; the Extract has the same Virtues; the Leaves, bruised, cure Wounds. *Martyn's Tournefort.*

2. Polygonum; oblongo; angusto; folio. *C. B. P.* 281. *M. H.* 2. 591. *Boerh. Ind. alt. Plant.*

Polygonum is, also, a Name for several Sorts of *Herniaria.*

Polygonum bacciferum. A Name for the *Ephedra*; *maritima*; *minor.*

Polygonum Cocciferum. See Coccus and KNAWEL.

Polygonum Germanis. See KNAWEL.

Polygonum maritimum. A Name for the *Ephedra*; *maritima*; *major.*

Polygonum minimum. A Name for the *Knawel*; *folio Alsines, glabro*; *flosculis plurimis.*

Polygonum montanum. A Name for the *Paronychia*; *Hispanica*; and for the *Paronychia, Hispanica*; *nivea polyanthos.*

Polygonum, perenne. A Name for the *Telephium*; *Dioscoridis.*

POLYIDÆ SPHRAGIS. The Name of a Pastil, described by *Celsus*, *Lib.* 5. *Cap.* 20. It consists of scissile Alum, four Drams; Vitriol, two Drams; Myrrh and Aloes, five Drams; of the Heads of Pomegranates, and Bulls Gall, each six Drams: All which, when triturated, are to be mixed with austere Wine.

POLYMORPHOS. Multiform; an Epithet for the *Os Sphenoides.* See CAPUT.

POLYNEURON. A Name for Plantain.

POLYOSTEON. A Name for that Part of the Foot which consists of a great Number of Bones.

POLYPHARMACOS. The same as POLYCHRESTOS.

POLYPHOROS. An Epithet of Wine, importing strong and generous.

POLYPODES. The same as MILLEPEDES.

POLYPODITES. An Epithet for Wine impregnated with *Polypody.*

POLYPODIUM.

The Characters are;

The Plant is not ramous; the Leaf is cut to the very Rib, into narrow oblong Parts, not adhering to a Pedicle, but with a wide Base embracing the Rib. Oftentimes the Lobes, or Segments, are not divided as far as the Rib, but are continuous, or joined by a leafy Structure. The Fruit grows on each Lobe, in a double Row, parallel to the Rib of that Lobe, and are membranaceous, covered with a thin Pellicle, and surrounded with an elastic crenated Circle, which explicating itself into a strait Line, discharges, with some Violence, angulous Seeds, growing within two very tender Membranes.

Boerhaave mentions six Species of *Polypodium*; which are,

1. Polypodium; vulgare. *C. B. P.* 357. *Park.* 1039. *Tourn. Inst.* 540. *Boerh. Ind. A.* 24. *Polypodium, Quercinum.* Offic. *Polypodium.* J. B. 3. 746. Ger. 972. Emac. 1132. Raii Hist. 1. 137. Synop. 45. *Filix Polypodium dicta.* Herman. Cat. 258. POLYPODY OF THE OAK.

This

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This is a capillary Plant, consisting only of pretty large, long, unbranched, pinnated Leaves, whose blunt Pinnæ are very finely indented, and grow not directly opposite to one another on the Stalk, but alternately, a little above one another; the Leaves terminate in a sharp Point, having no Pinnæ on the lower Part of the Stalk: On the back Part of each Pinna, come forth the Flowers and Seed, in double Rows of round Tubercles, of a reddish-brown Colour. The Root is slender, and full of small Knots, which appear like the Feet of an Insect, whence it takes the Name of *Polypodium*; it is of a brownish Colour on the Outside, and greenish within, of a sweetish styptic Taste. It grows upon old Walls, and at the Roots of Trees, and in the decayed Bodies of them; that which grows on the Oak, is most esteemed. The Roots only are used.

They are accounted opening, and gently purging; but are rarely given by themselves, but put among those purging Simples, which are stronger; they are supposed to purge bilious, melancholic Humours, and to open Obstructions of the Liver, and to help the Jaundice and Dropsy, and provoke Urine; they are good for the Scurvy, and are frequently an Ingredient in antiscorbutic Diet-drinks. *Miller's Bot. Off.*

The Root, being analysed, yields several acid Liquors, a little urinous Spirit, no concreted volatile Salt, a good deal of Oil, and a moderate Quantity of Earth. The Antients believed this Root was purgative. *Monardes* was the first among the Moderns, who knew that it loosened the Body but very gently. And *Dodonæus* confesses it does not purge at all, unless it is boiled in Cock-broth, with Mallows and Leeks. It sweetens the Blood, and removes Obstructions of the Bowels. It must be used in a dry Cough, when the expectorated Matter is saltish, in the Asthma, Scurvy, and hypochondriac Affections. It is an Ingredient in several Compositions. *Martyn's Tournefort.*

2. Polypodium; minus. *An. C. B. P.* 358. *Dod. p.* 464.

3. Polypodium, sensibile; aut Polypodium Virginianum. *Munt. H.* 289. *Herba viva, foliis Polypodii.* C. B. P. 359. *Filix Indica, Polypodii facie.* Menzel.

4. Polypodium; Cambro-Britannicum; pinnulis ad margines laciniatis. *Raii H.* 137. *Filix, amplissima; lobis foliorum laciniatis, Cambrica.* Plukn. Phytogr. *T.* 30.

5. Polypodium; tenerum minus. *Boerh. Ind. A.* 25. *Dryopteris.* Offic. *Dryopteris Adversariorum.* Ger. Emac. 1135. *Dryopteris sive Filix Querna repens.* Park. 1041. *Filix Querna.* C. B. 358. *Filix minor non ramosa.* J. B. 3. 740. Tourn. Inst. 537. Raii Hist. 1. 46. Synop. 48. OAK-FERN.

This Plant, the Whole of which is used, grows in marshy and putrid Places: When triturated with its Roots, it takes Hairs off the Body. It is to be apply'd by way of Ointment, and, when the Body is in a Sweat, the Sweat is to be wip'd off, and the Ointment apply'd again. *Dioscor.* It is possess'd of a septic Quality.

Rondeletius affirms, that he has found bad Effects produced by this Plant, when mixed with Medicines instead of Polypodium, by some ignorant Apothecaries of *Dauphiné.* I have sometimes found it in the Shops of some Apothecaries under the Title of *Adianthum album. Dale.*

6. Polypodium; angustifolium; folio vario. *Tourn. Inst.* 540. *Boerh. Ind. A.* 25. *Lonchitis.* Offic. *Aspera.* Ger. 978. Emac. 1140. Raii Hist. 1. 138. Synop. 45. *Aspera minor.* Park. 1042. *Minor.* C. B. 359. *Lonchitis altera foliis Polypodii.* J. B. 3. 744. *Lonchitis altera foliis Polypodii, Asplenium sylvestre nonnullis.* Chab. 556. *Filix sive Lonchitis altera foliis Polypodii.* Pluk. Almag. 152. ROUGH SPLEENWORT.

This Plant grows in moist, woody, rough, and uncultivated Places. The Herb is proper for agglutinating Wounds, without suffering an Inflammation to come on. When drank in Vinegar, it consumes the Spleen. *Dioscor.* The Root is aperient and diuretic. *Boerhaave.*

POLYPOSIA, πολυποσία. A copious drinking of Wine.

POLYPUS, πολύπους. A Name for any Animal possess'd of many Feet. But it is generally apply'd to a large Sea-fish, resembling a Cuttle-fish. It has eight Claws or Legs, which serve it to swim, walk, and convey its Aliments to its Mouth. These Claws, tho' distant from each other, are, nevertheless, joined by a large Membrane, which runs between them. The four middle Claws are the largest, in Bulk surpass a Man's Arm, and are all along adorned with a double Range of Tubercles, like small Horns. The four other Claws are call'd Brachia, Crura, Cirri, and Barba. The Eyes of this Fish are lodged at the Root of two of these Claws, and its Mouth, which is furnished with Teeth, is situated in the Middle. It has upon its Back a long Body, which, like a Rudder, it turns sometimes one way, and sometimes another, according as it intends to steer its Course. Its Flesh is not covered with any apparent Skin, but is spongious or porous, hard, and of difficult Digestion. This Fish is found in the *Adriatic* Sea, and feeds upon Shell-fish, human Flesh, when it can find it, Fruits and Herbs: It, also, loves Oil; it has, like the Cuttle-fish, near its Stomach, a Bladder full of a black or reddish-brown Liquor, which it discharges, when it intends to conceal itself. Its Eggs are like those of the Cuttle-fish, but of a whitish Colour. It contains a large Quantity of Oil, Phlegm, and Salts, both of a volatile and fixed Kind. Its Flesh, when roasted and eaten, is good against a windy Colic. *Lemery Traité des Drogues.*

POL

POLYPUS.

That Men in the Flower of their Age, and blessed with a naturally sound and robust Constitution, often die suddenly and unexpectedly, is sufficiently confirmed by Experience. Nor are the Vulgar ignorant, though Physicians cannot often account for the Thing, that there are some chronical and violent Disorders, whose Diagnostics and Prognostics are highly difficult, and which are in themselves so obstinate, as to prove mortal. But, the more frequent these Diseases are, and the more fond People are of knowing their Natures, the more surprising it is, that the genuine Causes of such Effects have so long remained latent, till luckily the modern Physicians began to make Anatomical Dissections of the Persons who have died of such Disorders, with a View to discover the genuine Condition of their Viscera; for Medicine has made more Advances in this present Age, by means of Anatomy alone, than were made in all preceding Ages, in which it was neglected; for as, by dissecting Bodies, many Causes of sudden Deaths, and dangerous Diseases, have been detected, so the most considerable of these are the Coagulations and Concretions of the Blood, firmly impacted in the large Vessels of the Heart and Lungs, and known by the Name of *Polypuses*; which, by intercepting and obstructing the free Circulation of the Blood, are capable, not only of destroying all the Functions, but, also, Life; for which Reason they are with Difficulty cured, and ought to have their fatal Causes in due time prevented, or removed by proper Medicines.

But that we may prove, that such Polypose Concretions have frequently been found, in dissected Carcases, to be the Causes of Death, and incurable Diseases, we shall enumerate a few Instances of this Kind, from the Writings of modern Authors. Thus *Bartholine*, in *Lib. de Lacteis Thoracicis, Cap.* 14. informs us, that in those who died suddenly, he, upon laying them open, found the larger Vessels of the Heart filled with a concreted Blood. This is, also, evinced by *Bonetus*, in *Anatom. Pract. Lib.* 2. *Sect.* 2. *Obs.* 5. where he treats at large of sudden Deaths produced by extraneous Bodies found in the Sinuses of the Heart. And *Frdericus Lossius*, in *Lib.* 1. *Obs.* 15. mentions a Boy of three Years of Age, who, though seemingly robust, and in good Health, yet died unexpectedly in his Mother's Arms: Upon dissecting the Body, the Viscera appeared perfectly sound, so that, besides an highly coagulated Blood in the Ventricles of the Heart, no other Cause of Death could be discovered. *Carolus Fracassirius*, who had many Opportunities of dissecting those who died suddenly, found nothing as the Cause, but Blood concreted and impacted in the Ventricles of the Heart, and in the pulmonary Vessels. And, that many died suddenly from an Infarction of the Vessels, is sufficiently evinced by *Panarolius*, who informs us, that, in the Year 1656, when sudden Deaths raged so much, many were suffocated by too large a Quantity of Blood retained within the Heart; so that, upon laying open the Bodies of these Persons, he hardly found any other Cause for their Misfortune, than a remarkable Infarction of the Vessels. *Jannes Daniel Horstius*, in *Manuduct. ad Med.* informs us, that in a Person who died suddenly, he found a whitish Phlegm in the Left Ventricle of the Heart. And *Riverius*, in *Cent.* 1. *Obs.* 82. tells us, that, in the Left Auricle of the Heart of a Man who died suddenly, he found a thick, compact, and entirely white Matter, resembling boiled Bacon.

From what has been said, it is sufficiently obvious, that in all Ages such Concretions of Blood have been formed in the Heart, and larger Vessels, as have produced sudden Deaths, and other incurable Disorders. But since, in the Writings of the Antients, the Word *Polypus* does not occur, we may reasonably conclude, that the Moderns have bestowed this Name upon such Concretions, because they generally send off many Ramifications, dispersed here-and-there among the adjacent Vessels; but, notwithstanding this Interpretation, it is to be observed, that the true Polypuses are only such Concretions, as consist of a whitish, fibrous, and pretty compact Substance, and are widely different from grumous or coagulated Blood; which, though it may create various violent Disorders in several Parts, especially when lodged in the Heart and Uterus, yet it hardly deserves the Name of a Polypus, but is, for the most part, by Authors called a *Pseudo-polypus.*

We now come to consider, why polypose Concretions are so fatal to Mankind. Now these Concretions are principally the Causes of violent Disorders, and of Death, when their Bulk is so increased, or, which more frequently happens, when they are, either by a slight internal, or external Cause, so removed from their Seat, as to intercept and disturb the free Circulation of the Blood from one Ventricle of the Heart, through the Lungs, to the other; or when, by blocking up the Orifices of the Vessels, they entirely destroy the Circulation of the Blood; for so long as small polypose Concretions only adhere to the Sides of the Vessels of the Heart, and of the other Vessels, they

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they do not much retard the Circulation of the Blood; and for that Reason do not manifestly injure the Functions. This is confirmed by Experience, which teaches us, that such Concretions may be formed in the Auricles and Sinuses of the Heart, on account of the various Windings, and fleshy Fibrils, about the Divarications of the Vessels, and, also, in other Parts of the Body, whilst, at the same time, the Blood is, notwithstanding, suffered to circulate freely. Thus *Vesalius*, in *Lib.* 1. *Cap.* 5. *de Corporis humani Fabrica*, informs us, that, in the Left Ventricle of the Heart of a certain Man, he found almost two Pounds of glandular, but blackish Flesh, the Heart being extended like the Uterus; and he adds, that though the Patient's Pulse was surprisingly unequal and various, yet he walked about like a sound Person for several Months before his Death, till at length, during the last Weeks of his Life, his Pulse became so greatly intermittent, that, during the Time usually requisite for nine natural Strokes of the Pulse, only two or three could be perceived in him.

We next come to consider what Diseases are produced, obstinately sustained, or disposed to an unhappy Termination, by means of polypose Concretions: Among these, the most considerable are various Disorders of the Breast, such as Pleurisies and Peripneumonies, among the acute kind; and, among the chronical kind, all sorts of Asthmas, the suffocative Catarrh, the Chin-cough, the Phthisis, and a Spitting of Blood: As for this last, it is certain from Experience, that, in consequence of a Stagnation of viscid and congested Blood, it easily disposes to polypose Concretions, which, in their Turn, produce a Spitting of Blood; for if, by means of these polypose Concretions, the free Passage and Repassage of the Blood through the Pulmonary Vessels is disturbed, the Blood must necessarily be accumulated in the capillary Vessels of the Pulmonary Artery; and at last, upon the breaking of some Ramification, expectorated by way of Spit, especially in Persons disposed to an Hæmoptysis. For this Reason it is no unusual thing for Polypose Concretions to be found in dissecting Persons, who have died of Spitting of Blood: Thus, in *Hoffman's Consult. Med. Tom.* 1. *Sect.* 2. *Obs.* 73. we have an Instance of a young Man of seventeen Years of Age, who died of a Spitting of Blood, accompanied with a slow Fever; and, upon laying open his Body, there was a callous Concretion found in his Pulmonary Artery. *Bonetus*, also, in *Anatom. Pract. Tom.* 1. *Lib.* 2. *Sect.* 5. *de Sputo Sanguinis*, gives us an Account of the Dissection of a Person who died of a Spitting of Blood, made by *Sylvius* in the Hospital of *Leyden*, in the Year 1664. In both Ventricles of this Person's Heart there was found a thick, fibrous, and, as it were, fleshy Matter, extended into all the Vessels running off from the Heart. But, particularly, such a Concretion, above three Spans long, was extracted from the Left Jugular Vein; but this Matter, to which much grumous Blood adhered, was, in the Ventricles of the Heart, of a considerable Thickness, and, in a singular manner, interwoven with the fleshy Fibres of the Heart, which its Fibrils, as it were, embraced. Besides, in the Middle there appeared a grumous Blood, and it seemed to have minute Vessels. I have, also, seen polypose Concretions in those who have died of a Phthisis. And *Bauhine*, as we are informed by *Georgius Horstius*, *in Op. Tom.* 1. tells us in express Words, that he almost always found polypose Concretions in those who died of a Phthisis and Dropsy. The Curious may, with respect to this, consult *Needham de Formatione Fœtus*, *Cap.* 2. *Malpighius*, *de Polypo Cordis*; and *Harderus*, in *Obs.* 45, 46, and 47.

An Asthma, especially that which is of the incurable kind, and on which depends a Dropsy of the Breast, is almost always generated and sustained by polypose Concretions. I have often had Opportunities of dissecting the Bodies of such as have died of this kind of Asthma; and found either Polypuses in the Heart, and Pulmonary Vessels, or a fœtid Serum extravasated in the Cavity of the Thorax. Nor are there wanting a sufficient Number of Observations to confirm this. Thus the celebrated *Græ-vius*, a Physician to the Army, in his *Dissertatio de Asthmate Convulsivo*, informs us, that, upon laying open the Bodies of fifty Soldiers, who died of Dropsies of the Breast, and Asthmas, he found Polypose Concretions in the Ventricles of all their Hearts. *Lancisi*, also, in his Treatise *de Motu Cordis*, gives us the following memorable Case: A Man of twenty-four Years of Age, of a slender Habit, and accustomed to a gross Air, and coarse Aliments, was seized with frequent Anxieties about the Heart, and Faintings, accompanied with a violent Difficulty of Breathing, and a Refrigeration of the Extremities. His Pulse was small and unequal, and his Jugular Veins and Abdomen were surprisingly tumid, till at last he died of a slow Fever. Upon laying open his Body, his Heart was found wonderfully flaccid and small, with polypose Concretions filling both its Ventricles, and the Pericardium firmly adhering to it. More Observations, with respect to that Asthma which is generally accompanied with a Dropsy of the Breast, may be seen in *Diemerbroeck. Anatom. Lib.* 2. *Cap.* 9. *Bartholin. Epist.* 2. *Cent.* 4. and *Epist.* 56. *Cent.* 2. *Harderus*, *Obs.* 56. *Lower de Corde*, *Cap.* 2. *Pezoldus*, *Obs.* 58. and 61. *Ruysch*, *Obs.* 19. and in the *M. N. C. Dec.* 2. *An.* 9. *Obs.* 174. and *Dec.* 3. *An.* 2. *Obs.* 185.

A Dropsy of the Pericardium and Thorax not only frequently accompanies an Asthma brought on by polypose Concretions; but, also, dropsical Tumors of other Parts of the Body derive their Origin from the same Cause. Hence nothing occurs more frequently in Practice, than to observe a spasmodic and convulsive Asthma, arising from polypose Concretions, succeeded by a cachectic Habit of Body, œdematous Swellings of the Feet, and sometimes an Ascites; for when the Circulation of the Blood, from the Right Ventricle of the Heart, through the Lungs, to the Left Ventricle, is hindered by such a polypose Concretion, the whole Circulation of the Blood, thro' the Vena Cava, must necessarily be rendered slower; and violent Stagnations by this means must be produced here-and-there in the inferior Parts, and particularly in the Liver, which when obstructed or indurated, the Blood begins to stagnate in the Mesentery, and all the Ramifications of the Vena Porta: Whence the Serum, being secreted, regurgitates to the lymphatic Vessels, which, when too much distended, are formed into Hydatids, the Breaking of which produces a fatal Extravasation of Serum. Memorable Observations of this kind occur in *Rhodius*, *Cent.* 3. *Obs.* 4. and *Peyer*, *in Hist. Anatom. Cap.* 6. *Wepfer*, in his *Exercitat. de Apoplexia*, informs us, that he observed fibrous and pituitous Concretions in the Bodies of those, who, during their Lives, had been for a long time cachectic, or often afflicted with Diseases. *Smetius*, *in Miscel. Medic. Lib.* 10. gives us a singular Instance of an œdematous Tumor in both Legs, arising from a tense and somewhat hard Polypus, and which, reaching as far as the Thighs, formed a full and hard Tumor in the lower Belly between the Pubes and the Navel, and which at last filled all the Region of the Abdomen. *Bonetus*, from *Boyle*, *Obs.* 9. makes mention of Polypuses in the Hearts of two Women, one of whom died of a Dropsy, and the other of a Cachexy. And *Albinus*, in *Dissert. de Polypis*, *Thes.* 5. mentions a memorable Species of Dropsy in a Man for some time afflicted with a Difficulty of Breathing, Palpitations and Anxieties of the Heart, who had Tumors in his Arms, and his Veins tumid, and protuberating into Knots, in consequence of a pretty large Polypus ascending from the Right Auricles of the Heart into the Trunk of the Vena Cava, and sending off Ramifications; but, in such a Situation, the Dropsy infallibly proves mortal.

But, waving the farther Consideration of an Asthma, and of a Dropsy, which often accompanies it, we now come to investigate the other Disorders of the Breast, which arise from polypose Concretions. The most considerable of these may be justly accounted the suffocative Catarrh; for, upon laying open the Bodies of such as have died of this Disorder, polypose Concretions have, for the most part, been found to be the principal Causes of Death, as is obvious from *Bartholin. Cent.* 2. *Obs.* 86. *Greiselius*, *in M. N. C. An.* 1640. *Obs.* 74. and *Malpighi de Polypo Cordis*; for the last-mentioned of these Authors informs us, that in all those he had laid open, who died either of an Apoplexy, or of a suffocative Catarrh, he found callous, viscid, and glutinous Bodies in the Heart and Brain, and frequently in both. Nor must we overlook a Palpitation of the Heart, which is, for the most part, and, when of the chronical kind, almost always, produced by polypose Coucretions. But, referring the Curious to the Article PALPITATIO, we come to consider those inflammatory and highly acute Disorders of the Breast, a true Pleurisy, and Peripneumony, which often arise from Stagnations of the Blood, produced by polypose Concretions. Thus *Malpighi*, in his Treatise *de Polypo Cordis*, affirms, that the Bodies of pleuritic Persons, when laid open, are found to contain a large Quantity of white Portions of concreted Matter, not only in the Præcordia, but, also, in the Liver and Veins. *Willis*, in his Treatise *de Febribus*, *Cap.* 11. informs us, that, upon laying open the Bodies of those who died of Pleurisies, the Blood has been found concreted into long Portions in the Sinuses of the Heart, and every-where about the Cavities of the Vessels. *Peyer*, also, in his *Exercitat. Anat.* mentions a Man of Sixty, who died of a Pleurisy changed into a Peripneumony; and, upon opening his Body, there appeared in his Heart large and tenacious polypose Concretions, resembling Portions of Fat.

Polypose Concretions prove the Causes of incurable Diseases, not only in the Heart, and annexed Pulmonary Vessels, but, also, in other Parts, especially the Veins, as is obvious from Dissections. Thus various Observations in *Wepfer*, *Peyer*, *Willis*, *Blasius*, and in *M. N. C.* sufficiently evince, that violent Cephalalgias, Apoplexies, and Deliriums, have been excited by Polypuses found within the Jugular Veins, and in the Sinuses of the Brain; but no Part of the Body is more disposed to the Generation of Polypose Concretions, than the Uterus, in whose Veins, on account of

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of their winding Complication, and the consequent slow Circulation of the Blood through them, such Polypose Concretions are easily formed, which afterwards lay a Foundation for frequent Abortions, immoderate Hæmorrhages of the Uterus, copious Effusions of Serum and Lymph from it, a Dropsy thereof, and Barrenness.

Having thus considered those incurable Disorders, and such as cannot be cured without the greatest Difficulty, which arise from Polypose Concretions, we shall now subjoin some Phenomena, by means of which it may be known, whether these Polypose Concretions are lodged in the Præcordia, where they have their principal Seat. But, among all the Signs which evince this, the most considerable are, a long-continued Palpitation of the Heart, often excited by a slight Cause, such as the Commotions of the Mind, flatulent Aliments, and such as render the Patient costive; for such is the Nature of these things, that, by disturbing the equable Circulation of the Blood, they produce a greater Impetus thereof to the Heart, where, being preternaturally congested and accumulated, on account of the obstructing Polypus, it cannot find a sufficient Space for expanding itself, but violently distends the Heart, and its Vessels; by which means it produces a violent Anxiety, and convulsive Motion of the Heart, which is called a Palpitation. Immediately after this, arises another Sign, which is, the Inequality and Intermission of the Pulse, often accompanied with Faintings; for as the Pulse is generally the best Circumstance, by which we can judge of the Motion of the Heart, and of the Circulation of the Blood through all the Parts of the Body; so, if it is irregular, or plainly intermittent, it, if other Circumstances concur, lays a Foundation for suspecting, that some Polypose Concretion, by its Bulk, disturbs, or, for some time, intercepts, the due Constriction of the Heart, and other Vessels, on which the Circulation of the Blood depends. Nor must we exclude, from the Signs which manifest a Polypus, a frequent Obstruction of Breathing, without a manifest Cause; a Compression of the Præcordia, in consequence of spasmodic Strictures of the Breast, and, what most generally accompanies this, a fixed Pain about the Heart; for each of these, if they are almost perpetual, are palpable Signs, that the Circulation of the Blood is obstructed by some foreign Body.

We now come to consider Polypose Concretions in a more particular Manner, and account for their Generation and Production. First, then, 'tis to be observed, that all Polypuses are not of the same Texture, Colour, and Bulk; for some are found so solid, hard, and so compacted of Fibres, that they seem to resemble small Tendons; whilst others are soft, composed of mucilaginous and thin Pellicules, and externally covered with a Membrane. Some are so large as to weigh a few Ounces; some, on the contrary, are smaller, and have sometimes many pinguious Parts intermixed with them. That the Colours of Polypose Concretions are widely different, is sufficiently obvious, from the various Denominations given them by Authors, especially those of a pretty antient Date; for sometimes they are represented under the Idea of Fat, which, according to some, is white, and resembles Candle-tallow; and, according to others, of a whitish yellow Colour, resembling that of the heated Marrow of Bones; at other times they are said to resemble Flesh, and at other times other Substances. Polypuses also differ in this, that some of them being rooted in the Right, and others in the Left Ventricle of the Heart, send off more or fewer Ramifications to the adhering Arteries and Veins; as also, in this, that some are by their own Bulk sufficient to prove mortal, by blocking up the Mouths of the Vessels; whilst others only produce that Effect, by being moved out of their Places.

But from sufficiently important Considerations, I am induc'd to think, that the Matter of Polypose Concretions is supply'd by the more weighty, viscid, and fixed Particles of the Chyle and Lymph, which by their Motion are easily united, and so form'd into one Mass, as to form a fibrous and membranous Body. This is sufficiently confirmed by various Experiments, made with respect to the Generation of these Substances. Thus *Ruysch*, that incomparable Anatomist, in his *Thesaur. Anatom.* 6. informs us, that of his own Blood, only by shaking, he formed a kind of spurious Membrane, which was furnish'd with many Stamina or Fibres, and so much resembled a genuine Membrane, that it was universally believed to be the Work of Nature: And in his *Thesaur. Anatom.* 1. n. 3. he tells us, that by strong Conquassation alone, continued for the Space of one Hour, he produced a Polypose Substance from the Blood of a newly killed Sow: Hence, we are enabled to form a distinct Idea of a Polypus; which may justly be defined, a certain solid, fibrous, Concretion, formed of the more viscid Parts of the Lymph, by means of a strong Motion, or Impulse.

Tho' Polypuses are formed in both Sinuses of the Heart, and in the Arteries as well as the Veins, yet 'tis certain from accurate Observation, that they are more easily and frequently formed in the Right Auricle and Ventricle of the Heart, than in the Left; as, also, more commonly in the Veins than in the Arteries: Nor is this hard to be accounted for, since the Chyle, which, by means of the Subclavian Vein, is convey'd to the Vena Cava, and the Right Ventricle of the Heart, being full of gross Particles, and moving slowly, easily deposits its heavy Parts, by which the *Columnæ* of the Heart being embraced, one Substance, or Body, as it were, is produced. Then the Blood convey'd to the Veins, by means of their too weak contractile Force, circulates more slowly, is of a thicker Consistence, and more weighty, than the arterial Blood: Hence it easily deposits its thick Parts; but especially, when these, not being intimately mixed, cohere slightly, they, by the Force of their Gravity, tend most to the Bottoms and Sides of the Vessels. But it is otherwise with the arterial Blood; for, as this is not only considerably promoted in its Course, by the elastic Motion of the Arteries, but, also, in the Lungs, impregnated with an highly subtile aereo ethereal Matter, and intimately mixed, by being forced through very minute Vessels, so 'tis by these means rendered more light and red: Hence the Reason is obvious, why the arterial Blood is less fit for the Generation of Polypuses, than that of the Veins.

Not only those advanced in Years, but also Children and Infants are found subject to Polypose Concretions. That such Misfortunes are incident to Adults, is universally allowed; for which Reason we shall here give a few Instances, in which such Polypose Concretions have been found in Infants: Thus *Albinus*, in his *Dissert. de Polypo Cordis*, gives us an Instance of a Polypus blocking up the Auricle of the Heart, in a very young Boy. *Bonetus*, in *Sepulchret. Anatomicum*, *Lib* 2. *Sect.* 11. *Obs.* 6. mentions pretty large Polypuses found in the Sinuses of his young Son's Heart. *Snell*, in his *Dissertatio de Cordis Polypo*, tells us that in a Boy of six Years of Age, who died of an Atrophy, he found a Polypus in each Sinus of the Heart. *Dorstenius*, in *E.A.C. Dec.* 2. *An.* 3. *Obs.* 153. mentions four extraneous Bodies, found in the Left Ventricle of the Heart of a very young Boy; and in *E.A.C. Dec.* 3. *An.* 2. *Obs.* 18. an enormous Polypus, found in a Youth, is described. This might be proved by a great Variety of Instances. 'Tis not, however, to be denied, that Adults, and those pretty far advanced in Years, are more disposed to the Generation of Polypuses than those who are younger; for the Blood peccant both in Quantity and Temperature is more easily accumulated, when the Work of Nutrition is over, than when it is carrying on; especially, when, in consequence of numerous and large Vessels, and a diminished Elasticity of the Solids, any one is disposed to a Plethora, addicted to an idle Life, without Exercise, or has the Misfortune of an improper Diet.

We almost always find Men more subject to Polypuses, and the Diseases produced by them, than Women; the Reason of which is, in my Opinion, this, that in the Female Sex, whilst the menstrual Evacuations are duly carried on, the Quantity of Blood is not so easily increased; and, in consequence of the Laxity of the Fibres, and greater Fluidity of the Humours, or a Blood more abounding in Serum, it more difficultly happens, that the gross Particles unite, and form themselves into Concretions. 'Tis, also, to be observ'd, that in marshy Places, and Northern Countries, far more die of Polypose Concretions, than in the hotter Climates: Which, in my Opinion, besides the cold Air, and the more obstructed Perspiration, is principally to be ascribed to the gross Aliments, such as Sea Fish, coarse Bread, smoked and salted Flesh, from which a tenacious Chyle, full of terrestrial Particles, and consequently a thick Blood, is generated.

We now come to consider the procatarctic Causes of Polypose Concretions; the most considerable of which is a Redundance of Blood; for, in consequence of an increased Diastole of the Vessels, under a plethoric State, the Fibres lose their Elasticity; by which means, the Systole of the Vessels is diminished, the Circulation of the Blood surprisingly retarded, and a palpable Foundation for the Cohesion of the terrestrial Particles laid. Besides, in consequence of this, an Obstruction of the Vessels happens; the great Tendency of which to the Generation of Polypuses is sufficiently obvious from an Experiment made by *Lancisi*, in *Lib. de Aneurismatibus*, *Propos.* 38. where that Author informs us, that with a waxed Thread he tied a certain Ramification of the Iliac Artery of a live Dog; and that, upon cutting the Ramification, without the Ligature, about fifteen or twenty Days after, he found a Polypose Concretion: Nor is it difficult to account for this, since, by making such a Compression, the more tenacious and least moveable Parts of the Blood, being mutually united, begin gradually to adhere to the Sides of the Vessels, till at last their Bulk being increased, they constitute a thick and fibrous Substance, called a Polypus. But not only a Redundance, but, also, a Penury or Scarcity, of Blood lays a Foundation for Obstructions, and consequently for Polypose Concretions. Hence I have frequently observed copious and frequent Hæmorrhages succeeded by the same Disorders, which are produced by Polypuses; for since, in consequence of the Distention, the Fibres are rendered more lax, and the Pores larger, they transmit all kinds of thick and viscid Humours, which are fit for generating Polypose Concretions. As

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As Length or Talneſs of Body diſpoſes to various Diſeaſes, ſo it, in a particular manner, contributes to the Generation of Polypuſes, and all the Diſorders ariſing from them; for, in tall Perſons, the perpendicular Aſcent of the Fluids is difficult: Hence, the Circulations in all the Parts of the Body become ſlower, and Stagnations and Obſtructions of the Viſcera are eaſily formed, but eſpecially of the Lungs, where the Blood circulating with Difficulty, ſtagnates in the minute Veſſels, and the ſecreted heavy Parts are, in Proceſs of Time, condenſed into a thick Maſs. If this Account of the Matter is not ſufficient, it may be ſtill farther confirmed by Experience, which teaches us, that exceſſively tall Perſons are not only inferior in Gaiety of Temper, and Strength of Body, to ſuch as are of a lower Stature, but, alſo, far more ſubject to the Diſeaſes ariſing from a ſlow Circulation, and Stagnation of the Blood, ſuch as Polypoſe Concretions, a Phthiſis, an Aſthma, and a Difficulty of Breathing.

But nothing is more injurious to the human Body, or has a greater Tendency to occaſion ſudden Death, than large Draughts, of cold Liquors, haſtily drank after any violent Commotions or Over-heating of the Body. Thus *Galen*, in his Book *de Sanitate tuenda*, juſtly thinks that ſuch a Practice induces a Cough, and Difficulty of Breathing; weakens the Brain, and excites Defluxions from it; impairs the Strength of the Stomach, and injures the Nerves; for ſuch is the pernicious Nature of Cold, that, by ſtopping the inteſtine Motion of the Fluids, it not only coagulates the Blood, but, alſo, precipitates the terreſtrial and gelatinous Parts; Hence 'tis not to be wondered at, if Obſtructions, Inflammations, and Polypoſe Concretions, ſhould be produced; which laſt may be obſerved, when Blood flowing warm from the Veins is ſuffered to fall into cold Water; or, when warm Water, in which ſuch Blood has fallen, becomes cold; for, in this Caſe, the fibrous and more heavy Part will be ſeparated and precipitated from the other, in a moſt beautiful manner. Many Inſtances might be alleged, in which the drinking cold Liquors has ſuddenly prov'd mortal.

Both Experience and Reaſon concur to evince how effectually Acids, and ſpirituous Liquors, contribute to induce violent and dangerous Coagulations of the Humours; for, according to a known Experiment, Blood which is ſufficiently fluid, when taken from the Veins, is by an Affuſion of any acid Liquor, or rectified Spirit of Wine, forthwith coagulated into an hard Maſs. Now none who accurately advert to this Circumſtance, can doubt but the ſame may happen in the human Body, tho' not in the ſame Time and Manner. But if they ſhould doubt of this, let them remember into what violent and chronical Diſorders, ariſing from Obſtructions in the Viſcera, ſuch as a Phthiſis, a Cachexy, a Dropſy, a convulſive Aſthma, and exceſſive Hæmorrhages, great Drinkers of Brandy, and ſpirituous Liquors, bring upon themſelves.

Nor are we to overlook the Affections of the Mind, eſpecially Anger, Frights, and Sorrow, which lay a ſufficient Foundation for Polypuſes, and the Diſorders ariſing from them. Without making a curious Inquiry into the latent Cauſes of ſo ſingular an Effect, we ſhall only give ſome memorable Inſtances of the Facts. Accordingly, the celebrated *Malpighi* gives us an Account of a Patient, otherwiſe ſufficiently robuſt, who, by means of a Fright, was ſeized with a great Inequality and Obſcurity of the Pulſe, eſpecially in the Left Wriſt, without any Fever, and a recurring Difficulty of Breathing. But ſoon after he expectorated by Spit, ſometimes a Portion of red Blood, and at other times a large Quantity of ſmall white Portions of Matter, not unlike Polypuſes. But afterwards his ſuperior Parts became turgid, and he was ſuffocated by the Redundance of confined Blood. *Riverius*, alſo, in *Cent.* 4. *Obſ.* 2. gives us an Inſtance of a certain Man of Diſtinction, who, having the Misfortune of a ſudden and unexpected Fright, complained of a violent Tremor of his Heart, a Difficulty of Breathing, together with an unequal and intermittent Pulſe, till he ſoon after died; when, upon laying open the Cavity of his Breaſt, the Heart, and larger Veſſels, were full; and in the Left Ventricle of the Heart were found round Caruncles, reſembling the Subſtance of the Lungs, the largeſt of which, approaching to the Size of an Hazel-nut, blocked up the Mouth of the Arteria Aorta.

Nor muſt it be forgotten, that the prepoſterous Methods of curing violent Hæmorrhages, and intermittent Fevers, by Aſtringents, Opiates, Chalybeates, and even the Peruvian Bark, greatly contribute to bring on violent chronical, and even incurable Diſorders, which are produced and ſupported by Polypoſe Concretions. And I can, after a Practice of more than fifty Years, affirm, that I have known more Miſchief done by no Medicines, than by the unſeaſonable and incautious Uſe of theſe; ſince I have ſeen, not only acute and mortal Diſorders, ſuch as Apoplexies, Epilepſies, and ſuffocative Catarrhs, but, alſo, long and chronical Diſorders, ſuch as a Phthiſis, a convulſive Aſthma, hypochondriac and hyſteric Diſorders, violent Hæmorrhages, ſlow and hectic Fevers, produced by this means. If we inquire whence ſo many Misfortunes ariſe, it is to be obſerved, that the Cauſe of theſe terrible Diſorders is principally to be ſought for, in the ſlow and retarded Circulation of the Blood and Humours through the minute and capillary Veſſels of the Body; for, by this means, the natural Secretions and Excretions, which are, alſo, made through minute Emunctories, compoſed of ſubtile Veſſels, are ſurpriſingly retarded: Hence ariſe various Stagnations in different Parts, Infarctions and Indurations of the Viſcera, together with a large Train of other Symptoms. Now if a Phyſician, in ſuch a State where there is already a Thickneſs of the Blood and Humours, and a ſlow Circulation, or where violent Spaſms ſtrongly compreſs the Veſſels, ſhould exhibit aſtringent and incraſſating Medicines, or even thoſe of the ſedative Kind, he muſt neceſſarily do his Patient a conſiderable Injury, by rendering the Diſorder more terrible. This happens the more infallibly, if the prepoſterous Uſe of theſe Medicines is too long perſiſted in: Nor can it be doubted, that ſuch Polypuſes as may prove the Cauſes of incurable Diſeaſes, may be produced by theſe means; and I have had Opportunities, in many Diſeaſes ariſing from this prepoſterous and empirical Method of Cure, ſometimes of prognoſticating Polypoſe Concretions, from pretty certain Signs; and ſometimes of ſeeing them, in diſſecting ſuch Patients after Death.

Thus we have conſider'd the principal Cauſes which concur to the Generation of Polypuſes: And, with reſpect to the other Cauſes, as they rarely occur, ſo they may be eaſily reduced to ſome one or other of thoſe already mentioned.

The Cure.

So obſtinate are moſt Perſons, that they rarely think of attacking the Beginning of Diſeaſes, but call for the Phyſician, and the Aſſiſtance of his Art, when, their Diſorders being increaſed by Delay, they have a near Proſpect of Death: But, by this means, they only haſten the fatal Day, which, by a ſpeedy Uſe of proper Medicines, might have been totally averted. Perſons afflicted with polypoſe Concretions are the more culpable in this reſpect, ſince it is certain from Experience, that their Cure is, at beſt, difficult and dubious, and, when the Diſorder is of long Standing, abſolutely impoſſible; for, if any Aſſiſtance is to be expected in thoſe Diſeaſes ariſing from an intercepted Circulation by means of Polypoſe Concretions, great Expedition is abſolutely neceſſary: And the principal Intentions of the Phyſician ought to be to hinder the Generation of ſuch Concretions, and to prevent their Increaſe, and injurious Effects, where they are already preſent.

Firſt, then, in order to prevent the Generation of Polypoſe Concretions, our principal Care ought to be, to dilute and reſolve the inſpiſſated Blood, and duly to diminiſh its Quantity in plethoric Habits. In order to obtain this End, nothing is of more Importance than a right Regimen, and Method of Living; for which Purpoſe let their Diet be ſpare, ſlender, and moiſtening; and let the Patient abſtain from all hard, acid, ſaline Aliments, and ſuch as afford much Nouriſhment: Let his Drink be of a proper Quality, and very thin. For this Purpoſe he may very commodiouſly uſe ſmall and pure Beer, or Spring-water, either alone, or mixed with a due Quantity of Wine, or a Decoction prepared of mild and aperient Ingredients; among which the moſt conſiderable are the Roots of Vipers-graſs and Sarſaparilla, together with *China* Root, and the Bark of Saſſafras-wood; for, by theſe means, the Purpoſes of Dilution and Reſolution will be excellently obtained. To theſe Meaſures let the Patient, alſo, add frequent Exerciſe, by which the Fluidity and equal Circulation of the Blood through all the Parts are greatly promoted. But all Perſons, eſpecially thoſe of fat and plethoric Habits, ought carefully to guard againſt violent Exerciſe ſuddenly begun, ſince, by this means, too much Blood is projected to the Lungs, where circulating ſlowly, it is eaſily coagulated. In order to prevent this, it is expedient forthwith to drink ſome warm Liquor; which is ſtill the more neceſſary, if, after the Body has been over-heated by violent Exerciſe, it is ſuddenly cooled; or, which is worſt of all, if large Quantities of any cold Liquor have been drank. Beſides, the Air the Patient breathes ought to be pure, ſerene, and temperate, neither too hot, nor too cold, nor too moiſt. But, if the Patient cannot have the Benefit of ſuch an Air, ſuch Infuſions as promote Perſpiration, have an excellent Tendency to attenuate the Fluids, and diſjoin the united Molecules.

The Patient ought, alſo, to guard againſt violent Affections of the Mind, eſpecially Grief, Anger, and Frights: But if at any time a Change is induced on the Body by theſe, ſuch things are with all Expedition to be uſed, as allay violent Commotions, and render the diſturbed Circulation of the Blood again regular and equable. Thus, if the bad Effects of a ſudden Fright are to be removed, ſuch Medicines are moſt efficacious as are gently reſolvent, and promote a mild Perſpiration; because, perhaps, by this means, that Part of the Maſs of Blood which

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which was beginning to be coagulated, is moſt commodiouſly reſolved: For this Purpoſe I always, with great Succeſs, exhibited the *Pulvis Marchionis*, either alone, or with a few Drops of the anodyne Liquor, taken in Cinnamon-water, or Baum-water prepared with Citron-juice and Wine; after which I order ſome Cups of a warm Infuſion to be drank: And this Method I, alſo, found highly beneficial in thoſe waſted by long Grief. Beſides theſe Meaſures, in violent Frights, moderate Exerciſe is greatly to be commended; ſince by it the Heart is enabled more eaſily to free itſelf from the Quantity of Blood congeſted to it, in conſequence of which the Diſorder becomes leſs terrible. Thoſe, therefore, but ill conſult their own Advantage, who, immediately after a Fright, betake themſelves to a State of Reſt, or endeavour to fall into a profound Sleep.

Care muſt, alſo, be taken, that the Body be duly ſoluble; and, if the Patient is coſtive, Clyſters, or balſamic Pills, are, with all Expedition, to be uſed, in order to remove this Misfortune. Nor is leſs Care and Prudence requiſite, that the other Paſſages ſubſervient to the Secretion and Excretion of the Humours, be kept free and open, leſt, as it generally happens, theſe being obſtructed, the Maſs of Blood ſhould be contaminated, and rendered impure: But it ought, in a particular manner, to be the Phyſician's Care, that no natural Evacuation of Blood, ſuch as the Hæmorrhoids in Men, and the Menſes in Women, be either totally ſuppreſſed, or too long retained; for, in this Caſe, there eaſily happen dangerous Congeſtions of Blood to other Parts, which, by the ſkilful Phyſician, may be commodiouſly prevented, by proper Veneſection, Pills, and other Medicines of a gently balſamic and temperate Quality. Nor are artificial Evacuations of Blood to be neglected; but theſe are ſtill more ſtrictly to be regarded, if the Patient is plethoric, and has, by long Cuſtom, render'd them natural to him.

Having laid down theſe Rules, with reſpect to Regimen, we muſt, among the Claſs of Medicines calculated for inciding and reſolving the inſpiſſated Fluids, recommend Salts of a neutral and alcaline Nature, ſuch as the Arcanum Duplicatum, vitriolated Tartar, Nitre, the digeſtive Salt of *Sylvius*, the aperitive Salt, Oil of Tartar per Deliquium, the Terra foliata Tartari, and the Liquor of fixed Nitre. Among ſpirituous Preparations, this Intention is anſwer'd by the Eſſence of white Burnet, the *Tinctura Antimonii Acris*, and others of a like Nature. But, among all the Medicines, I know none is ſo powerful in diſſolving thoſe Parts of the Blood which are fibrous, and diſpoſed to Concretion, as mineral Waters, eſpecially thoſe which are impregnated with an alcaline Salt, and of a mild and temperate Quality; ſuch as the *Embſen* and *Selteran* Waters, thoſe of *Aix la Chapelle*, but eſpecially the *Caroline* Springs, which, by their Salt, open all the Emunctories of the Body, waſh away and evacuate the impure Sordes, and reſolve and dilute the thick and viſcid Blood.

Having already ſhewn the Method of preventing Polypuſes, we now come to inquire what Meaſures are to be taken, when there are any Signs of a Polypus already formed in the Heart, or larger Veſſels, and by what means its farther Growth may be prevented: It is, therefore, to be obſerved, that whilſt a Polypus is only beginning, and, as yet, pituitous, we are not to loſe all Hopes of reſolving it, which may be done by alcaline and neutral Salts, which excellently reſolve the viſcid Humours; by a ſlender Diet; by a ſufficient Quantity of Drink of ſuch a Nature as to dilute the Humours; but, eſpecially, by the *Caroline* Waters; by the prudent Uſe of which I have known many cured, who had ſtrong Symptoms of a Polypus formed within. But if the Polypus has already degenerated into a fibrous and hard Subſtance, all poſſible Care is to be taken, leſt, becoming bigger, or, being moved out of its Place, it ſhould totally block up the Veſſels, and ſuddenly deſtroy the Patient. For anſwering this Intention, it is of the greateſt Importance to prevent a Redundance of Blood, and to preſerve its Fluidity, by the Medicines already recommended for that Purpoſe. But, when a Difficulty of Breathing ariſes from a Polypus, we muſt by no means uſe Veneſection in the Arm, ſince, by that Practice, a greater, and even a ſuffocative Congeſtion is produced. Beſides, let the Patient avoid all ſpirituous Liquors, too much Exerciſe, and Perturbations of Mind, all which, partly by coagulating the Blood, and partly by throwing it into too violent Commotions, render the Diſorder worſe.

We ſhall now ſubjoin ſome Cautions with reſpect to the Treatment of Hæmorrhages, and Intermittent Fevers. We have already ſhewn how faulty Phyſicians are in this reſpect; for which Reaſon I ſincerely adviſe, that, in ſtopping Hæmorrhages, the Phyſician would not attempt the Cure by Aſtringents alone, but rather by a proper Evacuation of Blood, and gently anodyne Medicines; as, alſo, by Frictions of the inferior Parts, to reſtore the equable Circulation of the Blood. With reſpect to the Cure of Intermitting Fevers, the greateſt Care is to be taken, that they be not too ſoon ſuppreſſed; for which Reaſon it is expedient prudently to uſe gently aperient and evacuating Medicines; to which we may commodiouſly ſubjoin, and even interpoſe, reſolvent, temperating, and corroborating Medicines. *Hoffman.*

POLYSARCIA, πολυσαρκία, from πολυς, much, and σάρξ, Fleſh. Corpulence.

This is a ſuperfluous Increaſe of Fleſh, by the *Greeks* ſo called, on account of its Exceſs. It is a Diſorder directly oppoſite to that, in which Nutrition ceaſes, and in which the Body becomes tabid and conſumptive. Too large a Quantity of Nouriſhment conveyed to the Parts, is the Reaſon, why an exceſſive Quantity of Fleſh is generated, and the Patient, by that means, oppreſſed. We may juſtly reckon this to be a Species of Cachexy; for the Patients are afflicted with ſeveral terrible Symptoms, ſuch as a ſuperfluous Quantity of Fleſh, an Exceſs of prominent Fat, Slowneſs of Motion, Oppreſſion, Weakneſs, Difficulty of breathing, and Sweating upon the leaſt Exerciſe; ſo that the Patient becomes apprehenſive of Suffocation, and can hardly wear the ſlighteſt Garments. Many Phyſicians have, therefore, given Rules for diminiſhing the Quantity of Fleſh, or preventing an Increaſe of the Body. But their Doctrine is refuted by *Soranus*; for, if the Habit of Body is good, a moderate Quantity of Fleſh, accompanied with Strength, is rather to be preſerved, than deſtroyed. But the *Polyſarcia* we call a Diſorder, which may be juſtly accounted a Cachexy, and is accompanied with many dangerous Symptoms; for all the Misfortunes, which attend voracious Animals, or thoſe fattened for Uſe, ſuch as Inflation, Extenſion, and Prominence of the Body, alſo, attend thoſe afflicted with a *Polyſarcia*. The like happens in ulcerated Bodies, in which the luxuriant Fleſh is either conſolidated, or ſprings up afreſh on the Lips of the Ulcers, after it has been removed.

There are two Methods of curing a *Polyſarcia*, the one by preventing too copious Nouriſhment, and which conſiſts in quick Geſtation, and the Uſe of ſuch mild Aliments, as do not nouriſh much, or have a Tendency to increaſe the Body; the other conſiſts in the Obſervation of certain Rules, and laborious Exerciſe, in order to induce a Change on the Body: But, for the ſake of Diſtinctneſs, we ſhall give more particular Directions with reſpect to the Cure. It is, therefore, expedient to exerciſe the Patient much and long, either on Horſeback, or in Coach; to order him to ſail, to read, and uſe his Voice; to wreſtle, and walk quickly, that his Legs may be the more exerciſed: He muſt, alſo, run, and have the Parts of his Body rubbed with the Hands dry, or with a rough Linen Cloth, and ſome Sand ſprinkled on the Parts; then he is to uſe various Paleſtrian Exerciſes, ſuch as that which the *Greeks* call σκιαδία and *Choricomachia* (perhaps χειρομαχία); which Exerciſes are directed by their reſpective Maſters: Then he is to uſe what the *Greeks* called ὁπλομαχία, that is, a Mock-fighting with Arms: Then he is to uſe the Exerciſe of Wreſtling, which the *Greeks* called ἀπεροκοπία, or τεχνιαμός. He is, alſo, to uſe the long tractary Machine, called by the *Greeks Macro-ſparton*, and the *Italians Sphere*, and Wreſtling; as, alſo, quick, hard, long-continued, and dry Frictions; for if the Parts are rubbed with Oil, the Hands ſlip, and the Patient cannot perform his Exerciſe with due Vigour. The Patient's Body muſt, alſo, be expoſed to the Sun, a Practice which the *Greeks* call ἡλίωσις. Then a Sweat is to be excited by means of a Flame, live Coals, and dry Steams. Sometimes Hot-baths, which diminiſh the Body, and, at other times, Cold-baths, which condenſe it, are to be uſed; for the Bodies of ſuch as have uſed the Cold-bath are perceived to be thick, and, as it were, teſtaceous. It is, alſo, expedient to apply hot Sand to the Body, and to ſwim in the Sea, or in Medicinal Waters. After Sweating in the Bath, the Body muſt be ſprinkled with Salt, by which the Fleſhes of Animals are preſerved dry, denſe, and free from Withering. Then the Patient is to uſe what the *Greeks* call *zegma*, (perhaps *ſmegma*) a Friction of Nitre reduced to Powder; and, after Bathing, Meat and Drink are to be long abſtained from; for then the Appetite begins to languiſh, and its Edge is obtunded by the Delay; the Keenneſs, alſo, of the Digeſtion languiſhes, when the Fomes, which ſuſtained it, is withdrawn. Drinking before Eating is to be forbidden, and very little is to be drank at all, though the Patient may drink moſt at Meals; for, by drinking much, the Aliments are rendered fluid, the Fleſh ſoftened, and by Digeſtion, the Food is rendered capable of adhering to the Solids, and, conſequently, of increaſing the Solids: But if the Patient is afflicted with an inſatiable Thirſt, he may drink a ſmall Quantity of moderately ſharp Wine. But Puls, Alica, Flour, Milk, Nuts, the Brains of Animals, Eggs, tender Fiſhes, and all pinguious Subſtances, are to be abſtained from; but the Patient may eat Bread that is cold, fermented, and prepared with the Bran; for ſuch Bread nouriſhes but little, eſpecially if it is old. Dry Aliments are, in a particular manner, beneficial; Pot-herbs, and Fiſhes of hard Digeſtion, are to be uſed; as, alſo, the drier Sorts of Birds, and wild Aliments, ſuch as Hares, and

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and wild Goats; as, alſo, Pork long dried in the Salt. The Patient ought, alſo, to uſe but one kind of Aliment at a Meal, and keep from ſleeping a great while after it; for, by Watching and Reſtleſſneſs, the Bulk of the Body is much impaired by Exhalation; whereas it is fattened, and its Bulk increaſed, by Sleep. Beſides, the Body is, by Sleep, rendered more moiſt. Cold Liquors are to be drank, and, during the Continuance of the Polyſarcia, the Metaſyncritic Cyclus is to be begun; for ſometimes the Patient is to uſe total Abſtinence, and ſometimes to take but a ſmall Quantity of Aliments and Water, which is to be regularly augmented, as the Situation requires. We are to begin the Cure by Vomiting, the Patient faſting, or by an Exhibition of proper Roots. Then the Patient is to uſe acrimonious Subſtances, Things of a neutral Quality, Birds, and wild Animals. Theſe Meaſures are the more expeditiouſly to be taken in a few Days, the more ſevere and violent the Beginnings of every Cyclus are. Diuretics are, alſo, to be exhibited among other Pot-herbs; ſuch as Aſparagus, Carrots, Parſneps, Smallage, Fennel, Leeks, and other Things of a like Nature; for by this means a Change may be induced on the Body by the Uſe of common and ordinary Aliments. We muſt, alſo, have a due Regard to the various Symptoms in the Cure of this Diſorder. Some Phyſicians recommend Phlebotomy, purgative Medicines, Clyſters, the Uſe of Venery after Bathing, and before Meals, and on the ſame Day a ſmall Quantity of Nouriſhment, and Water for Drink: They, alſo, recommend Vomiting after Supper. Some, alſo, as contrary to the *Polyſarcia*, recommend Exerciſing the Body by Pandiculation, after riſing out of Bed, which they call ἀντίπατος; as, alſo, the Drinking Night-dew, before the Riſing of the Sun. But the Madneſs and Abſurdity of late Phyſicians is ſufficiently obvious; for, by Phlebotomy, the Strength is impaired, and the Patient's Body rendered flaccid, which the *Greeks* call ῥάκωσις. Purgative Medicines, ſuch as Clyſters, and thoſe above-mentioned, corrupt the Fluids, and induce a bad Habit of Body by the *Greeks* called *Cachexia*. Venery, alſo, renders the Patient effeminate, and deſtroys his Strength. Some, alſo, order Bathing twice a Day, and Sleep before Meals; but this is very improper, ſince Sleep rather renders the Patient fat, than lean. Vomiting, alſo, after Supper, deſtroys the Strength; and though it diminiſhes the Fleſh, yet it fills the Head with Fumes, diſturbs the Organs of Senſation, renders the Gums putrid, corrupts the Breath, corrodes the Stomach, and renders the Patient diſagreeable to himſelf, which the *Greeks* call Δυσαρέσκησις, and which is accompanied with a State of Inequality, reſembling that of Fevers. Beſides, Vomiting is improper, and juſtly to be condemned, becauſe, by corrupting the Juices, it does more Harm to the Body. But if the Patient has eaten too large a Quantity of Aliments, then a Vomit is to be exhibited; for the Uneaſineſs ariſing from the Exceſs is greater than that produced by the Vomit. Cloſe and violent Application of Mind, alſo, contributes greatly to the Cure of the Polyſarcia; for which Reaſon we obſerve the Bodies of cloſe Students more thin and ſlender, than thoſe of Perſons who lead alazy and indolent Life, whoſe Bodies are more full and ſolid. *Cœlius Aurelianus. Chron. L. 5. C. 11.*

POLYSOMATICA. The ſame as POLYSARCIA.

POLYSPASTON, from πολὺς, much, and σπάω, to draw. The Name of a Machine for making Extenſion, in caſe of Fractures, or Luxations. See the Article FRACTURA, and the Explication of Table XXIX.

POLYTRICHUM; ſee TRICHOMANES.

POLYTRICHUM AUREUM; ſee ADIANTHUM AUREUM.

POLYTROPHIA. Abundant Nouriſhment.

POMACEUM. Cyder.

Cyder is the Juice of Apples, made ſpirituous by Fermentation; the Apples are gathered in Autumn, when they are ripe; then they are ground in a Mill, the Juice is preſſed out, and left to ferment in Hogſheads.

There may be as many Sorts of Cyder made, as there are different Sorts of Apples. Apples that are commonly eaten, and are of a ſweet pleaſing Taſte, produce Cyder that will not keep; and therefore others are preferred for this Purpoſe. Theſe Apples are of a curious Colour, but they have an harſh, bitter, and ſtyptic Taſte; which makes the Cyder pungent, ſtrong, and to keep long. Cyder ought to be fine, of a curious gold Colour, having a pleaſant Smell, and a pungent ſweet Taſte.

Cyder is pectoral; fortifies the Heart and Stomach; moiſtens, and quenches Thirſt; and is looked upon to be good for ſcorbutic and melancholy Perſons. When drank to Exceſs, it occaſions Drunkenneſs of longer Continuance, more dangerous, and of more pernicious Conſequences, than is produced by Wine.

By an exact Analyſis of Cyder, a ſulphureous Spirit is firſt drawn from it, and then Phlegm; afterwards, by the Help of a great Fire, a little thick Oil is extracted, and a Spirit, which is nothing but eſſential Salt, diſſolved in the Phlegm. What remains will yield a little fixed Salt by Calcination, Lotion, Filtration, and Evaporation.

When the Juice of Apples has not been well purified, it ſoon corrupts; becauſe the Dregs, which remain mixed with the Liquor, are ſmall Pieces of the Apples, which are as ſubject to rot, as the Apples themſelves, and give the Cyder an unpleaſant rotten Taſte. In order to purify it, ſome uſe Water-glue diſſolved in Wine; and, to prevent the Cyder from growing ſour, they put Muſtard into it. Others draw off what is clear, into earthen or glaſs Bottles, which are afterwards well corked.

Apples of an harſh and bitter Taſte are beſt for Cyder, becauſe they contain much eſſential Salt, proper for ſeparating the oily Parts from the Dregs. Beſides, theſe Apples ſupply the Cyder with a ſufficient Quantity of tartarous Parts, to hinder the Spirits from evaporating; and hence this Cyder is ſtronger, more pungent, and will keep the longer. On the contrary, ſweet Apples being deficient in theſe Particulars, the Cyder made from them quickly dies.

Cyder is good and wholſome, provided it be uſed with Moderation; and may be ſaid, in general, to be better for the Health than Wine, becauſe its Spirits are not ſo impetuous, nor ſo much agitated, as thoſe of Wine; and are, beſides, detained and moderated by a great Quantity of viſcous Phlegm, which ſtill contributes to make this Liquor moiſtening and cooling. We know by Experience, that moſt of thoſe who drink nothing but this Liquor, are ſtronger, more healthy, and look better, than thoſe who drink Wine; of which Lord *Bacon* gives us a remarkable Inſtance: Of eight old People, ſays he, ſome were near, and others above an hundred, who, during their whole Lives, drank nothing but Cyder, and were ſo vigorous, that they danced and jumped about like young Men.

Cyder, drank to Exceſs, does not intoxicate ſo ſoon as Wine; but the Drunkenneſs cauſed by it continues longer, becauſe its Spirit conveys along with it, into the Brain, a great many heavy and viſcous Particles, which hinder its ſudden Diſſipation. Theſe Viſcoſities, diſperſing themſelves afterwards, into all the Subſtance of the Brain, ſtop the Chanels of the Nerves, and oppreſs the animal Spirits, in ſuch a manner, that they require ſome time to recover themſelves, and to expel that which detain'd them in a kind of Repoſe and Unactivity. Hence proceeds that Sleepineſs after Drunkenneſs.

By letting the groſs Subſtance of the Apples ferment in Water, a moiſtening and cooling Liquor, called ſmall Cyder, is made. This Liquor will not produce Drunkenneſs, and many Women in *Normandy* make it their common Drink.

Of the Juice of Pears extracted and fermented, is made a kind of Cyder, or vinous Liquor, called Perry, which, in Colour and Taſte, reſembles White-wine. Bitteriſh and harſh Pears are beſt for this Purpoſe. As the Fermentation of both Liquors is the ſame, and as the Virtues of Perry are nearly allied to thoſe of Cyder, what has been ſaid may be ſufficient.

Many other ſpirituous Liquors may be made of the fermented Juices of ſeveral Fruits; but the greateſt Part of theſe Liquors never become ſpirituous, as Wine, or Cyder, and will not keep ſo long.

The Juice of Quinces, after it has been fermented, becomes viſcous. It fortifies the Stomach, works by Urine, is good for the Colic, Spitting of Blood, Dyſenteries; and qualifies the Motion of ſharp and bilious Humours, which cauſe Evacuations upwards and downwards. As this Liquor ſoon grows ſour, and decays, they mix Honey, Sugar, or the like, with it, to preſerve it.

Ananas is a juicy and delicious Fruit, that grows in the *Weſt Indies*, whoſe Juice the *Indians* extract, and make excellent Wine of it, which will intoxicate. Women with Child dare not drink it, becauſe they ſay it will make them miſcarry. The *Ethiopians*, alſo prepare a ſort of Wine, called *Sebanſcou*, from a certain Fruit that grows among them.

Pliny ſays, that they made a Liquor in *Egypt*, which was ſomewhat ſpirituous, of the Juice of Sebetes, which produced good Effects in Perſons of a bilious Conſtitution. The Juice of Jujubes, prepared in the ſame manner, has, alſo, the ſame Virtues.

From ſome Trees they draw Liquors, which are almoſt as ſpirituous and pleaſant, as thoſe we make from Fruits. A kind of a large and ſtrait Palm-tree grows in the *Indies*, called *Coquo*, in whoſe Branches they make Inciſions, and extract a vinous Juice, which the *Indians* call *Sura*, or *Taddi*, and from which they diſtil a good Spirit. They, alſo, make a ſort of Vinegar with this Juice, by expoſing it to the Sun: Others boil it upon the Fire, to make a ſweet Wine of it called *Orraca*.

The firſt Juice being drawn out of the Branches of the Tree, there comes out a ſecond, that is not ſo ſpirituous as the other, which they ſuffer to evaporate, in order to make a kind of Sugar of it, which they call *Jagra*.

The Fruit of this Tree ſupplies them, alſo, with a ſweet and well-taſted Liquor, which is very cooling and moiſtening.

The Birch-tree yields a Sap, which, being drank, is of an opening Nature. *Van Helmont* values it much for its Virtues in curing the Stone. Several Phyſicians, alſo, uſe it, for the ſame

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Lame Distemper, for the Strangury, and scorbutic Humours.

The Body, Branches, and Root of the Maple yield a sweet and pleasant Sap: This Liquor, Mr. *Ray* says, is more abounding in cold and rainy Weather, than in any other; whilst the Birch, on the contrary, yields more in hot and dry Weather.

The Root of the Nut-tree, also, yields a Juice, which *Boyle* and *Schroder* value much, they having observed it to have produced good Effects in the Gout, and several other Distempers.

Several other Trees supply different Nations with pleasant Drinks. *Lemery on Foods.*

The Countries in *England*, most celebrated for the Production of Cyder, are, *Herefordshire*, *Worcestershire*, and *Devonshire*. *Musgrave* informs us, that the *Devonshire* People are very subject to the Gout, which he attributes to the copious Use of strong Cyder. I have sometimes known an habitual Colic removed by an entire Change of Malt Liquor, or Wine, for Cyder, by way of common Drink.

POMAMBRA. Apples of Amber; these are made of odorous Powders, to which Oils may be added; and these Powders, being receiv'd in Wax, liquid Storax, or Mucilage of Tragacanth, with a little Turpentine, to render them tenacious, if it is necessary, and intimately incorporated, by an Addition of a proper Quantity of Rose-water, or some other such Liquor, are to be reduc'd to Balls of any Size, which shall be judg'd most expedient.

They derive their Name from Amber, not because that Substance is always and necessarily an Ingredient in them, but because they have a grateful Smell, and in that respect resemble Amber: Thus, for a Preparation of this Kind, we may take the Odoriferum Crollianum, which is prepar'd in the following manner:

> Take of Mace, Cloves, Cinnamon, or the Cassia Lignea, each two Drams; of Musk, Civet, and Gum Arabic, each one Dram; and of Tragacanth dried in a Furnace, two Drams.

Let these two Gums be triturated with the Musk; and, when all the other Ingredients are carefully triturated, mix the Civet with them, and add a sufficient Quantity of Water prepar'd from the Flowers of the Orange-tree; or the Water of Damask Roses, prepar'd with odorous Specifics, and Rose-water, in which has been digested for eight Days a small Quantity of the Carbo Paracelsi, or the Zibetta Occidentalis; all these are to be incorporated together.

The Carbo or Zibetta Occidentalis, so far as we may conjecture from the *Archidoxa* of *Paracelsus*, is nothing else but human Dung, or Sulphur plac'd in Digestion for some time, till, instead of its fetid Smell, it assumes one highly grateful and agreeable. See *Hartman* in *Croll*.

This Medicine may, also, be prepared by pulverizing the Mucilage of Tragacanth, dissolv'd in odoriferous Water, and mixing the other Ingredients with it.

This Medicine, when applied to the Nostrils, by its grateful Smell, conveys a brisk Motion to the Blood; and surprisingly comforts the Heart in Apoplexies, Epilepsies, Colics, Suffocations of the Uterus, and Plagues.

A small Quantity of it may be mix'd with express'd Oil of Nutmegs, in order to make a Liniment, to be us'd in the above mention'd Diseases. *Croll.*

Schroder, in his *Pharmacop.* gives three other Formulæ of the *Pomambra*; but, as they are of little Importance in Medicine, we refer the Reader to that Work without inserting them.

POMATUM UNGUENTUM. Take of fresh Hog's-lard, three Pounds; of fresh Sheep's-suet, nine Ounces; of the Apples commonly called Pome-waters, pared and sliced, one Pound nine Ounces; of the most fragrant Rose-water, six Ounces; of Florentine Orrice-root, grossly powdered, six Drams; let these boil together *in Balneo Mariæ*, till the Apples are dissolved; then strain without Expression, and keep for Use: Heat it then over again, and wash the Whole with Rose-water.

Almost all the officinal Dispensatories abound with Prescriptions for this Ointment. The Pharmacopœia Regia has one, containing these Ingredients, but crouded with many more; as has the *Augustan* Collection, one yet more loaded; but that, also, gives another from *Amatus Lusitanus*, much more contracted; and from thence, likewise, our College seemed first to take it, but yet with a farther Abridgment of Superfluities. *Zwelfer* takes great Pains, in his Animadversions, to teach the most convenient Manner of Composition, and Mixture of so many things of different Texture. But, as short a Compass as it is reduced to here, seemingly to avoid these Difficulties, the common Practice of the Shops has of late found out a much nearer way; which is by buying it of Persons, who make it their sole Business to beat up fresh Hogs-lard with Rose-water, into a kind of Curd; and scent it with any of the aromatic Oils, most suitable to the Liking of their Customers. *Quincy.*

POMPHOLYGODES. Frothy.

POMPHOLYGERON, πομφολυγηρόν. The Name of a Plaister describ'd by *Paulus Ægineta*, L. 7. C. 17.

POMPHOLYX, πομφόλυξ, is a Bubble excited in a liquid Substance, by some flatulent Spirit, or Air, contained therein. Thus πομφόλυγες are expounded in *Hesychius*, *αἱ ἐν τῷ ὕδατι γινόμεναι διάτασεις, ἢ φυσήματα ὕδατος*, "Tumors arising on the "Water, or Swellings of the Water." Bubbles, πομφόλυγες, appearing on the Top of the Urine, indicate a Disorder of the Kidneys, and that the same will be of long Continuance. *Hippocrates*, 7 *Aph.* 34.

POMPHOS, πομφός. Πομφοὶ, in *Galen*'s Exegesis, are expounded, *ἐπανασάσεις τὸ δέρματος ἰχθώδεις τε ἅμα καὶ πλαδαρὰς καὶ ἐνερυθεῖς*, "scaly Eminences or Tumors on the Skin, which "are at the same time red, and full of Moisture." In the Words *Galen* seems to have an Eye to that Passage of *Hippocrates*, (*Lib.* 2. *περὶ γυναικ.*) *καὶ ἐν τῇσι κνήμῃσι πομφοὶ ἀνίστανται*, "and *Pomphi* arise in the Legs." The Word occurs, also, *Lib.* 2. *de Morbis*, where we read *καὶ καταπίμπλαται πομφῶν ὡς ὑπὸ κνίδης*, "and she was full of *Pomphi* [red, watry Tumors], as "tho' she had been rubbed over with Nettles."

POMUM. See MALUS.

POMUM AMORIS. See AMORIS POMA.

POMUM ADAMI. A Name for the *Limon*, *fructu Aurantii*. *Pomum Adami* is, also, a Name for a Protuberance in the anterior Part of the Neck, form'd by the Thyroide Cartilage.

POMUM ARENOSUM. A Name for the GUAJAVA.

POMUM CITREUM. See CITREUM.

POMUM HIERUCHUNTANUM. A Name for the *Solanum*, *spinosum*; *fructu rotundo*.

POMUM SPINOSUM OPUNTIATUM. A Name for the *Melocactus*; *Indiæ Occidentalis*.

POMUM SYLVESTRE. See AGRIOMELA.

PONDO, or PONDUS. A Weight. See DRACHMA and LIBRA.

As it is necessary to be acquainted with the Weights us'd by different Nations, at different times, in order to understand their Practice, I have given Tables of the principal antient and modern Weights; and, after these, Table of their Measures.

PONGA. H. M. *Faca minor sylvestris Malabarica*. D. Commelin. *Tataisbæ Brasilienſium* Pison. *similis*. It is a tall evergreen Tree, growing in *Malabar*, and bearing no Flowers, at least none which are conspicuous; but the Fruit adheres to the Branches in the same manner as that of the *Faca*; whence the *Portugueſe* call the Tree the *wild Jaca*. The Calyxes are echinated, first green, and afterwards rediſh, and containing Multitudes of roundish-oblong, acuminated, and rediſh Seeds.

A Cataplasm prepared of the green Fruits of the Tree bruised, being apply'd to Tumors, potently promotes their Suppuration. Of the Bark and Root boiled in Water, is prepared a Fomentation for œdematous Tumors of the Legs, an endemic Disease among the *Indians*, and called by the *Portugueſe Pædo S. Thomæ*, which preserves them from an Inflammation. *Raii H. P.*

PONGAM. See MINARI.

PONGELION *sive Perimaram*. H. M. *Arbor Indica ſiliquoſa*, *Floribus racemoſis*, *pentapetalis*, *Siliquis foliaceis*, *ad ſingulos Flores ternis*. It is a tall large Tree, growing in several Parts of *Malabar*. The Oil, prepared of the Bark first bruised, and then boiled, being rubbed on the Body, extracts vicious Humours. The Juice which distils from the Tree, being drank with Butter-milk, discusses Flatulencies. The Fruit, triturated with *Mango*, and mix'd with a Decoction of Rice, being instilled into the Eyes, cures the Cephalalgia and Ophthalmy.

PONNA. H. M. *Prunifera ſeu Nucifera Malabarica Foliis Nymphææ*, *Fructu rotundo*, *Cortice pulvinato*. It is a vast Tree, thirty Yards in Height, and four in Thickness, bears ripe Fruit in *March* and *September*, and continues fruitful for the Space of three hundred Years; it grows in sandy Places almost everywhere in *Malabar*.

From the dry'd Kernels of the Fruit they express an Oil, which is used in Lamps, and cures Pains in the Limbs, being anointed therewith. Of the Bark of the Root macerated in Vinegar, they prepare an Extract, which, rubbed on the Head, cures the *Cephalæa*. The Tear which distils from the Tree, and its Fruit, being collected and exhibited, excites Vomiting, provokes to Stool, and violently purges corrupt Humours both upwards and downwards. *Raii H. P.*

Tsierou Ponna, H. M. is the *Malabarian* Cornel-tree, with Leaves like those of the *Nymphæa*. This is accounted a smaller Species of *Ponna*, and bears Fruit like that of our Cornel-tree, in Shape, Size, and Substance: This Fruit is eaten by the Natives, and from its Kernels they express an Oil, which is used in their Lamps, but is of no Service in Medicine. *Raii H. P.*

PONNAGAM, H. M. is a tall bacciferous *Indian* Tree with a smooth tricapsular Fruit, containing in each Capsula a single Seed. It is always cover'd with Leaves, Flowers, and Fruit.

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Of the Leaves and Fruit bruiſed, with Honey, is prepared a Cataplaſm, which, being apply'd, is a ſovereign Remedy for the Bite and Sting of Serpents, and other venomous Animals. The Root, bruiſed, and apply'd in the Form of a Cataplaſm to Contuſions, diſſolves the coagulated Blood, and cures the Part affected. *Raii H. P.*

Pee Tsjerou-Pommagam, H. M. is a larger Species of *Pommagam*, which grows to a greater Height than the former; but, in all other reſpects, is very little different from it. *Raii H. P.*

PONNAM. A Name for the *Senna*; *orientalis*; *fruticoſa*, *Sophera dicta.*

PONS VAROLII. The Name of a ſort of Arch in the *Cerebellum*, form'd by two medullary Proceſſes, call'd thus from *Varolius*, the firſt Obſerver of it.

PONTAGIA. A Term in *Paracelſus de Tartaro*, importing, as is ſaid, a Mixture of ſaline Subſtances with thoſe which are bitter, or ſtyptic.

PONTICUS, an Epithet in *Paracelſus*, expreſſive of a certain ſaline Taſte, reſembling that of Sea-water.

Pontica Vina are acid, feculent, and tartarous Wines.

Ponticum Mel is a ſort of poiſonous Honey. See ÆGOLETHRON.

POPONAX. The ſame as OPOPANAX.

POPLES. The Ham, or Joint of the Knee.

POPLITEUS MUSCULUS.

This is a ſmall Muſcle obliquely pyramidal, ſituated under the Ham; from whence it has its Name.

It is fixed above by a ſtrong narrow Tendon to the outer Edge of the inner Condyle of the Os Femoris, and to the neighbouring poſterior Ligament of the Joint. Thence it runs obliquely downward, under the inner Condyle of the Os Femoris; its flat, and pretty thick, fleſhy Body, increaſing gradually in Breadth, till it is fixed in the back Side of the Head of the Tibia all the Way to the oblique Line or Impreſſion obſervable on that Side.

The Popliteus performs the Rotation of the Leg, when bent, in a Direction contrary to that of the Biceps. The Biceps turns the Leg from before outward; the Popliteus from before inward. This Rotation, therefore, anſwers to the Pronation of the Radius, by the Pronator Teres; as that made by the Biceps Tibiæ does to the Supination made by the Biceps of the Arm.

This Muſcle is commonly reckoned among the Flexors of the Leg; but it ſeems very ill contrived for ſuch a Function, becauſe of the Obliquity of its Situation, and becauſe its Inſertion is ſo near the Centre of Motion of the Joint. By its Connection with the Capſular Ligament, it may ſerve to prevent its being catch'd between the two Bones in the Flexions of the Leg. *Winſlow.*

POPULAGO. Marſh-marigold.

The Characters are;

The Root is perennial, the Leaves are entire and roundiſh. The Flower is roſaceous, like that of the Ranunculus, and naked. The Fruit conſiſts of a Multitude of little Sheaths inflected downwards, ſtellated, and full of many oblong Seeds.

Boerhaave mentions two Species of *Populago*; which are,

1. Populago; flore majore. See CALENDULA *Paluſtris.*

2. Populago; flore pleno. *T.* 173. *Caltha paluſtris, flore pleno.* C. B. P. 276. *Pſeudo-helleborus ranunculoides, pratenſis, rotundifolius, multiplex.* M. H. 3. 461. *Boerh. Ind. Plant. Vol.* 1.

This Plant is ſaid to be of a refrigerating Quality, like the *Nymphæa*; but it is really of a very cauſtic Nature, ſo that Cattle avoid it, tho' in the greateſt want of Graſs; but, if they happen to eat it, they are firſt ſeized with an Inflammation of the Fauces, Oeſophagus, and Stomach, and at laſt die. Hence it appears to be a very acrimonious Herb, and of the Nature of Hellebore. *Hiſt. Plant. adſcript. Boerhaav.*

POPULARIS. Endemial, or Epidemical.

POPULUS.

The Characters are;

The Leaves are roundiſh. The Flower in the male Tree is amentaceous, and conſiſts of apiculated Leaves; from the ſquamous Calyx ſhoots forth a long Axis, to which grow on every Side maſculine Floſcules ſo diſpoſed, as by their Union to reſemble a Cat's Tail; each of theſe Floſcules conſiſts of a thin, caducous Membrane, furniſhed with an hairy Margin, and, under this of another leſs caducous Membrane, from which, on the ſupine Part, ariſe eight Stamina, furniſhed with red, indented, and adorned with a lanuginous Fimbria, or Fringe.

Boerhaave mentions five Species of *Populus*; which are,

1. Populus; alba; majoribus foliis. *Tourn. Inſt.* 592. *Boerh. Ind. A.* 2. 211. *Populus alba.* Offic. Ger. 1301. Emac. 1486. Park. Theat. 1410. Raii Hiſt. 2. 1418. Synop. 3. 446. *Populus alba λευκη.* J. B. 1. 155. *Populus alba (quæ λευκη ab albedine dicitur) majoribus foliis.* C. B. P. 429. THE ABELE, or WHITE POPLAR.

It delights in watry Places, and the Bark is of Uſe both inwardly and outwardly in the Sciatica, Strangury, and Ambuſtions.

2. Populus; alba; minoribus foliis. C. B. P. 429.

3. Populus; nigra. *Offic. Ger.* 1301. *Emac.* 1486. C. B. P. 429. *Park. Theat.* 1410. *Raii Hiſt.* 2. 1419. *Synop.* 3. 446. *Tourn. Inſt.* 592. *Boerh. Ind. A.* 2. 211. *Populus nigra ſeve* Αἴγειρος. J. B. 1. 155. THE BLACK POPLAR.

The black Poplar grows frequently to be a large Tree, having a whitiſh Bark, and ſmooth ſhining green Leaves, growing on long Foot-ſtalks; they are broad and round toward the Bottom, ending gradually in a narrow ſharp Point. The Stalks and Leaves have frequently large Swellings or Tumors on them, made by ſmall Inſects. The Catkins are long and looſe, coming out early in the Spring. It grows by watry Places and Rivers; the Leaves and Buds are uſed.

The only Uſe that they are put to, is to make the Unguentum Populeum; but, as the black Poplar is hot, the Ointment cannot receive its cooling Virtue from thoſe Leaves or Buds, but from the other Ingredients which are put in it. *Schroder* ſays, the Women in *Germany* uſe the Buds to make their Hair grow thick and ornamental. *Miller's Bot. Off.*

The Buds of this Tree are uſed in the Ointment of Poplar; to which *Tragus* adds the Root of Bryony, and the Tops of the Bramble: It is very lenifying, and is uſed with Succeſs in the Inflammation of the Piles; but a good Quantity of Opium muſt be added to it. The Tincture of the Buds with Spirit of Wine, is excellent for old Looſeneſſes, and internal Ulcers; the Doſe half a Dram, or a Dram, taken Morning and Evening in a Spoonful of warm Broth. *Martyn's Tournefort.*

The Eyes, or young Buds, gather'd in *April*, are uſed in Medicine. It is diſputed whether they are of a cold or hot Quality; but the moſt probable Opinion is, that they are moderately hot. *Dale.*

POPULEON, or POPULNEUM UNGUENTUM.

Take of the freſh black Poplar-buds, a Pound and an half; the Leaves of Violets, and Navelwort of the Wall, each three Ounces; freſh unſalted Hogs-lard, cleared from its Membranes, and waſhed, four Pounds. Bruiſe, mix, and macerate theſe together; and then add the tender Tops of the Bramble, Leaves of black Poppies, Mandrake, Henbane, Nightſhade, Lettuce, the greater Houſleek, and the greater Burdock, each three Ounces. Bruiſe again, and mix all together very well; and then after ten Days ſtanding, pour on them one Pound of Roſe-water; after which boil over a gentle Fire, continually ſtirring with a Spatula, until all the ſuperfluous Humidity is evaporated; then ſtrain and ſqueeze out with a Preſs, ſo as to obtain an Ointment, according to Art.

This is originally aſcribed to *Nicolaus*. The Pharmacopœia Regia gives a Preſcription of it, as, alſo, does the *Auguſtan* Diſpenſatory; but the latter comes much the nearer to what is here retained. The new College Diſpenſatory has corrected a Miſtake, which the former Editions were liable to, in expreſſing the Houſleek to be the greater Sort, becauſe the leſſer, commonly called Stone-crop, which was liable to be put in its ſtead, is of a very oppoſite Quality to the Intention of the Medicine. *Quincy.*

4. Populus; tremula. *Offic.* C. B. P. 429. *Tourn. Inſt.* 592. *Boerh. Ind. A.* 2. 411. *Populus Libyca.* Ger. 1302. Emac. 1487. Park. Theat. 1411. Raii Hiſt. 2. 1419. Synop. 3. 446. *Populus Libyca Plinii, κεγχις Theophraſti.* J. B. 1. 163. THE ASP or ASPEN-TREE.

It grows in Woods, and in moiſt watry Places; and the Leaves are ſuppoſed to agree in Virtues with thoſe of the black Poplar-tree.

5. Populo ſimilis arbor; reſinoſa altera. C. B. P. 430. *Tacamahaca.* Ibid. *Boer. Ind. alt. Plant. Vol.* 2.

The Bark of the Poplar is a very good Detergent, and the tender Buds are uſed by the Women in adorning and promoting the Growth of their Hair; they have, alſo, an anodyne Virtue, being externally apply'd; for which purpoſe they are an Ingredient in the *Unguentum Populeum*, ſo named from them: This Ointment is of excellent Service in the Hæmorrhoids, eſpecially if it be prepared with a good Quantity of Opium. The Tincture of the Buds is very good for an inveterate Diarrhœa, and internal Ulcers. The bruiſed Leaves are by ſome apply'd with good Succeſs in the Gout; and the Liquor, which is collected in the Cavities of the Poplar, is believed to cure Warts and the Impetigo. *Hiſt. Plant. adſcript. Boerhaav.*

PORCELLIONES. The ſame as MILLEPEDES.

PORCELLUS INDICUS. The *Guinea Pig.* The Fleſh of this Animal has not much Taſte, and is hard of Digeſtion. Some are of Opinion, that Broth prepared of it is good againſt Dyſenteries, and proper for exciting a Diſcharge of the Urine. *Lemery des Drogues.*

PORCUS MARINUS. The Sea-hog. This is a Species of Dolphin, or large oblong Fiſh, whoſe Noſe reſembles that of the Land Hog, and it digs up the Earth in the ſame Manner. This Fiſh is frequently carried up with the Tide into Rivers, and is very commonly ſeen at *Roan*, in the River *Seine*. It is of a yelloviſh Colour and very fat; its Fleſh is eaten, but is not very delicious, and is, beſides, ſomewhat hard of Digeſtion. When the Greaſe of it is melted, and perfumed with

ſome

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ſome odorous Plant, it is called the Oil of the Porpoiſe, or Sea-hog. It is of an emollient, reſolvent, and anodyne Quality, and good in Diſorders ariſing from a Coldneſs of the Humours. *Lemery des Drogues.*

PORCUS. Offic. *Porcus domeſticus ſive Sus.* Raii Synop. A. 92. *Sus.* Aldrov. de Quad. Biſul. 937. Geſn. de Quad. 872. Jonſ. de Quad. 70. Charlt. Exer. 13. Schw. de Quad. 123. *Mas* Aper, the BOAR. *Fœmina* Sus, the SOW. *Fœtus* Porcellus, a PIG. THE TAME SWINE, or HOG.

The Parts of this Animal, uſed for medicinal Purpoſes, are the Lard, the Gall, the Excrement, the Lungs, the Aſtragalus, and the Bladder. As the Lard is not of a very hot Quality, it is, therefore, made an Ingredient in refrigerating Ointments, and uſed for alleviating inveterate Pains of the Loins and Joints. *Dioſcorides* informs us, that the Gall of this Animal is uſed with great Succeſs againſt Ulcers of the Ears, and of all other Parts. It is, alſo, ſaid to prevent the Growth of the Hairs. The Excrements are of an emollient and diſcutient Quality, and for that Reaſon beneficial in Itchings, Exanthematous Eruptions; Corns of the Feet, and other hard Tubercles; the Excrements of this Animal, alſo, cure the Bites of venomous Animals, and ſtop Hæmorrhages of the Noſe; the Lungs are highly beneficial, if applied to Abraſions of the Skin contracted by the Shoes. The Aſtragalus is recommended for Fractures of the Bones, as alſo for Pains of the Neck and Head. The Bladder is beneficial to thoſe who diſcharge their Urine involuntarily. *Schrod.* It produces the ſame Effects, when applied to the Pubes, and is ſaid to provoke Urine. *Pliny. Dale.*

There are two Sorts of Hogs, the wild and the tame. Of the tame Hogs, thoſe are the propereſt for Food, which are neither too old, nor too young, which are large, fat, tender, and have been well fed, as with Acorns, Maſt, Beans, Turnep, and the like.

Pork is nouriſhing Food, and renders the Body ſoluble; but it is difficult to digeſt; produces dull, viſcous, and groſs Humours; and is improper for gouty Perſons.

It contains much Oil, volatile Salt, and Phlegm.

It agrees principally, in cold Weather, with young, hot and bilous Conſtitutions; with thoſe who have good Stomachs, and are uſed to labour, and exerciſe; but it has bad Effects upon old, weak, and tender Habits.

When an Hog is about a Year old, he is gelded, and in *Latin* called *Maialis*. He then grows fatter, and the Fleſh is more juicy, and better taſted, than before. A Sow is in *Latin* called *Porca*, or *Scropha*, and not ſo much fed for Food as the Hog, becauſe its Fleſh does not taſte ſo well.

A Pig, in *Latin* called *Porcellus*, is eſteemed an excellent Diſh, and that which is neither too young, nor too old, is moſt wholſome; when too young, it abounds too much with Humidity; and, when too old, it becomes hard of Digeſtion.

An Hog is ſubject to the Meaſles, Leproſy, and many other Diſtempers, becauſe it is full of groſs Humours, and ſuch as are liable to produce the like Diſeaſes in thoſe who feed upon them.

Pork affords a Food that does not eaſily waſte, becauſe it contains oily, balſamic, and viſcous Principles, which eaſily ſtick to the Fibres of the Parts, in ſuch a manner, that they are not without Difficulty ſeparated from them. Pork is, alſo, laxative, becauſe the oily and phlegmatic Principles, with which it abounds, looſen the Fibres of the Stomach and Entrails, and dilute the groſs Humours contained in thoſe Parts.

Galen ſays, that Pork is not only better taſted, than the Fleſh of other Animals, but, alſo, that it is more wholſome. He adds, that it nearly reſembles human Fleſh, which he proves, in his third Book, and ſecond Chapter, of the Nature of Foods, by an Account of certain Perſons, to whom he ordered human Fleſh to be preſented inſtead of Pork, which they eat without being able either by Taſte, or Smell, to diſcover the Fraud. Laſtly, he aſſures us, that Pork, when well digeſted in the Stomach, affords more Nouriſhment than any other Food; and ſays, that the Athletes, or Wreſtlers, and ſuch as were inured to hard Labour, were never ſo ſtrong and vigorous, as when they fed upon Pork; and that when thoſe People, who were uſed to this Food, lived but only one Day upon the Fleſh of another Animal, and ſtill continued the ſame Exerciſes, they found themſelves weaker the next; and when they continued ſeveral Days to diſuſe Pork, their Strength ſenſibly decayed, and they became lean.

We readily agree with *Galen*, that Pork may be very nouriſhing and wholſome, for thoſe who are uſed to Fatigue and hard Labour; becauſe it is durable Food, and not ſoon waſted. But Pork in general is not wholſome, and ought to be uſed moderately; for this Animal's Way of Living is lazy and unactive, and the Filth it continually feeds upon, plainly ſhews, that its Fleſh is full of viſcous and groſs Juices, fit to produce Humours of the ſame Nature, in thoſe who eat it, to cauſe Indigeſtions, and ſeveral other Inconveniences.

Some Nations never eat Pork, as the *Jews*, *Arabs*, *Mahometans*, *Moors*, *Tartars*, and others.

If we reflect upon the Diſtempers Swine are ſubject to, indiſputably from their habitual Way of living, and their noxious Juices thence contracted, we may, perhaps, find Reaſon to admire the Legiſlator of the Jews, who forbad the Uſe of it; and to commend the Wiſdom of the Eaſtern Nations, who eſteem it their Duty to obſerve this Prohibition. It is not at all improbable, that the Scurvy, a Diſtemper to which the Northern Nations are extremely ſubject, may be excited by the habitual eating of Swines Fleſh, eſpecially when hardened with Salt and Smoke.

Aper. Offic. Schrod. 5. 268. Schw. de Quad. 54. Aldrov. de Quad. Biſul. 1013. Geſn. de Quad. 918. Jons. de Quad. 74. Charlt. Exer. 13. Raii. Synop. A. 96. THE WILD SWINE, or BOAR.

The Parts of this Animal uſed for medicinal Purpoſes, are the Lard, the Teeth, the Penis, the Gall, the Excrements, and the Urine. The Lard is poſſeſs'd of the ſame Qualities, tho' in a ſtronger Degree, with that of the tame Swine. The Teeth are exhibited as a Specific in the Pleuriſy, and are ſaid to cure the Quinſey. The Penis and Teſticles are ſaid to remove Impotence and Barrenneſs. The Gall diſcuſſes ſtrumous Swellings. The Excrements, when dried, are thought beneficial in ſtopping Vomitings of Blood, and Hæmorrhages, when applied externally. The Urine is a Specific for reſolving and expelling the Stone of the Bladder. *Schrod. Dale.*

A wild Boar that is young, fat, well-fed, and tender-fleſhed, is beſt for Food; he ought, alſo, to be hunted, and well run. This Food is very nouriſhing, and does not ſoon waſte, but is eaſier of Digeſtion than common Pork. It produces groſs Humours, and is not good for ſedentary and tender Perſons.

All the Parts of a wild Boar contain much volatile Salt and Oil. Its Fleſh is good principally in Winter, for young People of an hot bilious Conſtitution, for thoſe that have a good Stomach, and are uſed to Fatigue.

The wild Boar is ſo called, becauſe it is of the ſame Shape and Size with the tame Hog, only that it lives in Woods. It is fiercer, more nimble, and rougher briſtled, than the other; and is uſually of a black, or dark red Colour: *Pauſanias* ſays he had ſeen white ones. *Pliny* and other Authors, aſſure us, that there were no wild Boars in *Candia*, *Africa*, and the *Indies*; and *Ælian* obſerves, they had none in *Macedonia*. The *Spaniards* have found ſome in *America*, which were much ſmaller, had a ſhorter Tail, and their Feet made otherwiſe than thoſe of our wild Boars; and their Fleſh was alſo more delicate, and eaſier of Digeſtion, than ours; and they found others in ſome Places with a Pair of Horns on their Heads.

The wild Boar in *Latin* is called *Verres Sylvaticus*, and the Sow *Sus fera* or *Scropha Sylveſtris*. *Pliny* ſays, that, *Servilius Rufus* was the firſt who introduced Hunting the wild Boar among the *Romans*.

The Fleſh of all wild Boars is not equally good. Thoſe that are pent up in Parks are inferior Food to thoſe that range at large, and feed upon Roots, Swine-bread, Corn, and Fruits.

The wild Boar is not of ſo moiſt a Nature as the common Hog, by reaſon of the Exerciſe, and different Food it lives upon; its Fleſh is, therefore, leſs viſcous, more agreeable to the Taſte, and eaſier of Digeſtion. This Fleſh is very nouriſhing, becauſe it contains oily and balſamic Juices; but it is proper only for thoſe who are of robuſt Conſtitutions, and inured to Fatigue; becauſe, being very compact in its Parts, it requires a ſtrong Stomach to digeſt it; and as Perſons who are uſed to much Exerciſe, loſe much of their Subſtance, they muſt have groſs Foods, which adhere to the Parts, and are not ſo eaſily ſpent. *Lemery on Foods.*

Porcus ſometimes imports the female *Pudenda*.

PORFILIGON. The Scales which fall from Iron upon being hammered. *Rulandus.*

PORFIRETICUM. A Braſs Mortar, or a Raſp. *Rulandus.*

POROCELE, πωροκήλη. A callous Hernia; from πῶρος, a Callus, and κήλη, a Rupture or Tumor.

POROMPHALON, πωρόμφαλον, from πῶρος, a Callus, and ὄμφαλος, the Navel. In the Definitions aſcribed to *Galen*, it is the Concretion of a Toph, or Callus, in the Navel.

POROPOEIA, ποροποιία, from πόρος, a Pore, or Paſſage, and ποιέω, to make. An Opening, or Reſeration, of the Pores, or Paſſages.

PÓROS, πόρος. A Pore, or Paſſage. See CUTIS, and PERSPIRATIO.

POROS, πῶρος. A Toph, or Callus. See PORUS.

POROSIS, The Generation of a *Callus*.

POROTICA, Medicines which generate a *Callus*.

PORPHYRA, See PURPURA.

PORPHYRIO. A Bird ſo called on account of its Colour, which reſembles that of Purple. It is a Water fowl, as large as a Cock, of a bluiſh or diverſified Colour, with a large, ſharp, and purple-coloured Beak. It has a Comb on its Head; its Legs are long, and its Feet divided into five Claws; its Tail is pretty ſhort, and the Fowl itſelf feeds upon any Kind of Fiſh it can catch. Its Fat is of an emollient, reſolvent, and anodyne Quality. *Lemery des Drogues.*

PORPHYRITES. *Offic. Worm.* 44. *Charlt. Foſſ.* 20. *Boet.* 505. PORPHYRY, or RED MARBLE.

This

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This is a Species of Marble highly hard, and of a red Colour; it is brought to us from the Confines of *Egypt*, the Red-ſea, and *Ethiopia*. It is thought to be poſſeſs'd of a Lithontriptic Quality, and to agree in Virtues with the OPHITES. The principal Uſe of Porphyry, in Medicine, is to levigate hard Subſtances, ſo as to reduce them to an impalpable Powder. *Dale.*

PORRACEUS. Of the Colour of Leeks.

PORRIFIGI. In Surgery, is the ſame as FICUS.

PORRIGO. A Diſorder of the Skin; the ſame as FURFUR. See LEPRA.

PORRUM.

The Characters are;

The Bulbs, or Roots, are oblong, narrow, almoſt cylindrical, and coated: The Leaves grow out of the Coats of the Roots, are plain, and ſometimes carinated.: The Flower is hexapetalous, as it were Bell-ſhaped, and adorned with broad and flat Stamina, ending in three Capillaments, the middle of which is adorned with an Apex; the Flowers are diſpoſed in almoſt globular Bunches: The Ovary becomes a roundiſh, tricapſular Fruit, full of roundiſh Seeds.

Boerhaave mentions four Species of *Porrum*; which are,

1. Porrum; commune; capitatum. *C. B. P.* 72. *Tourn. Inſt.* 382. *Boerh. Ind. A.* 2. 143. *Porrum.* Offic. Park. Parad. 512. Ger. 138. Raii Hiſt. 2. 1136. J. B. 2. 551. LEEKS.

Leeks are well known to have long, white, round Roots, with ſeveral white Fibres ſhooting from the Bottom; the Leaves are long and broad, encompaſſing the Stalk, which grows two or three Feet high, ſmooth and round, having at the Top a large, round Head, compoſed of a great Number of ſmall, greeniſh, purple, ſix-leaved Flowers. It is ſown in Gardens, and flowers in *June* and *July*; they have a ſtrong Onion-like Scent.

Leeks are more uſed in the Kitchen among Soops, and Broths, than in Medicine; they are warming and attenuating, and good to cleanſe the Lungs from tough Phlegm, and to help Shortneſs of Breath, and Stoppage of the Stomach; they are, likewiſe, reckoned good againſt the Bites of venomous Creatures. The Juice of them is uſed to diſſolve the Gums in the *Pilulæ fœtida. Miller's Bot. Off.*

2. Porrum, commune, capitatum. *C. B. P.* 72. *M. H.* 2. 390. *Capite, ſphærico, minori, floſculis, & pedunculis florum, carneis.*

3. Porrum, commune, capitatum. *C. B. P.* 72. *M. H.* 2. 390 *Capite ſphærico, maximo, floſculis candidis, pedunculis florum penitus viridibus.*

4. Porrum, commune, capitatum. *C. B. P.* 72. *Capite, ſphærico, minori, floſculis albis, in pedunculis penitus viridibus. Boerh. Ind. alt. Plant. Vol.* 2.

This Plant contains a fetid, oily, volatile Salt: Whence its Bulb being bruiſed, cauſes a Diſtillation of Tears from the Eyes and Noſtrils. For this Reaſon it is proper in Caſes where Heat is required, or where an Exceſs of Heat is not feared; but is injurious to thoſe who abound too much with Blood, or whoſe Blood is of too looſe a Contexture; as when it is voided by the urinary Paſſage, by an Hæmoptoe, or by the hæmorrhoidal Veins. It provokes the Menſes, and Urine; and is very good for the Bites of Serpents, and Combuſtions. *Hiſt. Plant. adſcript. Boerhaav.*

Beſides the foregoing Species of *Porrum*, *Dale* mentions the following.

Porrum vitigineum. Offic. Ger. Emac. 176. *Porrum tonſile.* Ger. 139. *Allium ſylveſtre Amphicarpon, foliis Porraceis, floribus, & nucleis purpureis.* R. Synop. Edit. 2. p. 230. VINE-LEEKS.

They have been obſerved by Mr. *Lawſon*, to grow on the Mountains of *Weſtmorland*, and to flower in *June*. The Leaves are uſed.

Dale takes this Plant for the *Ampelopraſum* of *Dioſcorides*; the Virtues of which ſee under the Article ALLIUM, from *Dioſcorides, Lib.* 1. *Cap.* 180.

PORRUM, or PORRUS, in *Fallopius*, is a Species of rough Wart, which reſembles the Root of a Leek, on account of a great Number of Filaments on the Surface.

PORTA. See HEPAR. The Female *Pudendum* is ſometimes thus called.

PORTAIGUILLE. The Name of a Chirurgical Inſtrument. See the Explication of *Fig.* 2. and 3. of *Tab.* XXVII.

PORTATILE. In the *Collectanea Chymica Leydenſia*, there is a Preparation of Tartar, intituled, *Acetum in Sacco Portatile.*

Take of white Tartar, half a Pound; after it is carefully waſh'd and dried, reduce it to a Powder; infuſe this Powder in ſtrong Wine-vinegar. Then dry the Powder again, and infuſe it a ſecond time in Vinegar. Let theſe Meaſures be repeated ten times, and an highly acid Powder will be obtained, which, when diſſolved in any Water, renders it acid; and this is called *Acetum Portabile*, or, *Portable Vinegar. Collect. Chym. Leyden.*

PORTORARIUM. The *Duodenum*, or the *Pylorus.*

PORTULACA.

The Characters are;

The Leaves are ſomewhat thick and ſucculent; the Calyx is monophyllous, bifid, and cloſely adheres to the Ovary; the Flower is roſaceous and pentapetalous. The Ovary in the Bottom of the Calyx becomes an oval Veſſel, conſiſting of two Shells, one within the other. Half the outer Shell, when ripe, burſts horizontally, or leaving an horizontal Opening, over the inner Shell, which afterwards flies open in the ſame horizontal Manner, diſcovering a Multitude of ſmall Seeds.

Boerhaave mentions ſix Species of *Portulaca*; which are,

1. Portulaca; latifolia; ſativa. *C. B. P.* 288. *Raii Hiſt.* 2. 1039. *Boerh. Ind. A.* 220. *Portulaca.* Offic. Park. Parad. 499. *Portulaca domeſtica.* Ger. 418. Emac. 521. PURSLANE.

This Plant is well known, and has round, ſmooth, reddiſh, and ſucculent brittle Stalks, with fat, thick Leaves, round, and broader at the End, than next the Stalk. The Flowers grow on the Tops of the Stalks among the Leaves, being ſmall, five-leaved, and yellow, ſucceeded by roundiſh Seed-veſſels, including ſmall, black, rugged Seed. The Root is ſmall and fibrous. It is ſown in Gardens; the Leaves and Seed are uſed. The Seed is one of the Four leſſer cold Seeds.

The Leaves are much uſed as a Salad, being cooling, and good for the Scurvy, attempering the Heat of the Bile; and help the Strangury, Heat of Urine, and Gonorrhœa. The Seed is cooling and reſtringent, and good to kill Worms. *Miller's Bot. Off.*

2. Portulaca; ſativa; latifolia; foliis flavis. *M. H.* 2. 570.

3. Portulaca; anguſtifolia; ſive ſylveſtris. *C. B. P.* 288. *Tourn. Inſt.* 236. *Boerh. Ind. A.* 220. *Portulaca ſylveſtris.* Offic. Ger. 418. Emac. 521. Park. Theat. 722. Raii Hiſt. 2. 1039. *Portulaca ſylveſtris minor ſive ſpontanea.* J. B. 3. 678. WILD PURSLANE.

It grows frequently in fallow Grounds, and by the Sides of Paths. The Herb is uſed, and agrees in Virtue with the common or Garden Purſlane.

4. Portulaca; Curaſſavica; lanuginoſa; procumbens. *Par. Bat.* 215.

5. Portulaca; Africana; ſempervirens; flore rubicundo. *H. A.* 2. 177.

6. Portulaca; Curaſſavica, folio capparidis. *Par. Bat.* 213. *Boerh. Ind. alt. Plant.*

This Plant affords an excellent Aliment and Medicine; its Parts are very ſucculent, and the Juice aſtringent, remarkably aperient, expulſive, and cooling in inflammatory Diſeaſes, and very good to waſh the Gums, when affected with a Gangrene. A Decoction of the Leaves makes an excellent Gargariſm for the Quinſey, and is no leſs ſerviceable in the Phrenſy, Pleuriſy, Peripneumony, Scurvy, and Inflammations of the Viſcera and Inteſtines; it tempers Bile, and is corroborative, eſpecially if the Plant be boiled with Whey. The Juice is ſomewhat acid, nitrous, and very viſcid: Whence it has the ſame Virtues as the *Sempervivum*, or *Nummularia*, which renders it qualify'd to correct an exceſſive Motion, or Volatility of the Spirits, a Putrefaction, and a Rigidneſs of the Fibres; whence it is of Service in all acute Diſeaſes. Being eaten in Salads in the Summer-ſeaſon, it mitigates Bile, and prevents Diſorders which may be juſtly apprehended from an Exceſs of that Humour; it deſtroys Worms, and is of Service in malignant putrid Fevers, Heat of Urine, and the Nephritis. The Leaves, applied to the Head, eaſe the Pains thereof; the diſtilled Water is very good for an exceſſive Flux of the Menſes, and for Hæmorrhages; the Juice is of great Efficacy in a Conſumption. The whole Plant is extremely full of Juice; ſo that if you compreſs and rub the Leaves between your Fingers, they will almoſt ſpend themſelves wholly in Juice; ſo that if you bruiſe a Pound of the Leaves, and ſqueeze out all the Juice, there will ſcarce remain a Dram of ſolid Subſtance. *Hiſt. Plant. adſcript. Boerh.*

Portulaca maritima. Offic. *Portulaca marina noſtras.* Park. 724. *Halimus ſive Portulaca marina.* C. B. 120. Raii Hiſt. 1. 195. *Halimus vulgaris ſive Portulaca marina.* Ger. Emac. 523. *Atriplex maritima anguſtiſſimo folio.* Tourn. Inſt. 505. COMMON SEA PURSLANE.

It is commonly found in the ſalt Marſhes, and flowers in *July* and *Auguſt*. The Leaves, and tender Branches, pickled after the manner of Samphire, are uſed by the *Engliſh* as well as the *Dutch*, in Sawces, for exciting an Appetite. *Raii Cat. Angl.* It is an hot Plant. *Magnol. Bot. Monpſ.* Mr. *Stubbs* commends it for a Coſmetic. *Dale.*

PORUS. See POROS.

PORI BILIARII. The Biliary Ducts. See HEPAR.

PORUS. *Pliny*, in the ſeventeenth Chapter of his thirty-ſixth Book, after he has ſpoken of ſarcophagous Stones, which ſoon conſume dead Bodies, which are laid in them, ſpeaks of others which have a contrary Property of preſerving them: Such, he ſays, was the *Chernites*, very much reſembling Ivory, in which it is reported *Darius* was laid; and ſuch another is the *Porus*, which, for Whiteneſs and Hardneſs, he deſcribes

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ſcribes to be like the *Parian* Stones, but leſs ponderous. *Pliny* is ſo brief in his Deſcription, that we are not certain whether he ſpeaks of the Stones which we now call *Pori*. Theſe have their Name from the Multitude of their Pores, or Perforations; in Subſtances they reſemble Coral, and only differ from it in their Poroſneſs. Some of them are near akin to Coral; others are widely different from it. Thoſe of the whiteſt and cloſeſt Subſtance much reſemble Coral, and ſpread themſelves in Branches after the ſame manner; but it muſt be obſerved, that they are all white in general. Thoſe which are wrinkled have ſtriated Lines, which run along the Trunk, and even to the Extremities of the Branches lengthwiſe; and they are, alſo, furniſhed within their internal porous Subſtances with Meatuſes, which proceed according to the Longitude of the Branches, being ſeparated by the Interpoſition of a ſort of Thread. Thoſe which have Punctations in their Superficies, have their Meatus interrupted by Rays proceeding from a Centre in the interpoſed Thread to the Circumference. *Ray* from *J. Bauhine*.

POSCA. Oxycrate, that is, Vinegar and Water.

POSSETUM. A Poſſet. The foreign Writers mention this as a ſort of Food, or rather Medicine, peculiar to the *Engliſh*. The Serum of a Poſſet, or Poſſet-drink, appears to be an excellent Liquor, either conſidered as a Medicine, or Aliment, from what is ſaid of Whey, under the Article Lac.

POSTBRACHIALE. The Metacarpus.

POSTHE, πόσθη. The Prepuce.

POSTHIA, πεσθία. A Diſeaſe of the Eye-lids; the ſame as Crithe, or Hordeolum.

POSTPOSITIO. When the Paroxyſm of an intermittent Fever comes on later than it is expected, this is called the *Poſtpoſition of the Paroxyſm*; as when it ſeizes ſooner, it is called the *Anticipation*. The firſt is eſteemed a good Sign; the latter, the reverſe.

POTABILE AURUM. See Aurum.

POTABILIS MARS. In the *Collectanea Chymica Leidenſia*, we find three Preparations of Iron under this Title, from *de Maets*. The firſt of them is thus prepared:

Take of the Filings of Iron finely triturated, and of the whiteſt crude Tartar obtained from *Rheniſh* Wine, each as much as you pleaſe; and of filtrated Rain-water, a ſufficient Quantity to form into ſmall Balls: Dry theſe Balls in the Sun, and bake them along with Loaves in an Oven. Then reduce them to a Powder again; and with a ſufficient Quantity of Rain-water, as before, form them into Balls, and again bake them in an Oven. Theſe Meaſures are to be repeated, till the Iron is found to be ſoluble in any Liquor. This Medicine is to be exhibited in a Spoonful of Rain-water. The Doſe is from ſix to ſixteen Grains, and one Scruple.

Or,

Take of the fineſt Filings of Iron, one Part; and of the Flowers of Sulphur, two Parts. Triturate them together, and add a ſufficient Quantity of Rain-water to reduce them to the Form of a Poultice. Let them ſtand in a moderately warm Digeſtion for twelve Hours. Then pour as much Rain-water upon them as riſes three or four Inches above them, and boil all together, till a yellow Tincture is extracted. When this Tincture is poured off, and filtrated, inſpiſſate it till only a fourth Part of it remains; for by this means it will in a few Days aſſume an highly red Colour.

But the moſt ſimple Method of exhibiting Iron, for removing any Obſtructions, and eſpecially for promoting the Menſes, and deſtroying peccant, acid, and auſtere Ferments, is the following:

Take of well-waſhed Filings of Iron, triturated in Alcohol, and paſſed through a fine Sieve, one Part; of the fineſt Sugar, half the Quantity; and of Mace, a fourth Part: Mix them intimately together. The Doſe of this Powder is as much as may be contained on the Point of a Knife.

POTAMOGEITON.

The Characters are;

The Root is fibrous and perennial; the Leaves are diſpoſed alternately on the Stalks, and ariſe at the Origin of the Pedicle of the ſpiked Flowers. The Calyx is tetraphyllous, the Flower tetrapetalous, and diſpoſed in Spikes. The Seeds are angulous, naked, four in Number, each ſucceeding its Floſcule. The Plant is produced in the Waters, and grows under them.

Boerhaave mentions eleven Species of this Plant; which are,

1. Potamogeiton; rotundifolium. *C. B. P.* 193. *Raii Hiſt.* 1. 188. *Synop.* 60. *Tourn. Inſt.* 233. *Boerh. Ind. A.* 196. *Potamogeiton.* Offic. *Potamogeiton rotundiore folio.* J. B. 3. 776. *Potamogeiton latifolium.* Ger. 675. Emac. 821. *Potamogeiton latifolium vulgaris.* Park. 1254. POND-WEED.

This Plant is frequently found in ſtagnant Waters and Fiſh-ponds. It flowers in the Months of *June* and *July*. The only Part of it uſed is the Herb, which is of a refrigerating and inſpiſſating Quality. It is, alſo, beneficial againſt Itchings, inveterate Ulcers, and Nomæ. *Dioſco. Dale.*

This Plant receives the Name of *Potamogeiton*, from the *Greek* Words ποταμὸς, a River, and γείτων, adjacent, becauſe it grows about Fountains; *Millefolium*, from the Smalneſs of its Leaves; and *Viola Aquatica*, from the Colour of its Flowers. *Hiſt. Plant. adſcript. Boerhaav.*

2. Potamogeiton; foliis latis; ſplendentibus. *C. B. P.* 193.

3. Potamogeiton; longo; ſerrato; folio. *C. B. P.* 193. *Lapathum, fluitans, longo, ſerrato, folio.* J. B. 2. 988.

4. Potamogeiton; foliis criſpis, conjugatis. *Tribulus aquaticus, minor, alter.* Cluſ. H. 252.

5. Potamogeiton; ſeu Fontalis criſpa; foliis alternis; caulículis compreſſis. *Tribulus, aquaticus, minor.* Cluſ. H. 252.

6. Potamogeiton; aquis immerſum; folio pellucido, lato, oblongo, acuto. *Raii Synop. C.* 1.

7. Potamogeiton; caule compreſſo; foliis graminis canini. *Raii Synop.* 61.

8. Potamogeiton; puſillum; gramineo folio; caule rotundo. *Raii Hiſt.* 190.

9. Potamogeiton; floſculis ad foliorum nodos. *T.* 233. *Millefolium, aquaticum floſculis ad foliorum nodos.* C. B. P. 141. *Myriophyllum, aquaticum, minus.* Cluſ. H. 252.

10. Potamogeiton; foliis pennatis. *T.* 233. *Millefolium, aquaticum, pennatum, ſpicatum.* C. B. Prodr. 73.

11. Potamogeiton; ramoſum; anguſtifolium. *C. B. P.* 193. *J. B.* 3. 778. *Boerh. Ind. alt. Plant.*

Potamogeiton, salicis folio. A Name for the *Perſicaria, ſalicis folio, perennis.*

POTASH. See Alcali.

POTENTILLA. A Name for the *Pentaphylloides; argenteum; alatum; ſeu Potentilla.*

POTERIUM. See Tragacantha.

POTERIUM, ποτήριον, is, alſo, a Name for a *Malagma*, recommended by *Galen* for a Dropſy, *L.* 9. *de Comp. M. S. L. Cap.* 3.

POTIO. A Potion; a liquid Form of a Medicine, conſiſting of as much as can be drank at one Draught. The Writers on Pharmacy diſtinguiſh Potions into Cathartic, Cardiac, and Alterative.

POUST. The *Indian* Name for a baſe Kind of Opium, procured by boiling the Leaves and Stalks of the Poppy.

POUTALETSJA. The Name of a low Berry-bearing Shrub, which is very common in *Malabar*.

Of the Leaves of this Tree boiled in Milk, they prepare a Drink, which prevents Sleep, and is of Service in a Lethargy, and other ſoporous Affections. The Leaves, Flowers, Bark, Root, and other Parts boiled in Water, make a Bath, which is of Efficacy in the Epilepſy, and other ſpaſmodic Diſorders. *Raii Hiſt. Plant.*

PRÆBIUM. A Doſe; the Quantity of a Medicine exhibited at one time.

PRÆCIPITANTIA. Precipitating Medicines; that is, Medicines which moderate the Motion and Heat of the Blood, as was ſuppoſed, by abſorbing and correcting the Acid contained therein. *Præcipitans Magnum* is a Name for the *Os Sepiæ*.

PRÆCIPITATIO. Precipitation is that Proceſs, by which Particles, after having floated, and been ſuſpended ſome time in a Menſtruum, at length ſink to the Bottom. Theſe Particles ſometimes precipitate of their own Accord, but oftener by the Aſſiſtance of ſome other Liquor added to the Menſtruum. The Reaſon of the Deſcent in both Caſes is the ſame.

It may be eaſily conceived, that Fluids may be made to ſuſtain Bodies ſpecifically heavier than themſelves; by making the Reſiſtance, ariſing from the Coheſion of the Parts of the Fluids, equal to the Exceſs which there is of ſpecific Gravity in thoſe Bodies above the Menſtruum. And it has been ſhewn, that this Reſiſtance is proportional to the Surface of the Corpuſcles. Therefore a contrary Condition to this, is all that is requiſite to their being ſuſtain'd no longer; or, which is the ſame thing, to their Precipitation: That the Tenacity of the Menſtruum be not proportional to the Gravity of the Corpuſcles: And this may be produced two Ways.

In the firſt place, Precipitation generally follows upon dropping in a Liquor ſpecifically lighter: For, by this Mixture, the Gravity of the Menſtruum, which always is proportional to the compound Gravities of both Liquors, become lighter. The Menſtruum being thus diluted, the Force of Coheſion is, alſo, weaken'd, ſo that it is not able to reſiſt, or bear up, the Bodies diſſolved in

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in it: Hereupon, the Equilibrium being taken off, they are precipitated by the Force of their own Gravity, just in the same manner as Hydrometers, which are eaſily ſuſtain'd in Water, upon pouring in a good deal of any inflammable Spirits, ſink to the Bottom of the Glaſs. And this does not only agree very exactly with the Laws of Mechanics, but, alſo, with Experiments themſelves. Thus Spirit of Sal Ammoniac does very plentifully precipitate the Filings of Metals, which are diſſolved in acid Menſtruums, though it be abundantly lighter than any of them. The ſame thing is done quicker by Spirit of Wine, whoſe Gravity is known to be almoſt the leaſt of any. By this Spirit, alſo, all Salts which are ſuſpended in Water, are precipitated, and afterwards unite into Cryſtals: So, if you drop in diſtil'd Vinegar the Droſs of Antimony, diffuſed in Water, it falls to the Bottom, and affords the Golden Sulphur. After the ſame manner, Water, Vinegar, *&c.* make a Precipitation from Acids, tho' more ſparingly. Acids themſelves, being poured upon others which are heavier, will precipitate whatever is ſwimming in them. Thus Spirit of Salt precipitates either Lead, Copper, or Tin, diſſolved in Oil of Vitriol. So little need is there for Alcalies in this Buſineſs, though all the Chymiſts have unanimouſly contended for them as abſolutely neceſſary.

In the ſecond place, Precipitation will ſucceed as well, if there be added an heavier Liquor to the Menſtruum: For the Particles of this Liquor, what with their Weight, and what with the Impetus they acquire in their Deſcent, carry down and ſink all the ſolid Corpuſcles they meet with in their Way: So that the Corpuſcles, being thus forced down, and kept there by this adventitious Liquor, cannot mount up into their former Situation. And, if any one has a mind to try the Truth of this Reaſoning by Experiments, there are enough to confirm it: For not only acid Spirits, but Water alone, will precipitate Tinctures of Vegetables extracted by Spirit of Wine. And the very ſame Tinctures, extracted with Water or Wine, are precipitated very copiouſly by acid Spirits, which are heavier. After this manner, Metals which are diſſolved in Spirit of Sal Ammoniac, are precipitated with Oil of Vitriol, or Spirit of Nitre. The ſame Bodies, though ſuſpended in Aqua-fortis, are eaſily precipitated with Oil of Vitriol, or Bezoartic Spirit of Nitre. And this very Oil, if poured upon Sal Volatile Oleoſum, or any other Solution of Salt, ever ſo much ſaturated, does not only ſink the ſmaller Particles, but converts almoſt the whole Liquor into Salt. For when theſe Liquors are poured upon one another, the Salts with which they abound, being put into Motion by their attractive Force, run mutually towards one another; and, becauſe they don't recoil far back after the Shock, they are at length ſo united, as to become like a Solid, there being very little Phlegm remaining. The ſame may, alſo, be obſerved in *Tartarum Vitriolatum*. In making all theſe Experiments, there happens ſuch a Conflict and Effervescence, as evaporates almoſt all the Moiſture, with which the Salts are diluted. And upon this depends the Rationale of chymical Coagulation, a thing of very great Conſequence in the Buſineſs of Precipitation. Nor can we account for Oil of Tartar's precipitating Bodies diſſolved in Acids, any otherwiſe than from its making a kind of Coagulation with theſe Corpuſcles, which thereby becomes too heavy for, and exceeds the Tenacity of the Menſtruum.

Nor does Coagulation ſucceed only upon the mixing of heavier Fluids, but it, alſo, very often promotes Precipitation, when the Gravity of the inſtil'd Liquor is entirely equal to that of the Menſtruum, or but very little different from it. And this Agglutination of Parts is to be ſeen in many Liquors, but moſt of all in ſaline ones. Thus Spirit of Sal Ammoniac, Spirit of Hartſhorn, that of human Blood, and Sal Volatile Oleoſum, whoſe Gravities are nearly the ſame as that of common Water, precipitate the Solution of Sublimate very plentifully, as you may obſerve in making white Precipitate of Mercury: In which Experiment, the Increaſe of the Weight gives ſufficient Indication of an Union of thoſe Salts, which are pretty copious in the Sublimate, and Liquors which are poured upon it: For that which ſubſides at the Bottom, exceeds in Weight the Sublimate which was at firſt put in. Alſo, the Magiſteries of Vegetables, extracted by Precipitation, confirm this Account of Coagulation; for theſe have a greater ſpecific Gravity than the Powders of the Plants they are made from. This additional Weight, therefore, is to be imputed to the Particles of the Liquor, with which Precipitation is performed. *Quincy.*

PRÆCORDIA. The Diaphragm. The Word, alſo, very commonly imports the ſame as *Hypochondria*, which, according to *Galen*, in *Prorrhet.* are thoſe Parts above the Navel, which on both Sides are ſubjacent to the ſpurious Ribs; for the *Epigaſtrium*, or *Abdomen*, ſays the ſame Author, *Com.* in 2 *Aph.* 35. is divided into the Hypochondrium, the Parts about the Navel, and the lower Belly, (which the *Greeks* call ὑπογάστριον, *Eutron*) which lies between the Navel and the Pudenda [See a very accurate Diviſion of thoſe Parts under the Article Abdomen]. The *Præcordia*, or *Hypochondria*, then, may be more fully deſcribed, as that external Part of the Abdomen, which extends itſelf above the Navel on both Sides, from the *Ilia*, under the cartilaginous Parts called the *ſpurious Ribs*, (ſituated above the empty Places called the *Ceneones*) and comprehending, in the Right Side, the Liver; and, in the Left, the Spleen. But the Word, in a larger Senſe, is uſed to ſignify all the inferior Parts comprehended within this Region, as the Stomach, Liver, Spleen, and Diaphragm; which is the Signification of the Word ὑποχονδείων in that Sentence, 1 *Prorrh.* 56. where it is ſaid, that "Fevers proceeding from Pains of "the *Præcordia*, or *Hypochondria*, are of a malignant Nature." And let this ſuffice for adjuſting our Notion of the *Præcordia*, by which we mean that Part of the Abdomen which is ſituated above the Navel, and extends itſelf to the Right and Left under the ſpurious Ribs.

The *Præcordia* (which we ſhall henceforth in this Diſcourſe call *Hypochondria*) may be regarded, firſt, as in a State which is uſual to Perſons in Health, and is beſt for the Patient; or they may be conſidered as in a bad Condition, and unlike that of healthy Perſons; as when, for Inſtance, they are affected with Tenſions, Pains, Tumors, and Suppurations. On this Subject we may obſerve *Hippocrates* ſpeaking in his *Prognoſtics*, where he ſays, "The Hypochondria are in the beſt State when "they are free from Pain, and are ſoft and equal both on the "Right and Left Side." And he might juſtly ſay ſo; for, when the Hypochondria are in ſuch a State, we are ſatisfied, that no Part contained within their Region, as, for Inſtance, the Stomach, or Diaphragm, have received any Injury. And the good State of thoſe Parts under acute Fevers is of no ſmall Moment towards prognoſticating an happy Event; and it is impoſſible for any of thoſe Parts to be injur'd, and the *Hypochondria*, at the ſame time, to be ſoft, and free from Pain. In acute Diſeaſes, therefore, it is of extraordinary Moment towards predicting a Recovery, for the Hypochondria to appear in a very good Condition, as, when they are ſoft, equal, and free from Pain, both on the Right and Left Sides.

With reſpect to the Thickneſs or Carnoſity, and the Thinneſs or emaciated State, of the *Hypochondria*, *Hippocrates*, 2 *Aph.* 35. commends the former, in pronouncing, that, "Under "all Diſeaſes, it is better for the Parts about the Navel, and "the lower Belly, to appear thick and fleſhy; but when they "are remarkably lean and extenuated, it is a bad Sign." Whence it follows, that the *Hypochondria* when thick and carnous, have a promiſing Aſpect. But the beſt way will be for us, firſt, to procure a thorough Knowledge of the Patient's *Hypochondria*, and of the State, whatever it be, in which they uſually appear; for, oftentimes, they are perceived to be unequal, and not alike ſoft, in Perſons enjoying a good State of Health; for which Reaſon, not only thoſe *Hypochondria* which are in the beſt State, but ſometimes thoſe which are unequal and tenſe, provided they were ſo when the Patient enjoy'd Health, afford a good Prognoſtic. It is not, however, as good a Sign to have the *Hypochondria* tenſe and unequal, though it be no more than what was uſual in Health, as to have them ſoft, equal, and free from Pain. But thoſe tenſe and unequal *Hypochondria*, which are elevated into a Tumor attended with Pain, are always bad, unleſs they appear as Signs of a Criſis, at the Approach of which there is frequently a Tenſion, Tumor, or Pain, of the *Hypochondria*.

Of critical Tenſions of the *Hypochondria*, the Author of 1 *Prorrhet.* 144. thus ſpeaks: "Palpitations about the Belly, "with an oblong Tumor and Tenſeneſs of the *Hypochondria*, "indicate an Hæmorrhage." And a little after, *Text.* 147. "A Tenſion of the *Hypochondria*, with an Heavineſs of the "Head, Deafneſs, and Confuſedneſs of Sight, prognoſticate "an Hæmorrhage." *Galen*, alſo, in his third Book of *Criſes*, ſays, that a Tenſion of the *Hypochondria* without Pain is a proper Sign of an approaching Hæmorrhage from the Noſe; but when the Tenſion is accompanied with Pain, it is no Prognoſtic of an Hæmorrhage, but indicates an Inflammation. Hence we infer, that a Tenſion of the *Hypochondria* without Pain, and ſometimes, from the great Degree of Tenſion thro' the Redundance of the Blood, with Pain, a Dulneſs of the Sight, or Scintillations ſtriking on the Eyes, an Heavineſs of the Head, with a Redneſs, or high Colour, of the Face, are all critical; and, in particular, are Signs of an approaching Hæmorrhage from the Noſe: For which we have the Authority of *Galen*, *Lib.* 3. *de Criſibus*, *& Lib. de Præſag. ad Poſthumum*, and the Author of the *Prorrhetica*, *Lib.* 1. *&* 2. But a Tenſion of the *Hypochondria*, accompanied with a Coma, Anxiety, and Pain of the Head, are Signs of the Parotides, according to the Author of the *Coac.* 289. And *Hippocrates*, *Lib. Prognoſt.* teaching us to prognoſticate future critical Abſceſſes from Tenſions of the *Hypochondria*, ſays, "That an Inflammation about "the *Hypochondria* is ſucceeded by an Abſceſs in the inferior "Parts;

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" Parts; but if the *Hypochondria* be soft, and free from Pain, " you may expect an Abscess in the superior Parts of the Body." Hence it plainly appears, that even a Tension of the *Hypochondria* is sometimes very good and salutary, as it is an Indication of an approaching critical Evacuation.

We may reason in the same manner with respect to *Tumors* of the *Hypochondria*, though rarely any good Event may seem to be prognosticated from Tumors in those Parts. *Hippocrates*, however, in his *Prognostics*, speaking of those Tumors, says, " That soft Tumors, which are free from Pain, and yielding " to the Touch, remove the Crisis to a greater Distance of " Time, and are less to be dreaded." And more plainly to the same Purpose, a little after, he says, " Soft Tumors, in- " dolent, and yielding to a Pressure with the Finger, are slower " in coming to a Crisis, and less dangerous." Again, in the same Book, he tells us, that " Tumors of the Belly are less dis- " posed to form Abscesses than Tumors of the *Hypochondria*, " and Tumors below the Navel least of all; but an Hæmor- " rhage may be expect d from the superior Parts." And, *Coac.* 290. " A Tumor of the *Hypochondria*, succeeded by a great " or full Respiration, and an high Fever, in bilious Patients, " occasion the Parotides;" because in such Constitutions the bilious Humours take their Course upwards.

There are, also, Pains of the *Hypochondria*, which are critical; as, when they are occasioned by a Redundance of Blood distending the Vessels: The Signs concomitant, and indicating a Crisis, are, as we said before, an high Fever, an Heaviness of the Head, or Deafness, or Dimness of Sight, or a Redness of the Face. To this we may add, that Pains of the *Hypochondria* are not bad, when succeeded by a Fever. Of these Pains we find *Hippocrates*, 6 *Aph.* 40. thus pronouncing: " They " who are afflicted with Pains about the *Hypochondria*, with- " out an Inflammation, are relieved from them by the coming " on of a Fever." And, *Coac.* 281. we read, " That Pains " and Tumors of the *Hypochondria*, if recent, and not attend- " ed with an Inflammation, meet with a Solution from Rum- " blings arising in those Parts, and especially from their Erup- " tion together with Discharge by Stool and Urine."

Of Abscesses affecting the *Hypochondria*, the Author of the *Coac.* 281. pronounces, that, " As to those which break out- " wardly, it is best, that they should be contracted into a very " small Space, and to a very sharp Head." And, continuing to speak of the same Abscesses, he says, " For those which tend " inwardly, they are to be accounted the safest, which shew no " outward Mark of themselves, neither by Tumor, nor Pain, " nor Colour; but the contrary to these are of the worst " Kind."

The *Hypochondria*, in acute Diseases, tense, hard, pained, and unequal, are bad, as we are taught by *Hippocrates* in the *Prognostics*; and the same Author, 2 *Aph.* 35. passes a like Judgment on a remarkable Emaciation or Extenuation of those Parts. But, in order to a clearer and more distinct Notion of these Disorders, which affect the *Hypochondria*, and are all of them bad Prognostics, if attended with other bad Signs, we shall choose to treat of them all singly, and of their Causes, before we inquire what Prognostics may be formed from them; for without a just Idea of those Disorders, and some Knowledge of the Causes from whence they proceed, we shall never be able, with any tolerable Certainty, to form Predictions from them.

We shall begin, then, with a Tension of the *Hypochondria*; which Disorder is sometimes accompanied with a Tumor, and an Hardness which resists the Touch. Sometimes there is a Tenseness of the Parts without a Tumor, in such a manner, that though they appear distended, yet they are empty; and such Tensions as these, are what *Galen* calls *empty*, *softish*, and *tumorless Tensions*. *Hippocrates* has sometimes Occasion to speak of these Tensions, as in 3 *Epid. Ægr.* 2. where he says of *Hermocrates*, that " He had a soft Tension of the *Hypochon-* " *dria*." Sometimes he calls those Kinds of Tensions ὑπολαπάρας, " softish;" and the *Hypochondria* thus affected, μετέωρα, " elevated;" as he does in the Case of *Erasinus*, 1 *Epid. Ægr.* 8. In such Cases there is indeed a Tension of the *Hypochondria*, but such a Tension as is empty, and free from any hard Tumor. As to their Figure, these Tensions are sometimes oblong, according to that of the *Musculi Recti Abdominis*; sometimes broad, and sometimes round like a Crescent, in which Shape Tumors of the Liver are represented.

A Tension of the Hypochondria is attended with an Hardness, or an hard Tumor, from an Inflammation affecting either the Muscles, or the convex or gibbous Part of the Liver, or the Spleen, or even the Stomach. There is, also, a Tension without Hardness, as from a Repletion of the Muscles with a flatulent Spirit; and a Tension with an Hardness, but no Tumor, as from a Redundance of Blood in the Vessels. A Tension without Hardness is, also, without Pain, as is frequently observed, where a copious Hæmorrhage from the Nose succeeds; a Tension from a Flatus is without Hardness, and without Sense of Weight; a Tension from a Redundance of Blood is attended with both; and, lastly, a Tension from an Inflammation is attended with a Tumor, if an Inflammation affects the external Part of the Muscles, or the convex Part of the Liver, or the Spleen, or the Stomach. And this is the Doctrine of Tensions in general. But we think ourselves obliged to be more explicit, because it has been said, that a Tension of the Hypochondria, attended with an Hardness, proceeds from an Inflammation of the Viscera before-mentioned; whence we may be inclined to conclude, that this kind of Tension is always from the same Cause. This, indeed, is true; for all Tensions, attended with a Tumor, or Hardness, and Pain, indicate an Inflammation of the Viscera: Yet it is as true, according to the Doctrine of *Galen*, that there are several Sorts of Tensions, which are not hard, but soft, or, as the same Author explains it, void, empty, and sublime; and these Tensions may not be accompanied with an Inflammation of the Viscera; for which Reason they deserve our more accurate Examination. Those Tensions, then, which are soft, or empty, or tumorless, which Words all signify the same thing, are caused either by an Inflammation of the internal Parts of the Viscera, or by a Driness in the Origin of the Nerves, which supply the Diaphragm. Hence the Hypochondria are attracted upwards, and, on that account, are sometimes, by *Hippocrates*, call'd properly μετέωρα, " sublime." In this Case the Hypochondria are, indeed, distended; but the Inflammation being seated in the internal Parts of the Viscera, remote from our Notice, there is no concomitant Tumor, nor Hardness. *Galen*, in 3. *Epid. Com.* 2. *Text.* 1. tells us, that " a " soft Renitency of the Hypochondria indicates an Inflammation " of some Part of the Viscera, as the Liver, Diaphragm, or " Spleen." And the same Author, on 1 *Epid.* treating of the Tension which affected the Hypochondria of *Silenus*, says, that " through an Inflammation of the Diaphragm, the Hypo- " chondrium, by virtue of its Continuity, was attracted up- " wards, and distended, without a Tumor." Again, on 3 *Epid.* speaking of this kind of Tension, he has these Words: " As if he " (*Hippocrates*) had said, the Right Hypochondrium was dis- " tended, but without a Tumor, either because the Inflam- " mation of the Liver was not great, or affected only the lowest " Parts, by which it is united to the Belly; the gibbous Part " thereof, in Conjunction with the inferior Parts, being not as " yet elevated into a Tumor:" And this was the Case of *Hermocrates*. The Hypochondria, then, may be affected with a Tension of a soft kind, that is, without a Tumor, from an Inflammation of the Diaphragm, Spleen, or Liver, provided this last-mentioned be not wholly nor violently affected, but in a small Degree, or only in its lower Parts; whence the gibbous or convex Part of the Liver being free from an Inflammation, the Tension will feel soft to the Touch, and appear without a Tumor; but this Sort of Tension will never happen, when the Liver is either wholly or violently inflamed.

It was said before, that such a soft kind of Tension may proceed, not only from an Inflammation of the Viscera, but from a great Driness. *Galen*, *Com. in Prognost.* 27. comprehends both these Causes under the following Expression: " Sometimes, says he, there is a Tension of the Hypochon- " dria without an Inflammation, properly so called, either from " an immoderate Driness, not only in the Parts themselves, " but in the Diaphragm or Pleura; or from an Inflammation " with a Tumor affecting the Muscles of the Hypochondria, " without an Inflammation, properly speaking, which is a Tu- " mor attended with a Pain." And those Causes of a soft Tension are expressed yet more plainly by the same Author, *Com.* 2. in 3 *Epid. Cap.* 4. where he says, " There is a Tension " of the Hypochondrium, when the adjacent Parts are attracted " by the Diaphragm; and there is a Tension of the Dia- " phragm itself in a Pleurisy, sometimes from a violent Inflam- " mation of the Pleura, sometimes from a Retraction of the " Nerves belonging to the Diaphragm towards the Origin of " the Nerves, and sometimes from an Inflammation of the Part " itself."

Having said thus much of the Causes of a Tension of the Hypochondria, we proceed to inquire, what may be predicted from it. And here we are told by *Hippocrates*, in *Prognost.* " That an hard and painful Tumor in both the Hypochondria, " or only in the Right Hypochondrium, is a very bad Pro- " gnostic; for such Tumors, appearing in the Beginning, sig- " nify, that Death is not far off." *Galen*, commenting on this Place, by Tumor understands an Inflammation of the Liver, Stomach, or Spleen, which often proves mortal in a short time, especially when violent; tho' our Prognosticating from this Symptom must be confirmed by other pernicious Signs. But when the Tumor proceeds from an Inflammation of the Muscles, it is seldom accounted mortal. And *Hippocrates* himself, a little afterwards, seems to limit the Judgment he had passed on hard and painful Tumors of the Hypochondria, in saying, that their

Appearance

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Appearance in the Beginning prognosticates Death in a short time, in such a manner, as if none but great Tumors, and those not always, portended so fatal an Event, by saying, "Whenever, therefore, a Tumor (thus circumstanced) is painful, "hard, and large, it signifies, that the Patient is in Danger "of dying in a short time;" as if he had said, Those Kinds of Tumors, that is, Inflammations of the Viscera, if they prove mortal at all, destroy the Patient in a short time; for if they continue long, they indicate a Suppuration, rather than Death; agreeably to that of *Hippocrates*, delivered a little before, where he says, "If the Fever continues above twenty Days, and "the Tumor subsides not, the Disease changes to a Suppura-"tion." Tumors, therefore, of the Hypochondria, attended with Pain, and not proceeding from an Inflammation of the Muscles, but of the Liver, or Stomach, are dangerous, especially if the Inflammation be violent.

But our Prognostications in these Cases will be confirmed by the Pathognomonic Signs of these Inflammations, which indicate their Nature, and, if pernicious, portend a fatal Event. Such were the Signs observed by *Hippocrates* in *Apollonius*, 3 *Epid. Sect.* 3. *Ægr.* 13. of whom he says "that he was afflicted with Want of Sleep, and a bad kind of Inflation; "had a great Thirst; laboured under a Coma, with a Tumor "of the Right Hypochondrium, attended with a Pain; that "his extreme Parts, on all Sides, were somewhat refrigerated; "talked a little irrationally; forgot all he had said; and was "delirious."

No less dangerous are softish Tensions of the Hypochondria without a Tumor, since, as we have shewn, they indicate either an Inflammation of some one of the principal Viscera, or a very great Driness of the Origin of the Nerves which descend to the Diaphragm, or of the Pleura. But these Tensions, it is to be observed, though always bad, never of themselves portend Death, but only in Conjunction with other bad Signs appearing at the same time; for not all who labour under an Inflammation of the Liver, Stomach, or Diaphragm, die. It will be necessary, therefore, to consult the rest of the Signs; and if these, too, are bad, and of the Number of those which are fatal, we may safely venture to predict the Death of the Patient. Thus fatally circumstanc'd were the Tensions observed in *Silenus*, *Hermocrates*, *Philistes*, the young Man of *Melibœa*, and the young Man who lay in the *Forum Mendacium* [ἐπὶ ψευδέων ἀγορᾷ] who all, as you may read in the first and third Books of the *Epidemics*, had this softish Tension of the Hypochondria, attended with other bad and deadly Signs.

On the same account Pains of the Hypochondria, attended with the aforesaid Tension, and other bad Signs, are usually mortal. Thus it was in the Case of the Wife of *Dromeades*, 1 *Epid. Ægr.* 11. who, on the third Day, was seized with a Pain of the Hypochondria; and made thick, turbid Urine, which had no Settlement; and had cold Sweats; which were all mortal Signs. And, *Ægr.* 12. it is related, "that a certain "young Man, being feverish, went to Supper, and drank "pretty freely; at Night he vomited up all, and was seized "with an high Fever, attended with a Pain of the Hypochon-"drium, and a softish Phlegmon tending inwardly; and he had "a troublesome Night; his Urine, at first, was red and thick, "and deposited no Sediment; his Tongue was very dry, but "he was not very thirsty." All these were very pernicious Signs, and very fatal to the Patient, who died on the eleventh Day. The Author of the 1 *Prorrhet.* 56. says, "that Fevers, pro-"ceeding from Pains in the Hypochondria, are malignant." But *Galen* says, that all Fevers from the Hypochondria are not malignant, since there are several Parts seated therein; but only such as are excited by an Inflammation of the Diaphragm, Stomach, and Liver; nor are even these all malignant, nay, perhaps, not so much as acute, so far are they from Malignancy: Thus *Galen*. But the Malignancy of acute Fevers is to be demonstrated from other bad Signs. It may be added, that those Kinds of Tensions and Pains are bad and mortal, if they continue long attended with some pretty copious Evacuation. Of these it is said, *Coac.* 284. "that Pains aris-"ing in the Hypochondria are bad in every Circumstance, "but especially if accompanied with a Looseness." This appears from the Cases of the Sick, to which we just now referred; particularly that of *Silenus*, 1 *Epid. Ægr.* 2. who laboured under a Tension of the Hypochondria, accompanied with thin blackish Stools: And in the Case of *Erasinus*, *Ægr.* 8. who had a painful Tension of the Hypochondria, attended with Sweats.

We have spoken enough on the Subject of Predictions from bad Tensions of the Hypochondria; and proceed to speak of Suppurations affecting the same Parts, which are bad, if attended with a great Looseness, Nausea, Syncope, Vomiting; and worst of all, when the Fever is not at all remitted, nor the Patient relieved thereby. We said before, that Tumors, which continue long with a Fever, pass into an Abscess, or Suppuration, on the Authority of *Hippocrates*, who, in his Prognostics, says, "That, if the Fever holds the Patient above twenty Days, "and the Tumor does not subside, there is a Conversion into "a Suppuration;" and a little after, "If the Fever goes be-"yond the Bounds of sixty Days, and the Tumor, in that "time, does not subside, it indicates a Suppuration, both in "this Case, and, also, when the Tumor affects any other Part "of the Abdomen." Of the Prognostics, which may be drawn from these Kinds of Suppurations, the Author of *Coac.* 281. treats, where he says, "Among mortal Abscesses are to "be esteemed those which break inwardly; but, of those "which break outwardly, the most laudable take up the least "Space, and gather to the sharpest Head. Of those Abscesses, "which tend inwardly, the best are those which shew no out-"ward Marks of any Tumor, Pain, or Heat; but the contrary "to those are very bad." Hence we learn to know bad Suppurations; and that, to be sensible of a Tumor, Pain, or Heat, in the Hypochondria, is an Indication of a latent and not elevated Inflammation. If, therefore, this Tension of the Hypochondria continues after the Suppuration, without in the least relaxing, it is a pernicious Sign; but if there be, also, a Pain and Heat, it is a worse and more fatal Prognostic; but there is the greatest Reason for predicting the Death of the Patient, when a copious Evacuation of Pus gives him no Relief; and when he finds himself the worse after such Excretions, his Case is esteemed desperate. For such an Evacuation is one of these critical Symptoms, which determine nothing, and, consequently, are fatal; and the more so, if attended with a Decay of Strength, or some other bad Sign.

These are the Predictions we have Reason to make from a Suppuration in the Hypochondria; but, before we conclude this Discourse, it will be fit to observe, that *Hippocrates*, in his *Prognostics*, tells us "That if there be a Pulsation in the "Hypochondria, it indicates a Disorder of the Reason, or a "Delirium." But, in this Case, we are to observe the Eyes of the Patient; for, if he frequently moves his Eyes, and casts his Looks from Place to Place, Madness is to be expected; agreeably to that in *Coac.* 282. "A Pulsation in the Hypo-"chondria, with a Perturbation or Disorder of the Senses, "portends a Delirium; and the more, if it be attended with "frequent Motions of the Eyes." And such an Event seems probable, either from an Inflammation of the Diaphragm, or an Effervescence of the Humour, by which a Multitude of Flatulencies are generated; which, ascending in great Quantities to the Head, by heating and stimulating the Membranes of the Brain, excite a Delirium. This Pulsation of the Hypochondria is generally bad; though sometimes good, when it precedes a Crisis; in which Case it is distinguished from a bad Pulsation by critical Signs. But when a Pulsation in the Hypochondria is attended with other bad Signs, it ought to be esteemed a mortal Prognostic; agreeably to *Coac.* 283. where we read, that "A "Cardialgia, [καρδίης πόνος] attended with a Pulsation of the "Hypochondria, and a Fever, in which the external Parts are "refrigerated, is bad, both on other accounts, and the more, "if it be attended with an EPHIDROSIS" [See that Word]. And let this suffice to be spoken concerning Predictions from good or bad Hypochondria. *Prosper Alpinus de Præsag. Vit. et Morb. Ægrot.*

PRÆCURSORES, in *Paracelsus*, are the Signs of an approaching Distemper.

PRÆDICTIO. A Prediction; that is, a Prognostic.

PRÆFOCATIO. A Suffocation. It is applied to hysteric Fits.

PRÆFURNIUM. The anterior Part of a Chymical Furnace, by which Coals are conveyed to the Grate, or Fire-place.

PRÆGNATIO. Impregnation.

PRÆLINGUA. The anterior Part, or Tip, of the Tongue.

PRÆLUM. A Press, in Pharmacy, for the Expression of Oils and Juices.

PRÆNOTIO. A Prognostic, or Foreknowledge.

PRÆORINATIO. An Uncertainty in the Mind of a Physician, in prognosticating the Event of a Distemper.

PRÆPARANTIA MEDICAMENTA. Preparing Medicines; that is, such as prepare the morbid Humours, and dispose them to separate from the healthy, and pass off by the Help of Evacuants.

PRÆPARANTIA VASA are the Spermatic Vessels.

PRÆPUTIUM. The Prepuce, or Foreskin. See GENERATIO.

PRÆSAGIA. Presages.

Three Things principally contribute to render a Physician perfect: The first is, that, from accurate Observations, he be able to trace and investigate the Origins and Causes of Disorders, in order to oppose them in their Beginnings by proper Remedies; or that, knowing these Causes, he

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may give salutary Precepts for preventing their Effects: The second is, that he accurately know the various Natures of Diseases, and their Differences, with respect to different Constitutions, that he may be the better capable of discovering Medicines proper and adequate for removing them. The third is, that he may be able to form a right Judgment concerning the Event of Disorders; as, also, concerning the Operation and Effects of Medicines. But though this last does not contribute directly to obtain the End of the Healing Art; yet it is certain, that it greatly promotes the Certainty of Medicine, and the Reputation of the Physician. For this Reason *Hippocrates*, in the very Beginning of his *Prænotiones*, speaks in the following manner: "It is, in my Opinion, most expedient for the Physician "to form a Prognostic; since, when he declares, not only "what is past, present, and to come, but, also, what escapes "the Patient himself, he must, by these very means, procure "the greater Confidence and Trust." And in *Prorrhetic. Lib. 2. Sect. 3.* he tells us, "That the Physician ought to be "mindful of this; that, if his Prediction succeeds, he will be "admired by the Patient; whereas, if he fails in his Prognostic, he will be hated, if not looked upon as a Madman." But this exalted Art of Prognosticating is so difficult, uncertain, and precarious, that we find, from Experience, the most sagacious Physicians have failed in it; since we often see the Patient die, of whose Recovery they were certain. *Hippocrates* confesses this, and pronounces all Prognostics in acute Diseases fallacious. In consequence of this Difficulty in forming Prognostics, the most sagacious Physicians have placed Medicine among the conjectural Sciences; and the Vulgar have not only deemed the salutary Art uncertain, but, also, despised its Professors.

But, though no Part of Medicine is incumbered with more Difficulties, than the Prognosticating Art, yet I do not despair to reduce it to the Form of a Science, and to establish it on certain general Axioms, and even Definitions; provided we assume what is necessary for this Purpose: But we shall first inquire into the Causes which may have so long hindered this Part of Medicine from being established into a Science. The most considerable, therefore, of these Causes is a Defect of Observations; for, as accurate Observations, and Histories of Diseases, are the first Foundation of Medicine, from which we learn whatever happens in Nature, what Effects are produced in this or the other Disorder, and what Changes are induced on human Bodies by particular Substances; so such Observations supply us with the Circumstances, the Matter and Opportunity of forming right Prognostics. The Physician, who duly compares these Things, and has a sufficient Knowledge of Natural Philosophy and Anatomy, is able accurately to investigate the true and adequate Causes of what is past, present, and to come; from which he can afterwards form a right Judgment of the Danger of a Disease, and tell, whether it will terminate in Death, or Recovery. But, as the Antients drew their Prognostics, not from entire Histories of Diseases, but from particular Circumstances, Numbers of which are collected by *Hippocrates*, and others, who have trod in his Steps, so it is not surprising, that they should rarely answer, but frequently prove fallacious. Besides, as the Antients wanted a rational Medicine, neither understood the true and genuine Natures and Causes of Life, Diseases, and Death, and were grosly ignorant of the Structure of the human Body, and the various Motions depending upon it; so they could not, even from the fullest and most circumstantial Observations, deduce the true Causes and Signs of the future Event of a Disease, with respect to Death, or Recovery: Much less could they comprehend and account for the different Operations of Medicines. Hence it is obvious, that the Antients treated, not only this, but all other Parts of Medicine, in an empirical manner. Thus, for Instance, if any one laboured under an acute Fever, and died under a particular Train of Circumstances, and if this happened for several times, they forthwith laid it down for a Rule, that these Symptoms were Signs of Death. But, because these Symptoms vary very surprisingly, according to the Diversity of Patients, Diseases, Countries, and Seasons, hence numberless Precepts are laid down, especially by the Antients, which rarely hold good; so that *Hippocrates* confessed, that the Prognostics, with respect to Life and Death, were very uncertain in acute Diseases.

That this Art of Prognosticating may receive more Advances, and, in time, find a Place among the Sciences, all Circumstances are to be carefully consider'd, and adverted to, in the Progress or History of the Disease: Nor is it sufficient to know the Disease, and its Causes, since, in order to form a right Prognostic, it is absolutely necessary the Physician should have a perfect Knowledge of the Constitution of the Patient; for it is of great Importance, to know the Age and Strength of the Patient, the State of his Viscera, the Condition of his Blood and Humours, his previous Method of Life, the Season of the Year, whether his Body is strong or weak, and whether his nervous System is disposed to anomalous and spasmodic Mo-

tions. It is, also, necessary the Physician should know the several Stages of the Disease, in which certain particular Symptoms happen: He must, also, inquire in what Method the Cure has been carried on, that thus he may know, whether any Error has been committed by the Patient, or by any other Physician. From these Things, duly consider'd, he is to form a Judgment, what Signs or Symptoms, under these or other Circumstances, in this or the other Patient, prognosticate a salutary, or a fatal Event: For it often happens, that a particular Symptom of the same Disease proves fatal to one Patient, and not so to another. Thus we frequently observe, that when infirm and old Persons, those wasted with Hunger, or previous Diseases, or long Grief, are seized with a Fit of the Stone or Colic, they generally die under the slightest Train of Symptoms, which seem to portend no Danger, and which are easily supported by the Robust and Vigorous. In acute Disorders, the same is, also, observable: Thus, in acute Fevers, those who are of a slender Habit, and whose Parts are exquisitely delicate and sensible, are racked with violent Pains, Anxieties, Watchings, a Delirium, and insatiable Thirst, and yet escape; whereas, when those who are of a spongious Habit of Body, or whose Strength is impaired, are seized with the same Kind of Fever, they do not complain of any great Uneasiness, Pain, or violent Heat; yet die delirious, in the Height of the Disorder, upon the least external Refrigeration. The Stages of the Disorder are, also, of great Importance in forming a Judgment of its Symptoms: Thus it is certain, that an Epilepsy, especially in Children, often happens without any Injury, in the Beginning of the Small-pox; whereas an Epilepsy, in the Height of this Disease, infallibly proves mortal. In the Beginning, also, of the Small-pox, a Phrenitis is in young Persons often observed to be without Danger; but, if it seizes the Patient about the ninth or tenth Day, it is a certain Sign, that Death is not far off: For this Reason, in forming Prognostics, all Circumstances are duly to be separated, distinguished, and considered: Hence *Hippocrates*, in his *Prorrh.* justly advises Physicians to Caution, as in all the Parts of Medicine, so more particularly, in forming Prognostics; for a Physician in no manner opens the Mouths of People against him, and exposes himself to Contempt, more effectually and shamefully, than by false and ill-founded Predictions; especially when a Patient is left for irrecoverable, and afterwards recovers; or, when the Patient dies, though the Physician was absolutely certain of his Recovery: For I have known some Physicians affirm, that their Patient would not die, when a few succeeding Hours have put an End to their Lives.

Thus, though the Prognosticating Art is very difficult, yet the Physician ought to do all he can, to have some certain Signs and Marks of future Recovery, or Death, which, in my Opinion, may be obtained; for it is certain, that all Events, whether with respect to Life or Death, proceed from certain adequate Causes, without which they cannot happen. If, therefore, the Physician thoroughly knows the Causes why a Patient must necessarily die by a Disease; and if he observes these Causes in the Patient, by their usual and infallible Signs; he may certainly, from their Presence, predict and foretel the Event they will produce. In the same manner, if a Physician knows in what Manner, at what Time, by what Ways or Excretions, a Disease is terminated, and the Patient recover'd; from the Presence of these Circumstances, he may confidently and reasonably predict future Health. We must, also, condemn the Practice of those Physicians, who, in the Beginning or Progress of a Disease, before they either have, or can have, certain Signs, either of Health or Death, rashly form a Prognostic, with respect to its Event: For we are by no means, from the Beginning of a Disease, to form a Judgment of its End; for a Disorder which begins gently, and proceeds mildly, often rages with Violence, when arrived at its Height.

I am not of Opinion, that a Physician can, in the Beginning or Progress of a Disease, form a Prognostic, either with respect to the Life or Death of the Patient, as the Vulgar believe, and, therefore, demand a satisfactory Answer from the Physician. I assert, however, that both in acute and chronical Disorders, there are certain Signs and Marks by which we may both foresee and predict a fatal, or a salutary Event; but, before we can do this, we must wait for the Times in which these Signs discover themselves. Besides, it is one thing to pronounce a Disease dangerous, and another to prognosticate future Death; for the former may be conjectured at, even in the Beginning of the Disease, from the Nature and Strength of the Patient, and the Genius of the Disease; whereas the latter cannot be prognosticated, except when the true Signs of Death are present. But, before we consider the Signs by which we may be sure of a future Death, in any violent and dubious Disorder, we shall give a Theory of Death, and investigate its true Causes, that what we are afterwards to advance, may be the better understood.

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As the Antients were entire Strangers to ſolid Reaſoning in medicinal Affairs, ſo it would be to no Purpoſe to endeavour from their Works, to diſcover wherein the Nature and Eſſence of Death conſiſts; for they aſſert nothing more, than that Life conſiſts in a due Temperament of the innate Heat, and the radical Moiſture; and Death in the Extinction of theſe: But as theſe Words convey no clear Idea to the Mind, ſo nothing ſolid or ſatisfactory can be deduced from them: But after, in our Times, by the Study and Contemplation of Nature, and by a careful Diſcovery of the Structure of the human Body by Anatomy, Light and Truth began to diffuſe their genial Rays on Medicine, and the Circulation of the Blood was diſcovered, the Reaſons and Cauſes of Life and Death can no longer remain in the Dark; for as by the conſtant and free Circulation of the Blood and Humours, the Body, in itſelf ſubject to Putrefaction, is preſerved from every Degree of Corruption, all the Actions, whether natural or animal, remain entire, and Vigour is imparted, both to the Mind and Body; ſo, when this Circulation is totally deſtroy'd, we obſerve, that the Force of the Mind and Body is cancel'd, all their Functions ceaſe, and the Body itſelf is forthwith converted into Putrefaction: Hence we underſtand, that Death is preſent, when the Circulation of the Blood is ſo effectually ſtopped, that it can by no Means or Art be reſtored. Now, as this Circulation of the Fluids depends on the Motion, Impulſe, and Tone of the Heart, Arteries, and all the Veſſels furniſhed with nervous moving Fibres, ſo the Cauſe of Death is only to be ſought for in a total Deſtruction of the Pulſation of the Heart and Arteries, and an effectual Abolition of the Motion of the Thorax, ſo ſubſervient to Reſpiration. We now come to explain, how in Diſeaſes theſe Motions of the Heart and Thorax are totally intercepted.

The Seats, therefore, of Diſeaſes, and, conſequently, the Cauſes of Death, can in no manner be more accurately inveſtigated, than by Anatomy, or the Inſpection of Carcaſes: Now, upon laying open Carcaſes taken off by any Diſorder, the evident Cauſes of the Patient's Death are forthwith ſubjected to our Senſes; for whether the Patient has died of an acute, or a chronical Diſorder, a putredinous Corruption of ſome Part or other, accompanied with an highly fetid Smell, is always obſerved; for always, in ſome of the nobler internal Parts, either in the Stomach and Inteſtines, or within the Brain, and its Membranes, or in the Liver, Uterus, Kidneys, Spleen, or Lungs, there is a certain putrid and ſphacelous Corruption, hardly tolerable on account of its fetid Smell; and this is found to proceed either from a Stagnation or Inflammation of the Blood, which, in acute Diſorders, produces Death; or from a Stagnation and Extravaſation of the Blood and Humours into the principal Cavities of the Body, ſuch as the Head, Thorax, or Abdomen. This laſt principally happens in chronical Diſeaſes, where the Viſcera, eſpecially in the Thorax and Abdomen, are found corrupted by extravaſated Pus, or Serum. Upon diſſecting the Bodies of thoſe who have died of any violent Diſorder of the Head, an Apoplexy, for Inſtance, or a Lethargy, there is always an inflammatory and ſphacelous Stagnation of Blood, in the Meninges, obſerved: The like happens in thoſe who die of violent Diſorders of the Breaſt; for in Patients taken off by a profound Pleuriſy, or Peripneumony, the whole vaſcular Compages of the Lungs is found infarcted and obſtructed, by corrupted Blood. In Patients who die by a Phthiſis, the Lungs are found full of purulent Tubercles, or a great Part of them are corrupted, and corroded with Pus. In convulſive Aſthmas, a large Collection of Water in the Thorax generally deſtroys the Patient; and in a ſuffocative Catarrh, which ſoon proves mortal, there is a Collection of Blood or Serum in the Bronchia of the Lungs, which hinders the free Ingreſs and Egreſs of the Air. In inveſtigating the Cauſes of Death, in thoſe Diſorders which have their Seat in the Abdomen, we find in a Cachexy and Dropſy, that the Liver and Omentum are indurated, or corrupted by a large Extravaſation of Serum. In the Morbus Niger of *Hippocrates* the Spleen is generally large, infarcted, and corrupted, whilſt, at the ſame time, there is an Extravaſation of Blood in the Cavity of the Stomach and Ileum. In thoſe who die of violent Iliac Paſſions, Colics, Choleras, Dyſenteries, and Cardialgias, the Parts of the Stomach and Inteſtines, are found inflamed, ſphacelated, and corroded, ſo as to diffuſe an highly fetid Smell. The Patient who dies of a violent Pain ariſing from a Stone firmly impacted in one of his Ureters, has his Stomach principally inflamed, the Kidneys, and urinary Ducts and Paſſages, being at the ſame time affected, and corrupted. In ſuch Diſorders of the Uterus as prove mortal, the Womb is either inflamed, exulcerated, ſphacelated, or corrupted by extravaſated Serum.

As for acute Diſorders, the moſt conſiderable of which are Fevers, which deſtroy ſo many in the Flower of their Age, and are ſo unfriendly to the human Conſtitution, they prove fatal in no other manner than by an Inflammation, which terminates in a Sphacelus of the internal Parts, eſpecially of the Stomach, Inteſtines, and Meninges; for theſe Phenomena are univerſally obſerved in thoſe deſtroyed by Fevers. Poiſons of every kind prove mortal by a ſphacelous Inflammation, eſpecially of the Primæ Viæ, which, upon opening the Patient immediately after his Death, is ſubjected to the Senſes; ſo that ſuch an Inflammation is, among all others, the moſt certain Sign of having taken Poiſon. In Patients deſtroyed by Worms, the Inteſtines are viſibly corroded and inflamed. From all which I think it ſufficiently obvious, that Death cannot readily happen, without the Putrefaction and Corruption of ſome internal Part; ſo that Putrefaction may be juſtly ſaid to be highly unfriendly to Life, and fatal to Mankind; for, as the Putrefaction of the human Body quickly ſucceeds a total Deſtruction of the Circulation of the Blood, ſo it is generally the adequate, true, and almoſt perpetual Cauſe of Death, and which attacks either the external Parts, though rarely, or, which happens moſt frequently, thoſe of the internal Kind; ſo that we may truly affirm, that hardly a Patient among a thouſand dies without a Sphacelus: Only we muſt except ſuch as die violent Deaths, and thoſe who are ſuddenly taken off by a Polypus blocking up the Mouths of the Veſſels. But, in all other Subjects, when opened after Death, a fetid Putrefaction, highly ungrateful to the Smell, is perceived.

But though the Cauſes of Death are moſt evidently diſcovered, by diſſecting Perſons after Death; yet we muſt here give a Caution, not to confound the Cauſes of Death with the Cauſes of Diſeaſes, which we ſee frequently done: For I have obſerved, that ſeveral Phyſicians, when a Patient dies of a dangerous Diſorder, immediately order his Body to be laid open; and, when the internal Parts are found ſphacelated and corrupted, they ſhew them to the By-ſtanders, and inform them, that the Patient could not poſſibly be ſaved, in conſequence of ſo violent a Diſorder, thus manifeſtly confounding the Cauſes of his Death, with the Cauſes of his Diſeaſe; whereas it ought principally to be conſider'd, whether thoſe Cauſes which produced Death, might not, by proper Meaſures, taken in due Time, have been prevented. By theſe means they endeavour, artfully, to palliate and cover their Errors, if they have, poſſibly, committed any. Since, therefore, the Nature and Eſſence of Death conſiſts in a putrid Corruption; hence we may juſtly infer, that the Phyſician, who intends to preſerve his Patient, ought carefully, by proper means, to prevent and remove this ſphacelous Corruption, which always proceeds from a Stagnation of the Humours, and ſtrictly forbid him the Uſe of every thing which can, in the leaſt, promote ſuch a Putrefaction.

But, that we may more accurately conſider this Subject, and be able, from certain Signs and Marks, to foreſee and predict ſuch a future Corruption, we are to inveſtigate the Cauſes by which it is generated in the human Body: For as no Effect in Nature is produced without certain and adequate Cauſes, ſo, we may affirm, that there are certain Cauſes of this Corruption, from which, when preſent, a right Prognoſtic is to be deduced. But, before we attempt an Explication of theſe Cauſes, we ſhall briefly ſhew, why Putrefaction is ſo unfriendly to the human Conſtitution, that a ſlight and gentle Sphacelus, in a ſmall Part of the Stomach and Inteſtines, is ſufficient to deſtroy the Patient ſuddenly. This, therefore, in my Opinion, happens in the following manner: The Circulation of the Blood, on which depends the Soundneſs of all the Functions of the Body, is ſupported by the Impulſe, Strength, and moving Force of the Solids. But this depends not, as ſome imagine, on any immaterial Being, but, rather, on the highly ſubtile Fluid of the Blood and Nerves, and its Influx into theſe Parts, as is ſufficiently obvious from this Experiment, that when the Nerve, or Artery, which runs to any Part is tied, or cut, all Senſation, Motion, and Nutrition, are deſtroyed in that Part. Beſides, that the Strength of the Parts depends on ſome material Principle, is certain from this, that, by Hunger, Strength is impaired; but immediately reſtored by the Exhibition of proper Aliments. Now there is nothing in Nature ſo prejudicial, and which ſo ſoon deſtroys Strength, as Putrefaction; as we obſerve in a Sphacelus, or in an exulcerated Cancer, which ſoon deſtroys, not only Strength, but Life. It is, therefore, certain, that Putrefaction conceived in the Body, eſpecially when it increaſes and diffuſes itſelf, intimately mixes its malignant Vapour, principally with the nervous Parts, and moving Fibres; and being highly unfriendly to the Fluid, which is the Origin of the Motion of the Solids, it corrupts it, as it were, extinguiſhes the Syſtole and Diaſtole of the Heart, and totally deſtroys the Tone and Motion of the Fibres.

In Diſeaſes there are, therefore, two Methods by which Death is brought about; one of theſe is ſudden and precipitate, and this is produced by violent Conſtrictions of the nervous Parts, which either ariſe from Inflammations, and ſometimes, in

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in the Vigour of the Diſeaſe, generate freſh inflammatory Stagnations, which tend to a Sphacelus, and the Death of the Patient, which principally happens in Fevers, and acute Diſorders: The other Method is more ſlow, and happens gradually, from a Corruption of the Viſcera, and a Stagnation and Extravaſation of the Humours; and this principally happens in chronical and long-protracted Diſorders. As for Death, in acute Diſorders, or Fevers, it generally proceeds from violent Spaſms, which bring on an Inflammation of the Stomach, Inteſtines, or Membranes of the Brain, together with a mortal Corruption; for Spaſms are univerſally hurtful, and unfriendly to the Conſtitution, becauſe they direct the Motion of the Blood and Humours from the Circumference of the Body to the internal Parts, and obſtruct the ſalutary Secretions, ſo neceſſary to Life and Health. Beſides, ſuch is the Force and Power of Spaſms, that they hinder the free Circulation of the Blood, in which the very Eſſence of Health conſiſts; and, by rendering its Motion unequal, produce Congeſtions of Blood in the nobler Parts, eſpecially in the Head Stomach, and Inteſtines, which, if not ſurmounted by Nature, by means of an happy Diſcuſſion and Reſolution, infallibly bring on Corruption and Death: For in every Commotion of Nature, or Fever, there are two Kinds of Motions, which ought to be duly adverted to, and carefully diſtinguiſhed from each other. The one is highly pernicious, and performed from the Circumference to the Centre: This is that ſpaſmodic, and always morbid Motion, which tends to the Deſtruction of Nature, and the vital Motions, and diſcovers itſelf by Coldneſs, Rigor, Horror, Anxiety, and a ſmall and weak Pulſe. The other is of the ſalutary Kind, ſucceeds the Spaſms, is contrary to them, directed from the Centre to the Circumference, and diſcovers itſelf by Heat, and a briſk and ſtrong Pulſe: And this is, as it were, the Medicine of Nature, which frees the Body from Deſtruction, and by means of which theſe ſpaſmodic Strictures are reſolved, the inflammatory Stagnations diſcuſſed, and the excretory Ducts, before cloſed up and conſtricted, happily open'd. This is that Motion which the Antients called *the healing Power of Nature*, by the Efforts of which Diſeaſes are ſubdued, the Patient recovered, and the Danger of Death averted: This is, alſo, that Motion under which no ones dies, which rather happens under a ſpaſmodic Motion directly contrary to it. The Phyſician, therefore, who duly knows the Genius, Power, mutual Actions, Effects, and Relations, of theſe two oppoſite Motions, is able to act with Prudence in the Management of Diſeaſes, to foretel their Dangers judiciouſly, and with Reputation to prognoſticate their happy Terminations: Such a Phyſician is, alſo, qualified for underſtanding the ſeemingly uncouth Phraſes of the Antients, when they tell us, that a Fever is the Struggle of Nature with a Diſeaſe; and that the Patient recovers, when Nature gets the better of the Diſorder: For if Spaſms, Inflammations, Congeſtions, and Stagnations of Blood, in themſelves mortal, are not in a certain Period of Time, by the hot, reſolvent, and febrile Motion, digeſted and diſcuſſed, but remain in their full Force and Vigour, then Nature ſinks, and the Patient muſt neceſſarily die. But ſince there are certain Signs, by which the Victory both of Nature over the Diſeaſe, and of the Diſeaſe over Nature, may be eſtimated, it is ſufficiently obvious, that the Prognoſticating Art depends upon certain Principles and Foundations.

We ſhall, therefore, here briefly conſider thoſe Effects and Signs of fatal Spaſms, as rarely prove fallacious in acute Diſorders; and ſuch as, if they appear about the critical Days, after the Patient is weaken'd by the Diſeaſe, and either are not removed, or increaſe, may render the Phyſician pretty certain, with reſpect to the fatal Termination of the Diſorder. Nor are theſe fatal Spaſms obſervable in one, but in many Parts of the Body. If, therefore, a Rigor, accompanied with Coldneſs, is obſerved about the Height of the Diſeaſe, or recurs often; if the Body is not equally ſoft, but hard, dry, and rough; if exanthematous Eruptions are, by the Spaſms of the Skin, repel'd or diminiſhed; if the external Parts are ſeized with an Horror and Coldneſs; if Fontanels, or Ulcers, diſcharge no more Matter; theſe are bad Signs, and prognoſticate the greateſt Danger of Death; becauſe, in conſequence of the Spaſms of the Skin, the Motion of the Blood and Humours to the internal Parts excites dangerous inflammatory Congeſtions, and hinders the peccant Matter from being expelled by Perſpiration. In acute Diſorders theſe Spaſms generally affect the Parts ſubſervient to other Excretions; ſuch as thoſe by Urine and Stool, by conſtricting which, the Urine is render'd thin and aqueous, the Patient coſtive, and afflicted with an Hardneſs and Tenſion of the Abdomen. Some Patients, in conſequence of the Violence of theſe Spaſms, are afflicted with a frequent Deſire of diſcharging their Urine and Excrements.

But the Danger is ſtill greater, when theſe ſpaſmodic Contractions affect the internal and more noble Parts, ſubſervient to the vital Motions; for the ſmall, the contracted, the quick and hard, as, alſo, the unequal and intermittent Pulſe, proceed from no other Cauſe than the ſpaſmodic and convulſive Stricture of the Nerves, which terminate in the Fibres and Coats of the Heart, and always, in the Height of the Diſeaſe, prognoſticate great Danger. Equal Danger is indicated, by a frequent, uneaſy, and difficult Reſpiration, happening about the critical Times; for, as *Hippocrates*, in his Prognoſtics, juſtly obſerves, that as in all Diſeaſes an eaſy Reſpiration is of great Importance to Recovery, ſo in acute Diſorders, a frequent and difficult Reſpiration is always an unlucky and inauſpicious Omen. If the Nerves of the Præcordia are affected with violent Spaſms; inſupportable Uneaſineſs, Inquietude, Toſſing, and Change of Situation in the Bed, happen; if the nervo-muſcular Membranes of the Oeſophagus and Stomach are ſeized with Spaſms, Efforts to vomit, Regurgitations of the Liquors drank, frequent Diſcharges of a limpid Serum from the Fauces, Difficulty of Deglutition, a Dryneſs of the Tongue and Mouth, afflict the Patient; and if the Duodenum is drawn into Conſent; the whole Body, and eſpecially the Face, is tinged with a yellow Colour: But when more exceſſive and univerſal Spaſms ſhake and rack the whole nervous Syſtem, the certain Death of the Patient may be prognoſticated from the Pinching of his Noſtrils, his collapſed Temples, his cold and flaccid Ears, his hollow Eyes, the Coldneſs and Tenſion of his Skin about the Forehead, and his black or highly pale Colour; all which make up the *Facies Hippocratica*, an infallible Prognoſtic of Death. Convulſions of the Nerves, which, according to *Hippocrates*, in *Sect.* 4. *Aph.* 6. are always bad Signs in acute Diſorders, are indicated by the following Signs: If the Patient lies on his Back, with his Knees contracted; if he falls downward to the Feet of the Bed; if he makes bare his Arms and Legs, and toſſes them irregularly about him; if his Nails and Fingers are pale; if he gathers the Knaps, or Fingers the Edges, of the Bed-cloaths; if he picks off the Eminences from any adjacent Wall, and is afflicted with a Twitching of the Tendons: When all theſe appear, they prognoſticate a ſpeedy Death.

Tho' moſt acute Diſorders have, for their Cauſe, an Inflammation of ſome internal Part, and, for that Reaſon, are not free from Danger; yet, in the Height and Violence of the Diſtemper, freſh Inflammations are frequently formed, eſpecially in the Stomach and Membranes of the Brain, and ſuch Inflammations are always terrible and ſure Prognoſtics of Death: Theſe Inflammations, whether ſeparately or jointly, infallibly deſtroy the Patient, if they appear on the ſeventh, ninth, or eleventh Day, not only of malignant, petechial, contagious, and Camp-fevers, but, alſo, in other acute Fevers, ſuch as the Synochus, Burning Fevers, the Purple Fever, the Small-pox, and Meaſles: An Inflammation of the Stomach is known, if there is a violent Heat, and, as it were, a Senſe of Burning, accompanied with an acute Pain about the Præcordia; if theſe Parts are hard to the Touch; if the Extremities are cold; if the Patient is uneaſy and reſtleſs; and if every thing he takes, whether Medicines or Drink, is immediately either thrown up by Vomit, or, if retained, creates great Uneaſineſs, and increaſes the Anxiety: Sometimes, alſo, the Inflammation is ſo great, as to paſs through the Oeſophagus to the Fauces, which, in this Caſe, are full of burning painful Puſtules, and continually covered with a viſcid and putrid Mucus: All which are Prognoſtics of a quickly approaching Death. Another more dangerous Inflammation, which is generally joined to this, and happens a little before the Death of the Patient, is, that of the Membranes of the Brain, by the *Greeks* called *Phrenitis*, which generally ſucceeds an obſtinate and continual Watching, and an intenſe Pain of the Head: Its Approach may be predicted from a previous Rigor, thin and copious Urine, a Ringing of the Ears, a ſtrong Pulſation in the Head, and a Diſcharge of a few Drops of Blood from the Noſe: Its Preſence is known from the following Signs: The Eyes are red, fiery, and ſtern; there is an Alienation of Mind; the Words are ſenſeleſs and incoherent; the Patient makes improper Anſwers to the Queſtions put to him, often diſcharges Tears involuntarily, gnaſhes his Teeth, and has no longer any Appetite for Drink. If the Phrenitis is ſucceeded by a Convulſion, it is a pretty infallible Sign of a ſoon approaching Death. Theſe are the principal Cauſes which, in acute Diſorders, take off the Patients. Perſons of ſanguine Temperaments, thoſe of choleric or ſanguineo-choleric Habits, young Perſons and Adults, thoſe of delicate Conſtitutions, thoſe prone to Anger, thoſe of lean and conſtricted Habits, or who have indulged themſelves in high, rich, and ſpirituous Living, are principally ſubject to theſe acute Diſorders, which are produced by violent Inflammations and Spaſms.

But, in acute and continual Fevers, there is another Cauſe of Death, in thoſe who are of a plethoric and ſpongious Habit of Body, who are phlegmatic, or whoſe Strength is exhauſted, either by Diſeaſes, Hunger, long Grief, or Hæmorrhages; for thoſe

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these are not so much destroy'd by vehement Spasms, and a terrible Train of Symptoms, as by an Imbecillity and Defect of the Motions, a Want of due Tone in the Parts, and a Loss of Strength. In Cases of this Nature, the Stagnations of the Blood and Humours, in the very Beginning of the Disorder, dispose to a putrid Corruption. And as these Disorders are attended with mild Symptoms, they often deceive the Physician, and elude his Prognostics. Hence, because their Nature is not so evident, but occult, their Events are, with Difficulty, prognosticated, and they are generally classed among the Fevers of the malignant Kind. Such Fevers are known by the following Signs: They appear with a slight Coldness and Horror; but, in the very Beginning of the Disease, there is an uncommon Loss of Strength, and a languid, frequent, and contracted Pulse. In an erect Posture the Patient easily faints away; the Urine is thin, and without a Sediment; the Patient cannot sleep, though he has a perpetual Propensity to it. This Condition is succeed by a still greater Loss of Strength, and an Alienation of Mind; he complains of no Pain, Thirst, or any great Uneasiness; he is, however, pretty restless, and tosses in Bed; and if his Extremities become cold, and his Pulse begins to be defective, and can no longer be felt in his Wrists, we may justly prognosticate, that the Death of the Patient is not far off. But tho' such Patients are not taken off without an Inflammation of the Stomach, and Membranes of the Brain, yet this Inflammation is not accompanied with violent Spasms, or terrible Symptoms. But a Corruption is easily brought on, which accounts for their Death.

But since all Inflammations generally terminate in a Mortification, or sphacelous Corruption, we shall subjoin some Marks or Signs, by which the Transition from the Inflammation to the Sphacelus may be known. In this Case, therefore, a certain internal Sense of Coldness is perceived; the before-intense and acute Pain about the Head, or inferior Parts, suddenly ceases; the Mind before disorder'd, in some measure, resumes the Exercise of Reason; the Defect of Strength is increased, and the Pulse is either totally deficient, or highly unequal, contracted, and intermittent: The Patient, though before excessively costive, has his Body rendered soluble, or discharges his Excrements involuntarily; his Countenance is unseemly and pale, his Temples, Neck, and Breast, are moist, with chilly Sweat; his Extremities are cold, his Pulse begins to be palpably defective, Rumbling and Noise arise in his Belly; and when the Liquids he drinks descend, they make a Noise, as if they were poured into a deep Vessel: All these are Prognostics of a quickly approaching Death; because, in consequence of the Increase of the Sphacelus, the Tone of the Parts is incredibly destroy'd, and the Strength wonderfully impaired. When plethoric Patients suddenly die of an internal Sphacelus, a few Hours after their Death, their Abdomen becomes surprisingly tumid, large Vesicles arise upon the Surface of the Body, the Face becomes hard and green, the Corps is intolerably fetid, and an ill-smelling Blood is frequently discharged from the Mouth and Nostrils.

There is another Kind of Death incident to those who labour under violent Disorders of the Breast; and that is, Suffocation; which generally takes off those afflicted with a Quinsey, a Peripneumony, a suffocative Catarrh, a convulsive Asthma, and a Dropsy of the Thorax; for these Disorders not only totally intercept the free Ingress and Egress of the Air from the Lungs, but, also, destroy the Circulation of the Blood from one Ventricle of the Heart, thro' the Vessels of the Lungs, to the other. Thus an Angina, possessing the internal Muscles of the Larynx, when there is neither any Pain nor Redness in the Neck and Fauces, but, at the same time, an intense Pain, and violent Fever, quickly destroys the Patient by Suffocation. In this Case, as *Lommius*, in *Lib.* 2. *Obs. Medic.* has observed, the Eyes are distorted, red, and prominent, as in those who are strangled; the Voice is inarticulate, small, and resembling the Squeaking of Puppies; the Mouth gasps eagerly for the cold Air, a frothy Saliva is discharged from it, and the Tongue hangs out; Liquors drank regurgitate through the Nostrils; the Patient is totally uneasy, frequently leaps out of Bed, and at last dies of a Suffocation and Syncope. A Peripneumony, also, destroys the Patient by Suffocation; for, if nothing is expectorated, if there is a great Difficulty of Breathing, and Restlessness, if the Matter of the Spit is perceived to make a Noise in the Breast, if the Pulse is unequal and intermittent, if the Strength is impaired, and the Patient seized with a Flux, if what is thrown up on Coughing is frothy, and sometimes bloody, and sometimes yellow, if there is a continual Watching, if a Phrenitis succeeds, if the Desire of drawing in the cold Air is excessively great, if the Patient is fond of lying on his Back, and in an erect Posture; for when he lies reclined upon his Face, he is ready to be suffocated; and in this Case the Patient infallibly dies on the fifth, or, at most, on the seventh Day.

Those who die of a convulsive Asthma, are, also, destroy'd by Suffocation; for this Disorder generally arises from a Dropsy of the Thorax, suddenly produced by a Rupture of the Hydatides: When, for Instance, a large Quantity of Water, by its Weight, hinders the Motion of the Diaphragm, and the free Expansion of the Lungs, so that the Air can neither enter them, nor the Blood pass freely through them. A suffocative Asthma is, also, produced, when the interior glandular Coat of the Bronchia, which is furnished with many large Glands, is so contracted, that the Air contained in the Lungs can neither be expelled, nor fresh Air received. Convulsive Spasms, also, frequently contract the Bronchia so powerfully, that the Patient miserably dies of Suffocation. In all these Disorders, there is the greatest Anxiety and Restlessness, a tremulous Breathing, an irregular and unequal Pulse, a Rattling and Noise are perceived in the Breast; the Patient cannot rest in one Place; a certain frothy, or bloody Matter is expectorated; and, at last, the Extremities becoming cold, the Patient dies of a Suffocation and Syncope. The like happens in a suffocative Catarrh, which is principally incident to old Persons, those of weak Habits, and Infants; and generally arises from a Palsy of the pneumonic Nerves. In this Disorder, also, the Breath is drawn with the greatest Difficulty and Uneasiness; the Bronchia are filled with an Humour secreted from the Blood; and, because no Spit is expectorated, the received Air makes a great Noise in the Breast, till at last the Patient is suffocated for want of Air. Besides the Signs already mentioned, there are, also, other infallible Marks of Death; such as an intermittent, small, and totally defective Pulse, which frequently happens a few Hours before Death. It, also, often happens, that a violent Uneasiness, accompanied with a Coldness of the Extremities, comes on. In Phthisical Patients, when a considerable Cavity, corroded in the Lungs, contains a large Quantity of Pus, and the Pus, in consequence of a Defect of Strength, ceases to be expectorated, Death soon succeeds.

Having considered those Disorders, which destroy by Suffocation, together with their mortal Signs, we shall now treat of some other acute Diseases, which destroy the Patient, both by Inflammation, and violent Spasms; and consider by what Signs Death may be foreseen and prognosticated in them. If, therefore, a white Purple Fever, which arises from an highly vapid and corrupted Lymph, appears in the End of other Fevers, the Measles, or Small-pox, or in Childbed, after the Lochia are suppressed, it is always dangerous, and generally destroys the Patient by an Inflammation of some of the internal Parts, especially of the Stomach and Intestines. It is a mortal Sign, when a violent Heat of the Præcordia, and a great Uneasiness, are succeeded by a Sense of internal Coldness, accompanied with a small, weak, and unequal Pulse; when the Purple Eruptions disappear; when the Patient faints away, has his Mind disturbed, and his Respiration difficult. I have rarely known any young Person to escape in the Small-pox, if the Disorder seizes him with a violent Pain of the Loins, and a Delirium; if, on the second Day, rough Efflorescences and Spots, like the Purple Fever, appear on the Skin; if, on the fifth and sixth Days, after a total Eruption, the Pulse is not more moderate, but continues equally quick; and if the whole Body is covered with Pustules. But, about the ninth Day, a burning intense Pain of the Hands, produced by the Exulceration, frequently changes all the Symptoms which promised the Recovery of the Patient; for this intense Pain, affecting the whole nervous System, produces the greatest Uneasiness, Tossings, and a subsiding of the Pustules; and afterwards a difficult Respiration, a Disturbance of Mind, Convulsions, and a small languid Pulse, coming on, soon put an End to the Patient's Life.

Those who die by any highly emetic, or purgative Poison, are destroy'd by a sphacelous Inflammation, as is obvious from dissecting their Bodies. The Signs of an approaching Death, in this Case, are, when internal Heats, and violent Uneasiness, are succeeded by a small, unequal, or totally defective Pulse, accompanied with a cold Sweat, a Delirium, and Convulsions; which, when brought on by a purgative Medicine, are by *Hippocrates*, in *Aph.* 25. of *Sect.* 7. and, in several other Parts, pronounced mortal. Those who die of the Stone, are generally taken off by an Inflammation of the Stomach and Meninges; for, if a Vomiting, and acute Pain, are succeeded by a Fever, accompanied with great Uneasiness, and an insatiable Thirst, and if afterwards an Hiccup, a Delirium, and a Coldness of the Extremities, come on, the Patient will not live long. In a Cholera, if acute Pains and Gripes happen, if Humours, especially of a green Colour, are impetuously discharged by Vomit and Stool, if there is an insatiable Thirst, if the Countenance is yellow or pale, and the Pulse small or contracted, the Disorder is not without Danger. But if the Pulse is totally defective, if the Legs are contracted, the Body covered with a cold Sweat, and the Patient seized with Deliquiums, these are pretty sure Signs, that the Inflammation is degenerated into a Sphacelus. Now the most certain Signs of a Sphacelus are, when the acute Gripes suddenly cease, when the Extremities become cold, and the Strength is greatly impaired. An Hiccup, a Cardialgia, Heat, and Uneasiness about the Præcordia, generally precede this Condition, and indicate a fatal Inflammation of the Stomach. In the Iliac Passion, where the Pains are intense, and accompanied with Costiveness, and a continual Vomiting of fetid Matter, if an Hiccup, a Delirium, cold Sweats, Refrigeration of the Extremities, and Convulsions of the Nerves, come on, these are certain Signs of an approaching Death, as *Hippocrates*, in *Sect.* 7. *Aph.* 10. has justly observed. Violent convulsive Colics take the Patient off in the same manner; for, in this Disorder, there is often such an intense Pain in the Intestinum Rectum, produced

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produced by the ſtagnant hæmorrhoidal Blood, that this Inteſtine is not only ſeized with an Inflammation, but, alſo, a mortal Sphacelus; under which, in conſequence of the putrid State of the Inteſtine, highly fetid Excrements are diſcharged; a frequent and weak Pulſe, accompanied with a great Loſs of Strength, ſucceeds; and the Sphacelus often ſpreads to the external Parts, and the Scrotum; after which, the Patient is ſeized with Deliquiums, and ſoon dies.

'Tis certain, that many Women die either during, or after Labour; for which Reaſon we ſhall conſider ſome of the moſt fatal Preſages and Prognoſtics, in Caſes of this Nature. If, therefore, a Woman, in conſequence of an unnatural Situation of the Fœtus, eſpecially when too large, is, for ſome Days, ſucceſſively racked and fatigued with violent Pains, accompanied with internal Heat, which may be known by the Celerity of the Pulſe, it frequently happens, that in Labour, or after it, the Strength being ſuddenly loſt, ſhe falls into a kind of Deliquium, or Diſorder reſembling an Apoplexy, and can by no means have Strength and Life reſtored to her: In ſuch a Situation, it is a Sign of Death, when the Diſorder laſts for ſome Hours, and the Patient cannot be roufed by the moſt penetrating Medicines, ſuch as Spirit of Sal Ammoniac, prepared with Quick-lime, and mixed with Oil of Rue, put into the Noſtrils. If the Face, during the Paroxyſm, remains red, it is a Sign, that the Blood, too impetuouſly convey'd to the Brain by the Spaſms, has produced this Diſorder, in every reſpect ſo like an Apoplexy; and, after the Death of the Patient, a bloody fetid Serum is generally diſcharged from the Mouth and Noſtrils. If, after the Fœtus is dead in the Uterus, the Mother dies in Labour, the Child is frequently expelled, in conſequence of the Relaxation of the Paſſages, and the internal fermentative Motion. Thoſe Women who die in Childbed, for the moſt part, ſuffer great Pains from a Retention of the Lochia; but if theſe Pains are not ſucceeded by the Lochia, but rather accompanied with a Flux, a fatal Inflammation of the Uterus, and a Fever, generally ſucceed. Such an Inflammation is known from a burning Heat, reaching from the inferior Parts to the Region of the Heart; and, if it is accompanied with great Uneaſineſs, Loſs of Strength, Reſtleſſneſs, and a total Loſs of Appetite; if afterwards there is an internal Senſe of Cold, with an Horror, a frequent, ſmall, and weak Pulſe, and if the Sight begins to grow dim, theſe are Signs, that Death, proceeding from a Sphacelus, is not far off. Many Women in Childbed die with the full Uſe of their Reaſon, which frequently returns to them a few Hours before their Death; ſo that unskilful Perſons conclude them to be in a fair way of Recovery, whilſt the more Skilful and Judicious know, from the State of the Pulſe, that Death is approaching. If, in conſequence of a large Effuſion of Blood, after Labour, and in Childbed, a ſlow Heat, accompanied with a frequent and weak Pulſe, and which is not allay'd in the Morning after Sleep, is brought on, and attended with a total Loſs of Appetite and Strength, the Patient generally dies of a Syncope, about the End of Childbed, that is, in the ſixth Week.

In an exulcerated Cancer, ſcarcely any Patient is preſerved, on account of the violent Corruption, which is indicated by the black, thin, and highly fetid Sanies. In this Caſe, the Patient is afflicted with a ſlow Fever, and the Strength daily decreaſes; the Sleep, alſo, is uneaſy, reſtleſs, or none at all, till, at laſt, a Deliquium and Death enſue. Perſons are ſometimes ſuddenly taken off by the Retroceſſion of Inflammations of the external Parts; ſuch as Eryſipelas, and the Gout, either in the Feet or Hands. Nor does this happen in any other manner, than by an Inflammation of the Stomach and Inteſtines. But 'tis ſtill more dangerous, if, in the Plague, Carbuncles and Buboes recede, or are not ſufficiently expelled; for, in this Caſe, the Death of the Patient is certain, ſince he is ſeized with an Horror, becomes reſtleſs and uneaſy; an Heat ſeizes the Region of his Stomach, whilſt his Extremities are cold; he has a Deſire to vomit, or is ſeized with an Hiccup; after which, the Patient is afflicted with a Perturbation of Mind, and dies of a Syncope. If any one dies of an exceſſive Loſs of Blood, which may happen in Miſcarriages, a Spitting of Blood, a Vomiting of Blood, the Morbus Niger of *Hippocrates*, or violent Hæmorrhages in Fevers, ſuch a Patient is taken off by a Deliquium and Syncope. But 'tis to be obſerved, that, for the moſt part, Death is preceded by an inſatiable Thirſt, an Inclination to vomit, a weak and frequent Pulſe, and Convulſions of the Extremities, which are Signs, that the Blood, ſtagnating in the internal Parts, ſuch as the Head and Stomach, ſtill excites ſome Spaſms; for Thirſt generally ariſes from a ſpaſmodic Stricture of the glandulous Coat of the Oeſophagus. The Diſorders of which Children die, are generally of the ſpaſmodic and convulſive Kind, and bring on an Inflammation and Sphacelus, eſpecially of the Stomach, Inteſtines, or Head; for, in conſequence of the acute Pains, they eaſily fall into Epilepſies and Convulſions, Fevers and Aſthmas. If one epileptic Fit ſucceeds another, and if the Patient was before very coſtive, he ſpontaneouſly diſcharges highly fetid and black Excrements: If the Voice becomes ſtrill and interrupted, and the whole Body is intenſely hot, we may prognoſticate, that Death is not far off.

We now come to conſider the Preſages of Death in ſome chronical Diſorders, the moſt conſiderable of which are the Dropſy, a Cachexy, the Scurvy, a Conſumption, an Hectic, a Phthiſis, and a Tabes. Thoſe who are deſtroyed by theſe Diſtempers, die ſlowly, but certainly; becauſe, though the Corruption of the Viſcera, from a Stagnation or Extravaſation of the Humours, proceeds ſlowly, yet it cannot be removed by any means. The Signs of a Corruption of the Abdominal Viſcera, and, conſequently, of approaching Death, are, a Loſs of Appetite, and a Loathing of ſuch Aliments, as the Patient was fond of, when in Health. If the ſlow Fever increaſes, and the Pulſe becomes quicker, theſe Signs always denote an internal Corruption; which is, alſo, indicated by a Loſs of Strength, a great Difficulty of breathing, and reſtleſs Sleep, which rather weakens, than refreſhes. If theſe Symptoms afflict the Patient long, and yield to no Medicine, they are certain Prognoſtics of Death, eſpecially in old Perſons, or thoſe, who, in conſequence of a previous Diſorder, have fallen into ſuch a chronical Diſeaſe. Theſe are ſome of the moſt common Signs of Death in chronical Diſorders. But we ſhall add ſome, peculiar to certain Diſeaſes of the chronical kind. As for a Phthiſis, then, the Signs of Death in this Diſtemper are; if the whole Body is conſumed; if a continual Hectic Fever afflicts the Patient; if the Face is red, and the Body preternaturally ſoluble; if there are colliquative Sweats, and œdematous Swellings of the Feet; if the Spit is ſuppreſſed, the Nails pale, the Eyes ſunk, and the Noſtrils ſharp and pinched. In caſe a Dropſy ſucceeds a long-continued Aſthma, and Palpitation of the Heart, or an Induration of the Liver, a Quartan, we may pretty certainly prognoſticate, that the Patient cannot be preſerved; and if the Urine is ſmall in Quantity, turbid, and red, it is a very bad Sign. If the ſuperior Parts become ſlender, and the Face aſſumes a yelloviſh Colour, we may pretty infallibly prognoſticate Death ſome Months before it happens; but the Patient is infallibly deſtroyed, if the Fever is increaſed, and the Reſpiration rendered more difficult. Thoſe who frequently, and eſpecially after violent Exerciſe of the Body, or Commotions of Mind, perceive an obſtinate Palpitation of the Heart, and afterwards fall into a convulſive Aſthma, a Spitting of Blood, or a Dropſy, may have their Death prognoſticated a long time before it happens, eſpecially if they are afflicted with Deliquiums; for the Cauſe of all theſe Diſorders is a polypoſe Concretion in the Veſſels of the Heart, which cannot be removed by any Medicine; and which, with the Concurrence of other Cauſes, generates theſe terrible Diſorders; and if Deliquiums, alſo, produced by the Polypus, happen frequently, and without any manifeſt Cauſe, the Patient generally dies ſuddenly This Doctrine is, alſo, confirmed by the Authority of *Hippocrates*.

When a ſphacelous and mortal Corruption affects the Liver, there is a great Loathing of Food, eſpecially of Fleſh; there is a frequent and inſatiable Thirſt, a Fever, a Loſs of Strength, an Hiccup; now-and-then Serum, or yellow Bile, is diſcharged by Vomit, and the Body is gradually conſumed. In ſuch Caſes, after Death, I have obſerved the Liver evidently ſphacelous and black. An Exulceration of the Stomach, alſo, produces a long and mortal Diſorder, and is known, if a great Uneaſineſs and Vomiting ſucceed Eating: And theſe Misfortunes are increaſed by any acrid and ſaline or ſpirituous Medicines; the Body is waſted, the Pulſe is always quick, the Extremities ſeized with a Rigor, and ſometimes with an Horror; Fontanels are dried up, and the Sleep is little and reſtleſs; ſuch Patients die in the third or fourth Month, and their Death may be prognoſticated a long time before it happens. In a Cachexy, if the whole Body becomes tumid, inflated, and pale; if there is a Loathing of Food; if the Patient frequently vomits a fetid Matter, and diſcharges little by Stool; if the Urine is crude, and in ſmall Quantity; if the Reſpiration is difficult, and the whole Body fetid; if afterwards a frequent Pulſe, and a more difficult Reſpiration, happen, the Patient's Death, in ſome Months, may be prognoſticated; and it happens the more infallibly, the more Errors in Diet, or exceſſive Drinking, the Patient commits; or the more he is afflicted with long Grief.

We ſhall, farther, ſubjoin ſome uſeful Cautions with reſpect to forming Prognoſtics. Spaſmodic chronical Diſorders are, therefore, to be carefully diſtinguiſhed from thoſe of the acute Kind; for, in hypochondriac and hyſteric Diſorders, ſuch Symptoms occur, as in acute Diſorders prove mortal, but are leſs dangerous in the former; for nothing is more frequent in hypochondriac and hyſteric Affections, than for the Patient to be afflicted with violent Uneaſineſs, a Difficulty of Breathing, a Coldneſs of the Extremities, a thin and watry Urine, a ſmall and weak Pulſe, and frequently violent Deliquiums; which Symptoms are, however, ſoon carried off, without any Danger. The Stages of Diſtempers are, alſo, to be carefully diſtinguiſhed; for, of all the mortal Signs already enumerated, if ſome, or even a conſiderable Number, ſhould appear in the firſt Days of a Diſorder, thoſe would act inconſiderately, who ſhould

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should thence conclude, that Death was at hand. But it is otherwise, if, after the Strength is, for several Days, exhausted by excessive Heat, Want of Appetite, Anxiety and Pain, those fatal Spasms, and the Symptoms produced by them, appear; especially at those times, on which the Disorder is generally terminated in a salutary manner; which is, for the most part, on the odd Days, that is, the seventh, ninth, and eleventh Day. Great Regard is, also, to be had to the Habits of Patients, whether they are of weak and languid, or of vigorous and robust Constitutions, since the former are always in greater Danger, than the latter. Among the Weak, we reckon old Persons and Infants, those of spongious full Habits, those who have small Vessels, those sprung from weak and infirm Parents, and those weakened by previous Disorders, immoderate Hæmorrhages, long Hunger, the Affections of the Mind, Grief, Care, and Thoughtfulness. Among this Class we, also, reckon Childbed Women, and those, who, in consequence of a bad Regimen, and a Suppression of the Excretions, have contracted a Redundance of impure Juices in their Vessels; for, in all these tender Habits, the Pains and Inflammations easily degenerate into a mortal Sphacelus. We ought, also, carefully to observe, whether the Symptoms, which appear, are excited by external Causes, such as Anger, a Fright, Refrigeration of the Body, improper Aliment, or Medicines of a drastic or virulent Quality; all which, in dangerous Diseases, and in Persons of weak Habits, are of such a Nature, as to prove mortal, and accelerate the Death of the Patient. But if, in less dangerous Diseases, and in robust Habits, these terrible Symptoms appear, they are not forthwith to be pronounced absolutely mortal. And, lastly, in order to form a right Prognostic, it is of great Importance, duly to consider the Beginning of the Disorder; for every Disease, which, in the Beginning, destroys the Strength, and is accompanied with a frequent Pulse, portends no Good, because it clearly discovers a Loss of Strength, an Impurity of the Juices, and a fatal Dyscrasy of the Blood. *Frederic Hoffman.*

PRÆSCRIPTIO. A Prescripion.

PRÆSEPIA, or PRESEPIOLA. The Sockets in the Jawbones, in which the Teeth are contained.

PRÆSERVATIVA REMEDIA. Remedies, which preserve Health, and prevent Diseases.

PRÆSERVATORIA INDICATIO. The Preservatory, or Prophylactic Indication. See INDICATIO, and FIBRA.

PRAMNIOS, πράμνιος. A Sort of black and austere Wine, mentioned by *Hippocrates*, in his Treatise of the Disorders of Women.

PRASINUM VIRIDE, is the same as *Flos Æris*. See Æs.

PRASINUS, or PRASOIDES; the same as PORRACEUS.

PRASIS is explained by *Rulandus*, *Creta viridis*.

PRASITES. An Epithet for a sort of Wine described by *Dioscorides*, L. 5. C. 58. It is made by infusing the Leaves of Horehound in fermenting Must.

PRASIUS. Offic. Charlt. Foss. 33. Calc. Mus. 217. Kentm. 47. Boet. 203. Worm. 95. Aldrov. Mus. Metall. 897. *Prasus sive Prasius*. De Laet. 42. *Lapis, Prasius dictus, aliis, Plasma, aut Nilium, aut Leda. Lapis Nephriticus viridis Mali Aurantii foliorum virore*. Cup. Hort. Cath. Supp. 2. 51. THE GREEN STONE.

It is green for the greatest Part of it, but is seldom without black, and sometimes white Spots. Many take it for the Mother of the Emerald, because this Gem is sometimes found in it. The *Prasius* has the Virtues of the Emerald, but in a lower Degree.

PRASION, πράσιον. White Horehound.

PRASUM, πράσον. A Leek.

PREHENSIO. A Name for the CATALEPSIS.

PREMNON, πρέμνον. The Extremity of the White of the Eye.

PRESBYTÆ. Vision is commonly divided into three Sorts; the good Sort, that of the Myopes, and that of the Presbytæ.

A Person is said to enjoy a good Sight, when he can see to read at a Foot Distance: In this Case the Crystalline Humour is in its most perfect State, and such People can distinguish distant Objects, like the Presbytæ, but more accurately. This Species of Vision has three Degrees, or Focuses; one at the Distance of half a Foot, another at a Foot Distance, and a third a little further.

The Sight of the Myopes has a very short Focus; they can see distinctly, when the Object is near, and require little Light to read. At a Distance they see confusedly, and Objects considerably remote they cannot perceive at all. This Defect of the Sight is attributed to the too great Convexity of the Crystalline.

The Myopes have, also, three Degrees or Focuses. The first is, when they cannot read, without bringing the Book close to the Nose; the second hold it two or three Fingers-Breadth farther; and the third hold it at half a Foot Distance, or more. In order to distinguish distant Objects, the Myopes should use concave Glasses.

The Presbytæ have their Focus very long; they observe remote Objects distinctly, but those which are near, confusedly: This Defect of the Sight is imputed to the too great Flatness of the Crystalline. The Presbytæ have, also, three Degrees or Focuses; one at the Distance of a Foot and an half; another at two Feet and an half; and the third at a greater Distance: Upon this account they cannot read without Spectacles. This Species of Vision is common among the Aged, and is directly contrary to that of the Myopes.

Of these three Species of Sight, two of them are subject to Alteration. The good Sort may sometimes be changed into that of the Myopes, especially in those who read much, or apply themselves to fine Work; and in Old-age it is liable to change to that of the *Presbytæ*. The Sight of the Myopes admits of no Variation; and that of the Presbytæ sometimes becomes good. These different Changes of Vision proceed from the different Degrees of Convexity, of which the Crystalline Humour is capable. When the nutritious Juice, necessary to maintain the Convexity of the Crystalline, is sufficiently fluid to pass through the Extremities of the finest Vessels belonging to it, then the Sight is perfect. But, if the Juice is too thick, it cannot enter these Vessels in a sufficient Quantity; for which Reason the Convexity will be diminished, in proportion to the Tenacity of the Juice. *St. Yves.*

PRESIS, or PRESMA, πρῆσις, or πρῆσμα. *Galen* explains this Word, Inflation.

PRESMUCHUM, or PRESMUKIS. Ceruss. *Rulandus.*

PRESSORIUM. A Press. *Rulandus.*

PRESSURA. Pressure, or Compression. *Pressura Gentium*, in *Paracelsus*, is the Venereal Disease.

PRESTER, πρηστήρ. The external Part of the Neck, which is inflated by Anger. *Gorræus.* But *Prester* is, also, the Name of a Serpent, the same as *Dipsas*.

PRIAPEIA. A Name for the NICOTIANA MINOR.

PRIAPISCOS, πριαπίσκος. The Name of a small Piece of Wood, which constitutes a Part of the *Scamnum Hippocraticum*. *Priapiscos*, also, imports a Tent made of Linen, rolled up in the Form of a PENIS. *Paul. Ægineta, Lib.* 3. *Cap.* 24.

PRIAPISMUS, πριαπισμός. A Priapism. See SATYRIASIS.

PRIAPOLITHUS. The Name of a Stone mentioned by *Borelli*, found about *Castro* in *Italy*, resembling in Shape the Penis.

PRIAPUS, πρίαπος. A Penis.

PRIMÆ VIÆ, The first Passages; that is, the Stomach, and Intestinal Tube.

PRIMITIÆ. The Waters which precede the Fœtus at the Birth.

PRIMORES. A Name for the *Dentes Incisores*, or Foreteeth.

PRIMULA VERIS.

The Characters are;

The Root is perennial; the Leaves are oblong, and wrinkled; the Calyx is quinquefid, pentagonal, and soft: In this Calyx is seated a monopetalous Flower, shaped somewhat like a Salver, with its Margin divided into five Heart-shaped, bifid, Segments; this Flower is furnished with five Stamina, which arise from the Inside of its tubulous Part. The seminal Vessel is an oblong Shell, concealed in a Calyx, furnished with a long Tube, and gaping at its Apex; the Seeds are roundish.

Boerhaave mentions twenty Species of *Primula Veris*; the first twelve of which are of the Class of those which bear a single Flower on every Stalk, and are enumerated as follows;

1. Primula Veris; pallido flore; humilis. *Boerh. Ind. A.* 198. *Primula Veris.* Offic. *Primula Veris minor.* Ger. 636. Emac. 781. *Primula Veris vulgaris.* Park. Theat. 535. Raii Hist. 2. 1080. Synop. 3. 284. *Primula Veris, floribus ex singularibus, majoribus, simplicibus.* J. B. 3. 497. Tourn. Inst. 125. *Verbasculum sylvarum majus, singulari flore.* C. B. P. 241. THE PRIMROSE.

The common Primrose has large wrinkled Leaves, of a dark Green above, and whiter underneath, broad and round at the End, and growing narrower towards the Roots; the Flowers arise directly from the Root on long slender Foot-stalks, consisting of single Tubes spread out at Top, and cut into five large, round Segments, of a pale-yellow white Colour, set in loose Calyces. The Root is small and fibrous. It grows in Thickets, and under Hedges, and flowers in *March* and *April*. The Flowers and Roots are used, though but seldom.

The Flowers are commended by some, as good against Disorders arising from Melancholy, and phlegmatic Humours; the Juice

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Juice of the Root is ſometimes uſed as an Errhine to purge the Head of tough ſlimy Phlegm. *Miller's Bott. Off.*

2. Primula Veris ; Conſtantinopolitana ; flore albo. *T.* 125. *Verbaſcum Turcicum ſive Carchicec Turcarum.* M. H. 2. 555.

3. Primula Veris ; Conſtantinopolitana ; flore dilute carneo. *T.* 125.

4. Primula Veris ; Conſtantinopolitana ; flore dilute purpureo. *T.* 125.

5. Primula Veris ; Conſtantinopolitana ; flore majore purpureo. *T.* 125.

6. Primula Veris ; Conſtantinopolitana ; flore minore purpureo. *T.* 125.

7. Primula Veris ; Conſtantinopolitana ; flore miniato. *T.* 125.

8. Primula Veris ; Conſtantinopolitana ; flore luteo. *T.* 125.

9. Primula Veris ; Conſtantinopolitana ; flore flaveſcente. *T.* 126.

10. Primula Veris ; Conſtantinopolitana ; flore obſolete pallido. *T.* 126.

11. Primula Veris ; Conſtantinopolitana ; flore obſoleto. *T.* 126.

12. Primula Veris ; flore pleno. *H. Eyſt. Vern.* o. 1. *F.* 5. *Fig.* 3. *Verbaſculum, ſylveſtre, magno, plenoque flore.* C. B. P. 242.

The ſecond Claſs contains thoſe Species, which, on one Stalk, bear a Multitude of Flowers, diſpoſed ſomewhat in the Form of an Umbella ; they are as follows :

1. Primula Veris ; umbellata ; odorata ; pratenſis. *Boerh. Ind. A.* 199. *Paralyſis.* Offic. *Paralyſis vulgaris pratenſis, flore flavo, ſimplici odorato.* Park. Parad. 244. *Primula Veris major.* Ger. 635. Emac. 780. Raii Hiſt. 2. 1081. Synop. 3. 284. *Primula Veris odorata, flore luteo ſimplici.* J. B. 3. 495. Tourn. Inſt. 124. *Verbaſculum pratenſe odoratum.* C. B. P. 241. COWSLIPS, or PAIGLES.

The Cowſlip is well known to have ſomewhat ſoft, large, wrinkled Leaves, green above, and whitiſh and hairy underneath, and full of Veins, broadeſt at the End, and growing narrower towards the Stalk ; among theſe ariſe one or two round ſmooth Stalks, five or ſix Inches high, bearing on the Top ſeveral yellow Flowers, in a kind of Umbel, each on a long Foot-ſtalk, and ſet in a looſe whitiſh pentangular Calyx ; the Top being round, and cut into five Segments, with Saffron-coloured Spots in the Middle of each ; the Part incloſed in the Calyx being hollow, and Pipe-faſhioned ; they are of a pleaſant ſweet Scent. The Root is compoſed of ſeveral Strings or Fibres, ariſing from a ſmall Head ; it grows in moiſt Meadows and Marſhes, and flowers in *April*. The Leaves ſometimes, but the Flowers are moſtly uſed.

They are accounted cordial and cephalic, and beneficial to the nervous Syſtem, and ſerviceable againſt the Epilepſy, Palſy, Apoplexy, and Pains in the Head ; they are anodyne, and ſuppoſed to have a Tendency to procure Sleep, for which Purpoſe a Tea is ſometimes made of the Flowers. The Leaves are uſed in warming, ſtrengthening Ointments, particularly the *Unguentum Nervinum.*

Officinal Preparations from Cowſlips are, the ſimple Water, the Syrup, and the Conſerve. *Miller's Bot. Off.*

The Flowers of this Plant, being analyſed, yield a good deal of Acid, a little urinous Spirit, no concreted volatile Salt, and a pretty deal of Oil and Earth ; theſe Flowers have a volatile, aromatic, oily Salt, pretty much tempered. They are very aperitive, and good to reſtore the Courſe of the Spirits. In the Apoplexy and Palſy, *Tragus* preſcribed the Conſerve, or diſtilled Water, of theſe Flowers. To draw the Spirit from them, they muſt be ſprinkled with common Salt, leſt to ferment ſome Days, and then diſtilled ; this Spirit has the ſame Virtues. The Leaves and Roots are very aperitive. *Martyn's Tournefort.*

The Plant is heating and drying, and has ſomething of an acrimonious and bitteriſh Taſte ; it is, alſo, ſomewhat aſtringent, and has an anodyne Virtue. The principal Uſes, to which it is applied, are in cephalic Diſorders, and the Arthritis, and other Pains and Affections of the Joints.

2. Primula Veris ; pallido flore ; elatior. *Boerh. Ind. A.* 199. *Tourn. Inſt.* 124. *Herba Petri.* Offic. *Primula pratenſis inodora lutea.* Ger. 635. Emac. 780. Raii Hiſt. 2. 1081. Synop 3. 284. *Primula Veris caulifera, pallido flore inodoro aut vix odoro.* J. B. 3. 496. *Paralyſis altera odorata, flore pallido polyanthos.* Park. Parad. 244. *Verbaſculum pratenſe aut ſylveſtrium inodorum.* C. B. B. 241. GREAT COWSLIPS, or ORSLIPS.

They grow in Woods and Thickets, and flower in *April*. The Leaves, infuſed a Night in White-wine, are recommended againſt the Anaſarca. *Dale.*

3. Primula Veris ; geminato flore. *H. Eyſt. Vern.* o. 1. *F.* 5. *Fig.* 4. *Verbaſculum proliferum.* C. B. P. 242. M. H. 2. 554.

4. Primula Veris ; Anglicana ; flore pleno. *H. Eyſt. Vern.* o. 9. *F.* 3. *Fig.* 2. *Verbaſculum, hortenſe, multiplex.* C. B. P. 242.

5. Primula Veris ; hortenſis ; umbellata ; caule & flore folioſo, coccineo, majore.

6. Primula Veris ; hortenſis ; umbellata ; flore folioſo ; luteo, minore.

7. Primulæ Veris ; umbellatæ ; odoratæ ; hortenſis ; ſimplicis varietas uberrima pro varietate jucundiſſima coloris multiplicis.

8. Primulæ Veris ; umbellatæ ; geminato flore abundans & grata ratione pigmenti diſcrepantis copia. *Boerh. Ind. alt. Plant.*

It is called *Primula Veris*, becauſe it flowers in the Spring before all other Plants. It is recommended in a Palſy proceeding from Want of Spirits. The Leaves are eatable in Salads, or boiled with other Greens ; and their expreſſed Juice is good againſt the Palſy, for it is reſtorative ; the Flowers have a very ſweet and innocent Smell, and are diſſolvent, without Danger of an Inflammation. The Leaves and Roots are aperitive, and effectual in Apoplexies and Rheumatiſms, being comfortable and ſtrengthening to the Nerves and Joints ; externally uſed, they are of Service in Tumors ariſing from the Bites or Stings of venomous Animals, and in the Gout. Vinegar impregnated with the Roots, and attracted into the Noſtrils inſtead of an Errhine, is an admirable Remedy for the Tooth-ach. A Conſerve of the Flowers is very good for the Palſy ; *Willis* and *Sydenham* preſcribe it in acute Diſeaſes. The Flowers, when young and tender, are uſed inſtead of the Flowers of the Tilia ; for they procure Sleep, and are of an anodyne Quality. *Hiſt. Plant. adſcript. Boerhaav.*

PRINCEPS. A Name for the *Inteſtinum Rectum.* *Principes Dies* are Critical Days.

PRINCIPIA. The Principles, or Elements, of Bodies.

It is impoſſible to diſcover the Virtues of any Body, or how mixed Bodies of different Kinds ſtand related to the human Body, either for the Preſervation of its Functions entire, the reſtoring them when loſt or impaired, or for the total Deſtruction thereof, till we know the Principles of which they conſiſt, and, likewiſe, the Mixture and Proportion of ſuch Principles in Bodies, to which their Effects are principally owing. Wherefore, having diſcovered, by various Ways, the Parts into which a true chymical Analyſis reſolves Bodies, we muſt look upon ſuch ſimple Parts, into which all mixed Bodies are capable of being reſolved, and of which they ſeem to be compounded, as their true and genuine Principles. The Antients, having obſerved, that, in analyſing all Bodies whatever, they obtained a Spirit, or Mercury, Sulphur, Salt, Water, and Earth, concluded the Number of Principles to be five.

If Wine, for Inſtance, be diſtilled in a proper Alembic, a burning Water, or Spirit, will firſt ariſe, next an inſipid Water, which they call *Phlegm*, a thick, viſcid Maſs alone remaining in the Still. This they put into another Veſſel, or Retort, which being expoſed to a more intenſe Heat, a ſmall Portion of Phlegm comes over firſt ; then an acid Water, which, according to them, is ſtill Spirit, or Mercury ; next, a fat, oily Subſtance, called *Sulphur*. What remains ſtill in the Retort, is burnt to Aſhes in an open Fire. Theſe Aſhes are thrown into an earthen Veſſel, with a proper Quantity of boiling Water, which they impregnate with Salt. This Water, being tred through Cap-paper, and afterwards evaporated, leaves the Salt at the Bottom. The other Part of the Aſhes, which the Water does not take up, is termed *Earth*, or *Caput Mortuum.*

Of theſe five Subſtances the Chymiſts have reckoned two to be paſſive, Water, and Earth ; and three active, Spirit, Sulphur, and Salt ; and on theſe laſt they thought the whole Virtue and Efficacy of the mixed Body depended. In this Analyſis we may obſerve, that there is a twofold Spirit ; one oily and inflammable, which riſes firſt by a gentle Heat, and is termed *Spirit of Wine* ; another acid and penetrating, like that of Vinegar. Beſides, theſe Chymiſts give the Name of *Spirit* to other penetrating, volatile, or urinous Liquors, obtained from the Parts of Animals, ſuch as the *Spirit of Urine, Hartſhorn, Blood*, and ſuch-like Subſtances : But the later Chymiſts have baniſhed theſe Spirits from the Number of their Principles, as being nothing elſe than Sulphur, or Salt, diſſolved in Water. Thus Spirit of Nitre, and others of that Kind, are only acid Salts in Water ; Spirit of Hartſhorn, or Urine, alcaline Salts ; and Spirit of Wine, or of Turpentine, an ethereal, attenuated Oil.

Some of the Moderns deny, likewiſe, that either Sulphur or Salt deſerve the Name of Principles, or Elements ; as not being the moſt ſimple Subſtances producible by Chymiſtry. For Sulphur, when treated with due Care, may be reſolved into Salt, Water, and Earth ; as is evident by diſtilling fetid diſtilled Oils ſeveral times with Quick-lime ; which, by this Treatment, yields,

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yield, in large Quantities, a volatile Salt dissolved in Phlegm, together with a Caput Mortuum, or Earth. Likewise ethereal Oils are only fat, thick Oils like that of Olives, attenuated by Salts, and dissolved in Water, as may be proved by the two following Experiments: If Oil of Olives, or any other of that kind, be mixed with a fermenting Liquor, such as a Solution of Honey in Water, the Whole will be converted into an inflammable Spirit. And if a Quart of Spirit of Wine, diluted with six Quarts of common Water, be exposed in a cold Place to the open Air, the volatile Salts will fly off, and leave Drops of Oil swimming at the Top, which are, in every respect, the same as Oil of Olives, or Almonds.

Salt has no better Title to a Principle, than Sulphur, because it may, by proper Management, be at length reduced to Earth and Water. Thus Nitre, by Distillation, may be almost wholly reduced to an acid Spirit; but, if it be burnt with Tartar, or Charcoal-dust, it becomes an alcaline Salt, called *fixed Nitre*. This, if suffered to run per Deliquium, and afterwards filtred through Cap-paper, will leave a large Quantity of Earth behind; and, if the same Liquor be distilled to Dryness, a large Quantity of insipid Water will come over, and the Salt remaining at the Bottom of the Retort will have lost a great Part of its first Quantity. If this Operation be repeated, nothing will at length remain, but Earth. Again, the Vitrification of alcaline Salts seems to be nothing, but the Conversion of them into Earth; for Glass has no Qualities different from those of Earth.

What we have proved by Experiments made by resolving Bodies, may be further confirmed by others relating to the Formation and Composition of them, and particularly by *van Helmont*'s famous Experiment on the Willow, which has been often quoted by succeeding Authors. He took about two hundred Pounds of Earth dried in an Oven, and put it into a Vessel covered with an iron Lid full of Holes. In this Earth he set a Branch of Willow, weighing about five Pounds, which soon took Root, and grew so much, that in eight Years time it weighed an hundred and sixty Pounds, the Earth it stood in, having, during all this Time, lost only a few Ounces; so that the whole Increase of the Tree must have been owing to Rain-water, and a very small Proportion of Earth, and the Salts and Sulphur therein must have been composed of these two Elements alone. The Experiments of this kind, made by the illustrious Mr. *Boyle* on small Sprigs of Mint, Marjoram, Penyroyal, Baum, and the like, set in Phials filled with clear Water, are more to be depended on. They increased in a short time to double their first Weight, and, being afterwards distilled, they yielded the very same Principles, as they would have done, had they grown in the most proper Soil; from whence it is plain, that Salt and Oil owe their Original to Water and Earth.

Water and Earth, in the strictest Sense, deserve the Name of *Principles*; but, in the Formation of mixed Bodies, a third Principle must necessarily concur with them; for as they are of themselves wholly inactive, something must be supposed to give them their Motion and Activity. Without this, Water would immediately turn to Ice; and as there are few Bodies, out of which Fire may not be drawn, it is evident, that there must be some active, moveable Principle in them all, to which the Motion of the other Parts is to be ascribed. Therefore, though this Principle should not fall under our Senses in the same manner as the others, that can be no Reason for doubting of its Existence, since it must concur in the Composition of all Bodies, which, if they were made of Water and Earth alone, would remain for ever without any Virtue or Energy. This they must receive from another Principle, and, according to the different Combinations of all the three, Bodies are formed with different Properties and Powers. We acknowledge, therefore, three simple Substances in Bodies, which are properly Elements, or Principles: One active, which may be termed *Fire*; and two passive, Water, and Earth. From the most simple Union, or Connection of these three, Salt arises, which is to be looked upon as the most simple of all mixed Bodies. The next to that is Sulphur, or Oil, made by the Union of the three Principles, and of Salt.

Thus far concerning the Principles of Bodies in general: We now proceed to consider each of them in particular.

Fire considered as a Principle.

We reckon elementary Fire the first Principle of Bodies, as being that, from whence all the rest receive their Activity. It is a simple and most subtile Body, in a continual swift Motion, filling, and easily permeating, the Pores of all other Bodies. Its immense Subtilty is evident from this, that it penetrates all Bodies whatsoever; and its swift Motion, from that Rapidity which it is capable of communicating to them. Its Force is in proportion to the Quantity of it any-where collected. In the Sun, which may be looked upon as a vast Congeries of this Substance, its Motion is most violent. In culinary Fires, the Quantity and Motion of it are not so great, but still greater, than in spirituous and volatile Liquors, where it is hardly to be perceived, except when they are set on Fire. Not only all Motion, but, also, Heat, proceeds from it, which, as it exists in Bodies, is nothing but the excessive Motion of their Parts. It is, also, too subtile and active ever to be collected pure in Chymical Analyses; where-ever it is found, it is always united with Water and Earth, in Salts and Sulphurs; and is sometimes concentred with Bodies in so great Quantities, as considerably to increase their Weight, as is evident in calcined Antimony, in which there is an Addition made of almost a Fifth Part.

Water considered as a Principle.

Elementary Water is a simple, liquid, insipid, inodorous, pellucid Substance. Its Fluidity is owing entirely to the Action of Fire, and, when that Action is very great, its Parts are actually divided, and the Whole turned to Vapour; but, when it is very small, they cohere strongly, and turn to Ice. This Element the Chymists call *Phlegm*, and it may be conceived to consist of small, smooth Particles, of an oblong or oval Figure, and perfectly rigid or inflexible. From the Minuteness of its Particles, it easily penetrates the Pores of almost all Bodies. An oval Figure seems more agreeable to the Fluidity and Motion of Water, than a spherical, and, likewise, to the Solidity we observe in Ice; the Points of Contact being too few, in spherical Bodies, to form so strong a Cohesion. Were its Particles angular and flexible, they would be too weak to penetrate and dissolve Salts, and would, likewise, be too much resisted; but, as their Surface is smooth, they can easily enter the Pores of Salt, and afterwards they easily separate their Parts, that is, dissolve them by their Rigidity, and oval Figure. The Want of Taste or Smell in Water seems to proceed from the Smoothness, Obtuseness, and Smalness of its Particles, which cannot vellicate the Nerves of the Tongue and Nostrils. The Fluidity of Water arises from the Smalness, Smoothness, and Figure of its Particles, and from the easy Motion thereof by the Fire contained in their Interstices. Without the Action of Fire separating these Particles, and keeping them in continual Motion, their Fluidity would presently be lost, how much soever their Structure may dispose them to it, and they would become one solid Mass. On the other hand, if the Action of Fire upon them be very great, they are farther separated from one another, and fly off in Vapour or Smoke. In fine, Water is transparent, because its Pores are so disposed, as readily to transmit the Rays of Light.

Earth considered as a Principle.

Elementary Earth is the same with the *Terra Damnata*, or Caput Mortuum, of the Chymists; being a simple, friable, porous Substance, without Smell or Taste, consisting of Particles of no regular Figure, and altogether unfit for Motion. The Porosity of Earth seems to arise from the irregular Figure of its Particles; and as these Particles often touch one another only by their Angles, the whole Mass must necessarily be friable. The Want of Taste and Smell seems to be owing to their Inaptitude for Motion.

In the Analyses of Bodies, the last Thing is always this Principle of Earth; and, in their Composition, it seems to serve as a Basis or Foundation for the other Parts of the Mixture; and to it the Dryness, Solidity, and Hardness, of Bodies are, in a great measure, to be ascribed.

Salt considered.

Salt, as has been said, is a mixed Body; but I chuse to introduce it immediately after the Principles, because, in all the common Analyses of Bodies, it is obtained entire, and a great deal of Pains and Accuracy is required to decompose it, or reduce it to its Principles. It is, also, the sole Origin of the Taste, Smell, and many other Properties of Bodies. It may be defined to be a mixed Body, formed by the Concretion of Fire, Water, and Earth, into a solid rigid Substance, soluble in Water, and fusible by Fire. As its Particles may be conceived to cohere by large Surfaces only, Salt cannot be friable like Earth; but requires a considerable Force to separate its Parts, which fly off from one another, like those of Glass, with a sensible Noise. It becomes the Cause of Taste and Smell, because its Particles terminate in strong Points, which vellicate the nervous Membranes of the Tongue and Nose.

Salt is of three kinds, acid, acrid, or alcaline, and a third, compounded of the other two, called, in *Latin*, *Sal salsus*.

Acid Salt is a Congeries of inflexible solid Parts, of an oblong Figure, and pointed at both Ends. That its Particles are rigid and hard, appears from the Force, with which it divides and dissolves solid Bodies; and its Sharpness and Pungency are evident from the Effect it has on the Tongue, different from the Corrosion of acrid Salts. Acid Salt is easily dissolved by Water, and after this Solution its Particles are equally dispersed thro' that Fluid, and have the same Motion with it. Hence it appears, that the Particles of both Substances have nearly the same specific Gravity; and likewise that the Motion of the aqueous Parts is great enough to overcome the Cohesion of the Parts of Salt.

Con-

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Concerning the Manner, in which the Particles of acid Salt are compounded of Fire, Water, and Earth; nothing can with Certainty be determined. It may be conjectured however, that several Particles of Water, being collected into one little Mass, are cemented together by some Particles of Fire and Earth, lodged in the Interstices left between them; and that all these, taken together, are disposed in an oval Form, or that of two Cones joined by their Bases. This Configuration, however, is not the same in all acid Salts; but the Differences may all be reduced to three; the nitrous acid, the muriatic, and the vitriolic.

The Word *Alcali* is derived from *Cali*, the *Arabic* Name of a Plant, from the Ashes of which a Salt is obtained, proper for making Glass: And thence it came to be used for all Salts, got from the Ashes of Plants, and afterwards for all Salts, and other Substances whatever, that ferment with Acids.

Acrid or alcaline Salt seems to be a Congeries of spherical Particles, with rough prickly Surfaces, because of their great Disposition to Motion, and their corrosive burning Taste, the Points of their Surfaces acting on the nervous Papillæ of the Tongue, like so many Files, whereas acid Salt is only pungent. But then, by these Points, a larger Surface is exposed to the Action of Fire, than could otherwise be; and thus the Particles of alcaline Salt are very volatile, or easily raised by a gentle Heat. The Origin of their Salt is probably from a certain Connection of acid Points, and terrestrial Particles, because, in many Operations of Chymistry, such Salts arise from the Mixture of acid Salts, and Earth; as we see particularly in the Preparation of fixed Nitre, and Fomentation of Urine. Nitre, being distilled, leaves a compound fixed Salt behind, of the same Nature with Sea-salt, out of which, by a nicer Distillation, an acid Liquor may be extracted, without any volatile Salt, or at least, but a very small Quantity; but if the same fixed Salt be previously fermented, and then distilled, it yields a large Quantity of volatile Salt, and very little fixed Salt, or Acid; because by Fermentation or Calcination the acid and terrestrial Particles are intimately mixed, the acid Spicula entering the Pores of the Earth, and so forming new Molecules, which are dense and close towards the Centre, and prickly on the Surface, by the acid Points sticking out. Such are the Particles of volatile Alcalis, of which if a great Number be joined together, they must cohere very strongly, by means of their Points, and form Molecules of irregular Figures, in the Pores of which watry, earthy, sulphureous, or acid Particles may be received and absorbed. Hence it is that acid Salts are seldom pure; and as they are very often filled with Particles of Earth, they resist the most violent Degree of Fire, and will sooner melt than be raised by it. This is the true Nature of fixed alcaline Salt, such as Salt of Tartar, or the Salts got from the Ashes of Plants called Lixivial Salts. If they be impregnated with sulphureous Particles, they continue very volatile, and are raised by a small Degree of Fire; as we see in Salt of Urine, Harts-horn, and others got from Animals. Acrid Salts easily melt, when exposed to a moist Air, because the Particles of Water contained in it readily enter their Pores. When thus melted, they become properly Lixivia, and are commonly termed Oils, as Oil of Tartar per Deliquium. Volatile alcaline Salts, diluted with Water, are called volatile urinous Spirits; such as the volatile Spirit of Urine, of Harts-horn, Blood, and others.

The *Sal Salsus*, or third Kind, is compounded of acid and alcaline Molecules united together; and the Figure of its Particles is principally produced by the Kind of Acid that enters its Composition. The Impression these Particles make on the Tongue, is more dull and languid, than that made by acid or acrid Parts alone; because the Molecules formed by the Union of these are larger in Bulk, and consequently less disposed for Motion; and therefore, though there is a greater Quantity of Aculei, or Points, in one of these Molecules than in the former, yet their Bulk makes them less capable of entering the Pores of the Skin, and vellicating the nervous Papillæ, than when they are in a disjoined State. The Taste of these Salts is termed saline, and varies according to the Thickness of the Spicula, their Number, and the other Parts that may be mixed with them. That this is the true Original of this kind of Salts, is evident, both from the artificial Composition thereof, from acid and acrid Particles blended together, and from the Resolution of them into the same. Thus, by pouring Spirit of Nitre, of Sea-salt, or of Vitriol, on Salt of Tartar, new Salts are produced exactly of the same Appearance with Nitre, Sea-salt, or Vitriol; and, by analysing these three Salts, the essential Salts of Plants, Sal Ammoniac, and others, an acid and alcaline Salt may be obtained, in some fixed, in others volatile.

Oil, or Sulphur, considered.

What the Chymists call Oil, or Sulphur, is not a simple Substance, but a Body compounded of Fire, Water, Earth, and Salt; but we chuse to introduce it here, as it is most commonly separated entire in the Operations of Chymistry, and is not resolved without Difficulty into its component Principles. It may be defined to be a fluid, viscid, inflammable, transparent Body, without Taste or Smell, (though, by mixing it differently with Salts, these sensible Qualities are produced) compounded of Fire, Water, Earth, and Salt; and it may be conceived to consist of many Flakes, or Flocculi, each of which is again made up of very small flexible Filaments, formed of the four Principles before-mentioned, by Fermentation, as well in the Bowels of the Earth, as in the Bodies of Vegetables and Animals: Thus an aromatic Plant, growing in Water, will, by Distillation, yield an Oil, which could never have been obtained from the Water, in which it stood; and all Oils may by Art be resolved into Water, Earth, and Salt. From these Filaments variously concreted arise the Flakes already mentioned, which are of different Thicknesses; and in the Pores thereof is lodged the Element of Fire, which, also, runs in Rivulets through their Interstices. Upon these depend the specific Levity, Inflammability, and Fluidity of Oil; but, as, notwithstanding the intestine Motion caused by the Element of Fire, the small Flakes still adhere, in some measure, together, this Fluid must be more viscid than any other.

From what has been said concerning the Nature of alcaline Salts, and the Figure and Structure of the oily Flocculi, it is easy to conceive, why all Alcalies dissolve Sulphurs; for since the alcaline Particles are spherical and prickly, they cannot enter the Interstices of the Flakes, without carrying away some of them from the rest; and thus, by degrees, throughly dissolving them. But the dense, rigid, and pointed Molecules of Acids, being forced into these Interstices, increase the Density, and strengthen the Texture, of the Flocculi; and from the Diversity of these, and of the acid Spicula mixed with them, arise the different kinds of Sulphurs. Sulphurs formed in the Earth of Fire, acid Salt, Water, and a very fine Earth, are termed Bitumens. Thus Bitumens dissolved in a large Quantity of Water form the mineral Oils, or Petrolea. But if they are mixed with Earth and Salt, the solid Bitumens are produced, differing from one another in Degrees of Purity, according to the Quantity or Grossness of the Earth, or different Degrees of Mixture. Thus fossil Coals, Jet, Amber, and the common Bitumens, and bituminous Earths, are produced. If there be but a small Quantity of Earth, and much acid Salt, the common mineral Sulphur, or Brimstone, is formed. If the mineral original Bitumen is joined to a fusible Earth, capable of Vitrification, it communicates to it a metallic Form; that is, the Sound, Brightness, Softness, Ductility, Malleability, and all the other sensible Qualities of Metals.

This Origin of mineral Bitumens may be confirmed by many Experiments: If a Mixture of equal Parts of Oil of Vitriol, and Oil of Turpentine, be digested together, for a considerable time, in a very gentle Heat, and afterwards distilled in a Retort, there will come over first a yellowish Liquor, resembling Petroleum, both in Smell and Consistence. What remains in the Retort, is, at first, a soft Bitumen, and afterwards turns into an hard black Mass, easily inflammable, and, when burnt, smelling exactly like a fossil Coal. But if the Distillation be continued, a white acid Liquor will next be obtained, which, by standing, lets fall a grey Powder, which is true common Brimstone, a yellow Substance of the like Nature adhering likewise to the Neck of the Retort; what is left behind being a black, shining, light Substance, disposed in thin disgregated Strata, like Talc, in which, by the Help of the Loadstone, Iron may be discovered. Thus, therefore, all these Bitumens may be artificially produced; and the Analysis of the natural ones further confirm the Manner of their Formation. Thus the Chymists have shewn, that Metals are nothing but bituminous Substances, which have undergone a long Digestion; for, by depriving them of their Sulphur, they are reduced to Ashes, and then to Glass. This is easily seen in the imperfect Metals; for if any of them be exposed to a long Heat, and especially to the Rays of the Sun, collected by a large Burning-glass, the sulphureous Principle flies off, and only a Calx, or Ashes, will be left behind, which, in a more vehement Degree of Fire, are presently vitrified; and, by restoring the Sulphur, this Glass may be again reduced to Metal.

The inflammable Substances in Animals and Vegetables consist of a different Combination of the Principle of Sulphur, and acid Salt; for the Oil, or Sulphur, in these, is formed by a small Portion of Earth joined to the elementary Fire, acid Salt, and Water: This Oil, when joined to an acrid Salt, produces Gums; when joined to a fine Acid, and a new Accession of fiery Particles, it produces essential Oils, and inflammable Spirits; but if the Acids are more gross, by reason of a larger Quantity of Earth joined to them, it forms Resins, as we learn from the artificial Composition of all these Substances. By mixing Spirit of Wine with volatile Spirit of Urine, we obtain a mucilaginous Concretion, or thin Gum. Oil of Olives, and Salt of Tartar, melted together, makes a kind of Soap, or thick Gum; and if Spirit of Wine be digested for a long time with Oil of Vitriol, and then distilled, an inflammable Oil is obtained, resembling in Smell, and other Qualities, the essential Oils of Plants, a true Resin being left behind in the Retort.

In Animals this same oleaginous Principle forms the Fat, and other glutinous or gelatinous Substances; these last being com-

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compoſed of an acrid volatile Salt and Oil, as appears from their Analyſis: But Fat is made of the ſame Oil, and acid Salt; for if Oil of Olives, and Spirit of Nitre, be mixed together, and digeſted, a Subſtance will be formed in every thing reſembling the Fat of Animals.

Sulphureous Subſtances found in Bodies are either fixed, or volatile. The fixed Sulphurs are either ſolid, ſuch as Fat, Reſin, and the Bitumens; or fluid, as Oils. Volatile Sulphurs are ſuch as fly off with a ſmall Degree of Fire, and have an Appearance compounded of that of Oil and Water. Such are inflammable Spirits obtained from the Flowers and Fruits of Plants.

The Mixture of Elements.

All Bodies conſiſt of the five Principles above-mentioned; and the Diverſity of Bodies ariſes entirely from the different Combination of them. Theſe Combinations, or Mixtures, of the five Principles are produced by Motion, and that Motion entirely by the Element of Fire. This Motion is ſometimes ſlow and inſenſible, as in the Growth and Maturation of Fruits; more lively and quick, as in the Fermentation of Muſt; or very vehement, as in the Deflagration of Bodies. All theſe Motions go by the general Name of Fermentation; and if they tend to the Deſtruction or Diſſolution of Bodies, they are termed Corruption.

The moſt ſimple, or leaſt compounded, Mixture of Principles is ſeen in the Fermentation of Salts, which conſiſt principally of Water and Earth; next of Sulphur, made up of Water, Earth, and Salt; then of the acrid Salts, both fix'd and volatile, with the eſſential Salts of Plants, and ſulphureous Bodies, whether ſolid or liquid. The Manner how theſe Mixtures are brought about, and the Changes ariſing from thence, will beſt be underſtood by Examples.

The Fruit of the Vine, juſt beginning to put on the Form of Grapes, is inſipid, or, at leaſt, taſtes only like Graſs. As it grows, a certain Acidity is diſcovered in it, which at firſt produces an auſtere Taſte; then an acerb one, in which State the Juice is termed Omphacium, which, in Diſtillation, yields a great Quantity of Water, ſome acid Liquor, and a ſmall Portion of Oil, a large Proportion of Earth being left behind. In this Juice, therefore, the auſtere and acerb Taſtes are owing to the acid Spicula, juſt breaking out through the earthy Parts, but not wholly diſengaged from them. When the Grapes come to be fully ripe, the auſtere Taſte is changed to a ſweet one, becauſe the Juice, being more thoroughly penetrated by the Element of Fire, is rarefied, and put in a more violent Motion, by which the Salts throw off their earthy Involucra entirely, and by a new Combination of theſe Salts, Water, and Earth, are formed Sulphurs, or Oils. But if any of the acid Salts remain after the Compoſition of the Sulphurs, they continue ſtill entangled by the Filaments thereof; and their ſharp Points, vellicating the nervous Papillæ of the Tongue, create that agreeable Taſte, which is perceived in Muſt. This Muſt in Diſtillation affords a great Quantity of Phlegm, next a pretty large Portion of an acid Water, ſome acrid or volatile urinous Salt, and a Quantity of thick Oil, much beyond what was gained by the former Diſtillation. Laſtly, from the Maſs that remains in the Retort, an acrid fixed Salt may be obtained by the common Method. However, even in this Juice of ripe Grapes, or Muſt, the Salts and Oils are not carried to the greateſt Degree of Fineneſs, and Part of them remain ſtill involved in the earthy Involucra. But if a large Quantity of it be ſet to ferment, the igneous Particles begin to act again, and by them this inteſtine Commotion is continued, till all the groſs Parts are either attenuated, or thrown out from the Liquor, and the Salts and Sulphurs perfectly ſet free from the earthy Parts, and intimately mixed with one another. The Liquor in this State is Wine, and the groſs Parts, that fall to the Bottom of the Veſſel, are termed Lees. The Briskneſs and penetrating Quality of the Wine ſeems to be owing to the large Proportion of the Element of Fire, which harbours among the Filaments of the ſulphureous Flocculi; and this Liquor being diſtilled, we obtain, firſt, a great Quantity of inflammable Spirit, then a copious Phlegm, next an acid Liquor with ſome Portion of an oily Spirit, a thick Oil, and, laſtly, a ſmall Quantity of Caput Mortuum, which will yield a little fixed Salt. In this Diſtillation a far leſs Quantity of acid Liquor is obtained, than from Muſt; which, on the other hand, yields no inflammable Spirit. If the Lees of Wine be well dried, and then diſtilled, they yield a very large Quantity of volatile urinous Salt, the acid Salts, combined with the ſulphureous and earthy Particles, being, by Fermentation and Heat, converted into alcaline Salts.

In the ſame manner, if green Peas or Beans be diſtilled, they yield a great deal of acid Liquor and Phlegm, with a ſmall Portion of Oil. If they are firſt fermented with common Water, an inflammable Spirit is got from them in the ſame manner as from Wine; and if they are kept for ſome Months in a dry Place, they yield a volatile alcaline Spirit, without any acid Liquor, or, at leaſt, but very little. Whence it is evident, that acid Salt, by its Union with other Principles, is changed into Sulphur; and, by its Union with earthy and ſulphureous Particles, becomes an alcaline volatile Salt; as, by being driven into earthy Particles, alone, by the Force of Fire in Calcination, it is changed into a fixed Alcali.

It may be proper, upon this Occaſion, to obſerve, that the Salts of all Plants are not entirely alike, but differ from one another, not only as the Quantity of Sulphur, Water, or Earth, which is joined to the Acid, is greater or leſs; but, alſo, according to the original Nature of the Acid which enters their Compoſition. Acid Salts, as we have already ſaid, are of three Kinds, muriatic, nitrous, and vitriolic. Muriatic Salts, ſuch as Sea-ſalts, and Sal Gemmæ, being cryſtallized, put on a cubic Figure, the Particles thereof appearing to be formed of two quadrilateral Pyramids, joined together by their Baſes. Nitrous Cryſtals repreſent Priſms with ſix Sides, formed by the Juxtapoſitions of two triangular Pyramids; and Cryſtals of Vitriol ſeem to conſiſt of two hexagonal Pyramids, as far as can be judged by the Particles thereof, when carefully ſeparated from all Metals. Theſe original Salts, combined with others, form compound Salts, of almoſt all Kinds. Thus, in the Vegetable Kingdom, the different Sorts of Vinegars are nothing but ſome original acid Salt diſſolved in Phlegm. The eſſential Salts of Plants obtained without Fire conſiſt of ſome Acid joined with Particles of Earth, or of the other Principles. Sal Ammoniac ariſes from the Union of acid and volatile alcaline Salts. Fixed Alcalies are only the acid Spicula ſtruck into earthy Molecules; and volatile Alcalies conſiſt of the ſame Acid, joined to very fine Particles of Earth and Sulphur, ſo as to form prickly Globules. Moreover, the ſame Varieties of acid Salts are to be met with in Vegetables, that are found in Minerals. Thus the eſſential Salts of Pellitory of the Wall, Borage, wild Cucumber, and the like, are nitrous; and, when thrown upon burning Charcoal, they fulminate like Nitre. The fixed Salts of Carduus Benedictus, Glaſſwort, and Spurge, are like Sea-ſalt, their Particles having the ſame cubic Figure; and, when thrown upon burning Charcoal, they decrepitate. The Cryſtals of Tartar are like thoſe of Vitriol; and that they are formed by a vitriolic Acid, appears from the ſulphureous Smell of Tartar, when artfully calcined. Beſides the ſaline Compounds already mentioned, other Mixtures are formed in Plants, ſuch as Gums, Reſins, Honeys, and the like. Gums are ſomething between Acid and Oil, being an acid Salt, ſo fixed in the Earth, as that the greateſt Part of it is changed to an Alcali, the other into Oil; ſo that the Mixture ariſing from thence is an oily Salt, reſembling the ſaponaceous Concretes of the Chymiſts, made of Oil of Olives, and a Lixivium of Tartar, or the mucilaginous Bodies formed of Spirit of Wine, and the volatile Spirit of Urine. And thus we ſee, that all Seeds which are oily when ripe, are in the Beginning only a Mucilage, or imperfect Oil. Reſins conſiſt of Oil and Acid, and accordingly are artificially produced by mixing Spirit of Vitriol with Spirit of Wine, or of Turpentine. They are either ſolid, or liquid; but theſe differ from one another only in the Proportion of Earth, that enters their Compoſition. Melleous Juices, which either exude ſpontaneouſly from Plants, ſuch as Manna, or are obtained by Art, as Sugar, are eſſential Salts, conſiſting of a Mixture of Acid and Alcali, with a large Proportion of Oil.

The Mineral Kingdom furniſhes us with a great Variety of Inſtances, of the way how the Principles of Bodies may be combined together. The Lime-ſtone and Parget are ſo framed, that, by being calcined, a vaſt Number of Cells are opened by the Fire, into which Water eaſily enters, with an Hiſſing or Colliſion of the included igneous Particles. If the Water remain long in theſe little Receptacles, nitrous Parts are formed, as we ſee in old Walls, built with theſe Materials, from which Nitre may always be obtained. The greateſt Part of this Nitre, by Diſtillation, is changed into an acid Spirit; but, by Calcination, turns to an alcaline Salt. And it may be, that the Nitre of the Antients, or that alcaline mineral Salt, which was dug out of the Earth in *Egypt*, and other Countries, and is obtainable by Art from mineral Waters, was nothing but Nitre calcined by the Heat of the Earth, and ſo converted into a fixed alcaline Salt. The vitriolic Acid, joined with different metallic Subſtances, produces all the Kinds of Vitriol; with an aſtringent Earth, it forms Alums; and with the Principle of Fire, common Brimſtone, which, by Deflagration, may be again converted into Oil or Vitriol, the other Principles flying off. Brimſtone may, likewiſe, be artificially produced by uniting the Principle of Fire to any vitriolic Acid.

The like Mixture of the Principles of Bodies may be obſerved in the Animal Kingdom. Chyle and Milk contain a latent Acid; which eaſily diſcovers itſelf by Putrefaction; but this acid Salt, having undergone a due Fermentation, or ſome other Action analogous to that in the animal Body, is changed into a volatile Alcali, obtainable in great Plenty from the Blood, Serum, Bile, Urine, and other Juices. In an healthful Body, however, theſe volatile Alcalies are never perfectly formed, the animal Salts being more of the Nature of Sal Ammoniac, with a Mixture of earthy and oily Parts, to which Mixture the glutinous Quality of the Blood and Serum is owing. By Putrefaction, or Calcination, all animal Liquors are changed, ſo as to afford

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a ſtrd perfect volatile Alcalies, as has been evidently ſhewn by Experiment. *Geoffroy.*

PRION, πρίων. A Saw, or *Terebra.*

PRISIS, πρίσις, from πρίω, to ſaw. A Saw, or *Terebra* of the Trephan. A Sawing. Or a Grinding of the Teeth.

PRISMATA, πρίσματα, from πρίω, to ſaw. Saw-duſt, or Raſpings.

PROBARBIUM. The firſt Appearance of the Beard on the ſuperior Lip.

PROBLEMA, πρόβλημα, from προβάλλω, ſignifying, among other Actions, to object, or lay ſome Hindrance in the Way, is any kind of Obſtacle laid to obſtruct an Entrance into any Place, or guard the Avenues leading to it. In this Senſe the Term πρόβλημα is uſed by *Hippocrates*, *Lib.* περὶ γυναικ. φύσ. and *Lib.* 2. περὶ γυναικ. to ſignify the Membrane which, growing to the Neck and Orifice of the Uterus, obſtructs the Paſſage of the Semen, and ſo prevents Conception. This Membrane, he ſays, will offer itſelf to the Touch of the introduced Finger.

PROBOLE, προβολὴ, from προβάλλω, to project, is a Projecture, or Prominence, of any kind. Thus, *Lib. de Artic. Hippocrates* obſerves, that, in other Cattle beſides Oxen, προβολὴ τῶ χείλεος λεπτὴ, "The Prominence of the Lip is but "thin," and the upper Jaw is but thin, and therefore they can feed upon ſhort Graſs; but in Oxen it is quite otherwiſe. And, *Lib. de Vulneribus Cap.* προβολὴ τῆς κεφαλῆς ἐκ τὸ ἔμπροσθεν, "The Prominence of the Head towards the anterior Parts," is explain'd by the Author to be when the round Eminence [ἐξέχον στρογγύλον] of the Bone juts out beyond the reſt.

PROBOSCIS. The Trunk of an Elephant, and of ſome Inſects.

PROCARDION, προκάρδιον. The Pit of the Stomach.

PROCATARCTICA CAUSA. The antecedent, preexiſtent, or predisposing Cauſe of a Diſeaſe. See CAUSA.

PROCESSUS, in Anatomy, is a Proceſs, Protuberance, or Eminence of a Bone. In Chymiſtry, a Proceſs is properly a Series of Operations, tending to the Production of ſomething new.

PROCHEILA, πρόχειλα. The Extremities of the Lips.

PROCHYMA, πρόχυμα. Muſt which flows from the Grapes ſpontaneouſly, before they are preſſed.

PROCIDENTIA. The falling of any Part out of its proper Place. It is the ſame as PROLAPSUS.

PROCLESIS, πρόκλησις, from προκαλέω, to provoke, call forth, ſignifies, in *Hippocrates*, a provoking or inviting the Senſes to the external Parts, in order for their Gratification. Thus we read, *Lib. de Liquid. Uſu*, διὰ τᾶτο ἡ ἀπὸ τὸ θερμᾶ ἡδονὴ ἡ πρόκλησις, ἀπὸ δὲ τᾶ ψυχρᾶ ἀλγηδόνες ἡ ἀποῤῥίψεις· "For this Reaſon, hot Water gives Pleaſures and Allurements "to the Senſes; but cold Water, on the contrary, creates "Uneaſineſs and Averſions." Here ἀποῤῥίψεις, which import a Retreat, Shrinking back, and Retirement, as it were, of the Senſes inwards, is ſet in Oppoſition to προκλήσιες in the Senſe before given. The Word occurs, alſo, *Lib.* περὶ εὐχυμ. in the following Paſſage; νομίζει δὲ τᾶτο βίη εἶναι ἐς πρόκλησιν θεραπείης· "For he thinks this neceſſary towards the inviting or pro- "curing Health." But it is here to be obſerved, that the printed Copies read πρόσκλησιν, which cannot much alter the Senſe.

PROCONDYLOS. The firſt Joint of every Finger.

PROCONIA ALPHITA, προκόνια ἄλφιτα, *Lib.* 2. περὶ γυναικ. as explained in *Galen's Exegeſis*, ſignifies Meal of Barley prepared while the Grain is new and tender; and the Reaſon why it was ſo called, was, becauſe it was prepared πρὸ τῆς τὸ κῶνε ἑστῶτος, "Before the Erection of the Cone," or before the Barley was erected into Piles of a conic Figure. For κῶνος, according to *Galen*, is a wooden Structure erected in Areas, and eſpecially in humid Places, about which the Corn and Fruits were piled up in a tapering Figure, or in the Form of a Cone. Some, however, as *Galen* ſays, in *Exegeſ.* by προκόνια ἄλφιτα underſtand τὰ τῶν ἀφύλλων μόνα, "Nothing but Meal made of "Barley not torrefied."

PROCTOS, πρωκτός. The Anus.

PRODROMUS, πρόδρομος, from πρὸ, before, and τρέχω, to run. It imports the ſame as PROCHYMA. Certain Winds which blow before the Dog-days, are called *Prodromi.* See ETESIA. *Prodromus* is, alſo, any Circumſtance which precedes a Diſtemper, and indicates its Approach.

PROEGUMENE. See CAUSA.

PROFLUVIUM. A Flux of any kind.

PROFUNDUS MUSCULUS. A Name of the Muſcle otherwiſe called PERFORANS MANUS.

PROGERMINUS ABSCESSUS. An Abſceſs ariſing from a viſcid, and almoſt corrupted Phlegm. *Caſtellus* from *Marc. Aurel. Severinus.*

PROGLOSSIS, πρόγλωσσις. The Tip of the Tongue.

PROGNOSIS, πρόγνωσις, from πρὸ, before, and γινώσκω, to know. The Prognoſtic of a Diſtemper. See FEBRIS.

PROHIBENS. The ſame as CONTRAINDICANS. See ANTENDEIXIS.

PROJECTIO. Projection. A chymical Term, importing the caſting of any Subſtance, to be calcined, into a Crucible, by a Spoonful, or a ſmall Quantity, at a time. Projection is, alſo, an Addition of a ſmall Quantity of ſomething to a greater Quantity of a Metal, in order to meliorate the Metal. *Wilſon's Chymiſtry.*

PROJECTURA. An *Apophyſis. Blancard.*

PROLABIA. The ſame as PROCHEILA.

PROLAPSUS ANI. See ANUS.

PROLAPSUS UTERI. See UTERUS.

PROLECTATIO, is defined, an Extraction, by the Extenuation of the moſt ſubtile Parts, in ſuch a manner, that theſe, being rarefied, ſeparate ſpontaneouſly from the more groſs Parts. *Rulandus.*

PROLEPTICOS, προληπτικός. Anticipating; an Epithet of the Fever, the Paroxyſms of which return ſooner than they ought to do regularly.

PROMALACTERION, προμαλακτήριον. The firſt Apartment in the antient Baths, where the Body was ſoftened, before going into the Bath.

PROMANUS. The Thumb.

PROMETOPIS, προμετωπὶς. The Skin of the Forehead.

PRONATORES. The Name of two Muſcles of the fore Arm. One is the

PRONATOR TERES, SIVE OBLIQUUS.

This is a ſmall Muſcle, broader than it is thick, ſituated on the upper Part of the Ulna, oppoſite to the Supinator Brevis, with which it forms an Angle like the Letter V.

It is fixed to the internal Condyle of the Os Humeri, partly by fleſhy Fibres, and partly by a Tendon common to it with the Ulnaris Internus; thence it paſſes obliquely before the Extremity of the Tendon of the Brachiæus, and reaches to the middle Part of the convex Side of the Radius, where it becomes flat, and is inſerted below the Supinator Brevis by an Extremity almoſt wholly fleſhy.

It is called the Teres, to diſtinguiſh it from the Quadratus. The Name of Pronator Superior would be more proper, but that of Pronator Obliquus is the moſt proper of all.

This Muſcle can have no other Action but that of Pronation, in the different Situations of the Radius, whether that Bone be in a middle State between Pronation and Supination, or in the greateſt Degree of Supination: And, in this Caſe, though it is but a ſmall weak Muſcle, it overcomes the Supinator Longus.

PRONATOR QUADRATUS SIVE TRANSVERSUS.

This is a ſmall, fleſhy Muſcle, nearly as broad as it is long, lying tranſverſly on the Inſide of the lower Extremity of the fore Arm.

It is fixed by one Side, or Edge, in the long Eminence, at the lower Part of the internal Angle of the Ulna; and, by the other, in the broad, concave Side of the lower Extremity of the Radius.

It is wholly fleſhy, without any Mixture of tendinous Fibres. It is ſituated tranſverſly, but that Extremity which lies on the Radius, is nearer the Carpus, than that on the Ulna. It is of a moderate Thickneſs, and the Fibres neareſt the Surface are the longeſt, the reſt decreaſing in proportion as they lie near the Interval between the two Bones, and the interoſſeous Ligament.

It has a ligamentary, or tendinous Frænum, belonging to it, one End of which is fixed in the interoſſeous Ligament, the other in the inner Edge of the Baſis of the Radius.

The Pronator Quadratus is capable of no other Motion but Pronation, and it acts with much more Force than its Congener, the Pronator Teres; both becauſe of the Number and Direction of its Fibres; and becauſe it acts upon the Radius near the lower Extremity, where its Effects, in Pronation, are, much greater, than if it acted near the Head of that Bone. The Fibres lie almoſt in the ſame Direction in which the Bone moves; and in this it has the Advantage, not only over the other Pronator, but over all the Supinators, the Biceps itſelf not excepted.

The Fibres, of which this Muſcle is compoſed, are ſo diſpoſed, as that the longeſt adhere to the internal Angles of both Bones of the fore Arm; the ſhorteſt lie neareſt the interoſſeous Ligament; and the intermediate Fibres are longer or ſhorter, according to their greater or leſs Diſtance from the Ligament.

By theſe different Degrees of Length, the whole Number of Fibres is advantageouſly diſpoſed, and their Action rendered uniform. In the greateſt Degree of Supination, the Extremity of theſe Fibres, inſerted in the two Bones, make a very oblique Plane, which becomes almoſt ſtrait, in the greateſt Degree of Pronation. *Winſlow's Anatomy.*

PRONERVATIO. A Tendon, or tendinous Expanſion. *Caſtellus.*

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PRONOMÆA, προνομαία. The same as PROBOSCIS.

PROPHASIS, πρόφασις. The Cause, or Occasion, of a Disorder.

PROPHYLACE, προφυλακή; PROPHYLAXIS, προφύλαξις; and PROPHYLACTICE, προφυλακτικὴ, from πρὸ, before, and φυλάσσω, to preserve. The Method of preserving Health, and averting Diseases. See INDICATIO.

PROPOLIS. Bee-bread. This is a rude, wax-like, and thick Matter, or Glew, found in the Entrance of Bee-hives. It is gently heating, abstergent, and attracting: It softens indurated Parts, alleviates Pains, and induces Cicatrices on Ulcers. *Schrod.* See AMBRA.

PROPOMA, πρόπωμα, or προποτισμός. A Potion prepared of one Sextary of despumated Honey, and four of Wine, boiled together. *Paulus Ægineta, Lib.* 7. *Cap.* 15.

PROPTOSIS, πρόπτωσις. The same as PROLAPSUS; a falling out of the natural Situation; from προπίπτω, to fall out.

PRORA. The Occiput. *Os Proræ* is the *Os Occipitis*. *Sutura Proræ* is the Lambdoidal Suture.

PRORRHESIS, πρόρρησις, from πρὸ, before, and ῥέω, to tell. A Prediction, or Prognostic.

PROSARMA, προσάρμα, from προσαίρω, to offer. Aliment.

PROSARTHROSIS, προσάρθρωσις. The same as ADARTICULATIO.

PROSCARABÆUS. Offic. Mouff. Insect. 162. Jonst. de Insect. 74. Mer. Pin. 201. *Scarabæus unctuosus*. Schrod. 5. 345. *Pinguiculum*. Agricol. *Meloen*. Paracelf. THE OIL-BEETLE.

It is to be found creeping about every-where by the Sides of Paths, and in Woods, in the Months of *May* and *June*; and the Parts used in Medicine are the Insect itself, and its oily yellowish Liquor.

The Oil-beetle is much of the Nature of Cantharides, forces Urine and Blood, and is of extraordinary Efficacy against the Bite of a mad Dog. Taken in Powder, or preserved, it cures the Vari, or wandering Gout, as we are assured by *Wierus*. The Liquor is, by some, esteemed of Efficacy in Wounds; it is an Ingredient, also, in Plaisters for the Pestilential Bubo and Carbuncle, and in Antidotes; an Oil is prepared by Infusion of the living Animals in common Oil, which some use instead of Oil of Scorpions. *Dale* from *Schroder*.

PROSCEPHALÆON, προσκεφάλαιον, from πρὸς, to, and κεφαλὴ, the Head. A Pillow, to support the Head, or a disordered Limb.

PROSCLYSMA, πρόσκλυσμα. An Aspersion, or Sprinkling, of any Part with a Fluid.

PROSCOLLEMA, προσκόλλημα. An Agglutination.

PROSCRIPTIO. A Retardation. *Rulandus*.

PROSECHES, προσεχὴς. The same as SYNECHES, or CONTINENS.

PROSERPINACA. A Name for the *Polygonum Latifolium*.

PROSERPINALIS HERBA. A Name, in *Marcellus Empiricus*, C. 10. for the *Dracontium*.

PROSOEMA, πρόσοιμα. The same as PROSARMA.

PROSOPITES, προσωπίτης. The same as ARCION. The Burdock. *Paulus Ægineta, L.* 7. *C.* 3.

PROSPHEROMENA, προσφερόμενα, (from προσφέρω, to bring, or offer; properly, in a medicinal Sense, Food, or Aliment; are usually spoken of such Things as are offered to the Sick for their Support and Nourishment; but, however, often signify the external Apparatus necessary to the due Treatment of a diseased Part; or, in short, whatever a Surgeon ought to be provided with when he undertakes a Cure. *Hippocrates, Lib. de Medico.* Προσφερόμενα, in the more usual Sense, as signifying Food offered, are also called προσοίσματα (*Prosoismata*), and προσοίσια (*Prosoistea*); as in that Passage, *Lib. de Locis in Homine*, ἢ ὅταν κρατῆται τὸ σῶμα ὑπὸ τῶν προσοισμάτων· "Whenever the Body is overcome by (is too weak to concoct) "the Foods exhibited;" πρόσοισμα, a few Lines farther, is also spoken in the other Sense of a hot Bath; and *Lib. de R. V. I. A.* near the Beginning, παροισέα comprehends all manner of Assistances offered to the Sick, whether of Food, or Medicine. Again, *Epid.* 3. *Sect.* 3. we read, τοῖσι δὲ προσφερομένοισι δυσκόλως ὑπακοῦσαι. "They [the Bodies of the Patients] were not "easy to be affected, or wrought upon, by the Things which "were exhibited;" where *Galen*, on the Place, says, that by προσφερόμενα we are to understand all manner of Helps, and Assistances, in general; and, particularly, Meats and Drinks. In 2 *Aph.* 33. προσφοραὶ are expounded, by *Galen*, τῶν σιτίων προσφοραὶ, "Exhibitions of Food."

PROSTASIS, πρόστασις, from προΐσαμαι, to preside in Power or Dignity, is used, by *Hippocrates*, in a particular Sense, for that Humour, which prevails and predominates over the rest. Thus, we read, 6 *Epid. Sect.* 5. *Aph.* 15. γλῶσσα ἀκριβὲς τῆσι προστάσεσι, "The Tongue is of the Colour of the "prevailing Humour." *Galen* here confesses it to be an obscure Word, but understands it of the Humour with which the Tongue appears, chiefly, impregnated. *Prostasis, Lib. de Locis in Homin.* as derived from προΐσταμι, to stand by, to adhere; signifies no more than an Adhesion, or Accrescence, in that Expression, αἱ τομαὶ πυκναὶ ἐοῦσαι πρόσασιν ποιέουσιν τῇ σαρκὶ πρὸς τὸ ὀστέον, "Often-repeated Sections cause Flesh to come, or grow "up, about the Bone."

PROSTATÆ. The Prostate Glands; from προΐσταμαι, to be adjacent to. See GENERATIO.

PROSTETHIS, προστηθὶς. The anterior Part of the *Thorax*; or the fleshy Parts in the Concavities of the Hands, and Feet, and betwixt the Fingers.

PROSTHESIS, πρόσθεσις, from προτίθημι, to add. That Part of Surgery which supplies what is deficient.

PROSTHETA, πρόσθετα, from προστίθημι, to apply, signify, in *Hippocrates*, subdititious Medicines, whether Suppositories, or Pessaries. *Prostheton*, προσθετὸν, frequently signifies a Suppository; and προσθεῖ, or προστιθέναι ἐν εἰρίῳ, is often spoken of a Pessary, applied in Wool, throughout the whole Treatise *de Morb. Mul.* Sometimes, instead of προσθετὸν, we read πρόσθεμα, in the same Sense; and once, *Lib.* 1. περὶ γυναικ. we meet with προσθέσιας, for προσθετὰ; tho' προσθέσιες, in other Places, signify Exhibitions of Food; and προτιθέναι is often used with relation to the same.

PROSTHEMENE, προσθεμένη, in *Hippocrates*, is a Woman under the Application of a Pessary. Thus, 1 *Epid. Ægr.* 4. προσθεμένη δὲ ταῦτα μὲν ἐκαρίσθη, "Being treated with a "Pessary, these (Symptoms) were alleviated." *Galen*, on this Place, says, "The Signification of this Word, προσθεμένη, "when it is joined with βάλανον (*Balanus*), a Glans, or Sup"pository, is obvious; but when it is used without an Addi"tion, we are either to understand it of βάλανον, as some will "have it; or of a lenitive and antiphlogistic Pessary."

PROSTHION, πρόσθιον. The Penis.

PROSTOMION, προστόμιον. The Part where the Lips meet, when closed.

PROTARCHI MEDICAMENTUM. The Name of a Medicine, recommended by *Celsus*, against the *Scabies*, *L.* 5. *C.* 28. *Sect.* 16.

PROTASIS, πρότασις, from προτείνω, to stretch, or put forth, or propose, is, properly, a Proposition, or Problem, offered to be discussed; but πρότασιες πνευμάτων, *Lib. de R. V. I. A.* "Stretchings of the Spirits (Breath)," are expounded, by *Galen*, on the Place, by Obstacles and Interruptions of Respiration. For τὰ προτεταμένα πνεύματα, "Breath drawn out "in Length," he says, are τὰ ὅλην ἐγκοπτόμενα, "such as is, "in a manner, interrupted;" and which, in another Place of the same Book, is described as πνεῦμα προσπταῖον ἐν τῇ ἄνω φορῇ, "Breath which strikes, or impinges, in its Passage upwards." It is to be observed, that all the vulgate Copies of *Hippocrates* read προσάσιες (*Prostasies*); but those of *Galen* have it, πρότασιες, (*Protasies*) as above.

PROTEUS. The Name of a *Collyrium*, described by *Paulus Ægineta, L.* 7. *C.* 16.

Proteus was represented, by the antient Poets, as a God, the Son of *Oceanus* and *Thetis*, who could transform himself into any Shape. Hence *Morton*, in his *Pyretologia*, calls the irregular Appearances of intermitting and remitting Fevers, *Proteiform*. And certain it is, that, in consequence of the Violence of the Symptoms, when almost the whole System is briskly stimulated to a Conflict with the peccant Matter, these Fevers often resemble most other Diseases, especially of the acute Kind, but yield to the Efficacy of the Bark; tho', at the same time, they often prove fatal, if that Medicine is not exhibited: For, among the various Symptoms which generally accompany these Fevers, there is not one, which does not, sometimes, rage with such Violence, as not only to endanger the Life of the Patient, but, also, so totally to conceal and oppress the Form of the Fever, in its various Stages, of Chilness, Heat, and Sweat, that it can neither be distinguished by the Urine, the Temperament, the Pulse, or any other usual Method; but, appearing under the Mask, as it were, of a terrible Chilness, an incessant Vomiting, a Diarrhœa accompanied with Gripes, a Cholera Morbus, a Colic of the Stomach, a periodic Hemicrania, an Apoplexy, a Syncope, a Rheumatism, universal Spasms, a Pleurisy, a Peripneumony, a punctory Pain of the Side, or some other Disorder, frequently misleads the Physician from the true Intention of Cure. In this Case, an Attempt may, indeed, be made, to remove the Symptoms, by proper Medicines, but all in vain; for, as the febrile Ferment is neglected, on the Approach of the next Paroxysm, the former, or worse Symptoms, unexpectedly recur, the Physician labours in vain, and the Patient falls a Victim, or, at least, sustains a considerable Injury, by the Ignorance or Carelessness of his Physician.

When, in consequence of the highly deleterious Quality of the Poison, the animal Spirits are so weakened, that they can by no means expand themselves, after the first Shock, the Shivering, which,

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Which, generally precedes the first Approach of these Paroxysms, is so long protracted, that the Patient, spent with frequently recurring Deliquiums, at last falls a Sacrifice to his Disorder. Internal and external Medicines, are, in the mean time, used in vain, to rouse the languid Principle of Life; but the Fever cannot, even by the most accurate Observer, be discovered, from any Signs, either in the Urine, the Heat, or the Pulse.

In like manner, when, in the first Stage of the Paroxysm, the poisonous Fomes only oppresses the Spirits, so that they cannot expand themselves beyond their usual Sphere, the Patient without any Signs of a present Fever, complains of a Nausea, Sickness, and Vomiting, till the Poison being subdued by the *Peruvian* Bark, or some other Antidote, the Spirits are restored to their natural State.

Sometimes, about the Beginning of the Paroxysm, the febrile Poison is convey'd to the Glands of the Intestines, and excites a Flux, accompanied with Gripes, or a Dysentery. But when the Spirits are long oppressed in an uniform manner, these Symptoms, though continual, are at stated Periods augmented, become periodical, without any manifest Signs of a Fever, and cannot be removed by the Efficacy of Opium and Astringents, till, by a Mixture of the *Peruvian* Bark with Laudanum, the Cause, or febrile Ferment, which contaminates the whole Mass of Blood, is removed, together with all the Symptoms arising from it.

When the Poison partakes of an emetic, and at the same time, a cathartic Quality, the Patient is seized with frequent Vomitings and Purging; and, unless the Spirits, by their due Expansion, throw off the Virulence of the Poison in the first Stage of the Paroxysm, a Cholera Morbus is by that means formed, whilst the Fever, in the mean time, can neither be discovered by the Pulse, the Urine, nor the Heat. The Stomach, in the mean time, or the Intestines, or both together, being sphacelated by the intensely poisonous Acrimony of the Humours, the Patient soon dies; or, at least, after a delusive and fallacious Respite, when the next Paroxysm approaches, the same violent Symptoms are again produced by the Poison, unless such a Misfortune is prevented by a seasonable Exhibition of the Bark.

By the like Degree of Virulence in this Poison, I have frequently observed Patients, especially such as laboured under long and confirmed Fevers of this Kind, after the Form of the legitimate Fever was lost, so spent with a perpetual Nausea, Sickness, Vomiting, colliquative Sweats, hysteric Suffocations, and other like Symptoms, affecting the nervous System, that they seemed just about to die; and these, though incurable by any other means, I have speedily recovered by a due Dose of the Bark.

Every one conversant in the Practice of Physic knows, that violent spasmodic and lancinating Pains, equal to those excited by Poison, frequently accompany the first Attacks of legitimate intermittent Fevers, especially those of the quartan Kind, during the Shivering and Rigor, till the Spirits, being forcibly expanded and agitated, become capable of eliminating the acting Poison. The febrile Flame being by this means roused in the Mass of Blood, the painful Spasms gradually cease. But, when the Spirits are not only depressed by the Force of the Poison, but, also, forced into a kind of explosive State, I have, in consequence of this, found the whole Body not only for a long time continually cold, and without any Mark of a Fever, but, also, vellicated and twitched by universal violent and flitting Spasms. Nor is it to be wondered at, if, as it often happens, the Patient spent with perpetual Sickness, Vomitings, and Deliquiums, soon becomes desirous of Death, unless languishing Nature is seasonably assisted by Art.

The Spirits, also, in consequence of their natural Weakness, an Obstruction, and especially Cold, or any other evident Cause, are frequently forced into a kind of explosive State; by which means, some particular Parts, especially those of the Thorax, such as the Pleura, the Diaphragm, or the Stomach and Intestines, are vellicated and afflicted with spasmodic Pains. The Patient, in consequence of the intense Pain, shivers perpetually, and is spent with frequent Deliquiums, Suffocations, and Vomitings, without any ardent Mark of a Fever; he discharges clear Urine, and without any Pulse he is at the Point of Death, till the Spirits, affected by the Poison, being expanded either by Nature or Art, again rouse the Principle of Life in the Body. This Disorder can only be distinguished from a Cholera Morbus, a Pleurisy, or a Peripneumony, by the want of a Cough, and the Privation of the Pulse, by the excessive Vomitings and Pain, by the Deliquiums, and the Coldness of the Extremities.

I have, also, frequently known Patients complain of a punctory Pain in one or other of their Sides: But, in these, I could not for several Days discover any of the Marks of a Fever, except that the Pulse was somewhat too quick. But after by Venesection, and the Use of Laudanum mixed with Alexipharmics, these Spasms were mitigated, and by that means the natural elastic Force of the Spirits increased, the Signs of a febrile Flame in the Mass of Blood soon discovered themselves. The Urine was tinged and turbid, the Pulse became equally strong and quick, the whole Body was render'd hot, a violent Thirst seized the Patients, and Aphthæ covered their whole Tongues and Mouths. But directing my Intentions to the febrile Flame, and the Exacerbation of the periodically returning Pain, by a sufficient Quantity of *Peruvian* Bark mixed with Laudanum, and exhibited in the Intervals between the Paroxysms, I subdued the Poison, and totally freed the Patients from their Fever and Pain.

I have often with Surprize observed, that, after the subduing of the febrile Poison, in some measure brought about by the Expansion of the Spirits, when by a strong and quick Pulse, an intensely red and turbid Urine, the Heat of the Body, and other Signs, the Fever manifestly discovered itself, the Joints were affected with these spasmodic Pains, which returned at stated Periods, like a Rheumatism removed from Place to Place, and produced a Tumor and Heat in the Parts affected, by means of the Efforts of the Spirits endeavouring to expand themselves in these Parts: But I always happily removed these Pains by due Venesection, and a copious Use of the *Peruvian* Bark, exhibited between the Paroxysms.

Every Physician knows, that, on the first Approach of legitimate intermittent Fevers, the Brain is affected, not only from the Vertigo, and the Oppression and Disturbance of the Spirits by the active Poison, but, also, from the acute and violent Pains arising from the Effort of the Spirits endeavouring to expand themselves in the Membranes of the Brain. But sometimes the Spirits are at this Period of the Fever so oppressed and disturbed, that the Patient, like one under an Apoplexy, lies, during the whole Paroxysm, without any Signs of the Fever; and the same Symptoms often return with the succeeding Paroxysm. But, though we are to endeavour the Mitigation of these Symptoms by Venesection, Vesicatories, and the other Remedies appropriated to the Cure of Apoplexies, yet their Return cannot be prevented without the Use of the Bark.

I have, also, observed a periodic Hemicrania produced by an Effort of the Spirits to expand themselves in the Membranes of the Brain. But this Symptom I totally removed in two Days time by Venesection, and the Use of the Bark; though, for its Removal, I had, for some Weeks before, in vain used Venesection, Vesicatories, Emetics, Cathartics, Errhines, and Masticatories. *Morton. Pyretologia.*

The above-quoted Author gives a great Number of Cases, in Confirmation of this Doctrine, which are very much worthy of Perusal, because this Subject is of infinite Importance in the Art of Healing. See *Exercitatio* 1. *Cap.* 9. and *Exercitatio* 2. *Cap.* 9.

PROTMESIS, πρότμησις. The Navel of a Child, when first cut. According to *Pollux*, it signifies the same as *Lumbus*, a Loin.

PROTOGALA. Beestings; the first Milk, after an Animal has brought forth Young.

PROTOPATHEIA. A primary, or idiopathic Affection.

PROTOPLASTUS. The first Man. *Paracelsus.*

PROTORRHYTOS. See CAPNELÆON.

PROTOS POROS, πρώτος πόρος. The internal Mouth of the Uterus. *Ruffus Ephesius, de Appel. Corp. Human. Lib.* 1. *Cap.* 31.

PROTOSMA. The first Woman. *Paracelsus.*

PROTOSTACTON, πρωτόσακτον. A Lixivium from Ashes, with an Addition of Quick-lime.

PROTOTOMI, πρωτότομοι. The tender Stalks, or Asparagi, of Cabbages.

PROTROPON, πρότερον. The same as PROCHYMA.

PROULIMATESIS, in *Forestus*, is a Disorder of the Stomach, consisting in its Prominence, exciting an external Tumor. *Castellus.*

PROVOCATORII DIES are the same as the *Dies Intercalares*; that is, those which fall betwixt the Critical Days, and the *Dies Indices*. They are the third, fifth, ninth, thirteenth, and nineteenth.

PRUINA, in *Paracelsus*, is a sandy Sediment in the Urine. According to *Rulandus*, *Pruina* is the first Species of Tartar. *Pruinæ Chymicæ*, are Sublimates.

PRUNA. See PRUNUS.

PRUNELLA. Offic. Ger. 577. Emac. 632. Raii Hist. 1. 551. Synop. 3. 238. *Prunella vulgaris.* Park. Theat. 526. *Prunella flore minore vulgaris.* J. B. 3. 428. *Brunella major folio non dissecto.* C. B. P. 260. Tourn. Inst. 182. Boerh. Ind. A. 169. SELF-HEAL.

The Roots of Self-heal are slender, creeping, and fibrous; the lower Leaves grow on long Foot-stalks, beset with a few Hairs, as is the rest of the Plant; they are broadest in the Middle, and narrower at both Ends, less than Betony, and not at all indented about the Edges. The Stalks are square, about a Foot high, with two Leaves set opposite at a Joint, which are not many on a Stalk; the nearer they grow to the Top, the shorter

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ſhorter are their Foot-ſtalks. The Flowers are ſet on the Top of the Branches in thick verticillated Spikes, of a purple Colour, having an hollow Galea, and a three-lipt Labella, ſtanding in brown flatiſh Calyces, ſix ſtanding round the Stalk in a Whorle; each Flower is ſucceeded by four longiſh brown Seeds growing in the Bottom of the Calyx. It grows every-where in Meadows and Paſture-grounds, flowering all the latter Part of the Summer: The Leaves and Flowers are uſed.

Self-heal is reckoned among the vulnerary Plants, and is accounted ſerviceable for all Sorts of Wounds, and putrid Ulcers. It is reſtringent, and good for inward Bleedings, and making bloody Water; and is much uſed in Gargles, for Ulcers in the Mouth, Throat, or Gums, either the Juice, or a ſtrong Decoction. *Miller's Bot. Off.*

Self-heal gives a pretty deep red Colour to the blue Paper; it is of an herby, ſtyptic, and glutinous Taſte, mixed with a very little Bitterneſs; from which we may conjecture, that the acid Part of the natural Salt of the Earth is in this Plant diſengaged from a good deal of the acrid Part; and that, being united with abundance of Earth and Sulphur, it produces there a Salt which reſembles Alum. This Mixture of Principles renders Self-heal vulnerary, aſtringent, and deterſive; and is an Ingredient in the Arquebuſade Water, and in vulnerary Potions. *J. Bauhine* eſteems a Lotion of it for Gunſhot Wounds. It is preſcribed in Ptiſans, Broths, and Apozems, for ſpitting of Blood, for bloody Urine, for the too great or too frequent Flux of the Menſes, for the Bloody-flux, and for all Sorts of Hæmorrhages. It is uſed by way of Injection in deep Wounds, and by way of Clyſter in the Bloody-flux. For Diſeaſes of the Throat, Gargariſms of it muſt be frequently uſed. They bathe the Gums of ſcorbutic Perſons with it, adding ſome Grains of Maſtich. The diſtilled Water of the whole Plant, and the Conſerve of its Flowers, may be uſed for the ſame Purpoſes. *Cæſalpinus* uſed the Leaves bruiſed, and applied in form of a Cataplaſm, to ſuppurate Boils, and to heal Wounds. He uſed the Juice for the Ulcers of the Mouth, and, in great Pains of the Head, he bathed the Temples with it, after having mixed it with Oil of Roſes and Vinegar. *J. Bauhine* added to it a little Roſe-water, and gave it to drink to thoſe who had been bitten by any venomous Creature. *Martyn's Tournefort.*

Prunella abſterges and conſolidates; its principal Uſe is in Wounds, eſpecially of the Lungs, and in Coagulations of Blood. It is, alſo, frequently employed outwardly in Wounds, and in the Quinſey, and other Affections of the Mouth and Fauces. *Burb.* This Plant is, alſo, of excellent Virtue in all inflammatory Diſtempers, Hæmorrhages, and Dyſenteries, and in ſpitting or piſſing of Blood. *Hiſt. Plant. adſcript. Boerhaave.*

PRUNELLUS. See PRUNUS.

PRUNUS.

The Characters are;

The Calyx is monophyllous and quinquefid; the Flower roſaceous, pentapetalous, and furniſhed with thirty or more Stamina. The Ovary in the Bottom of the Calyx becomes an ovated or globous Fruit, containing under a thin, ſmooth Membrane, or Skin, a ſoft Pulp, in the Middle of which is incloſed an oblong or oval flatiſh Stone, acuminated at both Ends, and containing a ſingle Kernel; the Pedicle of the Fruit is of a good Length.

Boerhaave mentions ſeven Species of *Prunus*; which are,

1. Prunus; ſylveſtris. *Ger.* 1313. *Emac.* 1497. *Park. Theat.* 1033. *C. B. P.* 444. *J. B.* 1. 193. *Raii Hiſt.* 2. 1527. *Synop.* 3. 462. *Boerh. Ind. A.* 2. 241. *Prunellus ſylveſtris.* Offic. *Acacia Germanica.* Schrod. THE SLOE-TREE, or BLACK THORN.

This is a Buſh, or ſmall Tree, whoſe tough Branches are full of hard ſharp Thorns, ſending forth its white five-leaved Flowers early in the Spring, before the Leaves appear, which are ſmall and oblong, finely indented about the Edges. The Flowers are ſucceeded by ſmall round Fruit growing on ſhort Stalks, green at firſt, but, when ripe, of a fine purpliſh-black Colour, of a rough, ſour, auſtere Taſte, and not fit to be eaten till mellowed by the Froſts. The Sloe-buſh grows every-where in the Hedges.

The Fruit is principally uſed, being reſtringent and binding, and good for all Kinds of Fluxes and Hæmorrhages. It is, likewiſe, of Service for Gargariſms for ſore Mouths and Gums, and to faſten looſe Teeth.

The Juice of Sloes, being boiled to a Conſiſtence, is the *Acacia Germanica*, Off. which is now uſed inſtead of the true, and put into all the great Compoſitions. It is of a darkiſh Colour on the Outſide, and rediſh within. *Miller's Bot. Off.*

The Leaves of the Sloe-tree are bitter, a little ſtyptic, glutinous, and give a faint Tincture of Red to the blue Paper; but the Fruits give it as deep a Red as Alum; they are a little ſour, and extremely ſtyptic: Thus it is likely, that the natural Salt of the Earth predominates in the Leaves, where it is mix'd with a little fetid Oil; but that its acid Part, being diſengaged in the Fruits, is united with the Earth, and forms a Salt reſembling Alum. *Tragus* found by ſeveral Experiments, that the diſtilled Water of the Sloe-tree is an excellent Remedy for the Pleuriſy, and for the Oppreſſions of the Stomach: When this Author had not the diſtilled Water of theſe Flowers, he gave Wine, in which they had been macerated, to be drank by his Patients, or elſe made uſe of the ſame Wine diſtilled in Balneo Mariæ. He affirms, that thoſe Fruits, preſerved with Honey, are very good for the Dyſentery, and all Sorts of Looſeneſſes. The Wine made of Sloes has the ſame Effect. *J. Bauhine* ſays, that in *Alſatia* they dry the Sloes in an Oven, and put them into their Muſt; and that renders them agreeable and aſtringent. *Matthiolus* made uſe of the Decoction of the Fruits and Roots for Ulcers of the Mouth and Throat. The Juice of the Fruits aſſwages the Inflammation of the Eyes; the ſame Juice, thickened, is called *Acacia Recentiorum*, or *Germanorum*, becauſe it is ſubſtituted in the room of the Acacia of the Antients, to cool and bind. *Wittichius* preſcribes as a good Purgative, the Syrup made with ſeveral Infuſions of the Flowers of this Tree. *Schroder* mentions it alſo. *Ettmuller* relates, that a very ſtrong Vinegar is obtained from the Juice of the green Fruits by diſtilling them in Balneo Mariæ. *Martyn's Tournefort.*

2. Prunus; fructu cerei coloris. *T.* 622.

3. Prunus; fructu majore; rotundo; rubro. *T.* 622.

4. Prunus; fructu maximo; rotundo; flavo & dulci. *T.* 622.

5. Prunus; fructu parvo, ex viridi flaveſcente. *T.* 623.

6. Prunus; fructu parvo præcoci. *T.* 623.

7. Prunus; fructu magno, dulci, atro-cœruleo. *Tourn. Inſt.* 622. *Boerh. Ind. A.* 2. 241. *Prunus Damaſcena.* Offic. *Pruna, magna, dulcia, atro-cærulea.* C. B. P. 443. *Pruna atro-cærulea, Theocrito Bartyla, aliis Damaſcena dicuntur.* Jonſ. Dendr. 77. THE DAMASK-PRUNE.

The beſt Plums, or Prunes, being formerly brought from *Damaſcus*, the Fruit has kept that Name ever ſince; though it is ſeldom or never brought from thence now, we making uſe of the Fruit that is brought from *France*, or the *Pruna Gallica*, Offic. which I take to be the Fruit of the *Prunus Damaſcena*, or Damſon Plum, *Ger.* the great Damſon or Damaſk-Plum of *Park. Parad.* They are brought over dried in great Quantities from *France*, being a larger and ſweeter Plum than the common Damſon.

Prunes are cooling and moiſtening, rendering the Body looſe and ſoluble; they aſſwage Thirſt, and mitigate the Heat and Acrimony of the Bile. A good Quantity of the Pulp is put into the lenitive Electuary.

Medicines deriving their Name from Prunes, are the *Electuarium Diaprunum, Lenitivum, & Solutivum.* See DIAPRUNUM. *Miller's Bot. Off.*

Beſides the foregoing Species of *Prunus*, *Dale* mentions the two following;

1. Prunus Gallica. Offic. *Prunus.* C. B. P. 443. *Prunus ſativa.* J. B. 1. *Prunus domeſtica.* Ger. 1311. Emac. 1497. *Prunus vulgaris.* Park. Theat. 1511. *Prunus fructu parvo, dulci, atro-cœruleo.* Tourn. Inſt 622. THE COMMON PRUNE.

This Plant is frequently cultivated in Gardens, and flowers in *April*. It is tranſported dry to us from *Provence* and *Languedoc*, and its Gum is hard and pellucid. It is thought to be poſſeſſed of the ſame Virtues with the former. *Dale.*

2. Prunus Brignolensis. Offic. *Prunus Brignonienſis fructu ſuaviſſimo.* Tourn. Inſt. 632. *Prunus Briolenſia aut Brignolenſia.* Raii Hiſt. 2. 1526. *Pruna ex flavo ruſeſcentia, mixti ſaporis, gratiſſima.* C. B. P. 443. THE PRUNELLO.

Theſe are ſmall yellow Plums, brought over from *France* in little long Boxes; they are moiſt, flat, and without Stones.

They are ſeldom preſcribed by Phyſicians; but being of a pleaſant grateful Taſte, and not ſubject to purge, they are frequently eaten by Perſons in Fevers. *Miller's Bot. Off.*

PRURIGO. The Itch. See LEPRA. Or an Itching.

PRURITUS. The ſame as PRURIGO.

PSAISTE MAZA, ψαιστὴ μάζα, is expounded in *Galen's* Exegeſis, by "a *Maza* worked up with Honey and Oil, becauſe, ſays he, the *Pſaiſta* were ſo prepared." Now the *Pſaiſta*, according to *Heſychius*, were *Alphita* wet with Oil, or, as *Suidas* ſays, with Oil and Wine, which they burnt in Sacrifice to the Gods. *Pſaiſta* was, alſo, a Name for a ſort of wide and round Cakes, by ſome called, alſo, ψαιστὰ (*pſeſta*); agreeably to which, all the Copies read μάζαν ψαιστὴν, *Lib.* περὶ τῶν ἁπλῶν παθῶν, tho' *Calvus* ſeems to have read ψαιστὴν, which occurs in another Place of the ſame Book, where we find μάζαν δὲ ψαιστὴν ὡς μάλιστα, "a Maza very well work'd up with Oil and Honey;" but *Aldus* reads it here, too, ψεστὴν, as he does, alſo, in another Place of the ſame Book.

PSAGDAS, ψάγδας, is expounded in *Galen's Exegeſis* by εἶδός τι μύρου, "a kind of Ointment," which is, alſo, the Expoſition which *Erotian* gives of it, and for which he quotes *Eupolis*. But ſome Copies of *Erotian* read ψάδδας; and *Heſychius* expounds ψάδδας, ψαγδᾶς, by μύρου εἶδος, "ſome ſort

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sort of Ointment." Upon the Whole, it seems to be a foreign and barbarous Term. *Foesius.*

PSALACANTHA. ψαλακάνθα. *Suidas* informs us, that *Ptolemæus Cytherius* wrote a Poem on the *Psalacantha*, which he said was an Herb possess'd of many extraordinary Virtues. *Photius*, from *Ptolemæus Hephæstionis*, mentions it as an *Egyptian* Plant, with some fabulous Circumstances, not worth relating. Some, he says, represent it to be like the *Artemisia*; others like *Melilot*.

PSAMMISMOS, ψαμμισμός. A sort of Cure of the Dropsy, by covering the Body with Sand.

PSAPHEROS, ψαφερός, is expounded in *Galen*'s Exegesis by ψαθυρός, (*psathyrus*) and ψαφερόν, ψαφαρόν, are the same as ψαθυρόν, ψαθυρόν, ψαθαρόν, ψαθηρόν and all signify brittle, or friable, and are applied to such Foods as contain nothing of a fat or viscous Substance, but are tender, friable, or incoherent. *Galen*, *Lib.* 3. *de Alim.* The same Author, *Lib.* 3. *de Diff. Puls.* opposes their Signification to γλισχρός, (*glischros*) viscid, or glutinous; and, *Lib.* 11. *de M. M.* expresses it by κραυρός (*craurus*); as *Aristotle*, *Lib.* 4. *Meteor.* does by θραυστός, (*thraustos*), Words importing Friability, and Loosenes of Contexture: ψαφερόν, in *Coac.* 608. is joined with μαλθακόν, and both are apply'd to Excrements of a loose and soft Contexture, which are condemn'd; ψαθαρὸν διαχώρημα is the same as ψαφαρόν, and signifies loose, incoherent Excretions by Stool; and, in an Epithet, joined with ξηρόν, dry, ψαφαρόν is expounded also by ξηρόν, ἀυχμηρόν, ἀσθενές, ἐλαφρόν, dry, squalid, weak, light. In *Coac.* 583. we read ὕδρον, ὑδατώδες, ἢ τεταραγμένον ψαφερῇ, τρηχύτητι. "Urine like Water, or disturbed with a loose, or rough, and sand-like Substance."

PSARON. The Name of a Powder described by *Aetius. Tetrabib.* 4. *Serm.* 2. *C.* 36.

PSATHYROS. ψαθυρός. The same as PSAPHEROS.

PSEGMA. ψῆγμα. A Name for the *Flos Æris. Dioscorides*,

PSELAPHIÆ, ψηλαφίαι, (from ψηλαφάω, properly, to touch the Strings, in playing on a musical Instrument, as *Eustathius in Iliad.* observes; but commonly signifying to feel or grope like Persons in a Delirium) in *Hippocrates*, *Lib.* περὶ εὐσχημ. signifies Friction with the Hands, and is reckoned Part of the Office of a Physician, which he should always be in a Readiness to perform, when the Subject requir'd it.

PSEUDES, ψευδής, False, or Bastard. Hence the following Articles, beginning with *Pseudo*, are derived.

PSEUDO-ACACIA.

The Characters are,

It has a papilionaceus Flower, from whose Calyx rises the Ovary, involved in a fimbriated Membrane, and becoming, at last, a flat Pod, opening into two Parts, full of Kidney-shap'd Seeds.

Boerhaave mentions two Species of *Pseudo-Acacia*; which are,

1. Pseudo-Acacia, vulgaris. *Tourn. Inst.* 649. *Boerh. Ind. A.* 2. 39. *Pseudo-Acacia.* Offic. *Pseudo-Acacia Americana Robini.* Park. Theat. 1550. *Acacia Americana Foliis coluteæ, monococcos, siliquis echinatis.* Raii Hist. 2. 1719. BASTARD ACACIA.

This Plant is naturally produced in *America*; but is with us found in the Gardens of the Curious. I know nothing of its Use and Virtues; at *Paris*, however, a distilled Water is prepared from its Flowers. *Dale.*

According to *Rubinus*, the Leaves of this Plant when boiled and expressed, purge in the same manner with Sena. Others recommend a Decoction of the Leaves, for its corroberating and refrigerating Quality. It is exhibited in Dysenteries, but excites violent Pains and Flatulences. *Hist. Plant. adscript. Boorh.*

2. Pseudo-Acacia; siliquis glabris; *Acacia Virginiana, siliquis glabris.* Raii Hist. 1719. *Boerh. Ind. alt. Plant. Vol.* 2.

PSEUDO-ACORUS. See ACORUS ADULTERINUS.

PSEUDO APOCYNUM, *hederaceum, Americanum, tubuloso Flore phœniceo, Fraxini Folio.* A Name, in *Boerhaave*, for the *Bignonia, Americana, Fraxini Folio*; *Flore amplo, phœniceo.*

Pseudo-Apocynum, Americanum, capreolatum, tetraphyllum, tubuloso Flore, Foliis longioribus. A Name, also, in *Boerhaave*, for the *Bignonia, Americana, capreolis donata, siliquâ breviori.*

PSEUDO-ASPHODELUS. *Ray*, in *Hist. Plant.* takes notice of three Plants under this Name. The first is the;

Pseudo-Asphodelus minor, sive Pumilio, Folio Iridis, sive 2 Clus. *Pseudo-Asphodelus Alpinus*, C. B. *Minor, Folio Iridis.* THE LESSER BASTARD ASPHODEL. Park. *Asphodelus Lancastriæ*, Lancashire Asphodil.

I find no medicinal Virtues ascribed to this Plant.

The second is the,

Pseudo-Asphodelus palustris vulgaris nostras. Asphodelus Lancastriæ verus. Ger. Emac. descr. TRUE LANCASHIRE ASPHODEL. *Pseudo-Asphodelus primus.* Clus. *Palustris Anglicus.* C. B. *Luteus, acrifolius, palustris Anglicus.* Lobelii I. B.

This is said to be an excellent Application for the Cure of Wounds. Women dye their Hair with the Flowers of this Plant, macerated in a *Lixivium*.

The third is the

Pseudo-Asphodelus palustris, Scoticus minimus. THE LEAST SCOTISH ASPHODEL.

No medicinal Virtues are ascribed to this Species.

PSEUDO-ASTHMA. An *Asthma* excited by an Abscess, or Vomica, in the Lungs.

PSEUDO-BUNIAS. See BARBAREA.

PSEUDO-BUNIUM. See BUNIAS.

PSEUDO-CADMIA. A Name for the ANTICADMIA.

PSEUDO-CAPSICUM A Name for the *Solanum, fruticosum, bacciferum.*

PSEUDO-CHAMÆBUXUS. A Name for the *Polygala, frutescens, Folio buxi, Flore maximo.*

PSEUDO-CHINA. A Name for the *Senecio, Asiaticus, Jacobææ Folio, radice lignosâ, China officinarum dicta nobis.*

PSEUDO-COLOCYNTHIS. A Name for the *Pepo, fructu ovato, variegato.*

PSEUDO-CORALLIUM. A Name for the CORALLIUM NIGRUM.

PSEUDO-COSTUS. A Name for the *Pastinaca, Olusatri folio.*

PSEUDO-CYTISUS. See CYTISUS.

PSEUDO-DICTAMNUS.

The Characters are;

The Root is perennial; the Calyx is orbicular, open, and contains the ripe Seeds, under Covert, as it were, in a Sawcer. The Galea is erect, fornicated, or arched, and bifid; and the Beard tripartite. The Whorles of the Flowers, resemble those of white Horehound; and are disposed in close Order, with aculeated Apices.

Boerhaave mentions eight Species of *Pseudo-dictamnus*; which are,

1. Pseudo-dictamnus, acetabulis moluccæ. *C. B. P.* 222. *M. H.* 3. 378.

2. Pseudo-dictamnus, verticillatus, inodorus. *C. B. P.* 222. *Tourn. Inst.* 188. *Boerh. Ind. A.* 173. *Pseudo-dictamnus.* Offic. Park. Theat. 27. *Pseudo-dictamnum.* Ger. 651. Emac. 797. *Dictamnum adulterinum, quibusdam verticillatum, vel potius Gnaphalium veterum.* J. B. 3. 255. *Marrubium Pseudo-dictamnum dictum.* Raii Hist. 1. 557. *Gnaphalium veterum, Centunculus, Dictamnum adulterinum quibusdam.* Chab. 410. BASTARD DITTANY.

This Plant is cultivated in Gardens, and flowers in *July*. The Herb is only used, and as in external Appearance, so in Virtues, it agrees with Horehound. *Dale.*

The Virtues of this Plant are by some said to be the same with those of the Dittany; but this is by no means true, since the odorous Smell of the former is not so strong as that of the latter. It is by some thought to be the *Alypon* of the Antients, but unjustly. *Hist. Plant. adscript. Boerhaav.*

3. Pseudo-dictamnus, Hispanicus, amplissimo Folio nigricante, & villoso. *T.* 188.

4. Pseudo-dictamnus; Hispanicus, Folio Scrophulariæ. *T.* 188. *Galeopsis Anguillaræ.* 278.

5. Pseudo-dictamnus, Hispanicus, amplissimo Folio candicante & villoso. *T.* 188. *Marrubium subrotundo Folio.* Boc. Mus. 2. 167. Tab. 122.

6. Pseudo-dictamnus, Africanus, foliis subrotundis, subtus incanis. *H. A.* 2. 179. *Marrubium rotundifolium, Africanum, Folio Hederæ terrestris.* Flor. 2. 67.

7. Pseudo-dictamnus, Hispanicus, Foliis crispis & rugosis. *T.* 188. *Marrubium, Dictamni spurii Foliis & Facie.* Par. Bat.

8. Pseudo-dictamnus, Hispanicus, Folio amplissimo, candicante & villoso. *T.* 188. *Boerh. Ind. alt. Plant. Vol.* 1.

PSEUDO-DIGITALIS. A Name for the *Dracocephalon*; *Americanum.*

PSEUDO-FUMARIA. A Name in *Boerhaave* for the CAPNOIDES.

PSEUDO-GNAPHALIUM. A Name for the *Gnaphalodes, Lusitanica.*

PSEUDO-HELICHRYSUM. A Name for the *Helichrysum, sylvestre, latifolium, capitulis conglobatis.*

PSEUDO-HELICHRYSUM FRUTESCENS. A Name for the *Senecio, Africanus, Folio retuso.*

PSEUDO-HELICHRYSUM VIRGINIANUM. A Name for the *Senecio, Virginianus, arborescens, atriplicis Folio.*

PSEUDO-HELLEBORUS. A Name for the *Helleboro-Ranunculus, Flore luteo globoso.*

Pseudo-Helleborus Ranunculoides. A Name for the *Populago, Flore majore*; and for the *Populago, flore pleno.*

PSEUDO-IPECACUANHA. See APOCYNUM.

PSEUDO-IRIS. See ACORUS ADULTERINUS.

PSEUDO-LIEN. A Name for certain Glands observed by *Ruysch* adjacent to the Spleen.

PSEUDO-LOTUS. A Name for the GUAJACANA.

PSEUDO-LYSIMACHIUM. A Name for the *Salicaria, vulgaris purpurea, foliis oblongis*; and for the *Veronica, spicata, longifolia.*

PSEUDO-MARRUBIUM. A Name for the *Lycopus, palustris, glaber*; and for the *Lycopus, foliis in profundas lacinias dissectis.*

PSEUDO-MELANTHIUM. A Name for the *Lychnis, segetum major.*

PSEUDO-MELISSA. A Name for the *Melissa, humilis, latifolia, maximo flore, purpurascente.*

PSEUDO-MOLA. A false Mole, form'd by a Piece of the *Placenta*, left in the Uterus after the Exclusion of the *Fœtus.*

PSEUDO-NARCISSUS. A Name in *Boerhaave* for several Sorts of *Narcissus.*

PSEUDO-

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PSEUDO-NARDUS. A Name for the *Lavandula*; *latifolia*; and for the *Lavandula*; *anguſtifolia*; *Flore albo.*

PSEUDO-ORCHIS. A Name in *Boerhaave* for the *Orchis*; *latifolia*; *minor*; *ſabuletorum Zelandiæ & Bataviæ.*

PSEUDO-PETASITES. A Name for the *Petaſites*; *Africanus*; *Calthæ paluſtris Folio.*

PSEUDO-POLYPUS. A Baſtard Polypus.

PSEUDO-RHABARBARUM. A Name for the *Thalictrum*; *majus*; *ſiliquâ anguloſâ, aut ſtriata*; and for the *Thalictrum*; *majus*; *flavum*; *ſtaminibus luteis*; *vel glauco Folio.*

PSEUDO-RUBIA. A Name for the *Rubeola*; *latiore Folio*; and for the *Rubeola*; *anguſtiore Folio.*

PSEUDO-SALVIA. A Name for the *Phlomis*; *fruticoſa*; *ſalviæ Folio latiore & rotundiore*; for the *Phlomis*; *fruticoſa*; *ſalviæ Folio longiore & anguſtiore*; and for the *Phlomis*; *fruticoſa*; *Folio ſubrotundo, breviore*; *Flore luteo.*

PSEUDO-SELINUM. A Name for the *Caucalis*; *Semine aſpero*; *Faſciculis rubentibus.*

PSEUDO-STACHYS. A Name for the *Stachys*; *Cretica*; *pro Pſeudo-ſtachyde I. in prodromo deſcribitur*; for the *Stachys*; *Alpina*; *magna*; *Flore ex albo rubeſcente*; and for the *Galeopſis*; *Alpina*; *Betonicæ Folia*; *Flore variegato.*

PSEUDO-STRUTHIUM. A Name for the *luteola Herba*; *ſalicis Folio.*

PSEUDO-SYCOMORUS. See AZEDARACH.

PSEUDO-VALERIANA. A Name for ſeveral Sorts of VALERIANELLA.

PSIDA. The external Rind of the Pomegranate.

PSILOTHRON, ψίλωθρον. A Depilatory.

PSIMMYTHION, ψιμμύθιον. Ceruſs.

PSINKUS. Ceruſs. *Rulandus.*

PSITTACION, ψιττάκιον. The Name of a diſcutient Plaiſter, deſcribed by *Paulus Ægineta*, *L.* 7. *C.* 17. *Scribonius Largus* deſcribes a *Collyrium* by the Name of *Collyrium Pſittacinum*. N°. 27.

PSITTACUS. The Parrot.

PSOÆ, ψόαι. The Name of two Pair of Muſcles of the Loins.

The firſt is the

PSOAS, *ſive*, LUMBARIS INTERNUS.

This is a long thick Muſcle, ſituated in the Abdomen, on the lumbar Region, adhering to the Vertebræ of the Loins, from the poſterior Part of the Os Ilium, to the anterior Part near the Thigh.

It is fixed above to the laſt Vertebra of the Back, and to all thoſe of the Loins, that is, to the lateral Parts of the Bodies of theſe Vertebræ, and to the Roots of their tranverſe Apophyſes. The Inſertions in the Bodies of the Vertebræ, are by a kind of Digitations, and are very little tendinous.

From thence, the Muſcle runs down laterally over the Os Ilium, on one Side of the Iliac Muſcle, and paſſes under the *Ligamentum Fallopii*, between the anterior, inferior Spine of the Os Ilium, and that Eminence, which, from its Situation, may be termed *Ilio-Pectinea.*

Before it goes out of the Abdomen, it unites with the *Iliacus*, and is ſometimes fixed by a few fleſhy Fibres, in the Outſide of the Eminence laſt mentioned. It afterwards covers the fore Side of the Head of the Os Femoris, and is inſerted in the fore Part of the little Trochanter, by an oblique Tendon, which is folded double from behind forward.

This Muſcle is ſometimes accompanied by another ſmaller Muſcle almoſt like it, called *Pſoas parvus*, of which hereafter.

The *Pſoas* bends the Thigh on the Pelvis, or brings it forward; it may, alſo, move the Pelvis on the Thighs, and hinder it from being carried along with the reſt of the Trunk, when the Body is inclined backward, while we ſit, having the lower Extremities fixed by ſome external Force. In this Situation it may, alſo, move the Vertebræ of the Loins. *Winſlow's Anatomy.*

The ſecond is the

PSOAS PARVUS.

This is a long ſlender Muſcle, lying upon the *Pſoas major*: It is ſometimes wanting; and *Riolanus*, who met with it often in Men, takes notice of his having found it once in a Woman, as a Thing very extraordinary. As for my Part, I found it ſeveral times in Women, before I ever met with it in Men; and I ſtill continue to obſerve it moſt frequently in that Sex.

It is fixed above by a ſhort Tendon, ſometimes to the laſt tranſverſe Apophyſis of the Back, or higher; ſometimes to the firſt of the Loins, and ſometimes to both: From thence it runs down wholly fleſhy, and more or leſs complex, on the great *Pſoas*, in a Direction a little oblique.

Having reached the middle of the *Regio lumbaris* or thereabouts, it forms a ſlender flat Tendon, which, gradually increaſing in Breadth, like a thin Aponeuroſis runs over the *Pſoas major*, and *Iliacus internus*, at their Union, and from thence down to the Symphyſis of the Os *Pubis*, and Os *Ilii*, and is inſerted principally in the Criſta of the Os *Pubis*, above the Inſertion of the *Pectineus*, ſometimes ſending an Aponeurotic Lamina a farther down. Beſides the *Pſoas parvus*, there is another ſtill ſmaller, between it and the *Vertebræ*, inſerted, with in the ſame manner. This Muſcle I diſcovered in the Year 13.

The *Pſoas parvus*, when it is found, ſerves to ſuſtain the *Pelvis*, much in the ſame manner with the *Muſculi Recti* of the Abdomen, in climbing. But when we ſtand, we have no need of ſuch a Support, the *Pelvis* reſting then upon the *Oſſa Femoris*, in ſuch a manner, as that the largeſt Portion thereof, and that which ſupports the whole Body, lies behind that *Valerum*, and the ſmalleſt Part before. It may, alſo, ſerve to hinder the vertebral Pillar from bending backward on ſome Occaſions. *Winſlow's Anatomy.*

PSOMISMA, ψώμισμα. Meat which is put into the Mouth of a Child.

PSOPHOS, ψόφος. A Noiſe, a Sound. Ψόφοι ἐν τῷ ᾄδει, are Noiſes, or Sounds, proceeding from the Breaſt, occaſioned by flatulent Matter attempted to be expectorated. Ψοφώδεις (*pſophodeis*) are thoſe who ſtart and tremble at every Noiſe; ſuch are they who labour under a Phrenſy or Delirium, 1 *Prorrhet.* 16. *Coac.* 96. where the ψοφώδεις are expreſſed by ψόφοι καθαπτόμενοι. which *Galen* in his *Exegeſis* expounds by ψόφοι ῥᾳδίως αἰσθανόμενοι. "Such as are very quick in their Perception of a Noiſe or "Sound."

PSORA, ψώρα. A Species of Itch. See LEPRA.

PSORIASIS. A Species of Itch affecting the *Scrotum. Blancard.*

PSORICA. Medicines for the Itch.

PSOROPHTHALMIA. A *Pſora*, or ſcurfy Diſorder of the Eye-lids.

PSUCHAGOGICA; from ψυχή, Life. Medicines which recal Life in an Apoplexy, or Syncope.

PSYCHOTROPHON. A Name for Betony. *Dioſcorides*, *L.* 4. *C.* 1.

PSYCHROLUSIA, ψυχρολουσία, or PSUCHROLUTRON, ψυχρόλουτρον, from ψυχρός, cold, and λάω, to waſh. Cold-bathing, or a Cold-bath. Sir *John Floyer* has given this as a Title to a Book wrote upon the Subject of Cold-bathing.

PSYCTICA. Refrigerating Remedies.

PSYDRACIA. A Species of Puſtule, of which *Trallian*, *L.* 1. *C.* 5. gives the following Definition. Theſe are ſmall Tubercles of the Head, which reſemble Puſtules, and corrode the Skin: But Exanthemata are ſuperficial Exulcerations of the Skin, of a rediſh Colour, and rough to the Touch. Both theſe Diſorders, eſpecially when of the moiſt Kind, are cured by an Ointment thus prepared:

> Take of Litharge and Ceruſs, each four Ounces; of Alum, and the green Leaves of Rue, each two Ounces; and of Vinegar, and the Oil of Myrtle, a ſufficient Quantity to make an Ointment.

PSYGMATA, ψύγματα. Refrigerating Medicines, either internal, or external.

PSYLLI. A People of *Africa*, celebrated by the Antients, for curing the Wounds of venomous Bites by ſucking them; but *Celſus*, *L.* 9. *C.* 27. is of Opinion, that any one may do the ſame thing without any Injury to themſelves.

PSYLLIUM.

The Characters are;

It agrees, in all reſpects, with the *Plantago*, and *Coronopus*; only the Stalks are leafy and ramous, or divided into a Multitude of Branches.

Boerhaave mentions four Species of this Plant; which are,

1. Pſyllium; majus; erectum; latifolium; annuum. *Boerh. Ind. A.* 2. 101. *Pſyllium.* Offic. *Pſyllium vulgare.* Park. Theat. 277. *Pſyllium majus erectum.* J. B. 3. 513. C. B. P. 191. Tourn. Inſt. 128. *Pſyllium ſive Pulicaris Herba.* Ger. 471. Emac. 583. *Plantago caulifera Pſyllium dicta.* Raii Hiſt. 1. FLEAWORT.

Fleawort has round hairy Stalks, a Foot or more high, beſet at the Joints with two, and ſometimes three, long, narrow, ſharp-pointed, ſomewhat hairy Leaves, often lightly cut in about the Edges. From the Boſom of theſe, toward the upper Part of the Stalks, ariſe pretty long ſlender Foot-ſtalks, bearing at the Ends round ſhort Spikes of ſmall ſtaminous Flowers, of four Leaves apiece, with Apices ſtanding out, and ſomewhat reſembling the Heads of the long Plantain; and are ſucceeded by round Seed-veſſels; containing two round ſhining reddiſh-brown Seeds, that look like Fleas, whence it takes its Name. The Root is ſtringy and fibrous; it grows in the *Southern* Parts of *France*, from whence we have the Seed which only is uſed.

Some attribute a purgative Quality to this Seed, but we uſe it only to extract a Mucilage for ſore Mouths and Throats, and to help Thruſhes and Quinſeys. It is, likewiſe, uſeful to obtund ſharp acrimonious Humours, which corrode the Bowels, and cauſe Dyſenteries. Outwardly it is good for ſore, inflamed, Blood-ſhot Eyes. *Miller's Bot. Off.*

The Salt of this Plant reſembles that of Coral; but is mixed with a little Sal Ammoniac, a great deal of Sulphur, and terreſtrial Parts.

By the chymical Analyſis, it yields a great deal of Oil and Earth, no volatile concrete Salt, a little urinous Spirit, and ſeveral acid Liquors.

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Pſyllium-ſeed is uſed in the *Electuary de Pſyllio*; but its purgative Virtue ought to be attributed to the Scammony, and the other Cathartics. The Mucilage of Pſyllium is very lenifying, and good to aſſwage the Inflammation of the Eyes: It is given in a Clyſter, for the Dyſentery, and Inflammation of the Kidneys. *Martyn's Tournefort.*

2. Pſyllium; majus; ſupinum; anguſtifolium & perenne.

3. Pſyllium; maximum; ex Littore Veneto.

4. Pſyllium Indicum; foliis crenatis. *J. B.* 3. 514. *Boerh. Ind. alt. Plant. Vol.* 2.

PSYTHIOS. An Epithet of Wine, importing Sweetneſs.

PTARMICA.

The Characters are;

The Leaves are ſerrated, crenated, diſſected, and void of Smell; the Calyx is ſquamous; the Flowers are altogether white, and generally diſpoſed in Umbellas; the Seeds are very thin and ſlender.

Boerhaave mentions nine Species of Ptarmica; which are,

1. Ptarmica; vulgaris; folio longo, ſerrato; flore albo. *J. B.* 3. 147. *Boerh. Ind. alt.* 111. *Tourn. Inſt.* 496. *Ptarmica.* Offic. Ger. 483. Emac. 606. Raii Hiſt. 1. 344. Synop. 91. *Ptarmica vulgaris.* Park. 858. *Dracunculus ſerrato folio pratenſis.* C. B. P. 98. *Achillea foliis integris minutiſſime ſerratis.* Act. Reg. Par. Ann. 1720. 321. SNEEZWORT, BASTARD PELLITORY.

From a woody, creeping, fibrous Root, of an hot biting Taſte, this Plant ſends out upright Stalks a Foot or more high, ſtiff, and not much branched, having long narrow Leaves, finely ſerrated about the Edges, growing on them without any Order: The Flowers grow Umbel-faſhion, on the Tops of the Stalks, conſiſting of a Border of white Petala, ſet about a fiſtular Thrum; they are larger than the Flowers of Yarrow: It grows in moiſt Meadows, and in watery Places; and flowers in *July*.

It is of an hot biting Taſte; and, therefore, it is ſometimes put into Salads, to correct the Coldneſs of other Herbs: The Root, held in the Mouth, helps the Tooth-ach, by evacuating the Rheum, like Pellitory of *Spain:* The Powder of the Herb, ſnuffed up the Noſe, cauſes Sneezing, and cleanſes the Head of tough ſlimy Humours. *Miller's Bot. Off.*

2. Ptarmica; vulgaris; pleno flore. *Cluſ. H.* 12. *Dracunculus, pratenſis, flore pleno.* C. B. P. 98.

3. Ptarmica; foliis profundè ſerratis, lætè viridibus; elatior. *H. L.* 694. *Flor.* 2. 51. *Dracunculus Alpinus, latiore folio ſerratus.* Sch. B. P.

4. Ptarmica; foliis profunde ſerratis; minor & humilior. *Flor.* 2. 51.

5. Ptarmica; vulgaris; folio longo; ſerrato & humilior. *Flor.* 2. 51.

6. Ptarmica; Alpina; incanis, ſerratis, foliis. *H. L.* 694.

7. Ptarmica; incana; humilis; foliis laciniatis, Abſinthii æmulis. *H. L.* 510. *Abſinthium Alpinum, umbelliferum, latifolium.* C. B. P. 139.

8. Ptarmica; Alpina, Tanaceti foliis, flore purpureo. *T.* 497. *Millefolium montanum, purpureum, Tanaceti foliis.* M. H. 3. 39.

9. Ptarmica; Orientalis; foliis Santolinæ incanis; flore pallido. *Vaill. Boerh. Ind. alt. Plant. Vol.* 1.

The firſt and ſecond Species of this Plant are of an heating and penetrating Quality. The Antients exhibited it in all Diſorders, where it was neceſſary to ſtimulate and open; for which Purpoſes it is very proper. By its Heat it corroborates the Stomach: Its Leaves, if chewed, procure a copious Diſcharge of Saliva; for which Reaſon they are beneficial in Tooth-achs: They are, alſo, exhibited in mucous and viſcid Obſtructions of the Fauces, where Sweats are to be excited. The Juice of this Plant, when boiled, is proper in all thoſe Diſorders for which Feverfew is recommended; but does not contain ſo large a Quantity of Oil, and, conſequently, is not ſo adhæſive. *Hiſt. Plant. adſcript. Boerhaav.*

PTERIS, πτέρις. Fern.

PTERNA, πτέρνη. The CALCANEUM.

PTERYGION, πτερύγιον. A Film of the Eye. See OCULUS.

But *Pterygion*, in *Celſus*, *Lib.* 6. *Cap.* 19. is a Diſorder of the Fingers: The Deſcription and Cure of which he gives in the following manner:

Old Ulcers of the Fingers are moſt commodiouſly cured by Lycium, or boiled Amurca, with an Addition of Wine to each. In the Nails there ſometimes ariſes a Species of Caruncle, accompanied with great Pain, and by the *Greeks* called πτερύγιον. In order to cure this Diſorder, we muſt diſſolve round Melian Alum in Water, till it is of the Conſiſtence of Honey. Then we muſt add a Quantity of Honey, equal to that of the Alum, and mix them with a Spatula, till the Preparation has aſſumed a Saffron-colour. With this the Parts affected are to be anointed. Some, for the ſame Purpoſe, rather chooſe a Decoction of equal Quantities of dry Alum, and Honey, mixed together. If the Pterygia are not, by this means, removed, they are to be extirpated, and the Fingers are to be fomented with a Decoction of Vervain, and the following Medicine.

Take of Chalcitis, Pomegranate-peel, and the Squamæ Æris, each a proper Quantity: Mix them with a fat Fig; boil gently in Honey, and apply to the Part affected. Or,

Take of burnt Paper, Auripigmentum, and native Sulphur, each an equal Quantity: Mix with a Cerate, prepared of Oil of Myrtle, and apply to the Part. Or,

Take of the Powder of Verdegriſe, one Dram; and of the Squamæ Æris, two Drams: Mix with a ſufficient Quantity of Honey, and apply to the Part affected. Or,

Mix equal Parts of Lime-ſtone, Chalcitis, and Auripigmentum, and apply to the Part.

Theſe Medicines, when applied, are to be covered with a Linen Cloth, dipt in Water. On the third Day, the Dreſſing is to be removed; the dry Parts, if any, are to be cut off, and the like Dreſſing is again to be applied. If the Diſorder is not removed by theſe means, the Part affected is to be cleanſed with the Knife, cauterized with ſmall Irons, and cured like other Burns.

PTERYGODEES, πτερυγώδεες, in *Hippocrates*, are thoſe People whoſe Cheſts are narrow and flat, ſo that their Scapulæ are prominent, like Wings. Such Perſons have been always eſteemed ſubject to Conſumptions.

PTERYGOIDES PROCESSUS. The Pterygoide, or Wing-like Proceſſes of the Os Sphenoides. See CAPUT.

PTERYGOPALATINUS MUSCULUS. A Name of a Muſcle of the UVULA; which ſee.

PTERYGOPHARYNGÆUS MUSCULUS. A Muſcle of the Fauces. See OESOPHAGUS.

PTERYGOSTAPHYLINI MUSCULI. Some Muſcles of the Uvula are thus called. See UVULA.

PTILOSIS, πτίλωσις, from πτίλος, a Perſon who has loſt his Eye-laſhes. A Baldneſs of the Eye-laſhes. *Paulus Ægineta, Lib.* 3. *Cap.* 22. ſays, the Ptiloſis and Madaroſis are Diſorders of the external Margins of the Eye-lids. The Madaroſis is only a Falling off of their Hairs, produced by a Defluxion of acrid Humours; whereas, in a Ptiloſis, the Margins of the Eye-lids become thick and callous; ſo that it is a Diſorder complicated of a Madaroſis, and an hard Lippitude: For which Reaſon the Remedies proper for the one are, alſo, conducive to the Removal of the other. For procuring the Growth of the Hairs, and preventing an Itching and Corroſion of the Corners of the Eyes, the beſt Medicine is that of *Philoxenus*, diſtinguiſhed by the Epithet *dry*. For removing a Dimneſs of Sight, the following Preparation is excellent:

Take of Cadmia, eight Drams; of Sal Ammoniac, two Drams; of Saffron, and Spikenard, each two Drams; and of white Pepper, one Dram: Mix all together for Uſe. Antimony, alſo, anſwers the ſame Purpoſe.

For a Corroſion of the Corners of the Eyes, and a Ptiloſis:

Take of calcined Antimony, extinguiſhed in Womens Milk, thirteen Drams; of Aloes, Myrrh, and Spikenard, each two Drams; and of calcined Barley, carefully triturated, four Drams: Mix, and uſe dry.

Another Medicine for a Ptiloſis, and Corroſion of the Eye-lids, is thus prepared:

Take of the Marrow of an Ox's Right fore Leg, a ſufficient Quantity; triturate it duly with Soot, and uſe it.

The Soot intended for this Purpoſe is to be thus prepared: Immerſe a ſufficient Quantity of Paper in the Oleum Seſaminum: Put the Paper in a Lamp, kindle it, and hold above it a ſmooth Shell, or brazen Veſſel, in order to collect the Soot, which, when triturated with the above-mentioned Marrow, is to be uſed. The Rennet of a Calf is, alſo, excellent for the ſame Purpoſe. For a Milphoſis, an Increaſe of Fleſh in the Corners of the Eyes, and other inveterate Diſorders of them, *Soſander* directs the following Medicine:

Take of Cadmia, Antimony, crude Chalcitis, and crude Miſy, each eight Drams: Bruiſe theſe; mix them with Honey, and torrefy them, after extinguiſhing them in Wine, and triturating them: Add to them, of Spikenard, two

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two Drams; of torrefied Saffron, two Drams; and of Pepper, one Dram: All these, when triturated together, are to be used.

The more simple Medicines contributing to the Cure of a Ptilosis, and a Corrosion of the Eye-lids, are boiled Amurca, *Indian* Lycium, and *Armenian* Stone, used by the Painters; which last, when mixed with Water, and used by way of Ointment, consumes the peccant Humours, and augments the natural Hairs; the Rust of Iron, triturated for many Days in the Heat of the Sun, and reduced to the Form of a Collyrium, with Wine and Myrrh; and Spodium, mixed with the Juice of Onions.

PTISSANA, *sive* PTISANA, πτισσάνη ἢ πτισάνη, from πτίσσω, to decorticate, bruise, or pound. Ptissan, or Ptisan, is properly Barley decorticated, or deprived of its Hulls; or, as *Suidas* expounds the Word, ἡ κεκομμένη κριθή, "pounded Barley;" because the antient Way of clearing Barley from its Hulls was not by grinding, as it is now performed, but by pounding in a Mortar: For the Antients, in preparing their Ptissana, first sprinkled their Barley with Water; then left it to swell; afterwards dried it in the Sun; and then pounded it in a Mortar, with a wooden Pestle, till it was separated from its Hulls; and then repositted it. Some, after wetting their Barley, and drying it in the Sun; as before, pounded it in a Mortar till it was deprived of its Hulls; then ground it to a Meal; and, afterwards, boiled it for a very considerable Time, to deprive it, as they imagined, of its Flatulency; then they dried it, and reduced it into small Lumps, or Balls, with which they made sorbile Liquors on occasion. Others, again, as we are informed by *Constant. Cæsar*, *Lib.* 12. *de Agricultura*, after macerating, cleansing, decorticating, and drying their Barley in the Sun, pounded it over-again; and, after giving it a second Drying in the Sun, before they repositted it, sprinkled it over with the thin Particles which they had beaten out in pounding it, because they had found them to contribute towards its Preservation.

Though Ptisana was properly prepared only of Barley, yet it used to be made, also, of other Grain, as of Wheat, Alica, Spelt, Rice, and Lentils; but, then, it was not called simply *Ptissana*, but with an Addition, expressing the Grain of which it was prepared, as, when they called it πτισσάνην πυρίνην, "Wheaten Ptissan;" χονδροπτισσάνην, "Ptissan made of "Alica;" τὴν ἐκ ζειᾶς ἢ ὀρύζης πτισσάνην, "Ptissan prepared "of Spelt, or Rice;" and so of the rest. Ptissan, thus prepared, was reserved for Use, with a prudent Regard to Health, which deserves Imitation; and, when Occasion required, was ready at hand, to be boiled in Water. There were different Ways of boiling it; but the most common Method among the *Greeks* was that described by *Galen*, *Lib.* 1. *de Alimentis*, and is as follows: They boiled a Portion of Ptisan in ten, or, as *Paulus* says, in fifteen times the Quantity of Water, taking care to make it swell as much as possible, during the Time of boiling; for what readily swells, and that to a considerable Degree, is esteemed the best; as, on the contrary, what swells but little and slowly, is accounted the worst. When it is swelled up to a considerable Degree, they pour in a little Vinegar upon it, and then a little Oil; but this last may be added at the Beginning: When it is perfectly boiled, they sprinkle it with powdered Salt, without any other Addition, except, perhaps, of a small Quantity of Dill, or Leeks. Thus *Galen*. And this is the best Way of preparing Ptissan; and far to be preferred to that where many superfluous Ingredients are unskilfully added, in order to season it; for some added Amylum, others Sapa; and some put Honey and Cumin to it, making of it an Hotch-potch, rather than a Ptisan; and, perhaps, they had some Reason for thus preparing it, which might be with a View to attenuate its Grossness, correct its Viscidity, or discuss its Flatulences. We who far excel the Antients in Delicacy, and, in point of Cookery, outdo *Apicius* himself, (who, *Lib.* 4. *de Obsoniis*, speaks of those superfluous Seasonings) despise them all, and are contented with putting thereto some triturated Almonds and Sugar, with a moderate Quantity of Salt, which are indeed of some Efficacy against the Grossness, Viscidity, and Flatulency of the Barley; but far inferior, in that respect, to Leeks and Dill, which are not only grateful to the Palate, but not a little conducive to Health.

Ptissana, thus boiled, as aforesaid, is no longer called *Ptissana*, but πτισσάνης χυλὸς ἢ ῥόφημα, "the Cream or Soop of "Ptissan," or, what is the same Thing, *Ptissanæ Jus vel Succus*, "the Broth, Gruel, or Juice of Ptissan." *Celsus* usually calls the Broth of entire Barley, boiled till it bursts, *Cremor Hordei*, "Cream of Barley;" and prescribes it in bilious and burning Fevers.

Πτισσάνη, "Ptissan used simply;" ὅλη πτισσάνη, "entire "Ptissan;" and πτισσάνη κριθώδης, "Barley Ptissan;" in *Hippocrates*, signify all three the same Thing; that is, Ptissan not strained: For if, after boiling, you strain it, and set aside the Liquor, this Liquor is neither called *entire Ptissan*, nor *Barley Ptissan*, nor simply *Ptissan*, but only χυλὸς πτισσάνης, "the Juice of Ptissan." Thus *Galen*, *Com. in Lib. de R. V. I. A.* In *Lib.* 2. *Epid.* near the Beginning, this entire or unstrained Ptisan is called πτισσάνη παχεῖα, "thick Ptisan." *Gorræus.* *Foesius.*

See *Hippocrates*'s Treatise, *de Ratione Victus in Acutis*, under the Article ALCALI.

PTOLEMÆI CHIRURGI MEDICAMENTUM. The Name of a Medicine mentioned by *Celsus*, *Lib.* 6. *Cap.* 7.

PTOLEMÆI EMPLASTRUM. The Name of a Plaister mentioned by *Marcellus Empiricus*, *Cap.* 36.

PTOLEMÆI EUERGETÆ STOMATICA. The Name of a Medicine calculated for the Mouth, and described by *Marcellus Empiricus*, *Cap.* 14.

PTOLEMÆI REGIS COLLYRIUM. The Name of a Collyrium, mentioned by *Aetius*, *Tetr.* 2. *Serm.* 4. *Cap.* 110.

PTOSIS, πτῶσις, from πίπτω, to fall. This imports falling down, and is a Disorder of the Eye-lid, consisting in the Descent of the superior Eye-lid, either on account of a Palsy of the Muscle, which should elevate it; or a Flux of Humours, which depresses it.

PTYALAGOGA, from πτύελον, Saliva, or Spittle; and ἄγω, to bring away. Medicines which promote a Discharge of Saliva.

PTYALISMOS, πτυαλισμός. A frequent and copious Discharge of Saliva. *Hippocrates*. Among the Moderns, it generally signifies a Salivation excited by Mercury.

PTYAS. The Name of a Species of Asp. See ASPIS.

PTYELON, πτύελον. The Saliva, Spit, or Spittle. See SPUTUM.

PTYGMATA, πτύγματα, from πτύσσω, to fold. Folded Cloths. *Cœlius Aurelianus*. Perhaps what we call *Stuphs*.

PTYSIS, πτύσις. A Defluxion of Humours upon the Thorax, or Lungs. *Cœlius Aurelianus*, *Chron. Lib.* 2. *Cap.* 7.

PTYSIS, also, implies Exputition, or Spitting.

PTYSMA, πτύσμα. The Spit, or what is brought up by Spitting, or Expectoration.

PTYSMAGOGA. Medicines which promote a Discharge of Saliva.

PUBES. See ABDOMEN.

PUBIS OS. See INNOMINATA OSSA.

PUCHAMIAS. The Name of a Tree which grows in *Virginia*, bearing a Fruit like a Medlar, extremely astringent, whilst immature; but, when ripe, of a delicious Taste. *Raii Hist. Plant.*

PUDENDA. The private Parts in both Sexes.

PUDENDAGRA. The Venereal Disease.

PUERPERA. A lying-in Woman.

PUFFINUS. A Sea-bird, which the *French* call a *Macreuse*, that is reckoned in the Number of wild Ducks: It is dark-coloured, and flies heavily; but, when it has a mind to come hastily away from a Place, the Bird sustains itself upon the Ends of its Wings and Feet, and, in this manner, runs lightly and swiftly upon the Surface of the Water: This Bird feeds upon Insects, Sea-weeds, and Fish: Its Flesh is hard, and like Leather, especially when it is old; and, therefore, it should not be eaten but when young: This same Flesh tastes, also, of Fish; and the *Roman* Catholics allow the Use of it in *Lent*.

PUGILLUS. A Pugil. The eighth Part of an Handful.

PULEGIUM.

The Characters are;

The Flowers, which are very small, are disposed in close thick Whorles, and their upper Lip is entire: In other respects this Herb resembles the *Mentha*, or Mint.

Boerhaave mentions four Sorts of Pulegium; which are,

1. Pulegium; latifolium. *C. B. P.* 222. *Boerh. Ind. alt.* 186. *Pulegium.* Offic. J. B. 3. 256. Raii Hist. 1. 533. Synop. 3. 235. *Pulegium regium.* Ger. 545. Emac. 671. *Pulegium vulgare.* Park. Theat. 29. *Mentha aquatica seu Pulegium vulgare.* Tourn. Inst. 189. PENYROYAL.

Penyroyal has many creeping fibrous Roots; from which spring a great many smooth roundish Stalks, hardly able to support themselves, but leaning on the Ground, and sending out small Fibres, by which it roots itself in the Ground: It bears two small, round, but yet pointed Leaves, at a Joint: The Flowers grow towards the upper Part of the Branches, coming forth just above the Leaves, in thick close Whorles; they are of a pale-purple Colour, small and galeated, set in small, somewhat downy Calyces, in which grow four small Seeds. The whole Plant has a very strong Smell, and an hot aromatic Taste: It grows frequently upon moist Commons, and in Places where Water has stood all Winter, and flowers in *July*. But what we use in the Shops is generally cultivated in

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in Gardens, where it grows tall and large: The whole Herb is uſed.

It is hot and dry, of very ſubtile volatile Parts, and is peculiarly appropriated to the Female Sex, being a good Uterine, provoking the Menſes and Lochia, expelling the Birth and Secundines: It, likewiſe, warms and comforts the Bowels, and helps the Colic and Jaundice, and is good againſt Coughs and Shortneſs of Breath: The Juice, or a ſtrong Decoction of the Leaves, ſweetened with Sugar, has been accounted a Specific againſt a whooping Cough.

Officinal Preparations are only the diſtilled Water and Oil. *Miller's Bot. Off.*

This Plant, which is very bitter, acrid, and of a very penetrating Smell, gives a deep Tincture of Red to the blue Paper; ſo that it is probable, it contains a volatile, aromatic, and oily Salt, loaded with Acid; whereas, in the artificial, volatile, oily Salt, this Acid is detained by the Salt of Tartar.

Thus this Plant is aperitive, hyſteric, and good for the Diſeaſes of the Stomach and Breaſt; ſince it evacuates thoſe glutinous Sordes, which fill part of the Bronchia, and Veſicles of the Lungs; eſpecially if it is boiled with Honey and Aloes; for then (as *Dioſcorides* obſerves) it purges, and procures Expectoration. *Tragus* very much commends the Decoction of Penyroyal in White-wine, for the Suppreſſion of the Menſes, and Fluor Albus. The Juice of this Plant, according to the ſame Author, clears the Sight, and removes Lippitude. *Montanus* preſcribed the Powder of Penyroyal, mixed with equal Quantities of Vinegar, Honey, and Water, for the Diſeaſes of the Eyes. The Conſerve of its Flowers and Leaves is good for the Dropſy and Jaundice. *Ray* affirms, from Mr. *Boyle*, that a Spoonful of the Juice of Penyroyal is a good Remedy for the Chin-cough of Children. *Chefneau* preſcribes a Glaſs of its Decoction for Hoarſeneſs; and adviſes to take it before going to Bed. *Martyn's Tournefort.*

2. Pulegium; anguſtifolium. *Ger.* 546. *Emac.* 672. *Raii Hiſt.* 1. 534. *C. B. P.* 222. *Boerh. Ind. alt.* 186. *Pulegium cervinum.* Offic. *Pulegium anguſtifolium ſive Cervinum.* Park. Theat. 30. *Pulegium cervinum anguſtifolium.* J. B. 3. 257. *Mentha aquatica Satureiæ folio.* Tourn. Inſt. 190. HART PENYROYAL.

This grows more erect than the common Penyroyal, with much longer and narrower Leaves, ſomewhat like Savory; the Flowers grow in thick Whorles, like the former, and the Smell is much alike; but this is rather pleaſanter. It grows in *Provence* and *Languedoc* in *France*, and in divers Parts of *Italy*.

It has the ſame Virtues with the common Penyroyal, and is, by the Phyſicians about *Montpelier*, preferred before it; but is ſeldom or never preſcribed here, or brought into our Shops. *Miller's Bot. Off.*

3. Pulegium; anguſtifolium; flore albo. *H. R. Par. Mentha, aquatica, Satureiæ folio, flore albo.* T. 190.

4. Pulegium; latifolium; hirſutum; flore cœruleo. *Boerh. Ind. alt. Plant. Vol.* 1.

Beſides the foregoing Species of Pulegium, *Dale* mentions the following;

PULEGIUM ERECTUM. Offic. An. *Pulegium latifolium alterum.* C. B. P. 222. UPRIGHT PENYROYAL.

This Plant grows in marſhy Places: The Herb itſelf is uſed, and in Virtues agrees with the common Penyroyal. *Dale.*

PULEX. A Flea.

PULICARIA. A Name for the PSYLLIUM.

PULMO. The Lungs.

The Lungs are two large ſpongy Bodies, of a rediſh Colour in Children, greyiſh in adult Perſons, and bluiſh in Old-age, filling the whole Cavity of the Thorax; one being ſeated in the Right Side, the other in the Left, parted by the Mediaſtinum and Heart, and of a Figure anſwering to that of the Cavity which contains them, that is, convex next the Ribs, concave next the Diaphragm, and irregularly flatted and depreſſed next the Mediaſtinum and Heart.

When the Lungs are viewed out of the Thorax, they repreſent, in ſome meaſure, an Ox's Foot, with the fore Part turned to the Back, the back Part to the Sternum, and the lower Part to the Diaphragm.

They are diſtinguiſhed into the Right and Left Lung; and each of theſe into two or three Portions, called *Lobi*; of which the Right Lung has commonly three, or two and an half, and the Left Lung two. The Right Lung is generally larger than the Left, anſwerably to that Cavity of the Breaſt, and to the Obliquity of the Mediaſtinum.

At the lower Edge of the Left Lung, there is an indented Notch, or Sinus, oppoſite to the Apex of the Heart, which is, therefore, never covered by that Lung, even in the ſtrongeſt Inſpirations; and, conſequently, the Apex of the Heart and Pericardium may always ſtrike againſt the Ribs; the Lungs not ſurrounding the Heart in the manner commonly taught. This Sinus is expreſſed in *Euſtachius*'s Tables.

The Subſtance of the Lungs is almoſt all ſpongy, being made up of an infinite Number of membranous Cells, and of different Sorts of Veſſels, ſpread among the Cells, in innumerable Ramifications.

This whole Maſs is covered by a Membrane, continued from each Pleura, which is commonly ſaid to be double; but what is looked upon as the inner Membrane, is only an Expanſion and Continuation of a cellular Subſtance.

BRONCHIA.

The Veſſels which compoſe part of the Subſtance of the Lungs, are of three or four Kinds; the Air-veſſels, Blood-veſſels, and Lymphatics: To which we may add the Nerves. The Air-veſſels make the principal Part, and are termed *Bronchia.*

Theſe Bronchia are conical Tubes, compoſed of an infinite Number of cartilaginous Fragments, like ſo many irregular Arches of Circles, connected together by a ligamentary elaſtic Membrane; and diſpoſed in ſuch a manner, as that the lower eaſily inſinuate themſelves within thoſe above them.

They are lined on the Inſide by a very fine Membrane, which continually diſcharges a mucilaginous Fluid; and in the Subſtance of the Membrane are a great Number of ſmall Blood-veſſels, and, on its convex Side, many longitudinal Lines, which appear to be partly fleſhy, and partly made up of an elaſtic Subſtance of another Kind.

The Bronchia are divided in all Directions into an infinite Number of Ramifications, which diminiſh gradually in Size; and, as they become capillary, change their cartilaginous Structure into that of a Membrane. Beſides theſe very ſmall Extremities of this numerous Series of Ramifications, we find, that all the ſubordinate Trunks, from the greateſt to the ſmalleſt, ſend out, from all Sides, a vaſt Number of ſhort capillary Tubes, of the ſame kind.

VESICULÆ BRONCHIALES.

Each of theſe numerous Bronchial Tubes is widened at the Extremity, and thereby formed into a ſmall membranous Cell, commonly called a *Veſicle*: Theſe Cells, or Folliculi, are cloſely connected together in Bundles; each ſmall Branch producing a Bundle proportionable to its Extent, and the Number of its Ramifications.

Theſe ſmall veſicular, or cellulous Bundles, are termed Lobules; and as the great Branches are divided into ſmall Ramifications, ſo the great Lobules are divided into ſeveral ſmall ones. The Cells, or Veſicles, of each Lobule have a free Communication with each other; but the ſeveral Lobules do not communicate ſo readily.

The Lobules appear diſtinctly to be parted by another cellulous Subſtance, which ſurrounds each of them, in proportion to their Extent, and fills up the Interſtices between them. This Subſtance forms, likewiſe, a kind of irregular, membranous Cells, which are thinner, looſer, and broader, than the Bronchial Veſicles.

This Subſtance is diſperſed through every Part of the Lungs; forms cellulous, or ſpongy Vaginæ, which ſurround the Ramifications of the Bronchia and Blood-veſſels; and is afterwards ſpread over the outer Surface of each Lung, where it forms a kind of fine, cellular Coat, joined to the general Covering of that Viſcus.

When we blow into this interlobular Subſtance, the Air compreſſes and flattens the Lobuli; and, when we blow into the Bronchial Veſicles, they preſently ſwell; and, if we continue to blow with Force, the Air paſſes, inſenſibly, into the interlobular Subſtance. We owe this Obſervation to M. *Helvetius.*

All the Bronchial Cells are ſurrounded by a very fine reticular Texture of the ſmall Extremities of Arteries and Veins, which communicate, every Way, with each other. The greateſt Part of this admirable Structure is the Diſcovery of the illuſtrious *Malpighi.*

BLOOD-VESSELS.

The Blood-veſſels of the Lungs are of two Kinds; one common, called the Pulmonary Arteries and Veins; the other proper, called the Bronchial Arteries and Veins.

The Pulmonary Artery goes out from the Right Ventricle of the Heart; and its Trunk, having run almoſt directly upward, as high as the Curvature of the Aorta, is divided into two lateral Branches, one going to the Right Hand, called the Right Pulmonary Artery; the other to the Left, termed the Left Pulmonary Artery. The Right Artery paſſes under the Curvature of the Aorta, and is, conſequently, longer than the Left: They both run to the Lungs, and are diſperſed through their whole Subſtance, by Ramifications nearly like thoſe of the Bronchia, and lying in the ſame Directions.

The Pulmonary Veins, having been diſtributed through the Lungs, in the ſame manner, go out, on each Side, by two great Branches,

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Branches, which open laterally into the Reſervoir, or muſcular Bag, of the Right Auricle.

The Ramifications of theſe two Kinds of Veſſels in the Lungs are ſurrounded, every-where, by the cellular Subſtance already mentioned, which, likewiſe, gives them a kind of Vagina; and the Rete mirabile of *Malpighi*, deſcribed above, is formed by the capillary Extremities of theſe Veſſels. It muſt be obſerved, that the Ramifications of the Arteries are more numerous, and larger, than thoſe of the Veins, which, in all other Parts of the Body, exceed the Arteries, both in Number, and Size.

Beſides theſe capital Blood-veſſels, there are two others, called the bronchial Artery and Vein; the Artery has become very famous, of late, by the Deſcription given of it by M. *Ruyſch*. The Vein was doubted of, for ſome time; but it exiſts as really as the Artery, and may be eaſily demonſtrated.

Theſe two Veſſels are very ſmall, appearing only like very fine Arteries and Veins coming from the Aorta, Vena Cava, and their Branches; and they ſeem to have no other Uſe, but that of nouriſhing the Lungs.

The Varieties in the Origins of the bronchial Arteries and Veins, eſpecially of the Arteries, their Communications, or Anaſtomoſes, with each other, and with the neighbouring Veſſels, and, above all, the immediate Anaſtomoſis of the bronchial Artery with the common pulmonary Vein, are of great Conſequence, in the Practice of Phyſic.

The bronchial Arteries come ſometimes from the anterior Part of the Aorta deſcendens ſuperior, ſometimes from the firſt intercoſtal Artery, and ſometimes from one of the OEſophagææ. They go out, ſometimes, ſeparately, towards each Lung; ſometimes by a ſmall common Trunk, which afterwards divides to the Right and Left, near the Bifurcation of the Aſpera Arteria; and follow Ramifications of the Bronchia.

The Left bronchial Artery comes often from the Aorta, and the Right from the ſuperior Intercoſtal, on the ſame Side, becauſe of the Situation of the Aorta: There is, likewiſe, another, which ariſes from the Aorta poſteriorly, near the ſuperior Intercoſtal, and above the anterior Bronchialis.

The bronchial Artery gives off a ſmall Branch to the Auricle of the Heart, on the ſame Side, which communicates immediately with the coronary Artery.

In the Year 1719. I obſerved a very plain Anaſtomoſis between ſome Branches of the Left pulmonary Vein, and of one of the Arteriæ OEſophagææ, which came from the firſt Left Intercoſtalis, together with a bronchial Artery of the ſame Side.

In that, or the following Year, I likewiſe obſerved an Anaſtomoſis between the Left bronchial Artery, and the Vena Azygos; and in *April* 1721. I ſaw an Anaſtomoſis between a Branch of this Artery, and the Body of the juſt-mentioned Vein.

Sometimes one bronchial Artery gives Origin to ſeveral ſuperior Intercoſtals, and ſometimes ſeveral bronchial Arteries ſend off ſeparately the ſame Number of Intercoſtals. The bronchial Veins, as well as Arteries, were known to *Galen*; theſe Veins are ſometimes Branches of the Azygos, coming from the upper Part of the Curvature, or Arch. The Left Vein is ſometimes a Branch of the common Trunk of the Intercoſt of the ſame Side; and ſometimes both Veins are Branches of the Gutturalis.

Nerves.

The Lungs have a great many Nerves diſtributed through them, by Filaments which accompany the Ramifications of the Bronchia and Blood-veſſels, and are ſpread on the Cells, Coats, and all the membranous Parts of the Lungs. The Nervi Sympathetici medii, and majores, commonly called Nerves of the eighth Pair, or the Intercoſtals, form, behind each Lung, a particular Intertexture, called Plexus pulmonaris, from whence nervous Filaments go out, which communicate with the Plexus Cardiacus and Stomachicus.

Lymphatic Veſſels.

On the Surface of the human Lungs, between the external and cellular Coat, we obſerve ſomething that looks like lymphatic Veſſels; but we ought to take care not to miſtake, for ſuch Veſſels, a tranſparent reticular Subſtance, obſervable on the Surface of the Lungs, after blowing ſtrongly into the Lobuli; this Appearance being entirely owing to the Air which paſſes through the bronchial Veſicles into the interlobular Cells, and which, by ſeparating a certain Number of Lobuli, finds Room to lodge between them. The true lymphatic Veſſels of the Lungs are moſt viſible in Brutes; and in an Horſe, particularly, I have obſerved one of theſe Veſſels to run along a great Part of one Edge of the Lungs.

Ligaments.

Under the Root of each Lung, that is, under that Part form'd by the ſubordinate Trunk of the pulmonary Artery, by the Trunks of the pulmonary Veins, and by the Trunk of the Bronchia, there is a pretty broad membranous Ligament, which ties the poſterior Edge of each Lung to the lateral Parts of the Vertebræ of the Back, from that Root all the Way to the Diaphragm.

Trachea, or Aspera Arteria.

The Bronchia, already deſcribed, are Branches or Ramifications of a large Canal, partly cartilaginous, and partly membranous, called Trachea, or Aſpera Arteria. It is ſituated anteriorly, in the lower Part of the Neck, from whence it runs down into the Thorax, between the two Pleuræ, through the upper Space left between the Duplicature of the Mediaſtinum, behind the Thymus.

Having reached as low as the Curvature of the Aorta, it divides into two lateral Parts, one towards the Right-hand, the other towards the Left, which enter the Lungs, and are diſtributed through them in the manner already ſaid. Theſe two Branches are called Bronchia, and that on the Right Side is ſhorter than that on the Left; whereas the Right pulmonary Artery is the longeſt.

The Trachea is made up of Segments of Circles, or cartilaginous Hoops, diſpoſed in ſuch a manner, as to form a Canal open on the back Part, the Cartilages not going quite round; but this Opening is filled by a ſoft glandular Membrane, which completes the Circumference of the Canal.

Each Circle is about the twelfth Part of an Inch in Breadth, and about a Quarter of that Space in Thickneſs; their Extremities are round, and they are ſituated horizontally above each other, ſmall Interſtices being left between them, and the lower Edge of the ſuperior Segments being turned toward the upper Edge of thoſe next below them.

They are all connected by a very ſtrong elaſtic membranous Ligament, fixed to their Edges. I have obſerved the firſt three Segments united into one, bent alternately in two different Places, according to its Breadth: Sometimes two are continuous in the ſame Manner.

The Canal of the Aſpera Arteria is lined on the Inſide by a particular Membrane, which appears to be partly fleſhy, or muſcular, and partly ligamentary, perforated by an infinite Number of ſmall Holes, more or leſs imperceptible, through which a mucilaginous Fluid continually paſſes, to defend the inner Surface of the Trachea againſt the Acrimony of the Air which we breathe.

This Fluid comes from ſmall glandular Bodies, diſperſed through the Subſtance of the Membrane, but eſpecially from Glands ſomething larger than the former, which lie on the outer or poſterior Surface of that ſtrong Membrane, by which the Circumference of the Canal is completed. The ſame Structure is obſervable in the Ramifications of the Trachea, from the greateſt to the ſmalleſt.

All the Veſſels of which the Lungs are principally compoſed, that is, the Air-veſſels, or Bronchia; and Blood-veſſels, that is, the pulmonary and bronchial Arteries and Veins; accompany each other through this whole Viſcus.

They are diſpoſed, commonly, in ſuch a manner, even to the laſt Ramifications, as that a ſubordinate Trunk or Branch of the Bronchia lies between the like Trunks or Branches of the pulmonary Artery and Vein; the bronchial Veſſels being immediately joined to the Bronchia. In ſome Places theſe three Kinds of Veſſels touch each other, in ſuch a manner, as to leave a triangular Space in the Middle.

The Bronchia are divided into a very great Number of Ramifications, and the laſt Branches are the Pedicles or Foot-ſtalks of the ſmall Lobuli. All the Lobuli are angular, oblong, broad, and thin; the Foot-ſtalks ſend out other ſmall membranous Pedicles, which are very ſhort, and terminate in the bronchial Veſicles, or Cells, of which they are Continuations. The ſubordinate Trunks and Ramifications detach a great Number of theſe Pedicles from their convex Surface.

When we blow into the Lungs, the bronchial Cells, neareſt their outer Surface, appear like ſmall Portions of round Veſicles; and, from this Appearance, all the bronchial Cells have got the Name of Veſicles, though they are all angular, except thoſe which I have now mentioned.

When we examine a Lung, without blowing it up, we find, that the cartilaginous Segments of the Bronchia lie ſo near, as to be engaged in each other; and, in drawing out any Portion of the Bronchia by the two Ends, theſe Segments are parted, and the whole Canal is increaſed in Length; but it contracts again, by means of its elaſtic Membrane, as ſoon as that Force is taken off.

When we open, lengthwiſe, any Portion of the pulmonary Artery and Vein, in the ſame Lung, we meet with a great Number of tranſverſe Rugæ, which are deſtroyed when theſe Veſſels are elongated: This is an Obſervation made by *Hallerius*.

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By virtue of this Structure, all the Ramifications, both of the Bronchia, and pulmonary Arteries and Veins, have constantly the same Direction, whether the Lung be inflated, or collapsed; and they contract in Length, without being either contorted, or folded. In Expiration, these Vessels are elongated, and shortened in Inspiration.

These three Vessels lie in a sort of cellular Vagina, which accompanies all their Ramifications, and is a Continuation of the interlobular Cells, or cellular Substance in the Interstices of the Lobuli. The Pelliculæ which compose it, are, however, disposed there, in a more regular manner, and more longitudinally, than in other Places; and thereby appear to form a true Vagina.

When we blow through a Pipe, introduced so far as to touch immediately a Trunk of the Blood-vessels, or Bronchia, the Air runs, at first, through all the Cells that lie nearest that Trunk, or its Branches; but if we continue to blow, it insinuates itself through the whole interlobular Substance.

Bronchial Glands.

At the Angle of the first Ramification of the Trachea Arteria, we find, on both the fore and back Sides, certain soft, roundish, glandular Bodies, of a bluish, or blackish Colour, and of a Texture partly like that of the Thymus, and partly like that of the Glandulæ Thyroides. There are other Glands, of the same Kind, at the Origin of each Ramification of the Bronchia; but they decrease proportionably, in Number and Size: They are fixed immediately to the Bronchia, and covered by the interlobular Substance; and they seem to communicate, by small Openings, with the Cavity of the Bronchia.

The Trachea has several Coats; the outermost, or common, Covering surrounds that Part of the Trachea which lies in the Thorax; but out of the Thorax, this first Coat is derived from the aponeurotic Expansions of the Muscles of the Neck; and it is between this, and the following Covering, that the Glands, already mentioned, are situated.

The second is a proper Coat, being a Continuation of the cellular Covering of the Lungs; and the Pellicles thereof, nearest the cartilaginous Segments, serve them for an external Perichondrium. The third Membrane lies on the Inside, adhering closely to the same Cartilages, and supplying, to these, the Place of an internal Perichondrium.

The fourth Membrane is that which completes the Circumference of the cartilaginous Circles of the Trachea: It consists, principally, of two Laminæ, or Strata, partly muscular, and partly tendinous; the external, or posterior, Lamina being made up of longitudinal Fibres; and the internal, or anterior, of transverse Fibres. This Membrane is perforated by the small Ducts of the above-mentioned Glands, which discharge a Fluid, when pressed; and, being examined through a Microscope, they appear vesicular, or folliculous, much like those of the Stomach.

The Ligaments between the cartilaginous Circles are very strong, and elastic; and each of them is confined to two Cartilages, without communicating with any of the rest; being fixed to the Edges of these Cartilages, much in the same manner as the intercostal Muscles are inserted in the Ribs.

As the Bronchia penetrate into the Substance of the Lungs, they gradually lose their Cartilages; but the muscular Lines, or Columnæ, of *Morgagni* appear as much, and sometimes more than before. The two Planes above-mentioned continue, likewise, to be visible; and we observe very distinctly, sometimes, even without a Microscope, a great many small Holes in the Pedicles of the Lobuli, and bronchial Vesicles, or Cells, which open from within outwards.

Uses.

Respiration is performed by Organs of two Kinds, one of which may be looked upon as active, the other as passive. The Lungs are of the second Kind; and the first comprehends, principally, the Diaphragm, and intercostal Muscles.

As soon as the intercostal Muscles begin to contract, the Arches of the Ribs are raised, together with the Sternum, and placed at a greater Distance from each other; by which means, the Cavity of the Thorax is enlarged on the two lateral and anterior Sides.

At the same Instant, the Diaphragm is flatted, or brought toward a Plane, by two Motions, which are, apparently, contrary; that is, by the Contraction of the Diaphragm, and the Dilatation of the Ribs, in which it is inserted. The external Surface of the Thorax being thus, in a manner, increased, and the Cavity of the Bronchia being, at the same time, and by the same means, less resisted, or pressed upon, the ambient Air yields to the external Pressure, and insinuates itself into all the Places where the Pressure is diminished; that is, into the Aspera Arteria, and into all the Ramifications of the Bronchia, all the Way to the Vesicles. This is what is called Inspiration.

This Motion of Inspiration is instantaneous, and ceases in a Moment, by the Relaxation of the intercostal Muscles; the elastic Ligaments, and Cartilages of the Ribs, bringing them back, at the same time, to their former Situation. This Motion, by which the Ribs are depressed, and brought nearer each other, is termed Expiration.

The pulmonary Arteries and Veins, which accompany the Bronchia through all their Ramifications, and surround the Vesicles, transmit the Blood through their narrow capillary Extremities, and thereby change or modify it, at least, in three different Manners.

The first Change, or Modification, which the Blood undergoes in the Lungs, is to have the Cohesion of its Parts broken, to be attenuated, pounded, and, as it were, reduced to Powder. The second is, to be deprived of a certain Quantity of Serum, which transpires through the Lungs, and is what we commonly call the Breath. The third is to be, in a manner, re-animated, by the Impression of the Air, whether the whole Body of the Air enters the Blood, whether the common Air is only the Vehicle of some finer Parts which are conveyed to it, or whether the Air only compresses, or shakes the Blood, as it passes round the bronchial Vesicles in the reticular capillary Extremities of the Vessels.

The Cartilages of the Aspera Arteria, and Bronchia, serve, in general, to compose a Canal, the Sides of which will not sink in, or subside, by Compression, but will, nevertheless, yield to certain Pressures and Impulses, without breaking. As these Cartilages are not complete Circles, or Rings, and as their Circumferences are completed by elastic Membranes, they allow of these Dilatations and Contractions, which modulate the Voice; and as they are connected by elastic Ligaments, of a considerable Breadth, the alternate Elongation and Contraction of the Bronchia is facilitated, in the Motions of Respiration. *Winslow's Anatomy.*

PULMO MARINUS. *Offic. Aldrov. Exang.* 577. *C. B. P.* 369. *Jonst. Exang.* 56. *Bellon. Aquat.* 438. *Gesn. Aquat.* 762. *Rondel. Aquat.* 2. 131. *Charlt. Exer.* 68. SEA LUNGS.

This Substance floats in the Sea; is of a pellucid bluish Colour, resembling, in some measure, that of Crystal; and is so tender, that it can hardly be taken out of the Sea entire. When recently triturated, and used by way of Ointment, it cures Gouts and Chilblains. *Dioscor. Dale.*

This Substance, according to *Lemery*, in his *Traité des Drogues*, contains a large Quantity of Oil, and of Salts, both of the volatile, and fixed Kind. It removes the Hairs, when applied to any Part covered with them. A Lixivium, prepared of calcined Sea Lungs, with a large Quantity of Water, if drank, is proper to dissolve the Stone, excite the Menses, and provoke Urine.

PULMONARIA.

The Characters are;

The Calyx is like a Tube, pentagonal, and quinquefid. The Flower is monopetalous, cylindrical in its lower Part, and shaped like a Bason above, with its Margin cut into five round Segments. From the Sides of the internal cylindrical Part, which are neatly fimbriated, arise five Stamina.

Boerhaave mentions six Species of *Pulmonaria*; which are,

1. Pulmonaria, vulgaris; latifolia; flore albo. *T.* 136. *Boerh. Ind. A.* 193. *Pulmonaria maculosa.* Offic. Ger. 662. Emac. 808. Raii Hist. 1. 488. Park. Parad. 448. *Pulmonaria Italorum ad Buglossam accedens.* J. B. 3. 595. *Symphytum maculosum sive Pulmonaria latifolia.* C. B. P. 259. SAGE OF JERUSALEM.

The lower Leaves of this Plant are large and oval, five or six Inches long, growing on broad Foot-stalks, thick-set with fine Hairs, of a deep Green above, and spotted with white Spots; but of a paler Green, and unspotted, underneath. The Stalks rise to be near a Foot high, having several smaller Leaves on them; and on their Tops grow several Flowers together, each in a long hairy Calyx, having their Brims appearing but a little above it, of a reddish Colour, being single, and Cup-fashion, cut at the End into five round Segments; and are each succeeded by four rough Seeds, growing in the Bottom of the Calyx. The Root is small and fibrous. It is planted in Gardens, and flowers in *May*; the Leaves are used.

This is accounted a pectoral, balsamic Plant, and good for Coughs, Consumptions, Spitting of Blood, and the like Disorders of the Lungs: It is, likewise, put into Wound-drinks, and traumatic Decoctions; being agglutinating, and good to heal Wounds and Ulcers, and old Sores. *Miller's Bot. Off.*

The Pulmonaria has a saltish, herby, glutinous Taste, and reddens the blue Paper pretty much; it is very sweetening. It is used in Ptisans, and Broths made of Calves Lungs, for the Diseases of the Breast, when the Spittle is salt, or purulent. *Martyn's Tournefort.*

2. Pulmonaria; Alpina; foliis mollibus, subrotundis; flore cœruleo. *T.* 136. *Symphytum maculosum.* Dod. p. 135.

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3. Pulmonaria; foliis Echii. *Ger.* 662. *Emac.* 808. *Raii Hiſt.* 1. 489. *Synop.* 3. 226. *Tourn. Inſt.* 136. *Boerh. Ind. A.* 193. *Pulmonaria anguſtifolia rubente cæruleo flore.* C. B. P. 200. *Pulmonaria anguſtifolia.* Park. Parad. 248. *Pulmonaria rubro flore, foliis Echii.* J. B. 3. 597. *Symphytum maculoſum ſeu Pulmonaria maxima, foliis quaſi Saccharo incruſtatis.* Raii Hiſt. 3. 266. NARROW-LEAVED SAGE OF BETHLEHEM.

This Plant is cultivated in Gardens, and flowers in *May*. Its Leaves are only uſed, and, in Virtues, agree with thoſe of the *Sage of Jeruſalem*. Dale.

4. Pulmonaria; folio non maculoſo. *Cluſ. H.* 169. *Symphytum, minus, non maculatum, Germanicum, anguſtifolium, floribus è rubentibus cæruleis.* M. H. 3. 444.

5. Pulmonaria; major; non maculoſa. *J. B.* 3. 493.

6. Pulmonaria; Orientalis; calyce veſicario; foliis Echii; flore purpureo, infundibuliformi. *T. Cor.* 6. *Boerh. Ind. alt. Plant. Vol.* 1.

This Plant contains a mild, benign Juice; but is no more efficacious in Diſorders of the Lungs, than Borage, or Houndſtongue, ſince it is equally proper in all Diſorders where Medicines of a demulcent, emollient, and relaxing Quality, are indicated.

It is, like Mallows, of an emollient, conglutinating, conſolidating, moiſtening, and inſpiſſating Quality. The Flowers or Leaves are recommended in a Spitting of Blood, an Hectic, and a Phthiſis. It is claſſed among the vulnerary Plants, and accounted highly beneficial in Hoarſeneſs, and long-continued Coughs. Hence it is proper in a Pleuriſy, a Peripneumony, and Hepatides, where Expectoration is required. It procures a free Breathing, and is beneficial to the Kidneys. *Hiſt. Plant. adſcript. Boerh.*

PULMONIA. The ſame as PERIPNEUMONIA.

PULPA. The Pulp of Fruits.

PULPEZIA. An Apoplexy.

PULS. The ſame as ETNOS.

PULSATILLA.

The Characters are;

The Root is fibrous and perennial; the Leaves are jagged, and ſurround the Stalk like a Crown, as in the *Anemonoides*, and *Anemone*. The Apex of the Stalk is expanded into a Placenta, whoſe Baſe has its Bottom ſurrounded with a naked, hexapetalous Flower, furniſhed with very numerous Stamina, which ariſe from the Bottom of the Placenta within the Petals. The Ovary becomes a little globous Head, to which grow Numbers of little hairy Huſks, furniſhed with a long hairy Sheath, ending in a ſort of long ſlender Capillament, like a plumous Tail.

Boerhaave mentions two Species of *Pulſatilla*; which are,

1. Pulſatilla; folio craſſiore; & majore flore. *C. B. P.* 177. *Tourn. Inſt.* 284. *Raii Synop.* 3. 260. *Boerh. Ind. A.* 39. *Pulſatilla.* Offic. *Pulſatilla vulgaris.* Ger. 314. Emac. 385. Park. Theat. 341. Raii Hiſt. 1. 633. *Pulſatilla Anglica purpurea.* Park. Parad. 199. *Pulſatilla purpurea cæruleave.* J. B. 3. 409. PASQUE-FLOWER.

This Plant is ſo acrid, that the mere Vapour of its Leaves, rubbed between the Fingers, ſeems to burn the Noſe, and penetrate to the very Brain: It might be made uſe of in the Lethargy; the Leaves bruiſed are applied to Ulcers, but eſpecially to the Wounds of Horſes.

By the chymical Analyſis this Plant yields ſome Marks of Acidity, a great deal of Sulphur and Earth, and a little fixt, and no volatile concrete Salt. *Martyn's Tournefort.*

2. Pulſatilla; flore minore; nigricante. *C. B. P.* 177. *Boerh. Ind. alt. Plant.*

PULSATIO. Pulſation; that is, a morbid Senſation of ſomething beating in any Part. Hence a ſort of Pain, attended with this ſort of Senſation, is called a pulſatory Pain.

PULSILOGIUM. A Pulſe-watch, or Inſtrument to meaſure the Celerity of the Pulſe. *Sanctorius* is ſaid to be the firſt Inventor of this Machine; and Sir *John Floyer* has wrote a Treatiſe expreſly upon this Subject.

PULSUS.

No Doctrine has been involved in more Difficulties than that of Pulſes; ſince, in giving a phyſiological Account of them, Phyſicians have eſpouſed quite oppoſite Sentiments; whilſt ſome doubt whether the Pulſe is owing to the Syſtole, or the Diaſtole; as, alſo, whether the Motion of the Heart and Arteries is one and the ſame for a Moment of Time: Others, eſpecially among the Antients, mention an incredible Number of different Pulſes, moſt of which can neither be felt by the Touch, nor comprehended by the Mind. Others run into the oppoſite Error, and will only admit of two or three different Kinds of Pulſes. Others take different Kinds of Pulſes for one and the ſame Species, whilſt others aſſert, that their Diſtinction is abſolutely neceſſary, to prevent Confuſion and Blunders in Practice. Thus many of the Moderns affirm a quick and frequent Pulſe to be the ſame; whilſt others maintain, that the Diſtinction between them is of the laſt Importance in Practice. A vehement, ſtrong, large, and quick Pulſe, are now-and-then ſaid to be of the ſame Species; whilſt others will have them to be entirely diſtinct: And, indeed, if we conſult Experience, we ſhall hardly ever find two Phyſicians agreeing in their Appellations of the Patient's Pulſe. The Opinions of the Learned are no leſs various, with reſpect to the Uſe of the Doctrine of the Pulſes in Practice; whilſt ſome aſſert, that they are highly fallacious Signs in moſt Diſorders, and can only be of Uſe in ſome Fevers; whilſt others aſſert the Knowledge of Pulſes ſo neceſſary to a practical Phyſician, that he cannot, without it, form a certain Prognoſtic; eſpecially with reſpect to latent Diſeaſes; for which Reaſon, they, with the *Chineſe*, greatly eſteem the Knowledge of the Pulſes; and maintain, that they ought to be, for a long time, accurately explored, in various Parts of the Body. But, in all Probability, the Origin of thoſe Differences is, that the Antients were ignorant of the Circulation of the Blood, and invented different Species of Pulſes, from the ſpeculative and abſtracted Differences of any ſolid Body, at different Times, variouſly impelled. But as the Moderns have rarely applied the Doctrine of the Circulation of the Blood to Pathology and Practice, ſo they have reſted contented with the Rules of the Antients, with reſpect to Pulſes, without attempting a juſt Account of their Nature and Differences, from the Diſcovery of the Circulation of the Fluids. But, to lay a Foundation for Certainty in this Point, and prevent future Miſtakes, I ſhall, from the Laws of Mechanics, and eſpecially from the Circulation of the Blood, ſhew the Nature, Differences, and practical Uſe of Pulſes.

But, before we proceed to this, we ſhall, for the ſake of Accuracy and Connection, give the Phyſiology, or natural Conſtitution, of the Pulſe; that the Truths connected with it may be the better diſcovered and explained. But here a Controverſy occurs; which is, Whether the Motion of the Heart be the ſame with the Pulſe; or whether, at the ſame time the Heart is in its Syſtole, the Arteries are ſo too, and the Syſtole of the Heart and Arteries is the true Pulſe; or, rather, whether the Syſtole of the Heart, and Diaſtole of the Arteries, are not reciprocal; or whether, when the Heart is in its Syſtole, the Arteries are in their Diaſtole; and whether the Pulſe is not the Syſtole, but, rather, the Diaſtole, of the Arteries. *Sennertus*, in his *Inſtitut. Lib.* 3. *Part* 1. *Sect.* 4. *Cap.* 1. embraces the former of theſe Opinions; and informs us, that the Heart and Arteries are dilated, and contracted, at one and the ſame time; and that it is raſh, not to acquieſce in the Evidence of Senſe. He ſeems, indeed, in the Part now quoted, to oppoſe his own Opinion, by a Doubt conveyed to his Reader, in the following manner: "If, at the ſame time in which the Heart is contracted, and "expels its Contents, the Arteries were alſo contracted, it "would follow, that the Arteries could not receive the Blood; "and, on the contrary, that at the time the Heart and Ar"teries are at once dilated, the Heart could not receive the "Blood from the Arteries; becauſe theſe mutual Attractions "would hinder each other." Yet he anſwers this Doubt, in the following manner, by telling us, "That no Diſadvantage "ariſes from this, ſince the Arteries are not ſo compreſſed, and "ſhut up, as that they are abſolutely capable of receiving "nothing; but ſtill retain a ſufficient Cavity for receiving that "which is tranſmitted by the Heart; as, alſo, that the Heart "receives Blood from the Lungs; and that the Arteries not "only receive Blood from the Heart, but, alſo, from the ad"jacent Parts, and the Veins, in their Dilatation." But 'tis eaſy to perceive, that this Doctrine is entirely inconſiſtent with the juſteſt Notions of the Circulation of the Blood; of which *Sennertus* was ignorant.

But it is ſurpriſing, that ſome, ſufficiently acquainted with the Circulation of the Blood, ſhould tread in the Steps of *Sennertus*, and aſſert, that the Motion of the Heart, in its Syſtole, is the ſame with the Motion of the Arteries perceived in the Pulſe; and that the Syſtole of the Heart, by way of Eminence, denotes the Pulſe: By this means, they pretend to refute thoſe who aſſert, that the Motion of the Heart and Arteries is not the ſame, but alternate. It is, alſo, ſurpriſing, that ſo great Men as *Galen*, and *Johannes Baptiſta Montanus*, in *Lib.* 1. *de Pulſibus dignoſc. Cap.* 5. ſhould affirm, that the Syſtole, or Contraction of the Pulſe cannot be perceived; but even reject the Opinion of thoſe who believe, that when the Pulſe vibrates, the Artery is in its Diaſtole. But we aſſert, with almoſt all the Moderns, that the Pulſe is nothing but the Dilatation or Expanſion of the Arteries by the Blood, protruded, by the Contraction of the Heart, from its Left Ventricle, into the Arteries, which are ſtretched and dilated by the Impulſe of the Blood coming from the Heart, and communicated to the whole Fluids; then, after their Dilatation, they not only recoil, and are reſtored to their former Figure, but are, alſo, in ſome meaſure, farther contracted, and, with a new Impulſe, propel the Blood more into the minute Arteries and Origins of the Veins: For, according to *Bellini*, in

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in *Tract. de Pulsibus*, the Arteries have a double Motion, the one a Dilatation, or the Impressions they make on the Finger; and the other a Contraction, or receding from the Finger; which, according to *Galen*, is not to be perceived without great Difficulty: For the Circulation of the Blood, on which Life depends, is carried on, without Intermission, by the reciprocal Motions of the Heart and Arteries: Nor, without these, can the Motion of the human Fluids be accounted for. When, therefore, the Heart is in its Systole, and expels its Contents, the Arteries are in their Diastole, and receive them. So, also, when the Arteries, in consequence of the large Number of spiral and muscular Fibres, of which they consist, contract themselves, the Veins and Heart are in their Diastole, and receive the Blood from the Arteries. *Galen* entertained the same Opinion, which excellently quadrates with the Circulation of the Blood. For, in *Lib. 7. Anatom. administr.* he tells us, *That the Pulsation of the Heart and Arteries is such, that when the Heart is filled, the Arteries are emptied; and when the Heart is emptied, the Arteries are filled.* *Fernelius* is, also, of the same Opinion: *For*, says he, *the Pulse consists of a Systole and Diastole; the latter is a Dilatation or Expansion of the Artery every Way; whereas the former is a Contraction or Subsiding of it in every Dimension.*

With respect to Pulses, there is no small Difference of Opinions and Sentiments; for almost all the Antients maintained, that all the Species of them were distinct, and different from each other; whereas some of the Moderns take the quick, and the frequent, Pulse for one and the same, as is sufficiently obvious from their Works. Others, fond of being thought uncommonly wise, dissent from them; and affirm, that there is so great a Distinction between them, that a practical Physician would look upon the Man as a Fool, who should give them out for the same Pulse. But, in order to get clear of all Doubts and Difficulties, we shall more accurately investigate this Matter. The Antients, then, were unanimously of Opinion, that since the Pulse was a local Motion, whatever was requisite to the latter, or could be affirmed or denied of it, was, of course, applicable to the former. Now, according to *Galen* and *Sennertus*, five Things are requisite to local Motion: First, a moving Cause. Secondly, the Space through which the Body is moved. Thirdly, the Time consumed during the Motion. Fourthly, Rest, when Bodies, moving in opposite Directions, meet. And, fifthly, the Instrument by which the Motion is performed. From these they deduce the simple Differences of Pulses. Upon the moving Cause depend Vehemence and Weakness; hence a vehement, or weak, Pulse are produced. On the Space or Quantity of the Distention, or Dilatation, depend the Greatness and Smalness of the Pulse. On the Time in which the Artery performs its Motion, depend the Quickness and Slowness of the Pulse. According as the Artery remains long or short in a State of Rest, the Pulse is said to be frequent, or rare. And from the Organ of the Pulse, which is the Artery, and which is sometimes harder, and sometimes softer, arises a soft and hard Pulse.

But though *Sennertus*, in his *Institut.* defines a quick Pulse to be, when the Artery, in a short time, performs its Motion; yet he afterwards confesses, that the Celerity of the Pulse cannot be estimated by Space, because that Space cannot be known by the Touch; for which Reason, in defining a quick Pulse, he orders us to regard the Quality of the Motion; whether, for Instance, it is brisk, or slow. Hence *Fernelius*, and some others, have defined a quick Pulse, such an one as, in a short time, distends the Artery; and a slow Pulse, that which produces the same Effect in a long time. *Bellini*, in *Tract. de Pulsibus*, informs us, *That it is a quick Pulse, which, upon the Application of the Finger, persists a very short time; whereas a slow Pulse continues longer.* According to *Sennertus*, *Fernelius*, and others, it is a frequent Pulse which has a short Time of Rest, or in which there is but a short Time interposed between each Diastole; a rare Pulse is that which has a long State of Rest, or in which there is a long Time between one Distention of the Artery and another; or a frequent Pulse is that which, in a short time, distends the Artery, and becomes perceptible to the Touch; whereas a rare Pulse only produces these Effects at longer Intervals. The Word Frequency cannot, however, be properly applied to Motion; but the Celerity or Slowness, the Intension or Remission, of the moving Force are properly competent to Motion; since every Degree of Motion is to be estimated by its Celerity or Intension, and its Slowness or Remission: But one Motion, considered in itself, cannot be said to be frequent, or rare; but this Difference only holds, with respect to the Plurality and Number of Pulsations happening in a certain determined Time. Thus, for Instance, the Motion, or Impulse, is said to be frequent, when, in half an Hour, Water is an hundred times forced from a Syringe; whereas the Motion is said to be rare, when the Water is forced from it only thirty times during half an Hour. Thus, when a Globe, for Instance, is impelled, the Celerity of the Impulse may justly take place, with respect to each Stroke; and yet these Strokes be applied more rarely, or at longer Intervals; and thus any Stroke, applied to a Globe, may be remiss, or small, with respect to Violence, and yet frequently repeated.

This Doctrine holds excellently in those Motions which are not continual, but have certain Intervals of Rest, and in which this Distinction is of singular Use; so that quick and frequent Pulses ought not to be joined and confounded with each other. But 'tis far otherwise in the Motion of the Arteries, which is continual, and requires no Rest, in order to carry on a continual Circulation of the Blood from the Heart to the Arteries, from these to the Veins, and from these to the Heart again. It is not to be imagined, that, when after the Pulse, or Dilatation of the Artery, no Motion or Stroke is perceived by the Touch, the Artery becomes inactive, and remains in a State of Rest, since we have already shewn, that, immediately after its Dilatation, it not only by its proper elastic Force, but, also, in consequence of the Influx of the Spirits into its muscular Fibres, recoils, and is contracted; by which Contraction the Blood is forced into the Veins, and a fresh Dilatation of the Artery immediately succeeds. Hence the Pulse may justly be compared to a Pendulum, which performs a continual oscillatory Motion from one Side to another, without any perceptible Rest. With respect to this continual Motion, which the Antients did not understand, but which is sufficiently comprehended by the Moderns, there arises a Dispute, whether Frequency, and Celerity, applied to the Pulse, are separate and distinct from each other. We shall now examine this Difficulty in order to prevent Mistakes: When, therefore, in a Quarter of an Hour, a Physician counts two thousand Pulses in a Patient, he calls the Pulse preternaturally frequent; when, during the same time, he in another Patient counts only a thousand Strokes, he pronounces the Pulse rare. Now, if another Physician, being call'd, should denominate the frequent Pulse quick, and the rare one slow, the Question is, Which of them is in the right? I answer, Both; for, since the Motions of the Heart and Arteries consists in their continual Systole and Diastole, it is impossible, that, during a small Portion of Time, the Number of Pulses should increase, and be observed greater, unless every Systole and Diastole of the Arteries should become more brisk and intense, that is, be performed in a shorter time; just as we observe in the Vibrations of Pendulums, which, the more numerous they are in a certain time, the more short and quick they must of course be; for 'tis to be observed, that the Celerity of one Pulse by itself cannot be perceived, because it hardly lasts an Instant. Hence *Sylvius*, that happy Practitioner, in *Prax. Med. Lib. 1. Cap. 19.* informs us, "That the Celerity of the Pulse can be conceived in the Mind, though "not estimated by the Touch." *Bellini*, also, in *Tr. de Pulsibus*, speaks in the following manner: "A quick Pulse, be"cause it affects the Touch but for an Instant, in a State but a "little receding from a natural one, either does not happen at "all, or, if it does, cannot be distinguished by the Touch, "since the natural Dilatation of the Artery hardly lasts an In"stant. Much less can the Celerity of the Pulse be percepti"ble in a preternatural State." Hence 'tis obvious, that a Pulse cannot be called *frequent*, unless it is, at the same time, accompanied with Celerity; nor *quick*, unless it is frequent; because one Stroke cannot be easily distinguished with respect to Celerity. Hence *Schelhammer*, in *Tr. de Pulsibus*, justly observes, that the Frequency of the Pulse is not to be found without a concomitant Celerity. Hence the Reason is obvious, why in physical Authors we never read of a frequent and slow Pulse accompanying each other, or of a quick and rare Pulse going hand-in-hand; which Species of Motions may easily be conceived to happen in an interrupted Motion, but can never occur in one of the continued and uninterrupted Kind. Hence it follows, that the various Species of Pulses are by no means to be refer'd to the Nature of any local Motion, or Impulse of a Body, so as to lay a Foundation for asserting that of the Pulse, which can be affirmed of such a local Motion; for the Antients were ignorant of the Circulation of the Blood, from which all the Species and Differences of Pulses ought to be sought, and accounted for.

'Tis sufficiently known, that almost all Physicians, both antient and modern, constitute a peculiar Difference between a quick and a vehement Pulse, since they call the former *intense*, *quick*, and *brisk*, and its Opposite *remiss*; and the latter *strong* and *robust*, and its Opposite *weak* and *languid*. And as they deduce the Celerity of the Pulse from its Motion performed in a short time, so they derive its Vehemence from the strong or weak Force of the moving Cause. But a considerable Difficulty occurs here; Which is, whether a quick Pulse may not, also, be called *a vehement one*, and accounted as such, since Celerity, in the Opinion of all Mathematicians, is nothing but an increased, or more intense, moving Force. But an Increase of

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or an Intenſion of the moving Force, or Celerity, is capable of producing conſiderable Effects, or of overcoming a great Reſiſtance. Now the Vehemence of Motion is only properly applied with reſpect to the Effects, when, for Inſtance, by the Action of the moving Cauſe, a large Quantity of moveable and reſiſting Matter is removed. Hence all who are Maſters of ſtatical and mechanical Learning, agree, that the Celerity of a ſmall Body may be able to remove a large Weight or Bulk of Matter, ſince 'tis certain, that a Globe of a certain Diameter, moving with double Celerity, produces more conſiderable Effects, than a Globe of double the Diameter, moving with leſs Celerity.

Beſides, 'tis remarkable what ſurpriſing Effects are produced by ſome of the moſt ſubtile Bodies, ſuch as Air, Ether, and Fire, when in a quick and rapid Motion. *Galen*, in *Lib.* 3. *de Different. Pulſ. Cap.* 5. ſeems to think, that the Celerity and Vehemence of a Pulſe are not much different from each other, as he informs us in the following manner: "The Word "*Vehemence*, ſays he, is commonly uſed in order to expreſs "ſome ſtrong, and, at the ſame time, quick Action; and the "Perſons who perform ſuch Actions, are called σφοδροί." The ſame Author, alſo, informs us, in the Part laſt quoted, that if he had a Power of giving Names to the Pulſes, he would call the ſimple Quality, or Difference, of ſuch Pulſes as reſiſt the Touch, "*Force* or *Strength*, or ſome ſuch thing; and the Difference compounded of this Strength, and the Celerity, *Vehemence*." But becauſe the Word *Vehemence* is, by moſt Phyſicians, uſed to expreſs one of the ſimple Differences of Pulſes, he thinks it is to be retained, and not changed. But that this Affair may be rendered more clear and perſpicuous, we are here, according to the Principles of Statics and Mechanics, to ſuppoſe that Vehemence may be conſidered in a double reſpect, either with reſpect to the Body in Motion, or with reſpect to the Augmentation of the moving Force. In general, Motion is ſaid to be vehement, when it has great Force, produces great Effects, or overcomes much Reſiſtance. Hence a Pulſe is ſaid to be vehement, which makes a ſtrong Impreſſion on the Hand which feels it; whereas, that is called *languid* and *weak*, which affects the Hand in a faint and languid manner. But Vehemence, with reſpect to the Body in Motion, is, when either its Quantity of Matter, or its moving Force, is great. Hence a Body of great Bulk, and moving Force, is of great Force when put in Motion, or produces a vehement Motion.

The Word *Vehemence* is, alſo, applied to the Increaſe of the Motion, that is, when it becomes briſk, intenſe, and quick. Hence 'tis obvious, that a very ſmall Body may, by being put into a quick Motion, produce very conſiderable Effects; but that a ſtill more conſiderable Efficacy is exerted, when the Quantity of Matter, and the Celerity of Motion, concur. Though, therefore, according to *Galen*, a quick Pulſe, conſidered in itſelf, is never free from Vehemence, yet that Pulſe is only properly and ſtrictly called *vehement*, where a large Quantity of Spirits animate the Fibres of the Heart. This Pulſe, when without Celerity, is called *ſtrong*; but, when accompanied with Celerity, *vehement*, and at the ſame time large, when not a ſmall, but a great Quantity of Blood is forced into the Arteries by one Syſtole of the Heart; and then, which is the Sign of a vehement Pulſe, it beats the Finger ſtrongly, and with a kind of Violence. But becauſe it is not neceſſary, that under a quick Syſtole of the Heart there ſhould always be a great Quantity of Strength or Spirits, nor that the Blood ſhould always be expel'd copiouſly, but few Spirits are often ſufficient, hence the Artery is not in this Caſe forcibly ſtruck, though the Pulſe is at the ſame time quick.

Since the Antients, as we have already obſerved, deduced the Species of Pulſes from the Nature of local Motion, and feigned as many Species of Pulſes as there are Species of Motion; ſo there are, eſpecially in *Galen*, numberleſs Differences of ſimple and compound Pulſes deſcribed with reſpect to Time, Space, Inſtrument, Order, Equality, Proportion of Strokes, and moving Force. But afterwards, when they found theſe ſpeciouſly contrived Differences either incomprehenſible, or uſeleſs in Practice, they juſtly exploded and diſcarded them. Thus *Joh. Bapt. Montanus*, in *Conſil.* 256. frankly confeſſes, that he was ignorant of the minute Differences of the Pulſes; and tells us, that he believed *Galen* had ſomething of the *Greek* Subtilty about him, and laugh'd in his own Mind, when he was reducing the Kinds of Pulſes to their ſeveral Species. He afterwards adds, that though theſe Differences may poſſibly be conceived in the Mind, yet they are not all perceptible by the Touch. *Caſpar Hoffman*, in *Inſtitut.* ſpeaks in the following manner: "The ſhort Compendium of *Goldaldinus*, *de* "*Pulſibus*, is, in my Opinion, preferable to the three Vo"lumes of *Galen*, concerning the Difference, Cauſes, and "Prognoſtics, of Pulſes. Theſe laſt Works I take to be "*Herophilean* Subtilties, which he might have invented, not "only when young, but, alſo, when he had the Advantage "of Experience and Practice. This Opinion I was induced "to entertain by *Montanus*, in *Conſil.* 257." I was told by a Friend in *Italy*, who heard the Account from the Mouth of *Bartholomæus Schwalbius* himſelf, a celebrated Phyſician of *Prague*, that this Practitioner was content with three Differences of Pulſes, an equal, and an unequal; a quick, and a ſlow; a ſtrong, and a weak. *Plempius*, alſo, in *Fundam. Medic. Lib.* 5. *Sect.* 2. *Cap.* 2. tells us, "That Phyſicians trifle egregi"ouſly about Pulſes, ſince the Subtilty of ſome of their Minds "had induced them to conſtitute Differences of Pulſes, which "could not be perceived by the Senſes." The celebrated *Welſchius*, in *Oper.* tells us, "That, in the whole Doctrine of "Pulſes, many things uncertain, ſuperfluous, and imaginary, "have long ago been diſcovered by the Learned, who have ob"ſerved a quite different Motion in the Circulation of the "Blood, which they aſcribe to the Pulſation and vital Force "of the Heart, whilſt others attempt to account for it by "Inventions of their own, rather than by mechanical Reaſons." *Sylvius* has reduced the numerous Differences of Pulſes invented by the Antients, to three Heads, that is, the Strength, the Largeneſs, and the Frequency, of the Pulſe. By a ſtrong Pulſe, he means one of the vehement Kind, which with a certain Force ſtrikes the Finger that touches it. The weak Pulſe is, when it gently, or ſlightly, affects the Finger. The large Pulſe is, when the Artery is dilated much; and the ſmall, when it is only a little dilated, or expanded. The frequent Pulſe is, when, in the ſame Space of Time, the Pulſations happen oftener than at other times, or more frequently than in other Patients. And the rare Pulſe is, when the Strokes or Pulſations of the Artery, happen leſs often than they uſed to do.

But, that we may reduce things to the better Order, and eſtabliſh the genuine Differences of Pulſes, which occur in Practice, both in a natural and preternatural State, we muſt, firſt, from the Principles of Mechanics, ſuppoſe that all Motion is quick or ſlow; for Celerity and Slowneſs are genuine Properties of Motion. Hence *Galen*, in *Lib. de Pulſibus ad Tyrones*, *Cap.* 3. juſtly informs us, that Celerity and Slowneſs properly belong to Motion; that the former is a briſk, and the latter a ſlow and remiſs Motion; and that from theſe we were to form a kind of comparative Judgment concerning the natural Pulſe. Secondly, all Motion is performed in a large, or in a reſpectively ſmall Space; and is conſequently either vehement, or languid. Thirdly, with reſpect to Order, Motion is either equal or unequal; and the Equality is to be underſtood, both with reſpect to Time or Celerity, and with reſpect to Magnitude or Vehemence. And, fourthly, with reſpect to the moveable Body, Motion is either great or ſmall.

Now we ſuppoſe, that the Motion of the Heart and Arteries is continual, and conſiſts of the reciprocal Syſtole and Diaſtole, without any Interruption; for which Reaſon, every Pulſe is either large or ſmall. The large is, when much Blood is by one Contraction of the Heart thrown into the Artery; in conſequence of which, its Dilatation is large and full. The ſmall Pulſe is, when, in conſequence of little Blood forced into the Artery by one Syſtole of the Heart, the Expanſion of the former is but ſmall and inconſiderable. Beſides, the Pulſe is either quick or ſlow. The quick is produced, when the Heart quickly, and in a ſhort time, contracts itſelf, and throws the Blood into the Artery. The ſlow, on the contrary, is, when the Contraction of the Heart requires a longer Time, or when the Conveyance of the Blood into the Artery laſts conſiderably long. But, as, in every Pulſe, the Degrees of Celerity and Slowneſs cannot be accurately eſtimated and computed, becauſe they happen in a Moment, hence, from the Frequency, that is, when, during the ſame time, the Expanſion of the Artery is obſerved oftener than at other times, the Celerity of Pulſes ought to be determined; but in ſuch a manner, that the Frequency be only made the Sign, Characteriſtic, or Meaſure, of the Celerity, and the Rareneſs of the Slowneſs; becauſe Frequency is not applicable to any Motion, conſidered in itſelf. But, in a continual Motion, which, however, conſiſts of different Species, a Syſtole, for Inſtance, and a Diaſtole, where one is perceived, and the other not, we ought in Juſtice to make an Eſtimate of the Celerity from the large Number of the perceived Motions, or Strokes. Thirdly, the Pulſe is either equal or unequal; equal, when there is an exact Equality with reſpect to the Celerity or Frequency of the ſucceeding Pulſes, as, alſo, with reſpect to their Largeneſs and Smalneſs. The Pulſe is ſaid to be unequal, when one Stroke is large, and another ſmall and weak; or when one is quick, and the other very ſlow; ſo that the Pulſe ſeems to be intermittent, though the Intermiſſion of the Pulſe may be more properly referred to that Species of Inequality which conſiſts in a great Slowneſs. Fourthly, the Pulſe is either vehement and ſtrong, or weak: The vehement Pulſe is, when the Syſtole of the Heart is performed by a large Quantity of moving Force, or Spirits; and the weak, when the Heart is contracted by a ſmall Quantity of Spirits.

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The Differences, formed by the Antients, of the vermicular, formicating, tremulous, ſerrated, and caprizating Pulſe, depend partly on the Inequality of the Pulſes, but, moſt of all, on the Convulſion of the Coats compoſing the Arteries; for which Reaſon they are almoſt always to be eſteemed dangerous in acute Diſorders. As for the hard and ſoft Pulſe, theſe depend only on the State and Condition of the Artery; for, when, in conſequence of an exceſſive Pain, Spaſms, or Convulſions, the Coats of the Artery become hard, ſo that the Reſiſtance makes a ſtrong Impreſſion on the Touch, the Pulſe is ſaid to be hard. The ſoft Pulſe is, when the Fibres of the Coats of the Arteries are flaccid, relaxed, and moiſt. When a large and vehement Pulſe concurs with ſuch a ſoft State of the Arteries, it is called *an undulating Pulſe*, which is the Forerunner of a profuſe and copious Sweat.

From theſe ſimple Differences, we may eaſily diſcover what Species of Pulſes may be joined with each other, and what not. Firſt, then, there is a Pulſe compounded of the large and quick; of the large and vehement; of the ſtrong and quick; and of the vehement and ſmall. Secondly, there is a Pulſe compounded of the frequent and weak, and of the quick and ſmall. There is, alſo, a ſlow and a large Pulſe, ſuch as that which happens in a natural State, and in plethoric old Perſons, as, alſo, in ſome melancholic and ſcorbutic Patients. But there is never a quick and a ſlow Pulſe, nor a ſlow and a rare, nor a vehement and weak Pulſe, unleſs we intend to confound Words.

As the Motion of the Heart and Arteries depends, firſt, upon the Quantity and Strength of the ſpirituous, elaſtic, and expanſive Subſtance, contained in the Blood, and nervous Fluid; ſecondly, on the due Tone of the muſcular Fibres of the Heart and Arteries; and, thirdly, on the proper Temperature, Quantity, and Conſiſtence of the Blood, ſo it is to be deduced and accounted for from theſe Sources. Now 'tis certain, that Life, Health, and the due Order of the whole Body, depend upon a proper and equable Circulation of the Blood and Humours through the ſolid Parts; ſo that the better regulated, and the more equable, the Circulation is, the more perfectly Nature preſerves herſelf, and cures the Diſeaſes incident to her; and, on the contrary, the more this Circulation recedes from a due and equable State, the weaker Nature is ſaid to be, and the more ſubject to Misfortunes and Diſeaſes. 'Tis, therefore, of the greateſt Importance, that the Phyſician ſhould know the Circulation peculiar to each Patient both in a natural and preternatural State, that he may be the better able to form a Judgment of their Diſpoſition to Diſeaſes, and of the Nature and Event of their Diſorders. Now every one muſt own, that the Circulation of the Blood cannot be better inveſtigated than by feeling the Pulſe, not in a ſuperficial manner, but frequently, and for a ſufficient Time; for the Pulſe not only diſcovers the Imperfections and Strength of the whole Body, but, alſo, the Nature of the Blood, and the State of the various Secretions. And, as a Pendulum of a Clock, by its equable and regular Vibrations, manifeſts the Worth of the Clock; ſo the Pulſe diſcovers the Habit of the Patient, and the Vigour or Depravation of all his Functions.

We now come to inquire what a moderate, conſtant, and equable Pulſe is, ſince it is, as it were, the Rule and Meaſure by which we are to judge of the reſt. A moderate Pulſe, therefore, is that which is large, but neither quick nor ſlow, hard nor unequal. This is the Pulſe with which all others ought to be compared, and which denotes the beſt State of Health, the Abſence of all preternatural and foreign Things, and a due and temperate Degree of Heat; for when ſuch a Pulſe is preſent, the Fluids are duly ſpirituous, the Fibres poſſeſſed of their natural Tone, the Blood temperate and fluid, and conſequently the Tranſpiration free, the Nutrition good, the animal Functions vigorous, the Secretions duly carried on, and the Patient in a State of good Health. But when the Pulſe is quicker, and conſequently more frequent than uſual, it indicates a preternatural Irritation of the Heart, as the Antients expreſs it, unleſs it proceeds from external Cauſes; but if ſuch a Pulſe continues long, it infallibly denotes a Diſorder accompany'd with an Increaſe of Heat, and even a Fever. It is generally produced by an inordinate inteſtine Motion of the Blood, and a Change induced on the Craſis of the Spirits by an Admixture of heterogeneous, and often cauſtic Particles. When the Pulſe is vehement, and, at the ſame time, quick, it indicates a feveriſh Intemperature, an Admixture of ſomething heterogeneous with the Blood, Lymph, and Spirits; but, at the ſame time, a large Quantity of Strength and Spirits. If a vehement and quick Pulſe is, alſo, large, the Circulation of the Blood is briſk, the Heat and Thirſt great, and the whole Habit red and turgid. Where the Pulſe is ſmall, and little Blood is conveyed from the Heart to the Arteries, and from the Veins to the Heart, the Circulation of the Blood is faint and languid. Hence the Tranſpiration and Secretions are but ſmall, and the Strength little: But, if a ſmall Pulſe is, at the ſame time, weak and frequent, or quick, it denotes a great Languor of the Strength, a preternatural inteſtine Motion, and a weak Circulation of the Blood; and, if this Species of Pulſe continues long, it indicates Malignity, and great Danger.

A ſlow Pulſe generally denotes a Viſcidity, Thickneſs, and weak Circulation of the Blood, together with a Languor of the Secretions; but if it is at the ſame time weak, it is dangerous, and raiſes a Suſpicion of a total Loſs of Strength. But a Pulſe which is ſlow and large, denotes ſufficient Remains of Strength, Tenſion, and Thickneſs, of the Fibres, of the Heart and Arteries, and a viſcid and tenacious Blood. All unequal Pulſes are very bad, ſince they denote, that there is neither a due Influx of the Spirits, nor a proper and equal Mixture of the Blood; but, particularly, ſuch Pulſes always prognoſticate unlucky Events, when they are weak. Intermittent Pulſes are, alſo, of a bad Kind, or generally accounted the Preſages of Death. But it is not univerſally ſo; for an intermittent Pulſe frequently happens without Danger, where, for Inſtance, the Symptoms are of a bad Kind, and the Patient's Strength ſtill entire. Hence this Species of Pulſe frequently happens in hypochondriac and melancholic Patients, where the inteſtine Motion of the Blood is diminiſhed by its Thickneſs. But when the Pulſe is weak and quick at the ſame time, it generally prognoſticates Death. An hard Pulſe generally indicates Pains, Spaſms, and Convulſions, becauſe the Fibres of the Heart and Arteries are ſpaſmodically conſtricted. The irregular, caprizating, and diſcontinued Pulſes, denote a very bad State of the Body, both with reſpect to the fluid and ſolid Parts.

It is carefully to be obſerved, that one Kind of Pulſe is not found in all Perſons; for as the Pulſe depends on the Tone of the muſcular Fibres, on the Influx of the Spirits, and the Nature and Temperament of the Blood, and as all theſe are ſurpriſingly various in human Bodies, with reſpect to Age, Sex, the Seaſon of the Year, the Climate, the Method of Life, the Sleep, and the Paſſions of the Mind, ſo, alſo, the Pulſes vary from each other according as theſe Circumſtances differ. Thus Men generally have a large and vehement Pulſe, and Women one of a more ſlow and weak Kind; for the former have ſtronger Fibres, and an hotter Blood, than the latter: For this Reaſon, alſo, the Circulation of the Blood is briſker in Men than in Women, and the former do not generate ſuch Loads of redundant Blood and Humours, as Women, who are generally weaker, and more ſubject to Diſeaſes. Choleric Perſons, and thoſe of ſanguine choleric Conſtitutions, have a larger, quicker, and more vehement Pulſe, than phlegmatic and melancholic Perſons; for which Reaſon the Fluids move more quickly, the Excretions are made more expeditiouſly, and the Blood is more fluid, in the former than in the latter; for the Blood of the former is impregnated with a larger Quantity of oleous and ſulphureous Parts, which are, as it were, the Source and Matrix of Heat, and a ſpirituous Quality. Thus, alſo, thoſe of a ſlender Habit, who have ſtrong Fibres, and large Veſſels, have a larger and ſtronger Pulſe, than thoſe who are fat, have lax Fibres, and narrow Veſſels. Hence they are, alſo, ſounder, more robuſt, and more capable of enduring Fatigue. This is, alſo, the Reaſon, why thoſe who are naturally thick and fat, are more readily ſeized with Sickneſs, and deſtroy'd by it, than thoſe of ſlender Habits.

In Infants and Children the Pulſe is frequent and ſoft, whereas in old Perſons it is ſlow and large, whilſt in young Perſons, and thoſe full-grown, it is large and vehement; for, generally, Infants and Children generate a large Quantity of Humours, which are neceſſary to their Growth, and collect a great deal of Sordes, which is the Reaſon why Infants and Children are more generally ſeized with Sickneſs, and more readily die of it, than Youths and Adults. Old Perſons have thick Blood, but rigid Fibres; for which Reaſon their Pulſe is hard, and makes a forcible Impreſſion on the Touch. But in Infants and Children the Pulſe is ſoft, on account of the Tenderneſs and Laxity of the Fibres. The Pulſe is, alſo, changed by the Seaſon of the Year, the Exerciſe of the Body, the Aliments, and the Affections of the Mind. In the Middle of the Spring, the Pulſe is large and vehement; at this Seaſon, alſo, the Strength is greateſt; for which Reaſon Perſons are at that time moſt rarely ſick, and recover moſt eaſily. In the Middle of the Summer, the Pulſe is quicker and weaker, becauſe, by the intenſe Heat, the Strength is impaired, whilſt the inteſtine Motion of the Fluids is greater than it uſually is. In Autumn the Pulſe is ſlower, ſofter, and weaker, than at any other Seaſon, and in the Winter harder, a little more vehement, and ſlower. Among Kingdoms and Climates, thoſe which are hot and ſultry, may be compared to the Middle of the Summer; thoſe which are cold, to the Winter; and ſuch as are temperate, to the Spring.

Exerciſe

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Exercise increases the Pulse, and consequently the Circulation of the Blood, whilst an idle and inactive State renders the Pulse slow, weak, and languid, and diminishes the Circulation of the Fluids. Spirituous Aliments render the Pulse large, vehement, and frequent. The Pulse of such as are asleep is slow, small, and languid; but as soon as they awake, it forthwith becomes large, quicker, and stronger. The Pulse of those who are angry is large, vehement, and quick; that of such as are frighted, frequent, small, and inactive; and of those who are sorrowful, small, languid, and slow. So that, according to *Fernelius*, in *Lib.* 3. *de Pulsibus*, "The common "and ordinary Affections of the Body change the Pulse; so "that, without duly adverting to these Affections, the Pulse "cannot be certainly understood, nor can it be determined how far it recedes from a natural State, in conse"quence of Diseases." The natural Pulse is, therefore, to be felt and observed, not immediately after Exercise, Bathing, immoderate Eating, drinking Wine, or other Causes, which exagitate the Heart and Spirits; for we are to determine nothing about the Pulse, till the Force of external Causes has ceased, and all Perturbations of the Body are allay'd; for the Pulse is the most certain Sign and Criterion for judging of the Motion of the Heart and Blood. But if the Pulse alone is observed, without paying a due Regard to other Circumstances, it may lay a Foundation for forming a false Judgment; because, as *Celsus* says, in *Lib.* 3. *Cap.* 6. the Pulse may be disturbed by a thousand things.

There has almost always been a considerable Dispute among Physicians, what Pulse is essential to Fevers, or constitutes their pathognomic Sign. Many of the Antients, among whom *Galen* was the first, inform us in their Works, that a quick and frequent Pulse denotes a Fever. But many of the Moderns take a frequent Pulse for the genuine Sign and Characteristic of a Fever. Thus *Sylvius*, in *Prax. Med. Lib.* 2. speaks in the following manner: "A preternaturally frequent Pulse is "the Sign, which, at all times, belongs to a Fever alone, "and is consequently its pathognomic Sign; so that, when this "Sign is present, a Fever is present; and, when it is absent, "so is the other, also; nor is any other Sign universally pro"per to all Fevers, hitherto discovered by Practitioners." For all other Signs do not so properly denote a Fever, as the Species, the Degree, or the Time, of a Fever. *Ettmuller* tells us, "That a preternaturally frequent Pulse is, justly accounted "the pathognomic Sign of Fevers, by *Sylvius*, both in his "*Dissertatio de Natura Febrium*, and in his *Praxis*, whatever "*Deusingius*, in *Tract. de Disquisitione Antisylvana*, may affirm "to the contrary." *Decker*, a practical Physician of *Holland*, in *Not. ad Barbette*, informs us, "That there is a Fever, "where-ever a preternaturally frequent Pulse is observed." *Schelhammer*, in *Tr. de Puls.* tells us, that in all Fevers there is a frequent Pulse, which, when accompanied with Heat, is their pathognomic Sign. The celebrated *Bohnius*, speaks in the following manner: "In a frequent Pulse, the Strength of "the Heart seems equal to the morbific Cause, if this fre"quent Pulse remains in an uniform manner, and is conse"quently the pathognomic Sign of Fevers; but if a Weak"ness of the Pulse is combined with its Celerity, it indicates "Loss of the Strength more or less, as more or fewer and "vehement Strokes are observed." Other Authorities would be of no Use; only we must observe, that, upon a false Hypothesis, not only the Antients, but, also, many of the Moderns, made a Distinction between quick and frequent; for they called the Pulse *frequent*, if within a certain time frequent Pulsations were made, whereas by a quick Pulse they meant one of the vehement Kind. Hence *Willis*, in *Tr. de Febribus*, calls that a *febrile Pulse*, in which the Arteries vibrate vehemently and quickly; where he, also, asserts, that if the Pulse becomes more vehement, the Fever is augmented. *Cœlius Aurelianus*, in *Lib.* 1. *Acut.* tells us, "That the Sign of Fevers is an in"tense Heat, and a vehement Pulse, unless it should be pro"duced by some external Cause."

For these Reasons *Brown*, in *Observationibus Medicin.* every-where asserts, that a quick and a weak Pulse are contrary to each other; so that by the Word *quick*, 'tis obvious, he meant *vehement*. Tho' Authors hardly as yet seem to have formed distinct Notions of Pulses, yet all, both antient and modern, seem to agree in this, that a frequent Pulse in every Species of Fever, whether continual, or intermittent, whether benign, or malignant, whether in its Beginning, or at its Height, proves such a Fever to be present: Hence they always join the frequent either with the quick, or with the weak, Pulse; so that they agree, that the *frequent* Pulse is rather to be called the *essential Sign of Fevers*, than the *quick*, which none of them will hardly assert to be found, either in the Beginning or Horrors of Fevers, or in any of the malignant Kind.

But, from what we have supposed, it is sufficiently obvious, that these Differences may be excellently reconciled, since the quick Pulse is nothing else but the frequent, which is the true pathognomic Sign of Fevers. But this Frequency is either greater or less, and associates itself with the great or vehement, or with the small and weak, according to the Diversity of Fevers, and the Times of the Disease. A frequent Pulse, when weak and small, is scarcely ever good, since it denotes a languid and slow Circulation of the Blood. But a frequent, large, or vehement Pulse, such as is generally observed in the Height of continual Fevers, denotes a brisk Circulation of the Blood, and an increased Heat of the Body. In investigating the Cause of a frequent Pulse, which is generally preternatural, and accompanies several Disorders, we shall follow the accurate *Bellini*, who, in *Tract. de Pulsibus*, accounts for the Motion of the Heart from the Influx of the Blood through the Coronary Arteries, and of the nervous Fluid through the Nerves into the Fibres of the Heart; from which he concludes, that the Muscles of the Heart are most frequently moved, when the nervous Fluid is most frequently convey'd into them, which happens when it is forced into them by a sufficient Quantity of Blood flowing forcibly into the Brain. Now, by a frequent Contraction of the Heart, a frequent Pulse is produced; which indicates, that a proper Quantity of Blood is convey'd to the Brain, and that the Brain is forcibly press'd; which will happen, either when the Blood stagnates therein, in consequence of an Obstruction of its Veins; or when the Blood contain'd in these Veins cannot flow into other Parts, the Blood, in the mean time, stagnating, either in the internal Parts, or in the Lungs; or when the Blood is thrown into a State of Effervescence, by which it assumes a Tendency to move in every Direction with a greater Impetus, and by that means presses the Brain more powerfully. The Muscles of the Heart, also, move more frequently, when irritated by any Stimulus. If, therefore, the Blood is too acrid, or hot, so as to stimulate the Sinuses of the Heart, the Heart will be more frequently contracted, and the Frequency of the Pulse will indicate a stimulating Quality in the Blood.

Since we have shewn, that from the Pulse we are to form a Judgment, not only of the Circulation and Temperature of the Blood, but, also, of the Motion of the Spirits, and the Strength of the Patient; so the Knowledge of the Pulse, and a due Attention to it, must be of singular Use to the Physician, not only in investigating the Natures of Disorders, and forming a right Judgment concerning them, but, also, in prescribing Medicines for their Cure. But it is to be observed, that the Pulse is to be carefully, and not superficially, consulted. The Physicians of *China* are far more careful in this respect, than those of *Europe*; for those often spend a whole Hour in feeling the Pulse, whilst the Physicians of our Country have hardly Patience to feel above two Pulsations; a Practice highly culpable, since after ten Strokes of the Artery, an Inequality, or Intermission, often occurs; which happens whilst the unequally mixed Blood passes through the Heart. The Pulse is, also, to be felt in both Wrists, in the Neck, and in the Temples, since 'tis certain from Experience, that the Pulse in the Wrists frequently varies, and may be more commodiously felt in one than in another. We ought, also, to advert to the Pulses of other Parts. Thus, sometimes, hypochondriac Patients perceive a large Pulse under the Ribs on the Left Side; which happens, when a quick and viscid Blood, exagitated by Heat, or any other Cause, endeavours to procure a quick Passage through the Pancreas and Spleen; but, stopping in their narrow Vessels, produces a Pulsation, and a kind of pricking Pain. Hence *Joh. Ant. Vander Linden*, in *Select. Medic.* tells us, "That "the Blood, in this Case, raises a kind of Tumult within, by "pricking and striking on the Spleen." How intense the pricking Pains of the Spleen are, some sound Persons experience, as soon as they are over-heated. *Tulpius*, in *Cent.* 2. *Obs.* 28. mentions a Man who had a preternatural Pulsation in the Spleen. In continual and malignant Fevers, a large internal Pulsation in the Veins of the Head generally denotes a subsequent Delirium; since it is a Sign, that the Blood there congested circulates slowly, till at last, becoming stagnant, it produces a violent Inflammation of the Meninges. *Hippocrates*, in *Coac. Prænot.* informs us, "That if a large Pulse arises "from an excessive Ebullition of the Blood, so that in Fevers "the Veins of the Temples beat, and the Face is turgid, "without a Softness of the Præcordia, there is Reason to su"spect, that the Disease will be long, and that it will not "terminate without a large Hæmorrhage from the Nose, an "Hiccup, Convulsions, or Sciatic Pains." The Reason of this, in my Opinion, is, that the redundant Blood seeks for an Outlet, either by the Nose, or the hæmorrhoidal Veins; and the sooner this happens, the sooner the Patient is freed from his Disorder.

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When a Pulsation is observ'd in any Part of the Body, where at other times it is not felt, we may certainly conclude, that the Part is inflam'd, and dispos'd to a Suppuration; especially when it is accompanied with Tumor and Pain. An hard Pulse is almost an infallible Sign of an Inflammation in the Membranous Parts; for this Hardness of the Pulse, or excessive Tension and Vibration of the Artery, indicates something of a spasmodic Nature, arising from the Consent of the Parts, and produc'd by the Inflammation and Pain. The Pulse of Persons labouring under Disorders of the Breast, or a Palpitation of the Heart, is generally frequent, unequal, and languid. But such a Pulse, unless when vehement, is accompanied with no preternatural Heat; and happens because the Blood does not pass thro' the Sinuses of the Heart, and the Lobes of the Lungs. In Weakness, and a Disposition to Syncopes, the Pulse is generally small, rare, and languid; but if the Pulse is absolutely imperceptible, the Body cover'd with a cold Sweat, and the Functions of the Mind are not totally destroy'd, I have frequently observ'd, that the Patient infallibly dies in six Hours; and such a Situation I have seen twice produc'd by corrosive Poison. It is to be observ'd, that about the critical Times in Fevers, when Nature endeavours to throw off the superfluous and peccant Matter by Stool or Sweat, the Pulse, tho' languid, is yet more regular, and less frequent, which is a certain Sign of Recovery. But if the Pulse is soft and undulating, it is a Sign, that a salutary critical Sweat is just coming on.

It is, also, to be observ'd, that the Pulse is chang'd by Medicines. Thus, after drastic Purgatives, which procure too many Stools, the Pulse is generally preternaturally quick. After Venesection, especially in plethoric Habits, the Pulse becomes quicker, a Sign that the Circulation of the Blood, in consequence of its having a larger Space, is happily increas'd; since, by this means, a Suppression of the Menses or Hæmorrhoids is generally remov'd. 'Tis certain, not only from the Authority of *Sydenham*, but, also, from Experience, that after the Use of Chalybeates, the Pulse is quicker, the Face redder, and the Heat greater. Strong Sudorifics, compos'd of volatile oleous Substances, greatly increase the Pulsation of the Heart and Arteries. On the contrary, Anodynes, Opiates, Preparations of Nitre, precipitating Powders, Acids, and such things as diminish the intestine Motion of the Blood, and fix its Sulphur, render the Pulse calm and moderate in Pains, Inflammations, and a febrile Intemperature. Such an Effect I, also, once saw produc'd by a due Mixture of Nitre and Camphire. As Dr. *Willis* has justly observ'd in *Tract. de Febribus*, some very useful and important Rules for the Exhibition of Medicines are drawn from the State of the Pulse. Thus Purging and Vomiting are contra-indicated by a too quick and vehement Pulse; as, also, by a low and depress'd Pulse; for when the Blood is in a violent Motion and Ebullition, the Secretions are generally very languid. If the Strength is defective, which may be known by the languid State of the Pulse, Emetics and Purgatives diminish the Strength still more; so that the Physician ought to consult the Pulse, before he exhibits them; for when the Pulse is strong, and the Motion of the Blood regular, these artificial Evacuations are most beneficial, and succeed best. The same Caution is necessary in the Exhibition of Sudorifics, and all Analeptics, which convey Heat and Motion to the Blood; for if the Pulse is strong and frequent, such spirituous Substances do more Injury than Good, because they rarefy the Blood too much, and accelerate its intestine Motion; by which means a Delirium, and other Inflammations, are frequently brought on. Great Circumspection, and Attention to the Pulse, is, also, requisite in the Exhibition of Narcotics or Opiates; for as these are possess'd of a Power of stopping the Motion of the Blood and Spirits, and consequently of impairing Strength, so they ought never to be exhibited when the Pulse is weak, languid, and small, but are to be avoided like Poison. But if the Pulse is unequal and intermitting, Opiates readily procure a perpetual Sleep. *Fred. Hoffman.*

PULVERATIO, or PULVERISATIO, Pulverisation, in Pharmacy, is the reducing any Substance to a Powder. See TRITURATIO and PULVIS.

PULVILLUS, in Surgery, is a Pledget, Bolster, or Compress.

PULVIS. A Powder.

The Operation of reducing Medicines into Powders is so very simple in itself, that it requires no other Skill, than having those Things which come under its Management, sufficiently dry, in order to be so divided.

In judging of the Fitness of Materials for this Treatment, only these two Considerations necessarily require our Attention. The first is, whether the Things themselves are thus reducible, without any previous Management, that may hurt their medicinal Virtues; and, next, whether their Virtues are conveniently preserved in this Form, when reduced into it.

Under the first of these, it naturally occurs, that viscid and oily Substances cannot be thus managed, without first reducing them to some Brittleness, which cannot be done without drying. If such things, therefore, cannot be sufficiently dried for Triture, without exhaling their better Parts, or destroying that particular Quality, for which the Simple is valued in Medicine, as it happens with many Seeds and Gums, they are much fitter for some other Forms than for this; though these Inconveniences may be avoided, where such Things bear so small a Proportion to those which are very dry and brittle, that they are to lost, and, as it were, absorbed by them in Triture, that all pass the Sieve well enough together. But this, however, should make the Prescriber wary of crouding into any Composition, under this Form, too many Gums or Seeds; and the Preparer careful in giving them a requisite Brittleness by drying; which latter may, in some measure, be known by the Compositions preserving the Scent, or particular Qualities, of the Ingredients suspected.

The other Requisite in this Form, relating to the Preservation of Things reduced into it, directs not to prescribe Materials therein, which are volatile, or will any other way change in the open Air: Thus the finer Aromatics will decay, and every thing very volatile, as the Radix Ari; for which Reason it is now ordered to be mixed at the time of taking. All the alcaline Salts, likewise, are not to come into this Form, because they will dissolve in Air; on which Account the Salt of Wormwood is an improper Ingredient in the *Pulvis Radicum Ari compositus*. These latter Inconveniences may indeed be, in some measure, avoided, by keeping such Compositions as have in them these exceptionable Ingredients, in Vessels stopt close from the Air: But the Necessity of frequently opening them in the Shops, for common Occasions, will subject them more to such Decay, than is consistent with keeping them any long time good.

Having a View of these two Requisites, we are better able to judge, both of officinal and extemporaneous Prescriptions in this Form: And, for our better Inquiry into the former, it may be, also, of Use, as is already done in some other Forms, to range them under such general Intentions, as they seem contrived, by their first Inventors to answer.

The *Species Diambræ*, *Pulvis Diacinnamomi*, *Species Diantbus*, and *Pulvis lætificans Galeni*, seem, by most of their Ingredients, to be intended for Cephalics and Cordials, as they consist of the warmer Spices, and Simples of similar Properties; but in the *Pulvis Diacinnamomi* the Cassia is much inferior to the Cinnamon in Flavour, and gives a Sliminess to the moist Form; but the Elecampane-root is a powerful Detergent, and quite out of the Intention. The Sugar, likewise, occasions an unnecessary Bulk in a Dose, when given in Powder, an Electuary, or a Bolus; and therefore would be better omitted. In the *Species Diantbus*, the Liquorice is blameable, on the same Account as the Elecampane-root in the foregoing; and in the *Pulvis lætificans Galeni*, the Rasuræ Eboris, Epithymum, Os è Corde Cervi, and Margaritæ, are chargeable with contributing nothing to the main Intention of a Cordial, though the Leaf Silver and Gold are very beautiful Decorations, if rubbed but coarsely in at last, that they may be seen to Advantage; but the Camphire, it is to be feared, will render it not so fragrant while it lasts, though even very close Keeping will not long retain its Volatility.

Some others, near approaching to this Intention, take in Simples, that give them, also, an Astringency; such as the *Aromaticum Rosatum*, *Pulvis Granorum Kermes compositus*, and *Pulvis Cardiacus Magistralis*; none of which are chargeable with an useless or unsuitable Ingredient, unless the Bezoar be reckoned so in the latter: However, it is pretty certain, that its Virtues do not compensate for its Cost; and indeed not much can be said for the Saunders and Aloes-wood; but the Custom of mixing them with those things has long prevailed.

The *Pulvis Diacalaminthes simplex*, thus intituled, in Distinction from a much larger Composition given in former Dispensatories, and the *Species Diatrion* and *Pipereon*, seem principally intended for Carminatives; though the former hath something in it aimed, also, against Hysterical Affections, and is pretty much used in both these Intentions with Success. The *Pulvis de Gutteta* was heretofore a Composition, consisting principally of such things, as were supposed to be very efficacious in some nervous Cases, by their specific and secret Virtues; as the Viscus Quercus, the Ungula Alcis, and Cranium Humanum; but there are now added many things of very manifest Properties, as the Radix Valerianæ, Contrayervæ, and Serpentariæ; but whether the calcined Hartshorn, Coral, Hyacinth, and Bezoars, will yet allow this to be duly reformed, and an uniform Composition, is much to be doubted; for if they can, with the Specific before-mentioned, be supposed to contribute any thing to the main End, yet it must be allowed to be so little, that they have not their Share, but are a Clog upon the Efficacies of some others, which, by these means, cannot be so conveniently given in their due Quantities. By long Experience, it has, likewise, been found, that Musk does Harm in many nervous Cases: Where, therefore, there is Reason to judge it proper, it is very easily ordered at the time of extemporaneous Prescription. The Leaf Gold, as was before observed, is an agreeable Ornament, and can do no Harm. The *Pulvis Cephalicus* is designed for a Snuff.

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The next Class of alterant Species may be reduced under the Title of Alexipharmics, at the Head of which it may be thought Injustice not to put the compound Powder of Crab's-claws: But the Lapis Contrayervæ seems to come under the same Rank much more properly; which the present Practice acknowledges, by taking notice of it much oftener than the other, though the greatest Dependence upon this is from the Contrayerva-root, which, both in its Smell and Taste, manifestly discovers the Quality of an Alexipharmic, which principally consists in a volatile Pungency.

The *Pulvis Radicum Ari compositus* is the only Composition in this Form, that aims at being an antiscorbutic; but its principal Ingredients, as has been already observed, will not keep long in this Form; and, when mixed with Boluses or Electuaries, the Oculi Cancrorum, and Sal Absinthii, soon make it ferment and sour.

Some of this Form are given for Emollients and Diuretics, as the *Species Diatragacanthæ frigidæ*, *Pulvis Haly*, *Pulvis Saxifragiæ compositus*, and *Pulvis Dialthææ*. But the principal Ingredients of these, especially of the former three, which are the cold Seeds, those of Poppies, and the like, are not only difficult to powder, but, when so reduced, will soon grow rancid. The Starch and Sugar are, indeed, some Helps against the first Inconvenience, by assisting the oily Seeds to pass the Sieve, and they seem intended for no other Purpose; but they are not sufficient to preserve them, when so done. Besides, all these things are so much easier brought into Emulsions, and with such greater Advantages to the Patient, that these Forms are now little used. The *Pulvis Dialthææ* does not, indeed, take in so many of these oily Seeds, and is more agglutinant by reason of the Quantity of Gums in it; but it is not often met with in common Prescription.

All the rest of this Division of Compounds, unless the *Pulvis Antilyssus*, are Cathartics. The greater and lesser Compositions with Sena are so crouded with Seeds and Spices, under the Notion of Correctors, that a sufficient Quantity for a Dose makes the Bulk too large to take in any Form; which seems to be the Reason, why they are very seldom prescribed or made.

But the *Pulvis Diasenæ* takes in Diagrydium enough to avoid this Inconvenience. There hath been in some of the old Dispensatories a *Pulvis Artheticus Turneri*, of which the *Pulvis Diaturpethi compositus* seems to be a good Abridgment, as taking in some of the principal Ingredients, and leaving out many useless ones, with which that was crouded. The *Pulvis Cornachini*, and *Pulvis Comitissæ Warvicensis*, are exactly the same, except in the Proportion of Ingredients, in which respect they likewise differ but little. They are quick enough of Operation in small Quantities, which occasions them to be given frequently to Children.

What hath been already taken notice of, as necessary to be regarded in the Officinal Prescriptions of this Form, should, also, be equally attended to in the extemporaneous Practice; that is, not to direct any thing in a Powder, which will waste by its Volatility, or which is not reducible to it, without such previous Management, as will hurt its medicinal Virtues. All volatile Salts, in particular, ought to be avoided in these Prescriptions, as that of Hartshorn, Sal Ammoniac, and the like; though, in the Salt of Amber, there is somewhat so fixed, that it will remain a considerable time in this Form, without any discernible Loss. Some regard, also, in common Practice, is to be had to the Vehicle, with which some things have, and others have not, a peculiar Fitness for Moisture. Thus the Æthiops, and every thing that takes in Sulphur, when prescribed in Powders, should be ordered to be taken in a Syrup, or some Pulp, because it is very troublesome to mix with any thing thinner; its offensive black Colour is, also, best disguised with Prunes or any thing of like Kind. Every Powder, likewise, that takes in crude Antimony, any of the Mercurials, or Things of light Weight, must be trusted in thin Vehicles, because they will immediately settle, and, by reason of the small Quantities, be liable to be left, at the Bottom of what they are given in. Sufficient Notice hath been already taken of the Unfitness of all Salts, made by Incineration, for this Form, and every thing dissolvable, or any way changeable, by the Air. Powders, likewise, which take in any resinous Substances, as Scammony, Resin of Jalap, or any thing of like Texture, should be directed in Vehicles of some Consistence, and be carefully mixed, because in thin ones they are subject to run into Lumps, which are not easily again dissolvable.

The Doses of most Powders ought seldom to exceed half a Dram, because of the Difficulty of taking them; and, rather than to put things together, which have not sufficient Efficacy in that Quantity, it is more eligible to have recourse to things of like Intention in some other Form.

There is one Conveniency, indeed, in this Form, which in common Practice may not be so duly considered as it deserves; and that is, where Persons have a great Aversion to many Medicines, they are sooner decoyed into a Compliance with Powders, than as many Boluses or Draughts, because they do not make so formidable a Shew; but in acute Cases, where the Stomach has been dried with much Heat, too many of these, especially of the warmer Alexipharmics, as the Contrayerva and Snake-root, are not usually judged so proper as the liquid Forms, and the Virtues of the same things drawn out by Infusion. *Quincy's Prælect. Pharm.*

PULVIS ANTILYSSUS. See ANTILYSSUS.

PULVIS RADICUM ARI COMPOSITUS. See ARUM.

PULVIS CARDIACUS MAGISTRALIS:
The magisterial Cardiac Powder.

Take of oriental Bezoar, and of calcined Hartshorn, of each one Dram and an half; of white and red Coral prepar'd, white Amber, prepared Pearls, Armenian Bole, Japan Earth, and of Tormentil-root, of each two Drams; of Aloes-wood, Citron-peel, Angelica-root, and Zedoary, of each two Scruples: And make them into a Powder together.

PULVIS E CHELIS CANCRORUM COMPOSITUS. See CANCER.

PULVIS CEPHALICUS:
A Cephalic Powder.

Take of the Leaves of Asarabacca; Marjoram; and Lilies of the Valley, each any Quantity: And make them into a Powder together.

PULVIS CORNACHINI.
Cornachine's Powder.

Take of sulphurated Diagrydium, ten Drams; of diaphoretic Antimony, six Drams; of Cream of Tartar, two Ounces and an half: Make them together into a Powder.

Schroder tells us, its Author was so fond of it, as to write a whole Treatise about it, wherein he recommends it in almost all Cases that require Purging. Its Dose is from eight Grains to one Dram.

PULVIS GRANORUM CHERMES COMPOSITUS.
Compound Powder of Chermes-berries.

Take of Chermes-berries one Dram, of Nutmegs, two Scruples; of Tormentil-root, and of yellow Sanders, of each half a Dram; of Cloves, prepared Pearls, and both Corals prepared, of each one Scruple. Let them all be made into a Powder together.

PULVIS DIACALAMINTHES SIMPLEX:
Simple Powder of Calamint.

Take of Mountain Calamint, Peny-royal, Origany, Seeds of *Macedonian* and common Parsley, and of Hartwort, of each two Drams; of Smallage and Thyme, of each half an Ounce; of Privet-seeds, and white Pepper, of each one Ounce: And mix them into a Powder.

PULVIS DIATURPETHI COMPOSITUS:
Compound Powder of Turpeth.

Take of Turpeth, Jalap, and Hermodactyl-roots, of Tartar of Vitriol, each equal Quantities; and make into a Powder, *S. A.* Its Dose is from half a Scruple to a whole Scruple.

PULVIS DIALTHÆÆ. See ALTHÆÆ.

PULVIS DIACINNAMOMI:
Compound Powder of Cinnamon.

Take choice Cinnamon, fifteen Drams; of Cassia-bark, and Elecampane-root, of each half an Ounce; of Galangal, seven Drams; of Cloves, Long-pepper, both the Cardamoms, Ginger, Mace, Nutmegs, and Aloes-wood, of each three Drams; of Saffron, one Dram; of white Sugar-candy, five Drams: Make them into a Powder.

PULVIS DIASENÆ. See SENA.

PULVIS ERYSIPELATODES. A Mynsichti.

Take of volatile Meal, half a Pound; of calcined Lead, and red Bole, each two Ounces; and of Mastich, Olibanum, and Ceruss, each one Ounce: Mix all together, and reduce to a fine Powder.

Pulverize together the Bole, and the Ceruss: Then pulverize separately the Olibanum in a Mortar, rub'd over with some Drops of Oil, and the Mastich moisten'd with some Drops of Water. Then mix these Ingredients, when pounded, with

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with the calcined Lead, and the fine Meal, for a Powder, to be preserv'd for Use.

It is proper to dry and cure the Tetter or Ring-worm: A small Quantity of it is to be laid on the Part affected, and cover'd with blue Paper, after the Patient is blooded and purg'd. This Powder may cure a mild and simple Ring-worm: But, when it is obstinate and rebellious, much happier Effects will be produc'd by the following Powder;

Take of the volatile Meal of Barley, half a Pound; of dry Elecampane-root, one Ounce; of the Salt of Lead, and white Precipitate Mercury, each three Drams: Mix all together. *Lemery Pharmacop.*

PULVIS AD GUTTETAM. See GUTTETA.

PULVIS HALY:

Powder of Haly.

Take of white Poppy-seeds, ten Drams; Starch, Gum Arabic, and Tragacanth, each three Drams; the Seeds of Purslain, Marshmallows, and Mallows, each five Drams; Cucumber, Melon, Gourd, Citruls, and Quince-seeds cleansed, each seven Drams; Liquorice, three Drams; white Amber, two Drams; Sugar-candy, the Weight of the Whole: And make them into a Powder. It may be given from half a Dram to two Drams.

PULVIS LÆTIFICANS GALENI:

Galen's Cordial Powder.

Take of cloved Basil-flowers or Seeds, Saffron, Zedoary, yellow Sanders, Cloves, Citron-peels, Galangal, Mace, Nutmegs, and Storax, each two Drams and an half; Ivory-raspings, Aniseeds, Thyme, and Dodder, each a Dram; the Bone of a Stag's Heart, Pearls, Camphire, Ambergrise, and Musk, each half a Dram; Leaf-gold and Silver, each half a Scruple: Make them into a Powder together, according to Art.

PULVIS MARCHIONIS. See MARCHIONIS PULVIS.

PULVIS COMITIS WARWICENSIS.

Earl of Warwick's *Powder.*

Take of Scammony, prepared with the Fumes of Sulphur, two Ounces; diaphoretic Antimony, one Ounce; the Crystals of Tartar, half an Ounce: Make them all together into a Powder. It is a smart Purge, and frequently given to Children, against Worms, from five to fifteen Grains; and, to Adults, from fifteen Grains to half a Dram.

PUMEX. Offic. Schrod. 355. Matth. 1371. Kentm. 37. Boet. 400. Gesn. de Lap. 31. De Laet. 130. Worm. 47. Charlt. Foss. 21. *Scyrus Lapis.* Aldrov. Mus. Metall. 696. *Lapis Pumex dictus.* Cap.-Hort. Cath. Supp. 2. 53. THE PUMICE-STONE.

This is a porous and spongious Stone, full of small Cavities and Perforations, and found in *Germany*, whence it is transported to us. It is of a refrigerating, drying, and extenuating Quality. It gently cleanses Ulcers, and renders Cicatrices full and seemly. *Schrod.* In Mount *Vesuvius*, *Ætna*, and other burning Mountains, large Quantities of this Species of Stone are found with the Sulphur. The Uses of it are enumerated by *Wormius* in his *Museum.* *Dale.*

PUNCTA LACHRYMALIA. See FISTULA LACHRYMALIS, and OCULUS.

PUNCTICULARIS FEBRIS. An eruptive Fever, or a Fever attended with Purple Spots.

PUNCTUM SALIENS. The first Rudiments of the Heart in the Fœtus.

PUNCTURA. A Puncture. *Punctura aurea.* See HERNIA.

PUNICA.

The Characters are;

The End of the Pedicle passes into an Ovary, on whose Top grows a monophyllous multifid Calyx, of a very florid red Colour, and shaped like a Bell. The Flower is rosaceous, polypetalous, growing on the Ovary within the Calyx, and furnished with very numerous Stamina. The Ovary, after the Flower is fallen off, and the Stamina wither'd, contracts the Calyx into an Umbilicus, and passes into a Fruit, resembling an Apple, and containing, under a very rough Rind, and vinous Pulp, a Multitude of Capsules full of numerous Seeds;

Boerhaave mentions three Sorts of *Punica*; which are,

1. Punica; quæ Malum Granatum fert. *Tourn. Inst.* 636. *Boerh. Ind. A.* 2. 250. *Granata, Mala Punica.* Offic. *Malus Punica.* J. B. 1. 76. Raii Hist. 2. 1462. *Malus Granata sive* 438. Park. Theat. 1510. Parad. 428. THE POMEGRANATE-TREE.

This Tree grows not to be of any great Bigness, even in its native Countries, having on its Branches here-and-there a few Thorns; the younger Shoots are of a redish-brown Colour, and have their upper End pretty thick-set with long narrow smooth Leaves, two Inches in Length, to half an Inch in Breadth; among these come forth the Flowers, of a glorious scarlet Colour, consisting of five Leaves, set in a tough brown Calyx, which, in time, enlarging itself, becomes the Bark or Covering of the Fruit, having a Crown on its upper Part, being, in Shape and Bigness, like an Orange, but with a browner and harder Peel, in the Inside of which grows a great Number of corner'd Acini or Kernels, compacted close together in a regular Order, containing either a sweet vinous Juice, or one more acid and acerb, with a little Stone in the middle of each. Pomegranates grow in *Spain*, *Italy*, and many other Countries, and flower in *June*, and the Fruit is ripe in *September*. The Balaustines are the large double Flowers of the wild Pomegranate Tree; which differs not in its manner of Growth from the other. See BALAUSTIA.

The Balaustines, as well as the single Flowers, and the Bark, are very drying and restringent, good for all sorts of Fluxes, Hæmorrhages, and Bleedings, both inward and outward: They strengthen the Gums, fasten loose Teeth, help the Falling down of the Uvula, and cancerous Ulcers in the Mouth and Throat. The Fruit is grateful to, and strengthening of the Stomach; stops Looseness, and the immoderate Flux of the Terms; and is useful in hot bilious Fevers, and Gonorrhœas.

Officinal Preparations are only the Syrup of the Juice. *Miller's Bot. Off.*

2. Punica, fructu dulci. *T.* 636.

3. Punica; flore pleno; majore. See BALAUSTIA, and *Punica; quæ Malum Granatum fert. Boerh. Ind. Alt. Plant.*

PUPILLA. The Pupil of the Eye. A Dilatation of the Pupil of the Eye is esteem'd a Sign of a general Relaxation of the Fibres; and a Contraction thereof, a Mark of Stricture. See OCULUS.

PUPPIS OS. The Os FRONTIS. The Suture in this Bone is call'd the *Sutura Puppis.*

PUPULÆ. The Extremities of the Fingers.

PURETTA. An heavy sort of Sand, or magnetic Powder, found near *Genoa*, on the Sea-shore. It is not us'd in Medicine.

PURGAMENTUM. The *Lochia*; or the Excrements discharg'd by Stool.

PURGAMENTUM STELLARUM. The same as COSLIFOLIUM.

PURGANTIA. Purgative Medicines. See CATHARTICA.

PURGATIO. See CATHARSIS.

PURGATORIUM, in *Paracelsus*, is a Name for any Disease.

PURPURA. Offic. *Purpura nostras violacea.* Col. de Purp. 1. *Purpura violacea Fab. Columnæ.* List. Hist. Conch. 4. Sect. 15. n. 1. *ex Terentino Sinu allatæ.* Bonan. 150. n. 172. THE PURPLE-FISH.

This Fish is frequently found in the *Mediterranean* Sea. In the Shops no Part of it is us'd, except the Shell, which is strong, furrow'd, striated, and rough, with short Tubercles. In former Ages the Sanies of this Fish was us'd for dying: The Shell is of an alcaline Quality, and in Virtues agrees with other testaceous Medicines.

In describing the Purple-fish, the Antients were so short and obscure, as to lay a Foundation for the Moderns to dispute what kind of Shell-fish they meant by that Name, since they describe various Species, the Sanies of which dyed a purple Colour. But *Fab. Columna* has determined the Controversy, by discovering the true Purple-fish. But tho' at present the true Purple-fish is hardly known in our Shops, yet, as Dr. *Martin Lister* observes, an Account of its Juice has been traditionally handed down from the earlier Ages to our own Times; but that this Juice was reckon'd among the Arcana, and carefully conceal'd, till Dr. *William Cole* discover'd it in *Act. Philosoph. Lond.* N° 178. Besides, Dr. *Robert Southwell*, President of the Royal Society many Years ago, informed Dr. *Lister*, that whilst his Mother liv'd in *Ireland*, she was famous for staining Handkerchiefs with the Juice of a certain Fish, the Colour of which could not be washed out. The Art of Dying Purple was, also, not only known, but highly esteem'd, in *England*, in the Times of *Bede*; for, says that Author, in *Hist. Eccles. Gentis Angliæ, Lib.* 1. *Cap.* 1. there are large Number of Shell-fishes, by means of which a purple Colour is dyed so strong and beautiful, that, instead of being tarnish'd by the Influence of the Sun, or the Injury of the Rain, the older it grows, the more beautiful it becomes. *Dale.*

PURPURA.

The Purples, a Disorder which at present rages universally, is a Disease of a peculiar Nature; proceeds from a Scurvy; and is accompanied with an Eruption of Efflorescences on the Surface of the Body, sometimes with a pretty acute and malignant Fever, and, at other times, without such a concomitant Symptom, gently, though for a long time, disturbing the Functions of the Body.

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As the Purples is a peculiar Species of Exanthematous Disorder, it is expedient to inquire, by what Circumstances it may be distinguished from other Diseases of the Exanthematous Kind. The peculiar and essential Characteristics, therefore, of the Purples are these following: First, the Papulæ, which appear, are accompanied with a Corrugation, Roughness, and Driness of the Skin. Besides, no Exanthematous Matter is so moveable, as that of the Purples, which frequently and quickly retire, to the internal Parts, and, after some time, appear again on the Surface of the Body. Nor is any of the Exanthematous Disorders so frequently attended with alternate Heat and Cold, Itchings, and pungent Pains. Besides, all the other Species of Exanthematous Disorders appear equally on all the Parts of the Body; whereas the Purples principally discover themselves on the Neck, Breast, Back, and Arms, rarely infesting the inferior Parts: By which peculiar Marks it may be easily distinguished from the Small-pox, Measles, Petechial Fever, scorbutic Spots, Chicken-pox, that Fever accompanied with Efflorescences resembling those excited by the Stinging of Nettles, the Herpes, the Itch, Phlyctænæ, and the Impetigo.

The Efflorescences of the Purples differ much with respect to Bulk, Figure, and Colour; for sometimes the Papulæ are red, and sometimes white. Hence the Purples are distinguished into those of the red and those of the white Kind. The former Kind has Vesicles more or less broad, which contain a Liquor; whereas the latter has no Vesicles, but only small Nodes, deep-seated in the Skin, resembling the Figure of a Grain of Millet, rough to the Touch, and infarcted with a thickish, and, as it were, purulent Humour. Hence the former Disorder is called the *white Miliary Purples*.

The Purples are, also, observed to be more or less benign or malignant; those of the malignant Kind are more acute than the other, accompanied with a continual Fever, and Symptoms highly offensive to Nature. But the benign Kind continues long without a Fever, is accompanied with Symptoms less offensive to Life, and seizes and proceeds principally with these Signs: This Disorder is preceded by a slight Horripilation; which is succeeded by an intense Heat, accompanied with a Languor, and Loss of Strength, which, in weak Habits, proceeds to a Deliquium. The Præcordia are constricted, and the Breast oppressed. The Patient, is, also, afflicted with deep Sighs, Anxieties, Inquietudes, Watchings, or laborious and disturbed Sleeps; an Heat, and pungent Pain, are perceived in the Back, whilst the Heat and Cold are alternate, and most sensible, in the Palms of the Hands. In Child-bed Women, the Lochia are retained; and the Milk in the Breasts, being resorbed, ceases to flow from them. These Symptoms are succeeded by a Roughness and Corrugation of the Skin, like that of a Goose, with innumerable Papulæ, either red or white, or both, mixed with each other, in Figure and Smalness resembling Millet-seeds; and which first appear on the Neck, then on the Breast and Back, and, last of all, on the Arms and Hands; and, upon the Eruption of these on the Surface of the Body, the Symptoms, which were before violent, especially the Anxiety of the Præcordia, the Cardialgia accompanied with a Syncope, the Inquietude, the Compression of the Breast, and the Difficulty of breathing, are considerably mitigated. The Pulse, which was before hard and quick, is now soft, free, and slow; the depressed Vigour of the Mind returns; the dry Skin becomes moist; and the Patient, who was before so costive, that he could discharge no Flatulences, has his Body rendered soluble; and sometimes not only the Flatulences, but, also, the Fæces, are spontaneously discharged.

There is a considerable Remission of the Symptoms, either in the red or white Purples, or in a Mixture of both, if they constantly continue after the Eruption; for the Vesicles, which are full of a fetid Ichor, are gradually enlarged; nor do they quit their Station, and retire: The Urine is, also, more saturated; the Sweat, which in this Disorder is highly fetid, breaks out; the Discharge of the Lochia returns; and the Milk is restored to the Breasts; the Body being either spontaneously soluble, or rendered so by a Clyster, or Suppository, the Fæces and Flatulences are discharged; and, in seven, or more Days, the Pustules disappear, with a considerable Itching of the Extremities, and the Patient is gradually restored to Health: For all these Circumstances indicate, that the Patient is not excessively weak; but that the solid Parts as yet retain their moving Force and Vigour; and that the whole Temperature of the Blood, and lymphatic Juice, is not destroyed; in consequence of which, the adventitious and unfriendly Matter is continually and equably separated from the vital Juices, and conveyed from the internal to the external Parts.

But it is otherwise in the malignant Purples, in which, after a sufficient Eruption of the Efflorescences, the Pulse is preternaturally quick; nor does the Sleep return, nor is the Inquietude allayed, nor the Respiration rendered free; besides, there are generally too copious Profusions of Serum by Sweat, which, if they happen in the Beginning of the Disorder, induce a great Loss of Strength, and, as it were, a paralytic Resolution of the Skin. Purples of the malignant Kind may be, also, known by the pale, crude, and copious Urine, or the continual Stimulus to discharge the Urine; as, also, when the Urine, which was before high-coloured and saturated, suddenly becomes pale, limpid, and thin, in consequence of the spasmodic Stricture of the Kidneys, and urinary Passages.

It, also, frequently happens, as a bad Omen, that in the Purples the Pustules sometimes appear, and at other times disappear, whilst the Symptoms are always equally violent; all which evince, that the Force of Nature is impaired, the Strength diminished, and the Tone of the Skin, that nerveo-tendinous and porous Emunctory, through which the whole Mass of Blood and Humours is purged, is destroyed; so that its most external, nervous, and sensible Portion is sometimes spasmodically contracted, and sometimes relaxed. But it is still a worse Sign, if the peccant Matter, returning, is firmly lodged in the internal Parts, and resists all Attempts to expel it again to the Surface of the Body; by which means the Symptoms are rendered more violent; the Oppression of the Breast, and Sighing, are augmented; the Loss of Strength, and the Anxiety of the Præcordia, accompanied with Inquietude, increased; and all the other Circumstances rendered worse. Hence all, who are taken off by the Purples, die on account of the Recess of the peccant Matter, and the Increase of the Symptoms produced by that Cause; for tho', before the Eruption of the Purples, the Matter producing the Disorder is highly malignant and peccant, yet, when it is separated from the Mass of Blood, and placed without the Limits of the Circulation, it, by its Continuance, assumes a far worse Nature; and, if it returns to the Parts subservient to Life, especially those destined to the Purposes of Sensation and Motion, it operates in a manner resembling that of Poison. Hence, as, in all Exanthematous Disorders, such as petechial Fevers, Small-pox, Measles, Gutta Rosacea, Itch, Scal'd-head, Gout, and Arthritis, a certain Matter, unfriendly to Nature, and at the same time propelled to the external Parts, renders the Symptoms more violent if it returns to the internal Parts, and mixes with the vital Juices, so it is certain from Experience, that, upon the Disappearance of the Purples, the Sordes received into the internal Parts of the Body are of a like hurtful and prejudicial Quality.

That the Event will be fatal, and that the Death of the Patient is not far off, may be known from the following Signs: If, in consequence of a deleterious Matter firmly lodged within, the internal Parts are excessively hot, whilst the external Parts, being constricted, are covered with a profuse cold Sweat; or if an intense Heat of the external Parts, and a considerable Sense of Refrigeration in the Abdomen, are alternately perceived; if there is a subsultory Motion of the Tendons; if the Hippocratic Face appears; if the Defect of Strength increases; if an uneasy Despair disturbs the Mind; and if the Pulse is hard, unequal, and tremulous: For, if these Symptoms happen, the Patient is generally soon after seized with a Deliquium, which proves mortal.

Though the Purples, with or without a Fever, is often a primary or idiopathic Disease, yet it is frequently, as a Symptom, complicated with other Disorders, especially continual Fevers, when near terminating, and is then not without Danger; for it very frequently happens, that the red or white Purples, or both together, happen in the Decline of the Small-pox, Measles, putrid Synoche, burning Fevers, petechial Fevers, and those resembling them, and other epidemical Disorders; on which Occasion they induce a new Fever, accompanied with a violent Train of Symptoms; so that when Persons, labouring under acute Fevers, are apparently out of all Danger, they are suddenly seized with an Horror, Uneasiness, Inquietude, Watching, preternatural Heat, and Loss of Strength, whilst the Purples, in the mean time, here-and-there appear on the Surface of the Body; and, by extinguishing the Strength exhausted by the preceding Disorder, generally put an End to the Patient's Life. I have, in a particular manner, often observed, that the symptomatic Purples were fatal to young Persons labouring under acute Fevers, who have before lived intemperately, indulged themselves in drinking to Excess daily, consumed their Strength in Venery, and induced a foreign Crasis and Disposition of their Humours; as, also, to Patients, who, during the Progress of the Disorder, have been so costive, as to discharge none of the Excrements for some Days; and to those, who have had too large Quantities of refrigerating and acidulated Medicines exhibited to them, such as Julaps and Potions. The Purples not only frequently appear in the Decline of acute Disorders; but, also, often, in the Beginning and first Days of the Disorder, something like the Purples appear with a kind of Roughness, especially in the Small-pox and Measles, tho' very rarely with an happy Termination of the Disease; for this Circumstance is an infallible Proof, that the Mass of vital Humours is filled and contaminated with various excrementitious Sordes. The Purples, also, accompanied with a Cough, and Difficulty of breathing, a Vomiting, or Flux, frequently attend the catarrhous Fevers of Children. In this Case, if the Disorder is in the Decline, the Purples are succeeded by a Swelling of the Feet, and sometimes of the Abdomen, with or without a Driness of the superior Parts; and the Purples, as is observed in the mountainous Parts of the upper *Black Forest*, are totally removed by Sweats, either arising spontaneously, or procured by Art.

The red Purples are, from the Beginning, always accompanied with a kind of febrile Commotion, which is perpetually exasperated towards the Evening: Yet, in Process of Time, the Fever, and Frequency of the Pulse, are mitigated; the Symptoms allayed; and

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and the Diſorder aſſumes a benign Nature. Hence, if, in the Beginning, this Diſorder is imprudently treated, and if the Body is cacochymic, or full of impure Juices, it frequently continues for ſeveral Months, not without great Uneaſineſs to the Patient, and freſh Returns of the Symptoms, though the Diſorder generally terminates happily.

That the Purples are the Offspring of the Scurvy, we have already obſerved: But this will be more effectually evinced, if we diligently conſider the material Cauſe of both Species of Purples, which, as well as that of a Scurvy, depends upon a Dyſcraſy of the Blood. But, in aſſigning this Cauſe, I am of Opinion, that our Sentiments quadrate with Truth, when we affirm, that the red Purples ariſe from an impure, ſaline, acrid, ſulphureous, and excrementitious Serum; and the white Purples, and an acute Miliary Fever, from the Lymph, and nutritous Juice, approaching to an acid, vapid, and putrid Nature; for both theſe Juices of the human Body are of a different Nature; for the Serum is called that Humour, which, being mixed with the Blood, and impregnated with many ſaline and mucid Parts, to be ſecreted and eliminated through numberleſs Emunctories and Strainers, is of a thickiſh Conſiſtence, and of various Colours and Taſtes. But the Lymph is that pellucid, inſipid, and pure Liquor, the more ſubtile Part of which affords the Matter of the Fluid of the Brain, Spinal Marrow, and Nerves, as, alſo, of the ſeminal Liquor. The gelatinous Parts of this Fluid nouriſh all the Solids of every kind, and its finer aqueous Parts are, through the lymphatic Veſſels, by means of the Valves, and conglobate Glands, again conveyed to the Heart; where, being again united with the ſweet aereo-elaſtic Parts of the Blood, and, as it were, animated afreſh, it is with it conveyed to all the Parts of the Body, for proper Uſes. Hence, when theſe Fluids recede from their natural State and Diſpoſition, they acquire a peculiar kind of Corruption; from which afterwards ariſes the different Genius of the Diſeaſe, the different Violence of the Symptoms, and the greater or leſs Danger.

That, in the white Purples, the Lymph is tainted with a kind of Acidity, is obvious from many Circumſtances; and eſpecially that a redundant Acid is contained in the Maſs of Blood and Lymph, we may know from the exceſſive Secretion of Serum, uſual, if not eſſential, to this Diſorder; for ſuch is the Force and Nature of an Acid, that, when it inſinuates itſelf into the Blood, it coagulates its thicker Parts, and produces a Secretion of Serum; we may know by which means profuſe Sweats are promoted, a copious Diſcharge of thin Urine occaſioned, a Salivation excited, or aqueous Stools brought on.

Having premiſed theſe things, we now come to inquire, why the white Purples are moſt incident, and generally fatal, to Child-bed Women. As, therefore, in general, all thoſe, whoſe Bodies contain a Redundance of lymphatic and aqueous Humours, as moſt Women do, are rather ſubject to an acid Vapeſcence, than a ſalino-ſulphureous Corruption of the Humours; for which Reaſon they are principally ſeized with the white Purples; and this is, in my Opinion, the true Cauſe of the Frequency of this Miliary Fever in Child-bed Women; for, in the Uterus of pregnant Women, both the Progreſs and Return of the Blood, by reaſon of its too great Congeſtion in that Part, and the Diſtention of the Veſſels, is very languid, ſlow, and difficult; hence, the Blood ſtagnating long there, the lymphatic Humour is copiouſly ſecreted into the Veſſels deſtined for its Conveyance; and, remaining, as it were, pent up in their Cavities and Windings, by its long Continuance becomes vapid, is corrupted, and contracts an Acidity, whilſt the more ſubtile ſpirituous Parts, the beſt Preſervers of the due Mixture of the Fluids, fly off. When, therefore, after the Birth of the Fœtus, the Uterus collapſes, and is contracted, whilſt the ſqualid lymphatic Humour, and feculent Blood, are not diſcharged and eliminated, on the third Day, generally, after the Labour, a febrile Motion happens; by which the peccant Lymph and Blood are repreſſed into the larger Veſſels, conveyed to the Heart; and thence, like a malignant Leaven, diffuſed through the whole Body in ſuch a manner, as to infect and contaminate the whole Maſs of Blood, Lymph, nutritive Juice, and nervous Fluid.

But if the Impurity and Dyſcraſy of the Blood and Serum is of the ſaline, acrid, and ſulphureous kind, the Symptoms are not ſo violent, but the Efflorescences are more chronical; the Face is inflated and high coloured; the Eyes are ſparkling; the itching Heat, and Senſe of Puncture, in the Skin, are greater; nor is the Patient afflicted with ſo great Inquietude, Anxiety, and Difficulty of breathing; which Circumſtances lay a Foundation for greater Hopes of Recovery. He may, alſo, be preſumed to be in a fair way, unleſs the white Purples ſucceed thoſe of the red Kind, or the red ſhould be changed into white, which frequently happens in conſequence of a bad Regimen, a prepoſterous Cure, or the Influence of violent Paſſions; whilſt the ſuperabundant Lymph is corrupted, and, at laſt, in the Fever, and hot inteſtine Motion of the Parts, the ſpirituous, fine, and ſulphureous Parts, fly off, leaving behind thoſe of a groſs, acrid, and vapid Nature.

Beſides, if we more narrowly conſider the Origin and Nature of that Matter, which produces Purples of a chronical and leſs dangerous Kind, we ſhall find, for ſeveral Reaſons, that it princi-

pally conſiſts of the ſalino-ſulphureous and acrid Particles of the Serum, which are not eliminated through the Emunctories, eſpecially the Skin, but remain in the Habit, and, by the hot inteſtine Motion, aſſume a worſe Quality. This is confirmed by Experience, becauſe the Purples of a chronical Kind generally ſeize thoſe, whoſe Bodies abound with impure Blood, ſuch as ſcorbutic Perſons; old People; Women whoſe Menſes are ſuppreſſed; Men whoſe uſual hæmorrhoidal Diſcharge is obſtructed; thoſe who are accuſtomed to a ſaline, vinous Diet, coarſe Malt Liquors, and ſmoking Tobacco; as, alſo, thoſe, who have looſe Habits of Body, and ſuch as lead too ſedentary Lives. Beſides, the Cauſe of this Diſorder is generally a ſudden Suppreſſion of Perſpiration; and, by that means, a Repulſion of the Sordes, either by a cold Air compreſſing the Pores, drinking too cold Liquors, or ſudden Frights. I have known Inſtances, in which Perſons overheated, and covered with a profuſe Sweat, have, after a Train of violent Symptoms, been ſeized with an Eruption of the Purples; many, alſo, upon expoſing their Bodies to cold Northerly Winds, after they have been overheated in Bed, by the Heat of the Sun in travelling, or that of dry Baths. The cold and tempeſtuous Conſtitution of the Atmoſphere long continuing, and obſtructing Perſpiration, is the Cauſe that the Purples ſo frequently recur, particularly after the Winter Solſtice, eſpecially in the Months of *January* and *February*. The ſurpriſing Influence of a cold and Northerly Wind, in intercepting and ſuppreſſing even the preternatural Excretions through the Skin, is, by a memorable Inſtance, confirmed by *Lazarus Riverius*, who, in *Obſ.* 53. informs us, that a certain Boy was afflicted with an Impetigo, which diſcharged an ichorous Matter; but that Northerly Winds coming on, this fetid Matter was ſuppreſſed, conveyed to the Lungs, and excited an Aſthma, which did not ceaſe till the Return of Southerly Winds.

But nothing more effectually diſcovers the ſalino-ſulphureous Subſtance, in the Purples of the chronical Kind, than that thoſe Medicines, which involve and correct the ſaline Spiculæ, ſuch as Whey, together with Goats and Aſſes Milk, mixed with the *Selteran* Waters, as, alſo, temperate Decoctions uſed for ordinary Drink, not only afford Relief, but, alſo, totally cure the Purples. Beſides, though this Species of Purples is free from Danger, yet, if it is treated with too much external Heat, internal heating, or volatile Medicines, in the ſame manner as in the Itch, ulcerous Puſtules, and other Defedations of the Skin, ariſing from a peccant and ſaline Diſpoſition of the Humours, the Heat, Pain, and Itching, are increaſed, and frequently a Thirſt and Fever excited; becauſe the Salts, being, by theſe means, rendered more acrid, inſinuate themſelves deeply into the ſmall Fibres of the Skin, which they lancinate and vellicate.

This chronical Exanthematous Diſorder is more uneaſy, and accompanied with a far greater Itching and Heat, than the white Purples mixed with the red; which can only be aſcribed to the ſaline and acrid Particles pricking the ſenſible Subſtance of the Skin. The ſaline Acrimony of the Humours is, alſo, evinced from this; that ſalutary, ſweet Waters, free from a ſaline Element, and a purgative Quality, ſuch as thoſe of *Lauchſtad*, when drank by thoſe afflicted with the habitual Purples, have rendered the Body remarkably ſoluble, procuring daily ſix or eight Stools, the Matter of which is ſo acrid, as to corrode the Anus; whilſt, a few Days after, the purgative Effect gradually ceaſes; nor, if next Year the Drinking theſe Waters is repeated, does the ſame purgative Effect follow. It is, alſo, to be obſerved, that, in the Purples, eſpecially of the obſtinate, chronical, and ſcorbutic Kind, after the Uſe of Milk, or temperate mineral Waters, I have, with great Succeſs, ordered a Bath of ſweet Rain-water, by the repeated Uſe of which all the Puncture, Heat, and Itching, of the Skin were removed, and the Efflorescences diſappeared; an infallible Proof, that, by correcting the Acrimony of the Humours within, and eliminating the acrid Recrements lodged under the Skin, through the Pores relaxed in the Bath, the Diſorder is removed, and the Patient cured.

We ſhall now ſpecify the Reaſons, why no Exanthematous Diſorder, when cured, ſo eaſily and frequently returns, as the red ſcorbutic Purples. This Effect, then, ſeems to be produced by two Cauſes: Firſt, becauſe, in this Diſorder, the Tone of the Skin is conſiderably injured and deſtroyed; and, ſecondly, becauſe the Subject and Seat of frequently returning Purples are the conglobate Glands; for as the Skin is an univerſal Emunctory to all the Humours, and of ſingular Uſe in the Preſervation of Health, ſo the Injuries done to the Conſtitution by any Diſorder in this Emunctory are certainly very great: But this Covering of the Body is eaſily injured by various Cauſes; ſince it is not only compoſed of the ſenſible Filaments of the Extremities of the Nerves, but is, alſo, totally tubulous and porous, becauſe the ſmall Mouths of the minute Arteries, which convey the ſubtile, exhalable Matter, terminate in it; for which Reaſon, both with reſpect to its Tubes and Pores, as, alſo, with reſpect to its Subſtance, it has not only a ſubtile Motion, and Tone of Dilatation and Conſtriction, but, alſo, an exquiſite Senſation. Hence, the greater the Senſibility of the Skin is, the more ſubject to Injuries it is, and the more eaſily its due Motion is perverted. It is, in a particular manner, eaſily altered and conſtricted by cold Northerly Winds,

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Winds, and relaxed by moist warm Southerly Winds; so that it constitutes a true microcosmical Hygrometer. External Causes, also, which hurt, prick, cut, or are possessed of a corrosive Acrimony, as, also, acrid Medicines, those of a too heating Quality, and refrigerating, pinguious, and inspissating Substances, are possessed of a singular Power, not only of impairing, but, also, of destroying, the Tone of this Integument. But when this Tone is changed and destroyed, the salutary Excretion of Perspiration through the small Orifices of this Strainer, must, at the same time, be greatly injured.

When, therefore, the vascular and fibrous Texture of the Skin is injured, and its Tone, by the Assistance of which the excrementitious Matter is eliminated by Exhalation, and laudable Juices restored, is destroyed, a bad Disposition and Weakness are induced, and more firmly take Possession of the Fibres; so that the impure Humours, easily conveyed thither, again act upon this weakened Part, and become stagnant. And certainly this preternatural Disposition of the Skin to produce such Stagnations, and the Difficulty of removing them, are sufficiently obvious from the Gutta Rosacea, which, by injuring and depraving the tender and tubulous Texture of the Skin in the Face, by a copious Congestion of Ichor, is not to be cured, and totally extirpated, without great Difficulty. Hence, since, by a frequent Approach of the purpuraceous Matter to the Skin, its Tone, Motion, Strength, and tubular Texture, are greatly changed and corrupted, it is not to be wondered at, if, the excrementitious Matter being again there collected, the same Disorder should again happen, and an Efflorescence of the Purples be produced.

Having thus explained what seemed necessary to point out the material Cause of both Species of the Purples, we now come to consider what Circumstances contribute, in a more remote manner, to the Generation of these Disorders. First, then, the Purples, especially of the chronical and protracted Kind, are most incident to those, who abound more with Serum than Blood, such as Infants, and Women of a spongious Habit, generally called *phlegmatic*; and the more the serous Humours discharged recede from their natural Purity, and mild Temperature, and the more sordid they are, the more difficult is the Cure, and the more dubious the Success, of the Disease.

It is, also, certain from Experience, that the Purples, both chronical and acute, as, also, malignant Miliary Fevers, are most incident to Women of weak and delicate Habits, to such as have their Strength impaired by violent Passions, especially long Grief, or by profuse Hæmorrhages during Abortion, or an Excess of the menstrual Discharge, or by a long-protracted previous Disorder; for, in such infirm and weak Habits, the lymphatic, mild, and nutritive Humours easily contract a foreign Nature and Taint, because, in consequence of the weakened Strength of the Solids, the Circulation of the Fluids is restored slower, and, the Secretions and Excretions being hindered, Crudities and Sordes are generated and accumulated in the Body.

But a Fever, accompanied with Miliary Purples, is principally incident, and often fatal, to Child-bed Women. This generally appears about the third Day after Labour, when the Milk Fever generally comes on; but it, also, sometimes seizes on the seventh, and sometimes on the fourteenth Day. In order to investigate the Causes of this Disorder, we are to overlook no Circumstance which can lead us to understand its Origin and Generation. Now it is certain from Experience, that poor Countrywomen of robust Constitutions, and accustomed to Exercise, are not in Child-bed seized with this Fever, whereas rich, tender Women, addicted to a sedentary Life, much Sleep, Luxury, and high Living, as, also, those, who are of delicate Constitutions, and such as are subject to tumultuous Passions and Commotions of Mind, are easily obnoxious to the Purples after Child-birth: And it seems to be true, that, as rich and easy Living, which, excluding hard and saline Aliments, consists of light Aliments, farinaceous Substances, light Cakes, Sweetmeats, fermentable Substances, Summer Fruits, and palatable Meats and Drinks, as, also, an impure, vapid Air, impregnated with sordid and putrid Exhalations, arising from adjacent Marshes and Standing-water, together with the Impurity of the Water, contribute greatly to the Generation of all Diseases, so they, in a particular manner, induce the Purples. From these Circumstances we are to deduce the Reasons, why this Disorder rages so much at *Leipsic*, which is situated low; and, on account of the adjacent Marshes, affected by an insalutary Air, whilst, at the same time, the Inhabitants live in a delicate and luxurious manner. For these Reasons, also, in *England* this Disorder first appeared in *London*, where the State of the Air, and the Method of Living, are the same; nor is it to be doubted, but that, elsewhere, Women, who live in the same manner, and in unhealthy Places, are frequently subject to this malignant Fever.

It is, also, observable, that pregnant Women, who are costive, use a sedentary Life, and, neither in the middle nor last Months of their Gestation, diminish the Plenitude of the Vessels by Venesection, are, when in Child-bed, in a very bad Condition, and generally afflicted with the Purples: For, since almost all pregnant Women contain a Redundance of Blood, and since, by reason of the Distention and Relaxation of the Tone of the Vessels, the Circulation of the Blood and Humours is slow, and the Evacuation of the Sordes, by Secretion and Excretion, scanty, they successively contract impure and peccant Humours; so, if improper Aliments are used, and the Elements necessary for the Support of Health, are peccant, a far greater Corruption is introduced, insinuates itself into the internal Parts, and afterwards proves prejudicial to Health, and sometimes produces mortal Diseases.

The Purples, especially of the Miliary Kind, generally seize Child-bed Women, if, in the first Days after Labour, the Lochia are not duly discharged, but are either totally suppressed, flow too scantily, stop too slow, or are forthwith suppressed by a sudden Fright, or the free Admission of Cold; for, in pregnant Women, by means of the Redundance of Blood and Humours, the vascular and cellular Texture of the Uterus is surprisingly distended and obstructed by the Congestion of the Humours; so that the Blood circulates slowly and with Difficulty there; and, not being totally consumed for the Nourishment of the Fœtus, stagnates in the uterine Vessels, and becomes thick and feculent, till at last, the Fœtus being excluded, the Lochial Blood is discharged from the Veins, by which the Placenta adhered to the Uterus. If, therefore, from a peccant Quality of the Blood itself, or a Defect of natural Strength, the corrupted Lochial Blood is not sufficiently evacuated, but, by an inverted Motion, passes into the larger Vessels, and is conveyed into the nobler Viscera, such as the Heart, Lungs, and Brain, it is not to be wonder'd at, that Fevers accompanied with a great Impurity and Corruption of the Serum, such as the Purples are, and other violent Symptoms complicated with them, should, by these means, be produc'd.

Besides, 'tis constantly observ'd in Practice, that Women, in consequence of an Obstruction of their Menses, are far more severely and frequently afflicted with Purples, both of the acute and chronical Kind, than Men; for the Uterus may be justly accounted the Source of this Disorder, since according to *Democritus*, in *Ep. de Nat. Hum. ad Hippocrat.* that Part is the Source of a thousand Woes to Woman; and the Purples rarely happen to Women, if their menstrual Discharge is regular, sufficient in Quantity, and continued for a due time; but, if otherwise, they are frequently afflicted with this Disorder. Hence 'tis certain from Experience, that Women who from advanced Age, or any other Cause, have their Menses totally suppress'd, labour under this Disorder longer than other Patients. Besides, if in young Women the Menses are not regular, or discharg'd too scantily, especially if other Causes concur, the Purples, accompanied with a Variety of Symptoms, are generally produc'd.

'Tis, also, certain from Experience, that Women subject to the Fluor Albus, when that Evacuation is too small, or check'd, or totally suppress'd, by improper Measures, have been seiz'd with the Purples; and, when these have been cur'd, the Fluor Albus has again appear'd; and, when this has been remov'd, the Purples have again succeeded. Hence 'tis sufficiently obvious, that this Exanthematous Disorder is the Off-spring of the Serum. Nor is it to be wonder'd at, if at present, when the Fluor Albus is more common than in former Ages, the Purples should, also, for that Reason be more frequent.

Though the immoderate Redundance of Blood in those in whom it is not lessened by the menstrual or hæmorrhoidal Discharge, or by stated Venesections, greatly contributes to the Generation, especially, of the chronical Purples; yet the Impurity of a copious Serum, arising from the Penury of laudable Blood, contributes still more to the Production of the same Disorder. It is, also, frequently observed, that by imprudent Venesection, or immoderate Hæmorrhages, in consequence of Abortion, especially with the Concurrence of a violent Fright, or Anger, Refrigerations of the Extremities, Deliquiums, Inflations of the Stomach accompanied with Anxiety, an Oppression of the Breast, and an alternate Sense of Heat and Cold in the Surface of the Body, have been produced; which Symptoms, upon the Appearance of the Purples on the third or fourth Day, are mitigated, and allayed: For nothing more effectually destroys the Tone, Force, and Strength of the Solids, or has a more immediate Tendency to bring on a virulent Quality of the Fluids, already impure, than tumultuous Commotions of Mind, especially long-protracted Sorrow, and Grief. Hence, if pregnant Women, hysteric Patients, or those labouring under Irregularities of the Menses, are afflicted with violent Grief, it is a pretty sure Sign, that they will, in Child-bed, be seized with Purples of a bad Kind: Besides, Purples of a mild and benign Nature, in weak Habits, and such as are often under the Influence of enormous Passions, easily acquire a great Degree of Malignity, and portend the greatest Danger; and it is certain from Experience, that studious Men, and those addicted to a sedentary Life, after obstinate Grief, have contracted the Purples, and struggled under that Disorder for a long time.

A bad State of the Air, the Use of which is continually necessary to Life, and an irregular Constitution of the Weather, contribute greatly to the Production of the Purples; for as the Influence of the Air is very great, in perverting the State and Crasis

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Crasis of the subtile, nervous, and membranous Fluids, and all the other Juices; so it is, also, of great Efficacy, in modifying and altering the Tone of the Skin, and the salutary Excretion of Perspiration: So that it is not to be doubted, but epidemical Diseases, and Purples, more or less malignant, are produced by the Impurity of the Air. Thus, some Years ago, the Purples, accompanied with a catarrhous Fever, raged epidemically, especially among the Children of the *Lower Saxony*; and this Disorder derived its Origin from a previous, long-continued, cloudy, and rainy State of the Weather, succeeded by cold easterly and northerly Winds; as we are informed by *Boettigerus*, in his *Dissert. de Purpura rubra epidemica.* In *Miscellan. Nat. Curios. Dec.* 1. *An.* 6. we are told, that, in the Spring succeeding an open and cloudy Winter, a malignant Purple Fever arose, which, through the whole Spring, had its epidemical Circuits, and was principally incident and fatal to Children. An impure Air, impregnated with foreign and active Exhalations, is, also, the Cause why this Disorder is not only more easily generated, but, also, more obstinately supported, in some Places, than in others. Thus, in large Towns, where the Air is impure, Persons seized with the Purples are often cured by removing to more salutary Places; and again afflicted with the same Disorder, upon their Return to such Towns, and staying in them for some time. Hence the Reason is to be deduced, why the Months of *March* and *April* so much favour the Production of catarrhous, exanthematous, and purple Fevers; for during these Months the Weather is generally heavy, rough, and changeable, whilst the Atmosphere is impregnated and contaminated with noxious Exhalations, arising from the Rains, and melted Snow.

We have already considered the principal Causes, which, especially in chronical Purples, have a great Affinity with those which generate the Scurvy; for, in this last-mentioned Disorder, there is an acrid, saline, and sulphureous Dyscrasy of the Blood, which, in the Purples, is only more exalted, and subtile. The Generation of the Purples is promoted by a lax Habit of Body, long Disorders of Mind, Obstructions of the natural Secretions and Excretions, a vapid Intemperature of the Air, moist and low-situated Places, improper Aliments, and those of hard Digestion, a Defect or a Redundance of Blood, and other Things of a like Nature. Hence a difficult Question arises, which is, Why, tho' all the Circumstances requisite to the Production of the Purples were present, this Disorder only began lately to appear. In deciding this perplexing Question, it must necessarily be acknowledged, that the same Disorder must have the same common Cause: Now we have already shewn, that in the Purples, especially of the chronical Kind, there is an impure, saline, and excrementitious Serum; that in the miliary Purples there is a Redundance of putrid, vapid, and acrid Serum; and that this Matter, contained in the Blood, whether acid, or acrid and saline, by the hot intestine Motion, acquires a worse Nature, so as violently to affect and irritate the nervous Parts, and, at last, to produce this Exanthematous Fever, accompanied with violent Symptoms. We must, therefore, direct our Views to other Circumstances, and consider whether, in Diet and Regimen, which afford the Matter, Temperature, and Intemperature, of the vital Humours, there is not some Error, which about forty, and some more Years ago, was unknown, or, at least, not so universally practised. This Error, therefore, is the almost universal Use, or rather Abuse, of warm Liquors, and especially of Coffee and Tea; for in some Parts, especially in *Germany* and *England*, Women of all Conditions use this Liquor, both in the Morning and Afternoon; and think it unpolite to send their Neighbours away without drinking large Quantities of it: And it is observable, that the Purples reign and increase most, since the drinking of these Liquors became so customary, and especially in those Places where it is most frequently used.

Though this Observation is so supported by Experience, that it cannot be doubted; yet its Truth may possibly seem to be weakened by this, that though in the hot *Asiatic* Countries Coffee is much used, the Purples are yet unknown in those Climates. But this seemingly specious Objection falls to the Ground, if we carefully consider, that in these Places the Regimen is quite different from what it is in ours; that their Inhabitants do not use coarse, hard, and salted Aliments; that the Air is purer and hotter, and Perspiration more copiously and expeditiously carried on; and, which is of all other Circumstances of the greatest Importance, that the Inhabitants have no scorbutic Taint in their Blood; for that a scorbutic and impure State of the Humours is to be class'd among the Causes which contribute to the Generation of the Purples, is sufficiently obvious from this, that the Purples rage most in Places most infested with the Scurvy, such as *England*, *Holland*, *Sweden*, and *Germany*: Hence the Disorder is called the scorbutic habitual Purples. It is, also, observable, that where the Purples already rage, and afflict the Inhabitants, the scorbutic lacerating Pains of the Limbs, the malignant Ulcers, the putrid and bloody Gums, the broad and livid Spots, which are the essential and peculiar Symptoms of a Scurvy, are rarely afterwards observed; or, at least, they are less frequent and violent, as we shall afterwards shew.

As, therefore, these Things which happen in other Climates, under another Regimen and Constitution of Body, cannot be transferred and accommodated to the Situation of *Europeans*; so this Subject will be more perspicuous, if, from this Source, we explain the Method in which the Purples are generated. Now it is sufficiently known, that the excrementitious Impurities of all Kinds, separated from the Blood and Humours, especially the bilious Sordes, and the fermentable Juice of a salival Nature, supplied from the pancreatic Glands, as, also, the mucid Humours secreted from the Blood, principally in the large Intestines, fall down into the Intestines: It is, also, certain, that in this winding Canal Feculences are produced, from Aliments of various Kinds, such as improper Acids, fermentable and half-corrupted Substances, and Fish; and that these Feculences, when mixed and collected, ought to be discharged by Stool, as unfriendly and prejudicial to the vital Fluids. Whatever Things, therefore, hinder the Discharge of these Sordes, and occasion their again entering the Mass of Blood, certainly greatly contribute to render the Blood impure, by conveying into it these Sordes, which may be along with it propelled to the Emunctory of the Skin; tho' they cannot, like the Matter of the Sweat, be quickly dissipated; but, on account of their acrid Nature, destroy the sensible Skin, and, lodging there, form Spots, or Pustules: For it is daily observed, that if cachectic and scorbutic Patients are costive, Pustules, a Gutta rosacea, and ulcerous Defedations of the Skin, are produced. It is, also, observable, that, in acute and burning Fevers, Costiveness is succeeded by the Purples; whereas those who in the Decline of such Fevers have a critical Flux, are not seized with this fatal Exanthematous Disorder.

Now, upon an accurate Inquiry, we find it confirm'd, by Experience, that all warm Liquors, Tea, as well as Coffee, by increasing Perspiration, and provoking Sweat, render most Persons costive; and that violent Fluxes are stopped by Sudorifics, exhibited with a proper Regimen, and drinking some warm Infusion. Hence, if Persons whose *Primæ Viæ* are loaded with Impurities and Crudities, which ought to be eliminated by Stool, frequently use large Quantities of Coffee or Tea, it is not to be wonder'd at, if the bilious, saline, and sulphureous Sordes, being attenuated by the Heat, and afresh dissolved with an aqueous Liquor, should return through the lacteal and lymphatic Vessels, which every-where occur in the large Intestines, to the Mass of Blood, where, by reason of their Continuance and Commixture, acquiring a worse Nature, they induce a foreign and hurtful Intemperature of all the Fluids; unless, by covering the Body well, or by the Advantages of a warm and temperate Atmosphere, they are duly and quickly eliminated by Perspiration. Hence we infer, that all Persons, whether Men or Women, who are costive, and drink these warm Liquors, especially Coffee, whilst the Skin, at the same time, does not duly transmit the Sordes, receive great Injury from such Liquors; since, in such a Case, they greatly dispose to the Generation of the Purples, especially if there is a previous scorbutic Disposition of the Humours; or if the Patient is under the Influence of violent Passions, especially long-protracted Sorrow and Anger, which greatly favour the Accumulation of bilious Sordes in the *Primæ Viæ*. On the contrary, these Liquors are not only harmless, but salutary, to those whose Bodies they render soluble, and who are disposed to Perspiration; for, in such Persons, they contribute to the Elimination of Sordes of various Kinds.

Besides, Coffee-berries, the Product of another Climate, contain something of a foreign Quality, unfriendly to the natural Temperature and mild Mixture of the Blood in our Parts of the World; and in burning these Berries, especially in a strong manner, which is usual, they contract something of a saline, volatile, and empyreumatic Sulphur, which is unfriendly to the Tone and Motion of the nervous Parts. Hence it happens, that in some the drinking of Coffee produces a Tremor of the Hands, and Anxiety; and these Effects are produced the more, the more the Water is inspissated by the Powder of the Berries much burnt. Besides, in this Liquor much Sugar is used, which, lodging in the Intestines, and not finding an immediate Discharge by Stool, ferments, and increases the mucous and acid Crudities. From what has been said, it is not to be wondered at, if, by the common Abuse of Coffee, the natural Mixture and Crasis of the constituent Parts of the Blood are greatly changed, and a foreign State of the Fluids induced; which, being conveyed to the Infants in the Uterus, along with the Blood, lays a Foundation for the Purples.

Though this Doctrine, with respect to the Origin of the Purples, seems to be overthrown by an Assertion of *Welschius*, in *Dissert. de Purpura Lipsi.* that this Disorder was known at

Leipsic

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Leipſic above ſixty Years ago, when the drinking Tea and Coffee was not uſed; yet it will be found not to be ſubverted by this means, when we aſſert, that warm Liquors, eſpecially Coffee, do not concur materially, but rather formally, to the Generation of the Purples; whilſt, by the frequent Uſe of ſuch warm Liquors, the Impurities of the Primæ Viæ, in conſequence of the Patient being rendered coſtive, inſinuate themſelves into the Blood. Beſides, if we carefully attend to the Living, Diet, and Regimen, uſed by pregnant and Child-bed Women at *Leipſic*, at the Time this Diſorder appear'd, we ſhall find, that it proceeded from the Cauſe aſſign'd; for it is certain, that the Women of that Town are much addicted to Pleaſure, lead an idle Life, indulge themſelves in ſleeping long, and almoſt daily uſe Sweetmeats, Summer Fruits, and farinaceous Subſtances, fried with Butter and Sugar; in conſequence of which, they are coſtive, and, during their Pregnancy, collect a Redundance of Impurities: For which Reaſon they are frequently afflicted with the Fluor Albus. It was at that Time, alſo, cuſtomary, not only to confine Child-bed Women cloſely to Bed, but, alſo, as it were, to macerate them in warm Rooms; and, during the firſt Days of Child-bed, to exhibit only boiling-hot Broths, and Drinks; whilſt they did not venture to remove the coſtive State of the Patient, by a Clyſter, or Laxative; nor to uſe Veneſection upon a Suppreſſion of the Lochia. Any one who deely conſiders theſe Things, and compares them with what has been already ſaid, muſt readily perceive, that ſuch Management was the Cauſe why, at *Leipſic*, this Exanthematous Diſorder appear'd before the Uſe of Coffee. This was, alſo, afterwards confirm'd by Experience; for after they diſcarded the hot Regimen, with reſpect to Child-bed Women, and admitted the Uſe of Laxatives and Veneſection, the Purples became far leſs frequent, leſs dangerous and fatal. Though, therefore, the Uſe of Coffee cannot be accuſed of generating the Purples in *Leipſic*; yet it cannot be denied, that the Purples, which for a Tract of Years were confined to that Town, upon the Introduction of Coffee appeared elſewhere: So that the more this Liquor was uſed, the more this Diſorder raged, and ſpread itſelf; and, which was a ſingular Circumſtance not before obſerv'd, it generally aſſociated itſelf with acute Fevers.

Theſe Things are ſufficient to demonſtrate, that warm Liquors contribute to the Generation of the Purples, or the Converſion of the Scurvy into the Purples. But this Doctrine will be farther illuſtrated by the following Obſervation: The City of *Hall*, in *Germany*, both on account of its low Situation, and the adjacent ſtagnant and ſaline Waters, which emit large Quantities of aqueous Vapours, is ſurrounded with a moiſt Atmoſphere; for which Reaſon it appears all beſet with Clouds, to a Perſon who views it at a Diſtance. Hence the Reaſon is to be deduced, why, from the remoteſt Times, the Scurvy has raged in this City, ſo that the Inhabitants are frequently afflicted with the wandering Gout which they call ſcorbutic, Colics, Tumors, and ſcorbutic Spots; together with other Symptoms peculiar to the Scurvy; eſpecially the various Diſorders of the Gums. This I learned, when young, partly from my Father, and partly from other Phyſicians of that Town, who hardly preſcribed any Medicine in which there was not ſome antiſcorbutic Ingredient. And I myſelf, in my future Practice, obſerved the ſame Method with thoſe who committed themſelves to my Care, whoſe Diſorders, on account of a ſcorbutic State of the Humours, I happily removed by Antiſcorbutics. But, as ſoon as the Inhabitants began to uſe warm Liquors, eſpecially Coffee, the Scurvy diſappeared, and the Purples, both of the malignant and benign chronical Kind, began to rage, and proved very fatal at firſt, when the Nature of the Diſorder was unknown. The ſame Effects were afterwards produced, by the ſame Cauſes, in *Eaſt Friſeland*; ſo that it is not to be doubted but the Scurvy lays a Foundation for the Purples.

The Scurvy is, alſo, frequently converted into the Purples, by means of a Regimen, or particular Choice of Aliments, which our Forefathers uſed, either not at all, or but moderately; for in our Days moſt Men, addicted to Idleneſs and Luxury, think of nothing but gratifying their Palates by Variety of new-invented Diſhes: Beſides, not content with the various Products of their own Country, they are fooliſhly fond of Subſtances brought, through dangerous Seas, from the remoteſt Parts of the *Indies*. Though I do not abſolutely condemn exotic Aliments, yet I muſt find fault with the modern Taſte, which reliſhes none but ſomewhat acid and gently-pungent Food; which muſt, conſequently, be prepared with large Quantities of Salt, Aromatics, Garlick, Onions, Pepper, and the various Kinds of Funguſes: For ſuch Aliments, by imparting a grateful Acrimony to the Tongue, partly make Perſons eat too liberally, and, by that means, produce a Redundance of Crudities in the *Primæ Viæ*, juſt as ſcorbutic Perſons do, by the Uſe of coarſe Aliments; and partly procure a greater Effervescence of the Blood; which greatly contribute to the copious Generation of ſaline and ſulphureous Particles: So that, with the Concurrence of other Cauſes, the Purples are eaſily produced. Beſides, the Uſe of ſpirituous Wines is at preſent ſo frequent, that in ſome almoſt the whole Maſs of Blood is, as it were, converted into Wine.

To this Luxury in eating and drinking it is to be aſcribed, that various Hæmorrhages, eſpecially the hæmorrhoidal Diſcharge, are ſo familiar to many. Hence ſome Phyſicians, being miſled, derive the Origin of all chronical Diſeaſes in Women from an undue Diſcharge of the Menſes; and in Men, from a Suppreſſion of the Hæmorrhoids: For which Reaſon, if ſuch Diſorders happen, they order the whole Intention of Cure to be directed to reduce theſe Evacuations to due Order; and, particularly, frequently, or even every other Day, exhibit Pills made after the manner of the *Pilulæ Becherianæ*, with a ſmall Quantity of Aloes. But though this Hypotheſis is leſs agreeable to Truth, yet I ſhall not heſitate to affirm, that the frequent Uſe of theſe Pills, in other reſpects ſafe enough, in ſome Perſons greatly contributes to the Generation of the Purples; for if there is no natural Propenſity to any Excretion of Blood, eſpecially by the hæmorrhoidal Veins, it muſt neceſſarily happen, that by theſe means the Maſs of Blood muſt be exagitated, and thrown into Commotions, and, by an Increaſe of the inteſtine Motion, a greater Quantity of ſaline and ſulphureous Particles produced, which are the material Cauſe of the Purples: Soon after, all the Circumſtances concur which accumulate the ſaline and ſulphureous Parts of the Blood, render them more acrid, and fix them deeper in the Fibrils of the Skin. Hence it is not to be wondered at, that the Scurvy, which is a ſaline Diſorder, changing its Nature, ſhould degenerate into another Diſeaſe, ſuch as the Purples.

Though we have intermixed the Prognoſtics of both Species of the Purples with the Hiſtory of the Diſeaſe; yet we ſhall ſubjoin ſome Things with reſpect to the chronical Purples. Since, then, this Diſorder is not accompanied with a Fever, it is not dangerous, unleſs when cured in a prepoſterous manner: It is, however, an obſtinate Diſorder, and generally creates great Trouble both to the Patient, and the Phyſician; for if the Fomes of the Purples fixes its Seat in the ſolid or internal Parts, it does not eaſily quit the Body, but, remaining within, generates violent Diſorders; if, on the contrary, it is too impetuouſly expelled, it produces no leſs terrible Misfortunes. But this principally happens to thoſe who have weak nervous Syſtems; or who, in conſequence of an unequable Circulation of the Blood and Humours, are diſpoſed to ſpaſmodic Strictures; by which it happens, that a Redundance of impure Blood is with Impetuoſity and Danger congeſted ſometimes in the Head, ſometimes in the Breaſt, and at other times in the Joints; by which means, a Train of violent Symptoms is excited: For if the Matter of the Purples retained in the Habit is conveyed to the Head, it produces Cephalalgias, Ringing of the Ears, Weakneſs of Memory, an Aphony, and ſometimes Madneſs, apoplectic Fits, and Lethargies. If it is conveyed to the ſenſible Membranes of the Lungs and Diaphragm, it produces ſpaſmodic Aſthmas, and pungent lancinating Pains of the Breaſt. If it is depoſited on the Membranes of the Stomach, Anxieties of the Præcordia, and Cardialgias, ariſe: If it ſeizes the Inteſtines, it produces Gripes, and Inflations of the Hypochondria, accompanied with an uneaſy Senſation of Heat: If it is lodged in the Joints, they are diſtorted by cruel and lancinating Contractions: And, laſtly, if the malignant Matter acts upon the tendinous and nervous Ligaments of the Hip, iſchiadic Pains are produced. But all theſe cruel Symptoms lay aſide their Virulence, and become milder, when the acrid cauſtic Matter is expelled to the Surface of the Body.

The Method of Cure.

For preventing a Return of the Purples, whether of the chronical, or of the acute and miliary Kind, nothing is more effectual, than Abſtinence from all kinds of Malt Liquors, which are improper in this Diſorder; ſince all of them, when old, contract an Acidity, and become too ſpirituous; and, when recent, are not only feculent and fermentative, but, alſo, contain coarſe and mucid nutritive Parts: But all ſuch Subſtances are ſo far from promoting, that they rather obſtruct the Deputation of the Blood and Lymph, on which, however, the Whole, both of the Prevention, and of the Cure, depends. Hence, in hot and Summer Weather, I adviſe the Uſe of temperate mineral Waters, ſuch as the *Selteran* Springs, and thoſe of *Wildungen*, mixed with a ſmall Quantity of Wine; but in the Winter, and to ſuch Perſons as could not procure ſuch medicinal Waters, I have ordered, for common Drink, either pure Spring-water, or Decoctions of the Roots of Vipers-graſs, Saſaparilla and Succory, Shavings of Hartſhorn, and clean Barley, with the Addition of a few Fennel-ſeeds; taking a Pint of Water for every Ounce of the Ingredients, adding a little Wine, if the Patient's Situation can afford it. I have, alſo, on account

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count of Cuſtom, permitted the Uſe of ſmall and well-defecated Beer, in ſome Caſes.

In Purples of the Chronical Kind, I order Exerciſe, Travelling, and Change of Air, by removing from low to higher Places, Diverſion, and Tranquillity of Mind, a Freedom from Care, and profound Meditations: I, alſo, prohibit the Uſe of all ſuch Things as render the Patient coſtive, obſtruct Perſpiration, and generate a Redundance of Blood. Nor is the Patient liberally to uſe Fleſh, eſpecially Pork; nor Aliments highly peppered, or prepared with aromatic Subſtances. In the Summer Months I have ordered the Cure to be totally performed by Aſſes Milk alone, or Whey of Cows, or Goats Milk, or by the *Selteran* Waters, mixed with a third Part of Cows or Goats Milk, and drank for a Month, or ſix Weeks, interpoſing, now-and-then, a Bath of ſweet Water, or of the *Lauchſtad* Springs. And this Method, if the Diſorder has been deep-rooted, I have ordered to be perſiſted in for three Years. In ſome Men, of corpulent Habits, I have, alſo, ordered the Uſe of the *Sedlitz* Waters; by a moderate Draught of which, for ſeven or eight Days, in the Spring and Autumn, the Fomes of the Diſeaſe has been carried off by Stool. I have, alſo, ordered many, afflicted with chronical, ſcorbutic, and habitual Purples, to drink the Waters of *Lauchſtad*, by which the Sordes were copiouſly eliminated, the Patient continuing the Uſe of them, till their purgative Effects ceaſed.

When the Chronical Purples have been produced by a Diſorder of the Uterus, and an irregular Diſcharge of the Menſes, my principal Intention has been, to reſtore theſe to their natural State; for which Purpoſe, beſides the Meaſures already preſcribed, I have ordered the Powder of Rhubarb, the Elixir viſcerale, and waſhing of the Feet, to be daily uſed, a few Days before the menſtrual Eruption. But if, as it generally happens, they are accompanied with ſpaſmodic Strictures, an Inflation of the Stomach, Anxieties of the Præcordia, and Pains of the Back, I have uſed Antiſpaſmodics; ſuch as the *Pulvis Marchionis*, mixed with a little Nitre and Cinnabar, a Grain or two of Caſtor, and of the Extract of Saffron: This Intention is, alſo, anſwered by the anodyne mineral Liquor, mixed with the Eſſences of Caſtor and Saffron, and the bezoardic Liquor. The Patient muſt, alſo, uſe Baths of ſweet Water and Milk. In order to provoke the Menſes, I have ordered weak Eſſence of Amber, extracted with an alcaline Liquor, by which means the Diſorder was removed. In order to prevent the chronical Purples in plethoric Perſons not ſubject to the Hæmorrhoids, Scarifications and Veneſections are of great Efficacy for diminiſhing the Redundance of Blood; as, alſo, repeated Purgings, which may be moſt commodiouſly obtained by a Solution of Manna, which is in a peculiar manner adapted to Diſeaſes ariſing from a ſaline Acrimony, adding to the Solution a ſaline Stimulus; ſuch as the *Terra foliata Tartari*. The Night-ſweats, alſo, with which thoſe diſpoſed to the Purples are often much infeſted, I have happily removed, by frequent Purgings, brought on by gentle Laxatives; ſuch as Raiſins, Rhubarb, the *Terra foliata Tartari*, and Cream of Tartar.

In the Cure of the chronical Purples, I order, that from the very Beginning of the Diſorder the Patient ſhould not be kept in too hot a Bed, or Room, but in a moderate Heat, lying as little in Bed as poſſible; by which means, I have found the troubleſome Sweats prevented. Beſides the above-mentioned Decoction for ordinary Drink, I have found no Medicine produce better Effects than a diaphoretic nervous Powder prepared of Hartſhorn, both calcined and not calcined, Crabs-eyes, Mother of Pearl, Amber, purified Nitre, and Cinnabar. I have, alſo, obſerved excellent Effects produced by the anodyne mineral Liquor; ſo that by theſe two Medicines, exhibited in proper Doſes, either in Conjunction, or ſeparately, without the Uſe of any other Remedy, I have happily cured Purples, both of the acute and chronical Kind.

We now proceed to the Method of preventing and curing that bad Species of Purples generally incident to Child-bed Women in the Beginning, or about the Middle, of their lying-in. The Cauſe and Origin of this we have already derived from the improper Regimen of pregnant Women, and Errors committed with reſpect to their Diet; for which Reaſon theſe are carefully to be guarded againſt. In order, therefore, to prevent the Purples in Child-bed Women, the firſt Intention to be purſued is, to take care, that, during Pregnancy, a Redundance of Humours, and much more an Impurity of them from their Stagnation about the Uterus, be prevented, and no Weakneſs induced on the nervous Syſtem. This Effect, if the Body is turgid with Blood, can in no manner be better obtain'd, than by Veneſection three or four times, though not very copiouſly, performed in the ſuperior Parts of the Body. The Patient muſt, alſo, abſtain from Idleneſs, long Sleep, Commotions of Mind, Sweetmeats, fermentable and farinaceous Aliments; but ſhe is to uſe Aliments of a laudable Juice, and a pretty large Quantity of ſome ſalutary Drink: She is, alſo, to uſe moderate Exerciſe, and keep her Body ſoluble, rather by Aliments, than Medicines; exhibiting Raiſins impregnated with Rhubarb, and prepared with or without Manna; for theſe are of ſingular Service to pregnant Women. And ſince Refrigerations of the Lower Belly are conſiderably troubleſome to pregnant Women, and have a Tendency to generate violent Diſorders, I always adviſe them to fortify their inferior Parts againſt the Cold; and, for that Purpoſe, to wear Drawers. In order, alſo, to prevent noxious Stagnations of the Humours about the Uterus, it is expedient, ſometimes, eſpecially after the middle of Geſtation, to anoint and rub the Abdomen, before a warm Fire, with the *Balſamum Embryonum*, or with old generous *Hungarian* or *Rheniſh* Wine, made hot, dropping a few Drops of the Balſam of Life into it: And theſe Meaſures are carefully to be taken during Geſtation.

We ſhall now inquire, what Meaſures are to be taken before and after the Labour, and during the firſt Days of lying-in, in order to hinder Women from falling into violent Diſorders, and the Purples, both of the acute and chronical Kind. As, therefore, this Diſorder is eaſily produced, and Women weakened, by the imprudent Management of Midwives, who before the due Time ſolicit the Pains, and for that Purpoſe exhibit hot and ſpirituous Subſtances, I injoin great Moderation, with reſpect to every thing, leſt the Strength ſhould be impair'd, the whole Maſs of Humours ſurpriſingly exagitated by the violent Pains, and the Uſe of Analeptics, and the feculent impure Humours about the Uterus put into a more violent Motion; but the Diſcharge of the Lochia, and other Excretions, are to be duly promoted, that the Diſpoſition to Diſeaſes may be as little as poſſible.

The ſecond Day after the Delivery, when all the Pains are over, it is neceſſary the impure Blood, collected in the Uterus during Geſtation, ſhould be evacuated, and the vital Juices freed from the Cacochymy they have contracted. Hence the Excretions of all Kinds, eſpecially thoſe by Stool and Perſpiration, are gradually, but not impetuouſly, to be promoted, and carried on; which may be moſt commodiouſly done by the following means: Let the Patient carefully avoid the exceſſive Heat, either of the Bed, or Fire; and let her Drink be neither too hot, nor cold, but tepid. Let her guard againſt all Commotions of Mind, eſpecially Dread and Sorrow; let her, alſo, every other Day, for four times, take balſamic corroborative Pills; ſuch as thoſe of *Becher* or *Stahl*; for theſe not only evacuate the Sordes by Stool, but, alſo, provoke a Diſcharge of the Lochia, and bring on a Diaphoreſis. But if, at the Beginning, all the Symptoms are not allayed, but a Quickneſs of the Pulſe, and an external Heat, are perceived, theſe Pills may be mixed with a precipitating abſorbent Powder, which, for a Doſe, may contain four or five Grains of Nitre. In ſuch a Situation it is, alſo, expedient, in weak Broth, to take ſuch Medicines as allay the Spaſms, reſolve the grumous coagulated Blood, and procure a free Diſſipation of the Sordes by Perſpiration; which Intentions are excellently anſwered by Sperma Ceti, Oil of Sweet Almonds, Infuſions of Elder-flowers, Chamomile-flowers, and the Tops of Yarrow, a temperate Eſſence of Orange-peel mixed with Eſſence of Saffron, the anodyne mineral Liquor, and the bezoardic diaphoretic Powders, to be exhibited in ſome analeptic Water. A Mixture, alſo, of the analeptic and pectoral Waters, prepared with diſtilled Vinegar, Crabs-eyes, and Syrup of Sorrel, is of ſingular Service, in reſolving the grumous and ſtagnant Blood.

By a due Obſervation of theſe Cautions, no mortal Diſeaſe will readily attack Child-bed Women, nor are the Purples to be dreaded: But if, in conſequence of a Neglect of theſe Rules, the Corruption of the Serum and Lymph is ſo increaſed, as to diſpoſe to the Purples, whether of the red or white Kind, or if theſe Diſorders are already preſent, I uſe the following Method, which I have often found ſucceſsful. After injoining an equal and temperate Regimen, with reſpect to Heat, I order Child-bed Women, ſeized with the Purples, to uſe Water-gruel, with or without an Infuſion of common Chamomile; and this I have found of very great Efficacy. In the malignant and white Purples, I do not render the Body ſoluble by ſtimulating Medicines; nor is it expedient to produce that Effect by Clyſters. I, alſo, forbid, as much as poſſible, all Change of Apparel and Bed-cloaths; but rather adviſe, that ſuch as are already uſed, be put on, after having been well dried, and warmed before a Fire. I, alſo, diſſuade an erect Poſture, or Riſing out of Bed; becauſe, by theſe means, the Patients eaſily fall into Deliquiums; and, the Motion of the Humours being directed to the internal Parts, the Efflorescences diſappear, and the moſt terrible Symptoms are brought on, as is ſhewn in *Fred. Hoffmanni Diſſert. de Situ erecto in Morbis periculoſis valde noxio.*

After the Eruption, I exhibit, at different times, about a Scruple, or half a Dram, of the temperate bezoardic Powders, to which I ſometimes add, a ſmall Quantity of Saffron, or Caſtor, interpoſing now-and-then a Doſe of the anodyne

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mineral Liquor, which is of singular Efficacy in allaying Spasms, quelling the hot intestine Motion, and correcting the Acrimony of the Humours: But, if, for various previous Causes, the Retrocession of the Purples is to be dreaded, or has already happened, I mix with the anodyne mineral Liquor, a fourth Part of the bezoardic Liquor, prepared according to the Directions of *Bussius*, and described in under the Article BUSSIUS: Which Mixture excellently promotes a Diaphoresis, and forces the peccant Matter to the Surface of the Body. For restoring the Strength, which, in the White Purples, is greatly impaired, I recommend an analeptic Potion, prepared of the Waters of Baum, Citron-peel, the Flowers of Lilies of the Valley, Primroses, *Egyptian* Thorn, and Cinnamon. This Potion must be impregnated with Juice of Quinces, adding a sufficient Quantity of Mother of Pearl, and Pearl-sugar, dropping into it a few Drops of the *Spiritus Nitri dulcis*. In this Mixture, as a proper Vehicle, the Powders may be exhibited, or a Spoonful of it may be frequently taken by itself.

As it often happens, that in the Milk, or Purple Fever, the Lochia are suppressed, and, in consequence of a Congestion of Blood to the Head, mortal Symptoms produced, it is a Question whether, if the Lochia are totally suppressed, or not sufficiently discharged, if a Fever is present, and if the Purples are apprehended, Venesection may be safely and usefully used. In *Fred. Hoffman. Dissert. de Venæsectionis prudenti Administrat.* 'tis shewn, that Venesection is sometimes highly beneficial in Exanthematous Fevers, even when the Efflorescences appear; and I can affirm, that by Venesection alone, proportioned to the Circumstances of the Patient, and performed either in the Foot or Arm, Child-bed Women at the very Gates of Death, and labouring under spasmodic Strictures, by which the Blood is impetuously forced to the Heart and Brain, have not only been preserved, but, also, received speedy Relief. Hence, if Child-bed Women die of a Suppression of the Lochia, we may justly ascribe the Cause of their Death to a Neglect of Venesection. Nor are there wanting celebrated Authors, who agree with me in this Opinion; such as *Willis de Febribus, Cap.* 16. *Welschius, de Purpura Lipsi. Rolfinckius, Lib. de Ord. & Meth. Consult. Lib.* 4. *Sect.* 2. *Cap.* 6.

In both Species of Purples, whether benign or malignant, nothing is so prejudicial, or has such a direct Tendency to increase the Cause of the Disorder, heighten its Symptoms, and render it malignant, as an Excess either of Heat or Cold; for this, of all Disorders, can least bear Refrigeration, or excessive Heat, but, with respect to both, requires great Moderation: So that the Room in which the Patient lies, and the Air she breathes, are always to be kept in a due and equal Temperature; for, if the cold Air is freely admitted to the Surface of the Body; or if only the Arms, after being hot and moist in Bed, are stretched out, the whole Body is forthwith seized with Horror and Shivering; and, after great Anxiety and Languor, the Pustules disappear; and this happens more easily, and with the greater Danger, the warmer the Room is, or the more closely the Patient has been covered with a Load of Bed-cloaths. In like manner, in all Exanthematous Disorders, especially the Purples, nothing, especially in the Vigour of the Disease, is more prejudicial, than frequent changing the Degrees of Heat produced by the Fire in the Room, because the sudden Changes from hot to cold, and from cold to hot, violently affect the nervous and sensible Substance of the Skin, and surprisingly vary and disturb its Tone, Strength, and Motion; so that the Pustules either cannot appear, or, if they appear here-and-there, cannot long continue.

Great Injury is done to Persons labouring under the Purples, by an excessive Heat of the Room or Fire; as, also, by Heat raised by the Exhibition of hot Liquors, or Medicines of an heating Quality; since, by these means, all the Parts being agitated by a continual Heat, the Strength is not only impaired, and the porous Substance of the Skin being too open, too great a Quantity of the Moisture dissipated, but the morbid Matter, by the hot intestine Motion, is, also, rendered more subtile, penetrating, and acrimonious; so that the Itching, Heat, and Anxiety, are so far from being diminished, that they are increased. Hence we often observe, that the Symptoms are augmented, and rendered more dangerous, by drinking large Quantities of hot Tea, or any other Infusions, or by eating hot Aliments, or using hot Liquors.

Much less can the Purples bear the internal Use of heating Medicines, Wines, spirituous Liquors, sudorific and expelling Substances, bezoardic Tinctures, and Essences, together with Alexipharmics, since, by means of these, the Disorder is always augmented. Thus I have seen chronical Purples of a mild Nature, and free from a Fever, and violent Symptoms, by external Heat, the Use of Antiscorbutics, and purifying Decoctions, and a strict sudorific Regimen, converted into Purples of the malignant Kind; so that the Patient has afterwards been afflicted with febrile Heat, a Loathing of Food, a Languor of the Strength, and a Want of Sleep. It has, also, been found from Experience, that the sooner and more impetuously the Purples are expelled by Medicines, and an hot Regimen, the more easily they are repelled to the internal Parts, by the slightest Cause.

Besides, in the Purples, excessive and liberal Purging is highly prejudicial; for so peculiar is the Nature of this Disease, that it admits neither too great Costiveness, nor too great Solubility of Body, much less artificial Evacuations by Stool. Hence, if the Patient is for a long time costive, the pent up Recrements are convey'd to the Surface of the Body; and the bilious, mucous, and fermentable Scoriæ, which ought, by means of the Liver, Pancreas, and glandular Coats of the Intestines, to be evacuated by Stool, are convey'd to the Skin; or, being collected, and mutually mixed, in the long and winding Canal of the Intestines, they are more corrupted by their Continuance there; and, being thence convey'd to the Mass of Blood, along with the chylous and nutritive Juices, lay a copious Foundation for the Disease, and the Increase of the morbific Matter. Hence, unless the Evacuation by Stool, and the other Excretions, are recalled and reduced to Order, the Disease is rarely perfectly cured, but either frequently returns, or is long protracted.

We are, also, to take care not to procure the Excretions, by acrid stimulating Medicines; for which Reason we are carefully to abstain from all, even the mildest Emetics, all Purgatives and Laxatives, tho' destitute of Virulence, as, also, from all saline Substances; nor is it always safe to render the Body soluble by a Clyster, or Suppository, especially before, and a little after, the Eruption of the Pustules; for, the internal Parts being stimulated by this means, the Motion of the Fluids to the Surface of the Body is forthwith disturbed, the Perspiration obstructed, and the Pores of the Skin contracted, so that the Efflorescences disappear.

Unseasonable Venesection, also, contributes a great deal to the dangerous Retrocession of the Purples; for as in all Exanthematous Disorders, so especially in the Purples, it is of the greatest Importance, that the Blood should be in a due Quantity and Proportion, and that it should be convey'd to the Surface of the Body; for either an Excess, or a Defect, is attended with Danger. If the Quantity of Blood is too great, from the spasmodic Strictures of the Parts, fatal Congestions of the Blood in the nobler Parts are to be dreaded. But, if the Quantity of the Blood is too small, it cannot be forced to the most minute Vessels of the Skin, and the Organs destin'd for the Secretion of the Sweat; and the peccant Matter is less duly eliminated through this capillary Strainer, but with the greatest Danger remains immoveable in the internal Parts of the Body. Hence hardly any thing is more to be dreaded in this Disorder, than the Danger arising from unseasonable Venesection. I myself have frequently seen the Practice of some, who, in chronical Purples afflicting hypochondriac Patients, subject to spasmodic Strictures, advised Venesection, so unlucky, that, the Exanthematous Efflorescences ceasing suddenly, an apoplectic Fit was brought on. In Cases of this Nature, I have, also, known the most violent Contractions of the Joints, and almost fatal convulsive Motions of the Parts, brought on by ill-timed Venesection.

In the Miliary Fever, some advise Vesicatories, if the Disorder proceeds from an acid corrupted Lymph, that by this means the peccant Matter may be extracted, and, at the same time, the oppressed nervous Fibres stimulated to a stronger Contraction. Thus *Hamilton*, in his Treatise *de Febre Miliari*, highly extols the repeated Application of them to the Scapulæ, in the following manner: "The Serosity of the Humours is "excellently lessen'd by Vesicatories; for, by their means, "the morbific Matter being in some measure lessened, Nature "can more easily throw off the rest in the manner to which "she is accustomed; so far are Vesicatories from hindering "the Eruption of the Pustules." But, though this Method of affording Relief in the Pustules seems pretty consonant to Reason, yet, I confess, I never used it; and must, therefore, leave it to others to make Trial of it. *Frederic Hoffman.*

See MILIARIS FEBRIS.

PURULENTIA. Purulence, or Suppuration.

PURULENTUS. Purulent, full of *Pus*, or Matter.

PUS. Matter. See ABSCESSUS, INFLAMMATIO, and SUPPURATIO.

PUSCA. The same as POSCA. *Blancard.*

PUSILLATUM, or PUSULATUM. A coarse, or grossly Powder.

PUSTA. A Digestion of Sanies. *Rulandus.*

PUSTULA. A Pustule. These principally appear in the Spring, and are of various Kinds; for sometimes a certain Roughness arises all over the Body, resembling that which is produced by the Application of a Nettle, or the Obstruction of Sweat,

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Sweat, and are by the *Greeks* called ἐξανθήματα. These are sometimes red, and sometimes retain the natural Colour of the Skin; sometimes large Numbers of them appear of the Bulk of *Vari*, and sometimes larger. There are, also, Pustules of a livid, a pale, a black, or any other unnatural Colour, with an Humour contained in them. When these break, the subjacent Flesh appears, as it were, ulcerated. These are by the *Greeks* called φλύκταιναι ἑλκώδεις, and are produced by Cold, Fire, or Medicines.

But the φλυζάκιον (*Phlyzacion*) is a Species of Pustule, somewhat harder, whitish, and rising in a sharp Point. But Pustules are sometimes converted into small Ulcers, either moist or dry, sometimes accompanied only with an Itching, at other times with Inflammation and Pain; and a Pus, or Sanies, or both, are discharged. This happens principally in Children, rarely in the Trunk of the Body, but frequently in its Extremities.

The worst Species of Pustule is, that call'd ἐπινυκτίς, which is generally of a somewhat livid, blackish, or even of a white Colour. Round about this Kind of Pustule, there is a violent Inflammation; and, when it is laid open, a mucous Exulceration of the same Colour, contained in the Pustule, is found within. The Pain accompanying it is far more intense than could be expected from its Bulk, which is no greater than that of a Bean. This Species of Pustule, also, arises on the Extremities of the Body, and generally in the Night-time; from which last Circumstance, the *Greeks* gave it the Name of ἐπινυκτις.

In the Cure of all Pustules, the first Step to be taken is, to use much Exercise and Walking; and, if these cannot be practis'd, Gestation is their best Succedaneum. The second Step is, to diminish the Quantity of Aliments, and abstain from all acrid and extenuating Substances. The same Measures are to be taken with the Nurse, when a sucking Infant is affected with Pustules. Besides these Steps, when the Patients are robust, and the Pustules but small, they ought to sweat in a Bagnio, have Nitre sprinkled on the Pustules, and be anointed with a Mixture of Wine and Oil, after which they are to go into the Bath. If these Measures prove ineffectual, or if the Pustules are of a large Kind, Lentils are to be applied to them; and, when the Skin is removed, we are to have recourse to mild Medicines. After the Application of the Lentils, the ἐπινυκτις is commodiously cured by Knot-grass, or green Coriander.

Ulcers formed from Pustules are removed by Litharge mix'd with the Seeds of Fenugreek, adding Oil of Roses, and the Juice of Endive, till the Preparation is of the same Consistence with Honey. The Pustules of Infants are very properly anointed with the following Preparation:

> Take of the Stone by the *Greeks* called πνεῖσης, eight Drams; mix with fifty bitter Almonds; and add three Cyathi of Oil, in order to make an Ointment: Before the Use of which, however, the Pustules ought to be anointed with Cerus. *Cels. Lib.* 5. *Cap.* 28.

PUTORIUS. The Fitchet. The Flesh of this Animal is said to be resolutive, externally applied.

PUTREDO, or PUTREFACTIO. Putrefaction.

The happy Influence of Natural Philosophy and Chymistry upon Medicine is in no Instance more palpably evinced, than in the Doctrine of Putrefaction; the great Importance of which in Medicine, and its Necessity to the Physician, we shall prove from several Arguments, after having investigated its Nature, Cause, and Effects, from physical and chymical Principles, that it Use, in the Application of things of a medicinal Nature, may be the more apparent. The Putrefaction, therefore, of a Body, is nothing but an intimate Dissolution of the Parts of which a Body consists, from their Union and Connection, accompanied with a volatile and fetid Exhalation, and changing the whole Crasis, Properties, and Qualities, of the mixed Body.

The Dissolution of Bodies is justly distinguishable into superficial and intimate, or radical. In the former, the Body is only divided into its most minute Parts, every one of which still retains its peculiar Nature, Virtues, and specific Qualities. Thus, in a Solution of Gold with Aqua Regia, though the Gold is resolved into highly minute Atoms, as is obvious from this, that a few Drops of such a Solution are capable of giving another Taste to a whole Pint of Spirit of Wine, yet by a Precipitation made by some Salt, either of the lixivial, or volatile Kind, these Particles, or Atoms, appear to have perfectly retained the Nature of Gold. But an intimate, or radical Solution is that, in which the Parts of a Body are so removed from their Situation, and so resolved from their intimate Mixture, on which the specific Differences of Bodies depend, that, being absolutely transformed into another Texture and Disposition, they assume new Qualities and Virtues. Thus, in the Solution of the Aliments in the Stomach and Intestines, by the subtile and universal salival Menstruum of the Stomach, and the Influence of the animal Heat, the intimate Mixture and Texture of the Aliments are so destroy'd, that their Taste, Smell, Colour, Consistence, and other Qualities, being destroyed, they produce Chyle and Fæces. Thus, also, in the Fermentation of Vegetables, the sweet Juices of Grapes, and Summer Fruits, by means of Fermentation, lose their sweet and temperate Nature, and are either changed into an acid, spirituous, or a vinous intoxicating Liquor; among these intimate Solutions, we ought, also, to reckon Putrefaction, the Nature and Effects of which consist in extinguishing the Mixture, Form, Qualities, and Virtues of Bodies.

The Cause of this intimate Dissolution, whether of the fermentative, or putrid Kind, is an intestine Motion of the moist Parts, and a copious Influx of a hot and violently agitated Matter; for as there can never be a Solution of a solid Body without Moisture, so without Water, the original Fluid, there can neither be Fermentation nor Putrefaction; for Water is the universal Menstruum, which not only deeply insinuates itself into the Pores of Bodies, but, also, because its Parts are in a continual intestine Motion, is able to disjoin and remove from their Situation the Parts of Bodies, which are variously mixed and united: But it produces this Effect most happily, when assisted with Heat; which is no more than the rapid Motion of an ethereal and celestial Matter, furnish'd with a great expansive Power, propelling from the Centre to the Circumference. The Moisture, then, when acting on Matter capable of Fermentation and Putrefaction, resolves the saline, sulphureous, and earthy Parts, receives them into itself, and carries them off with it in its Motion.

But though both Fermentation, and Putrefaction, are produced by an intestine Motion of the Moisture, and of the hot Principle, yet their Effects are very different, since, by Fermentation, a sulphureous inflammable Spirit, but, by Putrefaction, a volatile urinous Spirit, is produced; for which Reason Putrefaction is always accompanied with a fetid Smell. 'Tis, also, to be observed, that the Juices of Animals admit of no Fermentation, nor can any vinous inflammable Spirit be prepared from them, since these are the Properties of Vegetables alone; which, however, are capable of Putrefaction, as well as the Juices of Animals. The Reason why Animals, and their Parts, are only capable of Putrefaction, but can never, by Fermentation, yield an inflammable Spirit, is only to be sought for in the different Mixtures of Animals and Vegetables, since these last admit into their Mixture not only an Oil, but, also, an Acid, which in Distillation is obtain'd from them; whereas in Animals no such thing is found, since they are rather impregnated with an Oil, and a subtile volatile Earth, which, by the Action of the Fire, becomes saltish. In the Fermentation, therefore, of Vegetables, by the warm intestine Motion the tartareous Acid is first dissolved, by which, when it begins to act on the sulphureous and oleous Parts, an Effervescence, in consequence of this mutual Action and Reaction, is not only excited, but, also, a copious penetrating Vapour is raised, and carried off in the Air; and, lastly, by the mutual Combination of acid and oleous Parts in the Acid, a spirituous or vinous Liquor is produced. But in Putrefaction, where the Acid is defective, the oleous, sulphureous, and saline volatile Principles are forthwith carried off; and, being neither fixed nor corrected by the Acid, are freely dissipated in the Air with a nauseous and fetid Smell; which, according to indisputable chymical Experiments, is produced by an oleous, or sulphureous Principle, and a volatile Salt. A palpable Instance of this we have in mineral Sulphur, which, in its native State, is without Smell; but, when fused over the Fire with a lixivial Salt, assumes an ungrateful Odour. If, therefore, we intend to obtain a volatile oleous Salt from Animals, we must either subject them to Putrefaction, or burn them with a strong Fire; by which means both their oleous and volatile Parts are freed from the Contexture of other Parts with which they were entangled.

We have already observed, that Moisture and Heat were the principal Instruments of Dissolution, both in Fermentation and Putrefaction; so that, without the former two, neither of these can be performed. Hence it follows, that a Body, which has otherwise a great Tendency to Putrefaction, cannot be more effectually preserved from it, and kept sound, than by removing Heat and Moisture. For this Reason, Bodies sufficiently dried are never observed to be subject to Putrefaction and Corruption. Pork and Beef dried by Smoke, and the Influence of the Air, do not easily become putrid: But, if, by Maceration in Water, they receive a due Degree of Moisture, they soon become putrid in a warm Air. Such, also, is the peculiar Nature of Cold, that it preserves Bodies from Putrefaction, for no other Reason, than that by a certain rectilinear Motion it presses and conjoins the Parts, so that they are not easily disjoined, and put out of their Situation; whereas Heat, by its vertical Motion round its own Axis, expands and enlarges the Pores, and propels the Parts from the Centre to the Circumference.

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But as there are various ways of removing Moisture, or Humidity, so there are as many Methods of preserving Bodies from Putrefaction. Thus 'tis certain from Experience, that highly rectified Spirit of Wine is very proper for preserving Bodies from Putrefaction, when kept in it, because it quickly imbibes and absorbs the Moisture of Vegetables and Animals from their internal Pores and Parts. Hence Bodies, before soft, are indurated: But the Experiment succeeds more happily, if fresh dephlegmated Spirit is frequently pour'd to them. And though by means of distil'd Oils, and liquid Balsams, the Embalming and Preservation of Bodies from Putrefaction may be obtained; yet highly rectified Spirit of Wine is far preferable to them all, because it is of a more penetrating Nature, and more easily enters the internal Parts of the Bodies, than resinous balsamic Substances.

There is, also, another Method of preserving Bodies from Corruption, which is by Salts, the most considerable of which are common Salt and Alum, which excellently imbibe the Moisture, by the Absorption of which the fleshy Fibres are rendered harder. The more pure and dry these Salts are, the more happily they produce this Effect. And as Alum, in consequence of its large Number of terrestrial Particles, is of an astringent Quality, by which the Parts are more intimately united and connected with each other, so by means of a Lixivium prepared of Alum, and common Salt, all the Viscera of the human Body may for several Years be preserved entire.

'Tis to be observed, that corruptible Fluids, if agitated with a continual Motion, do not easily become putrid; but that stagnant and putrescent Fluids, such as are observed in Marshes, are easily susceptible of Corruption: For Heat and Moisture, continually acting upon quiescent Particles, more easily dissolve and destroy their Mixture, than if they perpetually changed their Place and Situation, in which case the Action and Change of Heat is more transitory; whereas, in quiescent Particles, it is more durable and permanent. We, also, observe, that Vegetables abounding with Moisture, and collected in a large Heap, become more easily warm and putrid, than when they are scattered; in which Case, they remain free from Putrefaction: The Reason of which is this, that, when they are collected into an Heap, the Effluvia excited by the Motion of the Moisture, and the intestine Warmth, cannot be exhaled and dissipated in the Air; but, being pent up, and returning, as it were, on themselves, accelerate the intestine putredinous Motion, instead of diminishing it. But nothing more effectually prevents the Corruption of corruptible Bodies, and dissipates it when beginning, than the Access of a free Air, especially of the dry and cold Kind. 'Tis, also, to be carefully observed, that a beginning Putrefaction is of a very multiplying Nature, and diffuses itself very quickly; for it acts like Leaven, which quickly puts the homogeneous, and especially the most adjacent, Parts into the like putredinous Motion with itself; as we plainly see in fermentable Substances, where a little Leaven added to a farinaceous Mass, or the Juice of Vegetables, immediately throws them into the like fermentative Motion.

Having thus, from the Principles of Natural Philosophy and Medicine, investigated the Nature, Generation, and Effects of Putrefaction, it will be far more easy to apply what we have said to medicinal Purposes in the human Body, in which a singular and wonderful Phenomenon recurs to be explained, that is, why the Bodies of Animals, and the Juices contained in them, which in their own Nature are so prone to Putrefaction, when Moisture and Heat are present, do not, however, become putrid so long as the Animal is alive, but remain sound and entire; whereas they quickly become putrid after the Death of the Animal. And in this principally consists the Preservation of Life, the Causes of which ought to be carefully investigated by every Physician. Those are greatly deceived, who seek for the Cause of the Preservation in a certain vital Spirit, or Balsam, and the innate Heat, since, instead of specifying the true Causes, unmeaning Words which explain nothing, are only used. They are, also, no less deceived, who think that this Preservation is the Effect of the Salt and Sulphur contained in the vital Juices; for 'tis certain from Experience, that neither saline, nor spirituous Substances, nor balsamic Medicines, copiously exhibited, are of such Efficacy as to remove Putrefaction, since they rather contribute greatly to promote it; for we observe, that the Bodies of scorbutic Patients, whose Juices abound with saline and sulphureous Parts, easily fall into a sphacelous Corruption; so that other Causes must be assigned for this vital Duration, or Preservation. Now we observe, that so long as the Mass of Blood and Humours, of themselves very corruptible, is continually, by a progressive and circular Motion, carried through the vascular Structure of the Body, it remains free from Corruption; but so soon as these Humours, ceasing to move, or circulate, stop, or become stagnant, in the solid Parts, they soon become subject to Putrefaction, which immediately diffuses itself, and, spreading to the adjacent Parts, brings on a Mortification and Sphacelus of them. Whenever, also, the Circulation of the Blood is totally removed, which happens in Death, Putrefaction immediately ensues, unless it is prevented by Cold, or some other external Cause.

Hence 'tis obvious, that the Circulation of the Blood is the Cause which defends the Bodies of Animals from Corruption; and so long as the Circulation is entire, the Body is free from all the Injuries of Putrefaction. But we must inquire, whether this Flux and Reflux of the Blood produces this Effect only by its progressive Motion, or whether other Causes, also, concur with it, which seems most probable; for, by means of this continual Circulation of the Blood, the hot intestine Motion of its constituent Parts is greatly increased, and the Juices not only consumed, but, also, gradually converted into a saline sulphureous Excrement. Hence 'tis obvious, that the Circulation has rather a Tendency to destroy than preserve the due Mixture of the Mass of Blood, as is obvious from the intense Heat of Fevers, where, in consequence of the brisk Circulation of the Blood, a greater intestine Agitation of the Parts is produced, and a more violent Heat excited, which not only consumes the Body, together with its Strength and Juices but, also, resolves these last into excrementitious Parts, which ought to be eliminated partly by Perspiration, and partly by Urine and Stool. Besides, with the Air, Aliments, and Drink, many Parts foreign to the Mixture of Blood, and highly subject to Corruption, are often mixed with the Blood; and, if these are retained in the Habit, they must naturally disturb and destroy the Nature and benign Mixture of the Blood. During the vital Action, and perpetual Motion, of the Fluids, we, also, observe, that a corruptible Matter fit for inducing Putrefaction, is generated in the Blood. Hence Reason dictates, that these Parts, so prejudicial to Life, by spoiling the due Crasis and Mixture of the Blood, should, with all Care, be separated, secreted, and eliminated from the Body.

Hence it is, that unerring Nature, in the curious Structure of Animals, has formed numberless secretory and excretory Organs; by means of which, not only the Excrements of a more fixed, but, also, of a more moveable, volatile, saline, sulphureous, aqueous, and aereal Nature, are continually and uninterruptedly separated from the Blood and vital Humours. This Purpose is excellently answer'd by that large Organ the Liver, which is continually employ'd in separating from the Blood the sulphureous Scoriæ, together with the hot, saline, and serous Parts. There are, also, here-and-there in the Body, numberless conglomerate Glands, which consisting of infinitely small Tubes, continually secrete a subtile and highly fermentable Fluid of a salival Nature, which, having performed its Office, is eliminated from the Body. The Skin, also, being full of Tubes and Pores, is, as it were, an universal and common Emunctory, through which the serous, sulphureous, saline, and excrementitious Parts of the Humours are eliminated. The Kidneys are the Organs through which a saline, sulphureous, and thick Serum is strained; and through the large Intestines the feculent Sordes and Fæces are evacuated.

For, in order to preserve the due Mixture of the vital Fluids, 'tis not only requisite there should be a perpetual Separation of the superfluous Parts, but 'tis, also, necessary there should be another Preservative of Life and Health, not mentioned by modern Writers; which is a fresh Accession of mild and temperate Juices, in the room of the corrupted Fluids, eliminated from the Body. Hence we see the Reason, why Men, and brute Animals, in order to prevent internal Putrefaction, and preserve Life, ought constantly to have due Supplies of Aliments, from which laudable, temperate, sweet Juices, fit for nourishing and increasing the Strength, such as the chylous and lacteal Juices are, may be again generated; for, without such a new Accession and Afflux of fresh Juices, Life and Strength cannot be long preserved; so that Life is excellently preserved, and a mortal Putrefaction prevented, in the Bodies of Animals, by means of Aliments, and due Excretion. It must, also, be observed, that in Adults, who stand in no need of having the Parts of their Bodies farther increased, the Excretions ought, in order to a due and equable State of Health, to be equal to the Aliments taken.

This firm and unshaken Foundation of Health, consisting in this, that every Substance approaching to Corruption, and capable of inducing Death and Destruction, ought carefully and perpetually to be abstained from, furnishes us with various Corollaries and Theorems, of singular Use in Practice: For, first, from what has been said, we may deduce the Nature and immediate Cause of Death, and the Putrefaction which succeeds it, and is, in its own Nature, highly unfriendly to Life: The Cause, then, of these Effects is a destroyed Circulation of the Blood, and the Putrefaction and Corruption arising thence, which, on the contrary, is generally the Cause of the Destruction of the Circulation, and, consequently, of Death; for, from a careful Dissection of those who have died both of acute and

and chronical Disorders, the Causes of Death are always manifest and conspicuous; since one or more of the Viscera, or more noble Parts, appear corrupted, putrefied, or sphacelated, by an Extravasation or Stagnation of the Humours: But in those who die suddenly, or of violent acute Disorders, which are not to be known without Difficulty, polypose Concretions, consisting of various Fibres and Membranes, are frequently found in the large Vessels; especially in the Ventricles of the Heart, and the Sinuses of the Dura Mater; which, by obstructing the free Circulation of the Blood, destroy the Patient.

Since, therefore, the whole Business of the Physician consists in procuring long Life, preserving the Body sound, and preventing untimely Death, and the Disorders which bring it on, he certainly cannot, in a more effectual manner, answer these grand Intentions, than by preventing and removing Corruption and Putrefaction, both in the internal and external Parts. But this End cannot be better obtained, than by preserving a free Circulation of the Blood through all the Parts of the Body, and removing every Cause which may in the least obstruct and hinder it.

But several Causes are capable of disturbing and hindering this Circulation; the most considerable of which is, a Redundance of Blood and Humours, which, by its strong Resistance and Expansion, impairs the Elasticity of the Fibres of the Heart, and its Auricles, so that the Circulation becomes very slow and languid: And this Circumstance, unless soon removed, produces Stagnations of the Humours, Infarctions of the Viscera, Obstructions, Indurations, Extravasations of the Humours, and putredinous or aposthematous Corruptions of the Parts. By this slow Circulation of the Blood and Humours, the Excretions are lessened, and particularly those made by Perspiration, and that of the bilious Humours, large Quantities of which are daily secreted in the Vessels of the Liver. Hence large Quantities of Impurities, of various Kinds, must necessarily be accumulated in the Mass of Blood.

But a Plethora so unfriendly to Health and Life is very incident to those, who, being of spongious Habits, live luxuriously, and indulge themselves in Ease and Quiet: But Women are still more disposed, than Men, to generate a larger Quantity of Blood than is necessary to Nutrition and Life. Lest, therefore, this Redundance of Blood and Humours should injure Health, or threaten Death, the Structure of our Bodies is so artfully contrived, that the Vessels and nervous Parts have a peculiar Kind of Motion, by which they prevent Stagnations, and free themselves from the Load of redundant Blood, so unfriendly to Nature; in Childhood, generally by the Nose; in Women, by the Uterus; and in Men, by the hæmorrhoidal Discharge returning at stated Periods: When, therefore, the usual and salutary Excretions, destined for diminishing the redundant Blood, are, by any Cause, rendered defective, diminished, or violently suppressed, numberless Misfortunes are produced; and, unless Relief is soon afforded, the Body is rendered subject to Disorders of all Kinds, both of a chronical and acute Nature, as in shewn in *Medicin. rational. Fred. Hoffman. Tom.* 2. I have frequently seen plethoric Women, who, having their Menses suppressed by a Fright, upon the Access of Cold, or the Use of a drastic Purgative, have soon after died of a sphacelous Corruption of the Parts; and immediately after Death, their Bodies became tumid, and were seized with an highly fetid Putrefaction, large Blisters rising here-and-there upon them.

From what has been said, any one may conceive, that Putrefaction and Death may be generated only by a Redundance of laudable Blood: In order to prevent which, no Remedies are more proper than Venesection, or a Restitution of the usual Excretions of Blood: But if any one is unaccustomed to Venesection, and naturally abhors it, and at the same time feeds and lives in such a manner as is fit for generating large Quantities of Blood, whilst Nature is slow, or absolutely defective, in carrying on the Excretions; such a Patient is to be treated in another manner, and great Care taken, lest he fall into some violent, or, perhaps, mortal Disorder, arising from Putrefaction: For, according to his peculiar Circumstances, such Things as lessen the Redundance of the Blood and Humours, are to be used; such as proper Exercise, Abstinence, light Drink and Aliments, Bathing, Laxatives, Infusions, and a due Use of the Mineral Waters, both of the hot and cold Kind.

It is, also, certain, that a mortal Putrefaction may be produced, by a Penury or Defect of Blood: For though it is seemingly most probable, that different Causes must produce different and dissimilar Effects; yet it is certain, from various Instances, that, in the human Body, contrary Causes may conspire in the Generation of the same Disease: But we shall now content ourselves with shewing, in what manner both a Redundance and Penury of Blood may induce a mortal Corruption on the Humours, and solid Parts. We have already observed, that the redundant Blood easily stagnates in the Vessels, and soon becomes impure, in consequence of the Diminution, occasioned by a Plethora, of the Secretions and Excretions, which ought to free the Blood from impure Sordes, and excrementitious Matter, which have a great Tendency to Corruption: The same, in like manner, happens from a Defect of laudable Blood; for, as, by a natural and due Quantity of Blood, all the Vessels are kept open, so, in consequence of a Penury or Scarcity of it, they collapse, and have their Diameters lessened, or, perhaps, are at last totally blocked up: Hence the benign and nutritive Juices can neither be conveyed to the solid Parts, nor a sufficient Quantity of the nervous Fluid be generated in the Brain; by which means the Strength is greatly impaired. Besides, as the Impulse of the Blood, by the due Diastole of the Heart and Arteries, such as is observable in the Pulse, depends upon a sufficient Quantity of Blood, it must necessarily happen, that, under a Defect of this Fluid, the Pulse must become very weak and languid, whilst the Blood itself is not duly propelled through the minute capillary Vessels of the Viscera, but stagnates here-and-there in the Viscera; such as the Lungs, Spleen, and Liver: And this State is succeeded by Corruptions, Cachexies, slow and hectic Fevers.

Now there is not a nearer Way to Corruption, and the Disorders arising from it, than when, after the Strength is consumed, by violent Hæmorrhages, severe previous Diseases, long-continued Passions of the Mind, Grief, or Hunger, Persons voraciously eat large Quantities of Aliments, which, as they cannot be sufficiently digested, and the useful separated from the useless Parts, on account of the weak and languid Force of Natur, so they not only generate a large Quantity of peccant Humours in the *Primæ Viæ*, but the Vessels, also, in consequence of the obstructed Excretions, are filled with impure and corruptible Juices, and a great Disposition to malignant and putrid, or to slow and hectic Fevers is brought on; for it is certain from Experience, that terrible Camp Diseases, as malignant and petechial Fevers, the *Hungarian* Fever, Diarrhœas, and malignant Dysenteries, afflict the Soldiers most, spread themselves farthest, and are most contagious, in the Autumn, and when they begin to leave the Camp, for no other Reason than that, during the Summer, under the long Heat, the Night-colds, the continual Fatigues and Watchings, or, perhaps, corrupted Aliments and Liquors, they have lost their Strength, and laudable Blood; instead of which they have their Veins and *Primæ Viæ*, stuffed with large Quantities of corrupted Juices, which are highly subject to Putrefaction, and, in acute Fevers, generally induce a mortal Sphacelus on the internal Parts.

Having thus considered the Cause of malignant Disorders, which is a Defect of laudable Blood and Juices, and a consequent easy Transition to Putrefaction, every thinking and judicious Physician must certainly perceive, that nothing is more dangerous than to exhibit too much Aliments, especially of bad Juices, to Persons weakened by Diseases, or any other Causes; since such Persons are, according to *Celsus*, highly subject to putrid Diseases: But it is better, in such a Case, gradually, and by little and little, to restore the consumed Blood, to eliminate the Crudities attending such a State, either by Perspiration or Stool, by means of gentle Evacuants; and then to corroborate the Digestion, and concoctive Power of the Stomach, by temperate, corroborating, and stomachic Medicines, by which means the violent Disorders, to be dreaded from a Corruption and Putrefaction of the Humours, may be excellently prevented.

There is, also, another expeditious Method of bringing on a mortal Putrefaction, in sound vigorous Persons, in the very Flower of their Age; which is by the Exhibition of Poisons, especially those of a caustic Quality, such as the three Species of factitious Arsenic, highly acrid Purgatives, or drastic Emetics prepared of Antimony; for, unless the violent Operation of all these is soon stopt by proper Remedies, they quickly prove mortal, by inducing terrible Spasms of the nervous Parts, and a Putrefaction of the nobler Organs of Life. Upon dissecting Patients taken off by these means, sphacelous Spots of the Stomach and Intestines, accompanied with an intolerable Stench, present themselves to our View; for Poisons of this Kind, by constricting the nervous Parts, and Vessels of the Stomach, produce Inflammations, which degenerate into a Sphacelus, which is the more fatal to Life, because it seizes the nervous and membranous Parts, such as the Stomach and Intestines, which have an intimate Consent with those Parts, which are furnished with an exquisite Sensation, and a brisk lively Motion, and which they, also, draw into the like irregular Commotions: It is, also, observable, that cold Liquors drank by a Person over-heated, and covered with a profuse Sweat, are highly prejudicial, and, in their Operation, frequently imitate Poisons, by quickly inducing a Sphacelus and Death: And though the Effect is not always so fatal, yet we have Instances in which cold Liquors, drank by over-heated Persons

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Persons, have proved mortal; and, upon laying open their Bodies, their Viscera were found sphacelous. Thus, some Years ago, a young Man of eminent Distinction, in the Flower of his Age, being covered with a profuse Sweat, after violent Exercise, drank a large Quantity of cold Ale, at a Draught; in consequence of which, being seized with a great Languor, an Uneasiness about the Præcordia, a Desire of vomiting, and frequent Deliquiums, he died of Convulsions on the fourth Day; and, upon opening his Body, a Part of his Stomach was not only sphacelous, but his Spleen, and the Left Lobe of his Lungs, were found resolved into an highly fetid and putrid Mass, black as Ink: For as the Viscera consist almost entirely of Congeries of highly minute Vessels, it is of course obvious, that they must readily be subject to Infarctions, and a Stagnation of Blood. When, therefore, a large Quantity of Liquor, actually cold, arrives at the Blood, which, in consequence of its Motion and Heat, is pretty thin and fluid, it is not surprising, that the Blood should be immediately coagulated, and, being firmly impacted in the Vessels, become putrid. In this Case there is not a more efficacious Remedy than speedy and seasonable Exercise and Motion, whether by riding on Horseback, or in a Chariot, after drinking a large Quantity of a warm Infusion of the Flowers of Daisies, common Chamomile, Carduus Benedictus, Paul's Betony, and Scordium; by which the Coagulation of the Fluids is prevented, and the free Circulation of the Blood, through the Vessels, promoted: Hence we see how simple, and yet how efficacious, the Remedies for preventing the most terrible of Deaths sometimes are.

Among the terrible Disorders arising from Putrefaction, we may justly class the *Morbus Niger* of *Hippocrates*; under which, Humours of a black Colour are not only vomited, but, also, highly fetid Excrements discharged by Stool. Here it is to be observed, that a Vomiting of bloody, or black, Matter rarely proves mortal; but if a large Quantity of Blood is, from the ruptured Veins of the Ileum, conveyed to the Fæces of the Colon, and is not immediately discharged, but, stagnating, is put into a putredinous Motion with the Fæces, accompanied with an highly fetid Smell, it soon kills the Patient: For, in my Opinion, those who die of this Disorder are not so much destroyed by the Effusion of Blood, which is not sufficient to destroy Life, as by the Putrefaction arising from the Mixture of the Blood with the Excrements; for this fetid Vapour is highly unfriendly to Nature, since, by its Subtilty, it penetrates to, contaminates, and totally destroys, that Fluid which animates the nervous and membranous Parts, and governs Sensation and Motion; because the Strength, the Origin of which is no other, than a pure and subtile State of the Humours, immediately begins to fail, and at last is totally destroyed, as we observe in a Sphacelus, and ulcerated Cancer of the external Parts, where the Putrefaction, penetrating into the internal Parts, proves the only Cause of Death, by destroying the Agility of the animal Spirits.

Among the putrid and malignant Disorders, the most terrible are the Plague, and petechial Fevers, which are sometimes more violent, though less contagious, than the Plague itself; for these Disorders are propagated, and conveyed to the Body, by a kind of Miasma, which is nothing but a putredinous Leaven; for as a small Quantity of any Mass already putrid, mixed with corruptible Substances, forthwith infects them, and surprisingly propagates itself, so highly subtile Vapours arising from Persons labouring under the Plague, or petechial Fevers, and received by the Air into other Bodies, partly by the Mouth and Nostrils, immediately reaches the Mass of Blood, and being partly swallowed with the Saliva, passes to the Primæ Viæ, quickly multiplies itself, and, at last, contaminates the whole Mass of Humours, producing the most terrible Symptoms. That the Nature and Essence of these Diseases consist in Putrefaction, is obvious from the uncommon Loss of Strength, the great Weakness and Inequality of the Pulse, the Conversion of the Carbuncles and Buboes into Abscesses, the highly fetid Exulcerations, the nauseous Scent of the Excrements, the black and livid Spots dispersed over the Body, which are only Species of Sphacelations, and the Smell of the Body after Death. And though these Miasmata infect found and healthy Persons who contain a temperate Blood in their Veins, yet it is generally observed, that they exert a greater Force and Influence on Persons of cacochymic Habits, whose *Primæ Viæ* are full of peccant Juices, because they there meet with Humours already disposed to Putrefaction and Corruption; such as those of the salival Kind, which are easily thrown into a fermentative Motion: Hence the Reason is obvious, why the Plague rages most among poor People; and why those who are oppressed with Hunger, and live in an irregular manner, are most subject to those putrid Disorders. If a Dysentery, the Small-pox, the Measles, or a Purple Fever, are accompanied with Signs of a malignant Nature, and prove very mortal, they derive their malignant Nature from nothing but peccant Humours, and Juices disposed to Putrefaction, and corrupted by a depraved Habit of Body.

Having thus investigated the Nature of the Plague, and of malignant Disorders and Fevers, which consists either in Putrefaction itself, or an easy Transition to it, it will be no hard Task for the skilful Physician to find out proper Remedies, and a due Method of using them, both for the Prevention and Cure of these Disorders; for nothing is more effectual for Prevention, than a good Diet, and a proper Regimen, taking care not to load the Stomach with too great a Quantity of Aliments, especially of a corruptible Kind. We must, also, take care, that the salutary Excretions, by which the Blood is excellently depurated, be duly and expeditiously carried on; for, by this means, the Miasma, not finding a Substance similar to itself, either does not operate at all, or renders the Progress and Termination of the Disease far more happy than they would have otherwise been. Under the Cure, those things are carefully to be avoided, which increase the intestine Motion of the Blood and Humours, such as all alexipharmic, hot, bezoardic, and spirituous Substances, which are so far from hindering the Putrefaction, that they rather accelerate and diffuse it: The Patient ought, also, to abstain from all alcaline, volatile, fetid, and oleous Substances, which are only the Produce of Putrefaction: On the contrary, Acids, which, by fixing the volatile and oleous Parts, strongly resist Putrefaction, are the best Medicines in the Plague. To this Class, also, belong earthy bezoardic Substances, and such as keep the Body in a gentle Diaphoresis; since there is not a more expeditious Method of removing a beginning Putrefaction, and evacuating the subtile fermentable Parts, than by the Emunctory of the Skin: And this Intention is best answered by such Analeptics as restore the Strength, and promote the Circulation of the Blood. Earthy and bezoardic Substances have this peculiar to themselves, that they, in some measure, preserve the Mixture of the Blood, and hinder its Dissolution.

To malignant Disorders, also, belong hectic Fevers, which arise not from so active, but a slow-proceeding Putrefaction, which preys upon the Strength: For, upon opening the Bodies of those who have died of hectic Fevers, they have been found to proceed from corrupt Abscesses, degenerating into a Sphacelus, in some of the Viscera, especially the Liver and Lungs. And this Corruption of the internal Parts is the Cause, why these Fevers are with Difficulty, if at all, susceptible of a Cure.

It is, also, to be observed, that most acute Fevers prove mortal by no other means than Putrefaction, as is obvious from dissecting those who die of them immediately after Death; on which Occasion an intolerable Stench, arising from nothing but the Putrefaction, is perceived; and, for the most part, the Stomach and Intestines, or some of the nobler Viscera, are found sphacelated: But as nothing more resists the Generation of Putrefaction, and the Sphacelation of the internal Parts, than hindering the Stagnation of the Blood, and preserving its equable Circulation, so the whole Business of the Physician is to prescribe such Medicines as preserve the Circulation of the Blood, restore Strength, and promote Perspiration; such as temperate bezoardic Mixtures, consisting of the Waters prepared from the Flowers of *Egyptian* Thorn, black Cherries, Cinnamon without Wine, Carduus Benedictus, and Roses, distilled Vinegar, Syrup of Citron-juice, the *Mixtura Simplex*, Crabs-eyes, diaphoretic Antimony, Hartshorn philosophically prepared, and native or common Cinnabar; the Use of which is to be long persisted in. Nor are we to suffer the Patient to be long costive, because the putrid Sordes, when translated from the whole Body to the Intestines, and there fermenting together, prove the Fomes of Putrefaction: For the Prevention of greater Mischief, the *Primæ Viæ* are to be carefully cleansed. But, for this Purpose, we are never to use drastic stimulating Medicines, since only gentle Laxatives, and mild Clysters, are to be prescribed, not in every Period of the Disease, but in its Remission.

We now come to consider, whether Camphire, which so powerfully resists Putrefaction, that nothing is found more effectual against an external Sphacelus and Gangrene, and, for this Reason, is called the best of Alexipharmics, may be safely used, to check a Putrefaction. Now, tho' Camphire is an highly subtile, though coagulated, and very evaporable Oil, yet it differs from other distilled Oils in this, that these induce a much greater Heat on the Blood, than Camphire, which soon transpires; whereas the others, in consequence of their viscid Nature, and tenacious Texture, continue longer in the Pores and Parts: This may be confirmed by an Experiment; for half a Dram of Camphire, dissolved in one Dram of Brandy, and taken internally, by a sound Man, produces rather a Sense of Cold, than of Heat, in the internal Parts; nor is the Pulse increased, or the Urine tinged of a red Colour: But if twenty Drops of the Oil of Cinnamon, or Cloves, are diluted in Brandy,

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Brandy, and taken, there is a remarkable Increaſe, not only of the Pulſe, but, alſo, of the Heat. For this Reaſon, in malignant Diſorders, I greatly recommend the internal Uſe of Preparations of Camphire, both for the Cure of Inflammations and malignant Fevers: And in this I do not rely upon Speculation only, but, alſo, upon Fact and Experience, by which we ought to conduct ourſelves in the Uſe of all powerful and efficacious Medicines. In the Height and Exacerbation of the Diſeaſe, if the Skin, and all the Parts ſubſervient to Excretion, are ſpaſmodically conſtricted, and the internal Parts exceſſively hot, eſpecially if the Patient is young, and accuſtomed to ſpirituous Liquors, it is expedient to abſtain from Preparations of Camphire, which are moſt commodiouſly uſed in the Beginning, after cleanſing the *Primæ Viæ* by a Vomit, if neceſſary, in Conjunction with cinnabarine bezoardic Powders, and a few Grains of purified Nitre, uſing at the ſame time a ſudorific Regimen. I know ſome Perſons, who, by certain Signs, appearing to be infected with a contagious malignant Fever, have, by the ſeaſonable Uſe of Preparations of Camphire, once or twice exhibited, had a profuſe Sweat excited, and been perfectly freed from their Diſorder. In the time of the Remiſſion, when the Skin is moiſt, the Pulſe weak, and the Strength low, Camphire, with the Addition of bezoardic acidulated Subſtances, is an excellent Preſervative againſt Malignity; and in violent Deliriums, no Medicine is more efficacious than Nitre, mixed with a ſmall Quantity of Camphire. When the Strength is ſo far exhauſted by the Violence of the Diſeaſe, that it begins to be inſufficient, as it were, for promoting the Circulation of the Blood, it is excellently reſtored by a few Grains of Camphire, diſſolved in Oil of ſweet Almonds. And, laſtly, in Fevers, ariſing from Inflammations of the internal Parts, half a Grain, or a Grain, of Camphire, mixed with Nitre, and frequently exhibited, is of ſingular Service: This Powder I have, alſo, uſed with Succeſs, in violent Peripneumonies.

We now come to inquire, why ſcorbutic Patients, and thoſe waſted with Age, are, generally, ſo ſubject to a fatal Sphacelus, from the ſlighteſt external Cauſe, or ſome Fault of the Blood: This, then, happens, in conſequence of the Propenſity of the Blood to a putredinous Corruption; for a Scurvy is an exceſſive Impurity, or Cacochymy, of the Blood, ariſing from a Redundance of ſaline and ſulphureous Particles, which, in conſequence of the diminiſhed Secretions, not only remain in the Habit, but, alſo, contaminate the benign and temperate Humours, whoſe due and natural Mixture they deſtroy. A Blood, therefore, impregnated with Impurities of this Kind, eaſily degenerates into a State of Putrefaction; for which Reaſon ſcorbutic Patients are often afflicted with ichorous fetid Exulcerations of the Mouth, Fauces, and other Parts, whilſt the Gums become tumid and putrefied, with an intolerable Stench of the Mouth, and the inferior Parts of the Body are covered with Spots of a livid bluiſh Colour; which are the Signs of a ſlight Sphacelation. It is not, therefore, to be wondered at, that, from the ſlighteſt Cauſe, the Blood, becoming ſtagnant in the Parts, ſhould degenerate into a ſphacelous mortal Putrefaction; as, alſo, that a Sphacelus, ariſing from an internal Cauſe, is incapable of being cured; for the Blood, already greatly diſpoſed to Corruption, is ſoon ſo infected by the Putrefaction already began in one Part, that the Danger cannot be averted by the moſt efficacious Medicines. Sphacelations, both of the internal and external Parts, are, alſo, very familiar to old Perſons, becauſe they have many Circumſtances in common with ſcorbutic Patients; for, in conſequence of the Thickneſs and Rigidity of the Fibres, contracted by Age, all the ſecretory and excretory Ducts become narrower, and have their Diameters leſſened: Hence the Secretions of the laudable Humours, the Application of the nutritive Juice to the minute Veſſels of the Parts, and the Influx of the nervous Fluid into the Nerves, are diminiſhed, the Strength of the whole Body, and all its Parts, impaired, and the Conſtitution rendered dry, parched, and waſted, by a ſlow Conſumption: But as in this Decline of Age, in conſequence of the contracted Emunctories, and diminiſhed Excretions, ſaline and acid Sordes are accumulated in the Primæ Viæ, hence the Blood of old Perſons is full of ſcorbutic Salts: Hence it is, that Itching, a dry Scab, red Urine, calculous Concretions in the Kidneys and Bladder, and tophaceous Concretions in the Gout, Catarrhs, Coughs, Rheumatiſms, Stranguries, and Exulcerations of the Parts, are ſo frequent and familiar to old Perſons: Hence appears the Reaſon why they have this in common with ſcorbutic Patients, that both their internal and external Parts are highly ſubject to a Sphacelation. I have ſeen the ſlighteſt Injury of the external Parts, the Sting, for Inſtance, of a Waſp, a gentle Contuſion, or the unſkilful Paring of a Corn in the Foot, produce a Sphacelus in old Perſons. I have, alſo, ſeen very old Men die of a Cardialgia, or Colic, brought on by ſome ſlight Error in Regimen; for no other Reaſon, than that in thoſe Parts, which were afflicted with Pain, a ſphacelous Stagnation was brought on.

Since, therefore, cacochymic, ſcorbutic, and old Perſons, are ſo ſubject to violent, putrid, and dangerous Diſeaſes, thoſe who intend to keep themſelves free from thoſe Diſorders, ought carefully to abſtain from every thing which can render the Blood impure. But, in particular, old Perſons, who are already half ſcorbutic, ought carefully to abſtain from all ſuch Things as are fit for generating the Scurvy; ſuch as all Sea Subſtances, which do not afford laudable Juices; Fleſh, and other Aliments, indurated in the Smoke, ſalted Subſtances, all rancid, corrupted, and ſemiputrid Subſtances; Aliments of ſtrong Juices, ſuch as Pulſes; a ſedentary Life free from Exerciſe; a foggy, cold, moiſt, and heavy Atmoſphere; heavy, ſharp, or ſemiputrid Waters; living, and ſleeping, in moiſt Places; long-protracted Care and Grief; a Neglect of uſual Evacuations; the too great Uſe of acid and ſpirituous Subſtances; all which, as they are never beneficial, but highly injurious, to weak Habits, ſo they ought carefully to be avoided by old Perſons. *Frederic Hoffman.*

PYCNOCOMOS. A Name for the *Scabioſa*; *integrifolia*; *glabra*; *radice præmorſa*.

PYCNOSIS, πύκνωσις. Condenſation.

PYCNOTICA. Incraſſating Medicines.

PYCTE, πυκτή. A Mixture of Curds, and Honey.

PYE, πύη. The ſame as PHTHISIS. *Aretæus, de Cauſ. & Signis Diuturn. Lib.* 1. *Cap.* 8.

PYELOS. See CHOANA.

PYGÆ, πυγαί. The Buttocks. *Ruffus Epheſius, de Appellat. Part. Corp. Human. Lib.* 1. *Cap.* 15.

PYGARGUS. A Name for a Sort of wild Goat; for the Heron; and for a Species of Eagle.

PYLORUS. The Right Orifice of the Stomach is thus called.

PYODES, πυώδης. Purulent.

PYON. Pus.

PYOPŒUS, πυοποιός. Suppurative.

PYOSIS, πύωσις. Suppuration: Or an *Hypopyon*; a Diſorder of the Eye.

PYR, πῦρ. Fire.

PYRACANTHA. A Name for the *Meſpilus*; *ſpinoſa*; *Pyri Folio.*

PYRACEUM. Perry. See POMACEUM.

PYRAMIDALES MUSCULI. The Pyramidal Muſcles of the Abdomen. See ABDOMEN.

PYRAMIDALIA CORPORA. Two Protuberances of the Medulla Oblongata, are thus called. See CEREBRUM. By ſome Authors the Spermatic Veſſels are thus named.

PYRAMIS. A Cone. In Chymiſtry, uſed for making Regulus of Antimony.

PYRAMISTA. An Inſect, very ſubject to fly into the Fire, or a Candle. The Poets make frequent Alluſions to this in their Love Songs; but it is of no other Uſe, that I know of.

PYRENOIDES, πυρηνοειδής, from πυρήν, a *Nucleus*, or Kernel. A Name for the Tooth-like Proceſs of the ſecond Vertebra of the Neck.

PYRETERION. The Part of a chymical Furnace, which contains the Fire.

PYRETHRUM. Offic. *Pyrethrum Officinarum.* Ger. 618. Emac. 758. *Pyrethrum vulgare Officinarum.* Park. Theat. 858. *Pyrethrum ſicre Bellidis.* C. B. P. 148. *Bellis montana fruteſcens acris.* H. Monſp. 31. *An Buphthalmum Canarienſe Leucanthemum.* Pluk. Almag. 73. Phytog. 272. 6?

PELLITORY OF SPAIN.

The Roots of the common Pellitory are about a Finger thick, hard, and of a yellowiſh-brown Colour on the Outſide, and whiter within; of a very hot burning Taſte; from which ariſe Stalks about a Foot high, much branched, and cloathed with large winged Leaves, in Shape like thoſe of Chamomile, but larger, and thicker: Among theſe grow ſeveral Flowers, much like the Flowers of Chamomile, but larger, ſet upon long Foot-ſtalks. It grows in *Spain*, and other warmer Countries, flowering in *June* and *July*. The Root is uſed.

The Root of Pellitory of *Spain*, held between the Teeth, helps the Tooth-ach, by drawing forth the cold watry Rheum: It, alſo, helps the Palſy of the Tongue, and the Loſs of the Voice conſequent therefrom: It is put into Maſticatories for that Purpoſe; as, alſo, into drawing Cataplaſms and Plaiſters, particularly the *Emplaſtrum Cephalicum*. *Miller's Bot. Off.*

Pyrethrum has its Name from πῦρ (*Pyr*), Fire, becauſe of the igneous Heat of its Root: It differs from the *Anthemis*, or *Chamæmelum*, by the Largeneſs of its Flower, and the acrid and fervid Taſte of its Root.

It is imported from the Eaſtern Parts. *Matthiolus* ſays, that it grows on ſome Mountains of *Italy*; but is there leſs acrimonious.

It

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It ſtimulates to Venery, cures a Quartan, and gives Relief under an Hemicrania. *Schroder.*

Moriſon, or *Bobart*, affirm this Plant to be the genuine Pyrethrum; for what is eſteemed by ſome the *Pyrethrum verum*, is an umbelliferous Plant. Authors were impoſed upon by a corrupt Reading of *Dioſcorides*, where, in the Deſcription of the Flower, ſome Copies, for ἀνθεμις, erroneouſly ſubſtitute ἀνήθου. *Hiſt. Oxon.* 3. 34.

PYRETHRUM VERUM. Offic. *Pyrethrum ſylveſtre.* Ger. 618. Emac. 758. *Pyrethrum umbelliferum.* C. B. P. 148. Raii Hiſt. 1. 462. *Pyrethrum umbelliferum primum.* Park. Theat. 891. *Pyrethrum umbelliferum Matthioli.* J. B. 3. 20.

TRUE PELLITORY OF SPAIN.

The Roots and Leaves are like thoſe of the *Cotula fœtida*; the Umbella is ſupported by a Multitude of Pedicles, proceeding, as it were, from one common Centre, after the manner of the *Pecten Veneris*, or *Anethum*; the Flowers are white, and of a ſervid and bitteriſh Taſte; to theſe ſucceed round blackiſh Seeds, larger than Aniſeeds: The Roots are an Inch, and ſometimes two Inches, thick, a Foot in Length, run deep under Ground, are of a brown Colour, inclining to yellow on the Outſide, black within, and of an hot and acrimonious Taſte.

Guilandinus cultivated this Plant in his Garden at *Padua*, and preſented it to *Lobel*, by the Name of the *Pyrethrum verum*. The Pyrethrum of *Cæſalpinus*, which bears a round compreſſed Seed, of the Figure of a Lentil, belongs to another Genus.

The Root of this Pyrethrum is often, and with good Succeſs, held in the Mouth for the Tooth-ach, which it removes, by attracting a Multitude of Humours into the Mouth, together with the Spittle: It excites, therefore, a Salivation, which, perhaps, it would excite in a more plentiful manner, and of longer Duration, if it were taken inwardly, in ſmall and repeated Doſes. *D. Soame e Sylvii Lib.*

Beſides this Species, *Ray* mentions the

PYRETHRUM *umbelliferum alterum.* Park. *Foliis Anethi.* C. B. *Geſneri.* J. B.

It has a long ſimple Root, moderately fibrated, creeping, of the Thickneſs of a Finger, of an hot and burning Taſte; the Leaves are like thoſe of *Anethum*; and the Stalk like that of Fennel, and the Flowers grow in Umbellas exactly circular. *Raii Hiſt. Plant.*

This *Pyrethrum* is cultivated in the Gardens of the Botaniſts, and flowers in Summer.

It is uſed in lethargic Affections, the Palſy, and the like Diſorders. The *Pyrethrum* ſends forth a Stalk and Leaves like the *Daucus Sylveſtris*, or Fennel, and has the circular Umbella of the *Anethum*. The Root is long, an Inch in Thickneſs, and of a very hot Taſte. *Dale* from *Dioſcorides.*

PYRETICA, according to *Blancard*, are Febrifuges.

PYRETOLOGIA, in Pathology, is the Doctrine relative to Fevers.

PYRETOS, πυρετός. A Fever.

A Fever is a very frequent Diſorder, inſeparably attended with an Inflammation, the Cauſe not only of many Diſeaſes and Death, but, alſo, frequently of an happy and ſucceſsful Cure.

As the Nature of this Diſorder is of an highly latent and concealed Kind, ſo we ought the more carefully to guard againſt Miſtakes and Errors in inveſtigating it.

But, in a Reſearch of this kind, Errors are eaſily fallen into, in conſequence of the large Train of Symptoms, with which this Diſorder is generally attended, and without which, however, there may ſtill be a Fever.

That ſuch Errors may be avoided, it is neceſſary, from among numberleſs Symptoms, to ſelect thoſe Phenomena alone, which always accompany every Fever; from the Preſence of which Phyſicians know, that a Fever is preſent; and from the Abſence of which they conclude, that a Perſon is free from a Fever.

Then, from theſe Symptoms and Phenomena, duly diſcovered, and maturely weighed, the particular Nature of the Fever is to be found out.

All Fevers, ariſing from an internal Cauſe, are accompanied with Horripilation, a quick Pulſe, and Heat, at different Times, and in various Degrees of the Diſorder.

The Fever in which the Horripilation, quick Pulſe, and Heat, proceed with Velocity and Danger, is called an Acute Fever.

The Fever, on the contrary, in which theſe three Symptoms proceed ſlowly, either with or without Danger, is called a Slow Fever.

Both theſe Species of Fevers are either common and epidemical, or only affect particular Perſons.

Thoſe are called Acute Febrile Diſorders, which are accompanied with an Acute Fever; whereas thoſe are called Chronical Febrile Diſeaſes, which are attended with a Slow Fever.

Hence it is, that all theſe febrile Diſorders are not to be explained, without a previous Knowledge of the Nature of that Fever with which they are accompanied.

Now the Nature of the attendant Fever is to be eſtimated from the three common Symptoms before-ſpecified; which are, Horripilation, a quick Pulſe, and Heat.

Though theſe three Symptoms are preſent, at ſome time, in every Fever, yet the Velocity of the Pulſe is the only Symptom which continues from the Beginning to the End of the Diſorder, and by which the Phyſician judges, that a Fever is preſent.

In conſequence of this, whatever Knowledge a Phyſician has of a Fever, depends entirely on the Velocity of the Pulſe.

The proximate Cauſe, therefore, of this Velocity of the Pulſe is, in like manner, the proximate Cauſe of the Fever, thus known from its Symptoms.

This Cauſe may, therefore, be a too quick Contraction of the Heart, or a too ſpeedy reciprocal Influx of the nervous Fluid, conveyed from the Cerebellum into the Muſcles and Cavities of the Heart.

Almoſt all Fevers hitherto obſerved, ariſing from an internal Cauſe, begin firſt with a Senſe of Cold, Concuſſion, and Horripilation; and this Senſe is greater or leſs, ſhorter or longer, internal or external, according to the Diverſity of Patients, Cauſes, and Fevers.

In the Beginning, therefore, of every Fever ariſing from an internal Cauſe, the Pulſe is quick, ſmall, and frequently intermittent; whilſt there is often a Paleneſs, Coldneſs, Rigor, Tremor, and Inſenſibility of the Extremities.

Hence it is obvious, that in this Period of the Diſorder the ſanguineous Humours become ſtagnant in the Extremities of the minute Veſſels, whilſt, at the ſame time, there is a Cauſe irritating the Heart to a ſtronger Contraction.

From theſe two Circumſtances we diſcover the Cauſe of all the Symptoms which appear on ſuch an Occaſion, and are before enumerated.

In all Fevers where theſe Symptoms have preceded, there ariſes an Heat, which is greater or leſs, ſhorter or longer, internal or external, according to the Diverſity of Fevers.

As this Heat ſucceeds the Fever already produced, it is obvious, the former muſt be rather the Effect, than the Cauſe and Eſſence, of the latter.

Hence, a quick Contraction of the Heart, and an increaſed Reſiſtance of the Capillary Veſſels, are Circumſtances which account for all acute Fevers. Both of theſe Circumſtances may, in a live Animal, be produced by numberleſs and infinitely various Cauſes; and as they may happen either jointly or ſeparately, ſo when one is produced, the other eaſily follows.

For this Reaſon, the proximate Cauſe of a Fever, which conſiſts in the quick Contraction of the Heart, and the increaſed Reſiſtance of the Capillary Veſſels, may itſelf have an almoſt infinite Number of proximate Cauſes, which are either ſingular, and peculiar to ſome Perſons; or univerſal, and common to many: And theſe depend on the State of the Air, the Quality of the Aliments, and the Patient's Method of Life.

The Cauſes, therefore, of a Fever, are either particular, or epidemical.

The proximate particular Cauſes of a Fever may be reduced to five Claſſes; which are, firſt, Acrid Aliments, Drinks, Sauces, Medicines, or Poiſons, when either poſſeſſed of ſuch a Property as that they cannot be digeſted, moved, and evacuated; or when taken in ſuch a Quantity as to irritate, ſuffocate, and obſtruct the Veſſels, by their Putrefaction. Secondly, The Retention of ſuch Things in the Habit as ought to be evacuated, in conſequence of Cold, Unctions, gloomy Diſpoſitions of Mind, improper Aliments, Drinks, Medicines, Poiſons, a cloudy and foggy Air, Eaſe, a Remiſſion of uſual Exerciſes, Obſtructions of the Veſſels by their Contents, or Compreſſions of them by ſurrounding Subſtances. Thirdly, Too much Exerciſe of the Mind, or Body; and acquir'd Heat. Fourthly, External Applications of an acrid, pungent, corroding, lacerating, cauſtic, and inflammatory Nature. And, fifthly, Such Subſtances as induce a great Change in the Humours and their Motion, ſuch as many external and internal Things; Hunger; exceſſive Evacuations; the Pus, Water, and Ichor, in a Dropſy and Empyema; an acrid Serum collected in any Part; an hot State of the Bile; an Inflammation; a Suppuration; a Gangrene; a Cancer; long-protracted Watchings; intenſe Study, of any kind; and exceſſive Venery.

The Effects of a Fever are, a brisk Expulſion and Propulſion of the Fluids; an Agitation of their ſtagnant Parts; a Mixture of all their Particles; a Prevalence over the reſiſting Matter; a Concoction of the Humours; a Secretion of the concocted Parts; and a Criſis of that which, by its ſtimulating and coagulating Quality, produced the Fever; a Change of Health and Soundneſs into a morbid State; a Change of Health into a Diſpoſition fit for bearing thoſe Things to which the Patient was little accuſtomed before; an Expreſſion of the moſt fluid

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fluid Parts of the Humours; and an Inſpiſſation of the reſt; Thirſt, Heat, Pain, Anxiety, Weakneſs, Laſſitude, a Senſe of Weight, and Loathing of Food.

The ſooner the Viſcidity of the Juices is reſolved, and the more expeditiouſly the Irritation is allayed, the ſlighter, ſhorter, and more ſalutary, the Fever is; and, on the contrary, it is the more violent, long, and injurious, the longer it is before the Viſcidity of the Humours is reſolv'd, and the Irritation allay'd. Fevers are, alſo, various, according to the ſeveral Degrees and Conjunctions of this Irritation and Viſcidity.

Hence it is, that Fevers often exert the ſame Efficacy with Medicines, with reſpect to other Diſeaſes.

Hence, alſo, the Beginning, Increaſe, Height, Decreaſe, Criſis, Change, and Cure of Fevers are various, in acute and particular Fevers.

A Fever terminates in Death, ſome other Diſorder, or in Health.

It terminates in Death, when the Solids are deſtroyed by a Force acting too ſtrongly on them; or when the Fluids are ſo depraved and peccant, as to obſtruct the vital Veſſels, or thoſe through which new Fluids ought to be conveyed, in the room of thoſe loſt. Hence ariſe Inflammations, Suppurations, and ſebrile Gangrenes, in the vital Viſcera, the Heart, Lungs, and Cerebellum; or aphthous Ulcers in the Primæ Viæ, the frequent Cauſes of Death in Fevers.

A Fever terminates in other Diſeaſes, when either, by a too violent Agitation, it injures the Veſſels, and, diſſipating the more fluid Parts of the Humours, inſpiſſates the reſt; or when, by a too weak Action, it is unable, by its Force, to reſolve the coagulated Parts of the Fluids; or when it depoſites the critical Matter in ſome obſtructed, dilated, or ruptured Veſſels. Hence ariſe red Spots, Puſtules, Eryſipelas, Meaſles, Small Pox, Phlegmons, Bubos, Inflammations of the Parotid Glands, Abſceſſes, Gangrenes, Sphacelus, and Scirrhus.

A Fever terminates in Health, firſt, When by its Force it ſubdues, reſolves, renders moveable, and carries off, by inſenſible Perſpiration, the material Cauſe of the Fever; and, at the ſame time, checks its Impetus, by reſtoring an equable Circulation. This univerſal Reſolution almoſt reſembles the Reſolution in the Inflammation of a particular Part. Secondly, A Fever terminates in Health, when the Matter of the Diſeaſe, being, by the Force of the Fever, ſubdued, reſolved, and rendered moveable, yet retains a certain Quality, by which it reſiſts the equable Circulation of the Blood, ſtimulates the Veſſels, and, by exciting ſome ſenſible Evacuation, is expelled. Hence Sweat, a Diſcharge of the Saliva, Vomiting, a Diarrhœa, and copious Diſcharge of Urine, happen critically, after the Concoction of the Matter, and the State of the Diſeaſe, generally within fourteen Days.

A Fever, alſo, terminates in Health, when the Matter of the Diſeaſe being, by the Force of the Fever, ſubdued, reſolved, rendered moveable, and again aſſimilated with the ſound Humours, circulates without any Criſis, or the Induction of any other Diſeaſe.

The Genius, Difference, and Duration, of Acute Fevers, when obſerved from the Beginning, through the Increaſe to the Height of the Diſeaſe, enable us to prognoſticate its Event, ſeveral Changes, and final Termination.

From all the Circumſtances, therefore, already enumerated, the general Diagnoſtics and Prognoſtics of Fevers may be eaſily deduced.

The general Cure of Fevers is moſt effectually obtained, firſt, By preſerving and ſupporting that Strength on which Life depends. Secondly, By correcting and expelling the acrid irritating Matter. Thirdly, By diſſolving and expelling the viſcid Juices. And, fourthly, by mitigating the Symptoms.

The Strength on which Life depends, is ſupported by Aliments and Drinks of eaſy Digeſtion, oppoſite to Putrefaction, allaying Thirſt, fit for increaſing the Appetite, and contrary to the known Cauſe of the Diſorder.

The Aliments are to be exhibited at the time the Fever is abſent, or, at leaſt, when its Force is leaſt.

The Aliments are to be exhibited in a ſmall Quantity, tho' at frequently repeated Intervals, leſt the Viſcera ſhould be oppreſſed, or a Change induced on them.

The Quantity and Quality of the Aliments are to be eſtimated and determined, firſt, From the Probability of the Duration of the Fever, whether for one, four, ſeven, nine, eleven, fourteen, twenty-one, thirty, forty, or ſixty Days; for as much Aliments ought to be exhibited as are ſufficient for ſupporting the Strength, and rendering it fit for the Purpoſes of Concoction, and a Criſis: The ſhorter the Diſeaſe, the leſs and the weaker the Aliments ought to be; whereas the longer the Fever, the more and the ſtronger they ought to be. Secondly, From the Age of the Patient; for the younger and the older Perſons are, with the greater Difficulty they bear Hunger. Thirdly, The Height and Vehemence of the Diſorder, when known, require Aliments of various Virtues, and exhibited in different Quantities. In the Height, a ſmall Quantity of light Aliments are to be uſed; but, in the Increaſe and Decline, the more and the ſtronger the Aliments ought to be, the more the Diſeaſe is diſtant from its Height. Fourthly, From the Place in which the Patient lives: For thoſe who live near the Equator, commodiouſly bear light Food, which does not ſo well agree with thoſe who live near the Poles. Fifthly, From the Seaſon of the Year; becauſe the Summer requires light, and the Winter ſtronger Aliments. Sixthly, From the Cuſtom and natural Conſtitution of the Patient: For the Perſon who, when in a State of Health, uſing delicate Aliments, has them eaſily diſſipated, requires a pretty large Quantity of Aliments, becauſe the Veſſels and Viſcera were accuſtomed to them before. And, ſeventhly, From the Senſe of Lightneſs or Weight ſucceeding the Uſe of the Aliments.

Any external irritating Subſtance, ſuch as the acute Fragments of Glaſs, Metal, Wood, Stone, and Bones, ſtimulating, corroding, veſicating, cauſtic, ſeptic, and poiſonous Subſtances, or ſuch as produce a Redneſs of the Parts, are, with all Expedition, to be removed; and the Parts in which ſuch Subſtances were lodged, and are injured by them, are to be fomented with viſcid, mucous, mild, oleous, anodyne, and gently aperient Fomentations. Thus,

Take ſix Quince-ſeeds; and of the diſtilled Waters of Roſe and Elder-flowers, each three Ounces: Make into an Emulſion, to which, when pure, add half an Ounce of rectified Spirit of Wine, and one Dram of the Tincture of Opium.

This Intention is, alſo, anſwered, by the Unguentum Aureum, Baſilicon, Diapompholygos, the Unguentum Nutritum, Ointment of Poplar, and Ointment of Roſes.

The acrid irritating Subſtance lodged internally, ſuch as the Acrimony of an Inflammation, Suppuration, Gangrene, Sphacelus, Cancer, carious Bone, Ichor, Pus, and acrid or ſtagnant Lymph, is to be removed, or corrected, by the Methods preſcribed under their reſpective Articles.

An acrid irritating Quality, induced on the Fluids, may and ought to be corrected by the Uſe of the ſix Nonnaturals, and various Remedies adapted to the known State and Nature of the Diſorder. This Intention is excellently anſwer'd,

Firſt, By Reſt, both of the Body and Mind; Abſtinence from too much Exerciſe; by moiſtening, diluting, mild, and lenient Subſtances, ſuch as Ptiſans, and laxative Decoctions.

Secondly, By temperating the exceſſive Heat of the Air, by cooling Exhalations, eſpecially thoſe of Plants proper for this Purpoſe; by drinking ſubacid, gently-nitrated Water, with a ſmall Quantity of ſubacid Wine; by ſubacid, gently demulcent, and a little ſalted, Aliments; and by Medicines of a ſimilar Nature. Thus,

Take of the Decoction of Barley, twenty-five Ounces; of pure Nitre, one Dram; of Rheniſh-wine, ſix Ounces; of the Robs of Currans, and Elder, each two Ounces: Mix all together, and let the Patient take an Ounce or two every Quarter of an Hour.

Take of the diſtilled Waters of Succory, Fumitory, and Baum, each three Ounces; of the Spirit of common Salt, one Dram; of the Syrup of Mulberries, two Ounces; and of pure Nitre, half a Dram: Mix all together, and let the Patient take a Spoonful every Half-hour.

Take of the Cryſtals of Tartar, two Drams; and of pure Nitre, half a Dram: Reduce to a Powder, of which let the Patient take half a Scruple every three Hours, in ſome proper Ptiſan.

Thirdly, By correcting the exceſſive Moiſture of the Air, by large Fires of aromatic and reſinous Woods, and by the Exhalations of aromatic Subſtances. Thus,

Take of the recent Herbs of Marjoram, curled Mint, Origanum, and Roſemary, each two Handfuls; of the Flowers of *Roman* Chamomile, red Roſes, Tanſey, and Lavender, each one Handful; of *Syrian* Marum, half an Handful; of the Roots of *Florentine* Orris, Garden Angelica, and Maſterwort, each three Ounces; of the Shavings of Saſſafras, two Ounces; and of bruiſed Celeri-ſeeds, three Ounces: Cut all down, and reduce to a Powder, to be ſprinkled in the Room where the Patient is.

Fourthly, By correcting the putrid State of the Air, by throwing Nitre, Gunpowder, Vinegar, and Salt, upon live Coals.

Fifthly,

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Fifthly, If a Fever is excited by Affections of the Mind, the Paſſions of the Mind are to be regulated by Reaſon, and contrary Affections; by Variety of Objects, Anodynes, and Opiates.

Sixthly, When a Fever proceeds from acrid acid Aliments, this Acrimony is to be diluted, check'd, abſorb'd, and changed into a compound Salt; and this Effect is produced by the aqueous and gelatinous Parts of Animals, by oleous and cretaceous Subſtances, Shells of Fiſhes, Crabs-eyes, pinguious Earths, alcaline, fixed, volatile, ſimple, and compound Salts.

Seventhly, When the Fever ariſes from acrid ſaline Aliments, this Acrimony is to be diluted by aqueous Medicines, and evacuated at the ſame time; tempered by mild oleous Medicines, and corrected by lixivious Preparations of Quick-lime.

Eighthly, When the Fever proceeds from acrid, aromatic, and heating Aliments, the Acrimony is to be diluted by aqueous Fluids, corrected by Acids, reſolved and deterged by ſaponaceous Acids, and tempered by mild glutinous Subſtances. As alcaleſcent acrid Subſtances belong to this Claſs, ſo we hence learn the Method of treating Fevers produced by them.

Ninthly, When a Fever is produced by the alcaleſcent Parts of Animals, it is to be cured by the Meaſures directed under the Article ALCALI.

Tenthly, When a Fever proceeds from too large a Quantity of Aliments, or the uſe of ſuch as conſtrict the Stomach, it is to be cured by Dilution, Faſting, Vomiting, and rendering the Body ſoluble. Gentle Vomits may be prepared, in the following manners:

Take of light Barley-water, thirty-ſix Ounces; of Oxymel of Squills, three Ounces; and of vitriolated Tartar which is not acid, two Drams: Mix, and let the Patient take two Ounces every Half-hour. Or,

Take of the Rob of Elder, three Ounces; Vinegar of Squills, one Ounce; and diſtil'd Baum-water, ſix Ounces: Mix all together, and let the Patient take half an Ounce every Half-hour. Or,

Take five Grains of Emetic Tartar, for one Doſe. Or,

Take one Ounce and an half of Emetic Wine for a Doſe. Or,

Take of white Ipecacuana-root, one Scruple: Reduce to a Powder, to be taken for one Doſe. Or,

Take of the Powder of Ipecacuana-root, four Scruples; and of White-wine, three Ounces: Boil in a long Phial, for four Hours; and exhibit the Liquor, when ſtrain'd, for one Doſe. Or,

Take five recent Leaves of Aſarabacca, cut down; pour upon them boiling Water; let them infuſe for half an Hour; and exhibit the expreſs'd Juice for one Doſe.

Eleventhly, A Fever brought on by acrid, fermented, or fermenting Liquors, acid, oleous, aromatic, or diſtil'd Fluids, or a ſimple Acrimony, is to be removed by the ſame Remedies with thoſe mentioned above in N° 5. 6. and 8.

Twelfthly, A Fever ariſing from exceſſive Watching is cured by the ſame Methods with thoſe recommended above in N° 1, 2. and 5.

Thirteenthly, If a Fever ariſes from an alcaline, acid, oleous, or ſaponaceous putrid Acrimony, contracted by a Retention of the excrementitious Humours, theſe muſt be rendered movable, their Paſſages muſt be lubricated, and their proper Emiſſaries opened; mean time, the vital Powers, which expel them, muſt be ſtimulated, and augmented: And this is to be done both by internal and external Remedies.

The principal excrementitious Humours, which, if retained, are capable of exciting a Fever, are the Fæces of the Belly, the Urine, the Lochia, the hæmorrhoidal Blood, and the perſpirable Matter.

The Emiſſaries are opened by reſolving the Matter fixed therein, and by relaxing the obſtructed Emiſſaries: This is done by Baths, Clyſters, Frictions, Abraſions of the Hairs, and cleanſing of the Skin.

What ſtagnates at the Extremities of the conical Veſſels, on account of too great a Quantity of Blood, by which the Veſſels are compreſſed, is reduced to a State of Fluidity, by diminiſhing the Quantity of Blood by Veneſection; and we learn, that this is the Caſe, by the Signs of a PLETHORA, ſpecified under that Article.

What adheres to the Extremities of the Capillary Veſſels, on account of ſpaſmodic Contractions of their Fibres, by which their Capacities are diminiſhed, is reſolved by relaxing the Fibres, and removing the Acrimony which cauſes their Contraction; for the Methods of doing which, ſee the Articles FIBRA, and OBSTRUCTIO.

What adheres on account of its own Viſcidity and Lentor, is reſolved by various Remedies, the principal of which conſiſts in a due Moderation of the Fever itſelf, in ſuch a manner, that by means thereof the Coagulation may be reſolved. It is, therefore, neceſſary to regulate the Fever in ſuch a manner, firſt, that no Inflammations, Suppurations, Gangrenes, or Sphacelations, may be produced; the Danger of which is evinced, by the Violence of the Symptoms, particularly Heat, compared with the Strength of the vaſcular Syſtem.

Secondly, That the moſt fluid Parts of the Blood may not be diſſipated by too violent a Motion thereof; the Signs of which Diſſipation are, a Dryneſs of the Noſtrils, Eyes, Throat, and Tongue; an Hoarſeneſs, a Dryneſs of the Skin, a diminiſhed Excretion of Urine, and a ſmall, quick, and unequal Pulſe.

Thirdly, That, before the Concoction of the febrile Matter, the Fever may not languiſh too much, ſo as to be incapable of ſubduing, moving, ſecreting, and excreting the Cauſe of the Diſeaſe. This State is diſtinguiſhed by an univerſal Languor of all the vital Actions, before the Signs of Concoction appear.

In caſe the febrile Motion is exorbitant, (*See the Diſſertation on Diſorders ariſing from an Exceſs of the Circulation, under the Article* SANGUIS), it muſt be moderated by Abſtinence, or an extremely thin Diet, by aqueous Drinks, by a ſomewhat cool Air, by calming the Paſſions of the Mind, by Veneſection, refrigerating Clyſters, and by mild, aqueous, glutinous, refrigerating, anodyne, and opiate Medicines.

Refrigerating Clyſters may be prepared in the following manner:

Take of pure Nitre, two Drams; of Honey of Roſes, one Ounce; and of recent Whey, twelve Ounces: Mix for a Clyſter. Or,

Take of common Vinegar, one Ounce; of Native Nitre, three Drams; of ſolutive Syrup of Roſes, with Sena, two Ounces; and of a Decoction of Barley, twelve Ounces: Mix for a Clyſter. Or,

Take of Butter-milk, ten Ounces; and Syrup of pale Roſes, two Ounces: Mix up, for a Clyſter. Or,

Take of the common emollient Decoction, eleven Ounces; of pure Nitre, three Drams; and of Honey of Mercury, one Ounce and an half: Mix for a Clyſter.

If the Fever is too languid, it muſt be raiſed by a cardiac Regimen, conſiſting of the more generous Sorts of Food and Drink; by reſpiring a ſomewhat warm Air; by exciting the Paſſions of the Mind; by acrid, volatile, aromatic, fermented Medicines; by Frictions, Heat, muſcular Motion, Baths, and Fomentations.

FORMS OF MEDICINES IN A FEBRILE LANGUOR.

Take of Oxymel of Squills, three Ounces; of *Matthiolus*'s Spiritus Vitæ, three Drams; of diſtilled Mint-water, four Ounces; and of diſtilled Cinnamon-water, one Ounce: Mix all together, and let the Patient drink an Ounce every Hour.

Take of the Diaſcordium of *Sylvius*, one Scruple and an half; of the Theriaca Andromachi, one Dram and an half; of the Syrup of the Five aperient Roots, two Ounces; and of the diſtilled Water of Carduus Benedictus, ſix Ounces: Mix all together, for the ſame Uſe.

Take of the Confection of Alkermes, one Dram; of candied Ginger, ſix Drams; of the Roots of Contrayerva, and *Virginian* Snake-root, each one Dram; and of the Syrup of the Five aperient Roots, a ſufficient Quantity for making a Conſerve: Of which let the Patient take half a Dram every four Hours.

Take of the Counteſs of *Kent*'s Powder, one Scruple and an half: And exhibit it for a Doſe every four Hours.

Take of White Ginger, *Winter*'s Bark, of the Roots of Zedoary, Contrayerva, and *Virginian* Snake-root, each one Dram; and of the Troches of Vipers, two Drams: Reduce to a fine Powder, to be divided into Doſes of one Scruple and an half; one of which is to be taken every four Hours.

Take of the Salt of Carduus Benedictus, half a Dram; of burnt Hartſhorn, one Dram; of red Coral, two Scruples;

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ples; and of the distilled Oils of Cinnamon, and Citron-peel, each three Drops: Reduce to a Powder, to be divided into ten Doses, for the same Use.

Next to the due Regulation of the febrile Motion, the most important Remedy against the Viscidity of the Juices is, the Restitution of the elastic Force of the Vessels, by diminishing the Quantity of Fluids, by copious Venesection, performed with Expedition, and from a large Wound; and immediately after, or at the same time, increasing their Motion by stimulating Remedies.

Lastly, The viscid Juices are render'd fluid, by diluting with aqueous Drinks, Baths, Fomentations, and Clysters; using, at the same time, Frictions. And these have a much better Effect, if taken warm; if resolvent Salts, as Nitre, are mix'd in a due Proportion with the aqueous Fluids; and if gently aromatic, bitter, and lacteſcent cooling Vegetables are boiled in them.

The bitter lacteſcent cooling Vegetables hinted at by the Author, are the

Chondrilla. Gum Succory.
Cichorea. Succory.
Hieracia. Several Species of Hawkweed.
Intubus. Endive.
Lactuca. Lettuce.
Scorzonera. Vipers-grass.
Sonchus. Sow-thistle.
Taraxaca. Several Species of Dandelion.
Tragopogon. Goats-beard.

But, that these may operate well, expeditiously, safely, and with Efficacy, Venesection is to precede their Use; for this facilitates their Ingress, their Mixture with, and Action upon, the Blood.

So soon as, by these Remedies, the morbid Viscidity is dissolved, by a Continuation of the same, and sometimes augmenting their Actions, it is forced through the Vessels, and expelled: Sometimes, however, it may be so far subdued and amended, as to be rendered similar to the healthy Juices, and require no Expulsion.

The usual Symptoms, accompanying an acute Fever, are, Cold, Tremors, Anxiety, Thirst, Nausea, Eructations, Vomiting, Weakness, Heat, Exestuation, Dryness, Delirium, Coma, Watchings, Convulsions, Sweats, Diarrhœas, and inflammatory Pustules.

All these Symptoms arising from, and caused by the Fever, cease spontaneously, when that is removed: For this Reason, they require no particular Method of Cure, provided they can be supported without endangering Life, till the Termination of the Fever.

But it must be remarked, that these Symptoms frequently arise from an Attempt of the vital Powers to form a Crisis, and expel the critical Matter; and then they precede, accompany, and follow the Crisis; in which Cases, nothing must be done to moderate them, which can in any Degree interfere with the salutary Work carrying on.

But if any of these Symptoms are unseasonable, or too severe to be supported without the Hazard of Life; if so troublesome, as to render the Patient insupportably uneasy; or if there is Danger of their producing some more formidable Disorder; in such Cases they must be mitigated by Remedies adapted to them; always having due Regard to the Cause and State of the original Distemper.

FEBRILE SYMPTOMS; and first of

FEBRILE COLD.

Cold, in the Beginning of Acute Fevers, arises from a decreased Attrition of the Liquids with each other, and with their respective Vessels; a Diminution of the circulatory Motion; a Stagnation of the Liquids at the Extremities of the Vessels; a diminished Contraction of the Heart, and only a partial Evacuation of its Ventricles; and a less copious Influx of the Spirits conveyed from the Cerebellum.

This Cold, if of long Duration, causes polypose Concretions in the larger Vessels near the Heart; and in the small Vessels an Evacuation of the Fluids they ought to contain, in consequence of their Contraction; and in both these Cases many and severe Disorders are excited.

Hence the Reasons are evident, why intense Coldness, in the Beginning of Acute Fevers, is of very bad Presage; why the Fever is dangerous, in Proportion to the Cold perceived upon its first Attack; and why, in the Beginning of the Plague, an excessive Sensation of Cold is succeeded by as excessive a Degree of Heat.

If any Attempts are made to remove the Coldness in the Beginning of Acute Fevers, by any Remedies which stimulate briskly, under whatever Denomination, a Foundation is frequently laid for an incurable Inflammation in the Sequel. For this Reason, all kinds of acrid saline Medicines, aromatic and oleous Substances, and Vesicatories, are to be condemned, in these Cases, as highly pernicious.

But a much more safe, and effectual Method of Cure, may be pursued, by exhibiting warm aqueous Drinks impregnated with Nitre, a little Honey, and Wine; by Baths, Vapours, Fomentations, and Lotions, made of the same Sorts of Liquors; and by moderate Frictions: For these, applied at first, are capable of curing and preventing very great Disorders.

Take of Barley-water, thirty Ounces; of pure Nitre, two Drams; of simple Oxymel, three Ounces; and of distilled aromatic Clove-water, two Ounces: Mix all together, and let the Patient, every Quarter of an Hour, drink two Ounces, pretty warm.

Take of the Four greater and lesser cold Seeds, each two Drams: Make into an Emulsion with Water, with three Pints of which mix, of distilled Fennel-water, four Ounces; of Sal Prunellæ, two Scruples; of the Syrup of the Five aperient Roots, two Ounces; and of the Syrup of Violets, half an Ounce: To be exhibited for the same Purposes with the other.

Take of distilled Borage-water, one Pint; of the distilled Water of Rose-flowers, one Ounce; of distilled Elder-flower-water, eight Ounces; of Distilled Cinnamon-water, one Ounce and an half; of *Matthiolus*'s Spiritus Vitæ, half an Ounce; and of *Fernelius*'s Syrup of Mugwort, two Ounces: Mix all together, and exhibit for the same Use.

Coffee, Decoctions of Sassafras and Sanders, together with others of a like Nature, are of singular Service in the cold Fit, especially if towards the End of their Preparation a small Quantity of some aromatic Substance is added. Thus,

Take of the White, Yellow, and Red Sanders, each one Ounce: Boil in Water for a Quarter of an Hour: Then add, of the Roots of Fennel, four Ounces; of the Shavings of Sassafras, two Ounces; and of Liquorice, half an Ounce: Let them boil for a Moment, and strain off four Pints; for the same Use with the others. *Boerhaave.*

PROGNOSTICS FROM COLDNESS IN ACUTE DISEASES.

A *Coldness* of the Body, which may rather be called a *Coolness*, or moderate *Heat*, after some good Evacuation, by which the Pulse is rendered better, and stronger, is a very good Sign, as it indicates a critical Solution of the Fever: That *Coldness*, also, which is the Consequence of refrigerating or allaying the Heat of a Fever, and is attended with Signs of Concoction in the Urine, Spit, or Stools, (where the Disease has affected the Nervous System, spirituous Parts, or Belly) and an Alteration of the Pulse for the better, is a very good Symptom, and signifies a safe and speedy Return of Health. A *Coldness*, also, is sometimes observed to be critical, or preceding a very good Crisis.

Though a *Coldness* thus qualified, as before described, is to be esteemed salutary; yet it rarely happens that we can draw any good Prognostic from a *Coldness* of the Body. This *Coldness*, to proceed, is observed either in the whole Body, or in the external Parts; in continual Fevers it is generally mortal, but in very robust Constitutions it portends not Death, but the long Continuance of the Disease. Under great Weakness it is always mortal, that is, where the Disease has been great and violent; when it is the Consequence of an Extinction of the Faculty, it shews Death to be very near: But that it proceeds from such a Cause, will be indicated by other preceding destructive Signs.

Some who labour under an Anasarca, but especially under an Ascites and Leucophlegmatia, have a *Coldness* almost of the whole Body; and the same is observed in Persons affected with inward Suppurations when dying; such have a *Coldness* or Chilness in almost every Part, either from an extraordinary Resolution of the natural Heat, or a Redundance of cold Humours.

A *Coldness*, however, of this Nature, in the extreme Parts, affords not always sure Grounds for Prognostication; for in some Patients, not under any acute Distemper, such a *Coldness* is not much to be feared. In Diseases, says *Galen*, not attended with a Fever, which happen in Winter, and to old Persons, for the extreme Parts of the Body, as the Ears, Nose, Feet, and Hands, to be cold, is not at all surprising; since, as he attests, in his second Comment on the *Prognostics*, those Parts are naturally bare of Flesh, and, also, at a great Distance from the Viscera.

But a *Coldness* of this Sort, in Acute Diseases, is no small Evil; for, by means hereof, through Weakness, the natural Heat is prevented from penetrating to the extreme Parts of

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the Body; besides, under acute Disorders, through the Violence of the Inflammation infesting the Viscera, the Blood is distributed but in small Quantities over the Body. In these Kinds of Disorders, therefore, for the Body to be cold, and chilled, and not only in the Extremities, but in every Part together, is very pernicious, unless occasioned by the Approach of a Fit; for it indicates the natural Heat to be either extinguished, or to labour under a Suffocation from the Multitude of Humours; but such a *Coldness* is attended with many other mortal Signs. Many dying Persons appear cold, with Desudations, or cold Sweats, and an extreme Languor; and they appear not only to be excessively cold, but, also, hard; whence we read, 1 *Prorrhet.* 77. "That a Refrigeration with an "Hardness, is a destructive Sign." But we shall proceed to examine more accurately into the Prognostics, *which may be drawn particularly from a Coldness of the extreme Parts.*

Of Prognostics from a Coldness of the extreme Parts of the Body.

The extreme Parts of the Body, which *Hippocrates* in his *Prognostics* calls the *Head*, *Hands*, and *Feet*, *Galen* on 7 *Aph.* 1. more distinctly, the *Nose*, *Ears*, *Hands*, and *Feet*, are affected with a *Coldness* in acute Diseases, when the natural Heat is either contracted, resolved, oppressed, or suffocated, or, in the last place, extinguished. The natural Heat is contracted inwardly to the Viscera, relinquishing the extreme Parts of the Body, and possessing the middle Parts, the Thorax, and the Belly, either on account of a violent Inflammation, or Erysipelas, affecting the Viscera, and, as *Galen* says, by its Heat attracting the Blood, in manner of a Cupping-glass, to the affected Part, or from a severe Pain in the Stomach, or its Mouth, or in the Colon, small Intestines, Uterus, or Kidneys; or, lastly, on occasion of the Fit, when Nature is at Work in the internal Parts, and makes its utmost Efforts to expel the redundant Humours with which it is oppressed; from which we prognosticate sometimes Death, sometimes Recovery, according to the present extraordinary Degree of Strength or Weakness of the Patient.

The natural Heat is resolved, either by the Violence of the febrile Estuation, or some vehement Pain, or immoderate Evacuation, or some poisonous Juice offending the Heart, and the Mouth of the Stomach, or by a sudden and immoderate Fit of Mirth.

The natural Heat is oppressed or suffocated in the Viscera, whence the remote Parts, being left destitute of their wonted Supplies of Heat, are refrigerated, when the Mouth of the Stomach is either overloaded with an immoderate Quantity of Food, or strongly vellicated by mordacious Humours, as *Galen* expresses it, *Com. in Lib. de R. V. I. A.* or when, the Viscera are infested with a Multitude of corrupt or crude Humours, by which the natural Heat is either suffocated, or remarkably oppressed, in the same manner as when by heaping great Quantities of green Wood upon a Fire, the same is so far from being increased, that it is quite suffocated, or, at least, much diminished, by so doing. Thus is the Heat shut up, and confined, within the Viscera by the Redundance and Coacervation of the Humours, so that it cannot penetrate or expand itself to the exterior Parts; the Veins and Arteries, by which it was diffused from the Viscera, being obstructed by those crude or corrupt Humours. A Fever proceeding from such a Cause is, by some, called *Lipyria*, [λειπυρία, λιπῦσιον, λιπυεῖν] by others, *Asaphodes*, that is, obscure and latent [see Asaphes]; by others is described as mild and gentle externally, but violent and tumultuous within: The Reason is, because the Fever owes its Original to a Multitude of putrid Humours, or a Redundance of cold, crude, and gross Humours, by which the Heat is suffocated; or to a Phlegmon affecting the Viscera, or to a malignant and poisonous Putrefaction; in all which Cases there is a *Coldness*, or, at least, a Coolness, and Absence of Heat, in the extreme Parts.

The natural Heat is not only destroyed or diminished by Strangulation or Suffocation, but is even extinguished by an intense *Coldness*, or an occult poisonous Quality, by which the vital Parts are corrupted; as may be observed in the Effects of cold Poisons, and such things as are mortal from a Property inherent in their whole Substances, as *Galen* expresses it.

Again, the natural Heat, which has its Seat in the solid Parts, according to *Galen*, may be wasted, resolved and dissipated, by a greater or flammeous Heat consuming the humid Parts, by which the natural Heat itself is preserved, and lives. Thus it happens in hectic Disorders, and under violent Pains of the Viscera, by which the natural Heat of those Parts is corrupted and resolved; on which account, *Hippocrates* had Reason to pronounce, 7 *Aph.* 26. a Coldness of the extreme Parts, under a violent Pain in the Parts of the Region about the Belly, a bad Sign.

In the last place, a *Coldness* may be generated, or Heat be destroyed, by an immoderate Evacuation, either spontaneous, or procured by Art; the Consequence of which, when extreme, is a mortal Syncope, in which the Patient dies under a *Coldness* of the extreme Parts: And the Symptom is occasioned by a Resolution of the Heat from opening an Artery.

We have hitherto been employ'd in examining into the Causes of this *Coldness*, or Extinction or Diminution of Heat, in the extreme Parts, and proceed now to the Prognosis, or Signs, afforded by it for our Observation; from whence we may predict a good or bad Event in an acute Disease.

In the first place, then, a *Coldness* of the extreme Parts, when Nature makes Attempts towards a Crisis, with other good Signs, must be esteemed salutary. But at the periodical Return of a Fit, or under a long Disease, such a *Coldness* affords no certain Prognostic; neither is it to be accounted a mortal Sign in old Persons, and in the Winter-season.

"A *Coldness* of the extreme Parts (with the before-mentioned Exceptions) in acute Diseases is, as *Galen* says, *Com. in 7 Aph.* 1. no slight Disorder, but a very pernicious Symptom, as it is the Consequence of a violent Inflammation of "the Viscera." But here we are to except, also, a *Coldness* of the Extremities from unseasonable Eating, and what is occasioned by a Paroxysm, in which, says *Galen* on the *Prognostics*, not only the extreme Parts, but the Skin about the Ribs and Belly, are rendered cold.

A *Coldness* of the extreme Parts sometimes begins at the same time with the Disease; and this Symptom was observed by us one Year in many wandering malignant Fevers, which derived their Original either from a most intense Degree of Putrefaction, by which the Viscera are affected, as it were, with Poison, and the natural Heat on that Account very much resolved, or else retracted inwards, or almost suffocated by the Redundance of the highly putrid Humours; or, which is the last Account to be given for it, the Fever was kindled up, and took its Rise, from crude and pituitous Humours, as we observe in a *Febris Amphemerina*, or Quotidian.

A *Coldness* of the Extremities, in continual Fevers, is always bad, and imports Death, or Malignity, but most commonly Death. When this Symptom appears in the Beginning, together with the Fever, and not in an extraordinary Degree, it foreshews only a Malignity, and is accounted by Physicians a pathognomic Symptom of malignant Fevers, in which the Patient is often not very thirsty, nor has his Tongue very much dryed; and this *Coldness* is sometimes equal, or of one Temperature, during the whole Course of the Disease, and sometimes unequal, or more or less increased and diminished.

A *Coldness* of the extreme Parts, not in the Beginning of the Disease, but on a critical Day, with critical Signs, indicates a Crisis, or a Change of a continual Fever into an Intermittent. But an intense *Coldness* of the Extremities, and of long Duration, with bad Signs, is always bad, and worst of all on a critical Day.

An almost invincible *Coldness* of the extreme Parts is a mortal Symptom: And this is confirmed by *Hippocrates* in his Observations, 1 *Epid. Sect.* 1. on a very mortal epidemic Fever, in which the Patients, he says, "were very subject to Refrigeration of the extreme Parts, into which it was very difficult to recal the Heat." And by what he tells us, 3 *Epid. Sect.* 3. in his Account of the Symptoms of an epidemic, and very malignant burning Fever, among which was "a remarkable Coldness of the Extremities of the Feet and Hands, "and especially about the time of the Paroxysms, into which "Parts the Heat returned but by slow Degrees, and not in a "kindly manner." To the same Purpose he says, of some who died of a Tabes, that, towards their End, "they were "much affected with Coldness, and were hardly capable of "receiving Heat." In *Prorrhet.* 65. we read, that "Refrigerations after a Rigor, which are not succeeded by a Return of Heat, are bad." Thus they proved, for Instance, in the Case of *Philiscus*, 1 *Epid. Sect.* 3. *Aegr.* 1. "whose "extreme Parts [the Day before he died] were cold on every "Side, and never recovered any Heat afterwards." The same happened to *Silenus*, *ibid. Aegr.* and others mentioned in the *Epidemics*, not long before their Death.

In Persons very near Death, there is observed a *Coldness* of the extreme Parts equal to that of a Marble-stone, and often attended with an Hardness and Lividness. Now an Hardness, with an intense Degree of *Coldness*, is accounted a mortal Sign, as we read 1 *Prorrhet.* 77. on which *Galen* says, "If the Coldness be so intense as to cause a total and absolute Refrigeration, with an Hardness, it is a Sign of Extinction," or that the natural Heat is extinguished.

A *Coldness* of the extreme Parts, attended with a Lividness, is no less mortal; for this latter is of all Symptoms the most pernicious, and shews Death to be at the Door. For a livid Colour

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Colour in those Parts indicates an Extinction of the natural Heat, as we are taught by *Galen*, who, in his Comment on the third Epidemic, tells us, that a *Coldness* of the extreme Parts, attended with a Lividness, is an evident Sign of Death. And this is confirmed by *Hippocrates*, *Lib. Prognost.* where it is said, that, "If, besides this dead Heaviness of the Body, [before "mentioned] there be, also, a Livideness of the Nails and "Fingers, nothing is to be expected but immediate Death." And, in what follows, we read, "That for the Fingers and "Feet to be quite black, is less pernicious than for them to "be livid;" and not without Reason, since a Livideness of these Parts always proceeds from an Extinction of the natural Heat, but a Blackness is not always from that Cause; for it may be owing to a black Humour settled in those Parts. We may conclude, therefore, that if to a *Coldness* of the extreme Parts there accedes a Livideness of the same, it is a most mortal Symptom, and shews Death to be near at hand. This we have abundantly confirmed by *Hippocrates* in his first and third *Epidemics*, by Instances in *Philiscus*, *Silenus*, the Woman who lay ill of a Quinsey at the House of *Aristion*, 3 *Epid. Sect.* 1. *Ægr.* 7. the Daughter of *Euryanactes*, *ibid. Ægr.* 6. *Erasinus*, and the young Man who lay ill in the *Forum Mendacium*, in all whom this Symptom was observed as they lay dying.

A great *Coldness*, or Chilness, of the extreme Parts, attendant on an intense Thirst, with a vehement Heat in the Thorax or Belly, is esteemed very pernicious, because it indicates a violent Inflammation of the Viscera, and is, as *Galen* says, *Com. in 7 Aph.* 1. an usual Symptom of the same. This is asserted, also, by *Hippocrates*, *Prognost.* where he says, that "For the "Head, Feet, and Hands, to be cold, whilst the Belly and "Sides are in an Heat, is bad;" and *Galen*, in his Comment, says, "it is not only bad, but mortal." The Sense of this Passage is very well and fully expressed by *Cornelius Celsus*, in the following Words: *Cui Febre æque non quiescente exterior Pars friget, interior sic calet, ut etiam sitim faciat, lethale:*" "A Coldness of the exterior Parts, where the Fever ceases "not in Proportion, and an Heat in the interior Parts so great "as to cause a Thirst, is mortal."

A *Coldness* of the Extremities is accompanied with other pernicious Signs, besides those mentioned; such as a violent and continual Pain of the Head or Viscera, Want of Sleep, a Coma, a furious or gentle Delirium, Dotage, Loss of Memory, Deafness, Blindness, Convulsions, Tremor, Loss of Voice, Hiccup, Restlessness, Anxiety, difficult Respiration, and cold Expiration from the Mouth and Nostrils, turbid Urine, which will not become clear, black Urine, with a black ENÆOREMA, [see that Word] white, aqueous, lucid Urine, and Suppression of Urine, Drops of Blood from the Nose, virulent Vomitings, bad and copious Stools, which give no Relief, and other Symptoms of the like Kind. Any of those, appearing with a *Coldness* of the extreme Parts, portends Death; and the more there are of them, the more certain and speedy is the fatal Event. This is illustrated by *Hippocrates* in the Case of *Silenus*, so often quoted, of whom he observes, that "On "the sixth Day he had a thin small Sweat about his Head, "his extreme Parts were cold and livid, he was very restless, "voided nothing by Stool nor Urine, and had an high Fever." And of *Pythion*, 3 *Epid. Sect.* 3. *Ægr.* 3. who died in *Thasos* in ten Days, it is observed, that "On the second Day about "Noon, his extreme Parts, and especially his Head and Hands, "were affected with a *Coldness*; he was Speechless, and lost "his Voice, fetched his Breath short, and at long Intervals, "[βραχύπνοος ὑπὸ χείρων πουλύν. We have here, with *Galen*, "and some few Copies, joined the three last Words with the "first, and not with ἀνεθερμάνθη which follows them. See "BRACHYPNOEA]; his Heat returned with a Thirst, he had "a quiet Night, and sweated a little about the Head." From these Instances, with what has been said, it appears, that a *Coldness* which is perpetual, or in a very high Degree, or attended with an Hardness, or Livideness, is a very pernicious Symptom, as indicating an Extinction of the natural Heat.

We may form Prognostics of a bad Event, also, from a *Coldness*, with respect to the preceding Symptoms, as, for Instance, when it succeeds a Rigor, and is not removed, according to 1 *Prorrhet.* 65. where we read, that "Refrigerations "succeeding a Rigor, and not followed by a Return of the "Heat, are bad."

For the extreme Parts to be much chilled after bad Evacuations, is pernicious, and especially if these Evacuations themselves are of the Number of mortal Signs; such as Blood falling by Drops from the Nose, cold Sweats, Desudations in the Head, Urine aqueous, livid, ictteric, turbid, depositing no Sediment, black, with a black Enæorema, a Suppression of Urine, Stools fat, liquid, very fetid, too frequent, or immoderate in Quantity, Spit black, livid, viscid, expectorated with much Difficulty, or quite intercepted. A *Coldness*, or Refrigeration of the extreme Parts, succeeding any of these bad Symptoms just enumerated, is pernicious.

A *Coldness* of the Extremities is known to be destructive, not only by preceding, but by concomitant and subsequent bad Signs. A Refrigeration, or Coldness, of the extreme Parts is usually followed by many other Symptoms of mortal Signification. And here, with respect to the *Coldness* itself, if this be first moderate, but increases afterwards to a violent and intense Degree, it is pernicious, because, as we have said out of *Galen*, it indicates an extreme Languor of the Faculty. It is no less fatal, in the second place, if this *Coldness* of the Extremities be succeeded by little or no Degree of Relaxation; as we find it confirmed in the Case of dying *Philiscus*, 1 *Epid. Sect.* 3. *Ægr.* 1. of whom *Hippocrates* observes, "That his extreme Parts were cold on every Side, and never afterwards "recovered their Heat;" and of *Silenus*, "who, it is said, "on the seventh Day was speechless, and could never from that "time have the Heat recalled into his extreme Parts."

A Part, after extreme Refrigeration, becomes livid, and sometimes hardens, in which Circumstance, if it long continues, Death, as was said, is at the Door. The same Event may be predicted from a subsequent Coma, Dotage, Forgetfulness, Deafness, Blindness, Loss of Voice, Convulsions, Tremor, cold Sweats, especially in the refrigerated Parts themselves, (which kind of Sweats seems indeed proper only to a Syncope and Death) Evacuations not good, no way relieving the Patient, or suppressed, Difficulty of Respiration, and the like Symptoms, many of which were observed by *Hippocrates* in dying *Silenus*, after a Refrigeration of the extreme Parts, and described by him as follows: "On the sixth Day he sweat-"ed a little about the Head, his extreme Parts were very cold, "and grew livid, he was very restless, had no Excretion by "Stool nor Urine, and was in an high Fever. On the seventh "Day he was speechless, his extreme Parts recovered no more "Heat, and he made no Water. On the eighth he had a "cold Sweat over all his Body, and, with the Sweat, an Erup-"tion of small, round, red Exanthemata, resembling *Vari*, "which settled without forming an Abscess; he voided, with "little Provocation, much thin, and, as it were, indigested "Matter by Stool, and with some Difficulty; his Urine was "sharp, and excreted with Pain; his extreme Parts recovered "some little Heat; his Sleep was but slight and comatous; "and his Urine was thin and pellucid. On the ninth Day "the Symptoms were much the same. The tenth he re-"fused Drink, was affected with a Coma, and slept in a "slight manner, his Stools were the same, but he discharged "Plenty of thickish Urine, which deposited a white and brainy "kind of Sediment; his extreme Parts were again refrigerated. "On the eleventh Day he died." We conclude, then, upon the Whole, that a Coldness of the extreme Parts, preceded, attended, or succeeded, by any of these before-mentioned, or the like pernicious Symptoms, gives just Reason for predicting a fatal Event in acute Diseases.

Of Prognostics from a Change of Heat to Cold, and of Cold to Heat, in acute Diseases.

It often happens in acute Disorders, that the whole Body changes from hot to cold, and from cold to hot, sometimes slowly, sometimes suddenly. A sudden Change to Cold, unless occasioned by a Paroxysm, is always bad; since, as it has been observed, it indicates the natural Heat to be either resolved, or by the Multitude of crude Humours oppressed and suffocated to such a Degree, as to be incapacitated, the Vessels being obstructed, for expanding itself externally; or that it is entirely collected in the inward Parts, on account of some malignant Humour, or violent Inflammation, infesting some of the principal Viscera.

We conjecture the natural Heat to be resolved, if there has appeared some preceding Cause of a Resolution; such as a violent and continual Fever, continual Watchings, severe Pains, and immoderate Evacuations of Blood or Humours.

A Suffocation is indicated by a Plethora, in which the Veins and Arteries are obstructed by the Multitude of crude Humours.

That the natural Heat is not expanded externally, we know by all those Signs which indicate the Redundance of the Humours; and that it is retracted inwardly by some acrid or malignant Humour infesting the Mouth of the Stomach, the Heart, or some other noble Part, we conclude from Pains about the Region of the Part affected, Loathing, ANGOR, [see that Word] Nausea, virulent or bilious Vomitings, Despondency of Mind, Anxiety, Watching, the Pulse highly irregular, weak, and low, and the like, as may be observed in those who have the Mouth of their Stomach vellicated by Worms, or some acrid Juice.

When

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When some internal Inflammation is the Cause that the Heat retires inwards, it is known by the Heat of the inward Parts; and, by proper Signs, which *Celsus*, as above-quoted, has expressed from *Hippocrates*, where he says, "That a Refrigeration "of the extreme Parts, where the internal Parts are parched "with Heat in such a manner as to excite a Thirst, is mortal;" for such a Refrigeration has for its Cause an internal Inflammation, and that in a very violent Degree.

In whatever manner, as we said, the Body is refrigerated, it is never good; but it is often highly pernicious, and most of all, if the *Coldness*, or Refrigeration, be long and intense, or, if an Hardness, or Lividness, accede thereto; for then Death, as was observed, is very near. A sudden and immediate Refrigeration of the actually warm Parts is, also, constantly bad, except that Refrigeration of the extreme Parts, which is occasioned by Nature in her Attempts towards a critical Excretion of the Humours; for it often happens against a Crisis, from the impetuous Course and Conflux of the malignant Humour to some noble Part, that the exrreme Parts are refrigerated, and never, or but very seldom, and by slow Degrees, recover any moderate Degree of Heat, after a Propulsion of the Humour to some more ignoble Part of the Body.

On the contrary, for refrigerated Bodies to recover Heat by equal and slow Degrees is a very good Sign; for it shews, that no inward, latent, acrid, or malignant Humour infests a noble Part, that there is no Inflammation in those internal Regions, nor any thing to prevent or intercept the Heat from diffusing itself over all Parts of the Body.

For the Parts to be unequally heated, is never good, and is sometimes esteemed a very bad Sign; but for the outermost Parts of the Body to be suddenly and frequently changed from hot to cold, and from cold to hot, in malignant Diseases, is pronounced by *Hippocrates* very pernicious, and is indeed esteemed more dangerous than the like Mutations in other Symptoms. To the same Purpose we read in 1 *Prorrhet.* 43. "That sudden Mutation of the remote Parts to either Ex- "treme is bad, as is, also, a Thirst of the like Nature;" that is, subject to the like Permutations. Here *Galen*, in his Comment on the Place, says, that in Diseases highly malignant there is a Mutation of these Qualities into their Contraries in the Space of one Hour, in such a manner, that the Patient shall at one time feel himself as cold as in Winter, and, soon after, as hot as in the Summer-season; and the Reason is, he says, because he has no Heat of his own, but is heated by that of the Fever, which, beginning at the Middle of the Body, and like a Flame spreading itself every-where, kindles an Heat in the extreme Parts, which being spent and transpired, those Parts grow cold again, because the natural Heat is extinguished.

Such swift Mutations of Heat and Cold, and, also, of Colour, and every other Symptom, frequently indicate a Complication of Affections in the Body, which requiring a considerable Length of Time for Nature to subdue, shews, that the Disease will be long and tedious; as is expressly affirmed by *Hippocrates*, 4 *Aph.* 40. where he says, that "Mutations in the "whole Body, as when the same is refrigerated, and then again "heated, signify the Length of the Disease."

In very acute and violent Disorders such sudden Mutations are a Sign that Nature is stinted in its due Time by the Violence of the Disease, and is in imminent Danger of being extinguished before it can put itself in a Posture of Resistance. Upon this Consideration it is, that we are told by *Galen* on the *Prorrhetica*, that Mutations of this Kind in highly malignant Distempers, are mortal, and that they are occasioned by an Extinction of the natural Heat.

Mutations of this Kind, or sudden Changes in other Symptoms, as from a Thirst to an utter Extinction of the same, from a placid Stilness to Restlessness, from Watching to profound Sleep, from the perfect Use of Reason to Deliriousness, or the Reverse of all these, are generally, also, of fatal Signification.

A Change of Symptoms in such a manner as, for Instance, there shall be a Pain of the Head, soon after of the Belly, then of the Legs, and soon after a Cessation of Pain, followed in a short time by a Delirium, which quickly gives place to another Symptom, has for its general Cause a *Metaptosis*, that is, a Transflux of the Humours; for Migrations of the Humour from one Part of the Body to another, or Turgescencies of the Humour appearing successively in different Parts, have the Name of *Metaptosis*, which of itself bears no other Prognostic than does the turgescent Humour. Every Turgescence or Orgasm of the Humours is, however, to be dreaded, since it threatens an Injury to some principal Part; for which Reason *Hippocrates*, 1 *Aph.* 22. *Galen*, and indeed all other Physicians, in Turgescencies, or Orgasms of the Humours, have immediately prescribed Purging even in the Beginning, when all things are in a crude State.

Permutations of Heat, Cold, Colour, and other Symptoms and Qualities, appearing with Signs of Concoction, indicate a critical Perturbation of the Humours. And in this Sense, perhaps, we are to understand, *Coac.* 125. where it is said, that "Frequent Changes of the Colour with the Heat are of Ser- "vice."

In malignant Diseases these Mutations are of Use, if made for the better, according to that of *Hippocrates*, 6 *Epid. Sect.* 6 *Aph.* 16. ἐν τοῖσι παλιμβόλοισι αἱ μεταβολαὶ ὠφελέουσι, τοῖσι μεταβάλλειν πρὶν κακοῦσθαι ἐς τὰ πρόσω, "In deceitful (ma- "lignant) Diseases, Mutations are serviceable, if directed to "proper Places, before they have received some Injury." [*Foesius* for παλιμβόλοισι reads παλιμβόλοισι, which he owns to be an obscure Word, and renders it in his Notes by *inconstantibus*, inconstant; and in this Sense, which seems most probable, the Sentence may be otherwise translated, thus, "In mutable, and "inconstant Diseases, Changes are beneficial, if made in proper "Places, and before any Malignity is contracted."] *Prosper Alpinus de Præsag. Vit. & Mort.*

Febrile Tremor.

A Tremor is a Vacillation of the Muscles betwixt the State of Tension, and that of Relaxation, the distending and relaxing Causes suddenly, and involuntarily, succeeding each other; which supposes an alternate Cessation, and Repetition of the Influx of the arterial, and nervous Fluid into the Muscles: In the Beginning of a Fever, therefore, it arises from a partial Stagnation of both the above-mentioned Fluids; but, in the latter End of a Fever, a Deficience of them, after they have been too much dissipated.

A Tremor, if of long Duration, causes Impediments to the Circulation of the vital Humours, and all their fatal Consequences.

Hence the Diagnostic and Prognostic of a febrile Tremor may be understood; and hence 'tis evident, why a Tremor joined with Coldness, and why a very great Tremor, are of extremely bad Presage: Why a Tremor accompanies very great Affections of the Mind: Why a Tremor happens about the time of Death: Why it is excited by exorbitant Evacuations of any kind: And why, when the Body has been habituated to a too copious Use of Liquors of any Sort whatever, a Depletion of the Vessels, by Abstinence from these Liquors, is accompanied with a Tremor.

A febrile Tremor is cured by restoring an equable Influx of the arterial Fluid into the Arteries, and its due Pressure upon them, and of the Spirits of the *Cerebellum* into the moving Fibres. This is done in the Beginning of the Fever, by such Remedies as dissolve Viscidities, and restore the Strength, which are specify'd above: But at the latter End of a Fever, by whatever expeditiously recruits the dissipated Liquids, and corroborates the Fibres and Viscera. See Fibra. *Boerhaave.*

Prognostics from a Tremor.

In treating of this Subject, we are first to shew what a *Tremor* is; and, next, from what Causes it proceeds. *Galen*, *Com.* 1. *in* 3 *Epid.* makes a *Tremor* a Diminution not of natural, but voluntary Motion; in which the Will or Faculty endeavours to move the affected Part, but fails of its Purpose, through the Imbecillity or Oppression of the same Part, which makes a Motion contrary, at least in some respect, to what was intended.

This kind of Affection differs from a convulsive Motion, which several have mistaken for a *Tremor* in Acute Fevers, under a Persuasion that *Hippocrates* makes a *Tremor* to be a convulsive Motion in many of his Patients, particularly in the fair Daughter of *Nerius*, 5 *Epid. T.* 50. of whom it is said, ᾗ σπασμὸς, ᾗ τρόμος ἦν· *There were Convulsions, also, and she was affected with a* Tremor. On some such Consideration, perhaps, it was, that *Sabinus* and *Metrodorus*, two antient Physicians, said, that a *Tremor* was a small Convulsion; intending, by this Expression, it is supposed, an Affection complicated of a *Tremor* and Convulsion; which kind of *Tremor* is, also, among Physicians, usually called a convulsive Motion, and *Convulsio ex Materia non proportionata.*

Others think that *Hippocrates* sometimes by *Tremor* means a *Rigor*; particularly 4 *Epid. T.* 13. where he relates of the young Stranger Patient, that *on the sixth Day he had a Crisis*; *on the seventh the feverish Fit returned, and went off with a* Tremor; that is, as they would have it, with a *Rigor*. In this Matter, however, they seem to be mistaken, since we persuade ourselves that *Hippocrates* means a real *Tremor*, and not a *Rigor*; if for no other Reason but that the Crisis, on the sixth Day, was not a perfect one, but effected partly by an Excretion, partly by a Translation of the morbific pituitous Matter upon the Nerves and Muscles, which was the Occasion of the *Tremor*.

But we have said enough on this Point, and proceed to shew the Generation of a *Tremor*. And here we are told by *Galen*, *Lib. de Trem. Rig. Palp. & Convulf.* that a *Tremor* is occasioned

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fioned by Weakneſs, or an Imbecillity of the motive Faculty, which is ſometimes infirm of itſelf, as in old Perſons; and ſometimes accidentally from other Cauſes; particularly, as the ſame Author proceeds, from want of Aliment, from a violent Flux of the Belly, or a profuſe Hæmorrhage; alſo, from long Faſting; by which the Aliment is conſumed, and, conſequently, the Faculty weaken'd; or from a Reſolution of the vital Force, as the Caſe is in Stomachics, Cardiacs, in Faintings, violent Colds, and a Plethora oppreſſing the Muſcles and Nerves. And he ſeems to ſpeak much to the ſame Purpoſe, *Com.* 1. *in* 3 *Epid.* when he makes the Cauſe of a *Tremor* to be the Imbecillity of the muſcular Force, which is occaſioned either on its own Account, or from an oppreſſive Redundance of Humours, or by Hunger, Laſſitude, Watching, Cares, or immoderate Venery; all which reſolve the natural Heat, or Strength. But let us hear the ſame Author more explicitly declaring the Cauſe and Generation of a *Tremor*, as follows, in the Place juſt before quoted. *A* Tremor, he ſays, *is occaſioned not only when the Muſcles and Nerves are diſorder'd, but when they are in a ſound State; when any Perſon undertakes to heave, or carry in his Hands, ſomething above his Strength. Thus ſome very ſtrong young Men, in carrying ſome very heavy Burden, and eſpecially when they have tried to aſcend with it by Steps, have been obſerv'd to tremble in their Legs; and what happens to them from an extraordinary Weight, the ſame is occaſion'd in old and weak Perſons by a Weight which is lighter; for that is heavy to them.* And a little after, comprehending under one all the Cauſes of a *Tremor*, he ſays, *We had the greateſt Reaſon, therefore, in our Treatiſe* de Tremor. Convulſ. & Rig. *for aſcribing always a* Tremor *to* Imbecillity.

But ſince the Virtue, or Faculty, is ſometimes weak of itſelf, ſometimes from ſome Paſſion of the Mind, and ſometimes not at all from itſelf, but from a Load which oppreſſes it; hence there are three different Cauſes of a *Tremor*; which are, a Diſorder in the Organs under the Command of the Faculty, the Paſſions of the Mind, and an heavy Load.

Firſt, then, a want of due Temperament, or a Diſtemperature, whether hot, cold, dry, or moiſt, may render the Muſcles ſo weak, as to occaſion a *Tremor* in their Parts: For Heat, if exceſſive, reſolves or diſſipates the natural Strength; violent Cold, on the other hand, extinguiſhes the natural Heat; Humidity, when imbibed in an exceſſive Degree, oppreſſes the Muſcles; and immoderate Dryneſs conſumes the Humid, which preſerves and maintains the natural Heat: Hence ſome mortal Phrenſies are obſerved to end in *Tremors*, from an exceſſive Deſiccation of the Origin of the Nerves, as well as of the Nerves themſelves.

Secondly, The Paſſions of the Mind, as Fear, Sorrow, immoderate Joy, and others, which diſſolve the Strength: Or,

Laſtly, An heavy Burden, by which the Muſcles, being oppreſſed, are diſabled from moving according to the Directions of the Will, may be the Cauſes of a *Tremor*.

Theſe things being premiſed, we proceed to the *Prognoſis*: And here, firſt, we obſerve, that ſome *Tremors* affect the Patient in the Beginning, others in the End of the Diſeaſe. As to the former, we learn from *Galen*, *Com.* 2. in 3 *Epid.* they never appear but in a violent Diſorder: *Tremors*, we have ſaid, are occaſioned either from Hunger, Laſſitude, Watching, immoderate Venery, or an oppreſſive Quantity of Humours; in which laſt Caſe they afford nothing certain alone on which to ground a Prediction in the Beginning, but are only Indications of the Violence of the Diſorder; becauſe all Redundances of Humours render a Diſeaſe dangerous. Of this Nature was the *Tremor* of *Pythion*, 3 *Epid. Ægr.* 1. who was taken the firſt Day with a *Tremor* of the Hands, an high Fever, and Delirium. Such, alſo, was the *Tremor* of *Chærion* obſerved on the third Day, 3 *Epid. Ægr.* 5. But though *Tremors*, in the Beginning of Diſeaſes, indicate only a Redundance of Humours oppreſſing the Nerves and Muſcles, unleſs they proceed from Hunger, Laſſitude, Watching, or immoderate Venery, or are excited by ſome Paſſion of the Mind, the Patient, however, will not be free from Danger, if he be viſited with a ſevere, malignant, or even long Diſtemper, ſince not only ſuch, but every other, Diſorder is to be dreaded in a Patient by any means debilitated. Theſe *Tremors*, as we ſaid, are no ſure Grounds alone for predicting any thing of Certainty concerning the Fate of the Patient; but if they are accompanied with other ſevere Symptoms, the Caſe will be dubious, as it was, for Inſtance, in the Wife of *Eumyris*, 4 *Epid. Tr.* 40. "who, it is ſaid, "look'd like one free from any Diſtemper, and had no Fever; "but loſt her Wits, and was afterwards ſeized with a *Tremor* "of the whole Body, attended with a Colliquation, Loathing, "Thirſt, and a Coldneſs." The ſame is further illuſtrated in the Caſe of the old Man, 4 *Epid. Tr.* 41. who, after a Relapſe, fell firſt into a *Tremor* of the Lips and Voice, at which time the Skin of his Body was obſerved to be more tenſe, and his extreme Parts were cold; he dy'd, as no leſs could be expected, tho', perhaps, his *Tremor* might proceed from Worms, as it was thought to do in ſome other Inſtances.

And thus much may be preſaged from Tremors in the Beginning of Diſeaſes; but when they appear without any other Diſorder accompanying or immediately ſucceeding them, they are uſually Signs of an Apoplexy: This Preſage is hinted to us by *Hippocrates*, 4 *Epid. T.* 36. where it is ſaid, "That ſome "were ſeized at the Beginning with a Tremor of the Fingers, "and of the Lips in ſpeaking, and, alſo, of other Parts; but "had their Tongue more ready, and Speech more fluent, than "uſual: They were more remarkable, alſo, for a Redneſs of "the Face. Theſe, alſo, drank Wine to a Degree of Ine-"briation, or were ſwelled by Vomiting."

Having thus ſhewn what may reaſonably be predicted from Tremors, in the Beginning of Diſeaſes, what we have to ſay of thoſe which are obſerved afterwards is, that ſome of them indicate a critical Tranſlation of the Humours, when Nature propels Part of the noxious Humours from the Viſcera to the Muſcles: And ſuch Tremors are very good, provided they are attended with Signs of Concoction. Such was the Tremor of the young Stranger, 4 *Epid.* before-mentioned, whoſe Fever went off on the ſeventh Day with a Tremor, the noxious Humours being critically tranſlated from the principal Parts to the Muſcles: It often happens, alſo, that at the Approach of a Criſis, by Vomiting, there is a Tremor of the lower Lip, which *Galen*, *Lib.* 3. *de Criſ. Cap. ult.* reckons among the Signs of a critical Evacuation by Vomit.

Theſe, then, are the Tremors obſerved in Diſeaſes after their Beginning, which we have not the leaſt Reaſon to dread; but, on the contrary, thoſe which attend burning Fevers, and Inflammations of the Brain, when the Nerves are dried, or when the Origin of the Nerves, that is to ſay, the Brain, are all mortal. Tremors, from a Dryneſs of the Nerves in Phrenſies, are mortal, and ſeem to be proper to deadly Phrenſies. Juſtly, therefore, was it ſaid by the Author of the 1 *Prorrhet. T.* 9. "That phrenetic Affections end in Tremors," or Tremors follow mortal Phrenſies. *Galen*, alſo, in his Comment on the Place, ſays, "That a Tremor ſucceeds mortal Phrenſies; for "Infirmities of the Nerves are of very long Continuance in "Phrenſies, on account of the Dryneſs of the Affection, the "Faculty being worn out with Watching, and much Motion, "and the Nerves immoderately dried, which are the Cauſes of "Tremors." In a Phrenſy, therefore, you ſee, all Tremors are mortal; and much more, if they appear attended with Convulſions, which are, alſo, the uſual Attendants of vehement Phrenſies. But, in the Beginning of a Phrenſy, a Tremor is not mortal; for a Trembling of the Tongue and Speech are then only Prognoſtics of a Delirium, as we are taught by the Author of 1 *Prorrhet.* 19. In obſcure and mild Phrenſies Tremors are, alſo, uſually obſerved, from a Reſolution of the animal Faculty, and are all pernicious: Of theſe Kinds of Phrenſies we have the Author of 1 *Prorrhet.* pronouncing, *T.* 34. where he tells us, that "Tremulous, obſcure, mild, "and tractable Deliriums, are very phrenetic; as was the "Caſe of *Didymarchus*, in *Coos*." For theſe are occaſioned by a Reſolution of the Faculty. In the laſt Place, a Tremor, from a conſiderable Injury of the Brain, by which the motive Faculty, for the Reaſon given before, is debilitated, is mortal in the higheſt Degree; of which we have an Inſtance in the fair Daughter of *Nerius*, 1 *Epid. T.* 50. *Proſper Alpinus de Præſag. Vit. & Mort. Ægrot.*

Febrile Anxiety.

Anxiety is cauſed by ſome Impediment to the Egreſs of the Blood from the Heart; and, in conſequence of this, from an Impoſſibility of its due Circulation through the Ramifications of the Pulmonary Veſſels, and thoſe of the Aorta: And theſe ariſe either from a ſpaſmodic Contraction of the ſmall Veſſels, or an inflammatory Spiſſitude of the Blood, which renders it incapable of circulating through the proper Canals. Or the ſame Symptom is produced by an Impediment to the Paſſage of the Blood through the Vena Portæ, from the ſame Cauſes: Since, therefore, all the Blood conveyed to the Abdominal Viſcera by the Cœliac and Meſenteric Arteries, and thence to the Vena Portæ by the Veins, cannot paſs farther, it muſt there ſtagnate, diſtend the Veſſels, and reſiſt the freſh Influx of Blood into the Arteries laſt-mentioned, thereby producing the moſt fatal Conſequences. On this account it is abſolutely neceſſary, in all acute Diſtempers, to obſerve, with the utmoſt Diligence, the Cauſes of both theſe Species of Anxiety; and, by all poſſible means, to remove them.

If ſuch an Anxiety continues long about the Heart, and vital Parts, it will produce polypoſe Concretions, Inflammations, and ſudden Gangrenes, accompanied with intolerable Uneaſineſs, and ſoon ſucceeded by Death: But that, whoſe Cauſe is ſituated in the Hypochondria, will produce an exceſſive Sick-

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gess at the Stomach, the other Viscera, mean time, having not so acute a Sensation: This is succeeded by sudden Putrefactions of the Blood, contained in the large and weak Vessels about the Liver; whence Gangrenes, Putrefaction of the Liver, and a fatal Dysentery, arising from such a Putrefaction.

From what has been said, the Physician may understand the Cause and Nature of such an Anxiety, and what Presages may hence be drawn; and, at the same time, he will distinguish betwixt that Species of Anxiety, excited by some nervous Disorder only, without a Fever, and that which is caused by an acute Inflammation, previously discovered by its proper Signs. And by comparing this with the Violence and Duration of the Symptom, and the Part where the Disorder resides, he will be enabled to discover its Nature; and to learn why, in all Diseases, at the Approach of Death, the last Scene is closed with extreme Anxiety; why a convulsive Anxiety is not attended with much Danger, but an inflammatory Anxiety with a great deal; and why Uneasiness, Restlessness, Sighing, Anhelation, and obstinate Want of Sleep, in suppuratory or inflammatory Distempers, are the Forerunners of Death.

Hence, likewise, it is evident, that various Methods of Cure are required, in order to mitigate the Severity of this Disorder; in the Discovery and Application of which the Physician will be duly instructed by a previous Knowledge of the particular Nature of the Symptom.

When, therefore, it is discover'd, that the Affection is excited by Spasms, it is to be removed by rendering the acrid, irritating Matter, of whatever Nature, mild; by expelling it, by means of Vomits, Cathartics, Sudorifics, Diuretics, and Abstersives; by diluting with warm aqueous Fluids; by calming the Affections of the Mind; by relaxing the Fibres, Vessels, and Viscera; and by moderating the Tumult of the nervous Fluid with Anodynes and Narcotics.

Boerhaave recommends the following Medicines, as Vomits, proper in Fevers.

Take of Oxymel of Squills, three Ounces; and of distilled Succory-water, five Ounces: Mix for a Draught.

Take eight recent Asarabacca-leaves; infuse for four Hours, in the distilled Water of Carduus Benedictus; and exhibit five Ounces of the expressed Tincture for a Draught.

Take of white Vitriol, twenty-five Grains: Reduce to a Powder, to be exhibited in a small Quantity of Beer.

Purgatives proper in Fevers are these following:

Take of the Crystals of Tartar, five Drams: Reduce to a Powder, and exhibit in warm Whey.

Take of the Crystals of Tartar, two Drams; of Sal Prunellæ, twelve Grains; and of Sal Polychrestum, sixteen Grains: Reduce to a Powder, to be taken for a Dose.

Take of Scammony, seven Grains; and of distilled Succory-water, half an Ounce: Make an Emulsion; to which add twelve Drams of the solutive Syrup of Roses, with Sena, to be taken for a Draught.

Take of Tamarinds, three Ounces; of the Troches of Agaric, three Drams; of Sena-leaves, one Dram; and of Figwort, half an Ounce: Boil in Water, and to eight Ounces of the expressed Liquor, add half a Dram of Sal Prunellæ, and an Ounce and an half of solutive Syrup of Roses, with Sena: Of this let the Patient take two Ounces, every Half-hour, till he begins to be purged.

Take of Prunes, four Ounces; of Tamarinds, one Ounce; of Sena-leaves, two Drams; and of Figwort, six Drams: Boil with Water for half an Hour; express through a Cloth, and, with twelve Ounces of the Liquor, mix two Ounces of the Syrup of Succory with Rhubarb: Of this Preparation let the Patient take three Ounces every Half-hour, till he begins to be purged.

Take of the Electuarium Diaprunum of *Sylvius*, one Dram and an half; and of the Powder of Sena-leaves, one Scruple: Make up for a Bolus.

The same Intention is, also, answer'd by the following Medicines, exhibited in the Doses specified. The Electuarium Diaprunum, or Cholagogum, of *Sylvius*, half an Ounce; the Confectio Hamech, four Drams; the Hiera Picra of *Galen*, one Dram and an half; Lenitive Electuary, one Ounce; and Electuary of the Juice of Roses, half an Ounce.

Sudorifics proper in Fevers are always of a diluting and aperient Nature, and may be prepared in the following manner:

Take of the Roots of Smallage, half an Ounce; of the Roots of Burdock, and China-root, each one Ounce; of the Roots of Succory, Grass, Navew, Parsley, Rape, and Butchers-broom, each half an Ounce; of Sarsaparilla, one Ounce; and of Vipers-grass, half an Ounce; of the Leaves of Sorrel, Succory, Endive, and Dandelion, each one Handful; of Elder-flowers, two Ounces; and of the bruised Seeds of Smallage, and Parsley, each one Ounce: Boil in three Pints of Water, of which the Patient is every Quarter of an Hour to drink three Ounces warm, till a gentle Sweat is excited.

After this Formula a great many more may be prepared.

Diuretic Medicines, proper in Fevers, are these following;

One Part of recent Milk, mixed with three Parts of Water; Whey; Buttermilk; the Juice of the Birch-tree; the recent Juices of mature Summer-fruit, diluted in Water; Nitre; antimoniated Nitre; Sal Polychrestum; and the preceding sudorific Decoctions, used with a diuretic Regimen.

Abstersive Medicines, proper in Fevers, are the same with those already mentioned.

If the Anxiety is excited by an inflammatory Viscidity of the Blood, this Viscidity must be dissolved and diluted; the Vessels must be relaxed; and the Impetuosity of the vital Fluid must be checked. With these Views, let the Patient drink copious Draughts of aqueous Liquors, in which farinaceous Vegetables have been boiled, impregnated with Honey and Nitre, somewhat acescent, and slightly aromatic. Let Fomentations, Cataplasms, Epithems, and Plaisters, composed of diluting, relaxing, emollient, and anodyne Ingredients, be applied to the Region affected. Let Clysters, at the same time, made of the like Ingredients, and small in Quantity, be frequently injected, and, if possible, be retained a long time. And let the Vapour of warm Water, mixed with Emollients, be perpetually drawn into the Lungs, through the Mouth and Nostrils.

And let it be remarked, that this Symptom, above all others, requires a safe and immediate Cure, on account of the Severity thereof, and its Consequences. *Boerhaave.*

Prognostics, or Presages, from an Anxiety.

There occur in the *Prognostics*, *Prorrhetica*, and all the Books of *Hippocrates*, relating to Prediction, four synonymous Words, ἀλύξη (*Alyce*), ἀλυσμὸς (*Alysmus*), ἀπορίη (*Aporie*), and ἄση (*Asse*), or ἄση (*Asse*): These all signify the same thing which we express by *Anxietas* (Anxiety), *Inquietatio* (Restlessness), *Implaciditas* (Uneasiness), and *Jactatio* (Jactation, or Tossing). [To these may be added δυσφορία]. Some indeed would have *Alyce* to have respect to an injured Respiration, when it is too frequent and irregular; but it appears from *Galen*, to have relation to a vitiated Decubiture, for, *Lib. de Humoribus*, he says, "He (*Hippocrates*) called it *Alyce* (an "Anxiety) though many call it *Dysarestia* (a Self-displiciency), "for they say, those Patients are under an Anxiety (ἀλύουσι), "who cannot continue in one Posture of Decubiture, but are "continually changing their Position, because the present is "always uneasy to them." And he repeats the same in his Comment on 7 *Aph.* 56. By these Terms, then, we understand no more than a vitiated Decubiture, when, through the Violence or Malignity of the Disease, the Sick is perpetually shifting his Position, and cannot in the least rest in one Place, but moves, tosses, and throws himself about, in various manners; sometimes raising himself up, then sinking down, sometimes on one Side, sometimes casting himself on his Belly, and sometimes on his Back, but never resting in one Place or Figure of Decubiture.

An Anxiety proceeds either from the Stomach, labouring under some Disorder, or oppressed with Food, and under a Nausea; or from a great Inflammation of one of the internal Viscera; or an Imbecillity, incapable of sustaining the Disease; or from an occult Malignity infesting the Heart, as in a pestilential Fever; or from an Agitation of the Matter in the turgent Veins about the Præcordia; or, lastly, from a critical and violent Perturbation, occasioned by an Intumescence of the Humours, tending to an Excretion.

First, then, an Anxiety may be owing to some Indisposition of the Stomach, or an Oppression of that Part by an immoderate Quantity of Food, as appears from *Hippocrates, de R. V.* *I. A.* and *Galen*'s Comment on that Book. Thus, when the Patient, after long Abstinence, the Disease not being past its Height, feeds too freely; or when the Mouth of the Stomach,

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as *Galen* says, *Com. in Aph. & in Lib. de Humor.* contains some Humour particularly offensive, which Humour is not much in Quantity, nor diffused in the open Cavity of the Stomach, but immersed in its Coats; or, lastly, which is perhaps the same, when, as that Author says, *Com. in Prorrhet.* the Mouth of the Stomach is vellicated by depraved Juices: An Anxiety, he there tells us, is known to proceed from the Stomach by the Attendance of a Nausea.

In the next Place, as Anxiety is produced by the Violence of the Disease, in hot and burning Fevers, especially at their Height, when the Sick becomes restless and impatient, through the Vehemence of the febrile Heat, and, what is no small Sign of Malignity, has his Anxiety occasioned by a Corruption of the bilious Humours swelling and estuating in the larger Veins. This Anxiety is most apparent, when one of the Viscera is affected with a great Phlegmon, or Erysipelas; in which Circumstance the Patient is not very hot in his outward and extreme Parts, but burns inwardly.

An Anxiety may, also, be owing to Weakness, as we are told by *Galen*, *Com. in 1 Prorrhet.* when the Faculty is oppressed by the Body; as when immoderate Evacuations have preceded, or the Faculty is extinguished by the Malignity of the Distemper.

Lastly, The Patient becomes seized with an Anxiety, from a Commotion of the Humours vellicating the Parts, in order to a critical Excretion: Hence we are told by *Hippocrates*, 2 *Aph.* 13. "That they who undergo a Crisis, have a severe "Night before the Fit." For when Nature intends an Excretion of the Humours, she raises a Commotion and Perturbation in the whole Body, which must, of Necessity, create a Restlesness and Anxiety in the Patient. To this we may add, that those who labour under a Suppuration, are often molested with this Symptom, either from a Decay of Strength, and Depression of Nature, or from the Use of Respiration much injured; or an Estuation in the Thorax; or from the Acrimony of the Pus corroding and vellicating the sensible Parts; or from an acrid Distillation from the Head upon the Mouth of the Stomach.

We have given you the Causes of an Anxiety, and proceed to speak of the Prognostics, which may be formed from this Symptom: And, in general, we say, with the Author of 1 *Prorrhet.* 39. 76. and in other Places, that an Anxiety is always bad, except when it is critical, or precedes an happy Crisis: There are, however, some Anxieties from which nothing certain can be prognosticated; such are those occasioned by some Disorder of the Stomach, which, though bad, never afford, by themselves, any sure Prognostic of the Death or Recovery of the Patient. And indeed such an Anxiety as is excited by some Affection of the Stomach, is distinguished, according to *Galen*, *Com. in 1 Prorrhet.* from other Anxieties by ναῦσιν, a *Nausea*, and ἔμεσιν, *Vomiting*; because they who are molested with this Sort of Anxiety have a continual Nausea, and Inclination to vomit; whence it is justly said, by the Author of the *Coaca Præsagia*, that an Anxiety, with a Loathing and Nausea, indicates an Affection of the Stomach. Now in Intermittent Fevers, and in many other Diseases, an Anxiety, or Inquietude, with a Loathing and Nausea, is far from being malignant, since the Anxiety is often removed by Vomiting. Of this we have an Instance given us by *Hippocrates*, 7 *Epid. T.* 102. "The Wife of *Thestimus*, he says, labouring under "a Semitertian, was seized with an Anxiety, Vomiting, and "Horror, all at once; and as the Fit came on with a Thirst, "in the Progress of the Fit, the Heat increasing with the "Fever to a vehement Degree, she drank Hydromel; and, "after Vomiting, was freed from the Horror and Anxiety together." An Anxiety and Inquietude, therefore, attended with a Loathing and Nausea, are not much to be dreaded, and least of all, when, by the Benefit of Nature, or the Assistance of Art, a Vomiting excited, relieves the Patient from them; as, on the other hand, an Anxiety which is increased by Vomiting, is not usually void of Malignity. Thus, also, in the Height of burning Fevers, under the greatest Estuation, an Anxiety is not to be feared, because it is a proper Symptom of that kind of Fevers. Anxieties of a good Sort are, also, frequently observed before an happy Crisis; for, at the Approach of a Crisis, the Patient grows restless and turbulent, and for very good Reasons, since the whole Body is then thrown into a Commotion and Perturbation, while Nature attempts an Excretion of the morbific Humour: But such critical Anxieties and Inquietudes are distingued from others by critical Signs, and chiefly by a supervening Rigor, succeeded by a copious Sweat, or by plentiful Vomiting or Purging, or a copious and critical Hæmorrhage. With Respect to this Subject, we read, *Coac.* 19. that "Such as labour under an Horror, Anxiety, and "Lassitude, with a Pain in the Loins, fall into a Flux of the "Belly." And *ibid.* 111. "They, who, after Watchings, "are seized with an Anxiety, may expect an Hæmorrhage "from the Nose." An Anxiety, also, often happens, when Nature makes Efforts to propel the putrid and malignant Humours to the Skin, as in an Expulsion of Exanthemata, after whose Appearance the Anxiety ceases.

These, then, are the Anxieties from which we have no Reason to be apprehensive of any Danger in a Disease. But, as an Anxiety under a burning Fever, especially at the Height, and utmost Intenseness and Estuation, at which time it is common to all, merits not our Concern, so, on the other hand, a malignant Anxiety observed in Fevers, where the outward Parts are in no extraordinary Degree of Heat, whilst the internal Parts and Viscera are in a burning State, is justly to be dreaded. Such an Anxiety seems to be a proper Symptom of malignant Fevers, which are mild and gentle, as to outward Appearance, but full of inward Perturbation and Uneasiness, occasioned, as we said, either by some violent Inflammation of one of the Viscera, or by an Erysipelas, or by an Estuation and Effervescence of the highly putrid Humours in the Veins about the Præcordia, or from mere Weakness, or from an extraordinary Redundance of crude Humours, with which Nature seems to be oppressed: In such a Circumstance the Patient in a Fever labours under a remarkable Anxiety, which we take for no slight Indication of Malignity.

But the "worst of all Anxieties, according to *Coac.* 2. are "those which are attended with Refrigerations," particularly of the extreme Parts, the Feet, Hands, and Ears. To this Purpose we find *Hippocrates* thus speaking, in his Book of *Prognostics*: "If the Patient, he says, lies with his Feet bare, "and not very hot, and throws about his Hands, Neck, and "Legs, in an unequal and disorderly manner, it is a bad Sign; "for it indicates an Anxiety."

An Anxiety, under Refrigerations of the extreme Parts, where Heat is not to be recalled, is mortal in the highest Degree, and shews Death to be at hand: Thus it proved in the Case of *Silenus*, 1 *Epid. Sect.* 3. *Ægr.* 2. and of the Woman who lay ill *in Foro Mendacium*, 3 *Epid. Sect.* 2. *Ægr.* 12.

No less pernicious is accounted an Anxiety which appears attended with bad Sweats, on a critical Day. Bad Sweats, according to *Hippocrates*, are all such cold Sweats, as in a continual Fever appear on the upper Part of the Body, as the Head, Neck, and Clavicles. Of such an Anxiety we read, 1 *Prorrhet.* 27. where it is said, "That a Restlesness and "Uneasiness [δυσφορίαι] with Refrigerations, and a Sweating "of the upper Parts, where the Patient is not free from a "Fever, prognosticate a Phrensy and Death, as in the Instance "of *Aristagoras*." And it was observed, by *Hippocrates*, of *Silenus* before-mentioned, "That on the sixth Day he sweated "a little about the Head, his extreme Parts were cold and "livid, and he was under a great Anxiety." And of the Woman mentioned, also, before, he says, "On the seventh "Day she had a new Fit of a Rigor, succeeded by an high "Fever, and an intense Thirst, with an Anxiety: Towards "Evening she had a cold Sweat over all her Body, with a "Coldness of the extreme Parts, and no Return of Heat." Anxieties, therefore, under Refrigerations, attended with bad Sweats, are destructive; which is the same thing as if he had said, that Anxieties, with bad Signs, are bad; and with pernicious Signs, pernicious and deadly. Now, that cold Sweats of the Head, and Refrigerations of the extreme Parts, are pernicious Signs, we are taught by *Hippocrates*, *Coac.* 572. 573. *Prognost. & Lib. de Crisibus.*

Anxieties on critical Days afford surer Prognostics, and are esteemed very bad, when succeeded by no salutary Evacuation, as by an Hæmorrhage from the Nose, or by Stool, Vomit, or Urine, but especially by Sweat. For Confirmation hereof we read, 1 *Prorrhet.* 61. "Refrigerations of the whole Body, "attended with an Anxiety, but no Sweat, are bad Signs." And of Anxieties, attended with bad Evacuations by Stool, we are told by *Hippocrates*, *Lib. de R. V. I. A.* "That such "Stools [spumous, and saturated with pure Bile] were very "pernicious on many Accounts, as not extinguishing, but "increasing the burning Heat of the Hypochondria, and "exciting a Restlessness, Anxiety, and Jactation of the "Members." Which *Galen*, in his Comment, tells us, are Symptoms of an Inflammation, affecting the Hypochondria themselves. Of the same Symptom, in Conjunction with Vomitings, it is said, 1 *Prorrhet.* 62. "Pure and unmixed "Vomitings, attended with Anxieties, are bad."

An Anxiety under an utter Decay of Strength, from immoderate Evacuations, is pernicious in the last Degree. Such a Sort of Restlessness and Uneasiness is observable in many dying Persons. We have an Instance, 7 *Epid. T.* 12. in the Person of *Chartades*, who (after vast Hæmorrhages by Stool) "was affected with an Anxiety about the Mouth of the Sto-"mach, [περὶ τὴν καρδίαν] a slight Sweating in almost every "Part of his Body, and a slow Fever. At first he seemed to "have the free Use of his Reason; but, as the Day went for-

"wards,

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" ward, the Anxiety and Uneaſineſs increaſed upon him, and " he fetched his Breath ſomewhat ſhorter: He was more " hearty and obliging in his Salutations, and Receptions of " Perſons, than Occaſion required, and ſome Symptoms of a " Lipothymy appeared, which were not at all relieved by " drinking Ptiſan, or Barley-water [τὸ ἀπὸ κρίμνων ὕδωρ]: " Towards Evening he drew his Breath very thick, with much " Agitation and Toſſing, and Turning from Side to Side, " without the leaſt Intermiſſion, or Reſt."

In acute Diſeaſes, if a Pain, affecting ſome ignoble Part, ceaſes, and the Patient is afterwards taken with an Anxiety, it is of bad Prognoſtication. An Inſtance of this we have in the bald Man of *Lariſſa*, 3 *Epid. Sect.* 3. *Ægr.* 5. " Who, " *Hippocrates* ſays, on the third Day, was freed from the Pain " in his Thigh, but was under much Perturbation and Deli- " rouſneſs, with great Jactation and Uneaſineſs; and the fourth " Day about Noon he died."

For a Perſon, after receiving a Wound or Blow, to be under an Anxiety, or very reſtleſs and uneaſy, is, alſo, a bad Sign; as was obſerved by *Hippocrates*, 5 *Epid. T.* 59. in one who received a Stroke on the Head with a Stone; and in another, who had his Liver pierced with a Dart. *Ibid. T.* 61.

Anxieties, alſo, are often obſerved attendant on mortal Phrenſies, as we learn from the Author of 1 *Prorrhet.* 12. where he ſays, " That in the Beginning of a Phrenſy for the " Patient to be mild and gentle, but often ſhifting from Place " to Place, is a bad Sign."

We conclude, therefore, from the Whole, that all Anxieties are bad, except thoſe which precede a ſalutary Criſis, and ſuch as proceed only from an Affection of the Stomach, and are not preceded, accompanied, or ſucceeded by other pernicious Signs; or ſuch as were obſerved in the Caſes of *Silenus*, the Woman in the *Forum Mendacium*, the bald Man of *Lariſſa*, and *Chartades*, before-related. *Proſper Alpinus*, *de Præſag. Vit. & Mort. Ægrot.*

Febrile Thirst.

Thirſt is excited by a Dryneſs of the Solids, an Immeability of the Fluids, and a ſaline, alcaline, or bilious and oleous Acrimony.

Thirſt, therefore, always witneſſes that ſome one of theſe Cauſes is preſent; and, on this Account, it prognoſticates all the Evils which are capable of being produced by ſuch Cauſes.

Care muſt, therefore, be taken, to remove immediately this Symptom of Thirſt, particularly in Acute Diſtempers.

Thirſt is removed, firſt, By drinking frequently, and in ſmall Quantities at a time, aqueous, ſubacid, nitrous, demulcent, warm Liquors; of which kinds are the following.

Take of common ſimple Barley-water, forty Ounces; of the Rob of Currants, four Ounces; as many Drops of the Spirit of Salt, as is ſufficient to procure a grateful Acidity; and of diſtilled Cinnamon-water, one Ounce: Mix, for ordinary Drink.

Four Ounces of the Robs, Jellies, or Syrups, of the following Fruits taken as above, may be uſed: The Robs, Jellies, or Syrups, for Inſtance, of Currants, Quinces, black Cherries, Barberries, Mulberries, Raſpberries, Pomegranates, Lemons, Citrons, common and *China* Oranges. Thus,

Take of the Jelly of Quinces, one Ounce; of the Diamoron of *Nicolaus*, two Ounces; of the Syrup of Citron-juice, one Ounce; of the diſtilled Waters of Borage, and Baum, each four Ounces; of common Water, twenty-four Ounces; and of Rheniſh-wine, three Ounces: Mix all together.

Drinks proper in a febrile Thirſt are, alſo, theſe following: Milk and Water, Whey, Butter-milk, Small Beer, Coffee, and one Part of Wine mixed with twelve Parts of pure Water, and a little Lemon-juice.

Secondly, Thirſt is removed, by waſhing the Noſtrils, and gargarizing the Mouth and Fauces, with the ſame kinds of Fluids as thoſe above recommended.

Thirdly, By applying Fomentations, Epithems, and Cataplaſms, of the ſame Nature, to the Region of the Hypochondria.

Fourthly, By the Uſe of ſimilar Clyſters, retained a conſiderable time.

But if a very great Thirſt is accompanied with extreme Weakneſs, it will be ſafe to exhibit vinous, or more ſpirituous Liquors, mixed with thoſe above recommended. Thus,

Take two of the beſt Citrons, take out the Seeds, pare off the yellow Bark, throw away the whole fungous Subſtance, and, bruiſing the yellow Bark and the Pulp together, put them in thirty-two Ounces of ſimple Barley-water; to which add, of the Syrup of Mulberries, an Ounce and an half; of Rheniſh-wine, eight Ounces; and of toaſted Bread, two Ounces: To be preſerved in a cloſe earthen Veſſel. Or,

Take of the Syrup of Lemons, three Ounces; of the beſt Spirit of Wine, one Ounce and an half; of Rheniſh-wine, four Ounces; and of pure common Water, fourteen Ounces: Mix all together, for ordinary Drink. *Boerhaave.*

Prognostics from Thirst in Acute Diseases.

It is natural for Perſons under acute and burning Fevers to be moleſted with Thirſt, as conflicting with a hot and dry Diſtemper, ſince it is much worſe for the Patients, in ſuch Caſes, not to thirſt at all, as it is, alſo, for them to have their Urine of no Colour, but thin and aqueous. It is beſt, therefore, on all Accounts, ſince the Reaſon of the thing requires it, that Perſons under hot Diſtempers ſhould be affected with Thirſt: But immoderate and intenſe Thirſt in no Caſe is good, as indicating a vehement and burning Heat in the internal Viſcera; but, on the contrary, is, for the moſt part, a bad and dangerous Symptom, and ſignifies that the Diſeaſe is very ſtrong and urgent upon the Patient, and difficult to be ſubdued; and that Nature is in Danger of ſinking under the Weight which oppreſſes it. We may, therefore, ſafely pronounce an immoderate Thirſt, as it is an Indication of the extraordinary Strength of the Diſeaſe, a dangerous and formidable Symptom in acute Diſorders, but moſt pernicious, and fatal, when it precedes, accompanies, or follows other very bad Signs; in which Caſe it is a certain Preſage of Death.

But from a Thirſt alone, as well in acute as other Diſeaſes, we can prognoſticate nothing with Certainty, but regard it only as a Sign of the Strength and Violence of the Diſeaſe. With Reſpect to this Subject may be conſidered, what *Hippocrates* writes, 1 *Epid. Sect.* 2. *Stat.* 3. where he ſays, *That the burning Fevers (of that Conſtitution) afforded Signs in the Beginning in what Subjects they would prove mortal; for the Patients were firſt ſeized on a ſudden with a high Fever, attended with a ſmall Degree of a Rigor, they were incapable of ſleeping, were very reſtleſs, and afflicted with a Thirſt and Nauſea.* Such was the Caſe of *Philiſcus*, 1 *Epid. Sect.* 3. *Ægr.* 1. of whom we read, *That on the third Day in the Morning, and till the Middle of the Day, he ſeemed to be free from a Fever; but towards Evening he was ſeized with a high Fever, attended with Sweat, and a Thirſt, a Dryneſs of the Tongue, and a Blackneſs of the Urine.* In this Caſe, a Thirſt, attended with black Urine, and other bad Symptoms, ſignified that the Diſeaſe would prevail over Nature, and prove mortal. The like Thirſt was obſerv'd by *Hippocrates* in *Pythion*, 3 *Epid. Sect.* 3. *Ægr.* 3. *who*, he ſays, *was ſeized with a vehement Rigor, ſucceeded by a high Fever, a Dryneſs of the Tongue, a Thirſt, Redundance of Bile, black Urine, which had an Enæorema* [ſee the Word], *but no Hypoſtaſis.* This Thirſt continued upon him till the fifth Day, accompanied with other pernicious Signs, particularly a Coldneſs of the extreme Parts, and a Loſs of Voice. We conclude, therefore, that an intenſe Thirſt, accompanied with other bad Signs, is of the moſt fatal Conſequence. Of this Nature, perhaps, was the Thirſt which the Wife of *Hermoptolemus* endured, 7 *Epid. T.* 13. *who*, it is ſaid, *was affected with a Trembling of the Hands, and a Shaking of the Head, a depraved Caſt of the Eye, with a violent Thirſt; and as ſoon as ſhe had drank, ſtill craved for more Drink, and ſnatched the Cup from the Attendant, and took large Draughts, and would not ſuffer the Cup to be pulled from her; her Tongue was dry, and very red; and, when under a Tremor, ſhe would put both Hands to her Mouth, and chew them.* Like to this was the Thirſt of *Ariſtocrates*, who died in four Days of a peſtilential Carbuncle. We conclude, upon the Whole, then, that an immoderate Thirſt in acute Diſeaſes is never good, oftentimes bad, and, when attended with other bad Signs, moſt pernicious and fatal.

What is to be prognosticated from a Removal or Absence of Thirst in Diseases.

A moderate Thirſt in Diſeaſes is always good; and to thirſt more or leſs, as the Reaſon of the thing, and the Nature of the Diſorder, with reſpect to Heat, require, can be no bad Sign: But for the Patient to be moleſted with an intenſe and continual Thirſt, is never a good Prognoſtic; as, on the contrary, not to have the leaſt Deſire of drinking, when labouring under a hot and dry Diſtemper, is highly pernicious, and fatal; and the more, when the Thirſt, with which they were before afflicted, ceaſes, without any Reaſon to be given for it. The Author of 1 *Prorrhet.* 57. tells us, that " a Thirſt in acute Diſeaſes, " which ceaſes for no Reaſon, is bad." And *Galen*, in his Comment on the Place, endeavouring to account for it, has theſe

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these Words: "When, therefore, it happens, that the Thirst "cannot be removed, either by Vomiting, Sweating, or Purging, or by a critical Abscess, so as that the Disorder itself is "not mitigated, but that the Sense thereof is blunted or abated, "this is no good Sign; but if the Thirst ceases whilst the "Tongue continues dry, and the Urine crude, this is a surer "Evidence of the Malignity of the Disease; and still the more, "if no refrigerating or moistening Remedies have been outwardly applied; a proper Use of which Medicines, in acute "Diseases, is not so much to extinguish a Thirst, as to abate it. "But in acute Distempers, if the Thirst be perfectly removed, "it is pernicious in the highest Degree." From this Passage of *Galen* it is obvious to every one, that it is highly pernicious, in acute Disorders, for a Thirst to cease for no manifest Cause, as, for Instance, a beneficial and salutary Evacuation or Purgation, but in a crude State of the Distemper.

But this want of Thirst, in such Cases, is most fatal and deadly, when attended with other destructive Symptoms. To this Purpose we find *Galen* discoursing, in his Comment on the first of the *Epidemics*: "As an Accumulation to all those "pernicious Symptoms under which the Patients laboured, "must be reckoned, that though they were afflicted with a "violent Heat, and Estuation, they had no Thirst; but as "for those who were at first molested with a violent Thirst, "and were afterwards freed from it, such an Event must be "necessarily owing to one of these two Causes; that is, either "a Solution of the Disease, or an Extinction of the Faculty, "in such a manner, that the Sick are no longer sensible of "the Evils under which they suffer: But the first was not the "Case in those Disorders, since these Symptoms prov'd mortal "in the Event."

They who labour under acute Diseases, are not thirsty; first, On account of a cold and moist Humour distilling from the Head upon the Stomach; whence *Hippocrates* justly says, 4 *Aph.* 5. that they who are molested with a Cough, are not very thirsty, because the Phlegm, which distils from the Head upon the Stomach, takes off the Thirst: And this want of Thirst is observed in some pleuritic and peripneumonic Patients; from which, however, nothing can be prognosticated with Certainty, since the Sick, in such Cases, are distinguished from others, who are not afflicted with Thirst by their Tongue, which is not dry and parch'd, but moist and soft, from the Phlegm which moistens it.

Secondly, A want of Thirst in very hot Distempers, where the Patient is in a very high Estuation, proceeds either from a Delirium, which renders him insensible of what he suffers; or an Extinction of the appetitive Faculty of the Stomach, or from both Causes. Of Persons in a Phrensy, the Author of 1 *Prorrhet.* 16. says, *Little Drinkers, who are startled at the least Noise, are subject to Tremblings.* And *Galen*, in his Comment, tells us, that *Phrenetic Patients are* βραχυπόται, *that is, have little Desire to drink, though their Disorder be of a hot and dry Nature, and their Tongue rough with excessive Dryness.* But we are taught by *Hippocrates*, that such Patients are disorder'd in their Senses, 2 *Aph.* 6. where he says, *They who are affected with Pain in any Part of the Body, and yet have but little Sense thereof, have their Reason disturbed.* Hence he says of those Persons who labour'd under a Phrensy, and whose Cases he describes, 3 *Epid. Sect.* 3. that they were all free from a Thirst. And he gives a particular Instance of this kind in the same Book, Case the last, of the young Man of *Melibœa*, who labour'd under a Phrensy, unattended with a Thirst.

In such Cases as these, then, not to thirst, is a bad Sign; and, if attended with others of the like Nature, mortal; but without these nothing certain can be prognosticated from it: For there are many Persons in a Delirium who never call for Drink, and yet recover, though, it is true, they are such as have no violent Delirium, nor other concomitant destructive Symptoms, particularly, which is much to be regarded, a Dryness of the Tongue. But where that Part is not only very dry, but, also, black and foul, not to thirst is mortal in the highest Degree, as it shews, that the Disease is very strong and urgent upon the Patient; and that Nature is ready to sink under its Burden.

In a very hot Distemper, not attended with a Delirium, but a great Dryness and Adustness of the Tongue, a want of Thirst is infallibly mortal, as it demonstrates the Faculty to be extinguished; and with the more Certainty, if the Thirst, under which the Patient laboured before, ceases unaccountably, and for no Reason; for this is a sure Indication of the Extinction of the Faculty. And we have very good Reason to assert it fatal, since it is impossible for Nature to be oppressed, and totally subdued, by the Disease, without the Appearance of several other mortal Signs. Thus it happened in the Case of *Erasmus*, 1 *Epid. Sect.* 3. *Ægr.* 8. "who had a continual Fever, with "Sweating; an Elevation and painful Tension of the Hypochondria; black Urine, which had a round Enæorema, but "no Hypostasis, a great Dryness of the Tongue, but no extraordinary Thirst." Another Instance is in *Hermocrates*, 3 *Epid. Sect.* 1. *Ægr.* 8. "whose Tongue at first was parch'd "with Heat, and soon after he was seized with Deafness, and "was incapable of sleeping, but not very thirsty." And a little after we read, "On the twentieth Day he had an Aversion "to all Food, had the perfect Use of his Reason, but could "not speak; his Tongue was very dry and parch'd, but he had "no Thirst; and he slept, but labour'd under something of a "Coma." The same was observ'd in the Virgin Daughter of *Euryanax*, 3 *Epid. Sect.* 2. *Ægr.* 6. who through the whole Course of her Fever, of which she died, had no Thirst, but abhorred Food. From these, and the like Instances, we conclude, that in acute Diseases it is always a bad Sign for the Patient to be without a Thirst, when he has been freed from it in an unaccountable manner; but when a Thirst ceases for good Reasons, which may be given, such a Cessation is so far from being bad, that, on the contrary, it is a very good Sign; as it proved, for Instance, in the Person who lay sick in the Garden of *Dealces*, 3 *Epid. Sect.* 1. *Ægr.* 3. who had several times, in the Course of the Disease, been thirsty and delirious, but was, at last, for a very good Reason, which was the Solution of the Disorder, freed from his Thirst. *On the twentieth Day*, says Hippocrates, *he fell into a Sleep, was restor'd to the perfect Use of his Reason, sweated, and was freed from his Fever and Thirst.* This Person underwent several Crises, which were preceded by a Thirst, a Dryness of the Tongue, and a Delirium; and these Symptoms were all alleviated, and the Thirst, in particular, diminished, after a Crisis, as the Reason and Nature of the thing required: But a want of Thirst, contrary to Reason, or just Expectation, and attended with other pernicious Signs, is destructive and fatal, in the highest Degree. *Prosper Alpinus, de Præsag. Vit. & Mort. Ægrot.*

A Febrile Nausea.

A Nausea is an ineffectual Effort to vomit, accompanied with an Idea of Horror; it is, therefore, excited by slight Convulsions of the muscular Fibres of the Fauces, Oesophagus, Stomach, Intestines, and abdominal Muscles: These are caused, first, By an acrid, putrid, and bilious Matter, received into the empty Stomach, thence ascending into the *Fauces*, which, together with the Stomach, it vellicates, and irritates. Hence the Parts above-mentioned are drawn into Consent, and excited to similar Motions: And that a Nausea is thus caused, we distinguish, by previous Fasting, by a putrid Breath, and Sordidness of the Mouth, and Fauces. Or, secondly, By a tenacious, viscid, fluctuating Matter, residing in, and vellicating the same Parts. This Species of Nausea is distinguished by the previous Signs of such a Viscidity. See Lentor. Or, thirdly, by a slight Inflammation of the Stomach, Oesophagus, Intestines, and adjacent Viscera: This is distinguished by the proper Signs of such Inflammations.

Fourthly, By the Remembrance of something, which, formerly taken into the Stomach, excited such a Nausea.

Fifthly, By an inordinate Motion of the nervous Fluid, excited by any Cause whatever: This is distinguish'd by *Deliria*, Spasms, a Vertigo, and Tremor.

If a Nausea persists long, it produces Emptiness, Abstinence from proper Drinks and Medicines, Vomiting, and many Misfortunes which may hence be excited; the principal of which are, Weakness, an alcaline putrid Acrimony, and universal Dryness.

A Nausea, from the first Cause, is to be cured by the Use of acid, nitrous, aqueous Drinks, Aliment, and Medicines, which are the same as those recommended against febrile Thirst; by the Exhibition of a lenient Purge of the same Kind; by acido-austere Medicines, which corroborate the Fibres; or, if these do not succeed, by a Vomit.

The second Species is to be remov'd by diluting, attenuating, purging, and Emetics. The Medicines here proper are the same as those recommended in a febrile Anxiety.

The third Species is only to be removed by curing the Inflammations which excite it.

The fourth Species is cur'd by forgetting and avoiding the Ideas which cause it.

The fifth Species is remov'd by austere Remedies, Rest, Narcotics, and cold Water. Thus, for Instance,

Take of the Rob of Quinces, four Ounces; of the Syrup of Lemons, two Ounces; of *Matthiolus*'s distill'd Aqua Vitæ, one Ounce; of distill'd Cinnamon-water, six Drams; of the distill'd Water of Citron-peels, six Ounces; and of the Tincture of Opium, sixty Drops: Mix all together, and exhibit one Ounce for a Dose, till the Nausea is remov'd.

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Take of ſtrong diſtill'd Mint-water, a ſufficient Quantity: And let the Patient drink an Ounce of it cold, every Quarter of an Hour.

Take of the Rob of Quinces, a ſufficient Quantity: Of which let the Patient take one Dram every Half-hour.

Take of recent Lemon-juice, half an Ounce; and of Rheniſh-wine, one Ounce: Mix both ſufficiently together; add one Dram of the Salt of Wormwood; and exhibit during the Effervescence.

Take thin Slices of Lemon, ſprinkled with Sugar: To be kept lying on the Tongue.

Moſt Patients receive Relief from Epithems, Fomentations, Cerates, and ſtomachic Applications; eſpecially when there is no Inflammation. Thus,

Take of the aromatic Powder of Roſes, of Diagalanga, and the Diarrhodon Abbatis, each one Ounce: Mix all together, ſew up in a Piece of Muſlin, and apply to the Epigaſtrium.

Take of the ſtomachic Cerate of *Galen*, a ſufficient Quantity for making a ſtomachic Plaiſter, to be ſpread upon Leather. This Plaiſter affords Relief, ſo long as it adheres.

Take of *Matthiolus*'s Aqua Vitæ, one Ounce; of the Spirit of Angelica-roots, of the carminative Spirit of *Sylvius*, and of the Spirit of Mint, each two Ounces: Let a ſmall Slice of toaſted wheaten Bread, well ſoak'd in theſe, be applied warm to the Epigaſtrium, applying over it a Swine's Bladder moiſten'd with Oil, and ſecur'd by a Bandage. This Dreſſing is to be renew'd every twelve Hours.

Hence we learn why, in acute Diſeaſes attended with a *Nauſea*, a Purge, or an Emetic, exhibited in the Beginning, are of ſuch great Service; and in what ſort of acute Diſtempers: Why Patients, under acute Fevers, abhor pinguious Aliments, Fleſh, Eggs, and Fiſh: And why, on the contrary, they covet Water, Acids, ripe Fruits, and cooling Liquors:

Why Medicines can be of no Service, unleſs the Nauſea is firſt cur'd:

Why the Symptom of a *Nauſea* is often incurable:

And why Diſeaſes, attended with a Nauſea, are generally, when they ceaſe, ſucceeded by a ſudden, unuſual, and ſurpriſing Appetite.

Febrile Eructations, and Flatulences.

Eructations are cauſed by an elaſtic Matter, dilatable by Heat, Effervescence, or Fermentation; which one Moment is confin'd, and the next ſet free, by a Relaxation of the Part which confines it, and is forcibly exploded, with a Noiſe.

Thus Air, oppoſite Salts, ripe Fruits, putrefying Humours, and fermenting Vegetables, afford Matter for Eructations and Flatulences; the Force and Fetidneſs of which vary, according to their different Natures.

Theſe, however, if ſuffer'd to paſs off freely, are productive of no forcible Exploſion: It is evident, therefore, that Spaſms of the *Sphincter* of the *Oeſophagus*, of the Oeſophagus itſelf, of the ſuperior and inferior Orifice of the Stomach, and of the Inteſtines, concur, and are alternately relax'd, in order to produce Eructations, Flatulences, Exploſions of Wind from the Anus, and Murmurings of the Inteſtines from Wind confin'd.

If the two Cauſes above-mention'd, that is, a Production of Flatulences, and their Confinement by Spaſms, concur, act ſtrongly, and continue long, then the elaſtic Matter, dilated by Heat, Motion, and its own proper Force, and confin'd in a Cavity, the ſurrounding Fibres of which are ſpaſmodically conſtricted, diſtends, ſtretches, and excites Pain in the Membranes which confine it, and compreſſes the adjacent Parts: Hence Pains, and intolerable Anxieties, are excited, which ceaſe upon the Emiſſion of the Flatulences. To this, if the Force of a Fever is added, it is evident, that inſupportable Torments may be produced.

The Cure of theſe Diſorders conſiſts,

Firſt, In removing the Matter which excites them, by diluting Remedies; by warm, aqueous, and ſomewhat aromatic, diſſipating Drinks; by Remedies which render the effervescing Salts perfectly neutral; ſuch as correct Putrefaction, and put a Stop to Fermentation.

Secondly, In mitigating the Convulſions by proper Remedies; among which are, thoſe which deſtroy Acrimony, and compoſe the Spirits; the principal of which are, Opium, and mild Antihyſterics.

Thirdly, In the Application of warm, relaxing, anodyne, and ſomewhat aromatic Clyſters, Fomentations, and Epithems; and of Cupping-glaſſes without Scarification, to the *Abdomen*.

Hence we underſtand what ſorts of Meats, Drinks, Aliments, and Medicines, are flatulent; why Flatulences happen particularly in the Stomach, and ſuperior Inteſtines, when empty; in the Inteſtines, when wounded; when the Abdomen is, by any means, compreſſed; and why they accompany hypochondriac, hyſteric, convulſive Diſorders, and the Colic.

Febrile Vomiting.

Vomiting is a violent Expulſion, firſt, of the Contents of the Stomach; then of thoſe of the Inteſtines; and, laſtly, of thoſe of the Viſcera, which evacuate themſelves into the Inteſtines. The proximate Cauſe of Vomiting is, a convulſive Motion of the muſcular Fibres of the *Fauces*, *Oeſophagus*, Stomach, Inteſtines, Diaphragm, and abdominal Muſcles; the remote Cauſe, whatever is capable of ſtimulating the Fibres above-mention'd, or the eaſily-irritable Viſcera, to ſpaſmodic Contractions.

Vomiting is ſometimes excited by a primary Diſorder of the Stomach, upon the Acceſs of a Fever; as, if it is affected with Convulſions, Inflammation, Suppuration, or Scirrhus; or if any Part of it is become cartilaginous; in theſe Caſes it is exceſſively obſtinate, and may be diſtinguiſhed by the Signs of the Diſtemper which produces it; and when that is remov'd, it ceaſes ſpontaneouſly.

But, frequently, Vomiting is cauſed by ſimilar Diſorders in the Viſcera, and circumjacent Parts, when they are irritated by the Stomach diſtended with Aliment, eſpecially upon the Acceſs of a Fever. In ſuch Caſes, it is extremely obſtinate, and the Cauſe is ſometimes not eaſily diſcovered.

Or a Vomiting may be excited by every Cauſe of a conſiderable *Nauſea*, mentioned above, from the Doctrine of which this Species of Vomiting may be diſtinguiſh'd; and hence, alſo, we may learn how to treat, and cure it.

If the Symptom of Vomiting continues long, it produces an Atrophy, the Iliac Paſſion, Convulſions, and all the Effects of a great and obſtinate Nauſea, mention'd above.

The Cure of that Species of Vomiting which is excited by primary Diſorders of the Stomach, and thoſe of the adjacent Parts, is to be learnt from the Hiſtory of thoſe particular Diſeaſes.

That Species which is produced by the ſame Cauſes as a *Nauſea*, is to be cur'd by the Remedies recommended for a *Nauſea*, diligently applied; eſpecially Opiates, and corroborating, attracting, and diſſipating Epithems.

Hence the Reaſon is evident, why Vomiting is ſo difficult to be check'd in many acute Diſeaſes; and hence we learn the Falſity and Danger of the Maxim, *that Vomiting is cur'd by Emetics*. This Doctrine of Vomiting farther teaches us, why Sudorifics ſometimes remove Vomiting, as in the Plague; why it often ceaſes, immediately after a Criſis, as in the Small-Pox; why it is frequently cured by Bleeding, as in acute inflammatory Diſtempers; why thoſe who vomit perpetually in the Beginning of acute Diſtempers, without any Inflammation of the Stomach, or adjacent Parts, have a Criſis by way of Diarrhœa, which may be prevented by an Emetic exhibited in the Beginning of the Diſtemper; and why a Diſcharge, by Vomit, of whatever is taken into the Stomach, as ſoon as receiv'd, is one of the worſt Symptoms that can happen in acute Diſtempers.

An Hiccup may be excited by the ſame Cauſes as a Vomiting, and is to be cur'd by the ſame means.

Predictions from Vomitings; *and firſt of thoſe of a ſalutary Kind.*

Since it is certain, that the Humours may ſuffer a good or a bad Expurgation by way of *Vomiting*, the Events of Diſeaſes may, therefore, in a great meaſure, be prognoſticated from ſuch Excretions; from thoſe which are bad, otherwiſe call'd *ſymptomatical*, we may predict either Death or a long Diſeaſe; and from the good we may venture to foretel the Recovery of the Patient.

Vomiting in the Beginning of acute Diſtempers, is excited by an Irritation of the Stomach, through the exceſſive Quantity, or depraved Quality of the Food, or Humour contained in it; or from an Exſudation of a Humour, either from the circumjacent Parts, the Liver, for Inſtance, when under an Inflammation, or from the whole Body, and a Cacochymy of the Blood and Juices; but *Vomitings*, in the Increaſe and Progreſs of the Diſorder, are produced by the Redundance or Malignity of the Humours ſtimulating the Stomach to Excretion. *Vomitings*, thus occaſion'd, are by Phyſicians call'd *ſymptomatical*, and bad; becauſe they are ſeldom or never ſucceeded by a Recovery, or, at leaſt, not till after a long time, much Pains, and frequent Relapſes. It is uſual, alſo, for the Patient, in the Height of the Diſeaſe, or a little before, when Signs of Concoction have preceded,

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preceded, to be suddenly taken with *Vomiting* in a plentiful manner; and this *Vomition* they call *critical*, because it is the Work of Nature prevailing over the Disease, and employ'd in cleansing the Body; on which account it is most salutary, and indicates a safe and speedy Crisis and Solution of the Disease.

Of the Signs which indicate *Vomiting*, we have the following Account from *Hippocrates* in the *Prognostics*: *If a Person*, he says, *not seized with a mortal Fever, tells us that his Head aches, or that a Mist appears before his Eyes, or that he has a gnawing Pain at the Mouth of his Stomach, bilious* Vomitings *are at hand. If he be, also, under a Rigor, with a Coldness of the Parts about the Hypochondria, the* Vomiting *may be expected still sooner; and if he eats or drinks at this Juncture, he will vomit immediately.* And 1 *Epid. Sect.* 2. we are told, that they who were affected with burning, or other epidemic Fevers incident to that Constitution of the Seasons there described, *and were oppressed with a Heaviness of the whole Head, attended with a Cardiogmos, and a Nausea, had those Symptoms succeeded by a* Vomiting *of bilious and pituitous Matter. Galen*, in his Book of *Crises*, says, that the Signs of *Vomiting* are, a gnawing Pain at the Mouth of the Stomach, with a Pain of the Head, a Scotomy, an Agitation of the lower Lip, and a Flux of much thin Spittle from the Mouth; and these not attended with Signs of an Hæmorrhage, Sweat, Flux of the Belly, or an extraordinary Flux of Urine, the Menses, or Hæmorrhoids. But the Author of the *Coac.* 142. gives us only three Signs of *Vomiting*; which are, a Nausea, Cardiogmos, and Ptyalismus, or Flux of Spittle. In a Phrensy *Galen* affirms, that frequent Spitting alone foreshews *Vomiting*.

These, then, are the Signs which indicate *Vomiting*; and so, without insisting more largely or accurately on this Head, we proceed to what we principally intend here, which is, to give the proper Marks and Characters by which we may distinguish those *Vomitings* which are good, useful, and salutary.

For lean or thin Bodies, which are prompt and easy to vomit, Expurgations by *Vomitings*, in the Summer Season, are useful and proper; as we are taught by *Hippocrates*, 4 *Aph.* 4. 6. especially in Disorders of the Parts seated above the Diaphragm, *ibid.* 18. where we read, that *Pains above the Diaphragm indicate Purgation by* Vomiting; *Pains below that Part, Purgation by Stool.*

As to Substances discharged by *Vomiting*, we read, in the *Prognostics*, that *Vomiting* is most serviceable when the Matter evacuated is mostly a Mixture of Bile and Phlegm, and not very thick, nor much in Quantity. *Galen*, *Com. in* 4 *Lib. Aph.* says it is good for bilious *Vomitings* to succeed a Rigor; because they indicate a Solution in a burning Fever, from an Expurgation of the Cause; whence not all *Vomitings* are good and serviceable, but only such as critically discharge a Multitude of bilious Humours. And not only bilious, but pituitous *Vomitings*, if critical, are beneficial; since *Hippocrates*, 6 *Epid. Sect.* 1. *Aph.* 5. commends pituitous, as well as æruginous *Vomitings*, in Pains of the Kidneys: And *Galen*, *Com. in* 5 *Aph.* 1. assures us, that æruginous *Vomitings* have proved salutary in *Convulsions*; and speaks of a young Man, who under violent Vomiting was convulsed in all Parts of his Body; but as soon as he had discharged an æruginous Matter, his Fever and Convulsions immediately ceased. *Hippocrates*, in his Book *de Prisca Medicina*, touches very elegantly upon the Benefit of this Expurgation of bilious Humours. "When a kind of Bitterness, he "says, which we call yellow Bile, is effused, what Anxieties, "burning Heats, and unruly Disorders, immediately arise! "But when we become free from this Humour, and the same "is discharged, either spontaneously, or by the Help of Medi"cines, provided it be done either way in Season, we find ma"nifest Relief from our Pains and Heat." And a little after, "When Persons are molested with a sharp, acrid, and æru"ginous Bile, what furious Passions, what Gnawings of the "Viscera and Thorax, with Desperation and Despondency of "Mind, seize upon them! Nor are any of those Symptoms "removed before the peccant Humour is purged off, subdued, "and mixed with others."

Hence we conclude, that all *Vomitings*, which duly evacuate the Humours, which are the Causes of Diseases, are good: They are, also, as we before observed, called *critical*; the proper Marks or Qualifications of which are, that they appear when the Disease is in a State of Concoction, that is, when Signs of Concoction have preceded; that they happen on critical Days; that they be conformable to the Nature of the Disease; and, above all, that they entirely remove the Symptoms of the Disease; or, at least, alleviate and diminish them. And this agrees with what *Hippocrates* has determined, 1 *Aph.* 2. where we read, that "spontaneous Evacuations by Stool or "Vomit, if the Matters discharged are such as require an "Expurgation, are beneficial, and easily supported; if other"wise, the Effect is contrary." Of the Marks or Signs of critical Excretions, we find the Author of the *Coac. Præn.* thus speaking, *T.* 77. "In a continual Fever, if the Patient "lies speechless, with his Eyes shut, and now-and-then twink"ling, if he be seized with an Hæmorrhage from the Nose, or "with Vomiting, succeeded by a Return of his Speech and "Senses, he recovers."

Those *Vomitings*, also, are salutary, which are attended with other good Evacuations: Of this Nature was the bilious *Vomiting* of the sick Woman in the *Strand*, who was three Months gone with Child, 1 *Epid. Sect.* 3. *Ægr.* 13. on the fourteenth Day of her Illness, and attended with a Sweat, succeeded by a perfect Crisis, and Removal of the Fever.

Vomitings without Signs of perfect Concoction, though they may be good, and alleviate the Disease, and diminish its Symptoms, yet they promise no Recovery till after a long time, and many Relapses. Such was the *Vomiting* of the Wife of *Epicrates*, 1 *Epid. Sect.* 3. *Ægr.* 5. who "on the fifteenth "Day was seized with frequent Vomitings of bilious, yellow "Matter; sweated, and was free from a Fever; but towards "Night had a high Fever, and discharged a thick Urine, with "a white Hypostasis." Here the Crisis and Recovery were delayed till the eightieth Day.

Vomitings of a pernicious Tendency, such as the black, pure, and others, if the Disease under which they happen be pretty favourable, portend not Death, but a long Disease, and Relapses. Thus of the Patient last mentioned it is said, that "about the twentieth Day, in the Morning, she had a small "Return of a Rigor, lay under a Coma, slept quietly, and "vomited bilious and black Matter, in small Quantities." Another Example we have in *Cleonactides*, 1 *Epid. Sect.* 3. *Ægr.* 6. who, also, recovered not till the eightieth Day; and was observed by *Hippocrates* "on the twenty-fourth Day to "be affected with a Pain in the Extremities of the Hands, and "to vomit up a yellow, bilious Matter, at pretty frequent "Returns, and, a little after, virulent Matter, by which all "the Symptoms were alleviated." These *Vomitings*, as they indicated some sort of Concoction of the Urine, which, it is said, "was during all the time thin, but not colourless," since it was of a good Colour, (which, according to *Galen*, in his Comment on the Case of the Virgin of *Abdera*, 3 *Epid. Sect.* 3. *Ægr.* 7. is the greatest Sign of Recovery in those who labour under a Redundance of Humours) and alleviated the Disease, and its Symptoms, were justly to be accounted salutary, and procured a salutary, though imperfect Crisis, from which might be prognosticated a future Recovery, though at a good Distance of time.

We conclude, then, that all *Vomitings* in acute Distempers, which alleviate the Disease, and render it more supportable to the Patient, are salutary; but those which are not good in their own Nature, such as pure, æruginous, black, fetid, virulent, scanty, and particoloured Vomitings, if the Disease be of the milder sort, and not in an absolutely crude State, are Prognostics that the same will be long, if not mortal, and attended with much Pain and Trouble, and frequent Relapses.

A spontaneous *Vomiting*, succeeding upon a long Diarrhœa, is said by *Hippocrates*, 6 *Aph.* 15. to remove the Disorder; and bilious *Vomitings*, in a Woman of a bilious Constitution, whose Menses flow'd in less Quantity than was requisite, are by the same Author, 1 *Epid.* pronounced good.

Of destructive VOMITINGS *portending Death.*

Vomitings of a bad Kind, portending a fatal Event, happen in the Beginning of the Disease, or soon after; and are attended with none, or, at least, very obscure Signs of Concoction; for, at such times, Nature, as has been observed, makes no due Excretions, according to that 2 *Epid. Sect.* 1. "Critical Sym"ptoms determining for the better appear not presently." The Nature of destructive *Vomitings*, then, appears, in the first Place, from their happening in the Beginning of a Disease, and being attended with Signs of Crudities.

Secondly, Excessive Evacuations by *Vomiting*, which exhaust the Strength, indicate a depraved Excretion; and copious Discharges this way, under a violent Disorder, if they relieve not, in some measure, the Patient, portend his Death; and with the greater Certainty, if accompanied with other pernicious Signs; but most certainly and infallibly, when they are in their own Nature destructive; as when they are *porraceous*, *livid*, *æruginous*, *black*, *particoloured*, *virulent*, *fetid*, *pure* or *unmixed*, and *scanty*, or discharging small Quantities of Matter; of which we are to treat singly: These Kinds of *Vomitings* were observed by *Hippocrates* in the phrenetic Patient, 3 *Epid. Sect.* 3. *Ægr.* 4. the Woman who lay ill *in Foro Mendacium*, *ibid. Sect.* 2. *Ægr.* 12. and the Son of *Hegetorides*, 7 *Epid. sub T.* 61. a little before their Death.

Small and *scanty* Excretions by *Vomiting* in acute Diseases, are one of those Signs, which, as *Galen* says, *Com.* 2. *in* 1 *Prorrhet. T.* 47. are in the Whole to be regarded, as of bad Signi-

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Signification. For an Evacuation truly critical ought not to be in small Quantities, since a scanty Discharge, of what Kind soever, indicates either an intolerable Redundance of the morbific Matter, too copious to be suffered by the affected Parts, or the Imbecillity of Nature, which proposes to itself an Excretion of Superfluities, but is too weak to effect it. Hence it appears, that scanty *Vomitings* are of the Number of critical Signs which determine nothing, and always indicate a difficult and dangerous, and generally a mortal Crisis, or Turn of the Disease, especially if they are, besides, bad in their own Nature; and are so far from relieving the Patient, that they reduce him to a worse State than he was in before.

Pure, *sincere*, or *unmixed Vomitings*, in acute Diseases, are very bad; because the excreted Humour is not only crude, but indigestible, as excluding not only the Act, but the Power of Concoction. *Hippocrates*, *Lib. Prognost.* bestows the Epithet of ἄκρητον [from *a* Negative, and κεράννυμι, to mix] on whatever Humour is void of Mixture, or every crude and fervid Excretion which is not diluted with its proper Serum, but owes its Generation to the Disorder of some Part, or to the Fervor of the febrile Heat, by which the aqueous and serous Part is consumed. This Kind of Excretion, therefore, by *Vomiting* in acute Fevers, indicates a violent internal Heat, and such as generally proves too strong for Nature. If it be attended with other bad Signs, it is of fatal Prognostication: Hence the Author of 1 *Prorrhet.* says, that "Pure and unmixed Vomitings, attended with much Nauseating and Anxiety, are bad." And *Hippocrates*, *Prognostic.* tells us, that "The purer or more "unmixed Vomitings are of the worst Sort."

The same Author, in the Treatise just mentioned, passes his Judgment on bad Vomitings, with respect to their Colours, where he says, "If the Matter discharged by Vomiting be porraceous, or livid, or black, any of these Colours is to be "esteemed bad; but if the Excretions be of all these Colours, "it is a most fatal Prognostic; but if the Matter be of a livid "Colour, and, also, fetid, it shews Death to be very near." All these Colours in Excretions by Vomiting are very bad; but porraceous, æruginous, livid, black, and fetid Substances may sometimes be vomited critically, though never but in a concocted State of the Disease, that is, at its Height or Decline; and then they will be sure to effect an entire Solution of the Fever, or at least an Alleviation of it and its Symptoms. However it seldom happens, that Substances are critically excreted of these Colours; and therefore, in a violent continual Fever, where no Signs of Concoction have as yet appeared, they are to be esteemed most certain Signs of Death.

Vomitings of different Colours are, in their own Nature, very bad, because, as *Galen* says, they indicate a Variety of Disorders affecting the internal Parts: Whence the Author of 1 *Prorrhet.* T. 60. tells us, that "Vomitings of various Co"lours are bad; and especially if they are discharged at short "Intervals," that is, as *Galen* says, follow fast one upon another.

Virulent, also, or æruginous Vomitings are, for the same Reason, mortal in acute Diseases, and most of all in a Phrensy, because they indicate the Brain to labour under a deadly Inflammation from an adust Bile. To this Purpose is the Observation of *Hippocrates*, 1 *Epid. Sect.* 2. where we read, that the epidemic Phrensies ended in Convulsions, and æruginous Vomitings, under which some of the Patients died suddenly. And of the phrenetic Patient, 3 *Epid.* that "On the first Day of the Decubiture, he vomited much thin "virulent Matter, and had a Fever, attended with an Horror." For *æruginous*, which we suppose we may, also, call *virulent Vomitings*, to happen after bad and destructive Signs, portend Death unavoidable; for mortal Signs, succeeding one upon another, shew the Case to be desperate. These kinds of Vomitings, attended with Pains of the Head, Watchings, or Deafness, which are Signs of an Inflammation of the Head, indicate an approaching Mania, 1 *Prorrhet.* 10. From the Premises we infer, that æruginous or virulent Vomitings indicate, in the first place, the near Approach of a destructive Disorder, as Delirium, Madness, and Mania, or Melancholy, attended with a Ferocity, and, at last, Death with Convulsions; since, as we have elsewhere declared, it is the Nature of these Kinds of Deliria, on account of an extraordinary Dryness, occasioned by an intense Degree of Heat, to end, at last, in Tremblings and Convulsions.

Fetid Vomitings seem to indicate no less Danger, but are rather most certain Prognostics of Death, as being, in their own Nature, extremely bad and destructive, according to the *Prognostics*, where it is said, "That Vomitings of a livid Colour, "if they have, also, a fetid Smell, portend very speedy Death; "and all subputrid and fetid Smells in Vomitings are bad." The Woman who lay ill *in Foro Mendacium*. 3 *Epid.* before her Death, vomited black and fetid Matters.

All bilious, that is to say, yellow, croceous, porraceous, and all Vomitings accompanied or preceded by bad Signs, are pernicious; and if reducing the Sick to a worse State than before, destructive: Those of the former kind are to be esteemed among those Pseudo-critical Signs, which determine nothing, but indicate a doubtful future Crisis; and, in the last Case, they appear to portend nothing but Death; and with the more Certainty, if they happen to be malignant. To this Purpose is that in 1 *Prorrhet.* 62. before-quoted, "Pure or unmixed "Vomitings with Anxieties are bad." And, *ibid.* 72. "They "who vomit up black Matters, and are affected with a Nau"sea, accompany'd with a Delirium, and a slight Pain in the "Pubes, who have a fierce Look, and shut their Eyes, ought "not to be purged, because Purging would prove destructive "to them." And a little after, T. 79. we are told, that "Scanty and bilious Vomitings are bad; and especially when "attended with Watchings: Blood falling by Drops from the "Nose, in this Case, is, also, bad." Of this Nature were the Vomitings observed by *Hippocrates*, in the sick Woman *in Foro Mendacium*, 3 *Epid. Sect.* 2. *Ægr.* 12. "Who, he "says, on the twelfth Day vomited much black fetid Matter, "and was much affected with the Hiccough, and a trouble"some Thirst: On the thirteenth she brought up great Quan"tities of black virulent Matter, had a Fit of a Rigor, and "about Noon was speechless."

All Vomitings which give no manner of Relief to the Patient, are bad; but those which render his State worse, are very pernicious, though they happen not to be malignant: Thus they proved in the Case of the Woman before-quoted, of whom we read, that "On the eighth Day, about Noon, she "recovered Heat, was thirsty, under a Coma, with a Nausea, "and vomited small Quantities of a bilious yellowish Substance; "at Night was very ill, took no Rest, and made great Plenty "of Water, which flowed from her imperceptibly." This Woman, if her bilious Vomitings had been good, should have rested, and found herself better; and thus it ought to have been, also, after the Vomitings on the ninth Day; whereas, on the tenth, the Fever was exasperated: And on the eleventh Day, after some bilious and virulent Vomitings, she was taken with a Rigor, her extreme Parts were cold, and she fell afterwards into a cold Sweat; and though she had vomited plentifully that Day, yet she had a very troublesome Night. All these Vomitings were of deadly Signification, as appearing not only in a violent Disorder, but attended with other bad Signs, and producing a Mutation in the State of the Patient for the worse; which last is the proper Character of all useless and remarkably bad Signs.

In Wounds of the Head, also, bilious Vomitings are bad, according to *Hippocrates*, 6 *Aph.* 50. "A Cut received by the "Brain is necessarily succeeded by a Fever, and Vomiting "of Bile."

Vomitings in the Iliac Passion are, also, very pernicious, as appears from 7 *Aph.* 10. where we read, that "Vomitings, "the Hiccough, a Delirium, or Convulsions, succeeding the "Ileos, are bad." Here *Galen*, in his Comment, says, "That "in the Ileos nothing descends to the lower Parts; and that this "is an inseparable Property of that Disorder. But Vomiting "is not always a Symptom; but when the Disease is mortal, "and the Patient violently racked, the Excrements ascend, "and a Hiccough succeeds." And *Lib.* 6. *de Loc. affect.* he says, that "He never knew one who vomited up his Excre"ments ever recover."

These, then, are the Vomitings which are justly to be dreaded in acute Diseases, the immoderate, scanty, yellow, red, porraceous, æruginous, livid, black, fetid, pure, particoloured, which happen in the Beginning of Diseases, where no Signs of Concoction have preceded. In such a Circumstance they are generally mortal; and if the Disorder be violent; and if other bad Signs appear together with them, or precede, or follow them, they are to be regarded as certain Prognostics of Death; especially when, as we observed, they in no manner relieve the Patient, but rather alter his Case for the worse. *Prosper Alpinus*, *de Præsag. Vit. & Mort. Ægrot.*

Febrile Debility.

Great Debility arises from an Impediment to the Influx of the nervous Fluid into, and its Pressure upon, the Muscles.

This Impediment may be, an Emptiness of the Canals, when the Fluid they should convey is exhausted; or an Immeability of the Fluid; or an Obstruction, or Compression of the Canals, especially near their Origins in the Cerebrum, or Cerebellum; or a Weakness of the Heart, thus rendered incapable of furnishing the Brain with a Quantity of Blood, sufficient for the due Secretion of the nervous Fluid.

That the Impediment to the Influx of the nervous Fluid into, and its Pressure upon, the Muscles, and the consequent Weak-

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Weakneſs, ariſe from the Emptineſs of the Veſſels, is known from the preceding or preſent Symptoms of large Evacuations, and from the long Duration of the Diſeaſe they accompany or ſucceed; from morboſe or artificial Hæmorrhages; Sweats; a Diabetes; Salivation; or Diarrhœa; from a Defect of Aliment, with Reſpect to its being taken in, its Retention, Digeſtion, and Conveyance to the Blood; from Paleneſs, a Smallneſs of the Pulſe, collapſed Veſſels, and flaccid Muſcles.

That they ariſe from an Immeability of the Fluid, may be diſtinguiſhed from what has been ſaid under the Article LENTOR.

That they are cauſed by Obſtructions, may be known from the Doctrine of Obſtructions, given under the Article OBSTRUCTIO.

We diſtinguiſh, that a Compreſſion of the Cerebrum and Cerebellum is the Cauſe of Debility, when we perceive thoſe Functions injured, which depend upon the Integrity of theſe Organs; as in caſe of Deliria, profound Sleep, Tremor, Vertigo, and Ringings in the Ears.

That Debility ariſes from a Weakneſs of the Heart, is known by the Signs of a languid and deficient Circulation. See PLETHORA.

Liquid Aliments, nearly approaching the Nature of the Blood, which are previouſly digeſted by Art, gelatinous, and mild, and artfully impregnated with vinous and aromatic Subſtances, if exhibited frequently, and in ſmall Quantities at a time, ſerve excellently to fill the exhauſted Veſſels, gentle Frictions of the Extremities being uſed at the ſame time; particularly if theſe are prepared of proper Materials, oppoſite to the Nature of the Diſeaſe.

Among theſe Aliments are the Broths made of Beef, Veal, Mutton, and Fowls of the gallinaceous Kind, either ſeparate, or mixed together, with the Addition of Salt, and Lemon-juice; new Milk; and the Decoctions of Bread, mentioned under the Article FIBRA.

That Species of Debility ariſing from an Immeability of the Fluid, is to be cured by the Methods recommended under the Articles LENTOR, and OBSTRUCTIO.

That cauſed by an Obſtruction of the Canals, is to be relieved by the Methods conſidered under the Article OBSTRUCTIO.

That Species which ariſes from a Compreſſion of the Cerebrum, and Cerebellum, is generally cured by ſuch Applications near the Part affected, as are capable of removing the impacted obſtructing Matter, and of deriving the Force thereof to other remote Parts. The Noſtrils, therefore, Head, Face, Mouth, and Neck, are to be moiſtened with mild Fomentations; and Epiſpaſtics are to be applied to the Feet.

The debilitated Heart uſually recovers Strength very ſlowly: But the general Methods of removing Debility, recommended above, may do ſome Service.

From what has been ſaid, we may learn, how little the Uſe of Cardiacs in acute Diſeaſes is underſtood: And that Debility, in Fevers, is frequently an inſuperable Symptom.

FEBRILE HEAT.

External Heat may be determined by a Thermometer; internal, by the Senſation of the Patient, and Redneſs of the Urine.

A greater Quantity of Fire is always preſent in that Part which is moſt hot.

This increaſed Quantity of Fire ariſes from a more violent Attrition of the fluid Parts of the Body on each other, and on the Veſſels, and of the Veſſels reciprocally on theſe.

This violent Attrition is cauſed by a ſtrong Motion of the Fluids from the Heart, and a great Reſiſtance of the Veſſels to the Force of the Heart.

This Motion is to be eſtimated, by the Denſity of the Blood impelled from the Heart, and its Velocity through the Veſſels.

The Denſity of the Blood is known by examining the Blood taken out of the Veſſels; by a preceding Diſſipation of the moſt fluid Parts; and by an Hardneſs of the Pulſe.

The Velocity may be calculated from the Number of Pulſations of the Heart, compared with the Magnitude of theſe Pulſations.

The great Reſiſtance is to be known by the Bulk of the inert Fluids to be moved; and from the Paucity, Narrowneſs, and Immobility of the Canals, which tranſmit them.

The Bulk of the Fluids is perceived by the Signs of a Plethora, or Cacochymia; or by a ſudden Solution of thoſe Liquids, which before were in a State of Stagnation, as of the Fat; but principally by an Inflation of the Veins, together with a quick and ſtrong Motion of the Arteries.

The Paucity of Veſſels is to be learned from the Hiſtory of Obſtructions, or of Wounds. See OBSTRUCTIO, and VULNUS.

The Narrowneſs of the Veſſels is known by the Sight, the Touch, a dry Temperament, and a great Increaſe of Heat, upon a very ſmall Degree of Motion.

The Immobility of the Canals which reſiſts their Dilatation, is learned from all the Signs of a Rigidity of the Fibres, Veſſels, and Viſcera. See FIBRA.

Upon ſo many Cauſes depends the Origin of Febrile Heat; which, however, may have a great Variety of other remote Cauſes.

But Heat may be increaſed, by an Increaſe of one of theſe Cauſes only; and, in this Caſe, the Increaſe of Heat is in proportion to the Cauſe.

But if two of the Cauſes are, at the ſame time, increaſed, the Heat is as the Product of the Increaſes of the Cauſes multiplied by each other.

And this Method of calculating will hold, with reſpect to the Accumulation of more Cauſes.

An increaſed Heat diſſipates the moſt liquid Parts of the Blood, that is, the Water, Spirit, Salts, and moſt ſubtile Oils; dries and condenſes the Reſt of the Maſs, and cauſes it to concrete into an immoveable, irreſoluble Subſtance; diſengages, attenuates, renders acrid, exhales, and moves the Salts and Oils: Hence the ſmalleſt Veſſels are fretted and broken; the Fibres are rendered dry, rigid, and contracted; and hence many acute, dangerous, and fatal Diſeaſes are produced, which may be accounted for from what has been ſaid relative to Heat.

From this Doctrine we learn, what is required to mitigate Heat; and how various the Remedies are which tend thereto.

Thus, if an increaſed Velocity of the Blood excites Heat, the Remedy is, whatever diminiſhes that Velocity: The principal of theſe are, Reſt of the Muſcles, and of the Mind; Veneſection; a ſlight Compreſſion of the Veins in the Limbs, continued a very ſhort time, by Ligatures; a gradual and cautious Application of cold Subſtances, both externally and internally; and Preparations of the Poppy prudently exhibited.

If Heat ariſes from the Denſity of the Fluids, it is cured by thoſe Remedies mentioned above, which diminiſh the Velocity; and by drinking Water, and Oxymel, and ſuch Medicines as relax the Veſſels.

The Bulk of the Fluids, in a Plethora, is eaſily diminiſhed; but in a Cacochymia, the Diminution is to be brought about by evacuating ſlowly, and at Intervals: But when the Fat, which was before ſtagnant, is reſolved, the greateſt Difficulty ariſes; in this Caſe, aqueous Fluids, impregnated with an Acid, Honey, the Yolks of Eggs, or Sugar, together with perpetually continued Evacuants, are of the utmoſt Importance, becauſe they render the Fat, or Oil, miſcible with the Blood.

The Cure of Heat excited by Obſtruction, may be learned from the Article OBSTRUCTIO; and that Part of the Article VULNUS, which treats of the Accidents ſupervening upon Wounds, attended with Loſs of Subſtance.

If Heat depends upon the Narrowneſs of the Veſſels, they are to be dilated by relaxing Remedies. See FIBRA.

And Heat ariſing from a Rigidity of the Veſſels, is removed by the ſame relaxing Remedies. See FIBRA.

When Heat is excited by many of theſe Cauſes combined, it muſt be removed by the proper Remedies above deſcribed, combined, alſo, together.

From all this Doctrine of Heat we learn, why a Fever, attended with exceſſive Heat, is acute, quick in its Progreſs, putrid, and, if there is the greateſt Degree of Heat, peſtilential: Why the Heat of a Bed, of Air confined, of Regimen and Medicines, muſt neceſſarily be, in ſuch Caſes, extremely prejudicial; and why Heat about the Heart and Hypochondria is of fatal Preſage.

From this Doctrine, alſo, the Origin, Nature, and Effects of Dryneſs may be underſtood; and the Cure may hence be learned, which conſiſts in the Exhibition of Drinks, Fomentations, Baths, Clyſters, and Gargariſms, which are aqueous, ſomewhat acid, impregnated with Honey, and relaxing. *Boerhaave.*

PROGNOSTICS IN ACUTE DISEASES FROM HEAT.

Since Heat, Coldneſs, Dryneſs, Humidity, Softneſs, Aſperity, and Pains, have relation to the Senſe of Feeling, and furniſh us with Signs and Symptoms for Prediction, as good and firm as any taken from other Heads, we think ourſelves obliged to treat of them diſtinctly, with regard to our Subject of *Prognoſtication*. And here, firſt, we ſhall begin with Heat, from whence, the Obſervation of other Signs not being neglected, may be drawn Preſages of Life and Death.

Heat, then, it muſt be obſerved, with relation to Prognoſtics, is either mild, or tepid, or high and vehement. A mild and gentle Heat is always good, eſpecially if, according to *Hippocrates*, in his Book of *Prognoſtics*, it be attended with an equal Softneſs of the whole Body, or be like the Heat of the

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the same Person when in Health. The Flesh of some Persons in Health is observed to be cool; of others temperately hot; of others again, hot to a pretty high Degree: Whence, if the Heat of the Sick be much the same as usual in a State of Health, it is a good Sign: And hence it is, that sometimes an high and vehement Heat, and sometimes a moderate Degree of the same, or Coolness, are laudable in the Patient, on account of their Approach to the Degree of Heat familiar to the Body whilst in Health: And the like Judgment is to be formed of the Urine, and other Excretions, which, if resembling those usually discharged in time of Health, are esteemed good. It is best, therefore, when the Body, under a Disease, suffers little or no Alteration with respect to Heat.

Of febrile Heat, the best Kind is what is mild, temperate, equal in all Parts of the Body, and united with a sort of Humidity, in which it chiefly resembles the natural Heat, which, as *Galen*, *in* 2. *de Natur. Hum.* tells us, is not only temperately hot, but, also, humid, in Opposition to acute and igneous, which kind of Heat is most contrary to the *natural*. This temperate Degree of Heat, therefore, will always be best, unless it happens, that we are deceived by the Malignity of the Disease: For there are several malignant Distempers, attended with a mild and gentle Heat, extremely like the natural; the Heat, in reality, being confined to the inward Parts, and not freely diffused abroad; for which Reason this good Heat must be accompanied with an equal Softness of the whole Body, as required by *Hippocrates*, in his *Prognostics*: "It is best, he "there says, for the whole Body to be equally hot and soft;" for an equal Softness distinguishes a good Heat from bad ones, since the Heat of a Patient may seem to be temperate and equal, and yet proceed from a very malignant Disorder. In such a Circumstance the State of the Sick is known, and distinguished by an unequal Softness of the Body; where, in particular, the Hypochondria are commonly observed to be hard, and the Heat is by no means equally diffused over the whole Body; the extreme Parts, for Example, being less hot than the Belly, whose Region and Contents are under a more intense Degree of Heat. We conclude, therefore, that a temperate Heat, equally diffused over the Body, and united with an equal Softness, will always be a good Sign, since it is impossible for a Body, under such an equal Heat and Softness, to be fatally sick; the Union of these Properties being a sure Indication, that the Viscera are free from a Phlegmon, Obstructions, and any considerable Degree of Putridness.

An equal Softness of the whole Body distinguishes, also, a good from an hectic Heat, which latter being sometimes observed mild and gentle to the Touch, has given Occasion to mistake the Case of an hectical Patient: But an hectic Heat is not usually attended with a Softness, but rather with a Squalidness; and an Hectic Fever is not only known by this Mark, but, also, by an Inequality of the Heat itself: For the Fever, as *Galen*, on the *Prognostics*, observes, is exasperated after taking Food.

The best Heat, therefore, is what is temperate, equally diffused over the whole Body, and united with an equal Softness of the Flesh. And not only an Heat thus qualified, but even an intense and vehement Heat, diffused over all Parts of the Body in burning Fevers, is not to be condemned, since it is a Property of malignant burning Fevers, as *Galen* on the *Prorrhetica* observes, not to heat the outer Parts; as it is, on the contrary, of those which are not malignant, to put the whole Body in an equal Degree of burning Heat, even to the outermost Parts, by which they indicate, as *Galen* tells us, on the *Aphorisms*, the Viscera to be free from any violent Inflammation.

It is, also, often best, and most desireable, for presaging a Recovery in acute Disorders, for some Parts of the Body to grow hot, or kindle into an extraordinary Degree of Heat, especially the Parts towards the Skin, upon which Nature often discharges and deposites both the Vehemence of the Heat, and the peccant Humours. For the extreme Parts, in such Cases, to undergo an extraordinary Degree of Heat, is a very hopeful Sign; as the contrary is of bad Prognostication: Hence a Coldness of the extreme Parts in acute Diseases is a very bad Symptom, as, on the other hand, an Heat in the same Parts is a good Sign, as indicating the internal Viscera to be free from any great Phlegmon, Inflammation, or considerable Putrefaction of Humours; and that Nature is not oppressed with a Multitude of Crudities. It, also, signifies, that the febrile Heat has left the Viscera, and discharges itself upon the remote Parts; or, that the noxious Humours are propelled and deposited upon the same; for an extraordinary Heat extending itself to the Feet, is, in many Cases, a Sign of the Decline of the Disease: Whence we are directed by *Hippocrates*, *de R. V. I. A.* in the Decline of a Fever, when the Heat descends to the Feet, to offer the Patient Food.

An Heat of the extreme Parts, attended with a Redness and Inflammation, is, also, a good Prognostic. In Confirmation hereof we are told by *Hippocrates*, in his *Prognostics*, that "The Patients [under a Quinsey] are very much relieved, if "the Neck and Breast contract a Redness, and the Erysipelas "returns not upon the inward Parts." And a little after he says, "It is safest when the Tumor and Redness are for the "most part turned outwards."

Having made these Observations concerning good and salutary Heats, we are to take some Notice of the contrary to these, or the bad and pernicious; of which Nature is, first, an Heat of the Body, attended with a Colliquation and Tabes; such is the Heat of Hectics, which, unless corrected before it has colliquated the solid Parts, infallibly brings the Patient to the Grave. This kind of Heat is equal and uniform, acute, and not very obvious to the Touch and Senses; on which account an hectic Fever, in the Beginning, escapes the Knowledge of many Practitioners. *Galen*, as we have observed in another Place, in his Comment on the *Prognostics*, has taught us to know this Heat by the following Signs: "By an Hectic "Fever the solid Parts of the Body become ignited; for "which Reason the Fever remains constant to itself, without "Alteration, under an Heat weakly affecting the Touch, "after the manner of Lime-stone. As often, therefore, as "the Patient eats or drinks, it is much the same as if you "poured Water on Quick-lime; whence the Heat becomes "much more sensible to the Touch."

That uniform Heat, also, of the whole Body under a continual Fever, though amounting to no more than a tepid Warmth, or perhaps Coolness, is to be suspected, as indicating the whole Force of the Burning to be contained within the Viscera. *Galen*, in his second Comment on *Hippocrates*, *de R. V. I. A.* and on the Book of the *Prognostics*, tells us, that "For the Body, under acute Diseases, not to be hot in pro"portion to the Nature of the Fever, and to lie with the "Limbs naked, though cold or tepid, as if they were in a "burning Heat, is a Sign of Malignity." Such a tepid Heat, though never good, is, however, no sure Prognostic alone, no more than a vehement Heat, which, though always bad in itself, will yet afford no certain Grounds for predicting a fatal Event; since, on the contrary, for the Body to grow hot to an intense Degree, after a Rigor, is a Sign to us of the near Approach of a Crisis; and therefore that Measure of Certainty which it may carry with it, must be taken from other Signs.

A vehement Heat, either of the whole Body, or only of the Thorax and Belly, if it continue long, is pernicious, since it exhausts the Strength, dries and colliquates, and, if succeeded by Spasms, portends Death; for Convulsions from such a Cause as produces a Dryness of the Nerves, are all mortal. Hence *Hippocrates*, 7 *Aph.* 13. pronounces Convulsions, or a *Tetanus*, after violent burning Heats, a bad Sign.

A violent Degree of Heat, also, in the Face, or in the Hypochondria, or in the Thorax, is very bad; since the two latter indicate a Phlegmon of some one of the Viscera; and the first an Inflammation of the Brain; though it must be confessed, that a firey Redness of the Face is not always a Sign that the Brain is thus affected, but, on the contrary, is sometimes the Forerunner of a critical Hæmorrhage; but when it appears accompanied with some other pernicious Sign, it foreshews a bad Event. Hence we read, 1 *Prorrhet.* 49. "That a good "Colour in the Face, with a very stern and sour Aspect, is a "bad Sign." For, as *Galen* says, when the Face is of a florid Colour, and the Countenance remarkably sour and sad, it indicates the Brain to labour under some very hot Affection, by which the Blood is rendered adust. A very high and firey Redness of the Face, attended with Sweating, is, by the same Author, pronounced a Sign of Malignity, and a just Ground for predicting a fatal Event to the Disease, since it indicates a great Inflammation of the Brain, which is reckon'd among mortal Distempers, as the Sweat, also, which in no measure relieves the Patient, is one of the pernicious Signs. The same is confirmed, and in a manner repeated, 1 *Prorrhet.* 67. where it is said, that "Burning Rigors are, in some measure, pernicious, "and a firey Redness of the Face, with Sweating, in such "Cases is bad."

An Estuation, or intense Heat in the Belly, or Thorax, is always bad, for it often indicates some great and deadly Disorder in those Parts; as when it proceeds from a great and malignant Phlegmon of one of the Viscera. In this Case the extreme Parts are either tepid or cold; agreeably to what we read 1 *Prorrhet.* 7. where it is said, that "Those burning "Heats which remain in the Hypochondria, after a general "Refrigeration, are bad at all times, but especially when at"tended with Sweats." And more expressly to the Purpose, in 4 *Aph.* 48. "In Fevers not intermittent, if the outward "Parts are cold, whilst the inward burn with Heat and la"bour under a Thirst, the Case is mortal."

In Fevers, a vehement burning Heat about the Stomach, with a Cardiogmos [see that Word], is bad, 4 *Aph.* 64. And

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And burning Heats in the Sides, attended with Pain, and a Rigor, are condemned by the Author of 1 *Prorrhet.* 66. "For "a burning Heat in the Side, attended with a Pain, says *Ga-* "*len* on the Place, is a Sign of a Phlegmon infesting that "Part; and if a Rigor supervenes, expect a Suppuration of "the Phlegmon." Now a Suppuration of a Phlegmon of the Viscera is seldom cured; but, when the Strength is much exhausted beforehand, never at all.

For the Patient, after some preceding Evacuation, to be so far from being relieved from his Fever, that he perceives an Increase of Heat, it is bad, according to 1 *Prorrhet.* 66. where we are told, "That a Return of the febrile Heat, after Re- "frigeration from Sweats, is bad; and burning Heats in the "Sides, with Pain, and a supervening Rigor, are bad." "For, "as *Galen* says in his Comment, if any Person under a Dis- "ease, after Sweating, grows colder than Nature requires; "and afterwards becomes feverish again, his Case is not free "from Danger." Again, the Author of 1 *Prorrhet. T.* 68. says, "That a Return of the febrile Heat, after Watchings "and Sweating is bad." And the same is repeated *Coac.* 41.

We may add, with relation to this Subject, that for refrigerated Bodies to be almost totally incapacitated for recovering Health, is highly pernicious in acute Diseases, as it is occasioned by an Extinction, Resolution, or Suffocation of the natural Heat. And the Case seems to be no less mortal, if the Symptom be observed of the exterior and outermost Parts of the Body, or if these are hardly capable of recovering Heat. To this Purpose we read, 1 *Epid. Sect.* 1. *Stat.* 1. that in a very mortal epidemic Fever, the Patients were much affected with Refrigerations of the extreme Parts, and that it was scarce possible to recal the Heat into them.

For Bodies, also, in the last Place, to be soon heated, and soon cooled, is a bad Sign; for it shews, as *Galen* says, the Disease to be highly malignant, and if not mortal, yet of long Continuance: But in acute Diseases, which speedily exhaust the Strength, the same Symptom portends Death. *Prosper Alpinus, de Præsag. Vit. & Mort.*

Prognostics in acute Diseases from Humidity and Dryness.

We sometimes form Presages in acute Distempers, from the Humidity or Dryness of the whole Body, or of some of its Parts. In those who die of an Empyema, or a Phthisis, may often be observed a little before their Decease, a copious Humidity, sometimes diffusing itself over the whole Body, sometimes no farther than the Legs and Belly. And *Hippocrates, Lib. Prognost.* pronounces a Dropsy in or from acute Diseases, mortal, as proceeding from an utter Decay of the natural Heat. "Dropsies, he there says, caused by an acute Disease, are "bad; for they remove not the Fever, but increase the Pain "and Sickness, and end in Death."

Desiccations, Dryness, and Hardness, either of the whole Body, or of any of its Parts, give, also, frequent Occasions for prognosticating an unhappy Event in acute Disorders. A Dryness and Extenuation of the whole Body, after a long Burning Fever, are just Grounds for presaging an hectic Habit of Body, terminating at last in Death, as every one versed in Medicine knows. An extraordinary Dryness, also, of the Forehead, Tongue, and other Parts, pretty often portend a fatal Event, as it did, for Instance, in the Case of the young Man of *Melibœa*, 3 *Epid. Sect.* 3. *Ægr.* 16. who, before his Death, was observed by *Hippocrates*, to have the Skin of his Forehead extremely dry and tense. *Prosper Alpinus, de Præsag. Vit. & Mort.*

Febrile Delirium.

A Delirium is a Production of Ideas not corresponding to external Causes, but excited by the internal Disposition of the Brain, whilst the Judgment is conformable to such Ideas, and the Affections of the Mind, and Motions of the Body, correspond therewith: And these, either alone, or combined, form various Species of Deliria.

It always, therefore, witnesses a morbose Affection of the medullary Part of the Brain, which may arise from any kind of Obstruction; from an Impediment to the Influx, Transflux, or Efflux of the Fluids, through the Brain; from a violent Velocity, or Stagnation, of the Liquids, and many other Causes, which must be investigated with the utmost Diligence, in order to acquire a just Knowledge of the Method of Cure.

For various Remedies, and Methods of Cure, must be adapted to the various Causes; among which the principal are, Baths for the Feet; Epispastics apply'd to the Feet and Legs, and Frictions of these Parts; diluting Clysters frequently administred; a thin Diet; sedative, deobstruent, and diluting Potions; emollient Applications to the Head; gentle Anodynes; Bleeding in the Feet; and exciting the hæmorrhoidal, or menstrual Flux.

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For an Account of Prognostics from a *Delirium*, see the Article Delirium.

A Febrile Coma.

A *Coma* is a perpetual Inclination to sleep in a Fever, either with, or without Sleep; and always witnesses such a State of the Brain, as prevents the Exercise of the Senses, and animal Motions. It may arise from a Deficience of the Arterial Fluid convey'd to the Brain; from an Impediment to its Circulation through the Brain; from an Impediment to the Secretion of the nervous Fluid from the Blood; or from whatever prevents the Flux and Reflux of the Spirits through the Nerves.

Hence various, and those often different, and even contrary Causes, may produce this Symptom, in a Fever; as all violent Evacuations, or Repletions; all glutinous, pinguious, or inflammatory Inspissations of the Blood; all Causes, of what kind soever, which may excite a Compression of the Brain, which may, also, have the same Effect, if they act upon the Nerves.

Hence appears the Necessity a Physician is under of investigating the particular Cause of a *Coma*, before he can determine what Remedies are to be apply'd, and in what manner: For, frequently, quite contrary Methods are required; and it often happens, that a *Coma* obstinate to all Remedies, ceases spontaneously, when the Concoction of the Fever is completed.

Those Remedies, however, recommended above in a *Delirium*, are proper in this Case; especially Fomentations apply'd to the Head and Neck.

But if there are Signs of a great Inflammation, it must be treated as an original Disease. See Phrenitis, and Somnus.

A Febrile Pervigilium, or obstinate Watching.

A *Pervigilium*, or obstinate Want of Sleep, is the direct contrary to a *Coma*; whence its Nature may be understood: It is caused by the first Tendency to a slight Inflammation of the Brain; an Increase of which often excites a *Coma*.

It is cured by Rest of the Muscles; Calmness of Mind; the Absence of all Objects of Sense; moderate Cold; a moist Air; mild and emollient Aliments; a gentle, continual, grateful, agreeably ringing hushing Murmur; farinaceous, suboleous, moistening, and demulcent Medicines; the Smell of soporiferous Vegetables; and the prudent Use of Anodynes, Paregorics, soporiferous Remedies, and Narcotics; always premising those Remedies, which are capable of checking and curing the Inflammation.

Of Prognostics in Diseases from Watching.

Watching, as well as Sleep, with respect to what they may portend, are to be considered first in their natural State; for when no Change or Alteration can be perceived on this Head, we have good Room and Opportunity for Prediction; since, if the Patient sleeps and wakes, according to Custom in time of Health, it is a good Sign, and gives Occasion to presage an happy Event. For it seems impossible for a Person to die of any Distemper, while his Times of Sleep and Watching remain entire, and without any manner of Alteration. On this Subject, *Hippocrates*, in his *Prognostics*, thus pronounces: "As to "Sleep, it is best when conformable to natural Custom, or when "the Patient wakes by Day, and sleeps by Night; but if "there be any Alteration in this respect, it is so much the "worse." And 2 *Aph.* 2. he says, that "when Sleep com- "poses a Delirium, it is a good Sign.

As to *Watching*, of which we will now treat in particular, it is defin'd by *Galen*, "An Extension of the Soul from its "Original to all Parts of the Body, which sometimes happens "to be great and copious, at other times little and inconsider- "able; because the Soul is extended from its Original some- "times for a long time together, and in an abundant manner; "at other times, for a shorter while, and more sparingly." Hence then proceed much and little Watching; But what we treat of at present is, a great and preternatural Extension and Effusion of the Soul from its Original to all Parts of the Body, proceeding from a Dryness of the Brain, occasioned by hot and acrid Juices, or Exhalations; as we are taught by *Galen* in many Places, particularly *Lib.* 3. *de Loc. Affect.* and *Com.* 4. in *Lib. de R. V. I. A.* And *Com.* in *Prognost.* and *Lib.* 4. *de Præsag. ex Pulf. Cap.* 4. and *Lib.* 3. *de Loc. Affect.* and in other Places, he tells us, that Watching is the proper Effect of Dryness, as Sleep is of Humidity; and that, as it is a Property of Heat to produce Deliriousness, so it is of Dryness to be the Cause of Watching: Whence they who have their Brains affected at the same time with an Excess of Heat and Dryness, are at once both wakeful and delirious, as the same Author observes, *Lib.* 4. *de Præsag. ex Pulf. Cap.* 8. And in his *Comment* on 3 *Aph.* 31. he says, that old Persons are wakeful from Dryness.

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From the Causes of *Watchings*, we shall now consider what may be learnt for prognosticating their Event; and here, first, we shall speak of *Watchings*, from which we may draw favourable Prognostics: For though all *Watchings* are in themselves bad, yet there are some which have a very good Signification; and such are those which precede good Crises, and are accompanied with Restlessness, Anxiety, Delirium, Convulsions, Pains, and other Symptoms, as *Galen*, *Lib.* 3. *de Crisibus*, observes. These *Watchings* are perceivable in the Increase or Height of the Disease, at which time it is usual for the Patients to be almost perpetually waking, to be under great Disorder, and to have the Fever more and more exasperated, the nearer they approach to a Crisis, as we are told by *Galen* in 4 *Aph.* 70. And the same Author, *Lib.* 3. *de Crisibus*, pronounces *Watching* with Signs of Concoction, in acute Diseases, the Forerunner of a Crisis. Of such Patients we read, 1 *Prorr.* 132—135, 136. where it is said, "They who on a sudden "[ἐυθὺ, for which some read ἐυθέ]α, sedate, composed] appear "very much disorder'd, are wakeful, and bleed at the Nose, "are in some measure relieved on the sixth Day." And, *Text.* 135. "They who are affected with an Heaviness of the Head, "and a Pain in its fore Part, with perpetual *Watching*, are "subject to an Eruption of Blood at the Nose." And, *Text.* 136. "Perpetual *Watchings*, with sudden Jactations and In"quietude, signify an Hæmorrhage, and especially if there has "been any previous Discharge of that Nature." "Again, *Text.* 149. "An Horror, attended with critical Sweats, and return"ing on the next Day, with unaccountable *Watchings*, por"tend, in my Opinion, an Hæmorrhage." Once more, *Coac.* 110. "Sudden Inquietudes with *Watchings*, and black "and hard Stools, are sometimes Forerunners of an Hæmor"rhage." These then are the *Watchings* from which we may venture to predict the Recovery of the Patient, on the same Ground, as from Pains, Convulsions, Deliriums, and Anxieties preceding a Crisis.

All *Watchings*, except those before taken notice of, however caused or circumstantiated, are bad; for *Watching* dries the whole Body; and as *Galen*, 7 *M. M. Cap.* 6. observes, is extremely prejudicial to such as labour under a Dryness, and induces on them, if it continues long, Convulsions, and a Consumption. It is no Wonder, therefore, that, in burning Fevers, obstinate and perpetual *Watchings* bring on mortal Convulsions, since in other Cases they cause violent Inflammations, and, in some Subjects, Fevers, especially as *Galen*, *Lib.* 1. *de Sanitat. tuenda*, observes, in Infants, *Watchings* refrigerates the internal Viscera, by resolving their Heat. Agreeably to this, it is asserted by *Hippocrates*, 6 *Epid. Sect.* 4. *Aph.* 12. "In *Watching*, "he says, the external Parts are evidently hotter, and the in"ternal colder." He there teaches us, also, that *Watching* digests and resolves Bodies: Whence it is necessary, as *Galen*, *Lib.* 12. *de M. M. Cap.* 8. infers, that by its long Continuance, the Patient must be extremely weakened and exhausted. We may add to this, that *Watching* foments and increases the Crudities of the Humours, as we are told by *Galen*, *Com.* 1. *in Lib. de R. V. I. A.*

For the Reasons aforesaid, all *Watchings* in acute Diseases, are to be esteemed bad; but the most pernicious are those which are perpetual, and which by inducing all the bad Symptoms before-mentioned, cannot but afford too just Grounds for prognosticating a fatal Event. It is, indeed, customary for perpetual *Watchings* to bring on Convulsions, and a Delirium; which they effect by two different Ways and Means, one by drying and inflaming the Brain, and the other by an Oppletion of that Part with an hot Humour; since all *Watching*, as we observed before, indicates either a Vacuity and Exsiccation of the Brain, or a Repletion of it with hot Humours, or an Inflammation of that Part. Convulsions and a Delirium from *Watching*, procured by this latter means, are not indeed absolutely fatal; for either by a Resolution and Evacuation of the hot Humour, or a Propulsion of it to some other Part, they are sometimes removed. With relation to this Subject, we read *Coac.* 109. "That in Children under an acute Fever, Costiveness with "Watching, much Crying and Striving, Alteration of Colour, and great Redness, indicate Convulsions." But tho' *Watchings* with those Symptoms are not always mortal, they are, however, very much to be dreaded. Wherefore, *Hippocrates*, 7 *Aph.* 18. justly pronounces *Watchings*, attended with Convulsions and a Delirium, a bad Sign.

Convulsions and a Delirium, attendant, or consequent, on perpetual *Watchings*, and not caused by a Repletion of the Brain with hot Humours, are absolutely mortal, in the same manner as Convulsions, supervening upon burning Fevers, indicate inevitable Destruction. Thus it was in the Case of the phrenetic Patient, who could not sleep, and dy'd on the fourth Day, as is observed by *Hippocrates*, 3 *Epid. Sect.* 3. *Ægr.* 4. *Watchings*, with some other attendant Signs, as æruginous Vomitings, and Pain of the Head, portend a furious Delirium and Death; agreeably to what we are told by the Author of 1 *Prorrhet.* 10. "A Pain of the Head, he says, attended with "æruginous Vomitings, *Watchings*, and Deafness, are soon succeeded by a Mania;" as it was in the Instance of the phrenetic Subject before-mentioned.

We may conclude, that constant and perpetual Watchings in acute Diseases are deadly; as they were in the Case of the phrenetic Person aforesaid; and of the Wife of *Dromeades*, 1 *Epid. Sect.* 3. *Ægr.* 11. who continued without Sleep from the first to the fourth Day, and dy'd on the sixth. *Hippocrates*, 1 *Epid. Sect.* 2. *Stat.* 3. informs us, that many, under burning Fevers, dy'd after perpetual Watchings: Wence, in *Prognost.* he justly pronounces it "a very bad Sign, "when the Patient can neither sleep by Day nor by Night;" for either Pain, and great Anxiety, or a Delirium, are signified by it.

Watchings, attended with some mortal Sign, are absolutely fatal. Here we ought attentively to consider the Evacuations attending this constant Want of Sleep; and, if these are all bad, as indicating a symptomatical, useless, or depraved Excretion of Nature, they portend certain Death.

Watchings, accompanied with Cold, copious and constant Sweating of the Head, are bad. With relation to this, we read *Coac.* 41. that "They who are affected with cold Sweats, "Watchings, and Vicissitudes of Head and Cold, are in a bad "State."

Of no better Signification are *Watchings*, attended with other Excretions, which give no Relief to the Patient, but are Signs of Crudity; such are a Stillation, or Falling by Drops, of Blood from the Nose, and virulent Vomitings.

Sometimes *Watchings* are succeeded by Evacuations, which, affording no Relief, are esteemed very bad, prove injurious to to the Sick, and increase the Disease: Such a Consequence in all Evacuations and Symptoms, under which, the Patient might reasonably expect to be eased, is pernicious, as we are taught by *Galen*, *Com. in Prorrhet.* and other Places, because in acute Diseases, Excretions, or other Circumstances, which use to relieve the Patient, if they answer no such Purpose, are said to be bad; but if they are so far from proving beneficial, that they render the Case of the Sick really worse than it was before, they may safely be pronounced fatal.

As pernicious Convulsions, furious Phrensies, and Tremblings, are frequently the Consequences of continual *Watchings*, so it sometimes happens, that a mortal *Coma* succeeds them: For, as a long Sleep, after much *Watching*, which refreshes the Sick, is a very good Sign, so a long Sleep, which is so far from refreshing, that the Patient rather finds himself fatigued and injured by it, must be of deadly Signification; agreeably to that of *Hippocrates*, 2 *Aph.* 2. "Sleep which composes a Delirium, "is good;" and the preceding Aphorism, "A Disease, in which "Sleep creates Pain and Anxiety, proves mortal:" But where Sleep helps and relieves the Patient. the Disease is not mortal.

A *Coma* succeeding a perpetual *Watching* is generally fatal, as proceeding from a Refrigeration and Resolution of the natural Heat, which must be highly destructive, as *Galen*, *Com. in* 4 *Aph.* 67. observes; for Coldnesses, he there says, which are consequent upon hot and dry Affections, are incurable. A *Coma* sometimes succeeds a *Watching*, or Want of Sleep, from a Resolution of the Bile, and a dry Evaporation, which was the Cause of that *Watching*, the pituitous Humour still remaining, which moistens and dilutes the Brain; and such a Coma, with Signs of Concoction, and the Strength not much injured, cannot be thought pernicious. *Prosper Alpinus de Præsag. Vit. & Mort. Ægrot.*

Febrile Convulsions.

See Vulnus.

A Convulsion in a Fever, is always excited by some Injury done to the Brain, either by Vellications convey'd to it by the Nerves from the inferior Parts, or from an inordinate Appulse, Transflux, or Egress, of the Liquid secreted in the Brain; which may arise from every Cause capable of exciting a *Delirium*, *Coma*, or obstinate *Watching*: And on this Account, there is a great Variety in the Ætiology and Cure.

If it continues long, it easily affects the entire nervous System: Whence fatal Disorders are excited.

If Convulsions succeed the Signs of an Inflammation of the Brain, they are generally fatal Symptoms.

If a Discharge of thick Urine is succeeded by one of the aqueous and pellucid kind, and Convulsions immediately follow, it is the worst of Symptoms.

If Convulsions arise in Fevers, after profuse Evacuations, they generally prove fatal; as do those, also, which are accompanied by a perpetual *Delirium*.

In order to a Cure, the particular Cause is, first, to be investigated, and the affected Part must be discovered, whence the Convulsions primarily arose; then Medicines are immediately to be apply'd, which are capable of correcting Acrimony, of resolving the impacted Matter, and relaxing the Parts

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Parts which are contracted. We are, therefore, to attempt the Cure of Convulsions by diluting, relaxing, making Revulsion, and lenifying, never trusting to the specious Character of Antispasmodics.

But if the Head is found to be primarily affected, recourse must be had to the Methods of Cure recommended above, in case of a *Delirium*, and *Coma*. *Boerh. Aph.*

Prognostics from Convulsions.

Convulsions, when alone, or attendant on other Disorders, though always bad, yet sometimes prove Indications for prognosticating a good Event; but oftener portend Death than Recovery; of which fatal Tendency are those excited in Fevers from a Dryness of the Nerves. *Convulsions* suddenly seizing the Patient in the Beginning of the Disease, afford no certain Prognostic. They are much attendant, also, on Fevers, and indicate nothing of themselves but a Multitude of Humours, without any Tokens of a Recovery, unless they are critical. But we shall treat more accurately of the Prognostics of *Convulsions*, after we have first shewn what they are, with their Causes and Differences.

A *Convulsion*, in *Greek* σπασμὸς, *Spasmus*, according to *Galen, de Sympt. Caus. Lib.* 2. *Cap.* 2. is an involuntary Tension of the Nerves and Muscles, by which they are reduced to the same Posture and Disposition, as would happen to them from a natural and spontaneous Motion. And in the *Definitiones Medicæ*, ascribed to the same Author, it is said, that a *Convulsion* is an Affection incident to the Nerves and Muscles, by which sometimes the whole Body, sometimes a Part of it, is distended. Hence, this Kind of Disorder is by many properly enough called a *Tension*, aud a *Distension*, tho' some make a Distinction between a *Convulsion*, or *Spasm*, and a *Distension*, from that Passage of *Hippocrates*, 4 *Aph.* 57. "A Fever coming upon a *Convulsion*, or "*Distension*, [τέτανος], removes the Disorder." But *Galen*, in Comment, has removed this Difficulty, and very well stated the Case, where he tells us, that of the three different Kinds of *Convulsions*, what the *Greeks* call *Tetanus*, may more properly be called a *Distension*, and not a *Convulsion*, if it were only, because in such a Disorder the Parts appear not convulsed, but are equally distended both Ways; on which account principally it has the Name of *Distension*.

There is, also, a twofold Distinction of *Convulsions*, one permanent, and without conspicuous Motion, of which there are three subordinate Kinds, one called by the *Latins*, *Distentio*, by the *Greeks*, *Tetanos*, and by *Celsus*, particularly *Rigor*, in which Affection, the Neck, together with the rest of the Body, remains immoveable, and inclined to neither Side, but erected in a right Angle to both. And this seems most properly to be what *Hippocrates* calls *Tetanos*, a *Distension*, which differs from a *Convulsion*, in that, as we just said from *Galen*, the Parts appear not to be convulsed.

A second Kind is called Emprosthotonos, [see Tetanus] which is, when the Head, Neck, and rest of the Body are contracted towards the Breast; on which account it is called *Tentio ad anteriora*, "a Tension towards the anterior Parts."

The third has the Name of Opisthotonos, [see Tetanus] from the *Greeks*; and by the *Latins* is expressed by *Tensio ad posteriora*, "A Tension towards the posterior Parts." *Galen*, in his Book of *Medicinal Definitions*, has comprehended these three Kinds of permanent *Convulsions*, in the following Words: "Travellers, says he, who die of Cold on the Roads, "are seized with such Kinds of Rigors as the *Greeks* call "*Emprosthotonos*, *Opisthotonos*, and *Tetanos*, because under "such Accidents the Body is inflected sometimes to the ante-"rior, sometimes to the posterior Parts, sometimes neither "Way, but is distended in a strait and immoveable Posture.

The other Kind of *Convulsions* is distinguished by frequent and interrupted Motion; and, therefore, called by Physicians, *convulsive Motions*, or *Convulsions*, *ex Materia non proportionata*, as when they are excited by a Stimulation and Vellication of the nervous Parts, or a violent Straining, and Stretching of the same, as in the Disease which the *Greeks* call *Epilepsia*, or are caused by Consent from a biting Sensation at the Mouth of the Stomach, or from some Injury received first by the Brain. This last Species of *Convulsions* is not *per se*, and in Strictness of Speech, called a *Convulsion*, but rather a *convulsive Motion*: And this is either universal, as when the Brain is primarily affected; or particular, from a Vellication of some particular Muscle or Nerve, in the same manner as a permanent or motionless *Convulsion*, is called *universal*, when, from an Affection of the Brain, it seizes the whole Body; and *particular*, when it affects only one Part; as, for Instance, in the Disorder which some call *Spasmus Cynicus*, in which the Mouth is distorted, or rather the Parts of the Mouth are convulsed.

As to the Parts which may labour under a *Convulsion*, or *Distension*, and the Place affected in *Convulsions*, *Galen, de Loc. Affect. Lib.* 3. *Cap.* 6. tells us, that all Parts of the Body which are fitted for Motion, may be convulsed; for the Parts of the Body which are moved, are put in Motion by Help of the Nerves and Muscles, which being convulsed, there is a Depravation of that Motion, as it happens in a Grinding of the Teeth, which the *Greeks* call *Tryſmos*, and is a *Convulsion* of the Muscles, as we are taught by *Galen, de Loc. affect. Lib.* 2. *Cap.* 2. And in the same Treatise, *Lib.* 3. *Cap.* 6. he teaches us from the convulsed Part to know, whether the spinal Marrow, or the Brain, or the Nerves, or which of them, are affected, in the following Words: "When the whole "Body is convulsed, all imagine such a Part to be affected, "as, like the Trunk with respect to the Branches of a Tree, "is the common Trunk of all the Nerves, and not of a few "only in one Part, in nature of a Branch; as is the Case, "when a Leg, or one of the Hands, happens to be convulsed, "where a Convulsion of the whole Member shews the Origi-"nal of the Nerves distributed on it to be affected, from the "Example of a Branch of a Tree. But when the whole Body "is affected, we must suppose the common Origin of all the "Nerves below the Face, which answers in proportion to the "Trunk of a Tree, to be affected, that is, the first Parts of "the spinal Marrow; for which Reason, the most experienced "Physicians adapt their Remedies to those Parts, and take "no Notice of the Heart. But if, with the rest of the "Body, the Face be, also, convulsed, we take care not "only of the Beginning of the spinal Marrow, but of the "Brain itself. And, indeed, we often see the Lips, the Eyes, "the Skin of the Forehead, the whole Jaws, and the Root "of the Tongue, affected with *Convulsions*; and, because "we learn from Anatomy, that all these Parts are moved by "Muscles, which receive their Nerves from the Brain, we "judge that to be affected whenever those Parts are convulsed; "but when we see the other Parts of the Body labouring under "*Convulsions*, while those remain in a due Disposition, we "conclude the Origin or Beginning of the spinal Marrow to be "affected."

Having thus learnt to know the Part originally affected by the Part convulsed, we proceed to inquire into the Causes of *Convulsions*; and, first, of those which are perpetual and permanent without Motion. *Convulsions*, says *Hippocrates*, 6 *Aph.* 39. "are occasioned either by Repletion, or Inanition." The same is confirmed by *Galen*, *Lib.* 2. & 3. *de Loc. Affect.* & *in* 4. & 6. *Lib. Aph.* & *Lib. de Trem. Palpit.* & *Convulſ.* and in innumerable other Places; but especially, *Lib.* 2. *de Symptom. Caus.* where he says, that "a *Convulsion* draws the "Nerves and Muscles into the same Posture and Disposition, "as that into which they were brought by the animal Force, "when in their natural State. Whether, therefore, voluntary "Motions are performed by a Tension of the Muscles at their "Origin, or an Impletion of them by a flatuous Influx, the "Effects are the same in a *Convulsion*, whether from a flatu-"lent Spirit, which may be generated in the Veins, or a Mul-"titude of other Disorders, among which is a Phlegmon, "which may create a Tension." And these are all comprehended, according to *Hippocrates*, under the two general Heads of *Repletion* and *Inanition*, of which the first takes place in a Phlegmon, and the other in burning and dry Fevers. And that immoderate *Impletion* and *Inanition* may either of them cause a Tension in nervous Bodies, we may learn from what happens to the tense Strings of musical Instruments, which break whenever those Instruments be laid in a moist and humid, or a dry and dusty Room; and they are therefore relaxed, before laid aside. This Generation of *Convulsions* is illustrated by *Galen*, *Lib.* 3. *Cap.* 6. in the following Words: "If you "observe nervous Bodies, particularly the Strings of an "Harp, by an immoderate Distemperature of the Air, di-"stended to such a Degree as to break, you will easily "imagine, that the same thing may happen to the Nerves "of Animals." But how are Strings, from an Affection of the Air, as when it is immoderately dry or moist, stretched in such a manner as to break? The Humour, to answer, moistens them so as to raise them into a preternatural Tumor, which must of Necessity cause extraordinary Tenseness; on the other hand, as the Sun by drying Skins contracts them, so Dryness draws and stretches Cords and Strings; and thus we observe Thongs of Leather, when dry'd by the Fire, reduced to a State of Tenseness and Contraction.

To these two Causes of *Convulsions*, *Galen*, in *Aph.* 25. adds a third, which is, the Weakness of the nervous Parts; on which account Children, he says, are much subject to *Convulsions*, as well as from the crude Aliment with which they abound.

The nervous Parts often labour under a Repletion from a crude Humour, by which they are convulsed, as we are told by *Galen, de Sympt. Caus. Lib.* 2. *Cap.* 2. Thus it is with Children, who, abounding with crude Aliment, and having their nervous Parts not very strong, are easily affected with Distensions,

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sions, as *Hippocrates* tells us, 3 *Aph.* 25. Hence, 2 *Epid. Sect.* 5. he adviſes, when Children * are affected with *Convulſions* to excite a Fever, by which means that Diſorder, together with the Fever; is ſometimes removed in a ſafe Manner.

To this Head of *Repletion* may be reduced Convulſions from an Humidneſs of the Air, as when we are told by *Galen*, in *Epid. Sect.* 2. that in a moiſt and cold Conſtitution of the Air, many Perſons, and eſpecially Children, as *Hippocrates* writes, were afflicted with Convulſions; and, alſo, thoſe proceeding from an immoderate drinking of Wine.

Sometimes, alſo, the nervous Parts are ſtretched and convulſed from their being imbued with Blood, or bilious Excrements, ſometimes from a Flatus, and frequently from a Phlegmon, either immediately, or by Conſent of the neighbouring Parts. After this manner are occaſioned Tenſions of the Hypochondria, which proceed from a violent Inflammation of the Diaphragm, Pleura, or Liver; and to the ſame Head appertain *Convulſions* from Wounds attended with an Inflammation.

The Parts are dry'd, or, to ſpeak in the Phraſe of *Hippocrates*, emptied, or evacuated, as well by a burning Heat, as an immoderate Cold. Of the latter we read, 5 *Aph.* 17. that it "produces Convulſions and Diſtenſions;" and, *ibid. Aph.* 20. it is ſaid, that "Cold is biting to Ulcers, hardens the "Skin, renders Pain inſupportable, blackens, and excites fe-"brile Rigors, Convulſions, and Diſtenſions." Here *Galen*, in his Comment, ſays, that "Immoderate Cold excites thoſe "Convulſions and Diſtenſions, with a Refrigeration of the "Nerves; for as it is not convenient, that this Subſtance ſhould "be diſſolved by an immoderate Heat, it is no leſs prejudicial "to them to be refrigerated and contracted." For exceſſive Cold, affecting the Nerves, Muſcles, Tendons, and Ligaments, firſt cauſes an Inequality of the Skin, by repelling the Heat and Moiſture inwards; then dries by expreſſing the finer Parts, compreſſes, condenſes, hardens, and, by cloſing the interior Sinuſes and Bores, prevents Diffiation and Perſpiration, as well as Reception of Aliment, ſo that the Parts remain rigid, hard, and diſtended. To this Purpoſe we read, *Coac.* 23. that "a Rigor, "producing an Opiſthotonos, is mortal;" and *Galen*, in his Book of medicinal Definitions, before quoted, ſays, that "Tra-"vellers oppreſſed with Cold, die of an *Emproſthotonos*, *Opiſtho-*"*tonos*, or *Tetanos*."

Immoderate Heat produces the ſame Effect, and much more efficaciouſly; for by diſſipating all the humid Subſtance of the Muſcles, and other nervous Bodies, it renders thoſe Parts extremely dry'd and parched; whence they are diſtended and convulſed. Burning Fevers, therefore, which, like a Fire, dry the Nerves, produce a Diſtenſion and *Convulſion* of the ſame; and, as *Galen*, on 4 *Aph.* 66. teaches, induce *Convulſions* of a pernicious Kind. After the ſame manner mortal Phrenſies, by diſſolving the Subſtance of the Nerves with their immoderate Heat, uſually end in *Convulſions*. On the ſame account, all conſiderable feveriſh Eſtuations have the like Effect by Drying, as we are aſſured by *Galen*, on 7 *Aph.* 13. and the ſame Conſequence follows from conſtant Watchings, and all great and immoderate Evacuations and Purgations, as we learn from the ſame Author, on 5 *Aph.* 3. 4 & 7. *Aph.* 9. And he calls all thoſe *Dryneſſes*, if I may uſe the Word, the Cauſes of *Convulſions*, *de Loc. Affect. Lib.* 3. *Cap.* 5. comprehending them all in the following Words: "For ſince a *Convulſion* is occa-"ſioned either by Labour, Watching, Hunger, Solicitude, "or a dry and burning Fever, as we ſee in Phrenſies, you may "juſtly impute the Cauſe to a Dryneſs and Inanition."

Thus have we aſſigned the various Cauſes of perpetual and permanent *Convulſions*, and have reduced them under the general Heads of Repletion, and a Dryneſs, Evacuation, or Inanition, of the nervous Parts. But *Convulſions* attended with manifeſt Motion, ſuch as thoſe of the epileptic Kind, and thoſe they call *convulſive Motions*, have other Cauſes. For ſometimes they proceed from a groſs and viſcid Humour obſtructing the Ventricles of the Brain; which is the Cauſe of that univerſal Convulſion which the *Greeks* call *Epilepſia*, and others *Morbus Cotitialis*, according to *Galen*, *de Loc. Affect. Lib.* 3. *Cap.* 7. where he tells us, that "the Epilepſy is a Convulſion of all "the Parts of the Body, not perpetual, as is obſerved in the "*Emproſthotonos* and *Tetanos*, but incident at certain Inter-"vals; and this *Convulſion* is occaſioned when the Brain is pri-"marily and in itſelf affected; whence, by Conſent of Parts, "we often obſerve Bodies to labour under *Convulſions* both "general and partial." The ſame Author, *de Loc. Affect. Lib.* 5. *Cap.* 6. has demonſtrated, that a Diſorder of the Mouth of the Stomach has not only occaſioned *Convulſions*, by communicating the Injury to the Brain, the Origin of the Nerves, but other very ſevere Symptoms; and, he tells us of a young Grammarian, who, whenever he was too intent on Teaching or Thinking, or faſted too long, or fell into a Paſſion, was ſeized with a Fit of an Epilepſy, from a bilious and acrid Juice vellicating the Mouth of the Stomach. And, in his Comment on 5 *Aph.* 1. he ſpeaks of a young Man who was frequently affected with an univerſal *Convulſion*, from an æruginous Humour gnawing the Mouth of the Stomach; and recovered not from his Fit, before he had diſcharged the æruginous Matter by Vomit. Again, in his Book of *Veneſection* againſt *Eraſiſtratus*, he tells us, that *Diodorus* the Grammarian was affected with *Convulſions* after long Faſting.

A *Convulſion*, alſo, is occaſioned by much Straining and Retching, when the Stomach labours to expel ſome malignant and noxious Matter, in the ſame manner as a true Epilepſy is induced, while the expulſive Faculty in the Brain makes Efforts to expel the groſs and viſcid Juices which obſtruct its Ventricles, and intercept the Paſſage of the animal Spirits thro' them. *Hippocrates*, therefore, had good Reaſon to ſay, that Convulſions were produced from White Hellebore, by its pernicious Juices gnawing and vellicating the Mouth of the Stomach. An Inſtance of this fell within our own Obſervation, while we practiſed Medicine at *Padua*, in a young Man, who, by the Careleſsneſs of an Apothecary, took White inſtead of Black Hellebore. But many Inſtances may be given of ſuch as have been affected with convulſive Diſorders from ſome bilious, or æruginous Humour, or ſome poiſonous Juice infeſting the Stomach, and vellicating its Mouth.

It appears, therefore, that an Injury done to the Mouth of the Stomach is, by Conſent of Parts, communicated to the Brain; whence Convulſions are excited. And not only the Mouth of the Stomach, but the Uterus, and this laſt, moſt of all, communicate, by Conſent, their Diſorders to the Brain; whence hyſteric Women are often obſerved to be moleſted with *Convulſions*. *Galen*, *de Loc. Affect. Lib.* 6. *Cap.* 5. gives an Inſtance of this in a Widow, who was affected with *Convulſions*, from the Uterus being injured by a Retention of the Semen; and was freed from them by groſs, fetid, ſeminal Excretions. Hence the Author of 1 *Prorrhet. T.* 129. ſays, "that Women "affected with Hyſterics, without a Fever, are ſubject to "Convulſions; as was the Caſe, for Inſtance, of *Dorias*."

And not only from the Uterus, but from other Parts, by a poiſonous and highly pernicious Vapour aſcending to the Brain, may convulſive Diſorders be excited; in Proof of which, *Galen*, *de Loc. Affect. Lib.* 3. *Cap.* 7. gives Inſtances of two Boys affected with an anomalous Epilepſy.

Such, then, we may ſuppoſe, are the Cauſes not only of permanent, but moveable *Convulſions*; but *Galen*, *Lib.* 12. *Meth. Med. Cap. ult.* has comprehended in few Words the Cauſe of all *Convulſions*, and convulſive Motions, where he ſays, they are occaſioned either by a Dryneſs, Repletion, a conſiderable Inflammation, a biting Humour, or violent Cold.

But we have treated, we hope with ſufficient Accuracy, of the *Cauſes* of *Convulſions*; and proceed now to conſider the Signs from which we may predict their future Appearance. And here we read, *Coac.* 85. 157. that Deliriums increaſing ſenſibly in Ferocity become at laſt outrageous, and portend *Convulſions*; and a little after, *T.* 162. "They who are af-"fected with a Pain of the Head, and labour under a Catochus, "with a Conſtipation of the Belly, have a fierce Look, and a "florid Colour in the Face, are ſeized at laſt with an *Opiſtho-*"*tonos*." That *Convulſions* ſhould ſucceed mortal Inflammations of the Brain, is agreeable to Reaſon, ſince they are Signs of a mortal Phrenſy, under which it is proper and uſual for the Patient, as *Galen* ſays in 1 *Prorrhet.* to be convulſed, and to die in *Convulſions*. The Author, alſo, of 1 *Prorrhet. T.* 28. tells us, "That frequent Mutations in Phrenſies indicate *Con-*"*vulſions*." And, *Coac.* 171. we read, "That an acute Pain "in the Head, attended with a Torpor and Heavineſs, are "uſually ſucceeded by Convulſions." And, *ibid. T.* 177. "That "a Pain of the Head, with a ſmall Sweat, and a Conſtipa-"tion of the Belly, end in Convulſions."

Theſe, then, are the prognoſtic Signs of *Convulſions*, of which Signs only violent Pains of the Head, and a furious or outrageous Delirium are to be reckoned as certain, the other Marks not affording any ſure Grounds for Prediction. As for Children, we are told by *Hippocrates*, in the *Prognoſtics* towards the End, that "They become affected with *Convul-*"*ſions*, if they labour under an high Fever, and are coſtive, "wakeful, frightful, much given to Crying, and change their "Colour to pale, livid, or red; and theſe Symptoms are inci-"dent to Children from their Birth to their ſeventh Year."

* The Author of the Notes and Emendations to *Proſper Alpinus*, reads *Puerperas* with *Foeſius*, as rendered from λεχους, and not *Pueros*, with *Alpinus*, becauſe, as he ſays, no ſuch Directions concerning Children are to be found in all the *Epidemics*.

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Children more advanced in Years, and full-grown Persons are not so subject to *Convulsions* in Fevers, unless at some very violent and dangerous Crisis, as is usual under a Phrensy.

But we have said enough on this Head, and shall now take into Consideration the *Prognostics* from Convulsions which offer themselves to our Examination, in order to the Prediction of Death, or Recovery in acute Diseases. And here, first, we shall speak a little of those *Convulsions* which are not attended with a Fever. *Convulsions* of this Kind, which proceed from a Repletion of the nervous Parts with a crude Humour, are less dangerous than such as are excited by a Dryness and Arefaction of the Nerves; and *Convulsions* which owe their Original to a Repletion, are distinguished from the others by their Suddenness.

Of the three distinct Kinds of *Convulsions*, what they call the *Tetanus* is the most acute Disorder, and often kills in three or four Days; the Muscles of the Jaws and the Gullet being convulsed in such a manner, that Deglutition is entirely destroyed, and the Patient rendered incapable of being nourished with Food, or relieved with Medicines: But when the Disease is protracted to a greater Length, there are good Hopes of Recovery. What we have said is the same with that of *Hippocrates*, 5 *Aph.* 6. *Whoever happen to be seized with a* Tetanus, *die in four Days; but if they survive that Term, recover.* The Patient, in such a Case, always meets with the best Relief from a supervening Fever; for the febrile Heat consumes the Humours which obstruct the nervous Parts. On this Subject we find *Galen* discoursing, *in* 2 *Aph.* 26. where he says, *If any Person in Health happens to be suddenly seized with* Convulsions, *they must of Necessity be occasioned by a Plenitude. Now the Nerves suffer a Repletion from cold and viscid Humours, by which, also, they are nourished, so that they become convulsed: And this Disorder is remedied by a supervening Fever, which heats the cold, and attenuates and discusses the viscous Humours.* This is no more than a Comment on that of *Hippocrates*, 4 *Aph.* 57. before-quoted. Very justly, therefore, it is said, 2 *Aph.* 26. that *it is better for a Fever to come upon Convulsions, than Convulsions upon a Fever.* And with good Reason does the same Author*, 2 *Epid. Sect.* 5. advise exciting a Fever in Children for *Convulsions*; by which means, the crude and gross Humours are heated, attenuated, and discussed. Hence the more violent the supervening Fever, and the more intense its attendant Rigor, the more effectually will it remove the *Convulsions*. Thus qualified is a Quartan, which is accompanied not only with an intense Degree of Coldness, but a most efficacious Heat; by virtue of which it gives Relief under a great Disease, if we may believe *Hippocrates* and Experience, for which we have good Reason; for this Kind of Fever is attended with a more effectual Heat than other Fevers; because it has its Foundation in a more gross and dense terrene Matter; as may be inferred from what we read 5 *Aph.* 70. where we are told by *Hippocrates, that they who are seized with a Quartan are not very subject to* Convulsions; *and such as are first taken with* Convulsions, *are relieved by the coming-on of a Fever.* Such is the good Effect of a Quartan, not only by its Heat, which effectually discusses the Repletion of the nervous Parts; but by the Intenseness of its Cold, with which it shakes the Body so long till the Humour is by that Motion digested, or expelled from the nervous Parts. A Fever, therefore, coming upon *Convulsions*, is good; because it removes the Repletion by a Discussion. And this is further illustrated and confirmed by *Hippocrates*, in what he says of those who are convulsed from Drunkenness, 5 *Aph.* 5. where we read, that if *a Person who is drunk be taken suddenly speechless, he dies in Convulsions, unless a Fever seizes him.*

And these are the *Convulsions* from which we may hope a good Event, especially in Children; who, the more subject they are to *Convulsions*, both on account of the crude Aliment with which they abound, and the Weakness of their nervous Parts, as *Galen*, on 3 *Aph.* 5. has it, the less are they in danger from such Disorders, and the more easily are they relieved from them by a supervening Fever. Hence *Convulsions* in Children labouring under Fevers, are not so much to be dreaded; but in adult Persons they are usually pernicious, as they are generally owing to a Dryness and Rarefaction of the nervous Parts by the febrile Heat, than which nothing is more pernicious, in the Opinion of *Galen*; who, in his *Meth. Med. Lib.* 12. *Cap.* 8. has these Words, with respect to a *Convulsion* from Dryness: *We must know*, he says, *that an Affection of this Kind, if ever it be cured, requires Humectation. But it is extremely difficult to be cured, or rather incurable, if it be contracted by a Fever, and succeeds a Phrensy of the most mortal Kind. For my part, I never knew, nor heard of any one cured, who was convulsed in this manner.* In Children, indeed, affected with feverish Disorders, *Convulsions* are not so bad, or so much to be dreaded, as we shall by-and-by demonstrate more plainly, from 1 *Epid. Sect.* 2. but in all other Ages, *Convulsions* proceeding from Dryness are pernicious. For this Reason, *Convulsions* attending Fevers are to be dreaded. Whence *Hippocrates* might very justly say, that it is better for Fevers to succeed *Convulsions*, than for those to come upon Fevers; for if they are the Consequence of Purgation, or any other considerable Evacuation, they are of the worst Sort, because all Evacuations dry the Body. In Confirmation of this Doctrine, we are told, by the Author of 1 *Prorrhet. T.* 145. *that a violent and copious Hæmorrhage from the Nose sometimes induces Convulsions*; and, by *Hippocrates*, 5 *Aph.* 3. *that Convulsions or Hickups succeeding a copious Discharge of Blood by the Anus, are bad:* And *ibid.* 56. *that Convulsions and a Lipothymy after a Flux of the Menses, are bad.* Again, 7 *Aph.* 9. we read, *that a Delirium or Convulsions succeeding an Hæmorrhage, are bad.* The same Position is more generally and expressly asserted by *Galen*, in his Comment on *Lib.* 6. *Aph.* where he says, that *Convulsions* from an Evacuation are most acute and pernicious. To the same Purpose we read, 7 *Aph.* 13. *that* Convulsions, *or a Tetanus, after violent burning Heats, are bad*; and, *ibid. Aph.* 18. *Convulsions and a Delirium after Watchings, are bad.* The Reason is, because violent Heats, or burning Fevers, and immoderate Watchings, resolve and evacuate the humid Parts. In the same manner, that is, by drying the Body, do immoderate Purgations produce pernicious *Convulsions*, according to 5 *Aph.* 4. where it is asserted, *that* Convulsions *or Hickups, succeeding an Hypercatharsis, (or profuse Purgation) are bad.* Moreover, we read, 7 *Aph.* 25. *that Convulsions from a purging Draught are mortal.* And 5 *Aph.* 1. *that* Convulsions *from (white) Hellebore are deadly.*

Having spoken hitherto of the Prognostics from what they call *permanent*, or *perpetual Convulsions*; we proceed to treat, in a few Words, of such *Convulsions* as are occasioned by a Straining, or Stimulation, while Nature attempts an Excussion of the gross and viscid Humours which obstruct the Ventricles of the Brain, as in a Fit of the Epilepsy. *Galen*, *in Lib.* 5 *Aph.* says, that an Epilepsy is not a very acute nor dangerous Disease; and justly, because it belongs to the Lists of chronic Diseases; and the Patients are often perfectly freed from it, especially Children; according to that Aphorism of *Hippocrates*, 2 *Aph.* 45. *Very young Persons subject to an Epilepsy, are cured chiefly by Change in Age, Place, and Way of Living.* And 5 *Aph.* 7. we are told who are capable, and who are incapable of a Cure; where it is said, "An Epilepsy before the Age of "Puberty, admits of a Metastasis (a Solution, see META-"STASIS); but if it molests the Patient after twenty-five, it "generally accompanies him to his Grave." And *Galen*, in his Treatise *de Puero Epileptico*, tells us, that he had cured several Children; and in his Book *de Purg. Med. Fac.* that in several others, who were not cured, he had prevented a Return of the Disorder, by the proper Precautions of Purging and Phlebotomy in the Spring.

As for other Kinds of *Convulsions*, which are excited from Consent of Parts, by some acrid Humour, or Poison, or from some poisonous and malignant Vapour, they are all curable. Of this Nature were the *Convulsions* under which the Grammarian before-mention'd labour'd, from bitter Bile; and the young Man, also, spoken of, who was molested with an æruginous Matter, gnawing and vellicating the Mouth of the Stomach, and was freed from the same by Vomiting. Examples may, also, be given, of *Convulsions* from malignant Vapours, remov'd, and perfectly cur'd; but we have, perhaps, said enough, as to the Prognostics from *Convulsions* excited without a Fever; and shall, therefore, proceed to speak of such as happen under acute Fevers.

Of the Signification of CONVULSIONS *in acute Fevers.*

All *Convulsions* which happen in the Beginning of Diseases, indicate a Multitude of Humours, by the nervous Parts labouring under a Repletion, which occasions a Tension, or *Convulsion*. This Kind of *Convulsion* affords no sure Grounds for Prognostication, but indicates, however, that the Disease is very severe, and not void of Danger; since all Disorders, proceeding from a Multitude of crude Humours, are violent, and dangerous. Instances of this are many, in the Books of the *Epidemics*, of those who were restored to Health; particularly, the Woman who was three Months gone with Child, and lay ill in the *Strand*; *Pythion*, who liv'd near the Temple of *Tellus*; the Man who lay ill in the Garden of *Dealces*; *Chærion* at *Demaretus*; and the morose Woman, who was seized with *Convulsions*, as it were, on a sudden, on the first Day. In all these Cases, except his who lodged in the Garden of *Dealces*, where a Crisis was indicated, *Convulsions* were Signs of a Multitude

* The Passage here meant runs thus: ἢν λάχοις σπασμὸς ἐπιγένηται, πῦρ ποίει. Where our Author, for λάχοις, reads παιδίοις; and translates πῦρ ποιεῖ literally, *Ignem excreamus seu inuramus*; but we have followed *Foesius*. See the preceding Note.

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of Humours, and had nothing in them of Certainty, with respect to Prediction. In *Chærion* and *Pythion*, indeed, they were not so much to be dreaded, because on the ninth Day attended with a Discharge of Urine, in which appeared some Signs of Concoction; but in the Case excepted they were critical: For, as *Galen* says, in his Comment, "the Delirium on "the ninth Day, and squinting of the Right Eye, were usual "Incidents in a Crisis."

Convulsions, also, in Fevers which proceed from the Brain, affected by Consent of Parts from a Disorder in the Mouth of the Stomach, are not to be feared, since they may be remov'd by a Vomit. An Instance to this Purpose we find recorded by *Hippocrates*, 5 *Epid. T.* 40. in "the Son of *Hermophilus*, who "was ill eleven Days. His Disorder was a Fever, and he "took no Sustenance: On the first Day he was delirious, but "recovered his Senses at Night. The next Day he lay speechless, under a Stertor, with his Eyes distorted, and was feverish; but by Intromission of a Feather he vomited black "Bile; and, by means of a Clyster, had a plentiful Discharge "of stercoraceous Matters by Stool."

Convulsions, in such Cases, proceeding from the Uterus, are, also, easy to be cured; according to that in 1 *Prorrhet.* 119. "*Convulsions* in hysteric Women are easily removed; as in "the Case of *Dorcas*." [See a more just Translation of this Passage before.]

Convulsions, also, in Children affected with feverish Disorders, as they are no Indications of any great Alteration from a healthy State; because Children abound much with crude Aliment, and have, besides, weak Nerves, are not much to be dreaded. "Children, says *Galen*, *Com. in* 1 *Epid.* because of "the Weakness of their Nerves, are very subject to *Convul-* "*sions*." And the more easily they are liable to be convulsed on slight Occasions, the less is the Danger. It is no wonder, therefore, if Disorders of this Kind are not so formidable in Children, even under Fevers, as in adult Persons. To this Purpose is the Observation of *Hippocrates*, 1 *Epid. Sect.* 2. "that many were at first seized with *Convulsions*, and a Fever, "especially Children; the Fever was, also, succeeded by *Con-* "*vulsions*. These Symptoms were generally of long Continuance, and had no ill Consequence, except in those where "all other Signs were pernicious." And the same is confirm'd by the Author of the *Coac. T.* 356. where he says, that "*Con-* "*vulsions* succeeding a Fever are mortal, but least of all so to "Children." But if to *Convulsions* there succeeds a Fever, or, if there be a Fever already, an Exacerbation of the same, it is a good Sign, with respect to the *Convulsions*, provided they proceed from a Repletion of the nervous Parts. Hence we are told, *Coac.* 358. "that an acute Fever, coming upon *Convul-* "*sions*, removes the Disorder; whether it is a new Fever, or an "Exacerbation of the old." The same Symptom is much alleviated by a Discharge of much vitreous Urine, or what resembles Semen.

Convulsions in the Beginning of Fevers, if the Fever increases, usually cause an Alleviation of the Rigor. Thus it was in the Case of *Philistides*, the Wife of *Heraclides*, 7 *Epid. T.* 130. "who, it is said, was seized with a high Fever, and a Redness of the Face, without manifest Cause; soon after, on "the same Day, she was affected with a Rigor, and recovered "no Heat; then was convulsed in her Fingers and Toes; "and, shortly after, her Heat was revived. On the second "Day she had a new Fit of a Rigor, but recovered a little "more Heat than before; her Redness was less, and the supervening *Convulsions* were more moderate."

We may add, that some Sorts of *Convulsions* in Fevers much alleviate, and even remove the Disease; and these ought to be called *critical*, being occasioned by a Translation of the morbific Matter from the Veins to the Nerves and Muscles; and if they effect a Solution the first Days, they are critical and salutary, according to *Coac.* 157. where we read, "that a Convulsion "excited in a Fever removes it the first, second, or third "Day; but if it transgresses the Time in which it first began, "and ceases not, it is a bad Sign." *Convulsions* of this Nature are occasioned, as we said, by a Metastasis of the morbific Matter from the Veins to the nervous Parts; which Metastasis, or Translation, may possibly diminish, or even quite remove the Fever, the Humours being excreted from the Veins, and no longer left to putrefy in them.

And thus far have we spoken of those Kinds of *Convulsions*, which, though not properly good, for all *Convulsions* in themselves are bad, yet sometimes happen to be salutary Prognostics. We come now to treat of those which are universally bad and pernicious, and of destructive or fatal Signification.

It is an Observation of *Hippocrates*, *Lib. Prognost.* that in acute Diseases a *Convulsion* of the Testes and Pudenda is succeeded by a violent Pain, or Death; and *Convulsions* in acute Fevers are always of bad Signification to adult Persons, but worst of all in burning Fevers, as we are assur'd by *Galen*, *in* 4 *Aph.* 66. because these dry the Nerves like a Fire, and excite pernicious *Convulsions*. We have observ'd, that *Convulsions* from a Dryness of the nervous Parts are not only difficult, but impossible to be cur'd; for which Reason, they must be always pernicious in acute Fevers, as being occasion'd by a Dryness of the Nerves, from a Consumption of the humid by the igneous Heat of the Fever. Thus *Galen*, *in* 4 *Aph.* 35. tells us, "that "in burning Fevers, if the whole Body be dry'd, and a *Con-* "*vulsion* of the Nerves happens to proceed from that Dryness, "it is a very great Disorder, and almost incurable, because a "long time is requir'd for removing the Dryness of the Nerves; "whereas the Violence of the Disease will not allow Time to "Nature, but speedily exhausts the Strength, and destroys the "Patient." *Hippocrates*, therefore, had good Reason to say, that "Convulsions and violent Pains about the Viscera, in "acute Fevers, are bad;" but if attended with a Decay of the Strength, they shew Death to be very near. *Hippocrates*, 4 *Aph.* 49. is very express and elegant to this Purpose, when he says, "In a not intermittent Fever, if the Lip, or Eyebrow, "or Eye, or Nose, be distorted, or the Patient cannot see, or "hear, the Body being at the same time very weak; which "ever of these Symptoms appears, Death is at hand." Thus it happened, for Instance, to the Wife of *Dromeades*, 1 *Epid. Sect.* 3. *Ægr.* 11. who died suddenly in *Convulsions* which began at the Head.

Convulsions in a Delirium are very dubious, but in Phrensies are the most pernicious of all Symptoms, and indicate the speedy Approach of Death. *Galen*, as before observ'd, *M. M. Lib.* 12. *Cap. ult.* says, he never knew or heard of any Person who recover'd in such Circumstances. *Hippocrates*, in his Description of the Epidemic Constitution, 1 *Epid. Sect.* 2. says, that *those who were affected with Phrensies, were convulsed, and molested with virulent Vomitings; and some of them died suddenly.* And this he had an Opportunity of observing more exactly, in the Case of the phrenetic Patient, 3 *Epid. Sect.* 3. *Ægr.* 4. *who on the second Day, in the Morning, lost his Voice, had a high Fever, sweated, without Intermission of the Fever, was affected with Palpitations in all Parts of his Body, and at Night with* Convulsions. *On the third Day all the Symptoms were exasperated; and on the fourth he dy'd.*

We have before demonstrated, from *Hippocrates* and *Galen*, that it is a Property of mortal Phrensies to end in *Convulsions*: For it is the Nature of a true Phrensy to excite *Convulsions* a little before Death, the Nerves being dry'd by an Inflammation of the Brain: We have an Instance to this Purpose in the Maid-servant of *Conon*, 7 *Epid. T.* 98. who dy'd at the End of forty Days, and was speechless and convuls'd for some Days before her Decease.

Tremors ending in *Convulsions*, or *Convulsions* from Tremors, are affirm'd by *Galen*, on the *Prorrhetics*, to be mortal.

Convulsions occasion'd by Pains, or obstinate Watching, in acute Fevers, are pernicious, 7 *Aph.* 18. and so are those which proceed from profuse Purgation, or immoderate Evacuations of any Kind, 5 *Aph.* 3, 4. 56. before quoted. The Reason is, because all immoderate Evacuations dry the whole Body, and occasion a *Convulsion* from a Dryness of the Nerves, which is of the worst Sort, as we have observ'd. Hence *Galen*, *Com. in* 7 *Aph.* says, that "a *Convulsion* from an Evacuation is most "acute and pernicious."

A *Convulsion* proceeding from an Inflammation of the *Ileum* is pernicious, 7 *Aph.* 10.

Convulsions from Wounds are, for the most part, mortal. Death is not the necessary Consequence of all *Convulsions* occasion'd by Wounds, as *Galen* observes, *Com. in* 5 *Aph.* though *Hippocrates*, 5 *Aph.* 2. pronounces them mortal. They are, however, for the most part, deadly; and we have many Instances of it in the *Epidemics*, particularly in *Scamander*, who was convulsed after a Section; another from a Wound with a Dart; the fair Daughter of *Nireus* from a Blow; a certain Pilot from a Fracture of the Finger; another from a Luxation of the Finger; who all died of *Convulsions*. Of *Scamander*, 5 *Epid.* 15. it is said, that "his Hip was sphacelated, and the "Bone had for a long time been dislocated. The Operation "of the great Section was performed upon him, and he was "cut home to the Bone, and the Wound afterwards cauterized. "The twelfth Day after the Section he began to be taken with "*Convulsions*, which held him pretty strongly; he was con-"vulsed from the Leg, on the infirm Side, up to the Ribs; and "the *Convulsion* was communicated to the other Side; the "Leg was contracted and extended; the other Limbs were "moved, and his Jaws set. The Patient died in *Convulsions* "on the eighth Day after he was first seized with them." In the second Instance, *ibid. T.* 47. it is said, "that a certain "Person received a Wound with a sharp-pointed Dart, a little "below the Neck behind, which appeared scarce worthy No-"tice; for it was not deep. But, not long after the Dart "was taken out, the Patient felt himself distended, and drawn "backwards,

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" backwards, like one seized with an *Opisthotonos*; his Jaws " were under a Constriction, and if he received any Liquid " into his Mouth, and tried to swallow it, the same was dis- " charged again at his Nostrils, and he immediately grew worse " and worse in all other respects, and died on the second Day." The tragical Story of the beautiful Virgin-daughter of *Nireus* is thus related: " This young Woman being about twenty " Years of Age, in playing and sporting with one of her " female Friends and Companions, received a Blow from her " with the Flat of the Hand, on the fore Part of the Head: " She was immediately taken with a Dimness of Sight, and her " Breath failed her; and when she came home she was imme- " diately seized with a high Fever, attended with a Pain of " the Head, and a Redness about the Face. On the seventh " Day she had a Discharge of above a Cyathus of fetid, red- " ish Pus by her Right Ear, and she seemed to be better, and " easier; but the Fever increased again upon her, with a Cata- " phora; she lost her Voice; the Right Side of her Face was " contracted; she fetch'd her Breath with Difficulty; labour'd " under Convulsions and Tremblings, with an Impediment of " the Tongue, and a Stupor of the Eye; and died on the " ninth Day." Again, *ibid. T.* 74. we have a pretty remark- able Case of a " Pilot belonging to a great Ship, who crushed " the fore Finger of his Right Hand, and the Bone below it, " with an Anchor: The Consequence was, an Inflammation, " Sphacelus, and a Fever; he had a gentle Purge administer'd, " and his Heats and Pains were mild and favourable. Some " Part of his Finger was separated, and after seven Days a " laudable Ichor was discharged from the Wound. Some time " after he complained of an Impediment in his Tongue, " whence an Opisthotonos was predicted, and a Tendency to " that Disorder further appeared first from a Constriction of " the Jaws, and afterwards by an Affixion of the same to the " Neck. On the third Day he was wholly convulsed, and " under a perfect Opisthotonos, attended with a Sweat; and " on the sixth Day from the Prediction he died." Much of the same Nature was the Case of *Telephanes*, the Son of *Harpalus* by his freed Woman, related *ibid. T.* 75. " This young " Man had his Thumb luxated towards the lower Parts, the " Consequence of which was, an Inflammation, and Pain. " When the Luxation was reduced, he went into the Field, " and at his Return had a Pain in his Loins; he bathed, and " towards Night had a Constriction of the Jaws, and was " seized with an Opisthotonos. A spumous Saliva made its " way through his Teeth, with much Difficulty; and on the " third Day he died." In the same manner one *Tychon*, *ibid. T.* 94. who received a Wound in his Breast by a Dart from an Engine, at the Siege of *Datos*, died suddenly, on the third Day, in *Convulsions*. From these Cases it appears, that *Convulsions* from Wounds are generally mortal.

Convulsions of the permanent Kind from drastic, or very strong Cathartics, or poisonous Medicines, are fatal. Thus *Convulsions* from Hellebore taken inwardly, are by *Hippocrates* pronounced mortal, 5 *Aph.* 1. and, in general, *Convulsions* from any violent Cathartic are by the same Au- thor judged fatal, 7 *Aph.* 25. And he gives an Instance of the same, 5 *Epid. T.* 53. " in a young Woman about twenty, " who took a Medicine to procure Abortion; after which she " was taken with a Pain, and vomited much bilious, pale, and " porraceous Matter; and when she drank was convulsed, and " bit her Tongue. On the fourth Day I (*Hippocrates*) at- " tended her, and observed her Tongue to be much swelled, " [μεγάλη] and black, and the White of her Eye to be red: " The same Day, towards Night, she died." In the same Book, *T.* 85. he gives us a Relation of a young Man who died in *Convulsions*, from swallowing a Serpent [See the Story under the Article ARGES]. And 7 *Epid. T.* 20. we have an Ac- count of a Woman labouring under a Quinsey, who was con- vulsed on the fourth Day, and died on the fifth or sixth.

These, then, are the mortal *Convulsions* observed in acute Diseases; and the most pernicious of them all, as we have ob- served, are those which happen in acute and burning Fevers, especially when consequent upon a Phrensy; and that *Convul- sions* from Wounds are very much to be dreaded, we have proved, from Cases related out of *Hippocrates*. It remains to give some Marks or Signs by which we may know whether those Kinds of *Convulsions*, which in the Beginning of acute Diseases are necessarily owing to a Repletion of the nervous Parts, or at any other time of the same acute Diseases, are by the same Cause in any manner whatsoever excited, are salutary or pernicious. For our Satisfaction in this Point, we are taught to form a Judgment of such *Convulsions* from the Signs which precede, accompany, or follow them: And here we ought to have a principal Regard to the Signs of Concoction, and Cru- dity: For when *Convulsions* appear under an absolutely crude State of the Disease, they always threaten a bad Event. And, indeed, those Kinds of *Convulsions*, when pernicious, never use to appear alone, but attended with other pernicious Signs. Thus it was in the Cases of the Wife of *Philinus*, the Wife of *Dromeades*, *Philistes*, the phrenetic Person, and the Woman of *Cyzicus*, related in the first and third Books of the *Epidemics*; to all which Persons these *Convulsions* proved fatal. In the Wife of *Philinus*, 1 *Epid. Sect.* 3. *Ægr.* 4. these *Convulsions* appear'd on the eighth Day in great abundance, attended with Pain, and a high Delirium. The *Convulsions* continued upon her the ninth Day; on the eleventh Day, after being convulsed, she voided great Plenty of white, thick, turbid Urine, which deposited no Sediment; and these concomitant and subsequent Signs were, no doubt, to be esteemed mortal. Much of the same Nature was the Case of the Wife of *Dromeades*, 1 *Epid. Sect.* 3. *Ægr.* 11. for " on the sixth Day, in the Morning, she was seized " with a new Rigor, but soon recovered Heat; sweat in all " Parts of her Body; was cold in her extreme Parts, and de- " lirious; her Respiration was great (full), and at long Inter- " vals [ἀραιὸν. See ARÆAS]; and soon after she died suddenly " in *Convulsions*, which began at the Head." The Signs pre- ceding, it must be observed, are related, among others, to be an Evacuation of thin, oleous Urine, and a small Distillation of Blood from the Nose; which, with the others before-mention'd, portended nothing but Death. The same Judgment was to be form'd from a Tension of the Hypochondria in *Philistes*, 3 *Epid. Sect.* 2. *Ægr.* 4. who died on the fifth Day; for his *Convulsions* were preceded by an Inflammation of the Dia- phragm, with other very bad Signs. In the phrenetic Patient, 3 *Epid. Sect.* 3. *Ægr.* 4. besides what we have before proved out of *Galen*, that all *Convulsions* are destructive, his *Convul- sions* were, moreover, attended with other mortal Signs; such as, on the first Day, virulent Vomitings, a Fever with a Hor- ror; a copious, constant, and universal Sweat; and a high De- lirium: On the second Day a Loss of Voice; a high Fever; Sweating, without any Remission of the Fever; and Palpitations in all Parts of the Body: These, among others, were the per- nicious Signs which preceded those fatal *Convulsions*, which seiz'd him the same Night, and were sure Prognostics of his Death, which happened on the fourth Day. Thus, also, the Woman of *Cyzicus*, who was taken with *Convulsions* on the fourteenth Day, had them accompanied with a Coldness of the extreme Parts, and a Delirium, which never went off, in an absolutely crude State of the Disease.

Thus much we think proper to be said of *Convulsions*, with respect to their Prognostics; and under them some may, per- haps, think, that we should have comprehended the *Singultus*, or *Hiccough*, which is a Species of *Convulsions*: But since the *Hiccough* is a very particular *Convulsion*, affecting only the Stomach, we have chosen to treat of it apart, under its proper Article; and the rather, because *Hippocrates* has written of the same as distinct from *Convulsions*. *Prosper Alpinus de Præsag. Vit. & Mort.*

FEBRILE SWEATS.

A Sweat in the Beginning of an acute Fever, whose Cause is somewhat obstinate, arises from a lax Debility of the extreme Vessels, a vehement Circulation of the Blood, and a ready Separation of the aqueous Particles from the other Principles of the Blood.

If it perseveres, it deprives the Blood of its diluting Fluid, inspissates the Remainder, and causes fatal Obstructions, it being afterwards almost impossible to dilute, or resolve the Blood: Hence almost every kind of acute Disease may be produced.

These Sweats are, therefore, always to be restrained in the Beginning, unless it is certain that the Matter, which ex- cites the Disease, is sufficiently thin to be carried off, together with the first Sweats.

Sweat is check'd by rising out of Bed, and sitting up; by avoiding too many Integuments; by admitting the cool Air; by abstaining from warm and heating Medicines; by using copious Draughts of mild, soft, and cool Liquors; that the Loss of what is dissipated may be quickly repair'd; and by checking the Violence of the Circulation.

PROGNOSTICS IN ACUTE DISTEMPERS FROM SWEAT.

As the Crisis of acute Diseases often turns upon *Sweats*, the Prognostics which may be formed from them, with respect to the Fate of the Patient, deserve to be carefully considered. For this End, therefore, we shall first explain the Nature of *Sweat*, with its Differences; and, also, its Causes; that we may understand how it is generated.

We say, then, a Person *sweats*, when he excretes through the Pores of the Skin a Humour which is actually moist; to distinguish it from Perspirations, or Exhalations, which pass through the same Pores, and are called, by Physicians, Insen- sible Evacuations; because they are imperceptible to the Sense. Whence it follows, that *Sweat* is a particular Sort of sensible Evacuation made through the Pores or Passages of the Skin. As

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As to the Differences of *Sweats*, they are of several Kinds: Some are taken from their *Substance*; in which respect they are sometimes thick and viscid, sometimes thin, and without any Viscidity: They differ, also, in *Figure*; for some, as we are assured by *Hippocrates*, *Lib. Prognost.* appear like Millet; others are in the Form of Drops. There is a Distinction observ'd in their *Colour*; for some are yellow, others green; and, besides, they must of Necessity assume the Colour of the Humour from which they are excreted through the Skin. There is some Difference, also, to be made in their Taste, though they are all, as *Galen* says, *Lib.* 10. *Simpl. Cap. de Sudore*, more or less salt and bitterish, as are the Humours whence they are evacuated. They differ in Smell, since some are fetid, others not; in Quantity, some are copiously effused, others are sparingly excreted, or vanish immediately after their Appearance. Again, as to their active Qualities, they are either hot, or cold, or of a middle Temperament; and they have their Differences, also, with respect to the Times in which they appear; for some are observed in the Beginning of a Disease, some at its Height, and others at its Decline: And with regard to the Times of their Duration, some are continual, others are observed at Intervals; some *Sweats*, again, appear with Signs of Concoction; others with Signs of Crudity: Some are critical, and determine the Fate of the Patient; others symptomatical, as appearing only after the manner of Symptoms: And some are periodical; as those which are observed in Tertian and Quartan Fevers. And these are all the Differences of *Sweats* which we shall observe at present.

In treating of the Generation of *Sweats*, we are to consider the Matter of which they consist, and the efficient Cause of them. The Matter of *Sweat* and *Urine* is the same, as *Galen* says, *Lib.* 10. *Simpl. Cap. de Sudor.* and in sound Persons is the Liquid they receive by the Mouth, only more elaborate, as having passed through all the Ducts, from the internal Parts to the Skin. Hence it appears to be the thinner Part of the Aliment, which they call the serous Humour, or Ichor, but what has acquired somewhat of a bilious Substance; and by its Thinness is capable of being eliminated from the Body through the Pores of the Skin; as a thick Humour, by a like Reason, seems indisposed for the Generation of *Sweat*. Such, then, is the Matter of *Sweat* in healthy Persons; and hence it follows, that they who eat and drink plentifully, sweat copiously; as do, also, plethoric Bodies, which have wide Pores, and such as have a moist Liver and Spleen. Hence it is said, by *Hippocrates*, 4 *Aph.* 41. *that copious nocturnal* Sweats, *without manifest Cause, indicate the Body to be too plentifully fed; if this be not the Case, you may be assured that the Body requires Evacuation.* The Matter of *Sweat*, then, in healthy Persons, is either the thinner Part of the humid Aliment, as was said before; or a redundant Humour in the Body. In Valetudinarians, or sick Persons, it sometimes consists of Serosities generated from too humid an Aliment, as may be observed in those who have transgressed the Laws of Temperance; but most frequently from a Redundance of too thin Humours, as Blood, yellow Bile, and, also, from a cold pituitous Humour. Hence it is said by *Galen*, *Lib.* 3. *de Crisibus*, *Cap.* 3. that *Sweats* are proper to all Fevers, especially to burning Fevers; and that Semitertians, Quotidians, and Quartans, form their Crises by them; that they are a considerable Relief under excessive Heats, Inflammations, Parotides, Lethargies, and all other Cephalic Affections; and that all Humours, whether cold or hot, with a proper Degree of Thinness, may excite a *Sweat*, or discharge themselves in *Sweat*; but, most of all, putrid Humours find a Vent this way, as being the thinnest, and most fluid. Sometimes it happens, though only in malignant and dangerous Disorders, that the alimental Humidities of the solid Parts, which Physicians call the natural Humid, by which the natural Heat is maintained, being colliquated and discussed, pass through the Pores of the Skin in the Form of *Sweat*.

The efficient Cause of *Sweat* is Heat, either natural or preternatural, existing in the Body; for it is Heat which attenuates the Humour, and conveys it to the Skin: For Bodies, when they are heated, fall into a *Sweat*. Hence it is that in continual Fevers, under that extraordinary Degree of Heat which succeeds a Rigor, there is usually an Eruption of *Sweat*: For while the Body is under a Rigor, the Heat retires to the inward Parts; but afterwards, if it be strong enough, breaks forth, and, diffusing itself through the Body, extenuates the Humours; and, being resolved almost into Vapours, conveys them, with itself, to the Skin, and there causes a *Sweat*. *Hippocrates*, in his Book of *Prognostics*, says, *Some* Sweats *are occasioned by a Faintness or Feebleness of the Body; others by the Violence of an Inflammation.* From the first Cause is produced not simply a *Sweat*, but a small Desudation, or rather a kind of dewy Moisture, which the *Greeks* call ἐφίδρωσις (*Ephidrosis*; for that Word) and the *Latins Desudatio*, over all the Body, as we are taught by *Galen* on the *Prorrhetica*; or only on the Head and Thorax, and indicates the Imbecillity of the retentive Faculty, or the Redundance of Humours in the sweating Parts. Desudations (in the Sense before implied) are occasioned by the Violence of an Inflammation oppressing or resolving Nature; or because the thinner Part of the Humidities which are rarefied by the burning Heat, settles on the Skin: Wherefore *Sweat* is generated by Heat, changing into Vapour the thin Humour which is the Serum or Ichor of the Blood, proceeding from the Humidities of the Meat and Drink, or rarefying the Blood, Bile, or Phlegm, and raising them into Vapours. In Fevers, which the *Greeks* call *Elodes*, and we *Sweating Fevers*, *Sweat* is a proper Symptom; for in this Case the suppressed Humour is, by the Violence of the Heat kindled in the inward Parts, resolved into a continual Exhalation and *Sweat*. But Desudations, which are, according to *Galen*, small *Sweats*, or Moistnesses, of no Signification or Benefit, affecting the whole Body, or rather the superior Parts, are to be ascribed to another Cause, as we observ'd, proceeding, as *Hippocrates* says, from a Faintness or Resolution of the Body, or the Violence of an Inflammation; or, according to *Galen*, from a Resolution of the retentive Faculty, occasioning a Desudation not only of the redundant excrementitious Humour, but of the alimentary Portion appropriated to the solid Parts. These Things premised, concerning the Nature and Causes of *Sweat*, we proceed to the Prognostics which may be formed from them.

Of good and salutary SWEATS, *prognosticating Recovery.*

It often fortunately happens, that Persons under acute Diseases are freed from them by a profuse and critical Eruption of *Sweat*; and with good Reason, since, as *Galen*, *in Lib. Art. Med.* observes, the whole Body is evacuated by *sweating*. *Sweats* of this beneficial Sort are distinguished from the contrary, by the following Properties or Characters.

First, These salutary *Sweats* appear when the Disease is concocted, and are attended with Signs of Concoction; as we are taught by *Galen*, *Lib.* 1. *de Crisibus*, *Cap.* 7. where he writes, that *Sweats* effecting a happy Crisis, happen not in the Beginning, but in the Increase, or at the Height of a Disease, when Nature has either made a perfect Concoction, or has done Part of her Work, and proceeds in the rest with Vigour and Success. This, then, is one considerable Character of a good *Sweat*, without which *Sweats* are so far from being serviceable, that they portend a long Disease, much Pain and Anxiety, Relapses, and either no Crisis at all, or a fatal one; according to the Observations of *Hippocrates*, 1 *Epid. Sect.* 2. *Sweats*, then, appearing after Concoction, are Signs of a speedy Crisis, and safe Recovery; but in a crude and unconcocted State, they signify either that the Disease will be converted into an Abscess of a bad Kind; or that the Crisis will be frustrated; or that the Disease will be very painful and lingering, or mortal; or else it foreshews a Relapse. A necessary Mark, then, of a salutary *Sweat* is, that it appear after Signs of Concoction.

Secondly, A good *Sweat* must make its Eruption on some critical Day. On this Subject we find *Hippocrates*, 4 *Aph.* 36. thus pronouncing: *Good Sweats in Persons labouring under a Fever*, he says, *are those which appear on the third, fifth, seventh, ninth, eleventh, fourteenth, seventeenth, twenty-first, twenty-seventh, and thirty-fourth Days; for these Sweats are critical: But those which break out at other times, signify that the Disease will be painful and tedious, and the Patient subject to Relapses.* *Galen*, in his Comment on this Place, says, that the fourth Day was either omitted by *Hippocrates* because there are several Diseases, of a very acute Nature, which have their Fits or Paroxysms on odd Days, and their Crises at the same time with their Fits; or that the fourth Day was omitted by the Negligence of some Transcriber: But, for our Part, we have often admired the divine *Hippocrates* on this Head, since we have rarely observed *Sweats* of a very good Kind appearing on the fourth Day.

A third Character of a good *Sweat* is, its succeeding some critical Rigor: For when Nature has succeeded in her Efforts to expel the thin and sharp Humours out of the Veins into the superficial Parts, it occasions a vehement Rigor from a Dispersion of the same Humours over the sensible Parts, and vellication of the same Humours over the sensible Parts, and vellicating them, as we are taught by *Galen*, *Lib. de Rigor. Convulf. & Palpit.* together with a Refrigeration of the extreme Parts; the Consequence of which violent Rigor and Coldness, when Nature is strong and vigorous, is, the exciting an acute and high Fever, by the breaking forth of the Heat, which, also, attenuates and rarefies those Humours, and resolves them into a copious *Sweat*. As an Instance to this Purpose, *Hippocrates*, 1 *Epid. Sect.* 2. *Ægr.* 6. observes a very good Kind of *Sweat* succeeding a Rigor in the Case of *Cleonactides*. *He was seized*, he says, *with a Rigor, had a high Fever, and fell into a copious Sweat*; the Consequence of which was, a perfect and salutary Crisis. This is further confirmed in the Case of the sick Woman in the *Strand*, *ibid. Ægr.* 13. of whom he says, *On the*

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the eleventh Day she had a new Fit of a Rigor, succeeded by a high Fever; on the fourteenth she fell into a Sweat, which proved critical, and removed the Fever. Another Instance we have in *Chærion*, 3 *Epid. Sect.* 2. *Ægr.* 5. who *on the seventeenth Day had a new Fit of a Rigor; had a high Fever; fell into a Sweat; underwent a Crisis; and was freed from his Fever.* It is on this Account that we are told by *Hippocrates*, 4 *Aph.* 58. *that a Rigor coming upon a burning Fever causes a Solution of the Disorder*; because, says *Galen*, such Rigors are succeeded by *Sweats*, or some other good Evacuations. A *Sweat*, then, following a *Rigor*, is a very good Sign; and therefore *Galen*, *Lib.* 3. *de Crisibus*, *Cap.* 3. says, that those who are seized with a Rigor sweat very well; and *Com.* 1. *in Prorrhet.* *that Sweats succeeding a Rigor are good, if they appear with Signs of Concoction.* And, as a further Confirmation, it is observed by *Hippocrates*, 1 *Epid. Sect.* 2. *Stat.* 3. that *the greatest Part of those who lay sick (at that Season), were seized with a Rigor about the Time of the Crisis, and especially those who had not been affected with an Hæmorrhage from the Nose; these latter had, besides, a Return of the Rigor with a Sweat.*

A fourth Qualification of a good *Sweat* is, that it be copious, hot, and break forth from all Parts of the Body: These are Marks which shew the Firmness and Strength of the Faculty, in equally diffusing the Heat over all Parts of the Body, and resolving the superfluous Humours with equal Efficacy on every Side into a *Sweat*, which it were impossible for it to effect if it were either very weak, or were contending with a malignant Disease; in which Cases the Evacuations of that Kind would be unequal, in some Parts much in Quantity, in others little, or, perhaps, nothing. The best Kinds of *Sweats*, then, you see, are hot, copious, and universal; whereas those which appear only on the Head or Thorax, or on all Parts of the Body, but little in Quantity, or cold, are esteemed very bad and pernicious; as we shall shew hereafter. The Truth of this Observation is confirmed by *Hippocrates*, in many Instances in the *Epidemics*; particularly, 3 *Epid. Sect.* 3. *Ægr.* 6. in the Case of *Pericles*, of whom he writes, "that on the fourth Day, "about Noon, a hot and copious Sweat broke forth over all his "Body, he had a Crisis, and was freed from his Fever without "any Relapse." And *ibid. Ægr.* 10. in *Nicodemus*, "who "on the four-and-twentieth Day fell into a profuse and hot "Sweat, which was universal, and proved critical, in the Re-"moval of the Fever." And of the morose Woman, *ibid. Ægr.* 11. we read, "that on the third Day, towards Night, "there was a plentiful Effusion of hot Sweat throughout all "Parts of the Body; she was freed from the Fever, and fell "asleep." Once more it is related of the Virgin of *Larissa*, *ibid. Ægr.* 12. "that after a Horror she fell into a hot and "plentiful Sweat over all her Body, underwent a Crisis, and "was freed from her Fever."

Fifthly, It is an additional Mark of a very good *Sweat*, that it be not only universal, copious, and hot, but discharges itself in Drops and Vapours. *Lib. Prognost.*

Lastly, A singular Mark and Character of the best and most salutary *Sweat*, given by *Hippocrates*, in the Book just quoted, is, that it effects an entire Solution of the Fever, or wholly frees the Patient from it. For this Reason, he always, in his *Epidemics*, gives it as a distinguishing Characteristic of a critical and most beneficial *Sweat*, that the Patient is, by means thereof, ἀπυρὸς, "free from a Fever;" or ἄπυρος ἐκρίθη, "that he had "a Crisis with the Removal of his Fever;" or ἰδρώσιος ἀπυρὸς, "his Fever went off with a *Sweat*." Those *Sweats*, also, according to *Hippocrates*, *Prognost.* justly deserve the Name of salutary, which, by their free and plentiful Effusion in all Parts of the Body, though they do not entirely remove the Fever, are, yet, the Cause that the Patient can more easily support himself under it; since they alleviate the Disease, and diminish the Symptoms. But these *Sweats* differ from those of the best Kind, in not effecting a perfect Crisis, though they are Prognostics of Recovery at a longer Distance of time. *Sweats* of this Kind were often observed by *Hippocrates*, particularly of him who lay ill in the Garden of *Dealces*, 3 *Epid. Sect.* 1. *Ægr.* 3. in whose Case it is related, "that on the seventeenth Day his extreme "Parts were cold; they covered him with Clothes; he had a "high Fever; sweated over all his Body; found some Relief, "and had the freer Use of his Reason; but the Fever did not "leave him, and he had a Thirst. On the twentieth Day he "slept; had the perfect Use of his Reason; had an Eruption "of Sweat; was without a Fever, or Thirst;" which, however, return'd upon him; and it was the fortieth Day, when, after frequent Evacuations of white pituitous Matters by Stool, he fell into a profuse and universal *Sweat*, and had a perfect Crisis.

Thus we have given you the Marks or Characters of the best Kinds of *Sweat*, and such as are critical, which you will find comprehended by *Hippocrates*, in his Book of *Prognostics*, in the following Words: "In all acute Diseases the best *Sweats* are "such as happen on a critical Day, and entirely remove the "Fever. They are good, also, which arise over all the Body; "and render the Disease more tolerable to the Patient; but "those which produce no such Effect, are of no Service." And good *Sweats* are not only known by these Marks in themselves, but by the Attendance of other good Signs, as a good Hæmorrhage, or some other salutary Evacuation; and, also, as we said, by the Patient's finding himself in some measure relieved by them. *Sweats* of this happy Influence were observed by *Hippocrates* in many Instances, particularly *Cleonactides*, *Matôn*, the sick Woman who lived in the Strand, and *Melidia*, recorded in the first of the *Epidemics*; and in the Patient who lay ill in the Garden of *Dealces*; *Chærion*, *Pericles*, the Virgin of *Abdera*, *Anaxion*, *Nicodemus*, the morose Woman, and the Virgin of *Larissa*; whose Cases you find related in 3 *Epid.* with many others: In whose Histories the intelligent Reader may find the forementioned Signs, and Matter to exercise his Judgment in forming such salutary Prognostics as will not fail to justify themselves by the Event.

Of bad and pernicious SWEATS, *which portend a fatal Event.*

Hippocrates, in his Book of *Prognostics*, speaking of bad *Sweats*, makes Degrees of them; and tells us, that such *Sweats* are in a great measure bad, as neither remove the Fever, nor render it more tolerable to the Patient; that is, afford him not the least Relief, though proceeding from all Parts of the Body. A worse Sort than those are such as neither proceed from the whole Body, nor alleviate the Disease: Still more pernicious are *Sweats* which exasperate the Disease; but the worst, and most pernicious of all are cold *Sweats*, and such as arise only about the Head, Face, and Neck; for such *Sweats*, he says, in a high Fever, portend Death; in one of a milder Nature the long Continuance of the Disease. But we shall consider all the bad Kinds of *Sweat* distinctly, under some general Heads, for the sake of Accuracy, and that we may be the better enabled to form just Prognostics from them.

First, then, we shall take into Consideration such bad Kinds of *Sweat* as appear in a crude State of the Disease, and unattended with the least Signs of Concoction. Secondly, We shall treat of bad *Sweats* with regard to their Quantity; or as they are more or less copious. Thirdly, We shall consider them with respect to Heat and Coldness. Fourthly, with regard to the Parts of the Body whence they proceed. Fifthly, as they injure, or at least no way relieve the Sick. And, lastly, as they appear attended with other bad Signs.

In examining the first general Head, that we may have a clearer Notion of what it contains, we shall distinguish *Sweat* into periodical, critical, and symptomatical. We call that a periodical *Sweat*, which attends the Periods or Returns of intermittent Fevers; as Tertians, or Quartans. Such was the *Sweat* observed by *Hippocrates*, 7 *Epid. T.* 4. in the Case of *Pythodorus*. A critical *Sweat*, of which we have spoken before, is such as appears, in continual Fevers, on some critical Day; and either entirely removes the Fever, or diminishes it, and relieves the Patient: And the Effect of this *Sweat* we call a Crisis, either perfect or imperfect. The Characters of a critical *Sweat*, we have told you, are, its Appearance with manifest Signs of Concoction, on a critical Day, when Nature is strong and vigorous; that it is hot, copious, and universal, yet not diminishing the Strength; and removes, or much diminishes the Fever, with its Symptoms. To a critical *Sweat* is opposed a symptomatical one, which happens in manner of a Symptom, and is never of any Benefit, but generally attended with destructive Signs; and portends Death, or, at least, a long Continuance to the Disease, with many Relapses, and much Pain and Trouble. On all such *Sweats* we bestow the Appellation of symptomatical, as we do, also, on all other Excretions which happen when the Disease is crude, or when no Signs of Concoction appear. Wherefore all bad *Sweats* appear in a crude State of the Disease, when there is no manifest Sign of Concoction. For which Reason *Hippocrates*, 2 *Epid.* near the Beginning, makes the *Sweats* which appeared at the Beginning of an epidemic Fever, there described, to be Prognostics of a difficult and dangerous Crisis: And these Kinds of *Sweats* are the worse, if they appear only on the Head, Neck, Throat, or Thorax; and if they are cold, scanty, or cease immediately; or if they are copious, continued, or immoderate, they are worst of all. Secondly, we are to speak of bad *Sweats*, with respect to Quantity, as they are copious, or scanty, or none at all. *Sweat* is said to be much, and copious, when it breaks forth in a thick and profuse manner; when it is assiduous and continual; and when it is both assiduous and copious. Copious *Sweats*, according to *Galen*, *Lib.* 3. *de Sympt. Caus.* are occasioned either by the Rareness of the Body, or the Thinness of the Matter evacuated. *Sweat* which flows for either of these Reasons, comes not forth in a pressing and profuse manner, but assiduously and constantly

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constantly. Much Sweating, therefore, in Fevers, if occasioned neither by the Thinneſs of the Matter, nor the Rareneſs of the Pores, (which ſort of Sweat, according to *Galen*, in 4 *Aph.* 41. is never copious) always indicates a Redundance of Humours, as we are told by the ſame Author, in 4 *Aph.* 42. And hence, *Hippocrates*, in the firſt-mentioned *Aphoriſm*, ſays, that "Much Sweating from Sleep, without any manifeſt "Cauſe, indicates too plentiful Feeding; but if it happens, "though the Patient takes no Food, it ſhews that the Body "wants Evacuation." Much Sweat, ſays *Galen*, ſignifies Plenty of Excrements: Theſe Sweats, therefore, appearing in Fevers, and affecting nothing towards a Criſis, are conſtantly pernicious, for this very Reaſon, that they indicate a Redundance of Humours, which requires a long Time for Nature to digeſt and ſubdue; whence in acute Diſeaſes, which extinguiſh Nature in a ſhort time, they often portend Death. Hence *Hippocrates*, 4 *Aph.* 42. ſays, that "A conſtant Flux of much "Sweat, if cold, indicates a ſevere Diſeaſe; if hot, a milder:" Becauſe, as *Galen* ſays in his Commentary, both of them are Signs of a Multitude of Humours, the cold Flux of cold Humours, which are the worſt; and the hot of hot Humours, which are leſs dangerous than the other. Theſe Sweats neither remove nor alleviate the Fever, and break forth when the Diſeaſe is crude; and therefore are, at beſt, Prognoſtics of a long Diſeaſe, ſubject to Relapſes, and attended with much Pain and Trouble. The Author of 1 *Prorrhet.* 58. calls thoſe Sweats unſerviceable in acute Fevers; and *Hippocrates*, 1 *Epid. Sect.* 2. ſpeaking of an epidemic continual Fever, ſays, that the Patients ſweated much; but were ſo far from being relieved, that they were rather injured by it.

Sweats not copious, but yet conſtant or perpetual, are, alſo, bad, and, for the moſt part, mortal; ſince they are occaſioned, as *Galen* ſays, *Lib.* 3. *de Sympt. Cauſ. Cap.* 2. and *Com. in* 4 *Aph.* 41. either by the Rareneſs of the Pores, or Imbecillity from a Reſolution of the Habit of the Body, as the Caſe is in a Syncope: Theſe Sweats then, are all pernicious, as indicating a Languor of Nature; but the worſt are thoſe ſymptomatical Sweats which are copious as well as conſtant, ſince they indicate an extreme Weakneſs, as well as an extraordinary Redundance of Humours, in which Circumſtance Death is unavoidable, as is confirmed from the Inſtances of *Eraſinus*, 1 *Epid. Sect.* 3. *Ægr.* 8. and the phrenitic Patient, 3. *Epid. Sect.* 3. *Ægr.* 4. of the firſt of whom it is ſaid, that *He had a Fever with perpetual Sweating:* And of the other, that *He vomited much thin, virulent, and æruginous Matter; had a Fever, attended with an Horror, and a copious and continual Sweat over all his Body.* Some read this Place not according to *Galen*, as above, but from other Copies, thus, *He had a copious and continual Sweat, which affected his Head and Neck during the whole Day.* And it is uſual with Perſons under a Lipothymy to ſweat in their Head and Neck. But this is no Reaſon that we ſhould not, with *Galen*, read ὅλῳ τῷ σώματι, *over all the Body*; ſince every Phyſician knows, that Perſons under a Phrenſy, before their Death, fall into a Sweat, from an univerſal Reſolution of the Parts: Hence we conclude, that copious Sweats, in acute Diſeaſes, not being critical, are not only of no Benefit, but, for the moſt part, fatal, and, when attended with a Languor, or total Decay of Strength, are moſt certain Signs of approaching Death; and that conſtant Sweats, whether copious or not copious, are alike pernicious in acute Diſeaſes.

Sweat, little in Quantity, is uſually of the ſame pernicious Signification as when much. *Galen*, *Lib.* 3. *de Symptom. Cauſ. Cap.* 2. writes, that ſmall Sweats are occaſioned by the ſmall Quantity, or groſs and glutinous Quality, of the ſuperfluous Humours, or the Straitneſs of the Pores, which are rendered narrower, either by Contraction or Obſtruction. The cutaneous Paſſages are obſtructed by thick and glutinous Juices, and cloſed up, or contracted from an Atrophy, Refrigeration, or Softneſs: Theſe little Sweats, if they break forth on a critical Day, are an undoubted Indication, that Nature makes fruitleſs Efforts to expel the Humours; and that its Attempts are fruſtrated by their Thickneſs or Viſcidity, or the Narrowneſs of the Paſſages. But where there is no Conſtriction of the Paſſages (as may be known, becauſe the Skin is neither contracted by an Atrophy, nor much refrigerated, nor remarkably ſoft) and there are Signs of a Redundance of Humours, little Sweats indicate Plenty of groſs and viſcid Humours; and if the Strength, at the ſame time, be very much exhauſted, are mortal; and ſo much the more, if they appear without Signs of Concoction; in which Caſe, all Excretions are ſymptomatical, and indicate a Redundance of Humours. Sweats of this Kind ſhew, that Nature had begun to expel the Humours through the Skin, and could eliminate no more than the thinneſt Portion of them, which muſt prove inſufficient for a Solution of the Diſeaſe. Under this Head may be reduced Sweats which ceaſe immediately after their Eruption, and are condemned by *Galen*, *Com.* 1. *in* 1 *Prorrhet.* Sweat, therefore, little in Quantity, is always bad.

But the worſt and moſt fatal of all Sweats, is that thin ſcanty ſort of Sweat which the *Greeks* call *Ephidroſis*, and the *Latins Deſudatio*, or *Mador*, "A Deſudation, or Moiſtneſs." This Kind of Sweat appears ſometimes on all Parts of the Body, but generally about the Head, Neck, Throat, Breaſt, and ſometimes about the Extremities. Of this Subject we find *Galen* diſcourſing, in his Comment on the *Prorrhetica*, where he ſays, "We meet with the Word *Ephidroſis* ſeveral times "in this Book; but we are not certain whether the Author "means by it, thoſe Sweats which appear about the Head and "Thorax, or thoſe which break forth from all Parts of the "Body, but in a weak and faint manner, and of no Benefit "to the Patient." Both of theſe indeed are bad; but the worſt of them is what appears only on the upper Parts: For ſince all *Deſudation* demonſtrates either a Plenitude in the ſweating Parts, or an Imbecillity of the retentive Faculty, if either of theſe affects the Parts about the Head and Thorax, it is a worſe Sign, than if it were in any other Region. Of the Judgment that is to be made of Sweats indicating a Redundance of Humours, we have ſaid enough already; but we may conclude the other Sort to be, alſo, pernicious, ſince they proceed from an extreme Decay of Nature, which is too weak to retain the alimentary Humid of the ſolid Parts, diſperſed by Oppreſſion or Reſolution. Theſe *Deſudations* are diſtinguiſhed from thoſe occaſioned by a Multitude of Humours, in that they generally break forth about the Forehead, Neck, Breaſt, or extreme Parts, with a ſlight Moiſtneſs, not increaſing, ſeldom hot, but generally coldiſh, with a very low Pulſe, and other Signs indicating Nature to be in a very languid State. Of this Nature are the Sweats, which owe their Riſe to immoderate Evacuations, concerning which we read, 1 *Prorrhet.* 126. *A ſlight Sweat with a Refrigeration, after an Hæmorrhage from the Noſe, is bad.*

But is it not a bad Sign in ſome acute Diſorders not to ſweat at all? Yes, certainly, in all thoſe which, as *Galen*, *Lib.* 3. *de Criſibus*, has taught us, are critically terminated by Sweats: Such are all continual, and eſpecially burning Fevers, which form their Criſes by Sweat, or ſome other laudable Evacuation; whence the Fever is either entirely removed, or much diminiſhed, with its Symptoms, and the Caſe of the Patient altered much for the better. Without ſuch an Evacuation we are not to truſt to any Remiſſion of the Diſeaſe, as *Galen*, in 3 *Epid.* adviſes, agreeably to that of *Hippocrates*, 2 *Aph.* 27. *We are not to place our Dependence on Things which give Relief after an unaccountable manner.* The Neceſſity of ſuch Caution is exemplified in the Inſtances of *Hermocrates*, 3 *Epid. Sect.* 1. *Ægr.* 2. and the Virgin Daughter of *Euryanactes*, *ibid. Sect.* 2. *Ægr.* 6. Of the firſt it is ſaid, *On the fourteenth Day he was free from a Fever, did not ſweat, ſlept, and was in his perfect Senſes: His Urine was the ſame. About the ſeventeenth Day, the Diſeaſe returned, the Patient was very hot, and on the following Days he had an high Fever, his Urine was thin, and he was delirious. On the twentieth Day he had another Criſis, and was free from a Fever, but ſweated not.* Such deceitful Remiſſions of Diſeaſes without Sweat, or any other laudable Evacuation, are diſtinguiſhed from ſuch as may be truſted by the ſubſequent Signs, which, in the latter, are very good, in the former bad; as appears in *Hermocrates*, from what followed after the Criſis. *On the twentieth Day he had another Criſis, was free from a Fever, ſweated not: He had all the Time hitherto an Averſion to Food; had the Uſe of his Reaſon, but not of his Speech; his Tongue was dried up, but without Thirſt; and his Sleep was comatous. On the twenty-ſeventh he died.* And thus you ſee, that *not to ſweat at all*, in burning Fevers, is ſometimes a Prognoſtic of a fatal Event.

We proceed to take into Conſideration thoſe Sweats which are *cold*, ſince they are often obſerved to be mortal in acute Diſtempers; but, firſt, we are to have a thorough Inſight into the Generation and Cauſes of them, which will very much illuſtrate the Reaſonableneſs of grounding Predictions upon them.

Firſt, then, Cold Sweats, as they conſiſt of a cold and crude Matter, demonſtrate, in continual Fevers, a Redundance of crude Humours, as *Galen* ſhews, *Com. in* 4 *Aph.* 42. eſpecially when there is a copious Eruption of them. Theſe Sweats, according to *Galen*'s Opinion, *Com. in* 4 *Aph.* 37. *are generated when the Humours putrefy in the Veſſels; and Nature, which moderates and rules the ſolid Parts, and is, according to* Hippocrates, *the natural Heat, is either wholly or nearly extinguiſhed; the Matters evacuated are indeed cold to the Senſe, though the Heat, proceeding from the Putrefaction, may, for all that, be very violent; for which Reaſon it is a very deſtructive Sign, as it ſhews, that the exceſſive Quantity of Humours in the animal Body is endued with ſo great a Colaneſs, as not to be heated by either the natural or febrile Heat.* Cold Sweats, then, indicate a Redundance of very cold Humours, by which Nature is either totally,

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totally, or very nearly, extinguiſhed. But when there happens to be kindled in the Veſſels a moſt violent Heat, from the Putrefaction of the Humours, and the natural Heat retires to the inward Parts, there is a Refrigeration of the Extremities, with a very cold Humour, without conſidering their acting one upon another; but when there comes to be a mutual Acting and Reſiſtance of the Humours, it is neceſſary, either that the cold Sweat ſhould be heated, or the Heat ſoon extinguiſhed by it. Agreeable to this is the Obſervation of *Galen*, in *Lib.* 4. *Aph. In Diſeaſes not acute, but of a milder Nature, if the natural Heat, after maintaining itſelf a long Time, prevails not at laſt, it is extinguiſhed, which happens much ſooner in a violent Diſorder from a ſpeedy Reſolution of the Strength.* Juſtly, therefore, is it ſaid by *Hippocrates*, 4 *Aph.* 37. that *Cold Sweats, in an acute Fever, prognoſticate Death; in a milder one, the long Continuance of the Diſeaſe: Since*, as *Galen*, in his Comment, ſays, *if the Fever be of a gentler Kind, the Patient may recover, the Redundance of the Humours being concocted, and ſubdued by Length of Time. But an acute Fever is both a Cauſe, and a very pernicious Sign: As a Cauſe, it naturally effects a Reſolution of Bodies; and as a Sign, it ſhews the Multitude of Humours, which are too intenſely cold to be altered by the febrile Heat.*

But perhaps you will aſk, How it is poſſible for theſe Humours, which are cold, and, conſequently, unfit for Motion, and much more under an extreme Weakneſs, and almoſt Extinction of Nature, to be conveyed to the Skin?

I anſwer, That the Humour being in ſome meaſure heated by the febrile Heat, though naturally unfit for Motion, is conveyed to the Skin, where the adventitious Heat it had received being reſolved, it begins to cool again, and ſo turns out cold.

Cold Sweats, then, in acute Diſeaſes, are always of fatal Signification, whether much or little in Quantity, howſoever they come forth; or whether they proceed from the whole Body; or from the Head, Neck, and Breaſt; or from the Extremities. Inſtances of this were obſerved by *Hippocrates*, in the firſt and third Books of the *Epidemics*, in *Philiſcus*, the Wife of *Dromeades*, the Woman who lay ill *in Foro Mendacium*, and *Philiſtion*, who all died with cold Sweats upon them. And the moſt deſtructive of this kind is a petty thin cold Sweat, which comes out about the Head, or extreme Parts, as the Hands and Feet, becauſe they indicate a near Extinction of the Faculty. Juſtly, therefore, was it ſaid by *Hippocrates*, *Lib. Prognoſt.* that *Cold Sweats are worſt, and, in acute Diſeaſes, indicate Death; in milder ones, a long Continuance of the Diſorder.* Cold Sweats, then, are bad in all Caſes; agreeably to the Obſervations of *Hippocrates*, 3 *Epid. Sect.* 3. *Stat. Peſt.* where, among other Symptoms peculiar to the reigning Fevers of that Seaſon, were *Cold unſeaſonable Sweats, which came forth in a plentiful manner, and held the Patient continually.* The deſtructive Tendency of theſe Sweats is confirmed by other concomitant Signs; which, taken all together, and eſpecially ſuch as are ſubſequent, are neceſſarily pernicious. Of this kind were thoſe obſerved by *Hippocrates*, in *Philiſcus*, and the others juſt mentioned. Of *Philiſcus*, 1 *Epid. Sect.* 3. *Ægr.* 1. it is ſaid, "At the Cloſe of the fifth Day he grew "ſpeechleſs, fell into a cold Sweat, and his extreme Parts were "livid: On the ſixth Day about Noon he died." It is farther remarked of this Patient, that "He was continually under "a cold Sweat." The Wife of *Dromeades*, *ibid. Ægr.* 11. "On the ſixth Day in the Morning had a new Fit of a Rigor, "ſucceeded by a ſpeedy Return of the Heat, and a Sweat all "over her Body; her extreme Parts were cold; ſhe was de"lirious; her Reſpiration was great and rare [ἀραιόν. See "ARÆON], and ſoon after ſhe died in Convulſions, which "began at the Head." And of the Woman who lay ill *in Foro Mendacium*, 3 *Epid. Sect.* 2. *Ægr.* 12. we read, that "On the ſeventh Day ſhe was ſeized with a Return of a Ri"gor, ſucceeded by an high Fever, with an intenſe Thirſt, "and Jactations [Ἐλκεισμός. See BLESTRISMUS]: Towards "Evening ſhe fell into an univerſal cold Sweat, and her ex"treme Parts were cold." From theſe Inſtances, and what has been ſaid, it abundantly appears, that cold Sweats in acute Diſeaſes are deſtructive, and conſtantly portend Death; which may be predicted with the greater Certainty, if thoſe Sweats make their Eruption on ſome critical Day, and are ſucceeded by ſome pernicious and mortal Sign.

Let this ſuffice concerning deſtructive cold Sweats; and let us now proceed to conſider Sweats, with reſpect to the Partiality, and the Parts of the Body whence they break forth. For Sweats, as we have ſaid, are very good and ſalutary, when they make their Eruption from all Parts of the Body, becauſe they demonſtrate Nature to be robuſt, and under no inward Impediment, from a malignant Diſorder, or any morbific Cauſe, which might fruſtrate her Efforts in making Excretions of the Humours from all Parts. But, on the contrary, when any one of the internal Viſcera is ſeized with a violent Inflammation, or oppreſſed with a Multitude of Humours, there ariſes a partial and unequal Sweat. Such Sweats, therefore, as make their Eruption not from the whole Body, but from the Head or Thorax, are, according to *Hippocrates*, *Prognoſt.* of the worſt Kind; and, whether they be hot or cold, in acute Diſeaſes portend Death; in milder Diſorders, a long Continuance, Relapſes, and much Pain and Sickneſs. *Hippocrates*, 1 *Epid. Sect.* 1. *Stat.* 1. ſpeaking of epidemic, and very mortal kind of Fevers, ſays, that the Patients "were "under a perpetual Sweat, but not in all Parts of the Body." And a little after, enumerating the Symptoms by which burning Fevers were known to be mortal, even at the Beginning, ſays, that "The Patients ſweated a little about the Forehead "and Clavicles; but not one of them in all Parts of the Bo"dy." Hence the Author of 1 *Prorrhet.* 39. had Reaſon to ſay, that "Sweats, and eſpecially about the Head, with a kind "of Uneaſineſs [κατὰ ὑφορέσι], in acute Diſeaſes, are a bad "Sign." All Sweats, therefore, which proceed not from the whole Body, are bad, as being Prognoſtics of Death, or a long Sickneſs. Juſtly, therefore, has *Hippocrates* ſaid, *Lib. Prognoſt.* that "The worſt Kind of Sweats are thoſe which "are cold; and eſpecially when they happen only about the "Head, Neck, and Face: For ſuch Sweats, in acute Fevers, "portend Death; in leſs violent Diſtempers, their long Con"tinuance." And very right is the Judgment which *Galen* on the *Prorrhetica*, paſſes on them, when he ſays, "Every "*Deſudation*, that is, Sweat breaking forth about the Fore"head, the fore or hinder Part of the Neck, or Clavicles, "indicates an Imbecillity of the retentive Faculty, or a Re"dundance of Humours." And, in another Paſſage of the ſame Comment, he tells us, that "Such Sweats are not good, "both becauſe they ariſe on the ſuperior Parts, and, alſo, for "a double Reaſon, which is, that they proceed from a Lan"guor of the Faculty, or an Oppreſſion of the ſame in its "Original." Sweats ariſing in the Head and upper Parts, are very bad, particularly in a Suppuration and Phthiſis, of which the Author of the *Coac.* 402. ſays, "They who are affected "with a Suppuration, eſpecially from a Pleuriſy or Peripneu"mony, have their Diſorder attended with Heats, which are "but ſlight in the Day, but more intenſe at Night; they, alſo, "ſpit forth ſomething not worth Notice, ſweat about the "Neck and Clavicles, have hollow Eyes, and red Cheeks." With good Reaſon, therefore, are ſuch Sweats eſteemed mortal in an acute Fever, as indicating an Extinction of the Faculty, before it can accompliſh the Concoction of the Humours; and when they are occaſioned through an Imbecillity of the retentive Faculty, being unable to retain the Humour, or even the alimentary Juice proper to the Solids, portend, in a Fever, not only unavoidable but ſpeedy Death, and with the greater Degree of Certainty, if they are, alſo, cold; of which Nature were thoſe obſerved in *Pythion*, and the Woman *in Foro Mendacium*, 3 *Epid.* before-mentioned; and in *Meton*, *Ariſtocrates*, and *Pherecydes*, 7 *Epid. T.* 47. 57. 91. and in many others, who all died. But if the Diſeaſe be more favourable, and the Strength extraordinary, ſuch Sweats indicate not Death, but the long Continuance of the Diſtemper; as it was in the Caſe of the Patient who lay ill in the Garden of *Dealces*, 3 *Epid. Sect.* 2. *Ægr.* 3. of whom *Hippocrates* ſays, that "On the "fourth Day there flowed from his Left Noſtril a ſmall "Quantity of pure Blood; he had a Sweat about the Head "and Clavicles, a Tumor of the Spleen, and a Pain in the "Thigh on the ſame Side."

Sweats are, alſo, known to be bad, from their being unattended with any other Evacuation; and more from the Injury the Patients experience from them. For when a Sweat is found to be ſo far from being beneficial that it proves of ill Conſequence to the Sick, it is to be eſteemed one of thoſe pſeudo-critical Signs which determine nothing, and, conſequently, according to *Galen*, *Com. in Prorrhet.* are mortal. *Hippocrates*, in his Book of *Prognoſtics*, pronounces ſuch Sweats as neither remove the Fever, nor render the Diſeaſe more tolerable to the Patient, to be uſeleſs and bad, and Prognoſtics either of Death, or a long Sickneſs. And the Author of the *Prorrhet.* 58. ſays, that "Much Sweating, in acute or high Fevers, is "of no Service to the Patient," as not removing the Fever. And, *ibid.* 7. "Burning Heats in the Hypochondrium, re"maining after a Refrigeration of the Fever, are a bad Sign; "and eſpecially when attended with Sweats:" Becauſe, as *Galen* ſays, in his Comment, they extend not over the whole Body; but are ſmall and inconſiderable, and incapable of extinguiſhing the flammeous Heat in the Hypochondrium. Again, 1 *Prorrhet.* 68. it is ſaid, that "They who lie waking in a "Sweat, and have a Return of the Fever [ἀναθερμαινόμενοι], "are in a bad State." And, *ibid.* 67. "A fiery red Face, "and Sweating, in a burning Rigor, are bad;" becauſe, if the Sweat were good, the Heat of the Face would be reſolved by it, which the Sweat not doing, indicates a Malignity. The

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the same Purpose, but more express, is 4 *Aph.* 56. "If a Person under a Fever fall into a Sweat, and finds no Remission of his Fever from the same, it is a bad Sign; for the Disease is prolonged, and a Redundance of Humidities is indicated." Such Sweats, in an acute Fever, portend Death; in a more gentle one, a long Continuance.

Among bad Sweats are, also, to be reckoned, all those which precede, accompany, or follow, other pernicious Signs. From such Sweats as these we may prognosticate a fatal End; since, if succeeded by bad Signs, they prove themselves of the Number of those critical undetermining Signs, by which the Patient is so far from being relieved, that he finds himself worse; and, consequently, are to be esteemed mortal. Of pernicious Signs succeeding bad Sweats we find *Hippocrates* speaking, 1 *Epid. Sect.* 1. where he says of some Patients under an epidemic Fever, that "They had continual Sweats, but not diffused over "the whole Body, and their extreme Parts were refrigerated, "so as to become almost incapable of recovering Heat." And the Author of the 1 *Prorrhetica* 126. says, that "An Hæmorrhage from the Nose, with thin cold Sweats, and a general "Refrigeration, indicate Malignity, and are bad for the Patient." And, *ibid.* 102. "They who in the Beginning (of "acute Diseases) are affected with cold Sweats, make concocted Urine, and are in a burning Heat, then unaccountably [ἀφύκτως] refrigerated, till a sudden Return of the hot "Fit, and moreover labour under a Torpor, Coma, and Convulsions, are in a very dangerous State." Once more, *Coac.* 40. "Refrigerations, with thin cold Sweats, succeeding a "Rigor [for ῥιγῶν I read, with *Prosper Alpinus*, ῥιγέων], are "bad." Of this Nature were the Sweats observed by *Hippocrates*, in the Wife of *Dromeades*, 1 *Epid.* the Virgin Daughter of *Euryanactes*, and the young Woman who lay ill *in Foro Mendacium*, 3 *Epid.* and in the Wife of *Theodorus*, *Aristocrates*, and the Wife of *Euxenus*, 7 *Epid. T.* 27. 52. 58. who all died. Of the Wife of *Dromeades* we have taken Notice above; and of the Daughter of *Euryanactes* it is said, that "On the "seventh Day after a Crisis she was seized with a Rigor, was "feverish. and sweated: The eighth Day after the Crisis she "had something of a Rigor; and afterwards her extreme Parts "became cold, and always so continued. About the tenth "Day, after a Sweat which she had, she was delirious; but "soon recovered her Senses." Of the young Woman who lay ill *in Foro Mendacium*, we read, that "On the second "Day all the Symptoms were exasperated; she had frequent "and unseasonable Stools, had no Sleep, was disturbed in her "Reason, and sweated a little. On the third Day she was "very uneasy, thirsty, nauseating, very restless and impatient, "delirious, and her extreme Parts were cold and livid." The Wife of *Theodorus* "had first a small Eruption of Sweat about "the Forehead, which, after a considerable Time, diffused itself over the whole Body and Feet, after which the Fever "seemed to remit. The Body of the Arteries seemed cold to "the Touch; but those at the Temples had more than an ordinary Degree of Pulsation: Her Breath grew short; she "was delirious at every Turn, and she became worse on all "Accounts." The Wife of *Euxenus*, "Had a Remission of "her Fever, with a copious Sweat; was much refrigerated; "laboured under an Asthma of various Kinds," and so died. By these, and other Instances which might be given, it appears, that all Sweats which are succeeded by pernicious Signs, have a destructive Tendency.

Sweats are, also, pernicious, when attended with bad Signs and Symptoms; and this is confirmed by *Coac.* 10. where it is said, that "They who are molested with frequent thin or cold "Sweats and Rigors by Turns, are in a very dangerous Way." And, *ibid.* 13. "They who labour under frequent Returns of "Horrors and Sweats, are in a very dubious State." Again, *ibid.* 53. "Sweats with a kind of Uneasiness, in acute Dis"eases, are bad." And, *ibid.* 327. compared with 1 *Prorrhet.* 127. "An Hæmorrhage at the Nose, on the contrary "Side is bad; as, for Instance, if it proceed from the Right "Nostril, in a Tumor of the Spleen; but it is worse if attended with a Sweat." And, *ibid.* 35. compared with 1 *Prorrhet.* 74. "Fevers, attended with a Coma, Lassitude, "Dimness of Sight, Want of Sleep, and Sweats, are malignant." Such were the bad Symptoms attending the Sweats under which *Aristocrates* laboured. 7 *Epid. T.* 52.

The same Judgment is to be made of Sweats succeeding very bad Signs or Symptoms. Thus, 1 *Prorrhet.* 126. "A small "Sweat, with a general Refrigeration succeeding an Hæmorrhage at the Nose, is malignant and pernicious." And we may say the same of it, when succeeding any bad Evacuation in general, whether it be an immoderate Hæmorrhage, or Distillation of Blood by Drops from the Nose, in burning Fevers, or a bad Flux of the Belly, or Vomiting. Sweat thereupon, consequent upon bad Signs, is very pernicious, and especially if it neither removes nor alleviates those bad Symptoms.

Thus it was in the Case of the Wife of *Olympiades*, 7 *Epid. T.* 49. of whom we read, that "Her Speech was not restored, "nor was she any way relieved; that her Eyes were cast down, "her Respiration was sublime [πνεῦμα μέτεωρον. See PNEUMA], and performed through the Nose; she had an ill Colour, and, when she was near Death, had a Sweat about her "Feet and Legs." *Prosper Alpinus, de Præsag. Vit. & Mort. Ægrotorum.*

A Febrile Diarrhœa.

The Matter of a Diarrhœa is the Mucus, Lymph, *Gluten*, Pus, Sanies, or Blood, from the Nose, Mouth, Fauces, Oesophagus, Stomach, Liver, Gall-bladder, Pancreas, Intestines, and Mesentery: It arises from too great an expulsive Force of these Substances into the Intestines, and a Weakness of the contracting Force of the Intestines; or from some Obstruction of the absorbing Vessels of the Intestines, which prevents the Admission of what ought to pass through them.

Hence it appears, that Fluxes of the Belly in Fevers are of various Kinds, with respect to the Matter, Cause, Effect, and Event; they are, therefore, sometimes utterly incurable; and sometimes colliquative, in which Case they seldom admit of a Remedy.

If a *Diarrhœa* perseveres long, it disposes the abdominal Viscera more and more to the same Disorder; weakens them, excoriates, and inflames them; empties and exhausts the other Vessels and Viscera: Hence arise an Atrophy, Emaciation, Weakness, a Dysentery, an Inspissation of the Fluids throughout the whole Habit of the Body; a Laxity of the Solids; a Loss of the Fluids; a *Leucophlegmatia*; Dropsy; and Tabes.

The Cure is performed by destroying the Acrimony which irritates the Intestines, and by expelling it by means of Emetics, Purges, and Clysters; by corroborating the relaxed Parts; by mitigating the Violence of the Diarrhœa with Narcotics; by determining the morbose Matter to some other Excretion, as those by Sweat and Urine; by diminishing the Cause, and correcting it at the original Fountain.

For an Account of Prognostics from Stools, see the Article DEJECTIO.

Febrile Eruptions.

The Matter of inflammatory Pustules is, generally, something which cannot pass the cutaneous Vessels, but sticks therein; and they are excited by the Force of the circulatory, secretory, and excretory vital Powers: Hence Eruptions are various, according to the Variety of Causes which produce them; and on this account Fevers acquire different Appellations, from the different Eruptions with which they are attended, as *Erysipelatous*, *Scarlet*, *red Petechial*, *purple Petechial*, *Morbillose*, *and Variolose*.

It is customary to treat of the last three separately; as for the three first, the Diagnostics, and Prognostics are easily found.

The Cure is not difficult; for it only requires, that the eruptive Matter be kept in a moveable State, by the Exhibition of a sufficient Quantity of light Fluids, and preserving a due Moderation of the vital Powers; for by this means they soon come to a Period, with a Desquamation of the Cuticle.

The other febrile Symptoms, which are similar to these, and of the like kind, require the same Treatment as the Diseases on which they depend.

Hence we learn, what Judgment is to be formed of the Variety of acute Fevers; for those in which the febrile Motion, when once began, is continued equably to the End, are called *Continual Fevers*; those in which the febrile Force remits, and is again exasperated alternately, in such a manner, however, that the Fever never ceases, are called *Continual Remittent Fevers*; those, lastly, which remit so entirely, that the Patient is absolutely free from a Fever in the Intervals betwixt the Paroxysms, are called *Intermittents*.

A Continual Fever.

The most simple of continual Fevers, is an *Ephemera*, or Diary Fever, which goes through the different Stages, as the Beginning, Increase, State, and Declension, in the Space of twenty-four Hours. It arises from a more vehement Motion only, excited by some Error with respect to the Non-naturals; and has scarcely any material Cause. It is distinguished by the Slightness of the Cause; the Purity of the Body; the Mildness of the Symptoms; the expeditious Crisis; and a Restoration of the Pulse to its natural State, immediately upon the Cessation of the Fever. The Cure is easily performed, by Abstinence, Rest, and Diluting.

If this Species of Fever continues many Days, it is called *A continual but not putrid Fever*. The Causes, Signs, and Cure are the same with those of the *Ephemera*; but it requires particularly copious Bleeding, and refrigerating Medicines.

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A Continual putrid Fever.

That Species of Fever, which is called a *putrid Synochus*, ariſes from Cauſes ſomewhat greater than a ſimple Inflammation; an Obſtruction of the Viſcera; an Oppilation of the Skin, and almoſt all the Capillaries; and a conſiderable Degree of Acrimony.

It is known by a Degree of Heat which is pungent to the Touch; a febrile, but unequal and irregular Pulſe; Urine which is thick, red, and turbid, without a regular Sediment; and by an hot and ſanguineous Temperament, Age, and Habit of the Patient.

This Fever is diſtinguiſhed by the Name *Homotonos*, when it preſerves the ſame Tenor through all its Stages, neither increaſing, nor diminiſhing: When it perpetually increaſes, it is called *Epacmaſtica*, or *Anabatica:* But when it continues perpetually to decline, it acquires the Title of *Paracmaſtica*.

Of theſe the firſt Species is eſteemed ſalutary; the ſecond the worſt; and the third better.

This Fever is eſteemed the more dangerous and fatal, in proportion as the Pulſe is more weak, frequent, unequal with reſpect to Strength, inordinate with reſpect to Time, and intermittent; as the Reſpiration is more difficult, frequent, and laborious; the more the *Pinnæ* of the Noſtrils are agitated; the more Pain it excites about the vital Parts; and the more inordinate it is; the more vehemently a Senſation of Laſſitude and Weakneſs, is perceived; the more frequently the Patient changes his Poſture of lying, toſſes about, and lies on his Back, with his Limbs extended; the more the rational Faculties, and Affections, are injured; the more the Appetite is impaired, the Digeſtion difficult, the Urine red, thick, and turbid, or pale, watery, diſcharged in ſmall Quantities, and difficultly retained; the more tremulous Motions are perceived in the Patient; the more he ſtarts from the Touch; the more he triffles and fumbles with his Hands; and the more he picks the Naps of the Bed-cloaths; the more ghaſtly his Eyes appear, and the more moiſt they are with involuntary Tears; for theſe are all very bad Symptoms.

But when Sleep is laborious and difficult, and affords no Relief; when purple or livid Eruptions appear on the Body; when the Hypochondria are tenſe and inflated, the Patient generally dies.

The Cure delivered above, is to be varied according to the Variety of Indications, the Violence of the Symptoms, the Condition of the Patient, and the Stage of the Fever; and, therefore, does not require to be particularly treated of.

The Antients called theſe Fevers Σύνοχοι, and the Schools, *Continentes*; becauſe in them there is no Remiſſion of Heat: But Continual Remittent Fevers, the Antients called Συνεχεῖς, in *Latin Continuæ*.

A Causus, or Ardent Fever.

Among theſe Fevers, we may juſtly reckon the *Cauſus*, or burning Fever, on account of its Frequency, Danger, and Difficulty of Cure.

The primary Symptoms of this Diſorder, are an Heat almoſt burning to the Touch, unequal in different Parts of the Body, moſt intenſe in the vital Parts, (but more mild towards the Extremities which are ſome times cold) and rendering the Breath intenſely hot, a Dryneſs in the whole Skin, Noſtrils, Mouths, and Tongue; a denſe, difficult, and quick Reſpiration; a dry, yellow, black, parched, and rough Tongue; an inſatiable Thirſt often ſuddenly removed; a Loathing of the Aliments, a Nauſea and Vomiting; the greateſt Anxiety, Inquietude, and Wearineſs; a gentle Cough, and a ſhrill Voice; a Delirium, Phrenitis, obſtinate Watching, Coma, and Convulſions, and Exacerbations on the odd Days.

The Cauſes of a burning Fever may be exceſſive Labour; long Journeys; the Heat of the Sun; Thirſt long endured; the Uſe of heating, fermented, aromatic, and acrid Subſtances; exceſſive Venery; and immoderate Wearineſs, eſpecially in the Summer.

This is the Progreſs of this Diſeaſe: On the third and fourth Day it often proves mortal; and, if it is violent, rarely exceeds the ſeventh, without putting an End to the Patient's Life. It is frequently terminated by an Hæmorrhage, (which, if it is ſparing on the third or fourth Day, is a mortal Sign) which may be predicted by the Pain of the Neck, the Heavineſs of the Temples, a Diſtenſion of the Præcordia without a Senſe of Pain, a ſpontaneous Diſcharge of Tears without any other mortal Sign, a Redneſs of the Face, an Itching of the Noſtrils; and this Hæmorrhage is moſt ſalutary on the critical Day. This Species of Fever is, alſo, terminated on the critical Day, by Vomit, Stool, Sweat, Urine, and the Expectoration of a thick Matter: If the Exacerbation of the Fit happens before the ſixth Day, it is a very bad Symptom; black and thin Urine, diſcharged in a ſmall Quantity, is, in this Diſorder, a mortal Sign; as, alſo, a Spitting of Blood, and a Diſcharge of bloody Urine; an injured Deglutition is a bad Sign; and a Refrigeration of the Extremities, among the worſt of Symptoms; a Redneſs and Sweating of the Face is, alſo, a bad Sign; and an Inflammation of the Parotid Glands, which does not come to Suppuration, proves mortal; an exceſſive Flux is, in this Diſorder, alſo, mortal: This Species of Diſorder, when accompanied with a Tremor, terminates in a Delirium, and then in Death; it, alſo, terminates in a Peripneumony, often accompanied with a Delirium: That Species of burning Fever, which ariſes after violent Gripes of the Belly, is of the worſt Kind; it is critically terminated by a Rigor.

From theſe Signs the Diſorder is eaſily known to be preſent, nor can its proximate Cauſe be miſtaken; for it ariſes from the Blood's being deprived of its milder and more liquid Parts by an Inflammation through the Whole of the Body, whilſt the Strength of the Patient is vigorous. Hence, alſo, ſure Prognoſtics may be made with reſpect to the Termination of this Species of Fever.

The Cure of a burning Fever requires a pure cold Air frequently renewed; Cloaths, which by no means ſuffocate or burden the Patient; a frequent erect Poſture of the Body; large Quantities of mild, demulcent, ſubacid, aqueous, and warm Liquors uſed as Drink; light farinacious Foods prepared of Barley, Oats, and ſubacid Fruits; Veneſection, if the Diſeaſe is in the Beginning, if the Marks of a Plethora appear, if there are Signs of a conſiderable Inflammation, if the Heat is intolerable, the Rarefaction of the Fluids exceſſive, a Revulſion neceſſary, and the Symptoms ſo violent, that they cannot be eaſily removed by any other Remedy; the Injection of mild, diluting, laxative, antiphlogiſtic, and refrigerating Clyſters to be repeated as the Heat, Coſtiveneſs, and Revulſion require; Humectation of the whole Body, by drawing into the Noſtrils a mild Air, impregnated with the Steam of warm Water, by waſhing the Mouth and Throat, by bathing the Hands and Feet with tepid Water, and by fomenting, with warm Sponges, the Places where moſt Veſſels are expoſed to the Touch; aqueous, mild, nitrous, gratefully acid, and gently laxative Subſtances; together with ſuch as ſupply the Matter of the Urine, and without any Acrimony, by their Quantity, afford a Vehicle for the Sweat; ſuch as remove Contractions of the Fibres, reſolve and dilute the Thickneſs of the Humours, and, at the ſame time, correct their Acrimony.

To theſe if we add what has been ſaid in the general Rules relating to the Cure of acute Diſorders, and their Symptoms, and the Doctrine of each particular acute Diſeaſe, ariſing from the Affection of each of the Viſcera, to be found under their reſpective Articles, he ſhall clearly underſtand what Remedies are proper for the Cure of any burning Fever.

Beſides, from what has been ſaid, all other particular acute Fevers may be underſtood, ſince they may either be referred to particular Symptoms, or are the Effects of ſome other Diſorder. See Causus.

Intermittent Fevers.

We have already given the Definition of an intermittent Fever, the Diagnoſtics of which are obvious, and its Diſtinction into various Claſſes eaſy, ſince theſe depend only on the Difference of Time.

But 'tis to be obſerved, that intermittent Fevers, in general, are either vernal, and rage from *February* till *Auguſt*; or autumnal, and rage from *Auguſt* till *February*; which Diſtinction is neceſſary on account of the various Conditions, Symptoms, Terminations, Durations, and Cures of different Intermittents: Beſides, one Intermittent Fever ſometimes removes another.

Intermittent Fevers, in the Beginning of the Autumn, often reſemble thoſe of the continual Kind, on account of their longer and redoubled Paroxyſms, whereas their Nature and Cure are widely different.

Fevers of this Kind begin with an Oſcitation, Pandiculation, Wearineſs, Weakneſs, Cold, Horror, Rigor, Tremor, and Paleneſs of the Extremities, a difficult Reſpiration, an Anxiety, a Nauſea, a Vomiting, and a quick, weak, and ſlow Pulſe. The more violent and numerous theſe Symptoms are, the worſe the Fever is; and afterwards the Heat, and other Symptoms, are the worſe. This is the firſt Stage of intermittent Fevers, which correſpond to the Increaſe of continual Fevers, and is of all the other Stages the moſt dangerous; for, in this Condition, the Urine is generally crude and thin.

This Stage of intermittent Fevers is ſucceeded by another, which begins with Heat, Redneſs, a ſtrong, large, and free Reſpiration, a ſmall Anxiety, a large and ſtrong Pulſe, an exceſſive Thirſt, and a Pain of the Limbs and Head, and generally a Redneſs of the Urine: This Stage correſponds to the State or Height of continual Fevers.

Then,

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Then, last of all, there generally appears a profuse Sweat, a Remission of all the Symptoms, a thick Urine, with a Sediment resembling Brick-dust, Sleep, a total Absence of the Fever, Lassitude, and Weakness.

Intermittent Fevers frequently terminate in those of the acute and dangerous Kind, which is generally owing to an excessive Heat, and too brisk a Motion of the Fluids.

Intermittent Fevers, running through their three different Stages, greatly injure the minute Fibres of the Vessels and Viscera, by producing Stagnations, Obstructions, Coagulations, Impulsions, Resolutions, and Attenuations of the Fluids: Hence the Vessels are weakened, and the Fluids become morbid, especially in that Species of the Disease, in which their Parts are less assimilated, and not duly mixed, by which Circumstances in Conjunction, an acrimonious State of the Juices is produced. Hence all these things concurring produce an easy Propensity to sweat, which greatly weakens the Patient, since, sometimes, the viscid Part of the Blood transpires. In this Situation of the Patient, the Urine is surprisingly thick, turbid, pinguious, like that of Horses, or like Saliva. Hence the weak, resolved, and hardly coherent Blood, being deprived of its best Parts, is at once acrid and thick; so that, in consequence of the Laxity of the Vessels, and the Acrimony of the Humours, those long-continued Fevers sometimes terminate in chronical Disorders, such as a Scurvy, a Dropsy, a Leucophlegmatia, scirrhous Tumors of the Abdomen, and the several Misfortunes produced by these.

But if intermittent Fevers are not of the malignant Kind, they dispose the Patient to Longevity, and cleanse the Body from inveterate Disorders.

Hence, after an accurate Examination of the whole History of Intermittents, their proximate Cause seems to be a Viscidity of the arterial Blood upon the Accession of any Cause which produces a brisk and strong Contraction of the Heart, and a Resolution of the stagnant Fluids.

Since, therefore, this Order is always observed in Intermittents, the Physician who can surmount the first Time, and the first Cause, may by that means remove the whole ensuing Paroxysm.

Besides, as an infinite Number of Causes, and these not very considerable, may produce the first Stage of a perfectly intermittent Fever, and its Cause; and as many such Causes may be produced, increased, and fomented, in all the Fluids, formed and secreted in the human Body, it is more difficult to distinguish the Cause already formed from infinite possible Circumstances, than to invent one possible Cause, sufficient from the Laws of the animal Œconomy to account for the stated Periods of Intermittents. This is sufficiently obvious to every accurate Inquirer.

The Cure, therefore, requires that we should use aperient, saline, alcaline, aromatic, mineral, diluting, mild, and oleous Substances, Heat, Motion, Fomentation, and Friction, during the Intermission, or in the first Stage. The Medicines of this Kind are all *Tachenius*'s Salts of Herbs, the most considerable of which, are obtained from Wormwood, Carduus Benedictus, and Stalks of Beans; Nitre; antimoniated Nitre; diaphoretic Antimony unwashed; Sal Ammoniac; Sal Prunellæ; and Sal Polychrestus; Tartarus regeneratus; Tartarus Tartarisatus; Salt of Tartar reduced to a saponaceous Mass with Oil of Turpentine; and all the Parts of all the aromatic Herbs, especially of those which are resolvent.

In order to purge the *Primæ Viæ* from the redundant Sordes, a Purge, or a Vomit, are often very beneficial, exhibiting either so long before the Paroxysm, that its Operation may be over before the Fit comes on. That this Method is to be taken, may be known from the Patient's way of living, preceding Diseases and Symptoms, a Nausea, a Vomiting, Eructations, Tumors, the Breath, the Sordes of the Tongue, Throat, and Palate, want of Appetite, Bitterness of the Mouth, and a Vertigo accompanied with Dimness of Sight; and, after the Operation, the tumultuous Commotion of the Fluids is to be allayed by an Opiate before the Paroxysm. Thus,

Take of emetic Tartar, five Grains, reduced to a Powder; to be taken at one Dose: Or,

Take of emetic Tartar, five Grains; and of the Crumbs of Bread, a sufficient Quantity; to make five Pills, to be taken for one Dose: Or,

Take of emetic Wine, two Ounces; and of Oxymel of Squills, six Drams: Mix up for a Draught: Or,

Take of emetic Tartar, five Grains; Rob of Currans, half an Ounce; and Oil of Cinnamon, one Drop: Make into a Bolus.

Forms of Purges, are these following:

Take of the Pulvis Cornachini, two Scruples for a Dose: Or,

Take of the Pilulæ Cochiæ majores, two Scruples; of solutive Syrup of Roses, half an Ounce; and of distilled Elder-flowers, two Ounces: Mix for a Draught: Or,

Take of washed Aloes, twelve Grains; of Myrrh, ten Grains; of Opopanax, five Grains; and of Sal Gemmæ, five Grains: Mix, and make up into nine Pills.

These are beneficial, when, by their Stimulus, they operate both Ways.

But they prove injurious when they weaken, evacuate the most liquid Parts of the Juices, and disturb the necessary Digestions; and thus either protract the Disease, or bring on Death. The cold and hot Fits are often removed by Sudorifics, whilst a few Hours before the known time of the Paroxysm, after filling the Patient's Body with an aperient, diluting, and gently narcotic Liquor, an Hour before the Paroxysm, a Sweat is excited, and continued till two Hours after the Paroxysm usually began.

Take of Sal Polychrestum, two Drams; of the Syrup of the Five aperient Roots, two Ounces; of pure Opium, two Grains; of the distilled fermented Waters of Carduus Benedictus, Wormwood, Rue, Marjoram, and Mint, each one Ounce; and of the Extract of Wormwood, two Ounces: Mix all together, and let the Patient take one Spoonful every Quarter of an Hour, drinking after each, four Ounces of the following Decoction:

Take of the Root of Masterwort, six Drams; of the Roots of Sassafras, and red Saunders, each two Ounces; of the Leaves of Golden-rod, two Handfuls; of the Leaves of the Lesser Centaury, half an Ounce; and of the bruised Seeds of Candy Carrot, six Drams: Infuse for two Hours in a close-stopt Vessel, without boiling, though very hot; then let them boil a little, and exhibit two Pints of the Decoction for a Dose.

Venesection, considered in itself, is always pernicious, though it may prove accidentally beneficial, as, also, a light and exactly regulated Diet.

When intermittent Fevers are in the second Stage, aqueous Substances actually warm, mixed with subacid aperient, nitrous Ingredients, or Preparations of Succory, and other mild Substances of a similar Nature, are indicated, whilst the Patient is to be kept in a State of Rest, and moderate Warmth. The Medicines before recommended in a febrile Anxiety and Thirst are to be used in this Stage of Intermittents.

When the Paroxysm is terminated by a Crisis, then it is expedient to supply the Matter of Sweat and Urine, by vinous Ptisans, Broths prepared with Flesh, and temperate Decoctions: Thus those two Excretions are to be excited, not by the Force of Heat, Medicines, or Bed-cloaths; but gently promoted by an increased Quantity of their Materials long persisted in.

Violent Symptoms are to be removed by the Rules laid down for the Cure of febrile Symptoms in general.

When the Fever is removed, the Patient is to have his Strength restored by analeptic Aliments, and corroborating Medicines; then after his Strength is increased, he is to be purged several times.

But if an autumnal intermittent Fever is very violent; if the Patient is weakened by the Disease; if the Disorder is of a considerable Standing; if there are no Signs of an internal Inflammation, nor of Pus collected any-where, nor of a considerable Obstruction of any of the Viscera, the Disorder is to be removed by the *Peruvian* Bark, exhibited in the Form of a Powder, an Infusion, an Extract, a Decoction, or a Syrup, with proper Specifics, during the Intermission, in a due Order, a proper Dose, and in Conjunction with a proper Regimen. For this Purpose,

Take of the *Peruvian* Bark, one Ounce; reduce to a Powder, to be divided into twelve Doses; one of which is to be taken by the Patient every Hour in Wine: Or,

Take of *Peruvian* Bark, three Ounces; and common Water, twelve Ounces: Infuse for two Hours; then boil for an Hour; and add four Ounces of *French* Wine; then let the Whole boil a little longer in a tall Vessel; and of this Decoction, when pure, let the Patient take one Ounce and an half every two Hours: Or,

Take of the *Peruvian* Bark, three Ounces; boil for two Hours in a close Vessel in common Water to sixteen Ounces of strained Liquor, of which let the Patient take an Ounce and half every two Hours: Or,

Inspissate

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Inſpiſſate the preceding Decoction to the Conſiſtence of Honey, and divide into four Doſes, one of which is to be taken every two Hours: Or,

Take the preceding Extract, dilute in one Ounce of the Syrup of the Five aperient Roots: Make a Syrup to be uſed in the ſame manner with the Extract: Or,

Take the preceding Extract; mix with it a ſufficient Quantity of the Powder of Liquorice, and reduce to a Maſs of Pills, of which the Patient is to take four Grains, during the time of Intermiſſion.

Epithems are, alſo, frequently beneficial, as, alſo, Unctions of the Spine of the Back, and the drinking aſtringent Liquors. Thus,

Take of the Oils of Scorpions, Caſtor, Juniper-berries, Camphire obtained from the Root of the Cinnamon-tree, Bays, and Turpentine, and of the terebinthinated Balſam of Sulphur, each half an Ounce: Mix for a Liniment.

Take of the Whole of the broad-leaved Plantain, ten Ounces; and of recent Tormentil-root, two Ounces: Boil in two Pints of Water; and let the Patient drink three Ounces of the Decoction every two Hours.

Take of Roch-alum, one Dram; of Nutmeg two Drams; and of the Powder of *Armenian* Bole, twelve Grains: Reduce to a Powder, to be taken an Hour before the Paroxyſm.

Epithems for the Wriſts may be prepared in the following manner:

Take of Currants, and Hops, each two Ounces; and reduce to a Poultice, to be applied to the Wriſts: Or,

Take of the Tops of green Rue, two Ounces; and of Muſtard-ſeeds, two Drams: Bruiſe, and apply to the Wriſts.

That the Cure of particular Intermittents may be underſtood, 'tis to be obſerved, firſt, that the ſhorter the Intervals of true Intermittents are, the ſooner they are cured; and the longer the Intervals are, the more Time is required to their Cure. Secondly, that, for this Reaſon, they approach much to the Nature of acute Fevers, and are ſometimes converted into them. Thirdly, that for this Reaſon, their Cauſe is more moveable, tho' more copious. Fourthly, that vernal Intermittents, upon the Approach of warm Weather, are ſpontaneouſly terminated. Fifthly, that autumnal Intermittents, on the Approach of cold Weather, are increaſed. Hence 'tis obvious what Fevers are curable, and by what Medicines. *Boerhaave Aph. & Mat. Med.* See ARANEA.

Sydenham, ſpeaking of the intermittent Fevers, which raged from the Year 1675, to 1680, obſerves, that though Quartans were more frequent formerly, yet now Tertians and Quotidians were moſt common, unleſs the latter may be intitled double Tertians; and, alſo, that though theſe Tertians ſometimes began with Chilneſs and Shivering, which were ſucceeded firſt by Heat, and ſoon after by Sweat, and ended at length in a perfect Intermiſſion, returning again after a fixed time; yet they did not keep this Order after the third or fourth Fit, eſpecially if the Patient was confined to his Bed, and uſed hot Cardiacs, which increaſe the Diſeaſe. But afterwards this Fever became ſo unuſually violent, that only a Remiſſion happened in place of an Intermiſſion; and approaching every Day nearer to the Species of continued Fevers, it ſeized the Head, and proved fatal to abundance of Perſons.

As to the Cure, I have learnt, ſays he, from the Experience of many Years, that 'tis dangerous to attempt to remove Tertians and Quotidians by Sudorifics; for when they are recent, and have aſſumed no certain Shape, they nearly approach to continued Fevers. And though it is well known, that as ſoon as the Sweat flows, the Reſtleſneſs, and other Symptoms, preſently go off, and a perfect Intermiſſion ſucceeds, and conſequently that it ſhould be ſomewhat promoted, or, at leaſt, not hindered, when the Fit is going off; yet 'tis manifeſt, that, if Sweat be forced beyond the due Degree, the Intermittent becomes a continued Fever, and Life is endangered. I conceive the Reaſon of this to be, that ſo profuſe a Sweat, (ſince it exceeds the Degree of the febrile Matter, already ſo exalted by the Heat of the Fit, that it may now be expelled by Deſpumation) after it has expelled that Part thereof, which might produce a ſingle Fit, proceeds to inflame the Blood. Upon conſidering, therefore, the Inefficacy of this Method, and the Inconveniencies attending other Evacuations, as Bleeding and Purging, both which, by weakening the Texture of the Blood, prolong the Diſeaſe, the *Peruvian* Bark afforded me the ſureſt Hopes; of which I can truly affirm, notwithſtanding the Prejudice of the Vulgar, and a few of the Learned, that I never found, or could reaſonably ſuſpect, any ill Conſequence follow its Uſe; unleſs, that ſuch as have taken it for a conſiderable time, are ſometimes ſeized with a ſcorbutic Rheumatiſm. But this Diſorder rarely proceeds from this Cauſe, and when it does, readily yields to the Remedies adapted to it.

And, in reality, if I were as certain of the Continuance of its Effects, as I am of the Innocence of the Bark, I ſhould not ſcruple to prefer it to all the Medicines hitherto known; ſince it is not only excellent in this Diſeaſe, but, alſo, in thoſe of the Uterus and Stomach: So little Reaſon there is to complain of its Unwholſomeneſs.

But, I conceive, that the Bark has been ill ſpoken of, principally, for the following Reaſons: (1.) Becauſe the numerous Train of violent Symptoms, which accompany, previouſly to the Uſe of the Bark, inveterate Intermittents, are aſcribed to it, though it has been taken only once. (2.) As it cures the Diſeaſe by a ſecret Virtue, and not by any ſenſible Evacuation, ſeveral Perſons maintain, that the morbific Matter, which ought to have been expelled, is retained in the Body by its Aſtringency, ready to occaſion freſh Diſturbance, the Diſeaſe not being entirely carried off. But ſuch Perſons do not ſufficiently conſider, that the Sweats, happening at the Decline of the Fit, have expelled all the morbific Matter that was collected during the preceding Interval, ſo that only the Seeds of the Diſeaſe remain, which require time to be ripened; and the Bark, by cloſely purſuing the retiring Fit, and cutting off the Supplies of the Diſeaſe, cannot be a means of retaining any morbific Matter in the Blood, which is now exiſtent there only in Embryo; conſequently the Bark is not to be eſteemed productive of thoſe Obſtructions, which are commonly judged to proceed from its Uſe.

But how does it appear, that the Bark cures Intermittents by its Aſtringency? In order to prove this, other Aſtringents, poſſeſſed of the ſame Virtue, muſt firſt neceſſarily be produced: I have tried the ſtrongeſt ineffectually. Beſides, the Bark effects a Cure, even where it purges, which is ſometimes the Caſe. Upon the Whole, therefore, they act the wiſeſt Part, who limit their Inquiries to their Abilities. But, if a Perſon, impoſing upon himſelf, ſhould imagine, that he is poſſeſſed of other Faculties than ſuch as are uſeful, either to Natural Religion, by which we learn that GOD, the Creator and Governor of all things, is to be worſhipped with profound Veneration, as he juſtly merits; or to moral Philoſophy, that he may practiſe Virtue, and render himſelf every way uſeful to Society; or, laſtly, to the Medicinal, Mathematical, and Mechanical Arts, which ſupply Mankind with many Helps and Conveniencies; I would have him in the firſt place, deduce an Hypotheſis from Natural Philoſophy, that may enable him to explain the Cauſe of but a ſingle ſpecific Difference of Things in Nature. For Inſtance, let him account for the univerſal Greenneſs of Graſs, and why it is never found of any other Colour, and the like. And if he can do this, I will readily embrace his Sentiments; but, if not, I ſhall not ſcruple to affirm, that all the Diligence and Caution of a Phyſician ſhould be employ'd in inveſtigating the Hiſtory of Diſeaſes, and applying thoſe Remedies which ſtand recommended by Experience for the Cure thereof; obſerving, notwithſtanding, that Method which is founded on right Reaſon, and not the Reſult of idle Speculations. I will, therefore, briefly deliver what Experience hath taught me, relating to the Method of exhibiting the Bark.

The *Peruvian* Bark, commonly called the *Jeſuits Powder*, to the beſt of my Remembrance, began to be eſteemed at *London*, for the Cure of Intermittents, and eſpecially Quartans, about twenty-five Years ſince; and, indeed, very deſervedly, as theſe Diſeaſes before this time were ſeldom cured by any other Method, or Medicine; whence they were reputed the *Opprobria Medicorum*, and not without Cauſe. But, not long after, it loſt its Character, and was entirely diſuſed, for two conſiderable Reaſons: (1.) Becauſe, being exhibited only a few Hours before the coming of the Fit, according to the received Cuſtom of that Time, it ſometimes deſtroyed the Patient; which I remember happened to Mr. *Underwood*, a Citizen and Alderman of *London*, and to one *Potter*, an Apothecary in *Black Fryars*. This fatal Effect of the Powder, though very rare, did, however, deſervedly prevail with the more prudent Phyſicians to refrain from its Uſe. (2.) Becauſe, tho' the Patient was, for the moſt part, freed from the Fit, that would otherwiſe have come, by this Medicine, yet a Relapſe commonly happened within a Fortnight, particularly when the Diſeaſe was recent, and had not been weakened by a long Continuance. Theſe Reaſons weigh'd ſo much with the Generality, that they loſt all Hopes they had hitherto conceived of this Medicine; nor did they eſteem it ſo material to prevent the Acceſs of a Fit for a few Days, as, upon this account, to endanger their Lives by taking the Bark.

But, having ſome Years ſince throughly conſidered the extraordinary Virtues of the Bark, I was firmly perſuaded, that intermittents

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termittents could not be better cured than by this efficacious Medicine, provided it were given with proper Caution. For this Reason I spent much time in considering how I might prevent the Danger ensuing from its Use, and the Relapse that succeeded in a few Days, which were the two Inconveniencies to be remedied, and by means thereof, to restore the Patient to perfect Health.

1. I conceived, that the Danger proceeded less from the Bark itself, than from the unseasonable Use thereof; for when a large Quantity of febrile Matter is collected in the Body upon the intermediate Days, the Bark, if taken immediately before the Fit, obstructs the Expulsion of the morbific Matter in the natural way (that is by the Violence of the Fit); which, being preternaturally detained, usually endangers Life. But I judged I could remedy this Evil, and, also, prevent the fresh Generation of febrile Matter, by giving the Powder directly upon the Departure of the Fit, so that a Stop might be put to the succeeding one; and by repeating it upon the intermediate Days, at proper Distances, till the Approach of a new Fit; and that by this means the Blood might be impregnated gradually, and consequently safely, with the Virtue of the Bark.

2. As the Relapse, which generally happened in a Fortnight, seemed to me to proceed from not sufficiently impregnating the Blood with the Virtue of the Febrifuge, which, however efficacious, was not powerful enough to cure the Disease at once, I judged, that the best Method of preventing a Relapse, would be to repeat the Powder, at proper Intervals, before the Virtue of the preceding Dose was quite spent, even though the Intermittent appeared to be conquered for the present.

These Considerations led me to the following Method, which I now use. When I am called to a Person afflicted with a Quartan, suppose on a *Monday*, if the Fit is expected the same Day, I refrain from doing any thing, and only give the Patient Hopes, that he shall be freed from the next Fit. And, in order to effect this, I exhibit the Bark upon the two intermediate, or well Days, that is, *Tuesday* and *Wednesday*, in the following manner:

Take of *Peruvian* Bark, very finely powdered, one Ounce; Syrup of Cloves, or of dried Roses, enough to make it into an Electuary, to be divided into twelve Doses; whereof let the Patient take one every fourth Hour, beginning immediately after the Fit is gone off, and drinking, after each Dose, a Draught of any Kind of Wine.

Or, if Pills be more agreeable,

Take of the *Peruvian* Bark, very finely pulverized, one Ounce; Syrup of Cloves, enough to make it into Pills of a middling Size; of which let the Patient take six every fourth Hour.

But an Ounce of the Powder may be mixed with a Quart of Claret, with less Trouble, and equal Success, and eight or nine Spoonfuls of it may be given at the Intervals above-mentioned. I order nothing on *Thursday*, when the Fit is expected, because, for the most part, it does not come, the Remainder of the febrile Matter being despumated and expelled the Blood by the usual Sweats, which terminated the preceding Fit, and a Collection of fresh Matter being prevented by the Repetition of the Powder upon the intermediate Days.

But, in order to prevent a Relapse, which was one of the Inconveniencies above recited, I always gave the same Quantity of the Powder, an Ounce divided into twelve Doses, upon the eighth Day precisely, after taking the last Dose. But though a single Repetition of the Bark in this manner frequently removes the Disease, yet the Danger is not over, unless the Patient will comply with the Directions of his Physician, and take it thus a third or fourth time; especially when the Blood has been impoverished by some preceding Evacuation, or the Body unadvisedly exposed to the cold Air.

Now, though there is no inherent purgative Virtue in this Medicine, yet a violent Purging is frequently occasioned thereby, on account of some peculiar Idiosyncrasy in the Constitution. In this Case, it is indispensably necessary to exhibit Laudanum therewith, to prevent its having this Effect, which is manifestly as opposite to its own Nature, as it is to this Disease, and that it may be retained long enough to answer its End. Therefore I direct ten Drops of Laudanum to be given in a little Wine, after every other Dose of the Powder, provided the Purging does not go off.

I follow the same Method in other Intermittents, whether Tertians or Quartans; for, immediately upon the Fit's going off, I administer a Dose of the Powder, and repeat it in point of Frequence, at as close Intervals, during the time of the Intermission, as the Nature of the Disease will admit; but with this Difference, that a Tertian may be so far conquered with six Drams of the Bark, as at least to give a Respite; whereas a Quartan can very rarely be removed with less than an Ounce of it, divided into proper Doses.

But tho' Tertians and Quotidians, after a Fit or two, may seem entirely to intermit, yet, as I have before observed, they afterwards frequently degenerate into a Species of continued Fevers, and only come to a Remission even upon those Days that promised an Intermission; especially when the Patient has been kept too warm in Bed, or been tormented with Medicines to carry off the Intermittent by Sweat. In this Case, I have no other way left, but to take Advantage of the Remission, though it be ever so small; and accordingly, I give the Powder immediately after the Fit is gone off, as near as I can conjecture, and repeat it every four Hours, as above-mentioned, without waiting for a regular Intermission, because otherwise the alexiterial Virtue of the Bark cannot be communicated to the Blood in so short an Interval.

And though the present reigning Intermittents, after the second or third Fit, incline to continued Fevers, yet they must be referred to the intermittent Kind; and, therefore, I scruple not to order the Bark, even in the most continued of this Species; the Repetition of which, in the above-mentioned manner, will certainly remove the Disease, provided the constant Warmth of the Bed, and the improper Use of Cardiacs, have not rendered it a continued Fever; in which Case, I have frequently observed, that the Bark proves ineffectual. Nor have I ever found, that the Wine, wherein the Bark is administred, did the Patient Harm, which might reasonably be suspected; but, on the contrary, the Heat, Thirst, and other febrile Symptoms, generally went off soon after taking a sufficient Quantity of this Medicine. But it must be here observed, that the nearer the Intermittent approaches to a continued Fever, either spontaneously, or from using too hot a Regimen, so much the more necessary it is to exhibit a larger Quantity of the Bark; for I have sometimes found, that Intermittents would not yield to less than an Ounce and an half, or two Ounces, of the Bark.

As some Persons can neither take the Bark in Powder, an Electuary, or in Pills, I give them an Infusion of it, which is made with two Ounces of Bark grosly powdered, infused cold for some time in a Quart of *Rhenish* Wine. This Infusion, being several times passed through a fine Strainer, becomes so clear, as not to be nauseated by the nicest Palate. Four Ounces of this Infusion, after it has stood some Days, should seem equivalent in Virtue to a Dram of the Powder in Substance; and, as it is neither disagreeable, nor lies heavy upon the Stomach, it may be exhibited with twice the Frequency of the other Formulæ, till the Disease vanishes.

When this Disease hath assumed no regular Appearance, it is sometimes attended with an almost continual Vomiting, so that the Bark cannot be retained in any Form; in which Case the Vomiting must be stopt, before it can be administred. For this Purpose I order a Scruple of Salt of Wormwood to be dissolved in a Spoonful of fresh Lemon-juice, and taken six or eight times in the Space of two Hours; and afterwards I give sixteen Drops of Liquid Laudanum in a Spoonful of strong Cinnamon-water; and soon after, if the Vomiting stops, I proceed to use the Bark.

For Children, who, on account of their tender Age, can scarcely bear to take this Remedy in any other Form, at least in a suitable Quantity to effect a Cure, I generally prescribed the following Julap:

Take of black Cherry-water, and *Rhenish* Wine, each two Ounces; *Peruvian* Bark finely powdered, three Drams; Syrup of Cloves, an Ounce: Mix them together for a Julap. Let a Spoonful or two (according to his Age) be given to the Child every fourth Hour, till the Fits return no more, dropping into every other Dose, in case of a Looseness, one or two Drops of Liquid Laudanum.

It must be further observed, that the Intervals between the Fits in Tertians and Quotidians are so short, that they do not allow sufficient time to impregnate the Blood perfectly with the febrifuge Virtue of the Bark; so that 'tis not to be supposed, that the Patient should so certainly miss the next Fit after the first time of taking it, as it commonly happens in a Quartan; for the Medicine, in these Cases, will frequently not effect the Cure in less than two Days.

It must, also, be remark'd, that if the Patient, notwithstanding the Observance of the Cautions above delivered, should relapse, which happens less frequently in a Quartan than in Tertians and Quotidians, it will become a prudent Physician not to adhere too closely to the Method of giving the Bark at the above-mentioned Intervals; but to attempt the Cure, as his Judgment shall direct, by some other Procedure: And here the bitter Decoction is generally esteemed of most powerful Efficacy.

With

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With respect to Diet and Regimen, the Patient must be allowed the Use of all Kinds of solid and liquid Aliment that agree with his Stomach, Fruit and cold Liquors always excepted; because they impoverish the Mass of Blood, and are very subject to occasion a Relapse. Let the Diet, therefore, be Flesh of easy Digestion; and a moderate Use of Wine may be permitted for common Drink; by the sole Use whereof I have sometimes recovered such as have been so debilitated by the frequent Return of the Intermittent, that the Bark proved ineffectual to their Cure. The Patient, also, must not unadvisedly expose himself to the cold Air, till the Blood has recovered its former healthy State.

It must here be remark'd, that tho', in treating of Intermittents heretofore, we recommended due purging after the Disease was gone off, yet this practical Caution is only to be understood of such Intermittents as either went off spontaneously, or were cured without the Assistance of the Bark: For when the Cure is effected by this Medicine, Cathartics are unnecessary and injurious; so powerfully does the Bark, alone, resist the Fits, and the Indisposition they occasion. Hence, therefore, all Kinds of Evacuations must be refrained from; for the gentlest Purge, even a Clyster of Milk and Sugar, will certainly endanger a Relapse, and, perhaps, reproduce the Disease.

And here it is proper to mention, that a very remarkable Symptom sometimes succeeded these Intermittents in the first Years of this Constitution: For the Fits did not begin with Chilness and Shivering, which were succeeded by a Fever; but the Patient was seized with the Symptoms of a true Apoplexy; though, in Reality, how nearly soever it resembled this Disease, it was nothing more than the Effect of the Fever's seizing the Head; as plainly appeared from other Signs, as well as the Colour of the Urine, which in Intermittents is usually of a deep red, though not so red as in the Jaundice, and, also, lets fall a lateritious Sediment. But though in this Case all Kinds of Evacuation seem to be indicated, in order to make a Revulsion of the Humours from the Head, as is generally practised in the genuine Apoplexy, yet they are to be wholly refrained from, because they are very prejudicial in the Intermittents, whence this Symptom originally proceeds, and, consequently, endanger Life, as I have observed. On the contrary, therefore, we must wait till the Fit goes off spontaneously, when the Bark, in case it could not be given sooner, must immediately be exhibited, and repeated with sufficient Frequency in the Intervals, till the Patient be perfectly recovered.

And these are the Observations I had to communicate, in a summary way, concerning the Use of the Bark; for my Design was not to consult the Pomp of Medicine: And, in reality, they who add any thing more to the Bark than a Vehicle, which is necessary to carry it into the Stomach, in my Opinion either do it ignorantly, or fraudulently; which every good Man must detest, who, as a Part of the Whole, would not be induced to commit such a Fraud, for his private Advantage. As to what remains, if my Contemporaries had pleased to have considered what I published in my History of acute Diseases, (which, it is highly probable, I was acquainted with before that time) relating to the Method of exhibiting the Bark in the Intervals of the Fits, and the succeeding Repetition of it when the Disease was gone off, perhaps the Lives of many Persons had been saved; how much soever some Men contemned my slender Endeavours for the public Good, and slighted the Cautions there delivered in the following Words; which contain, in a concise manner, what I have here judged proper to enlarge upon.

1. "Great Caution must be had not to give this Bark too "early, that is, before the Disease be in some measure spon- "taneously abated; unless the extreme Weakness of the Pa- "tient requires it to be given sooner: For the giving it too "soon may render it ineffectual, and even fatal, if a sudden "Stop should be thus put to the vigorous Fermentation raised "in the Blood, in order to its Despumation. 2. We must not "direct Purging, much less Bleeding, in order to carry off a "Part of the febrile Matter, and render the Bark more effe- "ctual; for they both weaken the Tone of the Parts, whence "the Disease returns so much the more expeditiously and cer- "tainly, after the Virtue of the Bark is spent. It were better, "in my Opinion, to impregnate the Blood with this Medicine "by Degrees, and at distant Intervals from the Fit, rather than "endeavour to stop it at once, just upon its coming; for by "this means the Bark has more time to produce its full Effect "in; and, besides, the Mischief is avoided that might happen "by putting a sudden and unseasonable Stop to the Fit just "approaching. 3. The Bark must be repeated at short Inter- "vals, that the Virtue of the former Dose may not be entirely "gone off, before another be given; and by repeating it fre- "quently the Disease will, at length, be perfectly cur'd. For "these Reasons, I prefer the following Method of giving the "Bark to all others.

"Take of the *Peruvian* Bark, one Ounce; Conserve of "Roses, two Ounces: Make an Electuary thereof. Take "the Quantity of a large Nutmeg, every Morning and "Night, on the intermediate or well Days, till the whole "be taken; and let it be repeated thrice, interposing a "Fortnight between each time."

But though the Bark is the best Medicine hitherto discover'd, for the Cure of these Diseases; yet I have known Vernal Tertians, in Persons in the Prime of Life, and of a sanguine Constitution, yield to the Use of the following Remedies: For Instance, Bleed in the Arm upon the intermediate Day; and some Hours afterwards, upon the same Day, give an Emetic of the Infusion of *Crocus Metallorum*, regulating the time in such manner, that its Operation may be over before, the Fit comes on; and as soon as it is gone off, let the following Electuary be given.

Take of the Extract of Wormwood, Gentian, and the lesser Centaury, each two Drams: Mix them together, and divide the Whole into nine Doses. Of which, let one be taken every fourth Hour; drinking, after each Dose, of the bitter Decoction without Purgatives, and of White-wine, each three Ounces.

There is another Method of curing these Tertians in Persons of low Circumstances, who are unable to be at the Expence of a long Course of Medicines, in order to their Cure. As,

Take of *Virginian* Snakeweed, in fine Powder, a Scruple; White-wine, three Ounces: Mix them together. Let the Patient take it two Hours before the Fit comes on; and, being well covered with Cloaths, let him sweat three or four Hours afterwards; and let it be repeated twice in the same manner.

In the following Year 1679. these Intermittents re-appeared at the Beginning of *July*, and, increasing every Day, proved very violent and destructive in *August*: But, having already treated of these at large, I shall only observe, that they gave way to a new Epidemic, which proceeded from the manifest Qualities of the Air in *November*. *Sydenham*.

Of the Salubrity of Fevers.

Such is often the wise and admirable Oeconomy of Nature, that what at first Sight appeared noxious and prejudicial, tends to promote and advance the Happiness and Health of Mankind. In no Instance is this Doctrine more remarkably verified, than in Fevers, since the febrile Commotions of the Blood, which accompany many Disorders, both of the chronical and acute Kind, are of such a Nature, as to banish and extinguish morbific Causes; and, consequently, they must be rather beneficial than detrimental to the human Body.

Before we proceed to the Confirmation of this Assertion, we shall observe, that this Doctrine is supported by the Authorities of the Antients. Thus the divine *Hippocrates*, in his Writings, often affirms, that a supervening Fever cures some Disorders, to be afterwards mentioned: And *Celsus*, *in Lib.* 2. *Cap.* 8. tells us, *that a Fever itself, which to some may seem strange, often proves salutary*: For a Fever allays Pains of the Præcordia, if not attended with an Inflammation, mitigates Pain, and, succeeding Convulsions of the Nerves, and a Rigor, totally removes them. It, also, relieves the Disease of the small Intestines arising from a Difficulty of Urine, if by the Heat it promotes a Discharge of it: Besides, a Fever was by the sagacious Antients defined the Struggle, Motion, or Contest of Nature; against the morbific Cause and Force of the Disorder; by which they intended to insinuate, that it was rather of a salutary, than of a noxious Nature: For that which fights against the Enemy of Life, which is the morbific Cause, cannot, in its own Nature, be pernicious. Hence *Linden*, *in Selectis Medicis*, cannot sufficiently wonder, that, notwithstanding the many Instances of this, in the Writings of *Hippocrates*, some should yet ascribe this Doctrine to *Campanella*, and damn it as a Novelty invented by a Man who was no Physician: For that Author, in *Tr. de Sensu Rerum*, *Lib.* 7. *Cap.* 2. affirms, that no Fever is a Disease, but a Remedy against other Diseases. This Opinion is, also, espoused by *Joh. de Meg*, *in Comment. Philos. Cap.* 5. *Loc.* 5. and the celebrated *Sydenham* is at a great deal of Pains to prove, that a Fever is the Effort or Instrument of Nature, by which the pure are separated from the impure Parts, and the morbific Cause exterminated and expelled.

Hence the Reason is obvious, why *Hippocrates*, in *Epidem. Lib.* 2. informs us, that it is the Office of a prudent Physician, sometimes, to excite Fevers: Besides, nothing more confirms this Doctrine, than the universal Agreement of the Antients in this, that Nature was the best Physician; cured best; termi-

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nated Disorders most happily; and, as *Galen* expresses it, made a violent Insurrection against the morbific Cause; strongly attempted Crises and Excretions; and at last, by Concoction and Evacuation, freed from mortal Disorders: For the Struggle or Effort of Nature against the morbific Cause, is nothing but a Fever. Hence we justly conclude, that a Fever is the Instrument by which Nature preserves the human Body, opposes morbific Causes, and, by expelling them, restores Health.

All Physicians, both antient and modern, have accounted a Fever a Disease in a certain Sense; and *Hippocrates*, *in Lib. de Flatibus*, *Sect.* 3. calls a Fever a common Disease, which accompanies other Disorders, and especially an Inflammation: For a Fever is a preternatural Commotion of the Blood and Humours, which not only injures and weakens the Functions of the Body and Mind, but, also, proves mortal: For few are taken off without a Fever. But this does not hinder it from being, in other respects, the Remedy not only of its own Cause, but, also, of other Disorders: So that we cannot sufficiently admire the stupendous Skill of the adorable Architect, who has so artfully contrived the human Structure, that by its Force and Strength it cannot only defend itself from impending Injuries, but, the Commotions or Effects of the morbific Cause are of such a Nature, that, if all other Circumstances are equal, they are, also, sufficient for removing themselves, and the Disorder. But that this Doctrine may be the better comprehended, we shall inquire into the Nature and Essence of a Fever, examine how it is created by Nature, and determine what Fevers produce such salutary Effects, at what Time, in what Diseases, and under what Circumstances, such laudable Consequences may be expected.

How common a Fever is, how often it accompanies most other Disorders, and how much the Knowledge of it has hitherto been involved in Perplexities and Obscurities, is sufficiently known; for almost all the celebrated Writers embrace different Opinions and Hypotheses, with respect to Fevers: But, without enumerating them, we shall only observe here, that as Health and Life depend on the due Motion of the animal Spirits, and Circulation of the Blood, so the Origin and Causes of all internal Disorders ought to be deduced and explained from some preternatural Circumstance in these Fluids. Hence we define a Fever, a too brisk Motion of the Muscles, especially of the Heart, accompanied with an unequal Circulation of the Blood, a Change of the Excretions, of the natural Heat, Pulse, and remitting or intermitting at certain Times.

A Fever is, therefore, a strong and increased Motion of the muscular System. Motion, by the Consent of the greatest Physicians, is performed in the human Body by means of an highly subtil and fluid Substance, by some called the animal Spirits, and by others the vital Principle, which exists originally in the Semen, is contained in the Blood, and afterwards supported by the external Air, and spirituous Aliments. This Substance was by the Antients called *Nature*, the *Anima purpurea*, and the *Calidum innatum*; and is the Cause not only of intestine, but, also, of circular Motion; moves all the Limbs, and is the genuine Instrument of Sensation and Reasoning. This Substance is capable of having its Motion augmented and accelerated in the Nerves, and muscular Fibres; as evidently appears in Spasms of the Skin, and internal Parts, and during an increased and more frequent Action of the Heart, accompanied with preternatural Heat. We, therefore, affirm, with *Helmont*, *in Lib. de Febribus*, *Cap.* 1. that the febrile Heat is not proper to the peccant Matter, or the Effect of it; but that it is the Effect of the animal Spirits acting too violently, which, as in a sound State, they are the Source of natural Heat, so they are, also, the immediate, primary, and efficient Cause of a febrile Heat. But I differ from *Helmont* in this, that he says the material Cause of a Fever is only occasional, and free from a material physical Influence and Concurrence, to the Production of a Fever; but that it affords an Occasion or Opportunity to the intelligent *Archæus*, or Nature, which, in the same manner as when an Object of Anger is externally presented, by her proper Force and Energy, rouses herself, attacks the Enemy, and endeavours to expel him. But I cannot deny, that the morbific Cause has a certain Power of Action and Motion, which, by acting inordinately on the animal Spirits, or vital Principle, by a certain mechanical Necessity, excites that impetuous Motion observable in the Heart, Arteries, and Muscles: For the febrile or morbid Motion is produced by the Action and Reaction of the active morbific Matter, and the moving vital Principle in the human Body; in which Sense it may be admitted, that Nature, or *Archæus*, is the Author of Fevers.

But we must determine by what means the febrile Matter acts on the animal Spirits in the Nerves and Membranes; what sort of Effect or Reaction succeeds this Operation, and how the Symptoms, common to Fevers, are produced. Now we assert, that all Motion of the muscular Fibres is active, systaltic, or contractory: Hence such a Motion must be rendered preternatural, either by Intension, or Relaxation, of the Fibres. The Intension is generally called a Spasm, which is a preternaturally strong and long-continued Contraction of the muscular Fibres. Such Spasms constitute the first and fundamental Cause of all preternatural Disorders, and morbid Commotions, and produce many and various Effects; since there is hardly any Disease without Spasms: These happen more especially in Fevers, and the Generation of excessive Heat, where Spasms are the Cause of the unequal Circulation of the Blood, the irregular and increased Pulse, and the other Symptoms: For as when the Tone of the Muscles, and Pulsation of the Heart, are moderate, and in due Proportion, the Fluids circulate regularly, the excrementitious Parts are secreted and eliminated, and such Substances, as are subservient to Life and Health, are retain'd, so, on the contrary, as soon as the Tone of the Muscles is vitiated, or as soon as a Spasm happens, and the Motion of the Heart becomes inordinate, the whole Order of the vital Motions, and the Oeconomy of the Secretions and Excretions, are disturbed and perverted.

The evident Signs and Effects of spasmodic Contractions of the muscular Fibres and Membranes, which in the Beginning of Intermittents appear evidently, but in a more languid manner in the Remission of continual Fevers, are various, according to the Diversity of Patients and Fevers. The following Symptoms, especially in the Beginnings of these Disorders, appear: The Skin, which is highly sensible, and the Organ of Touch, is much constricted, the lax Pores contracted, and the Skin raised into Tubercles, like that of a Goose: The Vessels, which were before tumid, and full of Blood, subside and disappear; the natural Redness is converted into a livid Colour; the turgid State of the whole Body subsides; there is a violent Horripilation, Rigor, and Refrigeration, especially of the Extremities; the Skin, which was before moist, becomes dry and parched; and the Sweat is suppressed. But this Compression and Constriction of the Fibres and Vessels is not only found on the Surface of the Body, but, also, in the internal Parts; as is obvious, about this time especially, in slow and continual Fevers, from the copious Discharge of aqueous limpid Urine, an obstinate Costiveness, a Retention of the Flatulencies, the Impossibility of injecting Clysters, the Anxiety of the Præcordia, the Nausea, and Disposition to vomit, and the intense Pain about the spinal Marrow, and Region of the Loins; all which Symptoms sufficiently evince, that not only the Stomach and Intestines, but, also, the Kidneys, and hepatic Vessels, are spasmodically constricted. Nor is the Substance of the Heart, Arteries, and Muscles, free from such Spasms, which, being rooted in the Spirits, by Consent affect the whole Body; as is evident, from the small, frequent, hard, and weak Pulse, arising from an insufficient and less free Influx of the Spirits. All these Symptoms differ not only in Degree, but, also, with respect to the Time of their Accession; since in Intermittents they appear in the Beginning, whereas, in those of the continual Kind, they appear in the Height and Decline of the Disorder, without observing Time, Tenor, or Proportion. And, certainly, there is no Fever with which the skilful Physician will not observe such Symptoms complicated. These Things were diligently observed by *Helmont*, who, *in Lib. de Febr. Cap.* 9. gives us the following remarkable Observations: The Part in which the febrile Matter is lodged, is first corrugated, which is easily perceptible in the Præcordia; in the affected Part all the Veins are disorder'd and constricted, by a Contraction of their oblique Fibres: Hence arises a rare, hard, and small Pulse, at once the Sign and the Cause of the cold Fit. This corrugating Stricture of the Veins will be easily perceived by every feverish Person, if he carefully adverts to his own Condition; and even a sound Person, by careful Attention, may be sensible of the natural State of the Veins: For when the Scrotum is lax, and hanging down, it is spontaneously corrugated, when the Excrements arrive at the Sphincter of the Anus. It is, therefore, natural for the Veins, and Parts primarily affected, to corrugate themselves; and as almost all Veins have corresponding Arteries, these must, also, in Consequence of their Communication, be seized with Convulsions. Spasms constitute the principal Cause both of the febrile Rigor and Heat; for, by means of the Spasms, the Circulation of the Blood through the Parts of the Body is rendered unequal, so that some Parts are turgid with Blood, whilst others are entirely deprived of it. In some Parts it, also, moves more quickly, and in others more slowly: Hence some Parts are affected with a Horror and Coldness, whilst others are seized with a preternatural Heat: And this unequal Circulation of the Blood, arising from Spasms, constitutes the very Essence of a Fever. None, either of the Antients or Moderns, has more judiciously treated of this, than *Hippocrates*, in his Treatise *de Flatibus*. For, says he, when the lower Belly is obstructed, Flatulencies run through all the Parts of the

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the Body [by Flatulencies he means irregular Motions of the Spirits, which produce Spasms, as is obvious from what he had before said], and, being conveyed to the Parts full of Blood, refrigerate them; since, by constricting them, they hinder the Afflux of the Blood. But when those Parts, which are the Source and Fountain of the Blood, are refrigerated, such as the Heart and Liver, an Horror penetrates through the whole Blood, and, when the whole Blood is refrigerated, an Horror must, of course, seize the whole Body. For this Cause, therefore, the Horrors first arise before the Fever; and, according to the Quantity in which the disorderly Spirits have made their Influx, such will the subsequent Rigor be. If many cold animal Spirits have made their Influx, the Rigor will be vehement; but if a smaller Quantity of less cold Spirits have made their Influx, the Rigor will be less violent. These Horrors are also, accompanied with Tremors, which happen by this means: The Blood, dreading a present Horror, runs through all the Parts of the Body, and flows principally to the warmest Parts: For when the Blood flows rapidly from the Extremities, the Viscera and Flesh tremble; for some Parts of the Body are full of Blood, whilst others contain none at all: And the Parts without Blood cannot rest for Cold, but shake, because depriv'd of Heat: Those Parts, on the contrary, which are full of Blood, tremble, and are seized with Inflammations, in Consequence of the Redundance of the Blood. This Doctrine he confirms *in Lib. 2. de Morbis, Sect. 5.* The Blood being condensed, the Veins are contracted, and, in their Contraction, contract the Body, and excite a Tremor. If the Blood is but little condensed, the Symptom produced is only called a Rigor; but if it is greatly condensed, a Horror is excited, which greatly afflicts the Patient. That a greater or less Fever is necessarily produced after the Horror, is owing to this: When the Blood, by any Force, (that is, an increased Motion of the Heart and Arteries) becomes warm, and again resumes its own Nature, that is, exchanges a cold for a hot State, the Phlegm and Bile mixed with the Blood, by the violent Motion, also, become warm, and even much hotter than the Blood: When these Fluids are, therefore, warmed after the Rigor, a Fever must succeed the Heat of the Blood. In this Passage *Hippocrates*, from mechanical Principles, and the Laws of Motion, so accurately describes the Progress and Generation of these Fevers, that we may justly doubt whether the Moderns can give a more distinct Account of them.

Nor is the Doctrine of *Erasistratus* very different from this of *Hippocrates:* For that Physician, as *Celsus, in Lib. 1.* observes, was of Opinion, that if the Blood was conveyed into the Veins accommodated to the Spirits, that is, into the Arteries, and excite an Inflammation, which the *Greeks* call *Phlegmone*, that Inflammation excites such a febrile Commotion as is perceived in a Fever: And, afterwards, when, mentioning *Erasistratus*, he tells us, that he affirmed, that a Fever was produced by a Transfusion of the Blood into the Arteries, in consequence of its Redundance. By these Passages, the Inequality of the Circulation of the Blood, in all febrile Commotions, is excellently described: For the Rigor which generally precedes the febrile Heat, is a Kind of Spasm, by which the capillary Vessels, being obstructed, hinder the free Circulation and Return of the Blood through the Arteries to the Heart: Hence the Blood, regurgitating to the Arteries and Left Ventricle of the Heart, and pressing upon them by its Weight, invites a freer Influx of the Spirits, and increases the Pulse. Hence *Hippocrates, in Lib. de Flatibus*, informs us, that the Blood, when warm, and forcibly propelled, cannot pass through a narrow way (the Arteries) with Celerity, because many Things hinder and obstruct its Motion: By these means, the Pulsations of the Arteries are produced, and in this manner Fevers and Pains are excited.

From what has been said, it is sufficiently obvious, that, in Fevers, the Cold which is principally perceived towards the Extremities, is owing to the Defect of a sufficient Influx of Blood, and a languid intestine Motion of that Fluid; whereas the succeeding febrile Heat depends upon an increased intestine Motion of the Fluids.

But as the Essence of a Fever consists in an unequal Circulation of the Blood, and the Cold, Horror, Heat, and other Symptoms depending upon it; we shall, having already considered the Origin of the Refrigeration, now investigate the Source and Causes of the febrile Heat. The various Opinions of Authors, concerning this Phenomenon, are found in *Frid. Hoffmanni Dissertat. de Caloris & naturalis & præternaturalis Causis.*

It is an usual Question, among Physicians, Whether the Violence of the febrile Heat depends on an increased Circulation of the Blood. *Borelli, in Tr. de Motu animal.* seems to have been the first who maintained this Opinion: For, says he, the most proper Affection and Characteristic of a Fever is, an increased Pulse, and a violent Commotion of the Heart and Arteries succeeded by a febrile Heat. This is not only universally agreed upon, but, also, confirm'd by Reason and Experience; because, upon a violent Commotion and Concussion of the Heart, there soon after succeeds a new and preternatural Heat of the whole Body, as is obvious in Anger, and violent Commotions of the Body. In like manner, when such a Motion of the Heart is removed, that is, when its Action is diminished, and rendered slower, a Tepidity, Rigor, and Coldness, succeed; as it happens in the Colds and Rigors of Quartan Fevers. He afterwards, in the same Work, tells us, that, by the vehement and quick Pulsation of the Heart, the Blood, which is return'd during the Rest of the Heart, being poured from the *Vena Cava*, must be impelled into the Arteries, as far as the minutest Capillaries, by the same brisk Motion with which the Heart is contracted; as is obvious, from the Laws of the Circulation. It is, also, certain, from the Evidence of Sense, that, by a violent and brisk Circulation of the Blood, a Fervor and Heat, which did not before exist, are excited through the whole Body; the Origin of which is not, in my Opinion, to be deduced from Motion, considered as Motion, but, rather, from the Nature of the Blood itself, which contains a Spirit, or Oil, or, rather, igneous Particles, sheathed up; which, when dissolved, and disengaged from their Fetters, in such a manner as to exert their Motion, excite a sensible Heat.

Next, therefore, *Borelli* deduces the Heat of the Blood from an increased intestine Motion of its subtil and sulphureous Parts; for, by the Consent of all modern Philosophers, Heat is nothing but an highly rapid Motion of sulphureous Parts: Nor is it to be doubted but this hot intestine Commotion of the Parts of the Blood is increased, by an accelerated Circulation, which is discovered by the Vehemence, the Frequency, and the Fulness of the Pulse: For when the Pulse is frequent, vehement, and full, the Blood must necessarily be moved briskly through the Vessels of the Body, and the Heat be sensibly increased. Nor is it to be doubted, that not only in a sound State, by an increased Vehemence and Largeness of the Pulse, in Consequence of a violent Motion of the Body, or Commotion of Mind, the Circulation of the Blood, and, consequently, the Heat is increased, but, also, in an unsound State, and even in Fevers, especially those of the intermittent, tertian, and continual Kind, as, also, those of the burning Kind, and the *Synocha*, the same Species of Pulse must produce a brisker Circulation, and, consequently, an increased Heat of the Blood. But this does not happen universally; nor do I assert, that where-ever there is a preternatural Heat in the Blood, there its Circulation must be increased: For an increased Circulation is not the only Cause of the hot intestine Motion of the Parts of the Blood, since various important Arguments convince me, that several other Causes may concur to throw the minute Particles of the Blood into a violent vertical Motion, even when its Circulation is slow and languid: For it is certain, that not only in malignant, but, also, in several other Fevers, there is a preternatural and intense Heat, where the Pulse is neither vehement, strong, nor large; but only quick, or frequent, small, and even weak; which Species of Pulse by no means discovers a quick Circulation of the Blood through the Heart: Besides, the inflammatory Stagnations of Blood in the Lungs, and other Viscera, which are accompanied with an internal uneasy Heat, a Thirst and Refrigeration of the Extremities, sufficiently evince that all excessive Heat does not proceed from an increased Circulation of the Blood: And, certainly, nothing is more observable in Practice, than that an intolerable Heat preys upon the internal Parts of the Body, when the external Parts are obstructed, contracted, dry, and parched; and that, on the contrary, that Heat is less troublesome, which seizes only the Surface of the Body, or tends towards the external Parts; since this latter Species of Heat indicates a free Circulation of the Blood through the Surface of the Body, whereas the former Species discovers an obstructed or retarded Motion of the Blood through the internal Parts: So that, in Practice, this Difference is to be perpetually observed, that, in an internal Heat, the Danger is always great; whereas, when the Heat is external, there are greater Hopes of the Patient's Recovery.

Besides, it is, also, confirmed by Experience, that all such Things as render the Blood fluid, and invite its Motion and Circulation to the external Parts, so that a gentle Sweat may succeed, which happens under a full and quick Pulse, which is a Proof of the increased Circulation of the Blood, instantaneously extinguish the most uneasy Heat; so that the Physician acts a judicious Part, who, a few Hours before the Paroxysm, disposes the Body to sweat; by which means, the succeeding Paroxysm is always rendered more mild. It, therefore, seems consentaneous to Truth, that, under the intestine Commotion of the Fluids, many Effluvia, of an igneous Nature, are excited, that is, put in a violent Motion, which, if they can be freely discharg'd through the Emunctories of the Body, greatly lessen the Cause of

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of the Heat. But if these igneous Effluvia remain in the Habit, which happens by a Diminution of the Circulation, and an Obstruction of Perspiration, they must, by returning into the Blood, redouble, and greatly increase, the Heat: For we find, that the Heat excited on the Surface of the Body, proceeds more from the reflected intestine Motion of the subtil Parts, than from the Circulation of the Blood. It is, therefore, certain, that the Essence of Heat consists in an highly quick Motion of sulphureous Parts; and that this Heat becomes violent under every progressive Motion, by an increased Impulse and Attrition on the Vessels and Fibres of the solid Parts: But it by no means follows, that, where the Heat is increased, this should always happen by an increased Circulation, since such an Heat often proceeds from a Retention of the hot Exhalations, and their fresh Repercussions on the same Object; as is sufficiently obvious, in violent Inflammations, and hectic Heats.

But they who derive the Origin of febrile Heat from an increased Circulation of the Blood, build their Hypotheses on this Foundation, that a quick Pulse, which is the pathognomic Sign, and inseparable Companion of a Fever, is an infallible Proof of an increased Circulation of the Blood; and that there is a great Difference between a quick and a frequent Pulse, which are not to be confounded by Practitioners, since the latter is rather found in a natural State, and in young Persons, upon an increased Agitation, either of Body or Mind, upon drinking Wine, as, also, in a Palpitation of the Heart, and an Asthma; and, consequently, cannot be the genuine Sign of a Fever; whereas a quick Pulse is never absent from a Fever.

This Doctrine I have investigated with the more Accuracy, not only that we might be the more certain, with respect to the Origin of febrile Heat; but, also, that, knowing the Nature of the Pulses exactly, we might be able to form a Judgment, with respect to a Controversy long agitated among celebrated Physicians, Whether a frequent, rather than a quick Pulse, is the essential Mark of a febrile Commotion. See PULSUS.

Having already treated of the Causes of the Horror, Rigor, and Cold, which are always observed in Fevers, and generally precede them; having, also, explained the Nature and Origin of febrile Heat; and demonstrated the Reciprocation of two Kinds of Motions in Fevers, one of which tends from the external Parts to the Centre, and the other from the Centre to the external Parts; we now come briefly to inquire, whether these two Motions depend upon merely physical, or on moral in Conjunction with physical Causes; as, also, what End they answer, and for what Purposes they are destined. In order to answer the first Part of this Question, it is to be observed, that the Mind, though incorporeal, has, nevertheless, in thinking and reasoning, a powerful Influence on the vital Principle, or the Motion of the animal Spirits, which it either increases, diminishes, or variously determines. As this was never denied by any Person who knew the Powers of the Passions and Imagination, and in what manner they change not only the Motion and Crasis of the Fluids, but, also, the Configuration of the Solids; so it is not to be doubted, but a certain febrile Commotion may be excited by Causes merely of an intentional and moral Nature. But it is principally to be determined whether a Fever is not most frequently produced by Causes merely physical, acting without any Morality, and without any spontaneous Direction of such an increased febrile Motion. The first who asserted moral intentional Causes which tend to a certain End, and which are only on the Presentation of a certain Object, received into the internal Agent, or *Archæus*, was *Helmont*, in *Lib. de Morborum Ortu & Febribus*; where he preposterously attempts to reduce the physical Causes of Diseases to the Class of moral Causes. But I was always of Opinion, that where known Causes, and Explications by sensible, obvious, and physical Matters, are or can be found, and where Phenomena can be accounted for from the Properties of Bodies, we are never to have recourse to unknown or incorporeal Qualities in them; for it is to be observed, that the Antients carefully distinguished the Effects of Nature from the Operations of the Mind; for they never call the Mind the *Curer of Diseases*, which, however, they affirm concerning Nature.

Among the Antients, Nature was said to be the Cause and Principle of all the Motions of the Body: But they called the Mind the *Source and Principle of Knowledge and Perception:* Whereas Nature is, by *Hippocrates*, pronounced, absolutely without Knowledge and Intelligence. With respect to this, there is a memorable Passage in *Cœlius Aurelianus*, *Lib. 1. de Passionibus acutis*, in which he mentions *Asclepiades*, who called the Soul *A Collection of the Senses*; and affirmed, that in the human Body, all things happened necessarily; and every Phenomenon had its respective Cause; that Nature was no more than the Body, or its Motion; and that she was capable not only of being beneficial, but, also, of being injurious; for whether the Soul, which in Men is the Principle of Determination, and in Brutes the Source of voluntary Motion, is only sensitive, or at once sensitive and rational, yet it can perceive nothing without Ideas, that is, without Motions impressed from external Objects: But these Motions are only received by various Sensories, destined for that End. Where, therefore, the various Sensories are defective, there, also, the Perception and Direction of the Motions are defective; for Touch is absolutely insufficient for accounting for, and understanding, the Nature, Figure, Motion, noxious Qualities, and Force of material morbific Causes: Hence, also, it is easily understood, that in Diseases the particular Direction of the Motions corresponding to the Nature of the morbific Cause can by no means be received by the Soul.

It is indeed true, that Nature is highly observant of Number, Order, Time, and Place, as is obvious in the Formation, Nutrition, and Conformation of the Body, the Cure of Diseases, and the carrying on of the Excretions. But this happens not by any Intelligence of the Things with which she acts, and an arbitrary Power of performing particular Motions, or of directing them to a particular End, of which she is entirely ignorant: But rather those Effects directed to a certain End, are produced alone, by mechanic Laws, and the Influence of Bodies acting and re-acting on each other, under a certain Measure, Degree, and Proportion; which is obvious from this, that these natural Motions may be at Pleasure suspended, increased, or diminished, by mere corporeal Actions. Besides, we have a manifest Instance of a regular and organic Structure in Vegetables, the Fabric of which expressing great Order and Art, does not depend upon any intelligent Faculty, but on a merely necessary Efficacy of Motion, though not without Order. But, without insisting any longer on this, we shall only observe, that it is of great Importance in Medicine, not to confound those Effects of Diseases, which flow from merely necessary Causes, with those which have, in Conjunction with them, a certain free and immaterial Principle of Action, as is obvious in the Passions of the Mind, where there is a great Difference between the Mind and the Disease, since the Disease is only called that, to the Production of which merely corporeal Causes concur; whilst a Passion of the Mind is said to be produced, when the Mind labours under any Disorder, though it often produces a morbid Effect of the Body.

From what has been said we conclude, that a Fever is not to be called *salutary*, because Nature knows the internal Matter to be peccant, and for that Reason endeavours at certain Times and Places to eliminate it from the Body, according to the different Quality of its Peccancy, in a certain Degree and Proportion. This may be granted, with respect to the Mind, when put in a Passion, upon the Presentation of some external Object of the disagreeable Kind; but it cannot be applied to Motions merely mechanical: For as a Passion of the Mind is different from a Disease, so, also, Anger is different from a Fever; but every Fever does not suppose an immaterial and ideal Act or Perception of the Mind. A Fever cannot, therefore, be properly called a salutary and useful Thing, excited for a good End, since Nature, and even the sensitive Soul, is absolutely ignorant of the Condition of the morbific Causes, the Ways, Places, and Ends intended by Nature, which are internal. A Fever, therefore, is not, in my Opinion, to be called *A Motion in itself salutary*, neither with respect to its Principle, or efficient Cause, nor with respect to its End or Effect; because it is often hostile, and even fatal, to human Nature; but only because it sometimes, by Accident, produces a salutary Effect. But to illustrate this by an Example: Thus the strong spasmodic Constriction of the Coats of the Stomach, or Intestines, by an Emetic or Purgatives, is not in itself a good and salutary thing, since it is plainly preternatural, and, consequently, morbid, and the Source of violent Symptoms; yet, as it removes the impure, viscid, and corrupted Sordes from these Parts, it does, for that very Reason, produce a salutary Effect. Thus, also, Spasms of the internal Parts, which generally produce spontaneous Hæmorrhages, are not of themselves good, because they sometimes excite mortal Hæmorrhages; but at other times, when the Blood is redundant, they accidentally produce this Effect in a salutary manner. The same holds true of a Fever, which, considered in itself, can neither be said to be useful nor salutary, since Half of Mankind are destroyed by it: Yet it often produces a salutary Effect, by restoring the impure morbid Body to perfect Health.

We now come to inquire, in a particular manner, in what Patients, and by what means, a Fever proves a salutary Medicine. But we must first of all observe, that the Cause which excites the febrile Commotion in the muscular System, is often not only a Redundance of Blood and Juices, but, also, a Collection of impure excrementitious and viscid Sordes, both in the Primæ Viæ, and in the Vessels: Which two Causes generally proceed both from a retarded Circulation of the Blood, and an Infarction and Obstruction of the Emunctories, as generally

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generally happens in burning Fevers, a bilious *Synocha*, a continual Tertian, a catarrhous Fever, and others of a like Nature. In order, therefore, to expel the Cauſe of theſe Misfortunes, Nature arms herſelf not by a kind of Free-will, but from a phyſical Neceſſity, ſtimulated by the Action of the hoſtile and peccant Matter, whilſt the ſpaſmodic Motion, not only of the external and membranaceous Parts, but, alſo, of the Muſcles, and eſpecially of the Heart, is increaſed by a greater Influx of the Spirits; for both a more ſtrong and intenſe inteſtine and progreſſive circulatory Motion are required, that the redundant and peccant Juices, formed under this double and languid Motion, may be eliminated from the Body, after the Obſtructions are reſolved, and the Humours prepared and diſpoſed for an Evacuation; for the Antients juſtly obſerved, that the Cures performed by Nature, were performed, firſt, by Maturation and Concoction; then, by Diſcuſſion and Rarefaction; and, laſtly, by Solution and Excretion. See *Hollerius, in Schol. ad Aphor. Hippocrat.*

By Concoction, or Maturation, they underſtood that of the pathologic Kind, a fitting of the excrementitious Matter for Excretion, juſt as phyſiological Concoction is a fitting of the Subſtance of the Aliments for Nouriſhment: For as the crude, coarſe, partly immoveable Humours, and ſuch as are not fitted to the Pores of the Emunctories, are morbid, theſe are firſt to be prepared for an Evacuation, that is, the viſcid Matter is to be incided and abſterged; that which is thick is to be rendered fluid, the intemperate and acrimonious Humours are to be temperated and corrected; all which were included in Maturation and Concoction among the Antients, who order, that not crude, but concocted Matter, ſhould be expelled from the Body, both by Nature and Art.

But as the Excretion of the peccant Matter is leſs commodiouſly carried on, unleſs the Paſſages are previouſly free, and the Emunctories open, hence the Obſtructions are to be reſolved, and the ſtagnant Humours, fixed in the capillary and excretory Veſſels, are to be reſolved and colliquated. After theſe Ends are obtained, the Excretion of the peccant Matter afterwards ſucceeds happily.

Theſe are the uſual Manners; this the common Method; and this the Order uſed by Nature, in curing Diſeaſes, or removing morbific Cauſes from the Body: But ſhe brings about all theſe Ends by one Inſtrument, which is Motion.

But the Motion of the Blood is twofold; one, the hot inteſtine Motion of the ſulphureous Parts; the other progreſſive and circular: Both theſe Motions are neceſſary, in order to prepare and, afterwards, eliminate the peccant Matter; for certainly the Circulation of the Blood alone, though intenſe and briſk, is not ſufficient for theſe Purpoſes, unleſs when accompanied with an increaſed inteſtine Motion, or an Increaſe of Heat: And though it cannot be denied, that in Fevers an exceſſive Heat does Harm to the Body, yet Nature requires both an increaſed Circulation, and an accelerated, hot, inteſtine Motion, in order to ſubdue and remove the febrile Cauſe; for what more happily diſſolves glutinous and viſcid Humours than Heat? What is more efficacious or expeditious in removing Obſtructions brought on by theſe Sordes, or in opening the obſtructed Emunctories, than hot and fluid Blood? What ſooner leſſens the Redundance of the Blood and Humours, and renders that which is thick and immoveable, fluid, than Heat? Hence the Antients juſtly eſteemed the febrile Heat neceſſary to concoct, that is, to incide, attenuate, and prepare the peccant Matter for Evacuation. And that moderate Heat is in itſelf highly beneficial to the Body, is ſufficiently obvious from this, that Men of hot Conſtitutions, young Perſons, and ſuch as uſe Exerciſe, and drink warm Liquors, are rarely ſubject to chronical Diſorders, and Obſtructions of the Viſcera. And this is, alſo, the Reaſon why all intermittent Fevers, eſpecially thoſe of the Quartan kind, as *Hippocrates* obſerves, if they ſeize in the Summer, are far ſhorter, and more eaſily cured, than if they happen in the Autumn and Winter; for the Summer Intermittents often ceaſe ſpontaneouſly, in the Month of *June*, when the Air is moſt intenſely hot. Beſides the greater Heat is perceived in the febrile Paroxyſms, the ſooner the Fever is terminated; and, on the contrary, the more languid and ſlow the Heat is, the more fixed and radicated is the Cauſe of the Diſorder. In order to deſtroy this Doctrine, it may be replied, that ſuch Effects are to be aſcribed not ſo much to Heat, as to an increaſed Circulation of the Blood, which is neceſſarily productive of Heat. But though an increaſed Circulation of the Blood cannot happen without an Increaſe of Heat, yet, as we have already obſerved, every Heat in the Body is not produced by an accelerated Circulation; ſince very often, when the Pulſe is languid and frequent, and the Extremities cold, the interior Parts are hot, the Tongue dry and black, and the Thirſt inſatiable: Beſides, as the inteſtine Motion is abſolutely different from the Circulation of the Blood; ſo, alſo, the former, in a different manner, contributes to Life: Nor, if the Circulation alone, and Excretion of the uſeleſs Parts, were ſufficient for the Purpoſes of Life, would a certain Temperature, Mixture, and Moderation of the Elements of the Blood, and eſpecially of the Sulphur, which is the Foundation of the inteſtine Motion, be neceſſary to the Preſervation of Life and Health; the aſſerting the contrary of which is, however, abſurd.

Hence the Antients juſtly aſſerted, that Life conſiſted in Heat; that Nature, by means of Heat, attacked the morbific Cauſes of Diſorders; and that there was no Animal, in the Blood and Juices of which there was not ſome hot Subſtance; becauſe, without an hot inteſtine Motion, there can be no Generation, no Life, nor any vital Motion performed: Nor does it hence follow, that there is no Heat which is not perceptible by the Touch; for the Senſes are not the only Teſt by which Heat is to be judged of. The hot inteſtine Motion may be ſaid to happen, partly with reſpect to Cold, and partly with reſpect to its Effect, eſpecially that of the rarefactory Kind; ſo that, in order to oppoſe this Doctrine, it is to no purpoſe to aſſert, that Fiſhes may live without Heat: But Heat is abſolutely neceſſary in Animals, to promote the ſpirituous Quality of the Humours, to preſerve them fluid, to keep the Pores open, and to carry on Nutrition and Excretion. Hence *Galen*, in his Treatiſe *de Uſu Partium, Lib.* 14. *Cap.* 6. calls Heat the firſt Inſtrument of Nature: For the ſame Reaſon, Nature, in ſubduing Diſeaſes, uſes a ſtrong and preternatural Heat, as is obvious in Fevers; for, by means of Heat, the peccant Matter is not only ſubdued and attenuated, but, alſo, rendered fit for Excretion; for though it cannot be denied, that an intenſe Heat is prejudicial to the Body, by obſtructing the Evacuations, eſpecially that by Sweat; yet, if we carefully examine the Matter, we ſhall find, that Nature does not ſo much cure Diſeaſes by Evacuation, as by a Diſſolution and Rarefaction of the Humours. And if the Matter is to be evacuated, Nature diſpoſes it for Excretion, concocts it, and opens the Pores, which Ends are commodiouſly anſwered by Heat; ſince a Cure conſiſts not ſo much in the Evacuation, as in the Correction of the morbific Cauſe: Hence, in my Opinion, thoſe are greatly miſtaken, who imagine, that the Matter which, after the Height of the Diſeaſe, is evacuated on the critical Days, is the morbific Cauſe. It is not, however, to be doubted, but the Evacuations in Fevers, carried on in due Quantities, and at proper Times, are excellent Signs that the Patient recovers; and that Nature is ſuperior to the morbific Cauſe; becauſe they evince, that every Thing is calm in the Body; that a free and equable Circulation of the Blood is reſtored; and that the ſpaſmodic Contractions of the Parts have ceaſed: Whence the Evacuations not only of the morbific Matter, but, alſo, of other excrementitious Humours, generated under the febrile Commotion, are freely carried on: Hence ſuch critical Evacuations are ſalutary, and, conſequently, not to be checked: For it is to be obſerved, that the morbific Cauſes of Diſorders act principally by Spaſms; and, under Spaſms, the Circulation of the Blood, and the Excretions, are diſturbed. Hence, if the Evacuations are duly carried on, it is a good Sign, that the morbific Cauſe is ſubdued; that the morbid Motions are allayed; and that every Thing is again returning to a natural State: For as ſoon as the Evacuations of the critical, but not of the ſymptomatic, Kind begin to be duly carried on, in conſequence of a proper Circulation of the Blood, the Force of the Diſeaſe forthwith remits.

We, therefore, affirm, that a Fever is ſalutary, becauſe, by the hot inteſtine Motion, and an increaſed Impulſe of the Blood through all the Veſſels, the viſcid Crudities are attenuated and diſſolved; the Obſtructions of the Glands removed; the ſtagnant Humours rendered fluid; the corrupted and redundant Juices evacuated, and the exceſſive Humidity of the Habit diſſipated: So that a Fever is often an excellent depurating and evacuating Remedy. This Doctrine is confirmed, not only by Authorities, but, alſo, by Experience. Thus *Hippocrates*, in *Aph.* 70. *Sect.* 5. informs us, that they who are ſeized with a Quartan Fever, are not ſubject to Convulſions; and that they who are afflicted with Convulſions, are freed from their Diſorder, upon the Approach of a Quartan; for no Fevers are more ſalutary than thoſe of the Tertian and Quartan kind, as is univerſally known: For, if theſe Fevers are periodical, and not too long continued; or if they happen before the Strength is conſumed, or Old-age comes on, they excellently depurate the Blood, powerfully remove Obſtructions about the Veins of the Meſentery, and reſolve and carry off the coagulated, thick, and viſcid Humours, which are the Cauſe of the Spaſms: They, alſo, dry the too moiſt Nerves, and corroborate ſuch as are paralytic and lax: Hence ariſes the Opinion of the common People, that a Quartan produces Strength; and that the Perſon who is ſeized with a Tertian or Quartan, will for ſome Years live free from all Diſeaſes. This Doctrine is, alſo, confirmed by *Aph.* 26. of *Sect.* 2. where we are told, that "It is "better a Fever ſhould ſucceed Convulſions, than Convul- "ſions

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"sions a Fever." But it is here to be obſerved, that the Convulſions here meant muſt ariſe from a Redundance, and not from a peccant Quality of the Juices; becauſe both the inteſtine Motion, and the Circulation of the Blood, attenuates and diſcuſſes the thick, viſcid, and compact Matter lodged in the Brain, Nerves, and *Primæ Viæ*. But *Hollerius*, in his Commentary on the ſame Aphoriſm, juſtly obſerves, that every Fever does not put an End to Convulſions, but only one of the moderate Kind, which is neither too weak, nor ſo violent and malignant as to impair the Strength. *Hippocrates*, alſo, tells us, in *Epidem. Lib.* 6. that a Quartan cures Melancholy, the Epilepſy, the Leproſy, and the Itch: For theſe terrible Diſorders ariſe almoſt from the ſame Cauſe which produces a Quartan; that is, a Stagnation of impure and viſcid Blood, about the abdominal Viſcera; and an Infarction and Induration of the Spleen, Liver, and Pancreas. But, as in a Quartan, a due febrile Motion diſſolves obſtinate and old Obſtructions, theſe violent Diſorders are by this means removed. *Langius*, in *Epiſt.* 16. *Lib.* 1. informs us, that upon the Criſis of Fevers, eſpecially thoſe of the Quartan kind, he has often ſeen the Itch ſpontaneouſly removed, without the Aſſiſtance of any Medicines. As for an Epilepſy, *Hippocrates*, in *Epidem. Lib.* 5. *T.* 6. informs us, that "Perſons labouring under a Quartan are not ſeized with an Epilepſy; or if they have formerly been ſubject to it, they are freed from it by a ſucceeding Quartan." And this Aſſertion is expreſsly confirm'd in *Sect.* 5. *Aph.* 20. where we are told, that thoſe afflicted with a Quartan are not eaſily ſubject to Convulſions; and, if they have formerly laboured under them, they are freed from them by a ſupervening Quartan.

Nor is it a difficult Taſk to aſſign a Reaſon for this; ſince it is univerſally agreed upon, that a chronical Epilepſy is produced by Obſtructions, and the partly viſcid Impurities ariſing thence, and which Nature, by an univerſal Spaſm principally ariſing in the Meninges of the Brain, and extending itſelf through the whole muſcular Syſtem, endeavours to remove. But ſuch Obſtructions, and viſcid Humours, hindering the free Circulation of the Blood through the Veſſels of the Head, are reſolved, diſcuſſed, and eliminated, by the Heat and Horror of a Quartan: For certainly, by ſuch a ſtrong Motion of the Fibres, and ſuch an increaſed Impetus of the Blood, as is obſervable in febrile Paroxyſms, Obſtructions are more effectually removed, and ſtagnant Humours more thoroughly diſcuſſed, than by any other Remedy, how valuable ſoever, whether of the ſudorific, or of the aperient and evacuating Kind. It is, alſo, owing to this, that thoſe who have formerly laboured under a Quartan, are not eaſily ſeized with an Epilepſy; becauſe a regular Quartan, by reſolving Obſtructions, frees the Body from thoſe Cauſes which produce an Epilepſy.

Beſides, a gentle Apoplexy is diſcuſſed by a Fever: Thus *Hippocrates*, in *Aph.* 5. *Sect.* 5. informs us, that if drunken Perſons are ſuddenly depriv'd of their Voice, they die convulſive, unleſs they are forthwith ſeiz'd with a Fever. In Drunkenneſs, when the Body is leſs perſpirable, eſpecially in conſequence of a large Quantity of generous Wine, it may happen, that the Head may be filled with too large a Quantity of Blood, which too much diſtending the Arteries, and Veins of the Plexus Choroideus, intercepts the Paſſage of the Spirits: But in a Fever, the accelerated Circulation of the Blood not only opens the obſtructed Veſſels of the Brain, but, alſo, powerfully diſcuſſes the Matter, whether aqueous or viſcid, which is ſtagnant in its Pores.

Hippocrates, alſo, pronounces a Fever a peculiar Remedy in hypochondriac Diſorders, ſince in *Aph.* 40. *Sect.* 6. he informs us, that "A Pain of the Hypochondria, without an Inflammation, but ariſing from Obſtructions, Flatulencies, or a cold unequal Temperament, is removed by a ſupervening Fever." It is perpetually inculcated by *Hippocrates*, that ſuch Diſorders as proceed from Obſtructions, a viſcid Sordes, or Infarctions of the Viſcera, are commodiouſly terminated by a Fever; becauſe in a Fever, the increaſed inteſtine, and progreſſive Motion of the Blood, attenuates, incides, and reſolves the immoveable Matter, and diſpoſes and prepares that which is fixed and ſtagnant, to an Evacuation. I have often obſerved in Practice, that hyſteric Symptoms and Spaſms in the abdominal Region of old Women, after a Suppreſſion of the Menſes, have been removed by a Fever, accompanied with an effectual Heat and Horror. And if we carefully conſider the Thing, we ſhall find that the ſpaſmodic and febrile Motions, ſo familiar to hypochondriac Patients, eſpecially in the Autumn and Winter, are uſeful in carrying off, through the Emunctories of the Body, the excrementitious Sordes, lodged in the Maſs of Blood and Humours.

But that a Fever is the ſalutary Inſtrument of Nature, by which ſhe frees herſelf from preſent Danger, is obvious from this, that the Redundance of Serum, whether pure or tainted with excrementitious, acrid, or bilious Salts, by which Nature is oppreſſed, is by a ſtrong febrile Motion, excited in the muſcular Syſtem, commodiouſly carried through proper Emunctories; as is obvious in catarrhous, rheumatic, and arthritic Fevers; as, alſo, in an Eryſipelas, the Meaſles, Small-pox, and Purple Fever, where there is always a certain febrile Commotion, and a ſubſequent ſalutary and critical Evacuation. Beſides nothing is more common than for a Fever of the inflammatory Kind to ſucceed an Extravaſation and Stagnation of the Humours; and this Fever is not, in my Opinion, excited by the arbitrary Determination of the Mind, in order to remove the ſtagnant Humours tending to Corruption; but it is rather a mechanical and neceſſary Effect, whilſt the peccant Matter, not only by its Redundance, but, alſo, by its irritating and hoſtile Quality, ſtimulates the Fluid which actuates the Membranes and Muſcles to an exorbitant Motion, which, being afterwards increaſed, though preternatural, is nevertheleſs, if duly managed, of ſingular Service in diſcuſſing and reſolving the extravaſated Blood: Hence it is obvious, that *Hippocrates*, and the Antients, were in the right, when they aſſerted, that Nature was the beſt Curer of Diſeaſes, that is, by an increaſed and intenſe Motion, which is of the febrile Kind: Hence, alſo, it is obvious, that *Aſclepiades*, according to *Celſus*, *in Lib.* 3. *Cap.* 4. *de diverſis Curationum Generibus*, was in the right, when he ſaid, that, in the Cure of Diſeaſes, he uſed the Fever as a Remedy. *Sydenham*, alſo, affirms, that a Fever is the Inſtrument by which Nature ſeparates the impure from the pure Parts.

From what has been ſaid, we may deduce the following Conſiderations, very uſeful in Practice: Firſt, As a Fever is ſo beneficial to the Body, Phyſicians ought not in the Beginning to ſuppreſs febrile Commotions, becauſe ſuch a Practice, in continual and acute Fevers, ſuch as the Meaſles and Small-pox, an Eryſipelas and the Gout, induces not only immediate Danger, but, alſo, ſometimes Death; and intermittent Fevers, when too ſoon ſuppreſſed, are found from Experience to terminate in violent Obſtructions of the Viſcera, and ſlow Fevers reſulting thence, an Hectic, a Dropſy, and ſpaſmodic and convulſive Diſorders: The whole Skill of a Phyſician ſeems to conſiſt in diſtinguiſhing thoſe febrile Motions of Nature which may produce a good Effect, and be eſteemed ſalutary and critical, from thoſe which are prejudicial, ſymptomatic, and pernicious. The former are not to be immediately ſuppreſſed; but, if languid, promoted; and, if exceſſive, moderated: But they ought never to be totally checked, nor too much heighten'd; ſince the beſt Intention the Phyſician can purſue, is to attack the morbific Cauſe of theſe hot Commotions, and leſſen it gradually till it is quite removed. It is, therefore, imprudent to abuſe the *Peruvian* Bark, which, if rightly uſed, is a divine Medicine, as, alſo, Opiates, and Subſtances poſſeſſed of a ſtyptic Quality, in the Cure of Intermittents: Thoſe Phyſicians, therefore, err, who judging a Fever to be a bad Thing, whereas it is the Effect of a good Cauſe, immediately endeavour to ſuppreſs it; in which they are as faulty as thoſe who immediately ſuppreſs the Menſes, or Hæmorrhoids, by Aſtringents; a Practice generally productive of the worſt of Symptoms. A Phyſician is, therefore, never to attempt the Suppreſſion of a Fever; but to try the Removal of its Cauſe: And when that cannot be commodiouſly done, he is to moderate the Fever; which, alſo, tends to prepare and expel the morbific Cauſe.

From what has been ſaid, 'tis obvious, that all Aliments and Medicines, which refrigerate too much, coagulate the Humours, and which, by their Viſcidity, their Acidity, or their anodyne Quality, retard the Motion of the Blood, are ſo far from being uſeful in the Cure of Fevers, that they are rather injurious. The Phyſician ought rather to render the Humours fluid, and promote the Circulation of the Blood through all the Emunctories. Hence *Helmont*, in *Tr. de Febribus*, *Cap.* 9. juſtly affirms, that Diaphoretics are the only ſpecific Remedies for Fevers. Nor are Veneſections, Evacuations, and Alteratives, any farther conducive to the Cure of Fevers, than as they promote a free Circulation and Tranſpiration; for if it is true, that Fevers generally ariſe from any obſtructed Tranſpiration, and a diminiſhed Circulation of the Blood, they muſt of courſe be cured by an Increaſe of the Circulation and Tranſpiration. It is, alſo, obvious from what has been ſaid, that Medicines are moſt commodiouſly exhibited when Nature is in a Commotion; for, by this means, ſhe the more eaſily produces the deſigned Effects. With reſpect to this, *Helmont*, in *Lib. de Febribus*, *Cap.* 9. tells us, that, if on the Day of the Acceſs, and at a proper time, Medicines are exhibited, Fevers are often removed by one Doſe. The proper time is, about an Hour before the Paroxyſm, on an empty Stomach, that thus the Medicine may be ſufficiently actuated; for if the Medicine is exhibited on the Days of Intermiſſion, or long after the Paroxyſm is begun, it is uſed in vain, whilſt it is not aſſiſted by Nature, either in actuating, or expelling, the Matter, which is the occaſional Cauſe of the Diſorder. Beſides, at ſuch times, the Medicine

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is rather hurtful than beneficial, becauſe it proves a Stimulus to Nature, when ſhe is inclined to Reſt.

From what has been ſaid, we, alſo, learn, that it is a bad Sign, when a violent Cauſe, or Obſtruction, is preſent, if the Fever is ſlow or ſlight, or if the febrile Motion does not correſpond to the Cauſe. Hence *Hippocrates*, in *Aphor.* 40. *Sect.* 4. juſtly affirms, that it is never a good Sign, when the Body is ſometimes hot, and ſometimes cold; for this is a Proof, that the Diſorder will be long protracted. Hence, alſo, the Reaſon is obvious, why in weak Bodies, and thoſe in which the Motions of the Humours towards the external Parts are not ſufficiently free, there are no genuine Evacuations, but the Patient is afflicted with Tranſlations and Abſceſſes, not to be cured without great Difficulty. We, alſo, obſerve in Practice, that thoſe Fevers are far worſe, and of a more malignant Nature, which do not diſcover themſelves by Heat, a quick Pulſe, and Thirſt, than thoſe which appear with theſe Symptoms, tho' exceſſive. I have, alſo, obſerved, that in ſlow Fevers, the Supervention of an hot Fever with Horror is an excellent Sign of Recovery.

From what has been ſaid, we conclude with *Hippocrates*, in *Epidem. Lib.* 2. that 'tis ſometimes the Buſineſs of a Phyſician to excite Fevers; for, ſays he, in *Epidem.* that which Nature does ſpontaneouſly, ought to be done by the Art of the Phyſician. But in *Aph.* 21. *Sect.* 5. he expreſly adviſes the exciting of ſuch a Fever; "For, ſays he, ſometimes in a "Tetanus without an Ulcer, in young and fleſhy Perſons, a "pouring on of cold Water recalls the Heat, and that Heat "reſolves the Diſtemper." He, alſo, confirms this Method of Cure in *Lib.* 3. *de Morb.* in the following manner: "Pour "a large Quantity of cold Water on the Patient; then cover "him with warm and thin Cloths, but let Fire be removed; "and this Method is to be uſed both in a Tetanus, and in an "Emproſthotonus." For when cold Water is poured upon a young Body in the Middle of the Summer, the Pores and Fibres are ſeized with a Rigor and Horror, and the Blood is repelled to the internal Parts; and thus, ſtimulating the Muſcles of the Heart, it excites violent Motions, which are highly beneficial in removing the Cauſes of chronical Diſorders; for, as *Hippocrates* in *Lib.* 2. *de Morb. Sect.* 5. affirms, a greater or ſlighter Fever always ſucceeds a Rigor. Without finding Fault with this Method, we ſhall only obſerve, that it is far ſafer by powerful Medicines, which convey Motion to the Blood and Humours, to remove the Cauſes of chronical Diſorders. Hence the Reaſon is obvious, why Decoctions of the Woods, mineral Waters, Mercurials, Sudorifics, and Diaphoretics, are of ſuch ſingular Efficacy in removing obſtinate chronical Diſorders.

Beſides, 'tis certain from Experience and Obſervation, that by violent Anger the moſt obſtinate chronical Diſorders have ſometimes been removed; for which no other Reaſon can be aſſigned, than that in Anger, as well as in a Fever, the Blood and Humours are moved with a kind of preternatural Impetus, as is obvious from the Vehemence and Quickneſs of the Pulſe, the Heat of the Body, and the quick Reſpiration. Thus *Variola*, in *Obſ. Med.* 4. *Lib.* 2. informs us, that a certain Man was cured of a Quartan, which would yield to no Medicines, by being put into a violent Paſſion by his Friends. The ſame Author, alſo, informs us, that a Relation of his own, after being convulſed for about ſix Years, in ſuch a manner, that he could not work, his Hams being contracted, was by a ſudden Paſſion, whilſt he endeavoured to beat a Servant, cured of his Misfortune, becauſe, in that Attempt, his Body was ſo violently exagitated, that the Nerves of his Legs being relaxed, and his Hams ſoftened, he was not only able to walk and ſtand ſtrait, but, alſo, remain'd free from his Diſorder during the Remainder of his Life. Beſides, ſays the ſame Author, I knew a Man cured of a Palſy of one Side of the Body, which would yield to no Medicines, by the ſole Influence of Dread and Anger exagitating the Body. And in *Paulin's Faſcicul. Obſ. ad Acad. Nat. Curioſ. Dec.* 2. *An.* 6. *annex.* we have an Inſtance of the total Cure of a Palſy produced by Anger alone. *Frederic Hoffman.*

PYRGITÆ, πυργῖται, from πυργὸς, a Tower. Sparrows, thus called, becauſe they uſually build their Neſts, and inhabit Towers.

PYRIA, πυρία, or πυρεῖν. Any kind of Heat applied to the Body by way of Fomentation; or, a Fomentation in general.

PYRIASTES. The ſame as PROTOGALA.

PYRIATERION, πυριατήριον. A Laconic Bath, Bagnio, or Sweating-room.

PYRIATOS. A heated Brick.

PYRICAUSTA, πυρίκαυστα. Burns, or Scalds.

PYRIEPHTHOS. The ſame as PROTOGALA.

PYRIFORMIS MUSCULUS. This is a ſmall oblong Muſcle, of the Figure of a flat Pear, or Pyramid, from whence it has its Name. It is ſituated almoſt tranſverſly between the Os Sacrum and Iſchium, being covered and hid, by the firſt two *Glutæi*.

It is fixed to the inferior lateral Part of the Os Sacrum, by fleſhy Fibres, and to the neighbouring Part of the anterior, or concave Side, of that Bone, by three Digitations lying between the anterior Holes. It is, likewiſe, fixed by a ſmall Inſertion to the *Ligamentum Sacro-ſciaticum*, and Edge of the great Sinus of the Os Ilium.

From thence it runs tranſverſly towards the Joint of the Hip, its Fibres contracting in Breadth, and end, in a ſmall Tendon, which is inſerted in the Middle of the internal Labium of the upper Edge of the great Trochanter, by two or three Branches. The upper Part of this Tendon receives ſeveral Fibres from the *Glutæus Medius*; and its lower Part is united to the *Gemellus Superior*, and Tendon of the *Obturator Internus*.

Sometimes there are two *Pyriformes* ſeparated by the *Nervus Sciaticus*.

See the Uſes of this Muſcle under the Article QUADRATUS. *Winſlow's Anat.*

PYRIMACHUS, or PYROMACHUS, πυρίμαχος. Antimony reduced to a ſtony Hardneſs, Copper fuſed with Sulphur, and thus rendered hard, is by ſome thus called.

PYRINE, πυρῖνη. The Name of a Plaiſter deſcribed by *P. Ægineta*.

PYRIPHLEGES, πυριφλεγὴς. An Epithet for a Perſon labouring under an exceſſive febrile Heat.

PYRISTIRION. The ſame as PYRETERION.

PYRITES. Offic. Boet. 516. Fabr. 29. Charlt. Foſſ. 17. 52. Aldrov. Muſ. Metall. 570. Worm. 39. 129. Schw. 388. *Lapis Pyrites*. Math. 1381. *Marchaſitæ variæ, ſeu Pyrites.* Mer. Pin. 212. *Marchaſita*, Moderni. FIRE-STONES.

It is found in almoſt all Mines, being the moſt fruitful Matrix of almoſt all Metals, Salts, and Sulphurs; for it is not purely a Stone, but ſeems to be the moſt fertile of all Minerals. There are great Varieties of it, with reſpect to Colour, Figure, Mixture with Metals, Stones, and other Foſſils; for it enters in various Proportions the Compoſition of Iron, Lead, Tin, Silver, Copper and Alum, and, alſo, that of black Flints, Pit coal, Lime-ſtones, Chalk-ſtones, and others. *Dale.*

The *Pyrites* is a kind of Stone, of which Copper is made. The beſt Sort reſembles Copper, and eaſily emits Sparks of Fire when ſtruck. They burn it in the following manner: They waſh it over with Honey, then put it into a gentle Fire of Charcoal, and continue to blow till it becomes red-hot. Others put the Stone, firſt well waſhed with Honey, into a great Fire of burning Charcoal; and, when it begins to be red-hot, take it out; and, blowing away the Aſhes, waſh it over with Honey, and burn it again, till it becomes equally friable in all Parts; for it frequently happens, that the Superficies only is burnt; when it is thus well burnt and dry'd, they lay it aſide, to be uſed as Occaſion offers. If it requires Waſhing, it muſt be waſhed in the ſame manner as *Cadmia*.

The *Pyrites*, whether crude or burnt, is of an heating and abſterſive Quality. It deterges ſuch things as darken the Sight, and concocts and diſcuſſes Hardneſſes. Made into a Plaiſter with Roſin, it repreſſes Excreſcences of the Fleſh, by ſomewhat of an heating join'd with an aſtringent Quality. Some call it, when burnt, as before deſcribed, *Diphriges*. *Dioſcor.*

PYRIUS PULVIS. Gunpowder. This is made of Charcoal, Brimſtone, and Saltpetre, intimately mixed together, in different Proportions, according as the Maker would have it more or leſs ſtrong.

When a Spark of Fire drops upon this Mixture, it immediately catches the black Oil in the Charcoal, which, in this Caſe, may be conſidered as a kind of Tinder: This ſets Fire to the Brimſtone, and the Brimſtone lays hold on the Acid of the Nitre or Saltpetre, which, expanding itſelf ſuddenly with great Violence, burſts through, or carries along with it, whatever oppoſes it.

The following Account is generally given of the Invention of Gunpowder: That it was firſt diſcovered by one *Conſtantine Anelzen*, a Monk of *Fribourg*, and a Chymiſt; who, having put a Mixture of Charcoal, Saltpetre, and Brimſtone, in a Mortar, and covered it with a Stone, it happened to take Fire, and blew up the Stone; which Accident, occaſioning him to make farther Reflections and Experiments, gave Riſe to this ſurpriſing Invention. But others affirm *Bartholdus Schwartz* to be the Diſcoverer, and that it was firſt uſed by the *Venetians* about the Year 1380. during their Wars with the *Genoeſe*.

But this Account is contradicted by others, who tell us, that in the Year 1343. the *Moors*, being beſieged by *Alphonſus*, the Eleventh of that Name, King of *Caſtile*, defended themſelves by ſhooting off a kind of Iron Mortars, which made a Noiſe like Thunder: And that, in a Sea-fight between the King of *Tunis* and the *Mooriſh* King of *Seville*, above four hundred Years ago, thoſe of *Tunis* made uſe of certain Iron Tuns or Barrels, where-

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wherewith they threw Thunder-bolts of Fire. To which may be added what *Du Cange* asserts, that Gunpowder is expressly mentioned in the Register of the Chamber of Accounts in *France*, as early as the Year 1338.

However, this is certain, that *Roger Bacon*, one of our Countrymen, and a Frier of *Merton* College in *Oxford*, so famous among the Commonalty for the romantic Story of his Brazen-head, was well acquainted with the Nature and Composition of Gunpowder, at least an hundred and fifty Years before *Schwartz* was born; as appears from his Treatise *de Nullitate Magiæ*, published at *Oxford* in 1216. where Mention is made of both in the following express Terms: "You "may raise Thunder and Lightning at Pleasure, says that ex- "cellent Frier, by only taking Sulphur, Nitre, and Charcoal, "which singly have no Effect; but, mixed together, and con- "fined in a close Place, cause a Noise and Explosion, greater "than that of a Clap of Thunder."

But there is Reason to believe, that the Force of Gunpowder was known long before, and discovered by some Nations in very early Ages of the World, though not brought to the great Perfection it is in at present: And it is probable, that these People kept it as a Secret, either for their own Defence, or, perhaps, out of a more generous and humane Principle; that is, for Fear of the Mischief it might do Mankind; or 'tis possible, that the Art may have been lost and recovered again at different Periods of Time.

The *Chinese* pretend to have had the Knowledge of Gunpowder long before the *Europeans*; and it seems very probable they had; for we have an Account in History, that *Bacchus* was drove from the Siege of a Town in *India* by Thunder and Lightning: And we farther read of something of the like Nature happening to *Alexander*, in his *Indian* Expedition. Now, if it be considered, that these two Conquerors penetrated at least as far as the Borders of *China*, it will not seem unlikely, that this Thunder and Lightning was the Effect of Gunpowder, and that the *Chinese* were acquainted with it before the Expedition of *Bacchus*; and this seems still more probable, because the *East-Indies* naturally afford vast Quantities of Nitre, or Saltpetre, without any artificial Preparation.

The Fable of *Salmoneus* says, that he attempted to imitate the Thunder and Lightning of *Jupiter*; and that *Jupiter*, for his Insolence, killed him with real Lightning. The Conjecture does not seem far-fetched, if we should suppose *Salmoneus* was acquainted with the exploding Property of Nitre, and to have play'd Tricks with it, in order to terrify his Subjects, and keep them in Awe; and the Circumstance of his being killed with real Lightning, seems to confirm this; for it is easy to suppose, that *Salmoneus*, not thoroughly understanding the Danger of his artificial Lightning, might accidentally destroy himself therewith; and the People, ignorant of the Cause, might attribute it to *Jupiter*.

PYROLA.

The Characters are;

The Leaves are alternate; the Flower is rosaceous, pentapetalous, shaped like a Hat, with a recurvated Pistil, and disposed in a Spike; the Fruit is roundish, striated, umbilicated, quinquecapsular, and full of small Seeds.

Boerhaave mentions two Species of *Pyrola*; which are,

1. Pyrola; rotundifolia; major. *C. B. P.* 191. *Tourn. Inst.* 256. *Boerh. Ind. A.* 278. *Pyrola*. Offic. J. B. 3. 94. Raii Hist. 2. 1223. Synop. 3. 363. Ger. 330. Emac. 408. *Pyrola nostras vulgaris*. Park. Theat. 508. WINTER GREEN.

The Leaves of Winter Green do somewhat resemble those of the Pear-tree, but are hardly so large; they grow on Footstalks, two or three Inches long, smooth, and of a firm Texture. The Stalks grow to be about a Foot high, bearing on their Tops several small five-leaved white Flowers, having a few Stamina in the Middle, growing one above another in a loose Spike, which are succeeded by cornered Seed-vessels full of very small Seed; the Root is small, slender, and fibrous. It grows in Woods, in divers Parts of *England*, both north and west, and flowers in *July*.

The Leaves, which are the only Part used, and that not often, are cooling and drying, and a good Vulnerary, both for inward and outward Wounds and Hæmorrhages, Ulcers in the Kidneys or Bladder, as, also, against making bloody Water, and the Excess of the Catamenia. *Miller's Bot. Off.*

2. Pyrola; rotundifolia; minor. *C. B. P.* 191. *Boerh. Ind. alt. Plant.*

Besides the foregoing Species of *Pyrola*, *Dale* mentions the following;

Pyrola altera. Offic. *Pyrola folio mucronato serrato*. C. B. P. 181. Raii Synop. 3. 363. Tourn. Inst. 256. *Pyrola folio serrato*. J. B. 3. 536. Raii Hist. 2. 1233. *Pyrola tenerior*. Park. Theat. 509. *Pyrola secunda tenerior Clusii*. Ger. Emac. 408. SMALLER WINTER GREEN.

It is found in Woods, but it is somewhat scarce, and flowers in *June*. The Herb, which is of Use in Medicine, agrees in Virtues with the *Pyrola*; *rotundifolia*; *major*. *Dale*.

PYRONOMIA. The Art of regulating Fire in chymical Operations.

PYROPHAGUS. A Person who has the Art of swallowing Fire; a Trick very frequent among Mountebanks.

PYROPUS. A Ruby, or Carbuncle. It has some other Significations, which are foreign to Medicine.

PYROS, πυρός. Wheat.

PYROSIS, πύρωσις, from πῦρ, Fire. An intense Redness and Heat in the Face, such as happens to Persons travelling in excessive hot Weather.

PYROTECHNIA, from πῦρ, Fire, and τέχνη, Art. Chymistry.

PYROTICOS, πυρωτικός. Caustic.

PYRRHOCORAX, from πυῤῥός, red, and κόραξ, a Crow. The red Crow, a Bird of no Use in Medicine.

PYRRHOS, πυῤῥός, is, by all the Translators, render'd *rufus*, redish; yet it signifies, also, *fulvus*, fallow, or a yellow Colour inclining to white, the same which we call flaxen; and is so commonly observed in the Hair of Boys and Youth, before the Years of Manhood. Thus *Galen*, *Lib.* 2. *de Temp.* and *Aristot. Quæst. Nat.* write, that the *Germans*, *Illyrians*, *Dalmatians*, *Scythians*, and those who inhabit cold and humid Countries, have πυῤῥὰς τρίχας, "yellowish or flaxen "Hair." The Difference between the τὸ πυῤῥὸν and the τὸ ξανθὸν, the *fulvum* and the *flavum*, or the pale and bright yellow, which seem to come nearest their Signification in *English*, is thus stated by *Galen*, *Lib.* 1. *de Crisi.* ἐγγυτάτω τὴν φύσιν ἐ, ιν τὸ πυῤῥὸν χρῶμα τῷ ξανθῷ, &c. "The *Pyrrhos* (*fulvus*) comes "very near the *Xanthos* (*flavus*); but they differ, in that the "former is more inclining to Whiteness, and the other to Splen- "dor; for bitter Bile sometimes appears *fulva* (πυῤῥὰ) of a "palish Yellow; sometimes *flava* (ξανθὴ) of a bright Yellow; "and frequently of a pale Colour (ὠχρὰ): For while it is "whiter, and more turbid than ordinary, it is of the pale Yel- "low; but when it begins to brighten up, and be purified, it "becomes of a splendid or bright Yellow; for whatever is of an "igneous Quality, and sparkles in Bile, renders it of a brighter "Yellow (ξανθότερον); and as much as the πυῤῥὸν (*fulvum*) "is whiter than the ξανθὸν (*flavum*), so much is the ὠχρὸν "(the *pallidum*, or pale) whiter than the πυῤῥόν. And, again, "as much as the ξανθὸν is less white than the πυῤῥὸν, so much "is the ἐρυθρὸν (*erythron*, red) less white than the ξανθὸν." From hence we may infer, that the Colours signified by the Words *rufus* and *fulvus*, both comprehended under the *Greek* πυῤῥὸς, are a Mean between the *flavus*, ξανθὸς, and the *pallidus*, or pale, ὠχρὸς; as this last is a Mean between the ξανθὸς, *flavus*, and the λευκὸς, *albus*, the white. The Epithet of *fulvus* is variously applied by the *Latins*; as to Stars, Gold, (by *Virgil* called, also, *flavum*, as he uses, also, *fulvum* for *flavum*) a Lion, Sand; and by *Hippocrates*, as signified by πυῤῥὸς, to the Sand discharged in nephritic Affections*. Πυῤῥὸν οὖρον, *ex* πεὶ γυναικ. calls the Yolk of an Egg ὠὰ τὸ πυῤῥὸν.

PYRRHULA. See RUBICILLA.

PYRUS.

The Characters are;

It is taller, and more erect, than the Apple-tree; the End of the Pedicle runs into an oblong Ovary, whose upper Margin becomes a Crown, which is expanded like a Calyx, after the manner of a Star, into five Segments, and is hollow in the Centre; the Flower growing on the Ovary has five Petals, expanded like a Rose, and arising from the Interstices of the Segments of the Crown; it is, also, furnished with twenty, or more, Stamina, which, too, arise from the Edge of the Calyx; from the Centre of the upper Part of the Ovary are produced five Tubes, which terminate in a scabrous, orbicular Apex; and the Ovary itself becomes an oblong, turbinated, quinquecapsular, fleshy, and umbilicated Fruit.

Boerhaave mentions but one Sort of *Pyrus*; which is,

Pyrus; sativa. *C. B. P.* 439. *Boerh. Ind. A.* 2. 247. *Tourn. Inst.* 628. *Park. Theat.* 1500. *Raii Synop.* 3. 452. *Pyrus*. Offic. Raii Hist. 2. 1450. Ger. 1267. Emac. 1455. J. B. 1. 35. THE PEAR TREE.

This is a Tree very well known to every Body, and of which there are several Kinds and Varieties cultivated in Gardens.

* *Galen*, on this Place, supposes, that by πυῤῥὸς, here *Hippocrates* is to be understood of all the Colours between pale and yellow, which have any Mixture of White or Red; such as the ὠχρόλευκον, ἐρυθρόλευκον, or ξανθόλευκον; since the Sands, or other Substances which subside in Urine, are varied, according to the Colour or Quality of the Blood.

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The Fruit is generally cooling and reſtringent; but as I know not of any medicinal Uſe they are put to, I ſhall forbear ſaying any more about them. *Miller's Bot. Off.*

PYTAHAIA. The Name of an *Indian* Tree, which grows in rocky Soils, bearing a red Fruit as large as an Orange, in Taſte like a Pomegranate.

PYTHON. A Serpent celebrated for Sharpneſs of Sight, large Eyes, and a triple Row of Teeth.

PYULCUM, πυελκὸν, from πύον, Pus, and ἕλκω, to draw out. An Inſtrument for extracting Pus out of deep Sinuſes; perhaps a *Canula*.

PYXACANTHA. A Name for the LYCIUM.

PYXINUM COLLYRIUM. The Name of a *Collyrium* deſcribed by *Celſus*, *Lib.* 6. *Cap.* 6. *Sect.* 25.

PYXIS. The Name of an *Acopon*, deſcribed by *Paulus Ægineta*, *Lib.* 7. *Cap.* 19.

PYXIS EMPLASTRUM. A Plaiſter deſcribed by *Aetius*, *Tetrabib.* 4. *Serm.* 3. *Cap.* 14.

PYXIS, in Anatomy, is the ACETABULUM. *Os Pyxidis* is the *Os Occipitis*. It is, alſo, a Surgeon's Box, divided into Compartments, for containing various Sorts of Salves, or Unguents.

Q.

Q. For the Signification of this Letter in the Chymical Alphabet, ſee *Alphabetum Chymicum*. Q. or q. in Preſcriptions, imports Quantity.

QUADRAGESIMUS DIES. The fortieth Day. The Antients fixed upon this Day as the laſt to which acute Diſtempers could extend; calling all thoſe chronical, which continued longer. I have, however, ſeen an acute Diſorder continue ſixty Days.

QUADRANS. The fourth Part of a Pound, that is, three Ounces.

QUADRANTAL. The ſame as AMPHORA.

QUADRATUS imports plump. But *Quadratus* is the Name of ſeveral Muſcles. Thus there is the *Quadratus Genæ*, ſee CAPUT. And the *Pronator Quadratus* of the *Ulna*, and *Radius*. See PRONATOR.

QUADRATUS FEMORIS. This is a ſmall flat fleſhy Muſcle, of the Figure of an oblong Square, from whence it has its Name. It is ſituated tranſverſly between the Tuberoſity of the Iſchium and the great Trochanter.

It is fixed by one Extremity along that obtuſe Line which runs from under the Acetabulum toward the lower Part of the Tuberoſity of the Iſchium; from thence it runs directly toward the great Trochanter, and is inſerted in almoſt all the lower Half of the oblong Eminence in that Apophyſis, but principally in the ſmall Riſing, or Tuberoſity, in the middle of that Eminence.

This Muſcle, the *Pyriformis*, and *Gemelli*, called, alſo, by the common Name of *Quadrigemini*, are Congeneres in their Uſes; and theſe have been confined by Anatomiſts to the Rotation of the Os Femoris about its Axis from before outwards: But this Uſe they cannot have, except when we ſtand, or lie at full Length: For, in ſitting, or when the Thigh is bent in any other Poſture, they carry the Thigh outward, or ſeparate the two Thighs from each other, when bent.

All the four co-operate in theſe two Uſes, of Rotation and Abduction; but they co-operate equally or unequally, according to the different Degrees of the Extenſion or Flexion of the Thigh. For Inſtance, when we ſtand ſtrait up, they all perform the Rotation equally; but if the Thigh be then carried a little forward, the *Pyriformis* is more in Action than the *Quadratus*; and if the Thigh be carried backwards, the *Quadratus* acts moſt.

Theſe Muſcles, by means of their Adheſion to the orbicular Ligament of the Joint of the Hip, may, likewiſe, ſerve to hinder that Ligament from being ſqueezed between the Bones, in the different Motions of the Thigh.

QUADRATUS LUMBORUM, SIVE LUMBARIS EXTERNUS.

This is a ſmall, oblong, flat Muſcle, irregularly ſquared, narrower at its upper than at its lower Part, lying along the Sides of the Vertebræ Lumborum, between the laſt falſe Rib and the Os Ilium.

It is fixed below to the external Labium of almoſt all the poſterior Half of the *Criſta Oſſis Ilium*, to the *Ligamentum Sacro-Iliacum*, and a little to the Os Sacrum, by a fleſhy Plane, the Fibres whereof run obliquely backward.

From thence it runs up between the Sacro-Lumbaris and Pſoas, by both which it is partly hid, and is inſerted in the Extremities of all the tranſverſe Apophyſes of the Loins by oblique tendinous Digitations. It is, likewiſe, fixed by a broad Inſertion, in the twelfth Rib, on the Inſide of the Ligament that lies between it and the *Longiſſimus Dorſi*, by which that Rib is connected to the firſt Vertebra of the Loins.

I have obſerved, likewiſe, a ſmall *Lumbaris Externus* adhering very cloſely to the back Side of the *Quadratus*, and fixed by tendinous Digitations to the Extremities of the ſecond, third, and fourth tranſverſe Apophyſes of the Loins; from thence its fleſhy Fibres run up obliquely over the *Quadratus*, and then mix with it at its Inſertion in the laſt falſe Rib.

The *Quadratus Lumborum*, and *Pſoas Parvus*, are of the ſame Uſe to the Vertebræ of the Loins, as the *Scaleni* to thoſe of the Neck; when both *Quadrati* act, they keep the Lumbar Pillar ſtrait, that is, ſo as not to incline to either Side; and then they may aſſiſt the *Recti* of the Abdomen in the Inflections forward, and the ſuperior Portions of the *Obliqui* in lateral Inflections.

They may, likewiſe, ſerve to ſupport the Haunches alternately in walking; and, in ſtanding on one Foot, the *Quadratus* of the oppoſite Side may ſupport the Haunch of that Side, in which Action they co-operate with the *Tranſverſi-ſpinales*, and poſterior Parts of the *Obliqui Abdominis*. *Winſlow's Anatomy.*

QUADRIFOLIUM. A Name for the *Trifolium*; *quadrifolium*; *hortenſe album*.

QUADRIGEMINI MUSCULI. Four Muſcles, which aſſiſt in moving the Thigh-bone, are thus call'd; the *Pyriformis*, *Gemellus ſuperior*, *Gemellus Inferior*, and *Quadratus*.

QUADRUPES. A Quadruped. That is, an Animal furniſhed with four Feet.

QUAUHYYAC OCUILENSIUM. *Nieremberg.* The Name of a very large *Indian* Tree, bearing Leaves reſembling thoſe of the Citron. The Bark is aſtringent, heating, drying, and of a ſtrong Smell: It reſtrains a Diarrhœa, and excites a Sweat. The Juice, ſnuffed up the Noſe, cauſes Sneezing, purges the Head, and thus removes Fevers, and Pains in the Head; for which Reaſons, it is preſerved in Families, as a popular Remedy. *Raii Hiſt. Plant.*

QUAMOCLIT.

The Characters are;

The Root is annual; the Stalk voluble, and ſcandent; the Flower monopetalous, funnel-ſhaped, and multifid; and the Fruit like that of the *Convolvulus*.

Boerhaave mentions two Sorts of *Quamoclit*; which are,

1. Quamoclit; foliis tenuiter inciſis & pennatis. *T.* 116. *Convolvulus, pennatus, exoticus, rarior, Quamoclit.* Col. 1. Obſerv. 72. *Jaſminum, Millefolii folio.* C. B. P. 398.

2. Quamoclit; Americana; folio Hederæ; flore coccineo. *Commel. Rar.* 21. *Boerh. Ind. alt. Plant.*

The *Hiſt. Plantarum*, aſcribed to *Boerhaave*, informs us, that it is cathartic, like the *Convolvulus*.

QUANDROS. The Name of a white Gem, ſaid to be found in the Brain of a Vultur. It is ſaid to increaſe Milk in the Breaſts; but the Virtues, and the Thing itſelf, ſeem to be equally fabulous.

QUANLI. Lead. *Rulandas.*

QUAQUILA. The COTURNIX.

QUARTANA FEBRIS. A Quartan, or Ague.

Among the Intermittent Fevers, a Tertian is, both with reſpect to Violence, and Obſtinacy, ſurpaſſed by that which returns every fourth Day, with two entire Days of Intermiſſion, and is called a Quartan Fever.

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This Disorder generally, in the Afternoon, about Four or Five o' Clock, and sometimes sooner, or later, seizes the Patient with a considerable Languor of the Body, a Pandiculation, and a heavy Pain of the Head, Back, Loins, and Legs; then the Hands and Feet become cold, the whole Body pale, the Countenance and Nails livid; after which succeeds the Horror and Rigor familiar to this Species of Fever: The Tongue and Lips tremble, the Breathing is difficult, the Præcordia are uneasy, the Body is restless, and the Pulse contracted, hard, and sometimes unequal: All these Symptoms last generally for two or three Hours, during which time, most Patients are costive; whereas, in some, there is a Stimulus to discharge the Fæces and Urine; and, in others, especially old Persons, there is an Effort to vomit, a real Vomiting, and a Discharge of the Excrements. In many Patients, also, especially those far advanced in Years, the Head is surprisingly disturbed, and such an Alienation of Mind brought on, that the Person speaks many incoherent Things; then succeeds, slowly, a Heat, which though not very intense, is, yet, troublesome, on account of the Dryness of the Skin, with which it is accompanied: Then the Rigor is removed, and the Pulse becomes equal, quicker, and larger: There remains, however, an obtuse Pain of the Head, accompanied with a Vertigo; and, at last, the Skin becomes moderately moist, till, after four or six Hours, the Heat, and other Symptoms, disappear, when the Paroxysm of the Fever is removed. Though the Patient, on the two Days of Intermission, generally gets out of Bed; yet he is afflicted with a certain Sense of Pain in his Limbs and Feet, the Bones of which seem, as it were, to be bruised, or oppressed, with a great Weight. In most Patients there is, also, a Sense of Weight in the Head, and a certain preternatural Uneasiness of Mind. The Urine, also, which, during the Paroxysm, was thin and aqueous, is now thick, and deposites a Sediment.

The Symptoms which appear under the Paroxysm, sufficiently evince, that, in a Quartan Fever, the whole nervous System is affected, and spasmodically constricted; so that the proximate and immediate Cause of this Disorder must, undoubtedly, consist in an universal and violent spasmodic Stricture of the nervous Parts; which, proceeding, principally, from the spinal Marrow, preternaturally affects not only the Coats of the Vessels, but, also, the whole Nerves and Fibres; by which means, the Motion of the Solids and Fluids is greatly disturbed.

The material Cause which throws the nervous Parts into such exorbitant Commotions, was, by the Antients, thought to be an extravasated, putrescent, melancholic Humour: But as in all Fevers, so, also, in a Quartan, there is an active Matter, possessed of a caustic Acrimony, stimulating the internal highly-sensible Parts to spasmodic Contractions: Yet, because this Matter is mixed with the pancreatic Juice, which has somewhat of an acido-viscid Quality, it affords a considerable Respite, is not so soon collected, nor so quickly conveyed from the Primæ Viæ to the Membranes of the spinal Marrow: For when it is in a sufficient Quantity collected in the Primæ Viæ, and successively enters the Mass of Blood, being, at certain stated Periods, conveyed to the Membranes of the Spine of the Back, it excites those febrile Commotions specified under the Article TERTIANA FEBRIS.

If we investigate the Origin of this febrile Matter, we shall find, that it proceeds from a slow Circulation of the Blood through the depuratory and secretory Viscera of the Abdomen, especially the Liver, Spleen, and Pancreas, and a succeeding Infarction and Obstruction of these; for, by this means, the fermentative, gastric, lymphatic, and salival Humours lose their temperate, subtil, and spirituous Quality, and assume a fixed and acid Nature; so that they become less fit for the intimate Dissolution of the Aliments, and the Extraction of the Chyle, but produce a large Quantity of acid and viscid Crudities; and these Crudities, in Process of time, contracting a worse Quality, and other external Causes, inducing Acrimony, concurring, a Quartan Fever is at last produced.

That the languid Circulation of the Blood through the abdominal Vessels, is the Cause of this Disorder, is sufficiently obvious, from this, that Quartan Fevers are most incident to Adults, and those advanced in Years; to Persons of melancholic Habits, and those who have contracted not only a Redundance, but, also, a Spissitude, and Impurity of the Juices, in consequence of a sedentary Life, an Intermission of usual Venesection, coarse unsalutary Food, an excessive Use of acid and spirituous Liquors, a Suppression of usual critical Evacuations of Blood, or immoderate Passions. That the peccant Matter is of a caustic Quality, is certain, from this, that Quartans generally appear in the Autumn, after the acrid Sordes are exhaled from the Body by the Heat of the Summer; that they are sometimes terminated by the Itch, or Purples; that they return when these are repelled; that they are removed upon the Eruption of the Small Pox; that they are generated by Tertians; that they terminate in Tertians; and that, like Tertians, they are very epidemic in marshy Places, where the Air is impregnated with a large Quantity of acrid Recrements.

Quartan Fevers are of different Sorts, since some are of the simple, and others of the double Kind. The simple is that already described; but a Quartan is said to be double, when, within four Days, two succeeding Paroxysms happen, in such a manner, that each preserves its proper Type, and peculiar Time of Accession, alternately corresponding to the preceding Paroxysm, and the third Day, only, being totally free from the Fever. This frequently happens when a simple Quartan is preposterously cured, or when any Error in Regimen is committed.

Quartans are, also, either legitimate, or spurious. The former observes its Period of Return, which is the Afternoon, more exactly than any other Species of Fevers; but a spurious Quartan has not a certain Period for its Return, which, however, is generally in the Forenoon. The Heat, also, is greater, and afflicts the Patient more, than the cold Fit.

Sometimes every fourth Day the Paroxysm returns, after previous Pandiculations and Horripilation, but does not very exactly observe its Period; nor, when the Paroxysm abates, does it totally intermit, but is only milder on the intermediate Days, than on that in which the Paroxysm happens: The Heat is, also, preternaturally intense, the Pulse increased, the Appetite languid, the Strength low, the Mouth dry, the Head giddy, the Sleep restless, the Urine red, thick, and with a high-coloured Sediment; for which Reason, it is, by Physicians, called a continual Quartan.

Quartan Fevers are generally epidemical, especially after an excessively hot and dry Summer, in consequence of which, a large Quantity of acrid and bilious Recrements are generated in the Body. An Instance of this is mentioned by *Sennertus*, in *Lib.* 2. *Cap.* 20. as happening in the Year 1606. *Bartholine*, *in Centr. Hist. Anat.* 95. mentions the same as happening in the Year 1652; and I can, from Experience, affirm, that the like happened in the Years 1684, 1719, 1726, and 1728. And because, in consequence of the excessive Heat, large Quantities of cold acescent Liquors are often drank, and the cold Night Air acts upon the Body, the Perspiration of the acrid Sordes is obstructed, and the Blood and Humours inspissated.

Quartan Fevers are epidemical in some Countries, and Parts of the World; such as *Westphalia*, *Pomerania*, and other Northerly Climates, whose Inhabitants use heavy, coarse, and crude Aliments; for, almost every Autumn, long-protracted Quartans rage very much in these Parts. The same thing happens in marshy Countries, and Places whose Atmosphere is impregnated with noxious Exhalations; in which Tertians are very frequent in the Spring, and Quartans in the Autumn; and the Patients are often subject to Relapses, in both Cases.

Quartans are of different Kinds, according to the Diversity of the Patients they seize; for when they happen to Persons who, in Consequence of a sedentary Life, or the Use of coarse and heavy Aliments, contain a large Quantity of thick Blood, to those afflicted with the hypochondriacal Disorder, or who have long indulged themselves in Grief, they are generally obstinate, and dangerous: For which Reason, great Care, with respect to Regimen, is requisite in the Patient, and great Judgment in the Physician, with respect to Medicines. When Quartans happen in cacochymical Constitutions, or in Persons where the Matter of the Purples lies latent in the Blood, they are accompanied with more terrible Symptoms, and the Strength is more impaired; the Patient is, also, afflicted with Watching, Alienation of Mind, an Anxiety of the Præcordia, and, at last, the Purples appear; and when these are by any Cause, however slight, repelled, the febrile Paroxysms are increased, and afflict the Patient more violently.

Quartans, in Patients whose Strength is exhausted by old Age, Indisposition, a bad Regimen, or exorbitant Passions, easily degenerate into continual Fevers, which are known from a Languor of the Strength after the Paroxysm, the Frequency of the Pulse, the slow Heat, and the Loss of Appetite; which Symptoms place the Patient in considerable Danger. When Quartans, after hot Summers, seize young and vigorous Persons, the Paroxysms last long, the burning Heat terminates in a profuse Sweat, and the Thirst, and Languor of the Stomach, are greater than in other Patients. As Infants and Children with Reluctance take Medicines, do not observe the Rules of a proper Regimen, catch Cold by throwing the Bed-cloaths off them in the Night, and have not only a lax Habit of Body, fit for retarding Perspiration, but, also, Stomachs fit for collecting Crudities, so they are long afflicted with Quartans, more frequently subject to Relapses than others, or afterwards exposed to the Attacks of other Diseases.

Quartan Fevers are, however, generally pretty safe, and rarely prove mortal, except in old Persons, those whose Strength is exhausted, those of tender Constitutions, or subject to epileptic Fits, or when the Fever has not only been excited, but augmented

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augmented, by the Paſſions of the Mind; or when ſuch a Fault is committed, either by the Patient or Phyſician, that the Quartan paſſes into a Quotidian, or ſome chronical and fatal Diſtan paſſes into a Quotidian, or ſome chronical and fatal Diſtorder.

The Safeneſs, however, of Quartan Fevers, ſcarcely attones for their Violence and Obſtinacy; for they are generally long protracted, and often prove the Reproach of the Phyſician, becauſe they elude the Force of his beſt-choſen Remedies. This principally happens in ſuch Quartans as ariſe in the Autumn, and continue throughout the Winter; for theſe are rarely removed till the Vernal Solſtice; at which Time, the Pores being opened, and the Juices attenuated, by the Serenity of the Air, they generally diſappear ſpontaneouſly. Quartan Fevers are, alſo, highly obſtinate, when the Diſorder is deeply rooted in the Viſcera, eſpecially the Liver, Spleen, and Pancreas; or when the whole Maſs of Humours is contaminated, and impure, or the nervous Syſtem exceſſively weak, and diſpoſed not only to conceive, but, alſo, to cheriſh ſuch anomalous Motions; and eſpecially when the Patient, by his Voracity, continually collects and increaſes the Matter of the Fever.

When, on the contrary, a Quartan happens in the Spring, or Summer, it is more eaſily cured, ſince the Temperature and Serenity of the Air greatly contribute to its Removal: Quartans, alſo, ariſing from irregular Living, or Crudities collected in the *Primæ Viæ*, whilſt, at the ſame Time, the Viſcera are ſound, as, alſo, Quartans ariſing from a Suppreſſion of Tranſpiration, are eaſily cured, and often happily removed, by one Vomit, or one Doſe of ſome proper diaphoretic Medicine, exhibited before the Paroxyſm: Thoſe Quartans are, alſo, eaſily cured, unleſs through ſome Fault of the Patient, or Phyſician, which ſeize young and vigorous Perſons; eſpecially if they rather proceed from Bile, than from an acid and tenacious Humour, which principally happens in ſuch epidemical Quartans as rage in the Summer.

Nor is an anomalous Quartan, which does not retain its Type, returns at uncertain Periods, or paſſes from the ſimple to the double Kind, ſo dangerous as it is commonly thought; for theſe Circumſtances are Signs that the peccant Juices are not very tough, and deeply impacted in the Viſcera; but that they are ſtill diſpoſed to Motion, and that Nature makes ſome Efforts for eliminating the Matter which produces the Diſeaſe: Beſides, the due Return of the Paroxyſms contributes greatly to diſſolve the viſcid, and diſcuſs the ſtagnant Humours. So that the more frequently theſe Paroxyſms recur, the ſooner the Cauſe of the Fever is removed, and, by the Aſſiſtance of Nature, the Cure perfected by a few proper Medicines.

Though a Quartan has generally no critical Excretion, yet it is ſometimes happily terminated, by an Eruption of Puſtules, Spots, ſmall Ulcers, and the Itch, all over the Body; as, alſo, by the hæmorrhoidal Diſcharge. In Children I have, alſo, ſeen Quartans terminate ſucceſsfully in the Small Pox; and I have found, that pregnant Women, labouring under Quartans, have not got rid of them till after the Delivery; at which Time, the Infants have been affected with the ſame Diſorder.

Quartan Fevers are ſometimes highly beneficial, not only in preventing, but, alſo, in removing other Diſorders, thoſe eſpecially of a chronical Kind: For the increaſed Motion of the Solids and Fluids, under the Paroxyſm, attenuates the tough Juices, forces them from their Seats, and greatly contributes to remove thoſe old Obſtructions, which are deeply ſeated in the minute Veſſels, Glands, and nervous Parts. Hence the moſt skilful of the antient Phyſicians, ſuch as *Hippocrates*, *Aſclepiades*, *Galen*, and *Celſus*, affirm, that they looked upon Quartan Fevers as Remedies for ſome other Diſorders; and they are certainly of ſingular Efficacy in removing hypochondriac Symptoms. *Hippocrates*, *in Lib.* 6. *Epidem.* highly extols Quartans, as beneficial in Epilepſies and convulſive Motions. Practical Authors have furniſhed us with Inſtances, in which convulſive Aſthmas, the Stone, and Gout, have been happily removed by the Courſe of a Quartan Fever, duly and skilfully treated. *Aulus Gellius*, in his *Noct. Attic. Lib.* 17. *Cap.* 12. informs us, from *Plato*, that Quartan Fevers not only free the Patient from Diſorders of the Viſcera, but, after their Removal, leave the Body ſtronger, ſo that they are not, for the future, ſo ſubject to other Diſorders, or Relapſes into the ſame. I myſelf have, alſo, known many live to a great Age, after Quartan Fevers. Hence we cannot enough admire the Bounty of indulgent Heaven, which has given an incomparable medicinal Virtue to ſome Diſeaſes ſeemingly the moſt deſtructive of Health.

But when Quartans are protracted too long, the Juices conceive a Dyſcraſy; and, if the Humours are thin and bilious, the Purples appear, or the ſpirituous, roſcid, and nutritive Parts, being diſſipated, the remaining Fluids become tough, are corrupted, and bring on chronical Diſorders. Quartans, ill treated, degenerate into violent and fatal Diſorders; ſuch as a Dropſy, an Anaſarca, an Aſcites, a ſcorbutic Cachexy, œdematous Tumors, ſlow and hectic Fevers of the continual Kind, a dry Aſthma, a Jaundice, a Chin-cough in old Perſons, comatous Diſorders and Hemiplegies; in young Perſons, the hypochondriac Diſorder; and, in Infants, violent Convulſions, which miſerably diſtort the Spine of the Back, together with other Parts, both in the anterior and poſterior Regions of the Body: And, in all theſe, after Death there is found ſome conſpicuous Fault of the Viſcera, eſpecially of the Liver, Spleen, and Pancreas; together with an Infarction, Obſtruction, and Corruption of the meſeraic Glands.

They who are taken off by a Quartan Fever, die under the Rigor of the cold Fit, and an uncommon Perturbation of Mind. On this Occaſion, as I have obſerved in two Adults, the Violence of the Spaſms is ſo increaſed, that no Degree of Heat ſucceeds, whilſt Symptoms, plainly reſembling thoſe produced by Poiſon, appear, and, at laſt, deſtroy the Patient: And, in Infants, the ſpaſmodic Strictures manifeſtly degenerate into fatal convulſive Motions.

After a Recovery from a Quartan Fever, the Patient ought, for ſome Time, carefully to obſerve a due and proper Regimen; for this Species of Fever eaſily recurs, and, upon the ſlighteſt Occaſion, reſumes its former Tenor. Thoſe who, having ſurmounted a Quartan, indulge themſelves in Gluttony, and overload their extenuated Bodies with a large Quantity, eſpecially of unſalutary Aliments, eaſily relapſe, in Conſequence of a freſh Collection of Crudities in the *Primæ Viæ*. The ſame Misfortune is incident to thoſe who have their Perſpiration obſtructed, expoſe their Bodies to the cold and moiſt Air, or drink large Quantities of cold Liquors when they are exceſſively hot: Thoſe, alſo, who have been long under the Influence of violent Paſſions, eſpecially exceſſive Grief, eaſily relapſe into Quartans. It, alſo, happens, though more rarely, that Quartans, which had ceaſed upon the Expulſion of the peccant Matter to the Surface of the Body, either under the Appearance of the Itch, Puſtules, Ulcers, or Purples, forthwith return, when theſe are repel'd.

The General Method of Cure.

In the Cure of a Quartan, the following Intentions are to be purſued.

1. The viſcid, acid, and bilious Crudities, gradually conveyed from the *Primæ Viæ* with the Lymph and Chyle to the Blood, and exciting febrile Commotions in the nervous Syſtem, are to be corrected, and evacuated, by proper Emunctories.

2. The Circulation of the Blood through the abdominal Viſcera, eſpecially thoſe to which the *Vena Portæ* is diſtributed, is to be render'd free and uninterrupted, whilſt the Congeſtion, Infarction, and Obſtruction, are to be removed; or, at leaſt, their Increaſe prevented.

3. The violent ſpaſmodic Conſtriction of the nervous Syſtem, which is the Cauſe of the terrible Symptoms, is to be allayed, and mitigated. And,

4. The impaired Strength of the Viſcera, Stomach, and nervous Parts, is to be reſtored; by which means, not only future Paroxyſms, but, alſo, a Relapſe, are prevented.

The firſt of theſe Intentions is anſwered by all thoſe Remedies which obtund Acids, incide tough Juices, correct ſuch as are acrid, and cleanſe the *Primæ Viæ*. Of this Claſs, the moſt conſiderable are, alcaline Medicines, ſuch as the Salts of Plants prepared by Incineration, eſpecially the Salts of Wormwood, and Carduus Benedictus: Neutral Salts are, alſo, excellent, for anſwering this Intention, eſpecially depurated Sal Ammoniac, the *Terra foliata Tartari*, and the digeſtive Salt of *Sylvius*; to which, in order the more effectually to correct the bilious Acrimony, we are to add gentle Abſorbents, ſuch as Crabs-eyes, Egg-ſhells, and Hartſhorn, prepared without Fire. But if the Intention is to evacuate theſe Crudities, the Salts obtained from medicinal Springs, ſuch as thoſe of *Egra*, *Epſom*, and *Sedlitz*, exhibited in a large Doſe, or the *Sedlitz* Waters by themſelves, eliminate the thickeſt of them by Stool, whilſt tartareous Medicines efficaciouſly carry off the more ſubtile ſalino-ſulphureous *Sordes* by Urine. In Quartan Fevers, the *Magneſia Alba* is, alſo, poſſeſſed of a purgative Quality, ſince, by abſorbing the Acid of the *Primæ Viæ*, it is converted into a bitter Salt, reſembling that of *Epſom*.

The ſecond Intention is excellently anſwered by bitter Subſtances, which, by their fixed balſamic Sulphur, reſtore the Balſam of the Bile, obtund acid and ſaline Humours, and procure a certain mild ſpirituous Quality to the Juices: Such are the bitter Extracts of Fumitory, Wormwood, Carduus Benedictus, red Gentian, Marſh Trefoil, and the leſſer Centaury; the Eſſence or Extract of Rhubarb; and the Pilulæ Balſamicæ, prepared according to the Directions of *Becher*, of well-depurated Aloes, bitter Extracts, reſinous, balſamic, and temperate Gums; which, beſides their laxative, have, alſo, an attenuating Quality, eſpecially if they are taken alternately with the above-mentioned Salts. This Intention is, alſo, anſwered by a due Uſe of hot and cold medicinal Waters, in Conjunction with

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a proper Regimen: But if an inveterate Obſtruction of the Viſcera, eſpecially of the Pancreas, which, in obſtinate Quartans, is highly pernicious, cannot be removed by mild Medicines, more penetrating and active Preparations of the mineral Kind are to be uſed, ſuch as *Mercurius Dulcis*, the *Diaphoreticus Solaris* prepared in the manner directed under MERCURIUS, and the *Antiquartanum* of *Riverius*, which is prepared of Mercury, Antimony, and Gold; by frequently abſtracting from them Aqua Regia, and then kindling Spirits of Wine upon them; and, among antimonial Preparations, medicinal Regulus of Antimony, the *Panaceas of Glauber* and *Conerdingius*; as, alſo, my Sulphur of Antimony, corrected and prepared without a Precipitation with an Acid.

The third Intention, which is to allay the ſpaſmodic Strictures of the nervous Syſtem, is anſwered, firſt, by antiſpaſmodic nervous Liniments, conſiſting of human Fat, the Oils of Spike, Lavender, Rue, and Sage, together with *Peruvian* Balſam, applied, with briſk Frictions, to the ſpinal Marrow. Secondly, By Clyſters prepared of nervous, carminative, and antiſpaſmodic Herbs, with the Addition of a ſufficient Quantity of demulcent Oils. Thirdly, By Baths of ſweet Water, which were, by the Antients, principally uſed, before the Acceſſion of the Paroxyſm. And, fourthly, By Epithems and Liniments prepared of ſpirituous and aromatic Subſtances, and applied to the epigaſtric Region under the Horror and Rigor of the Fever.

The fourth and laſt Intention of Cure is excellently anſwered, by all bitter Subſtances, which are, at the ſame time, poſſeſſed of a certain balſamic and aſtringent Quality: The moſt conſiderable of this Kind are, *Peruvian* Bark, the Barks of Caſcarilla, Capers, Tamarisks, and Cinnamon; the Shavings of red Sanders, and the Eſſences extracted from bitter Plants; which, when quickened with ſome proper chalybeate Liquor, are highly efficacious. But my antiſebrile Electuary, directed in the Article *Tertiana Febris*, is, of all others, the moſt effectual.

In Quartans, great Relief is, alſo, afforded, by applying to the Wriſts ſome Plaiſters; ſuch as that to which *Strobelbergerus* gives the Name of *Emplaſtrum famigeratiſſimum*: Theſe Plaiſters may be prepared of ſuch Subſtances as, by their aromatic and balſamic, as well as irritating Principle, add a certain Motion and Stimulus to the Fibres, ſo that they diſlodge the Matter deeply impacted in the nervous Parts, and, on the Day of intermiſſion, render the Circulation of the Blood quicker.

Beſides theſe Remedies againſt Quartans, I ſhall ſubjoin two others, which I formerly found of ſingular Efficacy in *Weſtphalia*: The one is a vinous Infuſion, which anſwers all the Intentions of Cure, and of which a large Draught ought to be drank every Morning. It is prepared thus:

Take of the fibrous Roots of black Hellebore, of Polypody of the Oak, and of Sena-leaves, without the Stalks, each one Ounce; of Wormwood, the leſſer Centaury, Carduus Benedictus, and Marſh Treſoil, each half a Handful; of the Shavings of Snake-wood, of *Peruvian* Bark, and recent Orange-peel, each three Drams; of the Filings of Steel, and the *Tartarus Tartarizatus*, each half an Ounce: Cut down and bruiſe all theſe together, ſprinkle them with two Drams of the urinous Spirit of Sal Ammoniac: Mix and infuſe in two Quarts of Wine.

The other is the following Powder:

Take of *Peruvian* Bark, three Drams; of medicinal Regulus of Antimony, two Drams; of Mercurius Dulcis, (which is not to be triturated with the Powder, on account of the Salts, but only mixed with the Point of a Knife) of the fineſt Crocus of *Mars*, and Arcanum Duplicatum, each one Dram; and of the Oil of Mint, four Drops: Make up into a Powder, of which half a Dram, or a Dram, may be reduced to the Form of an Electuary, with Rob of Elder, or Julap of Roſes, and exhibited every Morning and Evening.

And, certainly, this Powder is of ſingular Efficacy in a Quartan deeply rooted in the Viſcera; but it is only fit for robuſt Habits, and ought to be accompanied with a due Regimen: For though it ſometimes excites a gentle Salivation, which proves uneaſy, yet it ſucceeds ſo well, as to remove obſtinate Quartans.

PRACTICAL CAUTIONS, AND OBSERVATIONS.

Quartan Fevers are ſo obſtinate, that they call for Patience in thoſe who labour under them, and due Expectation in him who undertakes the Cure, eſpecially when they happen in melancholic Conſtitutions, old Perſons, thoſe ſubject to hypochondriac Diſorders, thoſe in whom the Circulation of the Blood through the meſeraic Veins is ſlow, thoſe whoſe Viſcera are infarcted, or when they happen about the middle of the Autumn; for, in the Cure of theſe Fevers, the Phyſician is not to act haſtily, or attempt the Relief of the Patient by violent and draſtic Medicines, for fear of doing more Harm than Good.

In the Beginning of the Diſeaſe, if the Patient is robuſt, and vigorous, Medicines of a pretty powerful, reſolvent, colliquating, and evacuating Quality, are to be uſed; but when the Diſeaſe is of long ſtanding, the Patient tender, and of a delicate Conſtitution, and a large Quantity of bilious and acrid Recrements are in the Body, the Fever is ſurpriſingly increaſed by ſuch Medicines, and frequently paſſes from a ſimple to a double Quartan, or to a Quotidian: But temperate Subſtances, rather of the dietetic, than of the pharmaceutic Kind, are to be uſed in Conjunction with ſuch Things as allay the Spaſms of the nervous Syſtem.

Every Quartan, however, is not ſo obſtinate as not to yield even to the gentleſt Medicines; for I have known many happily cured of this Diſorder, only by the Uſe of a temperate balſamic Elixir, prepared with an aqueous Lixivium of bitter Extracts and Rhubarb, with an Addition of a ſufficient Quantity of *Hungarian* Wine: Others have been freed from Quartan Fevers by frequently taking Oil of Tartar per Deliquium, in ſome proper Liquor, drinking old Rheniſh Wine, with or without Bitters, immediately before the Paroxyſm, and afterwards uſing violent Exerciſe. Some have, alſo, been cured of Quartans by the daily Uſe of Baths of ſweet Water, and uſing ſuch a Degree of Exerciſe as to produce Sweat immediately before the Paroxyſm.

But Quartans are moſt happily and eaſily cured, when the State of the Weather is favourable, or when the Air is pure, ſubtile, and rarefied, as it is in the Spring, and ſerene Summers; for, in ſuch Seaſons, long-ſtanding Obſtructions of the Viſcera are more quickly removed, the Toughneſs of the Juices more ſpeedily colliquated, and the acrid Sordes more expeditiouſly eliminated through the open cutaneous Pores, by an equable and conſtant Perſpiration. I have known ſome who could not poſſibly be cured of Quartans, till they removed to a more healthy Part, or uſed another Regimen and Method of Life.

As in all chronical Diſorders, ſo, alſo, in the Decline of quartan Paroxyſms, 'tis expedient to change the Patient's Drink, and exhibit Decoctions prepared of the Roots of Sarſaparilla and Succory, the Herb Carduus Benedictus, Raiſins, and Fennel-ſeeds; and ſuch Decoctions are not only to be drank cold inſtead of Ale, but, alſo, warm inſtead of Tea. In Quartan Fevers 'tis, alſo, proper to uſe temperate mineral Waters, ſuch as the *Selteran* Springs; for theſe, when drank with one half, or a third Part of Wine, produce an highly ſalutary Effect in diluting the thick Juices, and evacuating the impure Humours by Urine.

We are, alſo, to take due Care, that the acrid ſubtile Sordes be continually eliminated by Perſpiration. This Effect is to be produced both before and after the Paroxyſm, not by actual Sudorifics, but by ſuch Medicines as, by increaſing the Tone of the Solids, accelerate the Circulation of the Blood, and by that means promote Sweat. This Intention is excellently anſwered by violent Exerciſe, ſuch as Riding, Leaping, or Walking a few Hours before the Paroxyſm, by which means I have often known Quartan Fevers removed. Accordingly *Celſus*, in *Lib.* 3. *Cap.* 15. lays it down as a Maxim, "That, on the Day the "Paroxyſm is expected, the Patient ought to get out of Bed, "uſe Exerciſe, and endeavour, if poſſible, to protract his "Exerciſe till the very Acceſs of the Paroxyſm; for, by this "means, the Fever is often removed." This Effect I have, alſo, from numberleſs Experiments, found to be happily produced by the following Mixture:

Take of the Water of Carduus Benedictus, four Ounces; of Treacle-water, half an Ounce; of the Salt of Carduus Benedictus, one Dram; of diaphoretic Antimony, half a Dram; of the Spirit of Vitriol, between twenty and thirty Drops; and of the Syrup of Carduus Benedictus, two Drams: Mix all together; and, if the *Primæ Viæ* are previouſly cleanſed, Half is to be exhibited three or four Hours before, and the other Half immediately after the Paroxyſm.

When the Fever is in the Decline, and, the Heat wearing off, the Body becomes ſpontaneouſly moiſt, we are to take great Care, that the Sweat be not interrupted by external Refrigeration, or drinking cold Liquors. If theſe Meaſures are not taken, the Fever is not only longer protracted, but, alſo, Contractions, and œdematous Swellings, of the Feet generally ſucceed. But 'tis expedient to promote the Sweat by moderate external Heat, and warm diluting Drinks.

Though Veneſection is not directly calculated for removing the Cauſes of Quartans, yet when there is a Suſpicion, that

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the Fever is supported by an obstructed Circulation of the Blood through the abdominal Viscera, as in those subject to hysteric and hypochondriac Disorders, and those afflicted with the Hæmorrhoids, or who have a Disposition to that Discharge, a Vein may be opened in the Foot with so great Success, that by one Venesection I have often observed an obstinate Quartan totally removed. As most pregnant Women are generally plethoric, if they are seized with a Quartan, they not only bear, but, also, require Venesection, lest by the intense Motion of the Blood, excited by the febrile Spasms, the Uterus should be stimulated to an Exclusion of the Fœtus before the due time. We are, therefore, carefully to consider the various Stages of Quartans, the Habit and Strength of the Patient, together with the Disposition of the Solids and Fluids, lest, by unseasonable Venesection, the Cure should be render'd more difficult, and the febrile Spasms, during the Paroxysm, increased. It is observable, that the Blood taken from the Veins of Persons labouring under Quartan Fevers is remarkably peccant, and has its Surface covered with a tough, yellow Phlegm; and, according to *Schenckius*, there is, also, a white pituitous Crust of this Kind found in the Veins of Persons who are taken off by Quartans.

Nor in Quartans are Vomits to be used promiscuously, and without Distinction; for when there is a Propensity to vomit, arising from a Collection of crude and viscid Juices in the *Primæ Viæ*, in consequence of excessive Gluttony, it is highly proper, by an Emetic, to evacuate the peccant Matter by the nearest Way, before it enters the Mass of Blood, and affects the nervous System. But it is expedient not to exhibit a Vomit, unless the Viscera are sound, the Stomach and nervous System strong, and the Lungs free from every Disorder. Safe Vomits, and such as are appropriated to this Purpose, are, also, to be used: Of these the best is the Root of Ipecacuanha, which, besides its emetic, has, also, an aromatic and balsamic Quality. And, among Emetics calculated for this Purpose, we are to prefer those prepar'd of Copper, as *Cyprian* and white Vitriol, to antimonial Preparations, because the former, by constricting the bilious and glandular Ducts, not only prevents the farther Afflux of the febrile Matter, but, also, by contracting and stimulating the Fibres, renders them more capable of dislodging the peccant Matter, deeply impacted in the nervous Parts. But antimonial Preparations, and those of Copper, when duly mixed, and, as it were, reduced to a proper Temperament, afford an excellent Medicine, calculated both for cleansing the Stomach, and subduing the Fever.

Though the *Peruvian* Bark, skilfully used, is of singular Efficacy against Quartan Fevers, yet we are not to call in its Assistance, unless the *Primæ Viæ* are duly cleansed, the Plethora removed, and the Viscera sound, and free from Obstructions. It is, also, safer in those bilious Quartans which happen in the Summer, than in such as rage in the Autumn, and are supported by some Disorder of the Viscera, and a tenacious State of the Juices. In this last Case, it is more expedient to use a Decoction of the Bark with Wine, with an Addition of bitter aperient and diaphoretic Substances, such as the Tops of the Lesser Centaury, the Herb Carduus Benedictus, the Roots of red Gentian, and Burnet, together with Salt of Tartar.

In Quartan Fevers it is sometimes expedient to heighten the Virtues of the Bark by an Addition of highly subtile Crocus of *Mars*, and a volatile urinous Salt. This Medicine, however, never proves hurtful, when exhibited at proper Seasons, in just Quantities, and duly mixed with diaphoretic and resolvent Substances. See QUINQUINA.

In order to diminish, or totally put a Stop to the Paroxysms of Quartans, especially such as happen in the Autumn, are obstinate, seize Persons of languid Habits, or are accompanied with Drowsiness, I have found excellent Effects produced by applying to the Wrists Epithems prepared of acrid stimulating and gently vesicating Substances. The Vulgar use other Substances for this Purpose; but as their Smell is too ungrateful, so Epithems of this Kind are most commodiously prepared of Turpentine, Soot, Sal Ammoniac, bruised Spiders, Pepper, and *Venice* Treacle.

Mineral Waters, especially those of the cold and hot Kinds, in my Opinion, contribute not only to the Prevention, but, also, to the Cure of intermittent Fevers; but we are absolutely to abstain from them immediately before and during the Paroxysm, taking care before the Accession, to have the Water evacuated by proper Emunctories, lest the febrile Motions should, by that means be increased. For Drink, temperate Liquors, as we have already observed, are always to be used.

If in a Quartan Fever the Patient is excessively costive, it is expedient to render his Body soluble, rather by Clysters than internal Medicines. The best Ingredients for Clysters of this Kind are, such Substances as, besides their emollient Quality, are, also, paregoric, and allay the Spasms; such as the Tops of Yarrow, the Flowers of common Chamomile, Elder-flowers, the Flowers of the Lime tree, Cumin-seeds, Broth prepared of Veal, the Yolks of Eggs, and a little Sal Gemmæ, sometimes, also, some antisebrile, bitter, nervous, and corroborating Substances, are commodiously mixed with such Clysters; for, in *France*, it has been customary, for some Years past, to cure Quartans by frequently injecting Decoctions of *Peruvian* Bark into the Anus. The same Effect is, also, produced by Clysters of other antisebrile Decoctions, such as those of Carduus Benedictus, the Lesser Centaury, Gentian-root, and the Herbs Marjoram, Rosemary, Southern-wood, and Sage. And certainly this Method is very useful in Infants, and such as have Stomachs either naturally weak, or easily subject to Nauseas; only we must observe, that the Body must be rendered soluble by an emollient and saline Clyster, before that of the nervous and corroborating Kind is injected.

The violent Fevers with which Quartans, especially in Persons advanced in Years, are accompanied, are not without great Difficulty mitigated. The principal Relief is, however, to be expected from such Medicines as render the Body soluble, as, also, from bathing the Feet; by which means, the Impetus of the Blood is derived from the Head to the inferior Parts. Among external things, the greatest Relief is afforded by Vinegar of Roses, or that of Rue mixed with Salt and Nitre, poured upon Bread, and applied to the Head.

In order to prevent a Relapse into a Quartan, *Celsus*, in *Lib.* 3. *Cap.* 16. gives us his Advice in the following manner: "If, says he, a Fever of this Kind is removed, the Patient is "for a long time to remember the usual Day of its Accession, "and on it carefully to guard against Cold, Heat, Crudities, "and Lassitude; for it easily returns, unless the Patient is very "careful of himself for some time after his Recovery." Hence, he ought, especially on the Day in which the Paroxysm used to return, to avoid Northerly Winds, a dense, cold, and moist Air, such as that of low-situated, marshy, and subterraneous Parts, taking care at the same time to preserve Perspiration free and uninterrupted. He is to have a peculiar Care of his Regimen, and guard against eating too much, especially of such Aliments as are of difficult Digestion. He is, also, if possible, to preserve a constant Tranquillity of Mind, and avoid Anger and Dread, by which I have frequently known a Quartan brought on.

Then the Stomach is to be corroborated, and the Digestion assisted by stomachic Elixirs, prepared of bitter and aromatic Substances, which are to be long and frequently used, though in small Quantities, lest the Body, already weakened, should be thrown into a preternatural Heat. But in a particular manner we are to take care, that the crude Juices afterwards generated be gently evacuated by Stool; for which Reason the Patient must frequently use the balsamic Pills, or the cinnabarine Pills, or the *Pilulæ de Ammoniaco* of *Quercetan*, with which, if the Fever has been suppressed by the Use of *Peruvian* Bark, we are to join the digestive Salt of *Sylvius*: By these measures, not only Relapses, but, also, other more terrible Disorders, and especially slow Fevers, are seasonably prevented. *Hoffman.*

QUARS. A Gall-stone. *Rulandus.*

QUARTARIUS. The fourth Part of a Sextary, containing nearly a quarter of a Pint.

QUARTATIO. A Separation of Gold from Silver, when mixed together, by means of acid Spirits.

QUARTURA. The same as QUARTATIO.

QUASSATIO. A Concussion.

QUATERNARIUS, or QUATERNIO. The Space of four Days.

QUATRIO. The ASTRAGALUS.

QUEBRICUM is, according to some, Arsenic; according to others, Sulphur.

QUELLEM. Original, or Elementary Earth. *Rulandus.*

QUELLES. An ELIXIR.

QUELMEISEL. The *German* Name for a Tent made of a Piece of Sponge, Gentian, or any other Root, so as to swell, when introduced into a Wound, or Ulcer, and dilate the Orifice.

QUERA-IBA *Brasilienſibus.* Maregrav. & Piſo. The Name of a Tree which grows in *Brasil.* The Bark contused and boiled, is effectual for curing Wounds or Ulcers in the Legs, or other Parts.

QUERCERA. See EPIALOS.

QUERCUS.

The Characters are;

The Leaves are sinuous, and, as it were, laciniated: The Flower is male, amentaceous, and consists of dense Clusters of male Apices, affixed to a thin long Capillament: The Fruit grows at a remote Distance from the Flower, on the same Tree, is furnished with three Tubes, and grows in a Calyx, consisting of small angular Leaves, and becoming at last squamous: This Fruit becomes an Acorn, whose lower Part is contained in the Calyx, and, under an entire coriaceous Shell, includes a Kernel which cleaves in two. *Boerhaave.*

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Boerhaave mentions five Species of Quercus; which are,

1. Quercus; latifolia; mas; quæ brevi pediculo eſt. *C. B. P.* 419. *Platyphyllos, mas. Lugd.*

2. Quercus; latifolia; fœmina. *C. B. P.* 419. *Platyphyllos, fœmina.* Lugd. 2.

3. Quercus; cum longo pediculo. *C. B. P.* 420. *Tourn. Inſt.* 583. *Boerh. Ind. alt.* 2. 177. *Quercus.* Offic. *Quercus vulgaris.* Ger. 1156. Emac. 1339. *Quercus latifolia.* Park. Theat. 1386. Raii Synop. 3. 440. *Quercus vulgaris longis Pediculis.* J. B. 1. 70. Raii Hiſt. 2. 1335. THE OAK.

This is a Tree which grows plentifully in *England*, being one of the largeſt and moſt common Trees we have, having ſmooth, ſhining, green Leaves, ſinuated on both Sides. We have two Sorts, one of which, and the moſt common, bears its Leaves on ſhort Foot-ſtalks, and its Fruit or Acorns on long; and, on the contrary, the other has the Fruit on ſhort Foot-ſtalks, and the Leaves on long.

Of the Oak, the Bark, the Buds, the Acorns, and their Cups, are uſed; as, alſo, the Galls, which are Excreſcencies cauſed by Inſects, on the Oaks of the Eaſtern Countries, of which there are divers Sorts, ſome perfectly round and ſmooth; ſome rougher, with ſeveral Protuberances; but all, generally, having a round Hole in them.

All the Parts of the Oak are ſtyptic, binding, and uſeful in all kinds of Fluxes and Bleedings, either inward or outward: The Bark is frequently uſed in Gargariſms, for the Relaxation of the Uvula; and for ſore Mouths and Throats: It is, alſo, uſed in reſtringent Clyſters, and Injections againſt the Prolapſus Uteri, or Ani. The Acorns, beaten to Powder, are frequently taken, by the Vulgar, for Pains in the Side.

The only officinal Preparation is the *Aqua Germinum Quercus. Miller's Bot. Off.*

4. Quercus; pedem vix ſuperans. *C. B. P.* 420. *Robur.* VII. *ſive Quercus; pumila.* Cluſ. H. 19. Deſcript. VI.

5. Quercus; parva; ſive Phagus Græcorum, & Eſculus Plinn. *C. B. P.* 420. *Raii Hiſt.* 2. 1386. *Tourn. Inſt.* 583. *Boerh. Ind. alt.* 2. 177. *Phagus Eſculus.* Offic. *Phagus ſive Eſculus.* Park. Theat. 1386. *Phagus vel Eſculus.* J. B. 1. 2. 74. ESCULENT, or SWEET OAK.

It grows in *Greece* and *Dalmatia*, and the Bark, Leaves, Acorns, and their Cups or Calyces, are in Uſe, and agree in Virtues with thoſe of the common Oak.

Beſides the foregoing Species of Quercus, *Dale* mentions the two following; the firſt is the *Cerrus*, or *Holm Oak.* See ÆGILOPS.

The ſecond is the,

ROBUR. Offic. *Robur tertia Cluſii.* J. B. 1. 2. 76. Raii Hiſt. 2. 1386. *Robur cum Galla majore rugoſa.* Park. Theat. 1386. *Quercus Gallam exiguæ nucis magnitudine ferens.* C. B. P. 420. Tourn. Inſt. 583. THE GALL-OAK.

It grows in *Pannonia* and *Iſtria.* The Galls are uſed in Medicine.

With reſpect to Galls, there are ſeveral Sorts: The firſt and beſt is termed the *Aleppo* Nut, or *Galla Spinoſa*; the ſecond is white; the third, ſmooth and round; the fourth, of an irregular Figure; and the fifth, has a kind of Crown. All theſe Galls are owing to Inſects, which firſt prick the Oak-trees, and then lay their Eggs in the Wound: Theſe Eggs ſwell with the Excreſcence, and firſt turn to Worms; then to Flies, which, having perforated the Galls, make their Eſcape. And as ſome Eggs are unfruitful, and remain in the Gall, they are obſerved to yield a volatile Salt.

Galls are very aſtringent, and are by ſome given inwardly in Dyſenteries: They have likewiſe been recommended in intermitting Fevers; but the Foundation of their febrifugous Quality depends on too few Inſtances to be relied on. *Geoffrey.*

QUERCUS MARINA. See FUCUS.

QUERQUEDULA. The Teal: A Species of wild Duck. It is eſteemed good for the Wind Colic, when applied to the Belly. *Lemery des Drogues.*

QUERQUERA. The ſame as QUERCERA.

QUIES. Reſt. The Effects of which are abundantly explained, under the Article FIBRA.

QUINGOMEO. The *Portugueſe* Name for a Species of *Aloes*, which grows in *Braſil. Raii Hiſt. Plant.*

QUINQUEFOLIUM.

The Characters are;

The Root is fibrous and perennial: The Leaves grow by more than Threes, at the Top of the Pedicle, round one Centre: The Calyx is monophyllous, not caducous, and, as it were, octophyllous, or decaphyllous, expanded like a Star, and furniſhed with very numerous Stamina, proceeding from the Compaſs of the Baſe of the Ovary: The Flower is roſaceous, pentapetalous, and more rarely tetrapetalous, the Petals ſtanding round the Baſe of the Ovary: The Ovary is a ſeminal Head, involved in a Calyx, hemiſpherical, and has ſeveral Eggs, furniſhed with a long erected Tube.

Boerhaave mentions eleven Sorts of Quinquefolium; which are,

1. Quinquefolium; rectum; luteum. *C. B. P.* 325. *Pentaphyllum, ſive potius Heptaphyllum, majus, luteum, montanum, flore majore.* M. H. 188.

2. Quinquefolium; majus; repens. *C. B. P.* 325. *Tourn. Inſt.* 297. *Boerh. Ind. alt.* 40. *Pentaphyllum & Quinquefolium.* Offic. *Pentaphyllum vulgatiſſimum.* Park. Theat. 398. Raii Hiſt. 1. 611. Synop. 3. 255. *Pentaphyllum ſive Quinquefolium vulgare repens.* J. B. 1. 397. *Quinquefolium vulgare.* Ger. 836. *(figura tranſpoſita)* Emac. 987. CINQUEFOIL, or FIVE-FINGERS.

The common Cinquefoil, or five-leaved Graſs, has a large ſpreading, thick, woody Root, covered with a dark-brown Bark, and full of ſmall Fibres, ſending forth many ſlender creeping Stalks, which lie on the Ground, emitting ſmall fibrous Roots from the Joints, by which it eaſily propagates itſelf; at every Joint grow the Leaves, five ſet together upon one long Foot-ſtalk, which are narrow, veiny, ſerrated about the Edges, the two outermoſt being the ſhorteſt: Amongſt theſe come forth the Flowers, conſiſting of five round yellow Leaves, with ſeveral Stamina in the Middle, ſet, alſo, on long Foot-ſtalks; and after them ſmall, brown, naked Seed: It grows every-where by Hedges and Way-ſides, flowering all Summer. The Leaves and Root are uſed.

They are reſtringent and drying, and ſerviceable againſt all kinds of Fluxes and Hæmorrhages: The Powder of the Root, given to the Quantity of a Dram, two or three times a Day, is ſaid to cure Agues. The ſame is, alſo, accounted good againſt malignant Diſtempers, and is an Ingredient in *Venice* Treacle: It is frequently uſed in Gargles for ſore Mouths and ulcerated Gums, and to faſten looſe Teeth. *Miller's Bot. Off.*

3. Quinquefolium; quod Pentaphyllum, ſeu potius Heptaphyllum; erectum caule rubro; hirſutus. *H. C.*

4. Quinquefolium; rectum; floribus ſubluteis. *C. B. P.*

5. Quinquefolium; minus; flore pallidè luteo. *T.* 297.

6. Quinquefolium; folio argenteo. *C. B. P.* 325. *Pentaphyllum rectum, foliis profunde ſectis, ſubtus argenteis, flore luteo.* J. B. 2. 398.

7. Quinquefolium; minus; repens; luteum. *C. B. P.* 325. *Pentaphyllum; parvum, hirſutum.* J. B. 2. 598.

8. Quinquefolium; minus; repens; luteum; flore tetrapetalo. *Boerh. Ind. alt.* 40. *Tormentilla.* Offic. Ger. 840. Emac. 992. Raii Hiſt. 1. 617. Synop. 3. 257. J. B. 2. 598. *Tormentilla vulgaris.* Park. Theat. 394. *Tormentilla ſylveſtris.* C. B. P. 326. Tourn. Inſt. 298. TORMENTIL.

The Root of Tormentil is pretty thick and large, for the Bigneſs of the Plant, frequently crooked and knotty, of a reddiſh Colour in the Inſide, with many ſmall Fibres; the Stalks are long, and very ſlender, and hardly able to ſupport themſelves: It has frequently ſeven, though ſometimes only five, long narrow Leaves growing at a Joint; leſs than Cinquefoil, and ſerrated only at the Ends: The Flowers are ſmall and yellow, of four Leaves, with a few Stamina in the Middle: The Seed is ſmall, growing naked on the Calyx. It grows in Woods, and in Commons, and flowers in *June* and *July.* The Roots are uſed.

They are very drying and binding, good for Diarrhœas and Dyſenteries, eſpecially attended with malignant Fevers; they being, alſo, accounted alexipharmic: They are ſerviceable in Hæmorrhages of the Noſe, Mouth, or Womb: They faſten looſe Teeth, and help the Relaxation of the Uvula. *Miller's Bot. Off.*

9. Quinquefolium; album; majus; alterum. *C. B. P.* 325. *Pentaphyllum album.* J. B. 2. 598.

10. Quinquefolium; foliis ternis; præcedenti ſimile. *H. C.*

11. Quinquefolium; quæ Tormentilla; reptans; alata; foliis profundius ſerratis. *D. Plot. Raii Syn.* 142. *Boerh. Ind. alt. Plant. Vol.* 1.

QUINQUE FRAGMENTA PRETIOSA. The Fragments of the precious Stones.

Theſe rare Compoſitions are hardly prepared any other Way than by Chymiſtry, which ſometimes affords us an Opportunity of employing them in Medicine: But it is ſufficient, that we have ſpoken of each of theſe Stones in its proper Place; to which we refer the Reader. *Lemery des Drogues.*

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QUINQUE-NERVIA. See PLANTAGO.

QUINQUINA.

Cortex Peruvianus, Peruanus, China Chinæ, Quinquina. Offic. China Chinæ, Cortex Peruvianus, Quinquina, Cortex Cardinalis de Lugo, Caſcarilla. Mont. Exot. 8. *Kina Kina, vel Cortex Peruvianus Officinarum.* Ind. Med. 63. *Arbor febrifuga Peruviana, China Chinæ, & Quinquina, & Gannana peride dicta.* Raii Hiſt. 2. 1796. *Pulvis febrifugus Peruvianus.* Barthol. Hiſt. Med. Cent. 5. p. 107. *An Holquahuilt, ſeu Arbor Chilli.* Hern. 50. Cap. 10. THE JESUITS TREE.

It is an Opinion univerſally received, that every Diſeaſe has a Remedy peculiar to itſelf; and a ſick Perſon can hardly complain to any Man, who will not recommend an infallible Medicine for his Diſorder. This Error, which is the genuine Foundation of Quackery, ſhould, if poſſible, be entirely eradicated out of the Minds of Men; for as the Powers and Effects of Bodies are not in their Natures abſolute, ſo the Qualities of Food and Phyſic have a Relation to the human Body, on which they operate: Hence Experience teaches us, that the ſame Medicines may be both prejudicial and ſerviceable to different Perſons labouring under the ſame Diſorder, though adminiſtred in the ſame manner.

Hippocrates long ago inculcated this Doctrine in *Lib. de Art.* 56. "Every one, ſays he, is not a Judge, what is beneficial "and what pernicious; and yet the whole Art of Medicine "conſiſts in this Diſtinction, for thoſe Remedies, which are of "Service, are ſo from the proper Uſe of them; and thoſe "which are of Diſſervice from the Abuſe of them." This Author by no means aſcribes to all Medicines, an abſolute Power of procuring Health, but only in a certain reſpect; and that not becauſe they are exhibited in any particular Diſorder, but becauſe they are duly and judiciouſly preſcribed, after a thorough Examination into the Patient's Conſtitution, with the Cauſe and Nature of the Diſtemper, having, at the ſame time, a peculiar regard to the Time, Order, Doſe, and Quantity; but when theſe Cautions are neglected, he declares them noxious. Since, therefore, Medicines are both ſerviceable and prejudicial, he juſtly terms Medicine an Art; and pronounces him only a good Phyſician, who makes this Diſtinction between the different Effects, and various Operations, of Remedies.

A due Regard to this Doctrine of *Hippocrates* would put an End to many opprobrious Controverſies between Men of Learning; whilſt ſome are ſurpriſingly laviſh in their Encomiums, and others equally profuſe in their Diſparagement, of the ſame Remedy, in the ſame Diſeaſe; whilſt they very ſeldom agree in determining the Power, Effect, and Uſe, of any Medicine, in this or that Diſeaſe. No one can be a Stranger to the different Sentiments, which are entertained of thoſe Medicines, called *heroic*; ſuch as Mercurial Preparations, Antimonial Vomits, Chalybeates, Opiates, draſtic purgative Narcotics, and, among chirurgical Remedies, Veſicatories, Fontanels, Setons, and Veneſection: But what is ſtill more ſurpriſing, they agree no better in their Opinions of the moſt ſimple and diætetic Parts of Medicine, ſuch as cold and hot Baths, and the various Cures performed by Milk and Abſtinence.

The *Peruvian* Bark, brought into *Europe* about ſeventy Years ago from *America*, has met with the ſame Fate: It is wonderful, with what Applauſe it was at firſt received; and what Commendations were at firſt beſtowed upon it, as an infallible Remedy againſt Intermittents: Nor are there wanting, at this Day, ſome who have it in the higheſt Eſteem. Another Set of Phyſicians condemn it as unſafe, and even pernicious; and theſe have ſtill their Followers; and both Parties, in their Writings, appealed to their own Practice: But, for my own Part, I eſteem it a good, effectual, and ſafe Remedy, when properly uſed, according to the above-mentioned Rule of *Hippocrates*; but hurtful and dangerous, when imprudently or unſkilfully given, without any regard to the Conſtitution of the Patient, the febrile Cauſe, the Stage of the Diſeaſe, and other Circumſtances. I have, therefore, made choice of it for the Subject of my preſent Diſſertation, in which I ſhall firſt produce the Arguments of the Advocates for the Bark, and then thoſe of their Opponents; next from a rational Account of Fevers, and their Cauſes, and an Inquiry into the Principles of the Bark, and its manner of operating, I ſhall ſhew both its ſalutary and prejudicial Qualities; and, laſtly, anſwer all Objections.

The *Peruvian* Bark, then, has a great Number of Advocates; for, at its firſt Appearance in *Europe*, it was known at *Rome*, and ſold, by the Jeſuits, at an extravagant Price, as a moſt infallible Febrifuge; and in a little Bill, with Directions for the Uſe of it, they declared, that this alone, with a preceding Purge, if neceſſary, would cure even Quartans. *Bartholine, Cent.* 5. *Hiſt.* 50. tells us, that Cardinal *de Lugo* had Teſtimonials of above a thouſand Cures performed by this Medicine in the Year 1653, in which ſimple and double Quartans greatly raged; and that *Fonſeca* had, by Experience, found it not only innocent, but ſalutary. *Fr. Redi, de Experim. Nat. a.* 143. ſays, its Effects are miraculous. And *Tozzi, in Comment. in Aph.* 25. *Sect.* 2. aſſerts, that Quartans, which had hitherto been eſteemed incurable, are now eaſily and ſafely cured by the *Peruvian* Bark.

From *Italy* it was conveyed into *France*, and there ſeveral times adminiſtered with ſuch Succeſs, that *Tagaultius* gave it, both to the King, and Dauphin, more than once, to good Purpoſe. About the ſame time it was received in *England*, with almoſt univerſal Applauſe. For *Willis, de Febr. Cap.* 6. expreſsly ſays, that of an hundred Patients, who had taken it, ſcarce one miſcarried. To this one may add, the Teſtimony of Mr. *Boyle*, in *Tr. de Philoſ. Experim.* who aſſures us, that he had removed Quartans of a Year's Continuance, by a Doſe or two of the Bark, to the Quantity of a Dram. But *Digby*, in *Tr. de Medic. Secret.* moſt ſolemnly affirms, that, out of thirty whom he had cured of Quartans, by the Bark, not two relapſed: Adding farther, that a Relapſe was rather a Reproach to the Phyſician, than the Remedy. That great Practitioner *Sydenham*, in *Tract. de Febrib.* has not been wanting in his Encomiums on the Bark, and is very particular in his Deſcription of the proper Method of uſing it: And that it is ſtill in great Repute in *England*, is certain, from the Writings of *Freind, Liſter*, and *Moreton*, which laſt in *Tr. de Febribus*, ſays, "The "*Peruvian* Bark is, by the unanimous Conſent of all mo"dern Phyſicians, an univerſal Febrifuge, which entirely, "ſpeedily, ſafely, and ſucceſsfully cures all intermitting Fe"vers, at any Seaſon of the Year, at every Age, and in every "Temperament; ſo that it is unneceſſary for Phyſicians to "rack their Inventions for the Diſcovery of any other."

By this Time it had gained great Reputation in moſt Parts of *Europe*. Among the *Swiſs, Muraltus* greatly extolled it, and in *M. N. C. Dec.* 2. *An.* IIX. *Obſ.* 2. has given Inſtances of its Efficacy, both in Tertians and Quartans, upon Young and Old, and concludes with theſe remarkable Words, "It would "require a large Volume, to recount the Cures performed by "myſelf, and others, with the Powder of this Bark." The Writings of *Boerhaave* and *Decker* convince us, that it was, and ſtill is, greatly eſteemed in *Holland*. *Bohnius, in Diſſ. de minus ſuſpecta Febrium Fuga*, and *Bergerus, Diſſ. de Cortice Chinæ ab iniquis Judiciis vindicato*, have, by many ſolid Arguments, proved the Virtues of it; and that the *Germans* adminiſtered it in intermitting Fevers. Nor was it leſs eſteemed by *Waldſchmidius, Dolæus*, and *Zapfius*, who acquired both Fame and Wealth, by an antifebrile Electuary, whoſe Baſis was the Bark: And his Son-in-law *Stroidel* ſtill preſcribes it with the ſame Succeſs.

On the other hand, there have been, and ſtill are, many learned and excellent Phyſicians, who do not ſcruple to reproach the Bark with the Title of an *uncertain, dangerous*, and even *pernicious Medicine*. Some, relying upon their own Experience, poſitively affirm, that it is not only attended with violent Relapſes, but new and incurable Diſeaſes, as a Cachexy, œdematous Tumors of the Feet, Dropſies, obſtinate Coſtiveneſs, Oppreſſion of the Præcordia, hypochondriacal and hyſterical Affections, ſlow and hectic Fevers, accompanied with a Loſs of Strength and Appetite, Conſumptions, and ſometimes Convulſions and Epilepſies in Children. Among its moſt conſiderable Antagoniſts is *Baglivi*, who, *Opp. Lib.* 2. ſays, that a Tertian will not admit of a Febrifuge, till the fifteenth Day, when it ceaſes ſpontaneouſly; that all Remedies before that Time are uſeleſs, if not prejudicial; and that thoſe Phyſicians acted prepoſterouſly, who, by Febrifuges, endeavour, as it were, to check a Fever in its Infancy; for within a few Days it either returns more violently, or is ſucceeded by Aſthmas, Dropſies, ſlow Fevers, Conſumptions, or ſome other dangerous Diſtempers.

Among the *Germans, Ettmuller, Opp. Tom.* 2. calls it a precarious Remedy, and elſewhere affirms, that it generally produces Coſtiveneſs, a Tumor and Hardneſs of the Abdomen, with tenſive Pains; and that when theſe gradually remit, or are irritated by Purgatives, or the Spirit of Sal Ammoniac, the like Fever returns with a more intenſe Cold. *Pallilius*, alſo, in an Epiſtle to *Baglivi*, informs us, that the *French* give the Bark ſucceſsfully in Fevers; but that this Practice would be very ridiculous in *Italy*; nor does he adviſe it till towards the End, for ſtrengthening the Stomach. For more Inſtances of the noxious Quality of the Bark, ſee *Blegny, Zodiac. Gall. Med. Phyſ. An.* 4. *Menſ. Auguſt. Anno* 5. *Menſ. Januar.* and *M. N. C. Dec.* 3. *An.* 9. *Obſ.* 109. and *Cent.* 3. And *Stahlius* in *Theoria Med.* and *Opuſc. Phyſico-Med.* as, alſo, *Juncker*, in *Conſpect. Medic. Theoret. Pract.* every-where oppoſe and condemn the Uſe of the Bark in Fevers. And I muſt confeſs, that an improper Uſe of the Bark is very pernicious, and too often attended with dangerous Relapſes, or other ſevere Diſtempers; and particularly, that a Quartan is followed by

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by the Dropſy; and a Tertian, by hypochondriac Affections, in conſequence of the prepoſterous Uſe of the Bark.

I cannot, however, agree with thoſe who pronounce the Bark abſolutely, and always, prejudicial in Fevers; and, for that Reaſon, endeavour to diſcredit it, as ill adapted to their Cure; unfriendly to their happy Terminations; and oppoſite to the ſalutary Efforts of Nature: For theſe imagine, that a Fever is nothing but an exactly methodical Effort of Nature, which, by increaſing the Motion of the Solids and Fluids, endeavours to diſcharge out of the Body, through the proper ſecretory and excretory Ducts, thoſe Cauſes, which give Birth to the Diſorder: For the Accompliſhment of this, ſay they, the Humours muſt be put in Motion, and the Paſſages opened; but Aſtringents, among which is the Jeſuit's Bark, incraſſate the Fluids, contract and obſtruct the ſmall Canals of the excretory Ducts, and, conſequently, retain the morbific Matter; which muſt neceſſarily produce Relapſes, or other dangerous Diſtempers.

They further ſuppoſe, that Nature's principal Deſign in Intermittents, is, to diminiſh a Superfluity of Blood, pernicious to Life, by an Increaſe of internal Heat, reſulting from an Acceleration of the Blood's Circulation, and certain Reſolution of it into an excrementitious Serum; and at the ſame time, by a ſtronger Impulſe, to free the Viſcera from Diſorders, and Obſtructions: And, conſequently, that theſe febrile Motions are, as is were, Remedies and Means, by which Diſeaſes are cured, Pains expelled, and thoſe things which threaten Death, eradicated; ſo that a Suppreſſion of them muſt be very dangerous. Beſides, that it is an hazardous Attempt to diſturb and hinder this wiſe Intention of Nature, in expelling the noxious Humours through the ſecretory and excretory Ducts, by inducing a contrary Effect from Aſtringents; which Practice muſt be attended with Relapſes, ſevere hypochondriacal and hyſterical Affections, ſlow Fevers, Obſtructions of the Viſcera, Jaundice, Cachexy, Dropſy, Melancholy, and obſtinate Coſtiveneſs.

But they rely principally upon this, that the Fomes of a Tertian is ſeated in the Primæ Viæ, or in the Stomach; and eſpecially in the firſt ſmall Inteſtines and adjacent Organs; ſuch as the meſeraic Veſſels and Glands: But as this Fomes is generally a viſcid and tenacious Humour, that it is an Inſtance of the Wiſdom of Nature, that in the Beginning of the Diſeaſe, the porous and external Parts ſhould be conſtricted, that, by this means, the Blood may be forced to the internal Parts, and detained there, till a ſufficient Quantity of the ſerous lymphatic Humour tranſpires through the Coats and Glands of the Viſcera into their Cavities, which ſerves afterwards partly to colliquate and mollify, and partly to diſcharge the febrile Matter: Hence they conclude, that all Medicines are pernicious which obſtruct theſe ſalutary Motions, inſpiſſate the viſcid febrile Humour in the Primæ Viæ, and by conſtricting the excretory Ducts ſuppreſs all beneficial Secretions and Excretions, as well by Stool as Urine, and the Pores of the Skin. But the Bark is of this aſtringent Quality, and therefore to be rejected; and ſuch Remedies are only to be uſed, as aſſiſt Nature, diſſolve the febrile Matter, and, by decreaſing the Redundancy of the Blood, and promoting Secretions of all kinds, free the Body from the peccant Humour; and not ſuch as dangerouſly repreſs it, by a Suppreſſion of the febrile Motions.

Thus the Adverſaries of the Bark argue; and, at firſt Sight, they ſeem to have ſome Shew of Reaſon on their Side: But whether this ſhould poſitively deter all Phyſicians from the Uſe of it, is next to be inquired into. Their whole Argument, then, is founded on the Suppoſition of ſome internal Agent, which, upon a previous Knowledge, and ſubſequent rational Intention, produces and directs the vital Motions, among which are the febrile, as well as the Effects of Remedies, to ſome certain End. But ſuch a Principle is ſo far from being uſeful, either in the Theory or Practice of Phyſic, that it eſtabliſhes Errors, or induces Confuſion, both in explaining phyſical Subjects, and diſcovering or applying Remedies.

He who underſtands this, will ſoon determine what Judgment to paſs upon the febrile Motions excited by this Principle: They eſteem theſe Motions naturally ſalutary; whereas they are rather deſtructive; and accuſe wiſe Nature of Imprudence and Madneſs. For every Smatterer in Phyſic knows, that this univerſal Commotion is attended with ſpaſmodic and convulſive Agitations of the external and nervous Parts, and, conſequently, of the whole nervous Syſtem; not without a violent Injury to the animal Functions, and Danger of Death: So that every one, who dies of an intermitting Fever, expires with theſe Symptoms. And indeed, if this Agent could at Pleaſure excite the vital Motions, it would be more ſafe, eaſy, and rational, without this univerſal pernicious Spaſm, and Stricture of the Body, to conduct this copious Motion of the Blood and Humours, gradually to the Seat of the Diſtemper. And though I own, that Fevers, eſpecially of the intermitting Kind, in Bodies full of thick and impure Juices, ſometimes, by an extraordinary progreſſive Motion of the Humours, and an Increaſe of Heat, prove medicinal, and prevent eminent, chronical, and violent Diſorders, ariſing from Obſtructions of the Viſcera, yet they are not always accompanied with a Redundance of Blood and Humours, Impurity, or an exceſſive Craſſitude of the Blood and Juices, or an Infarction of the Viſcera; much leſs are theſe the immediate Cauſes of Intermittents; and, conſequently, this ſo impetuous Motion of the Solids and Fluids, with a Diſſolution of the vital Humours, is quite unneceſſary.

As to that Part of their Arguments, which is built upon Nature's Deſign for the Preſervation of the Body, to diminiſh the Redundance of the Blood, by a diſſolutory Reſolution of it, by the inteſtine Motion; we abſolutely deny a Redundance of Blood and Humours to be the Cauſe of the Diſtemper. For, if this was the Caſe, plethoric Perſons would be moſt ſubject to Fevers; and all kinds of Fevers removed by ſeaſonable Veneſection. Whereas a Conſumption of Blood, and its excrementitious Particles, is the Effect and neceſſary Conſequence of the febrile Heat, which is rather an Enemy, than a Friend, to Nature, as it diſſipates and deſtroys the Strength, upon which the Vigour of the vital Motions depends.

Of no greater Validity is that Way of reaſoning, which attributes the Cauſe of Intermittents to the crude, viſcid, tenacious Humours, proceeding principally from Indigeſtion in the Primæ Viæ, and adjacent Organs; for intermitting Fevers very ſeldom proceed from an irregular Diet, or bad Digeſtion: But we may rather deduce the Origin of Tertians from a Quantity of acrimonious bilious Humours in theſe Parts, eſpecially ſince we find young, choleric, and paſſionate Perſons, liable to them in very hot Seaſons; and that their Vomits and Stools are bilious, and their Urine generally high-coloured, from a copious Mixture of ſulphureous and bilious Particles. And though I do not approve of Aſtringents in all kinds of Fevers, yet I cannot allow, that the Bark, judiciouſly exhibited, has this Effect; but will rather venture to aſſert, that it promotes Excretions and Perſpiration, as I ſhall ſhew more at large hereafter.

I ſhall now propoſe my own Theory of Intermittents, and their Generation; by which we ſhall be the better enabled to judge of the proper Methods of Cure, and the Remedies beſt adapted to remove them. But I muſt premiſe, that Experience convinces us, that neither an irregular Diet, nor bad Digeſtion, gives Riſe to them in one or two Perſons, but that they rage epidemically, and ſpring from a preceding, unuſual, long-continued, hot, and dry State of the Air, when we careleſsly expoſe ourſelves, about Sun-ſet, to the North Wind, or cool, moiſt Breezes, from whence we feel a remarkable Cold and Shivering. For this Reaſon in low marſhy Countries, which abound with Ponds, and ſtagnating Waters, we ſee the Inhabitants ſo frequently afflicted with Intermittents at all Seaſons, that they ſeldom live to any great Age; for an Air which is cold, denſe, moiſt, and replete with Inſects, muſt ſtop Perſpiration. Nor does any, eſpecially an intermitting, catarrhous, arthritic, or rheumatic Fever, attack us, till cuticular Excretion has been leſſened or ſuppreſſed; nor are we, before that, in Danger of a Relapſe; and the Continuance and Violence of the Diſorder is proportioned to the Interception and Suppreſſion of this ſalutary Evacuation.

When there is, therefore, a large Collection of noxious Humours, either from the Temperature and preternatural State of the Air, an Irregularity in the Affections of the Mind, or coarſe Diet, which ought to be conveyed through the Pores; and the Tranſpiration, which ſhould rather be increaſed, for carrying off ſuch a Quantity of active, vapouriſh, ſalino-ſulphureous Particles, is, by a Stricture of the nervous and excretory Glands of the Skin, greatly impeded, it neceſſarily follows, that the Motion of the excrementitious Serum muſt be directed another Way, that is, to the internal Parts. As this, in catarrhous Fevers, happens to the glandulous Parts of the Noſe, Fauces, and Bronchia; in thoſe of the rheumatic and arthritic Kind, to the Membranes of the Muſcles, and nerveous Kind, to the Membranes of the Limbs; in Diarrhœas to the Coats glandulous Ligaments of the Inteſtines; ſo, in Intermittents, the ſecretory and depuratory Viſcera of the Abdomen, as the Liver, Pancreas, Glands, and glandular Coats of the Stomach and Inteſtines, are affected. But this malignant Humour here collected, vitiates, corrupts, and contaminates the fermentative, lymphatic, ſalival, and bilious Juices, deſtined to Digeſtion and Chylification; for theſe, whilſt lodged in the Cavity of the Duodenum, by their mutual Fermentation, and Commixture with the Crudities of a bad Digeſtion, contract, by their Continuance, a worſe Diſpoſition, and become very prejudicial to the nervous Parts. Theſe depraved Juices being ſucceſſively conveyed to the Blood, as well through the Pores as Tubes, when they reach the nervous Membranes, encompaſſing the Brain and

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and ſpinal Marrow, excite, by their noxious Quality, an univerſal Spaſm in the Veſſels and nervous Syſtem, which conſtitutes the Eſſence of a Fever.

For a Fever is nothing more, than a Diſorder or Effect of a preternatural Affection of the nervous Syſtem: For all the ſubſequent Symptoms, as Pains in the Head and Back, particularly about the firſt Vertebra of the Loins, convulſive Pains of the Joints, Laſſitude, Languor, Cold, Rigor, and Horror, ſometimes productive of a Concuſſion of the whole Body, Anxiety of the Præcordia, and Difficulty of Breathing, with Inquietude, a contracted, quick, ſmall, unequal Pulſe, Vomiting, or an Inclination to it, frequent Thirſt in the cold Fit, a very great Coſtiveneſs, or even a Flux, in ſome a Stimulus to make Water, and, as I have often obſerved in old Men, afflicted eſpecially with a Quartan, a Deprivation of the Underſtanding and Senſes, all plainly indicate a violent Diſorder of the nervous Syſtem. Whilſt, therefore, under theſe Symptoms, by the Stricture of the exterior Parts, the Blood is impelled to the larger Veſſels, the Lungs, Head, and Heart, it by its Quantity excites a more violent Pulſe, and quicker Syſtole, in the Muſcle of the Heart: Hence the Blood circulates with more Celerity and Strength; the Motion of the Arteries becomes more violent and ſwift; the Spaſms of the Nerves are relaxed by this Increaſe of Heat, and the Matter which produced them diſcharged: The Blood is then invited to the Surface of the Body; and the Pores of the Skin, upon this Remiſſion of the Stricture, being opened, a Sweat ſucceeds.

This ſeems to me the Origin and Progreſs of an intermittent Fever; and I ſhall now endeavour to account for the Return of a Paroxyſm, at a particular Diſtance of Time: This febrile Matter in the Duodenum, compoſed of vitiated, bilious, lymphatic, and ſalival Juices, with the Crudities of indigeſted Food, paſſes ſucceſſively to the Blood and nervous Syſtem. Then what remains after this Fermentation, if I may ſo call it, receives freſh Nouriſhment from the impure Juices flowing out of the Liver, Pancreas, and Glands of the Duodenum: Then, by the extraordinary Increaſe of Motion in the Paroxyſm, the Blood and Serum degenerate into mucid, ſaline, ſulphureous Sordes, which, as they are not entirely diſſipated on the intermediate Day, remain within, and increaſe the Corruption of the lymphatic ſalival Juices, and of the Bile itſelf. And give me Leave to make one Obſervation, which no one, I think, has yet made; which is, that upon the intercalary Day, the Weakneſs of the Pulſe, and the Coldneſs, rather than Heat of the external Parts, and Skin, ſufficiently prove the Tranſpiration to be incapable of diſcharging the febrile Matter. And, laſtly, it is very probable, that the Tone, Vigour, and Function of this univerſal, nervous, fibrous, and tubular Emunctory of the Body, the Skin, are very much weakened by ſo many violent and oppoſite ſpaſmodic Motions, followed by an exceſſive Remiſſion; ſo that the ſalutary Buſineſs of inſenſible Tranſpiration, cannot be effectually performed through the whole Courſe of the Fever, and, of conſequence, the Depuration of the Blood and Humours not carried on with proper Vigour: From theſe Conſiderations we may reaſonably conclude, that the Fomes, which is continually receiving freſh Supplies, may, in a certain Space of Time, be collected into a Quantity ſufficient to bring on another Fit.

That the Paroxyſms return ſometimes daily; ſometimes on the ſecond, third, or fourth Day, and that at different Hours; and ſometimes are double, may be attributed to the Difference of the Matter, either on account of its Quantity, and Activity or Inactivity, and the greater or leſs Afflux of it to the Primæ Viæ; and likewiſe the different State of the Viſcera, eſpecially the Liver, Spleen, and Pancreas. It is very manifeſt, that anomalous Quotidians, Tertians, and Quartans, were epidemical in *Germany* laſt Year, in conſequence of the unuſual Length of the Heat and Drought in the Summer and Autumn; and that theſe Fevers muſt proceed from the various Diſpoſition of the Humours and Viſcera, according to the Variety of the Temperaments and Foods of the Patients.

After this explicit Account of the Cauſe and Nature of intermitting Fevers, we ſhall inquire into the Preſervatives againſt them: Amongſt theſe the *Peruvian* Bark claims the Preference, whoſe Qualities, therefore, and Effects, whether beneficial or noxious, demand a moſt accurate Examination. Firſt, then, it is an Aſtringent; for its Powder, either by itſelf, infuſed with Water, or mixed with highly rectified Spirit of Wine, conſtricts the Tongue: This is farther confirmed by a chymical Experiment, while a Solution of it with Vitriol, like all other Aſtringents, grows as black as Ink: Another of its Principles is a Bitter, of an opening Nature, which is univerſally allowed to be a proper Remedy for Fevers; ſince almoſt all Bitters, ſuch as Wormwood, Carduus Benedictus, Fumitory, the leſſer Centaury, red Gentian-root, and *Virginia* Snake-root, and Snake-wood, are allowed to be excellent Febrifuges.

The Bark is, alſo, a Balſamic, which is very agreeable to Nature; but this Quality ſhews itſelf, not ſo much by the Taſte and Smell of the Powder, as by a Water drawn from it by Diſtillation, or when mixed with Spirit of Wine. Another of its Principles is, a fixed Earth, as appears after Solution and Extraction; and this Principle, though hitherto overlooked, is of great Efficacy in correcting, blunting, and involving the Acrimony of the febrile Matter; particularly of the bilious Kind, in the ſame manner as earthy Subſtances, Shells, Mother of Pearl, Sealed Earth, and Coral, operate in removing Fevers. This Simple, therefore, according to *Galen*'s Manner of ſpeaking, acts by the Whole of its Subſtance; and it has, beſides, many other Advantages, which are ſeldom or never found in any other Medicine; for which Reaſon they are greatly miſtaken, who confine the Power of this Remedy over Fevers to Aſtringency alone.

From this Theory and Pathology of Fevers, and theſe Qualities of the Remedy, we may ſoon learn the proper Uſe of the Bark, in intermitting Fevers, and how to give it to Advantage. We have already proved the material Cauſe of Intermittents to be, a large Collection of vitiated Bile, and ſalival Juices, mixt with indigeſted Aliments, and lodged in the Primæ Viæ, particularly in that winding Inteſtine the Duodenum; from whence ſucceſſively paſſing, in certain Quantities, into the internal Parts, and nervous Syſtem, it occaſions theſe ſpaſmodic febrile Motions. Our Intention, therefore, in the Cure ſhould be, to correct and blunt this peccant Matter, procure its Elimination, and prevent its further Diſcharge from the Glands, and biliary Ducts; and, in my Opinion, if the Bark does not entirely, it will yet, in a great meaſure, anſwer theſe Intentions.

We grant, indeed, that this Febrifuge is not ſo effectual, when the Primæ Viæ are overcharged with peccant Sordes, eſpecially of the viſcid and tenacious Kind; but rather does Harm, by inſpiſſating and rendering them more immoveable; and, at the ſame time, by its aſtringent Quality, rendering the Patient coſtive; by which means the febrile Matter is not only retained, but the tenſive Pains and Anxieties about the Præcordia are increaſed, as we have often ſeen in thoſe, who have been long afflicted with a Quartan, eſpecially old Perſons and Children, when they have taken great Quantities of the Bark. In this Caſe, therefore, it is ſafer and better to reject this Remedy, or at leaſt, not to uſe it till ſuch others have been exhibited, as conduce to attenuate, incide, and evacuate by Stool, the thick, viſcid, and tenacious Humours. For theſe Intentions, among Salts, we give the Preference to depurated Sal Ammoniac, the digeſtive Salt of *Sylvius*, vitriolated Tartar, the Arcanum Duplicatum, *Glauber*'s Salt, and *Epſom* Salt. Salts, alſo, drawn from medicinal Waters, are very efficacious in removing chronical Fevers, ſuch as the *Sedlitz* and *Egran*; half an Ounce, or an Ounce of which, diſſolved in a ſufficient Quantity of Water, and exhibited as often as the Circumſtances of the Patient require, will cleanſe the Inteſtines from the peccant and viſcid Sordes. The Power, alſo, of Bitters is very great, in inciding, deterging, and evacuating the mucid, tenacious, and acid Juices; among the beſt of theſe we may reckon the Extracts of the leſſer Centaury, red Gentian, and Carduus Benedictus, Wormwood, Rhubarb, and Aloes previouſly corrected and qualified, which, diſſolved in a lixivial aqueous Menſtruum, and given in Wine or Brandy, on the intercalary Day, are very ſerviceable. After theſe, the Bark, with other Remedies aſſiſting its Operation, not only greatly prevents an exceſſive Afflux of the peccant Humours to the Primæ Viæ, but, alſo, promotes and facilitates Perſpiration.

In like manner, when the Crudities ariſing from indigeſted and corrupted Aliments, with the vitiated Bile and ſalival Juice, nouriſh a Fever, Reaſon and Experience convince us, that we ought to purge the Primæ Viæ of theſe acid, bilious, and corrupted Humours, before we uſe ſpecific Febrifuges and Corroboratives. For this Purpoſe, gentle Emetics are proper, or ſuch Medicines as evacuate both upwards and downwards; but we muſt avoid all ſtrong draſtic Purges, and violent Emetics; for theſe being injurious to the Stomach and nervous Parts, weaken the Patient, and rather increaſe than diminiſh the preternatural Commotions. For this Purpoſe I would recommend an Ounce or two of Manna, with a Grain or two of emetic Tartar, gently diſſolved in a ſufficient Quantity of Spring-water; which Medicine operates efficaciouſly enough, both upwards and downwards; and, as I am aſſured from long Experience, anſwers the End propoſed. After theſe Meaſures are duely taken, the Bark may be exhibited with the greater Succeſs.

On the contrary, there are many Species of Fevers, ſuch as the bilious Summer Quartans and Tertians, thoſe of the double and continual Kind, accompanied with ſevere and cruel Symptoms, which proceed from an intemperate, ſharp, hot, and volatile Bile, generally after a long-continued, hot, Seaſon

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season. In these Cases, after a few Fits, the Bark, especially in Powder, mixed with absorbent and nitrous Medicines, will be of Service in fixing, correcting, and blunting this Matter, and preventing too copious an Afflux of it to the Intestines: Thus have I known great Advantages produced by plentiful bilious Stools, especially in bilious choleric Constitutions; for the Fever has soon after left them.

As what I have already said, is supported by Experience, so I can, upon the same Foundation, assert, that the Bark supports and promotes Perspiration; which, if not the principal, is certainly a very material Step towards the Cure of intermitting Fevers. For when this salutary Evacuation, as I before observed, is suppressed, and the Sordes, which should be discharged by it, are convey'd to the internal Parts, it gives the first Rise to these Fevers, which bear a Proportion to the Quantity of bilious Sordes retained in the Blood and Humours. Then these Sordes, on account of the inconsiderable Excretion upon the intervening Day, being collected in a greater Quantity, produce a Return of the Fit. Relapses, also, proceed from a Retention of the febrile Matter, which generally happens, when the Patient, too soon after Recovery, exposes himself to a cold humid Air, near stagnating Waters, in low Places, or in vaulted Churches, or to the North Winds. It must, likewise, be attributed to the greater Freedom of cuticular Excretion in the Summer, that Summer Tertians and Quartans are more easily cured, than those of the autumnal Kind; and that Quartans, which have continued all the Autumn, Winter, and Spring, go off spontaneously about the Summer Solstice, without any Medicines. And this will account for some Instances, produced by Authors of undoubted Credit, where obstinate Fevers have been cured by bare Exercise, as Running, Leaping, Riding, or by hot Baths, and drinking Wine till the Pores were opened.

So great is the Use and Necessity of Perspiration in the Cure of Fevers, that it is incumbent on us to shew, that the Bark is endued with a Power to promote it. For its astringent Quality seems adapted to produce a contrary Effect; and it is commonly thought, that it obstructs the Pores, and prevents Perspiration. But we do not ascribe an absolute and positive astringent Quality to the Bark, but rather esteem it a Corroborative, in consequence of its bitter and balsamic Principles.

For though aluminous and vitriolic Substances, Snake-root, and the Roots of Tormentil and Bistort, are very astringent, yet they prove efficacious in intermitting Fevers, if they are seasonably, and after a proper Regimen, exhibited, especially drinking a warm Decoction, or Infusion, after them, and using proper Exercise. But the Power, Nature, and Virtue of Corroboratives are far different, since these act not so much by their terrestrial and astringent, as by their balsamic and bitter Quality, upon the weakened Solids of the Body, by procuring to them Strength, Tone, Vigour, and a motive Faculty, that thus the Motion of all the vital Fluids, which principally depends upon that of the Solids, may be rendered quicker, and more expeditious, through the whole Habit; which always produces a greater Excretion of Matter, by insensible Transpiration; so that Corroboratives are much safer than Astringents. And, indeed, among the Simples of a corroborative and subastringent Quality, those are best and most efficacious in curing obstinate and inveterate Disorders, which have somewhat of a balsamic Virtue. Hence Decoctions of the vulnerary Herbs, such as Strawberries, Sanicle, Baum, Agrimony, Scabious, Horehound, Lung-wort, Liver-wort, Spleen-wort, Scolopendrum, Money-wort, Plaintain, Yarrow, the Flowers of Daisies, and St. John's-wort, and Tree Lung-wort, have an universal and surprising Effect, not only in the Cure of Wounds, but, also, of inveterate and almost incurable Diseases, such as the Cachexy, Consumption, Scurvy, Jaundice, Spitting of Blood, and sometimes a Quartan, by depurating the Blood, opening the obstructed Viscera, and promoting the languid Excretions; they do not, however, act immediately upon the Fluids, by correcting their Disorders; but rather upon the Solids, by restoring their Tone and Vigour. Nor are we now unacquainted with the Power of Cascarilla, which is hotter and less balsamic than the *Peruvian* Bark, in stopping excessive, and even dysenteric Fluxes; and, when properly applied, is of Service in intermitting, and, likewise, slow Fevers, which proceed from a Fault of the Stomach, or a Weakness of the Digestion.

The *Peruvian* Bark, then, is so remarkably salutary, that by strengthening the Tone of the Solids, it promotes the Circulation of the Blood, the various Excretions, and particularly, insensible Perspiration. Hence we learn from Experience, that by the Use of it the Strength is restored, Vigour of Body and Mind recovered, lost Appetite revived, with an absolute Cessation of the febrile Paroxysms. Other celebrated Physicians have observed the same remarkable Effects produced by it: Thus *Lister*, *Bohnius*, *Sydenham*, *Decker*, *Bergerus*, *Jones*, *Morton*, and *D' Aquin*, unanimously declare, that the Bark in an extraordinary manner corroborates the Stomach, quickens the Appetite, increases the languid Heat of the Body, restores the Strength, and not only promotes Perspiration, but, likewise, Urine, and sometimes renders the Body soluble, especially if it be fresh. And, at last, they judiciously add, that all who have found this Effect from the Bark in Fevers, have continued free from the Disorder, and been afflicted with no Symptom or Inconvenience arising from it. But we must take notice, that these salutary Operations are not derived from the increased cuticular Excretion alone. For I have not only often observed, that, after a plentiful and continual Sweat on the intercalary Days, the Fit has nevertheless returned, without any Increase of Strength or Appetite; but am, likewise, convinced from Experience, that strong Sudorifics are not proper and conducive to stop febrile Paroxysms. For there is a great Difference between Sweat, which often proceeds from a Want of Strength, and decayed Tone of the Skin; and an augmented Perspiration resulting from a brisker and quicker Circulation of the Blood through the whole Body: This latter may be distinguished by the Vigour and Equality of the Pulse. And these Effects are not so much produced by Sudorifics, which excite an hot intestine Motion in the Blood, as by those Medicines which restore and corroborate the Tone of the Solids, Heart, and Vessels; among the Number of which Remedies, we may justly reckon the *Peruvian* Bark.

Nor am I of Opinion, that this Remedy alone does, at all Times and Seasons, by corroborating the Solids, increase the Circulation of the Blood, and Perspiration, in those who labour under Intermittents; but it is very necessary, that the Body should be duly prediposed, the Passages and Tubes of the Excretories open, and not obstructed by Spasms, the Humours thin and fluid, not thick, viscid, and immoveable, and the Virtues of the Remedy entire, and neither blunted nor weakened by the peccant Humours of the *Primæ Viæ*. For the Effect of our Bark is the same as that of well-prepared Chalybeates, which, also, by corroborating the Tone of the Solids, and thus promoting an universal Circulation of the Blood and Humours, are of very great Efficacy in curing inveterate and obstinate Diseases: They do not, however, always produce these happy Effects, but only when the Fluids and Solids are duly disposed to promote the various Excretions. Since, therefore, Chalybeats, by strengthening the Solids, promote Perspiration, the Reason is evident, why chalybeated Flowers of Sal Ammoniac, as, also, those prepared with Blood-stone, duly exhibited either in Powder, or reduced to an Essence with Spirit of Wine, subtile Crocus Martis, and rusty Filings of Steel reduced to a Powder, and properly exhibited, have the same Effect as the Bark, in stopping and even removing febrile Motions; but on the contrary, prove highly prejudicial, when indiscriminately prescribed, without any regard to Time, or the Habit, Constitution, and peculiar Circumstances, of the Patient.

Hence it may possibly seem specious to urge, that, perhaps, it would be safer, and more reputable for a Physician, not only in the Cure of various Diseases, but, also, of Intermittents in particular, to abstain entirely from the Use of such Medicines, as require so exact a Circumspection, to prevent them from being mischievous; and rather commit the principal Business of the Cure to Nature, administering these only, which correct the Intemperance of the Humours, and render them sufficiently moveable and fluid. But this Practice is not always safe and beneficial to the Patient; for Experience teaches us, that Intermittents are sometimes so obstinate and stubborn, that tho' an exact Regimen has been observed, and safe and select Remedies used, which not only correct and dilute, but, also, gently evacuate, and after the Paroxysm excite a Diaphoresis, they yet continue for several Months, and sometimes a whole Year, and longer, emaciate the Body, and entirely exhaust the Strength. Besides, tho' the Violence of the Fever is in the mean time abated by these Medicines, yet on account of the great Weakness brought on by its long Continuance, and which, according to *Celsus*, happens in all Diseases, by any slight Error in Diet, or Regimen, gentle febrile inconsiderable Paroxysms easily return, or other Diseases, such as a Cachexy, and slow Fevers, are produced, especially if the Patient eats liberally; so that, even the Enemies of the Bark, and *Baglivi* himself, are forced to own, that in the End, when the Fever has for a long time preyed upon the Strength, the Bark may be used to strengthen the Stomach, and the whole Body. And certainly there are many, and those considerable Disorders, especially such as arise from a Redundance and Impurity of the Juices, which might be successfully cured without Physic, by Abstinence and Hunger alone; but as many are unwilling to undergo such a Degree of Mortification, recourse must be had to Venesection, which is far less safe than Abstinence. Care, must, therefore be taken to avoid dangerous and prejudicial Measures.

Another Argument brought by many learned Physicians against the Bark is, that its astringent and corroborating Qualities suspend the febrile Commotions and Paroxysms, but do not

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not remove the material Cause of the Fever, which afterwards induces Relapses, or other more terrible Diseases. But we have already proved, that the *Peruvian* Bark is of such a Nature, as, when exhibited duly, in a proper Order, and in Conjunction with other suitable Remedies, to remove the Cause of the Fever, by promoting Perspiration, and restoring the due Tone of the Solids. Besides, there are Cases, where it is expedient to check and remove, for a time, morbid, and even febrile Commotions, leaving the Cause to be afterwards subdued. For sometimes the Fits are so violent, for Instance, in a continual and double Tertian, that the Strength being consumed by Watching, and long-continued excessive Heat, the Patient becomes incapable of supporting the Disease any longer. Here then it is very serviceable, and indeed necessary to suspend these dangerous Commotions for a time, that Remedies (both of the correcting and evacuating Kind) may be afterwards more efficaciously used to remove the Cause of the Fever, because the Medicines would either do no Service, or be prejudicial, during such a violent Paroxysm of the Fever, and such a Perturbation of the Œconomy of the natural Motions and Functions.

But there is another Argument against the Use of the Bark, which seems to carry greater Weight with it, and which is, that many Persons, as Experience evinces, who have been afflicted with Fevers, have by this Medicine been hurried into dangerous and incurable Diseases, such as slow and hectic Fevers, Cachexies, an Ascites, and Tympanites; in Men, hypochondriac, and in Women, hysteric Disorders, and in Children, Convulsions, and Epilepsies. But, though it cannot be denied, that these dangerous Disorders frequently follow Intermittents, yet the Cause of this is not evident, and therefore deserves an accurate Examination. It must be observed then, that before the Fever the Humours and Viscera are generally disposed to those Diseases, which may, also, in some measure, be produced by an improper Regimen, Diet, and manner of living, great Perturbations of Mind, and perhaps, also, by an unseasonable and imprudent Administration of the Bark, either with regard to the Quantity, or the Time of its Exhibition; so that the Person who considers this State and Condition of things, cannot assert, that a proper Use of the Bark is the sole Cause of these bad Effects, nor even suspect it, as faithless and prejudicial.

Besides, it is sufficiently evident, that the most efficacious Remedies, such as Venesection, Emetics, Purgatives, Opiates, Mercurials, Chalybeates, Preparations of Gold and Antimony, the volatile Salts of Animals, Laconic Baths, and spirituous Medicines, if used without Judgment, are equally pernicious and fatal. But surely no one can hence infer, that they are of no Use in Medicine, and ought to be entirely rejected; but he must rather argue thus: These noble Remedies are capable of producing bad as well as good Effects; and, therefore, should be properly used. But this Reasoning is still more applicable to the Use of the Bark, which is not to be classed among the above-mentioned Medicines, which are of an highly active Nature, because they contain a certain Principle, a small Quantity of which, produces sudden and great Alterations in the Body; but the Bark acts otherwise, and whoever would see the Effects of it, must take successively a large Quantity, even some Ounces of it; and we may reasonably conclude, that the Bark is not unfriendly to Nature, because it may be very successfully given in Diseases, where the Strength is decayed, and the nervous System affected; and for this Reason it is very serviceable in strengthening the Tone of the Stomach, Intestines, and nervous Parts, not only in Fevers, but, also, as Experience evinces, in Fluxes, Vomitings, Dysenteries, hypochondriac, and hysteric Disorders, and gouty Pains.

'Tis almost universally allowed, that, when the Fever is almost overcome by the Assistance of Nature, the Bark may be successfully used to suppress habitual febrile Commotions; but that it may be safely administred in the Beginning, after the first or second Fit, is principally denied by those who think Nature prudently makes use of a Fever, as a Remedy to remove the Causes, which endanger Life, being persuaded, that the wise and salutary Design of Nature is, by this means, disturbed. But Experience, the best Master in the Medicinal Art, whose Sanction is superior to all Arguments, plainly evinces, that this Fear is unnecessary. I have known several Instances of Persons, who, being seized with an epidemic Tertian, attended with dangerous Symptoms, have been happily cured by the following Method: After the third or fourth Fit, having taken an efficacious Medicine, which purged both upwards and downwards, they took the following Day, an antifebrile Electuary of the Bark, in proper Quantities, Order, and Time. By this means, after two or three Paroxysms, they were never sensible of another Attack, but perfectly restored to Health, especially when, after the Bark, they used strengthening, stomachic Medicines, and Exercise, to promote Perspiration. And I can positively affirm from frequent Observation, that a Fever is opposed with more Difficulty, and requires greater Caution, when it has continued for several Weeks or Months, than when the Assault is recent; because, the longer the Continuance of the Fever, the greater Quantity of Sordes arises from the Dissolution of the Blood by the hot intestine Motion; and this larger Quantity of Sordes is, therefore, corrected and evacuated, with the greater Difficulty.

Of the same Opinion are several eminent Physicians, among whom we shall only mention *Bohnius*, who in a particular Dissertation *de Fuga Febrium minus suspecta*, has confirmed this Doctrine by many important Reasons; and *Bergerus*, who, in his Dissertation *de Chinchina ab iniquis Judiciis Vindicata*, very justly speaks in the following manner: "I cannot approve of *Sydenham*'s mistaken Caution in ordering, that the "Bark should not be too soon given, before the Fever has in "some Degree wasted itself by its own Force, lest the Patient's Life should be brought into Danger, if we should "suddenly check the Motion of the Blood, cleansing itself by "the utmost Efforts of a Fermentation." *Padus*, *Donzellius*, *Lister*, *Morton*, *Jones*, and principally *Bohnius*, with more Reason teach us, "That after the Use of Evacuants, if necessary, and especially of Emetics, at the Beginning, and before the Fever has taken Root, and weakened the Juices, "Viscera, and Strength of the Body, its Force is successfully "lessened by the Use of the Bark. Here there is no Fear "either of Relapses, or of more Disorders, which *Baglivi* "ascribes to the Use of the Bark; whereas he ought rather to "have ascribed these Disorders to a preposterous Cure of the "Fever, and the Impurity of the Body, because both Reason "convinces, and Experience demonstrates, that, by a proper "Use of this salutary Medicine, both the Cause of those Distempers, and of the Fever itself, are removed; so that "*Bohnius* declares, that in almost infinite Numbers, to whom "he gave the Bark at the Beginning, and whom he cured, "none were sensible of any ill Consequence from it.

Lastly, in order to establish and confirm the proper, secure, and efficacious Use of this Medicine in the Cure of Fevers, we shall subjoin some necessary Cautions and Admonition, the due Observation of which, will prevent any one from doing Mischief with the Bark.

The Bark, then, should not be given, till the *Primæ Viæ* are cleansed from that Collection of peccant Humours, with which they abound; and this is best performed by detersive Salts, either alone in due Quantity, or mixed with a proper Laxative, or Emetic. Nor should the Bark be prescribed, especially in a considerable Quantity, if the Viscera of the Abdomen are obstructed or infarcted with Blood and Humours, before these Obstructions are opened, and the Infarction removed; which Intention is best answered by drinking mineral Waters, by neutral and bitter Salts, obtained from hot and cold medicinal Springs, by Preparations of Rhubarb mixed with Salt of Tartar, or the *Terra foliata Tartari*, by Broths boiled with aperient Roots and Herbs, and by proper Motion and Exercise of the Body.

Nor is the Cure of an Intermittent to be undertaken by the Bark in a manifestly plethoric, cacochymic, cachectic, and hypochondriac Patient, or when the critical Evacuations of Blood are suppressed; but it is far better by seasonable Venesections, by temperate balsamic Elixirs, by the *Pilulæ Balsamicæ Polychrestæ*, and the Interposition of bitter neutral Salts, to remove Obstructions, and employ the febrile Commotions, which ought never to be suddenly checked, as Medicines adapted to remove these Disorders.

Greater Caution is necessary, if the Patients to whom this Febrifuge is to be given, have their Strength and Blood exhausted; if they are obnoxious to exorbitant Passions; if they are old; and if the Fevers themselves approach to a continual hectic, or a slow Fever; if there is an excessive Costiveness; if the Urine is limpid, and without any Sediment; if the Hypochondria are tumid, and an autumnal, or winter Fever, has already been long protracted; for, in such Cases, it is more expedient to moderate the febrile Commotions, if there are any, by gently evacuating and corroborating Medicines, till at last, as it frequently happens, the Fits spontaneously cease, either by a Change of Place, a more exact Regimen, and Method of Living, or a wholsome, light, serene, and warm Air.

Since it is of great Importance to the proper and salutary Use of the Bark, in what Form, Dose, Season, and under what Regimen, it is exhibited, we must observe the following Cautions: 1. As to the Form, we ought above all to choose a pure, solid, well-tasted Bark, without any musty, vapid Smell. This being reduced to a very fine Powder, is most commodiously given in Substance, without any Addition, in any proper Vehicle. But, if any one abhors the Powder, it may be made up into an Electuary with Water and Sugar, and then swallowed. I can positively affirm, that I have found the Bark, given in this plain Method, better, and more effectual, than when mixt with

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many other Ingredients, and reduced into a Variety of Forms. When there is a manifeſt Weakneſs of the Stomach, accompanied with a Loathing of the Powder, it may be infuſed either in Water or Wine, edulcorated at Pleaſure, prepared with a little Cinnamon to render it palatable, and which may be drank either warm or cold. Beſides, if the Fever is of the bilious Kind, attended with great Heat, it is better to give the Powder mixt with a fourth Part of purified Nitre. But when, from a Suſpicion of an Obſtruction and Infarction of the Viſcera by viſcid and crude Humours, its too ſtrong Aſtringency is to be dreaded, whether it is given in a ſolid or a liquid Form, lixivial Salts muſt be added, eſpecially thoſe of the alcaline Kind, which powerfully correct and ſubdue the aſtringent Quality of the Bark. For anſwering this Intention, a moſt ſecure corroborating and antifebrile Liquor may be ſoon prepared, by boiling an Ounce of the Bark with two Drams of Salt of Tartar, in a Pint of Water diluted with Wine. I have, alſo, uſed the followiog Electuary with very great Succeſs:

Take of the Rob of Elder, one Ounce; of *Peruvian* Bark, ſix Drams; of the Extract of common Chamomile-flowers, of depurated Nitre, and of diaphoretic Antimony, each one Dram and an half; and of the Julap of Roſes, a ſufficient Quantity.

2. As to the Doſe of this Specific, it is never to be given in an exceſſive Quantity, ſuch as a Dram or more at a time; but it will be more adviſeable to give, at different times, one or two Scruples only on the intercalary Day, after the Fit, every three Hours, drinking after it a ſufficient Quantity of Water, Decoction, Broth, or Beer. It may, alſo, be exhibited with the Aliments. But Motion and Exerciſe are very great Aſſiſtants to the Operation of this Medicine, as they promote Perſpiration, which is very conducive to the removing a Fever, and preventing a dangerous Stricture of the Solids, or a Coagulation of the Humours.

3. As for the Time, we ought to perſiſt in this Method of Cure, at leaſt for a Week: Then the Fever being gone, and the Appetite returning, a Doſe ſhould be taken once every Day, and after that every other Day.

There are ſtill further Cautions to be obſerved in the Uſe of the Bark in intermitting Fevers: For,

1. During the Uſe of this Medicine, if the Patient is coſtive, his Body muſt be rendered ſoluble, only by an emollient and gently ſtimulating Clyſter; but not by Purgatives, for fear of a Relapſe, becauſe, by the Uſe of theſe, Perſpiration is obſtructed, and the Afflux of the excrementitious Humours recalled to the Inteſtines. But afterwards Manna with Cream of Tartar may be uſed, as, alſo, my balſamic Pills, or thoſe of *Stahl*, or *Becher*, with ſome aperient Salt, given at proper Intervals, during the Intermiſſion, and towards the End, of the Diſorder, in ſuch a manner, however, that after the Uſe of theſe Laxatives, a Doſe of the Electuary may be again given.

2. When the Fever is gone, the Body ſhould be kept in a free Perſpiration; for which Reaſon, cold Air, North Winds, and all external Cold, together with moiſt and low Places, are to be avoided; and bitter ſtomachic and corroborating Elixirs, ſuch as my balſamic Elixir, muſt be uſed; which being taken in the Morning, or at Noon, not only contribute greatly to ſtrengthen the Stomach, but, alſo, to promote Perſpiration.

I muſt now briefly mention the Fate this Diſſertation has met with. There was publiſhed at *Francfort* upon the *Oder*, a Diſſertation, directly oppoſite to ours, wherein the well-known Author, out of a Spirit of Contradiction, very poſitively aſſerts, and ſupports the Aſſertion with idle trifling Arguments, that the *Peruvian* Bark, though uſed with the utmoſt Caution, is a faithleſs, dangerous, and noxious Medicine. I thought it not worth my while avowedly to oppoſe this Writer, becauſe the Judicious and Skilful in the Healing Art will ſoon diſcover the Weakneſs of his Argumentation: For the ſake, however, of young Phyſicians, who are eaſily confounded by a Diverſity of Opinions, I have been induced to make ſome Remarks on that Performance.

The whole Weight of the Reaſoning in this Diſſertation is founded on the famous *Stahlian* Hypotheſis, which is, that the rational Soul produces theſe febrile Commotions for a ſalutary End, in order to eradicate the Cauſe of the Fever out of the Body; and that they are, therefore, by no means to be ſuppreſſed, eſpecially by Aſtringents, among which the Bark is certainly to be claſſed. But, as I had in this Diſſertation previouſly overthrown this Opinion, I am the more ſurpriſed, that the Author ſhould, upon a bare precarious Hypotheſis, totally deny, and utterly reject, the Truth of Facts, vouched by the Authority of the moſt celebrated Phyſicians of all Nations in *Europe*, and which palpably evince, that the *Peruvian* Bark may be ſucceſsfully and ſafely uſed in chronical Fevers, which can be cured with no other Remedy. For it is a very unphiloſophical Procedure, to judge of Experience, and meaſure the ſalutary Uſe of a Medicine, by imaginary Hypotheſes, and the pageant Force of abſtract Reaſonings, ſince we ſhould rather inquire firſt into the Truth of a Fact, and then examine the Reaſons, and by theſe means eſtabliſh the Hypotheſis. Let this great Author, therefore, as it is incumbent on him, demonſtrate, that the Bark, even cautiouſly and circumſpectly given, has, without Diſtinction, and at all times, been detrimental in Fevers. As for my own Experience, in above fifty-five Years Practice in different Places, and particularly in *Weſtphalia*, where the Inhabitants are plethoric, I dare confidently affirm, that neither incurable Diſeaſes, nor Relapſes, have occurred to me, from giving the Bark prudently, and not in too great a Quantity, eſpecially, if it was exhibited under a proper Regimen; ſo that I have rather obſerved the evident and ſecure Effects of it. I have myſelf been three times afflicted with a very obſtinate intermitting Fever; and, after a fruitleſs Application of all other Remedies, was perfectly recovered by a proper Uſe of the Bark alone; whereas the Cures of intermitting Fevers, undertaken by other Phyſicians without the *Peruvian* Bark, or that of Caſcarilla, have more than enough convinced me, that the Patients have not only been racked for a long time, but often hurried into violent chronical Diſtempers; and, what is very ſurpriſing, theſe very Contemners of the Bark have at laſt been obliged to have recourſe to it, as their only remaining Refuge.

But, in order to ſhew from Reaſon, whether, as is falſly aſſerted, the Bark, even properly uſed, by its aſtringent Quality, depreſſes the febrile Commotions, without removing the Cauſe of the Fever, it will be neceſſary to examine very cloſely into the Manner of its operating. The Bark, then, contains fixed, terreſtrial, aſtringent, and bitter Particles, by which it exerts its antifebrile Virtue. But who in his Senſes does not perceive, that in theſe Principles of the Bark there is a natural Remedy, if properly uſed, to infringe the ſubtile cauſtic Acrimony of the Bile in the *Primæ Viæ*, from whence epidemic Tertians principally ariſe, before it is convey'd to the Maſs of Blood, or from thence to the Nerves, and throws the whole nervous Syſtem into violent ſpaſmodic Contractions? Further, ſince every one allows a ſtrengthening Principle in the Bark, which binds up the relaxed Parts, and corroborates thoſe that have loſt their Tone, it is not to be wonder'd at, that from the Increaſe of Perſpiration, eſpecially on the intercalary Day, the remaining Sordes, which afford Matter for a new Paroxyſm, ſhould be entirely evacuated, and the whole Impetus of the Fever, by this means, deſtroy'd.

Now we readily grant, that this Medicine will prove very detrimental, and even bring on worſe Diſeaſes, if improperly adminiſtred, without any regard to an accurate Hiſtory of the Diſtemper, the Conſtitution of the internal Parts, the Cauſe of the Fever, and other morbid Diſpoſitions and Circumſtances, as the Time, Order, and Doſe, in which the Medicine is exhibited. But, ſince it is unreaſonable to argue in the manner I have already mentioned, it neceſſarily follows, that the Bark, when properly applied, is beneficial, and, when improperly, pernicious; for, if the Bark, given in large and too frequently repeated Doſes, finds Obſtructions of the ſmall Veſſels in the Viſcera, and a Redundance of viſcid Humours in a Body diſordered through the dull and languid State of the moving Fibres, in this Caſe, by its aſtringent and incraſſating Quality, it may increaſe the Diſtemper, and excite violent chronical Diſeaſes.

Thus much I thought proper to ſay at preſent, to convince every one, that the Bark is not ſo dangerous and terrible a Remedy in Fevers, and other Diſtempers, as ſome imagine, but ſafe, efficacious, and innocent, eſpecially in the Hands of one, who adminiſters it with Judgment and Reaſon; and that the bad Effects of it do not proceed from the Medicine itſelf, but ſhould be deſervedly attributed to the improper Uſe of it, or the Errors of the Patient, or a Neglect of removing the peccant Reliques. However, I would adviſe thoſe, who are not complete Maſters of the Healing Art, to refrain wholly from all heroic Medicines, and even the Bark itſelf, leſt they ſhould do more Injury than Good. *Hoffman.*

Mr. *Ruſhworth*, a Surgeon, in *Northampton*, ſent a printed Letter to the Maſter and Governors of the Surgeons Hall in *London*, dated *October* 18. 1731. in which he gives the following Account of his uſing the Bark in Mortifications.

In the Year 1715. *I was ſent for to a Man who had a Mortification on the Foot, from an internal Cauſe. The Fever was very high, attended with an irregular Pulſe, as is uſual in that Caſe. I made deep Inciſions in the mortified Part to the Bone, and ſcarified all around as far as there was any Inflammation, and uſed the common Applications; upon which the Fever abated, and the Pulſe became not only calm, but, alſo, regular; and in a few Days I had a Digeſtion at the Edges: I was obliged to leave it*

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it to the Care of an Apothecary; but in a short time I was sent for again, the Fever being returned, and the Part mortified higher: I used the same Method as before, with the same Success; but all the former Symptoms returned the third time; but, upon repeating the same Method again, ceased. I thought it to no Purpose to take off the Leg, having too often found Returns after it, the Fault being in the Blood and Juices. But Providence now first directed me to order the Bark in this Case (while there was a Remission of the Fever); it answered beyond what I expected, the Fever no more returned; the Leg was taken off; and I saw the Person well and lusty many Years afterwards; and I have since several times had the Experience of the good Effects of it in the like Cases, which has been no small Satisfaction to me.

Mr. *Rushworth* reprinted this Letter, adding another to Serjeant *Amyand*, dated *August* 5. 1732. in which he says, *I beg Leave just to mention, that leaving off the Bark too soon, a Patient of mine had a Return of the Mortification, in about five Days time; but, scarifying, and repeating it, I presently had the good Effects of it again, and she is now perfectly recovered; and though she had a very ill Habit of Body before, is now much better than she had been for several Years, and her Looks shew it to all that knew her before, though she is fifty Years of Age.* In Page 35. of the same Pamphlet, he says, *It is necessary, that I intimate to all Surgeons what I have mentioned to our Company, that I would not be misunderstood by my printed Letter, as if the Bark would answer in Mortifications from all internal Causes; for in some it is not proper, as Surgeons may easily suggest to themselves.*

In the same Pamphlet is a Letter from Serjeant *Amyand*, dated *July* 29. 1732. giving Mr. *Rushworth* the following Account of his Success in exhibiting the Bark in Mortifications.

I am now to acknowledge yours of the 17th Instant, and to acquaint you, that from your Example, I have given the Bark in all Mortifications with such Success, as has encouraged the Gentlemen you mention, to administer it. I have now under my Cure a Gentleman of Seventy-eight, who owes his Life to that Medicine. His Case was at first a Gangrene after a Phlegmon; the usual Means seemed to have removed the Danger; but the Fever continuing without Remission or Intermission, a Sphacelus soon appeared, of which nothing stopped the Progress, till the Bark was used; and in twenty-four Hours, or less, the Separation began, with a laudable Pus. The same thing happened to a Few, whose Sphacelus had got Ground for three Weeks, in spite of all Means, where several Surgeons were concerned.

I have now used it in seven Cases, the Circumstances in each being different; and yet, in all, the Bark has taken Effect; even within these few Days, to *Mr.* Delenoe, *who kept the Bagnio in* St. James's-street, *in whom a Mortification happened after several Punctures in dropsical Legs. The Bark stopped the Progress in less than twenty-four Hours, and the Sloughs began to separate; but the Patient having a Jaundice, and being spent with Evacuations, it revived, and came to the other Leg; of which though he died, yet the Power of the Bark was so plain, that from this and the other Cases, I think it is evident, that we may be as sure of getting the better of, or at least of stopping a Mortification from an internal Cause by the Bark, as conquering an Ague thereby. I am,* &c.

Claud Amyand.

Mr. *Rushworth* gave the Bark in the Remission of the Fever, Mr. *Amyand*, in the Height of a Fever, yet it had the same Effect; which shews the Difference between these Sorts of Fevers and Agues; in which last it is known to every body, that the Bark does Harm, if given in the Fit. Mr. *Rushworth* says, the Bark will not answer in all internal Mortifications: Serjeant *Amyand* asserts from Experience, that it will answer in all internal Mortifications. Mr. *Rushworth* discovered this extraordinary Effect of the Bark in the Year 1715. and communicated it, as he says, to several Physicians and Surgeons; yet we never heard any thing of it, till it was lately brought into Practice by Serjeant *Amyand*. Neither Serjeant *Amyand*, nor Mr. *Rushworth*, have given any Account of the Dose they gave of the Bark, how often they repeated it, or how long they continued it.

Mr. *John Douglas* gives the following Case, by way of Instance, of the Effects of the *Peruvian* Bark in Mortifications.

April 22. 1732. I was sent for about fifteen Miles out of Town, to visit a Gentleman a little turn'd of Fifty, where I met Dr. *Newington*, of *Greenwich*, and Mr. *Wade*, Surgeon and Apothecary, of *Bromley*. Upon Examination, I found the Back of his Right Foot mortified near the middle Toes, about the Breadth of a Shilling, the Small of the same Leg being pretty much tumefied, and pitted a little in some Places; his Pulse quick, and his Tongue dry. Upon Inquiry, whether he had received any Bruise, Wrench, or Wound, he answered, Not, as he remembered; but some Persons about him talked of a strait Shoe, which he had complained of some time before, which there was no Stress to be laid on: Therefore, we were all of Opinion, that it proceeded from an internal Cause. The Dressings being prepared, I began to scarify on the mortify'd Part, and cut to the Bones without giving him any Pain. I then continued the Incisions through the Skin all over the Back of the Foot, which was a little tumefied, without his discovering the least Sense of Feeling; which did not a little surprise me, the Skin looking perfectly fair: I then went on all over the fore Part of the Small of his Leg, whence we had a considerable Discharge of a Sort of a bloody Water, but there was still no Sensation: Therefore, I proceeded as high as the Gartering below the Knee, when he began to complain a little, and pure Blood followed the Knife. His Limb was then well stuped with a strong Fomentation, and the Wounds dressed with Pledgets armed with Digestive, and dipped in hot Oil of Turpentine; over them was applied a Poultice made of Oatmeal, stale Beer, and *London* Treacle.

He was then carried to Bed, and the Doctor wrote thus:

Take of *Raleigh*'s Confection, half a Dram; compound Powder of Crabs-claws, and the Root of *Virginian* Snake-weed, half a Scruple; the Confection of Alkermes, a sufficient Quantity to make the Whole into a Bolus; to be taken every fourth Hour, drinking after it four Spoonfuls of the following Julap.

Take of the Waters of Milk, black Cherries, and Treacle, each three Ounces; of the Syrup of Saffron, six Drams: Make them into a Julap.

Let him drink plentifully of Whey, and alterative Treacle-water.

As soon as we withdrew into another Room, the Company asked me, What I thought of the Gentleman's Case? I told them, I thought he was in very great Danger, not only as it proceeded from an internal Cause, but because it had spread so far in so little time.

April 23. Serjeant *Dickins*, and Mr. *Cheselden*, having been sent for, came down this Morning; and, after they had seen and examined the Patient, they told him, that every thing had been done for him which was proper; that the Progress of his Disease appeared to be stopped, and that he had nothing to do but to go on in the same Method.

The 24th, his Pulse was much the same as before, and the Mortification did not seem to spread.

Dr. *Newington* wrote as follows:

Take of *Raleigh*'s Confection, and Lapis Contrayervæ, each a Scruple; Syrup of Saffron, enough to make them into Bolus; to be taken every fifth Hour, drinking after it four Spoonfuls of the Julap above prescribed.

April 25. his Fever was high, his Tongue dry, and the Mortification began to spread a little. I scarified it deep, and dressed warm.

On the 26th, I could not perceive, that the Mortification had made any further Progress.

The Doctor wrote thus:

Take of the common Decoction for Clysters, eight Ounces; Oil of Chamomile, and Syrup of Violets, each two Ounces: Inject this Clyster in the Evening.

Take of the compound Powder of Crabs-claws, a Scruple; *English* Saffron, and *Raleigh*'s Confection, each half a Scruple; Syrup of Cloves, enough to make them into a Bolus; to be taken every sixth Hour, drinking after it four Spoonfuls of the following Julap.

Take of alexiterial Milk-water, and Mint-water, each four Ounces; of Treacle-water, three Ounces, Syrup of Saffron, six Drams: Make them into a Julap.

The 27th, his Fever increased, and the Mortification spread cross the Toes, towards the Ball of the Foot, which I scarified deep, and dressed as before.

On the 28th. the Mortification still got Ground; therefore I had recourse to the actual Cautery, with which I burned, where-ever it was corrupted.

Next Day I found no Benefit from the actual Cautery; for the Mortification increased; so that I told those about him, I had no Hopes of his Life. They immediately replied, What! Would not taking off his Limb save him? No, I said, I did not think it would; but advised to send for the two Gentlemen they had consulted before. On

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On the 30th, in the Morning, Dr. *Newington*, Serjeant *Dickins*, Mr. *Cheſelden*, Mr. *Wade*, and myſelf, met in his Chamber; and found his Fever very high, and his Tongue exceſſively dry, his Viſage wild, a great Drought upon him, very reſtleſs, the Mortification ſpread as far as the *Tendo Achillis*; and he complained, alſo, of an Hardneſs and Pain in one Side of his Belly. After withdrawing, we were all of Opinion, that taking off his Limb would be of no Uſe; and that, in all Probability, he could not live twenty-four Hours longer.

Upon this, Serjeant *Dickins* adviſed the Trial of the Bark, which he ſaid had been highly recommended to him by Serjeant *Amyand*, in ſuch Caſes. Mr. *Cheſelden* was of Opinion, that it would do no Harm; but added, that he had never heard of its being ſerviceable in ſuch Complaints; nor did he believe that this, or any other Medicine, would ſucceed, in the preſent Caſe. Since it was the extreme Remedy, I was for having it given as ſoon as poſſible. That Evening it was given, in the following manner:

Take of the fineſt Powder of *Peruvian* Bark, half a Dram; Confection of Alkermes, enough to make them into a Bolus: To be taken every fourth Hour.

May 1. I returned about Noon, and found a ſurpriſing Alteration to the better: His Pulſe was calm, his Tongue moiſter, the Wildneſs of his Countenance gone, and he ſaid he had reſted much better than any other Night, from the Beginning of his Diſorder. When I opened his Leg, I found the Mortification had made no further Progreſs; he had then taken but four or five Doſes of the Bark.

Next Day he was ſtill better, and we had a ſmall Diſcharge from the Sore: He had five or ſix ſmall Stools, but we ſtopped the Purging, by adding three Drops of liquid Laudanum to each Bolus of the Bark.

On the 3d I found two large Abſceſſes formed, one on each Ancle: The innermoſt being biggeſt, I opened it firſt, and had about four or five Ounces of good Pus; then I opened the other, and found near the ſame Quantity of Matter: I could now thruſt my fore Finger, with Eaſe, through, from the internal to the external Wound, between the Tendo Achillis, and the Bones of the Tarſus, notwithſtanding the outermoſt Tumor ſubſided but very little after opening the innermoſt.

Thus the Violence of the Fever being taken off by the Bark, Nature was enabled to form theſe Abſceſſes, which was an infallible Sign that the Progreſs of the Mortification was ſtopp'd. We then order'd the Bark ſhould be given only every ſix Hours.

Next Day I found his Pulſe higher, his Tongue a little dry, and the Diſcharge rather leſs than the Day before; therefore we ordered the Bark to be given every four Hours, and a Glaſs of Madera Wine after it.

On the 5th I found his Pulſe regular, the Digeſtion plentiful and laudable, his Countenance ſerene, with other favourable Symptoms; but the next Day I found him very uneaſy, and his Pulſe quicker; and, upon Inquiry, I found this Alteration proceeded from his Mind being ruffled by his Lawyer, about his Will.

On the 7th I found the Symptoms favourable; on the 8th his four little Toes being entirely mortified, I cut them off; and, next Day, I cut off his great Toe, and deſired him to eat and drink more freely.

On the 14th every Symptom continued favourable, the Diſcharge from the Wounds was plentiful and laudable, a total Separation was now made between the living and the dead Parts, and the Sloughs were hanging, like Tatters.

On the 18th he had two large Stools in the Morning, and a great Diſcharge from his Wounds, which I thought weakened him; therefore we ordered a Mixture, with *Confectio Fracaſtorii*, to be taken, in caſe he had any more Stools; and, alſo, to add liquid Laudanum to his Boluſes of the Bark.

On the 20th I laid open a large Sinus above the inner Ancle.

On the 24th Mr. *Wade* and I agreed to give him the Bark every ſix Hours only.

On the 28th they ſhewed me an œdematous Tumor on the Back of his other Foot, upon which, we ordered him to take no more Bark, and drink a little more freely of Wine. He had now taken the Bark every four Hours for twenty-three Days, and every ſix Hours for five Days, in all, about ten Ounces.

Next Day I ordered his Left Foot to be waſhed well with hot Water, Bran, and Soap, every Morning, to get off the Dirt, and ſcaly Foulneſs, which obſtructed Perſpiration: We, alſo, ordered him ſome bitter Draughts, to be taken three times a Day.

On the 30th I found the œdematous Swelling of the Left Foot leſſened; and I deſigned to have purged him, but that he had two or three natural Stools: Next Day I found him hearty, and the Wound in good Order; therefore I took off the Bone of the *Metatarſus*.

June 2. an old Gentleman, who came to viſit him, took a great deal of Pains to prejudice him againſt our Proceedings. On the 3d I found an Impoſtumation about the fore and middle Part of his Leg; but I was obliged to bring Serjeant *Dickens*, next Day, to perſuade him to ſuffer it to be opened, with which he did not comply without Reluctancy. I made an Inciſion about two Inches long, and had a Diſcharge of three or four Ounces of Matter. On the 5th I carried him ſome Spaw-water, to drink with his Wine.

On the 7th I cut off another of the metatarſal Bones; and, on the 9th, I cut into the Joint of one of the metatarſal Bones, to haſten its Separation. On the 15th I cut into the Sloughs in the Foot, and let out a great deal of viſcid Matter; and then ſnipp'd off all the looſe Rags of Sloughs; upon which, I diſcovered a large Fungus, which had thruſt forth under the Sloughs, from the tarſal Bones.

On the 16th I cut off the Remainder of the metatarſal Bones, and ſprinkled the Fungus with red Precipitate. On the 19th I perceived the Tibia bare about the middle; a large Sinus, and a conſiderable Diſcharge: The Sinus I laid open on the 21ſt, and on the 22d I laid open a ſmall Sinus on the Back of his Foot. There was a large Diſcharge from his Wounds, which weakened him, and leſſened his Appetite. The next Day the Diſcharge was very fetid, and in too large a Quantity; and, on the 24th, it ſeemed rather to increaſe, and his Strength to decreaſe: Nevertheleſs, I laid open two more Sinuſes. On the 25th the Diſcharge ſtill increaſed; however, I laid open one more Sinus.

The Ulcer now reach'd from the Origin of the Soleus, juſt below the Knee, all along the Inſide of the Tibia, as far as the Heel, being in ſome Places very broad, and in others very deep; all the Bones of the Toes and Metatarſus were gone, and all thoſe of the Tarſus carious. I now ſuſpected that the Tibia was carious further than we perceived it, which might be the Cauſe of that great and conſtant Diſcharge; and I thought that he could not bear ſo large a Drain long, and that it was better to have his Limb off, before it was too late: But, on the 27th, I was much pleaſed, to find the Diſcharge conſiderably leſſened, and could diſcover no more Sinuſes: We, therefore, agreed to proceed as before, only to dreſs twice a Day, for ſome time.

On the 28th I found the Ulcer in good Order, and the Diſcharge leſſened.

July 1. we ordered an Infuſion of the Bark to be taken twice or thrice a Day. On the 8th he was carried out into his Garden, for the firſt time, in his three-wheel'd Coach, for the Benefit of the Air. On the 12th I took off the *Os Cuboides*, and the three ſmall Bones of the Tarſus. On the 16th I ſeparated the *Os Naviculare*, and left only the *Aſtragalus* and *Os Calcis*.

Auguſt 5. I cut off, with a Knife, that large Fungus which ſprung from the *Os Calcis*, and had plagued him ſo long, and then applied the Actual Cautery to ſtop the Blood, and conſume the Roots of the Fungus. Before this, I had tried red Precipitate, *Roman* Vitriol, Butter of Antimony, and even the Potential Cautery, ſeveral times, one after another, but could not deſtroy it.

On the 29th, Part of the *Os Calcis* came away.

Sept. 4. I took away the *Aſtragalus* whole, and the Remainder of the *Os Calcis*, as I thought: When theſe two Bones came out, they left a Hollow big enough to receive a Duck's Egg; the back Part was form'd by a horny ſort of Excreſcence, which ſeemed to ſpring from the *Tendo Achillis*, the fore Part of it, by the Remainder of the Fleſh which made the Back of the Foot, and the upper Part by the hollow End of the Tibia: A good deal of Blood follow'd theſe Bones, therefore I cramm'd this Hollow full of Lint, and roll'd it up tight.

On the 6th I cut off this large horny Excreſcence (which made a Half-Moon round the End of the Tibia) with a Knife; there was no Appearance of any Bone in it, yet my Knife ſtopp'd, when about half way through, which ſurpriſed me a little, becauſe I concluded the *Os Calcis* was entirely gone, yet there was a pretty large Piece of it in the middle of the Fungus, I, therefore, cut a little higher towards the *Tendo Achillis*, and it ſeparated, with Eaſe, all round. It bled very freſh, ſo I ty'd one Veſſel, which ſpurted out, and ſtopp'd the reſt with the Actual Cautery, which, at the ſame time, conſumed the Roots of the Excreſcence. It was very remarkable, that the End of the Tibia was not carious, notwithſtanding theſe foul Bones had remained there ſo long.

On the 13th I found all the Sloughs ſeparated, the End of the Tibia covered with a fine grainy Fleſh, the Lips thin, and the Diſcharge moderate and laudable.

By *Nov.* 8. the long Ulcer, which reached from his Knee to his Heel, was perfectly cicatrized; and though all the Bones of his Foot were taken, yet the Ulcer, on the End of the Tibia, was not above the Breadth of a Shilling, and, otherwiſe, very favourable.

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favourable. I then ordered a wooden Leg to be made for him, to clap his Knee on, and walk about for Exercise, until this little Ulcer should be cicatrized.

Mr. *Samuel Lewis*, aged Seventy-six Years, of a pale Complexion, and choleric Constitution, a lusty, and, seemingly, a very healthy Man, having but little Sickness from his Youth, shewed me an Inflammation of his Left Leg, extending from an Issue he had below his Knee, down to his Ancle, and all round his Leg, partaking of an Erysipelas and Oedema. I threw out the Pea from his Issue, and endeavoured, by discutient Fomentations, Embrocations, and Cataplasms, with Bleeding, and lenient Purges, to mitigate the Inflammation, but to no Purpose; for I found it tending, very fast, to a Gangrene: His Leg, from an intense red, turned livid black; Blisters arose, &c. I would have scarified it, but was not permitted.

On the thirteenth Day the Tumor was sunk, his Leg black and dry, his Pulse quick, with frequent Intermissions; his Countenance wild, his Tongue hard, parched, and dry: He would not permit the necessary Incisions to be made. With the Consent of Dr. *Anthony Weaver*, a Gentleman of great Charity, Humanity, and Learning, I prepared eight of the following Draughts:

Take of the Powder of the best *Peruvian* Bark, half a Dram; of the Water of Black Cherries, one Ounce and a half; and of the Syrup of Saffron, half an Ounce: Mix, for a Draught.

One of these Draughts I gave him about Noon, and order'd, that he should continue to take one every four Hours.

On the fourteenth Day, about Ten in the Morning, by which time he had taken three Drams of the Bark, I found his Tongue moist, his Countenance not so wild; and, examining his Leg, found it impostumated, from a little below the superior Tubercle of the Tibia, down to the Small of his Leg; a little above which I saw a small Aperture, with a little Matter ousing from it. I told him, he stood a very fair Chance for his Life, if he would submit to the suitable Means. With his Allowance, I immediately entered the Probe-point of my Scissars at the Aperture, and cut upwards, as far as it was hollow; then turned them, and cut downwards, as far as the Cavity ran, and discharged between three and four Ounces of a well-digested Pus; and, after fomenting very well with a Decoction of the warm Plants in a strong Lixivium of Wood-ashes, Sal Ammoniac, and camphorated Spirits of Wine (which I had used from the Time I suspected it would mortify), I dressed the Incision with equal Parts of Basilicon and *Linimentum Arcæi*, spread upon a Dossil dipped in hot Oil of Turpentine, with a Cataplasm of Oatmeal, Flowers of Centaury, and Chamomile, of each equal Parts, with the Fomentation and Oil of Chamomile over all. He found an agreeable Warmth about his Leg, after the Dressings were applied.

On the fifteenth, I found him very chearful, and discovered a large Sinus betwixt the Soleus and *Gastrocnemius internus*; I laid it open, and discharged about the same Quantity of well-digested Matter as Yesterday: There was a very large Slough in the former Incision, which I cut off, and dressed as before.

The sixteenth he had been very restless all Night, his Pulse irregular, his Tongue rough and dry, with Flushings in his Cheeks. Inquiring if he had taken his Draughts regularly, I was told he had not, through the Attendant's Drowsiness: After reprimanding them for that Neglect, and cautioning him about it for the future, I opened his Leg, and found the Discharge large, a fungous Flesh rising in the first Incision, which I sprinkled with red Precipitate, and dressed as before; and, by reason he had not a Stool since the fourteenth, I ordered him a common Clyster, which brought away some harden'd Excrements: At Night, his Heat and Flushings were not so great, and his Tongue was moister.

The eighteenth, being wearied of his Draughts, I ordered thus:

Take of the Powder of the best *Peruvian* Bark, half an Ounce; and of the Confection of Alkermes, one Ounce: Mix together, and divide into eight Boluses; one of which is to be taken every fourth Hour, drinking after it three Spoonfuls of the following Julap:

Take of Milk-water, and Black Cherry-water, each four Ounces; of Rue-water, half an Ounce; of the epidemical Water, two Ounces; of the Tincture of Saffron, prepared with the Aqua Theriacalis, one Ounce; of the Confection of Alkermes, two Ounces; and of the Syrup of Cloves, two Ounces: Mix all together.

I observed Matter lodged in the *Gastrocnemius internus*, almost to the Back of the Leg; I opened it in the most depending Part, but had not the Discharge I expected.

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On the twenty-first Day, Compresses and Bandages were applied, to unite that Cavity, and prevent the Matter from lodging in it.

On the twenty-second, a Sinus, running towards the Small of his Leg, opened.

On the twenty-third, he complained of a Pain in his Side, and had a restless Night: I dressed the Ulcers only with dry Lint; the Cavity above-mentioned inclined to unite.

On the twenty-fourth he was very much dejected, but I could not apprehend the Reason of it; every thing appeared in good Order.

On the twenty-fifth he shew'd me a Swelling in his Groin, with great Hardness and Inflammation reaching down the Inside of his Left Thigh, extending to a pretty large and insensible Tumor a little above his Knee, which he found gradually to increase since the fifteenth Instant, but did not speak of it before, lest he should (as he expressed it) be cut there. I applied an emollient Plaister over it, and was apprehensive he would have a very large Abscess, which would exhaust him: There was very little Discharge from his Leg.

Till the thirtieth Day his Fever increased, with an irregular Pulse, great Drought, and a Dryness of the Tongue, notwithstanding he continued the Use of the Draught or Bolus, as before; very little Discharge from his Leg, the Ulcer appearing livid. I fomented well, and applied the warm Digestive, as above. The Swelling in his Groin very much increased; the Inflammation decreasing, I felt Matter to fluctuate, but deep; the Tumor not very painful. Not having a Stool for several Days past, I gave him a lenient Purge, by which he had a very large Stool of black and very fetid Excrements.

On the thirty-first, the hard insensible Tumor above his Knee was of a livid Colour, and that in his Groin rising towards a Point near the Inguen, inclining to the Inside.

On the first and second of *February*, instead of Matter, there was a Discharge of clotted Blood from his Leg: I dressed with the warm Digestive.

On the third, the Pus was laudable, the Tumor in his Groin considerably raised; he took a lenient Purge, which gave him one Stool, not having had one since the thirtieth of last Month.

The eleventh; to this Day his Fever continued, but not in any Degree, and his Pulse was irregular; a white Pustule appeared on the most prominent Part of the large Tumor in the Inguen, which I cut, and then entering the Point of my Probe-scissars, cut about an Inch in Length near his Groin: Well-digested Matter gushed out, as from a Cock, and in as full a Stream, sometimes streak'd with Blood: I took from thence, at least, three Pounds. His Leg begins to cicatrize.

On the twelfth, a large Discharge about the Bed, from the last Incision, and a large Quantity of Matter that fell below the Orifice, yet in the Cavity on the Inside of the Thigh. I applied a Caustic on the lowest Part, and discharged from thence about half a Pound; I, also, open'd that Tumor near his Knee, and discharged an Ounce of well-digested Pus.

On the nineteenth I opened another Sinus on the Inside of his Leg, and discharged thence only several Clots of Blood. From this time the Discharge from his Thigh gradually lessen'd; that very large Sinus united, by means of Compress and Bandage; his Fever left him; and he did not use his Medicine since the Fourteenth Instant; in which Time, in Draughts and Boluses, he had taken between ten and twelve Ounces of the Bark, which, being continued so long, and regularly, I believe assisted Nature to expel her Enemy in that very large Abscess in his Thigh, which, otherwise, might, notwithstanding the Mortification was stopp'd in his Leg, have seiz'd it again, or have fallen upon some more noble Part, and occasioned his Death; after which, I made him a Decoction of the most agreeable Bitters, by which means, he recover'd a good Appetite, and, in a short time, was able, with a little Assistance, to walk down Stairs, and any-where else in the House, with a Staff only; and, on the twenty-fifth of *March*, he walked to my House to be dressed, which is near a Quarter of a Mile; and, about a Week afterwards, went to his Work as usual, (which is mending Shoes) his Leg giving him very little Disturbance. In the Day it swells considerably; but, when he rises, in the Morning, is of its natural Size; for which I order'd a laced Stocking. His Thigh is strong, and firmly cicatrized; as, also, is his Leg; and the Man enjoys good Health, and is every Way as fit for his Work as he was before his Illness.

A Surgeon of *Glasgow*, of a very bad scorbutic Habit of Body, about forty Years of Age, had a little Pimple on the middle of the Under-lip, which his Barber cut the Top from, in shaving him, on *Saturday* the ninth of *February*; the following Evening, upon going out to the cold Air, the Pimple swelled, and turned hard, with an Inflammation all round it, which increased the *Monday* following: He applied an anti-phlogistic Fomentation, with Spirit of Wine camphorated. Notwithstanding the frequent Use of these for four or five Days following,

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following, and his being twice blooded, the Inflammation, Hardneſs, and Swelling, increaſed conſiderably, extending itſelf to the Angles of his Mouth, and ſome way along the Cheeks, and all round the Chin, with great Pain, and with vaſt Diſorder through his whole Body.

On *Friday* the fifteenth, at Eleven at Night, a ſmall black Spot, about the Bigneſs of a Herring-ſcale, appeared (not where the Wound was, but) on the middle of the red Part of the Lip, which ſpread ſo faſt, that, by Eleven next Forenoon, it cover'd near one half of his Lip, that then began to ſtand out much; when a Conſultation, of almoſt all the Phyſicians and Surgeons in Town, was called, who adviſed the Continuation of the Fomentation and Spirits, as before, and a Decoction of the Woods. For two or three Hours the Mortification continued to ſpread, till it had covered almoſt his whole Lip, reaching inwards, and downwards, to the Gums, the Hardneſs and Swelling of the neighbouring Parts increaſing. Upon this, he was adviſed to try the Powder of the *Cortex Peruvianus*, half a Dram for a Doſe. He took the firſt Doſe betwixt Three and Four o'Clock Afternoon, and his Lip was dreſſed at Ten at Night, when the Mortification did not appear to be increaſing, at leaſt the Increaſe was very inconſiderable: He then took another Doſe of the Bark. Towards the Morning of the ſeventeenth his Lip was again fomented, and he took a third Doſe of the Bark: At Ten of the Forenoon I dreſſed it, and found the Mortification had made no further Progreſs ſince laſt Night: At Night I dreſſed it again; and then, for the firſt time, obſerved ſomething like an Appearance of Suppuration at the Place where the Wound, or, rather, Pimple, was; but none at all on the mortified Part. That Night he took another Doſe of the Bark, and continued to take two Doſes, one in the Morning, and another in the Evening, for two Weeks.

The Fomentation and Spirits being applied twice a Day, and a little Emulſion given him for Drink, without any other Medicine than the Bark, the Suppuration ſucceeded well in the mortified Parts on the third Day after he began to take that Medicine; upon which, proper Digeſtives, and other Dreſſings, were applied. The Sloughs caſt off very well; the Hardneſs and Swelling went off; and, in twelve or fifteen Days, the Lip healed up, though with a conſiderable Contraction, by the great Loſs of Subſtance.

In very cold Air he ſtill feels a Pain in his Lip. This, I am apt to believe, does not ſo much proceed from the Callus, as from his Lip preſſing upon the fore Teeth, which are very rough and looſe; and which it does, more eſpecially, when he attempts to ſpeak, by the Lip being ſo much contracted.

I have read this Account to the Patient, and had his Approbation of my Relation of the Facts, which my Attendance on him all the Time of this Diſorder gave me ſufficient Opportunity to obſerve.

Mr. *Monro*, Profeſſor of Anatomy in the Univerſity of *Edinburgh*, gives the following Remarks upon the *Peruvian* Bark.

After the good Effects of the Bark, in Gangrenes, were known, I had Occaſion to uſe it ſeveral Times, in that Diſeaſe, with Succeſs; and ſometimes, by Neceſſity or Choice, gave it in an Injection by the Anus, rather than by the Mouth, as I had, alſo, formerly done in Agues: The Quantities given in Clyſters were larger, but the Effects were the ſame. One Cure of a Gangrene, made, I think, by the Bark in Clyſters, ſeems to me ſo remarkable, that I muſt tell the Hiſtory of it.

A young Gentleman, very healthy, in Appearance, had ſtrained his Left Hand, but had no Uneaſineſs in it for ten or twelve Days; at the End of which, he was ſuddenly ſeized with a very ſharp Pain near the *Os Piſiforme* of the Wriſt; and, ſoon after, the Teguments on the anterior Part of the metacarpal Bone of the little Finger ſwell'd: He neglected to aſk Advice for two Days; then ſome Student, who ſaw it, obſerving a Mortification begun, ſcarified the Skin, fomented the Part, and applied ſome digeſting Ointment with Oil of Turpentine; which Dreſſings were continued, alſo, the third Day.

On the fourth Day, when I ſaw him firſt, the Teguments covering the ſhort Muſcles of the little Finger were all mortified, his Pulſe was ſo low, that, with Difficulty, I could feel it, and it was ſo quick, that I could not number the Beats of it. He had a general Tremor over all his Body; the *Subſultus Tendinum* was very frequent; he had a conſtant Anxiety, Reſtleſſneſs, and Delirium; his Tongue was parched and dry; and whatever Food or Drink he ſwallowed, was vomited before it almoſt got down to his Stomach. The gangrened Parts were again ſcarified and fomented, their Edges were dreſſed with warm Baſilicon, to which a ſmall Proportion of Oil of Turpentine was added, and a Poultice of *Venice* Treacle was put over all. Soon after, his great Guts were emptied by a laxative Clyſter, and, as ſoon as the Operation of this was done, five Ounces of warm Milk, and a Dram of the Powder of the *Peruvian* Bark, were injected, which he retained: Four Hours after, the Milk and Bark were repeated; and two more ſuch Injections were given, in the Night-time.

Next Morning he had no Raving, Tremor, Subſultus, or Vomiting; and his Pulſe was ſtronger and ſlower: The Hand was dreſſed, as the preceding Day, and the Injection with the Bark was repeated; in the Afternoon it was changed, at the Patient's Deſire, for a Bolus of half a Dram of the Bark, which was repeated every four or five Hours. The Fever ceaſed, the gangrened Parts began to ſeparate next Day, and, the Bark being continued ſeveral Days, the Cure went on without any further Accident, except that he was put to a good deal of Pain, one Day, by an Application of ill-prepared *Aqua Phagedænica*. This I mention, to have an Opportunity of warning the younger Surgeons not to make Uſe of that Medicine, unleſs when the Lime-water is ſtrong enough to make the Solution of the corroſive Sublimate Mercury to turn turbid, and to precipitate in Form of a very fine red Powder: For if the Lime-water is effete, and remains clear after the Sublimate is mixed with it, inſtead of a very mild Medicine, they are to expect all the Effects of unaltered corroſive Mercury.

In all the Gangrenes where the Bark was given with Succeſs, I obſerved, that it brought on a mild Suppuration, which I ſaw became worſe when the Uſe of the Bark was interrupted, and then turned of a good Kind, when the Bark was again given: This made me join in Opinion with others, that it would, alſo, be of good Service in ſeveral Sores where the Suppuration was faulty: Experience proved we judged right; ſo that the Bark became a common, and a beneficial Medicine, in this Town, for ſuch Sores.

This Effect of the Bark, in procuring a kindly mild Suppuration, led me to imagine, it might be ſerviceable in the Small-Pox of a bad Kind, where either a right Suppuration did not come into the Puſtules, or the Petechiæ ſhewed a Diſpoſition to a Gangrene; and I had the Pleaſure to ſee the Effects I expected from it in ſeveral variolous Patients, to whom I gave the Bark: The empty Veſicles filled with Matter, watery Sanies changed into thick white Pus; Petechiæ became gradually more pale-coloured, and, at laſt, diſappeared; the blackening of the Pox began ſooner than was expected. I no ſooner had the good Effects of the Bark in the Small Pox aſcertained by Trials, than I ſpoke of it to other Gentlemen in Practice here, ſome of whom had reaſoned in the ſame way I had done, and had been giving it to their Patients with Succeſs; ſince which, I have had Thanks from ſome of my Friends in the Country, to whom I recommended this Practice.

I gave, at firſt, the Decoction, and then the Extract of the Bark; afterwards, I forſook thoſe weaker Preparations for the fine Powder, which was mixed with ſome mild rich Syrup, and an aromatic diſtil'd Water, both which may be varied, as the Patient prefers one ſort of Taſte to another. In this Form, from ten to forty Grains were ordered to be ſwallowed every four or five Hours.

But as ſeveral Children could not be prevailed on to take it by the Mouth, in any Form I could contrive, and, through fear of having this Medicine given, would taſte neither Food nor Drink, there was a Neceſſity of uſing the other Form of Clyſters: Previous to giving the Bark this way, the great Guts were unloaded by a laxative Injection; and then from half a Dram to two Drams of the Jeſuit's Powder was injected, with a ſmall Quantity of warm Milk, to which ſome Diaſcordium, or Syrup of Poppies, was added, if the Clyſters were retained too ſhort a time: Theſe Injections were repeated Morning and Evening, or oftener.

I have hitherto only given the Bark in the Small Pox, after the Eruption, and continued it till the Blackening was compleated; but am perſuaded, from the Effects I ſaw of it, in mitigating the Secondary Fever, that if it is given during the eruptive Fever, it might be of Uſe in determining the Small Pox to be of a favourable Kind.

I hope what I have ſaid will not be underſtood as if I recommended the Bark as an infallible univerſal Remedy in thoſe Diſeaſes, and the only one that needs to be employed in them: So far from meaning any ſuch thing, I aſſure you, I have ſeen it fail, more than once, in both Gangrenes and Small Pox; and, in general, I know no Medicine which is not capable of doing Hurt to Patients, under ſome particular Circumſtances of the very Diſeaſe for which it is given with the moſt Succeſs. Thus, in the Small Pox, when the Lungs are violently infarcted, I would not conſent to give the Bark: I have ſeen Patients, in this Condition, almoſt ſuffocated, after a ſmall Doſe of it: They would, alſo, in my Opinion, do very ill, who would truſt entirely to the Bark, neglecting the other Medicines which have been uſed, to Advantage, in the different Circumſtances of this Diſeaſe. The Bark would not, ſurely, moderate a very high, full, hard Pulſe, with high Breathing, and inflamed Brain, in either eruptive or ſecondary Fever of the Small Pox, as Blood-letting would do. The Bark could not clear

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clear the Stomach and Bronchia of viscid Phlegm, as an Emetic would; it would not, singly, calm the general Spasm, or relax the Skin, to make way for the Eruption, as when assisted by a tepid Bath: Nor would it raise a sinking Pulse, or discharge a Load of viscid Humours, as the Stimulus of a Blister, and the Suppuration after it, will frequently do. In short, I pretend to recommend it no further than as an excellent Assistant to Nature in what the Antients called the Concoction and Maturation of the morbid Matter, the Effects of which appear in moderating the Fever, and bringing a kindly mild Suppuration; which are, indeed, grand Articles, in the Cure of Gangrenes, Ulcers, and Small Pox. *Medical Essays*.

Mr. *Ranby*, in a late Treatise, recommends the *Peruvian* Bark, in some Cases where its Use is not, I believe, commonly known, as follows:

The Method I have prescrib'd to myself, in penning this small Treatise, leads me in this Place to speak of the Bark; a Medicine which no human Eloquence can deck with Panegyric proportionable to its Virtues; of such incomparable Benefit it is to Mankind!

I have for a long time indulged myself in the frequent Use of this noble Drug, in respect of large Sores of every Kind; and have often experienced, that, in those painful Circumstances, it would procure Rest, if given in large Doses, when even Opium had been taken, without any manner of Effect.

Though I am aware, that a very ingenious Surgeon recommends the Bark (see *Philos. Transf.* N° 426.) against Hæmorrhages, in external Wounds in general; yet the prescribing it in gun-shot Wounds, in the manner I introduced it last Campaign, is a Practice, as I conceive, no-where left us on Record; and this I did with extraordinary Success, of which I shall give some few of the many Examples that have occurred to me in Practice.

In all large Wounds, especially those made by a Cannon-ball, there is constantly a great Laceration of the Membranes, and Parts endued with an exquisite Sensation; and these are ever attended with an excruciating Pain, and a Discharge of a gleety Matter, which, if not restrain'd, proves often of the last Consequence. In this unhappy State, the Bark (given in Doses of a Drachm each, and repeated every three Hours, or oftener, if the Stomach will bear it) with surprising Efficacy repairs the Breach made in the Constitution by this terrible Havock. Elixir of Vitriol, taken three times a Day, in a Glass of Water, I find to be of singular Benefit, and to prove a very good Assistant to the Virtues of the Bark; and, if the Body be costive, to each Dose of the Bark I add four or five Grains of Rhubarb, till that Inconveniency is remedied. Should the Bark run off by more than four or five successive Stools, I take care to check this Effect of it, by ordering two or three Drops of Laudanum, or two Spoonfuls of a Diascordium Mixture, along with it, every time it is given.

Where the Sore discharges a considerable Quantity of gleety Matter, is flabby, looks pale, and glossy, (which Appearances are ever consequent to a Loss of Substance) the Bark continually relieves the Pain, that is predominant in this Case, thickens the Matter, lessens its Quantity, and quite changes the Complexion of the Wound. And though the Patient has a dry Tongue, great Heat, a quick, low Pulse, and a Head hardly clear; yet, even in this Situation, I have known it to do Miracles. Nor (I freely own, when the Necessity for it is evident from Symptoms) have I, in administring it, the least Attention to the Quickness of the Pulse; and in Wounds where, upon every Dressing, the Arteries have started, and, of course, subjected the Patient to no little Hazard, I have frequently remark'd the Bark to procure the most unaccountably good Effects.

However, I would not be understood to insinuate, that the Bark will stop the Bleeding of any considerable Artery; nevertheless, though this efficacious Property is not to be expected from it, the vitiated Texture and State of the Blood (which, from too great a Degree of Fluidity, forces thus its Way thro' the arterial Passages) will be alter'd more effectually from the Exhibition of it, than from any thing I know in the whole *Materia Medica*: From whence, I think, is plainly pointed out to us, the Basis we are to erect our future Superstructure upon. The Bark, on these Occasions, I constantly advise, together with Opiates, more or less, in proportion to the Urgency of the supervening Symptoms.

As to the Efficacy of the Bark in amputated Limbs, Mr. *Ranby* gives the following Case: It is very common, in scorbutic Constitutions, for a Sore, the first eight or ten Days after taking off the Limb, to promise all imaginable Success; from which time it frequently begins to gleet prodigiously, looks pale, glossy, and flabby; and this Gleeting, if not check'd, in a little while runs the Patient out of the World. In Exigencies of this Kind, the Bark hardly ever fails to procure Relief, and works an apparent Change in a very short Space of Time, sometimes in twelve Hours. This I can attest for absolute Truth, in regard of a very worthy Gentleman, about fifty Miles from *London*, who broke his Leg by a Fall from his Horse. I took it off the second Day from the Accident, and, after the first Dressing, resigned him to the Care of his neighbouring Surgeons, not, in the least, afterwards suspecting but that every thing was succeeding agreeably to our Wishes: But the Scene was soon reversed; for, about sixteen Days after, I receiv'd a Letter from the Gentleman who had the Management of him, intimating, that a small Artery, near the Skin, bled very freely, on their removing the Dressings. In Answer, I advised a Vein to be open'd in the Arm, and the Bark to be taken instantly. But, as the Symptom of the arterial Opening ceas'd, and the Patient was without any Sign of a Fever, the Advice of seeking Resource from the Bark was postpon'd. The Seven-and-twentieth Day, another Surgeon, eminent in the Profession, and myself, were hurried out of Town to his Assistance: On our Arrival, we found him very much emaciated, a great Gleet incessantly ousing from the Stump, which, on the Removal of the Dressings, bled, from every Pore, like Water press'd from a Sponge. We immediately gave him the Bark, and repeated it every two Hours. The next Morning, the Discharge was considerably lessen'd, nor did there appear the least Footsteps of Bleeding. If he accidentally, at any time, neglected taking it only for a Day, or even lessen'd the Doses, the Wound inevitably pointed out the Omission, by the Alteration of its Complexion. He persisted in the Method of taking the Bark every two or three Hours, till he came to Town, when it was thought proper to give him a larger Respite. He now enjoys a perfect State of Health, and has done so ever since the Stump was heal'd; but, ere this was accomplish'd, he took near nine Pounds of the Bark. *Ranby*.

This Bark is brought from *Peru*, and there are three Kinds of it. The first is of a bitter, resinous Taste, and not so red as the common sort; the second, less than the first, is cover'd with a Moss; the third is the finest, and imported in small Pieces.

The *Peruvian* Bark is uneven, and thick, its Colour resembling that of Cinnamon, Coffee, or Rust of Iron. It is of a bitter Taste, and has no Smell but what comes from the Wood. The Name *Kina* is taken from the Count of *Cinchon*, who was Viceroy of *Peru* when the Medicine was discover'd. The Tree, to which it belongs, is not, as yet, sufficiently known: It is said to have Leaves like the Plum-tree, and flowers like the Orange-tree. *Herman* says, it is a high large Tree, like the Lime-tree; and that it bears Berries. It grows in the inland Part of *Peru*, on the Mountains near *Loxa*, or *Loja*, in the Province of *Quito*. The *Spaniards* say, that the Use of its Bark was discover'd in the following Manner:

Near the Town of *Loxa* was a Lake surrounded by *Quinquina* Trees, before the *Spaniards* settled in that Country: These Trees being, by an Earthquake, or some other Accident, thrown into the Lake, communicated a bitter Taste to the Water; so that the Inhabitants, who used to drink it, were obliged to leave it off: However, an *Indian*, who had a violent Fever upon him, and, consequently, a great Drought, finding no other Water, was forced to drink of this, by which he was perfectly cur'd of his Fever. He related this Adventure to some of his Friends, who, having made the same Experiment, were likewise cur'd: Upon this, they set themselves to discover what had given this febrifugous Quality to the Water of the Lake, and found, in the first Place, that a great Number of Trees had fallen into it; and, Secondly, that, after a certain time, these Trees, being rotted in the Water, it lost its bitter Taste, and, at the same time, its Virtue: Whence they concluded, that this Virtue was owing to the Trees. Afterwards, they tried all the Parts of them infus'd in Water; and thus discover'd, that their whole Virtue resided in the Bark. The *Spaniards* having conquer'd their Country, this invaluable Medicine was kept a great Secret; and they oblig'd themselves, by Oath, never to discover it to their Conquerors; hoping, thereby, to see them all perish by the epidemical Fevers that then reign'd in the Country. The Secret was inviolably kept, till the Year 1640, when a *Spanish* Soldier, quarter'd in an *Indian*'s House, who had got into the good Graces of his Landlord, was seiz'd with a severe Ague. The *Indian*, touch'd with Compassion, and fearing, perhaps, that he should have a worse Guest, if this Soldier happen'd to die, brought him the Bark, which having taken, he was soon perfectly cur'd. The Soldier, surpris'd at such an unexpected good Effect of an unknown Remedy, made use of all his Address to discover the Tree to which this Bark belong'd, and, at length, succeeded. For some time he contented himself with curing his Fellow-soldiers, but never told them by what means; but the Vice-queen, Wife of the Count *de Cinchon*, then Viceroy of *Peru*, being

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being seiz'd with an intermitting Fever, which had so far baffled the Skill of her Physicians, that her Life was despair'd of, and this Report having reach'd as far as *Loxa*; the Soldier, who was Master of the Secret, told his commanding Officer, that if he would allow him to go to *Lima*, he would cure the Vice-queen. The Officer, having inform'd himself of the Cures he had perform'd in that Country, readily gave him not only Leave to go, but, also, Letters of Recommendation, and proper Certificates. Being arriv'd at *Lima*, he was admitted to make Trial of his Medicine, on this Condition, that he was to take as much himself as he gave to his Patient. This he easily agreed to; and, having succeeded, in a very little time he was amply rewarded, and then prevail'd on to discover the Secret, which the *Spaniards* made use of from that time forward, with so great Success, that the Physicians were astonish'd, and half-starv'd. In 1649. Father *de Lugo*, a Jesuit, then Procurator General of his Order, and afterwards a Cardinal, brought some of this Bark to *Rome*, and the Society began to bring it into Reputation in *Europe*, by which they got a great deal of Money, in a short time. They sold it for more than the Weight in Gold, and, to disguise it the better, never parted with it but in Powder. From that time it was call'd the *Jesuits Powder*, because these Fathers were the sole Masters of it, and had brought it into Use. Two Drams were at that time thought sufficient for the Cure of any intermitting Fever, because they never gave it till after many other Medicines had been made Trial of. The Physicians were divided in their Opinions about it, some looking on it as a divine Medicine, whilst others believ'd it dangerous, and even fatal, in many Cases. Many Treatises were written, some for it, others against it; but the *English* Physicians, having, at length, made several Experiments with it, that might be depended on, it came to be greatly in Vogue in *England*; and the famous *Morton* wrote his *Pyretologia* in its Defence. In 1679. a Person, nam'd *Tabor*, who, to make himself more considerable, changed his Name to *Talbot*, came into *France*; where, having cur'd the Dauphin of a stubborn quartan Ague, by this Medicine, it gain'd a great Reputation, and the King purchas'd his Secret, and made it public. It was then term'd the *English Remedy*, and consisted of an Infusion of the Bark in Wine. There was a little Treatise publish'd at that time, with this Title, *The English Remedy for Fevers*.

The Bark is an infallible Remedy for all intermitting Fevers, if the following Circumstances be observ'd:

1. The Patient ought to lose some Blood, and to be purg'd before he takes the Bark; and, if he is of a dry Habit of Body, he ought to be kept, for some time, to a liquid Diet; because, before the depuratory Fermentation is begun, the Fluids ought to be well diluted.

2. The Bark made use of ought to be compact, or solid, of a reddish Colour, like Cinnamon, of a faint Smell, a little musty, bitter and astringent to the Taste, and not kept too long.

3. It ought to be given in large Doses: For Instance, a Dram of powder'd Bark may be taken at a Time, in a Glass of White-wine, or Water, and repeated every three Hours, till the Time of the Return, or Paroxysm, be over. It may, likewise, be given in Infusion, or Decoction; an Ounce boil'd in a Quart of Water, till reduced to a Pint, being drank, by large Draughts, in the Interval between two Fits.

4. It ought to be continued for a long time after the Fever has ceas'd, gradually diminishing the Dose, and the Frequency of repeating it. This is a sure way to prevent a Return.

This Remedy appears sometimes to fail, that is, the Fever returns, after a certain Quantity of it has been taken; but this is never owing to want of Efficacy in the Bark, but from Ignorance of the true Method of taking it. Thus, if the Body is not sufficiently prepar'd, it can't act as it ought, because of the Obstructions it meets with in the *Primæ Viæ*, and in the Blood-vessels. If the Bark be bad, nothing is to be expected from it; and if the Dose be too small, or not continu'd for a sufficient time, it only deadens the Fever for a time, but does not radically destroy it. It is, therefore, a groundless Prejudice, that the Bark fixes Agues, or that the Use of it is ever attended with bad Consequences, especially in the Stomach, as many pretend. The Patient is seldom thoroughly cur'd without some kind of Crisis, especially by Stool, or Urine: This latter is the best, and the Physician may be assur'd, that his Patient is safe, if he makes a greater Quantity of Urine than usual. The Bark has, likewise, been given in Clysters, with Success; but then the Quantity, usually taken by the Mouth, ought to be tripled.

This admirable Specific is, likewise, a good Alterative, and, consequently, proper in an infinite Number of Cases where there is no Fever; for it strengthens the Stomach, excites the Appetite, &c.

This Medicine is not hurtful to weak Lungs, as some imagine, Experience having often shewn the contrary; and it has often prov'd very successful in Catarrhs, and other Kinds of Fluxions, even when accompanied with Spitting of Blood, as in the Case of the late Mareschal *Tallard*. But in these Cases other pectoral Medicines are to be join'd with the Bark.

Some join with the Bark, given in Fevers, dried Arum-root, Sal Ammoniac, Cinnamon, *&c.* Sal Ammoniac is the most proper Way of any, being mix'd in the Quantity of half a Dram to two Drams of Bark. *Geoffroy.*

QUINTA ESSENTIA. See ESSENTIA.

CHYMICAL LIQUID QUINTESSENCES.

Put any distil'd aromatic, or essential Oil, into a clean dry Glass, and pour to it twelve times its Quantity of pure Alcohol, distil'd from Alcali, so as to contain not the least Water: Shake them together, and the Oil will disappear, and intimately mix with the Alcohol, so as to form one simple and transparent Liquor; but no Water must be contained, otherwise the Experiment will fail.

Alcohol, therefore, and essential Oil, are of such a Nature, as intimately to mix and unite together, provided they are both perfectly freed from Water; for, if only the Glass were moist, or the Breath interposed, it would hinder the Effect: And, when the Solution is perfect, and the two Liquors are thoroughly mixed together, the Addition of Water turns them white, or opake, while the Water unites with the Alcohol, and separates the Oil.

If the Alcohol, saturated with the Oil, be carefully distilled, in a close Vessel, with a gentle Fire, and several times cohobated, the Oil will thus gradually be made so volatile, as, in great measure, to rise along with the Alcohol: Whence Oils are rendered more moveable, and more subtile, and are exalted to the highest Degree of Penetrability, like that of Spirit, tho' still retaining their native Virtues. But if, with a Fire of only Ninety Degrees, a Mixture of Alcohol and these Oils be distil'd, the Alcohol will rise by itself, or only carry with it the presiding Spirit from the Oil, leaving the oily Part behind; and if, with great Care and Caution, the thinner Part be several times separated from the thicker, by repeated gentle Cohobations, the Alcohol will, at length, be so impregnated with these Spirits, as to appear almost pure Spirit itself, leaving a gross exhausted Oil behind.

REMARKS.

The antient Chymists conceived, that Fire, Air, Water, and Earth, contributed to the Composition of Bodies, with the Addition of a fifth thing, which, made of the four common Elements, enriched the Whole, by its own particular and inseparable Virtue, whereon the Colour, Odour, Taste, and Virtue, of each Body, principally depends: Therefore, they supposed, that each particular thing, consisting of four Essences, had a fifth Essence added to it, which was extremely small in Quantity, yet of very powerful Efficacy, so that, when separated, and added to another Substance, it animated the Spirits thereof: Upon which Subject *Isaac Hollandus*, and *Paracelsus*, ought to be read. There is scarce any known Method more proper than the present, for preparing Quintessences. Thus, if a single Drop of Quintessence, so made, with Oil of Cinnamon, be mixed, and drank with a Glass of *Spanish* Wine, it instantly gives a grateful Briskness to the flagging Spirits, and therefore proves an admirable Remedy in Faintings, Suffocation, and want of Spirits. Nor do we know, that the Art of Chymistry can go farther, in obtaining the Virtues of Vegetables. If a Drop of such a Mixture, of Alcohol and Oil, be let fall into the Water, it presently turns milky; which shews when Oils are adulterated with Alcohol. Hence, also, we understand the Power of Alcohol, which principally acts upon the Spirits and Oils of Plants, by mixing and fixing them intimately with itself, and thus making a Compound, which afterwards seems to act with an uniform Virtue. And though these Oils exist under very different Forms in Vegetables, yet they may still be united with Alcohol, provided there be no Water in either: And we find, that the native Spirit always adheres to this oily Matter, under whatever Form it appears. All these Preparations have a great Affinity with Fire; for such Quintessences, being taken, heat the Body, and, if the Quantity be large, scorch and burn it; when externally applied, they produce all the Effects of a sharp Inflammation, even up to a Gangrene itself.

DRY QUINTESSENCES.

Take Alcohol, wherein an aromatic Oil is dissolved; pour it upon ten times its Weight of dry Loaf Sugar, reduced to a fine Powder: Grind them together exactly, for a long time, in a glass Mortar, that they may unite; put the Mixture into a China Vessel, set it in a glass Body, kept on all Sides moderately warm, that thus the remaining Spirit, which moistens the Matter, may gently exhale, and, by means of a Still-head, be collected in the Form of a liquid Quintessence: And thus the Sugar

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Sugar will remain dry in the China Veſſel, yet impregnated with the Quinteſſence. Let it now immediately be put into a glaſs Veſſel, cloſe ſtopp'd, and preſerv'd, under the Title of a dry Quinteſſence. By a Dram of the fineſt Wheat-flour, five Drams of Loaf-ſugar, and grinding them dry in a glaſs Mortar, then adding a Dram of the liquid Quinteſſence, and proceeding as before, an elegant dry Quinteſſence will be obtain'd.

By taking a Dram of the liquid Quinteſſence, and half a Dram of the eſſential Extract of Saffron, and three Drams of fine Sugar, and as much fine Wheat-flour, and proceeding as before, nearly the ſame Kind of Preparation will be obtained, but more compounded.

As any of theſe Kinds of Oil may be diſſolved in Alcohol, and ſo brought into an uniform Liquor, though conſiſting of various Sorts, and thus employed to the ſame Uſes, it appears, that theſe noble Compoſitions may be made by various Mixtures, at the Diſcretion of the Artiſt. Hence there are infinite Ways of varying theſe Forms, each whereof may, for Excellence, vie with the reſt.

REMARKS.

Here we ſee to what a Length Chymiſtry may reach, in affording Forms of Medicines, of great Efficacy, in little Compaſs: For if a Scruple of the dry Quinteſſence be mixed with an Ounce of *Spaniſh* Wine, we have, hence, a little Draught, containing the utmoſt Virtue that can be obtain'd from Aromatics. If, therefore, a prudent Phyſician ſhall juſtly know the Neceſſity and Uſe of ſuch a Remedy, he may hence derive it from Chymiſtry for his Purpoſe. Theſe Preparations have this Convenience, that they may long be preſerved perfect for Uſe, and may be ſafely and commodiouſly carried in Voyages, Journeys, and Camps, where furniſhed Shops are not at hand. Here, again, we have the Bounds of chymical Perfection. *Boerhaave's Chymiſtry.*

QUINTANA. An Ague, the Paroxyſm of which returns every fifth Day.

QUINTI ANTIDOTUM. The Name of an Antidote, deſcrib'd by *Oribaſius*, *Collect. Medicinal.*

QUINUA. See AMARANTHUS.

QUIRAPANGA. The Name of a ſmall white Bird found in *Braſil*, remarkable for nothing but the Shrilneſs of its Voice, which may be heard half a League. *Lemery des Drogues.*

QUISQUILA. The COTURNIX.

QUISQUILIUM. A Grain of *Chermes.*

QUITY. See ARBOR SAPONARIA.

QUIYA. See CAPSICUM.

QUOCOLOS. The Name of a Stone found in *Tuſcany*, as hard as a Flint, ſomewhat tranſparent, and, in ſome meaſure, reſembling Marble. In the Fire it loſes its Tranſparency, and becomes leſs ponderous, and white; and a ſtrong Fire readily converts it into Glaſs. It has no medicinal Virtues, but is uſed at ſome Glaſs-houſes.

QUOTIDIANA FEBRIS. A Quotidian Fever.

Among the intermittent Fevers, thoſe of the quartan and tertian Kinds happen more frequently than the quotidian, which ſeizes and terminates every Day, with a ſubſequent Intermiſſion, for the Space of ſome Hours.

The Acceſſion of this Fever happens early in the Morning, about four or five a Clock; and is accompanied with Cold and Horror, though without any Rigor. During the Paroxyſm, there is a Cardialgia, accompanied with a Nauſea: Some are afflicted with Head-achs, others with Deliquiums, and moſt with a Vomiting, or Purging, or both: This State is ſucceeded by a Heat rather ſlow than exceſſive, whilſt the Thirſt is leſs intenſe than before; the Pulſe, alſo, though before irregular, and weak, becomes more frequent, and not ſo hard, but conſiderably ſofter: Nor is the Urine high-colour'd, but rather crude, turbid, and of a Citron-colour. Many Patients, labouring under Quotidians, have an unſurmountable Propenſity to Sleep; at laſt, a gentle Sweat appears on the Body; and after ten, or, perhaps, more Hours, the Paroxyſm is removed, leaves the Body languid and heavy, and returns next Day at a ſtated Hour.

This is generally the manner in which a genuine intermitting Quotidian ſeizes, and proceeds; but ſuch Quotidians as do not preſerve this Type, but have their Acceſſion either about Noon, or about the Evening, or at uncertain Periods, are call'd ſpurious, erratic, or anomalous Quotidians.

This irregular Species of Quotidian is frequently obſerv'd to be epidemical, eſpecially during a long-protracted, irregular, and inſalutary Conſtitution of the Weather. After the long-continued Heat in the Years 1727 and 1728, I obſerv'd, that, according to the Diverſity of Conſtitutions, not only Diarrhœas and Dyſenteries, but, alſo, intermittent Fevers of various Kinds, eſpecially Quotidians, were produced.

But as we are treating of an intermittent Quotidian, we ſhall not confound it with that of the continual Kind, which, alſo, has its Acceſſion early in the Morning, with a cold Fit; but the Heat and Languor, the Quickneſs and Weakneſs of the Pulſe, the want of Appetite, and, ſometimes, a colliquative Sweat, remain all the reſt of the time. If this Species of Quotidian is long protracted, it generally proves mortal; ſince the Patients, after their Strength is exhauſted, die under the cold Fit.

Nor is a genuine intermittent Quotidian to be confounded with a catarrhous Quotidian; ſince the latter, when of a benign Nature, ſeizes the Patient, towards the Evening, with a Kind of gentle Refrigeration, goes off in the Morning, and is ſufficiently diſtinguiſhable, by the catarrhous Defluxions with which it is accompanied. A catarrhous Quotidian, on the contrary, when of the malignant Kind, is eaſily known, from the remarkable Loſs of Strength, and the Watching; nor does it totally intermit, but remit.

The genuine intermittent Quotidian, alſo, differs from other intermittent Fevers; for when a ſimple Tertian becomes double, the Paroxyſm ſeizes every Day: But the Times of Acceſſion do not alternately correſpond to each other; neither are their Cauſes, and the Methods of Cure to be taken, the ſame.

If, from a Quartan, the Fit becomes quotidian, it is called a triple Quartan, and the Paroxyſm does not every Day return at one ſtated Hour, but, every fourth Day, has the ſame ſtated Period of Acceſſion: In theſe, alſo, the Methods of Cure are different, becauſe they proceed from different Cauſes.

A genuine intermittent Quotidian, alſo, differs from a ſlow Fever, becauſe the latter ſeizes after Meals, and towards the Evening, without Horror, but is accompanied with Heat in the Palms of the Hands, and Soles of the Feet: It is, alſo, more violent in the Night, than in the Day-time; is accompanied with Sweat, and remits in the Morning, though it does not totally intermit.

Now as the proximate Cauſe of every Fever is a Diſorder of the nervous Syſtem, ſo it is certain, that the formal Cauſe of a Quotidian conſiſts in a ſpaſmodic Agitation of the nervous Parts, and the Veſſels: But this preternatural febrile Commotion is brought on by a Matter quite foreign to the natural and mild Quality of the vital Humours conveyed to the Blood; though, at the ſame time, incapable of being mixed with it.

For the *Primæ Viæ*, the Stomach, *Duodenum*, and the largeſt Part of the *Jejunum*, which is furniſhed with Valves, are the Seats in which the peccant Matter, which, in ſome of its Qualities, reſembles Leaven, is lodg'd; from theſe it is convey'd through the lacteal Veſſels to the Blood and Humours, whence, being carried to the delicate and ſenſible internal Parts, it agitates and ſtimulates them to a preternatural and extraordinary Motion: And that, during a quotidian Fever, the *Primæ Viæ* abound with various Kinds of peccant, corrupted, viſcid, acid, and bilious Juices, is certain, from ſeveral Circumſtances: For a Quotidian is generally accompanied with Eructations, a Nauſea, a Deſire of Vomiting, want of Appetite, a Cardialgia, and Inflation of the Thorax, an Uneaſineſs of the Præcordia, and Oppreſſion of the Breaſt; and, ſometimes, a tenſive, pungent, and biting Pain, reaching to the Back: A diſagreeable, fetid, and, ſometimes, a bitteriſh, or a ſomewhat ſweetiſh and nauſeous, and ſometimes a plainly nidorous Taſte, is perceiv'd in the Mouth; and, at laſt, the Fever is frequently terminated by a ſpontaneous Purging; but an artificial Cure is moſt happily effected by Emetics and Purgatives, in Conjunction with Stomachics.

But becauſe this Fever is often protracted for many Months, it is juſtly to be ſuſpected, that the Diſorder is deeply rooted in the Receſſes of the lower Belly; for the ſecretory Organs, the Glands, and glandular Coats of the Inteſtines, being too much relaxed, inſtead of a ſubtil, lymphatic, and ſaliva Juice, diſcharge a large Quantity of an impure and ſerous Humour. The other Viſcera, alſo, ſubſervient to the Depuration of the Blood, ſuch as the Liver, Spleen, and Pancreas, in conſequence of their impaired Strength, and the languid Circulation of the Blood through them, ſend leſs pure, lymphatic, and bilious Juices, into the Organs of Digeſtion: Hence the Solution of the Aliments, and the Elaboration of the Chyle, are diſturb'd, and many ſerous and corrupted Crudities generated and accumulated in the *Primæ Viæ*, which aſſuming a worſe Quality, by their Continuance there, and being conveyed to the Blood, excite the febrile Commotion, as we have already obſerved.

The greater Frequency of the Paroxyſms in Quotidians, than in other Intermittents, is, in my Opinion, owing to a greater Weakneſs of the *Primæ Viæ*; for ſuch a remarkable Weakneſs greatly favours the Generation of Crudities, and is the Cauſe why they more quickly flow, and are collected there; as, alſo, why they are ſooner conveyed to the Maſs of Blood, and Membranes of the ſpinal Marrow.

Hence it is, that all Things which tend to bring on a Flaccidity of the Viſcera, or generate crude and impure Juices, lay a Foundation for quotidian Fevers, which are principally incident to

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so those of languid Constitutions, those addicted to Idleness, those who use crude Aliments, live irregularly, drink too much Malt Liquors, indulge themselves in Grief and Care, and whose Stomachs are weakened by the Shocks of previous Diseases, or by Hæmorrhages. It is more frequent in Winter, the Autumn, and cloudy Weather, than at other Seasons; old Persons are more subject to it than others, Women more than Men, Persons of pituitous, phlegmatic, and sanguineous Constitutions, more than those of bilious and melancholic Habits. A Quotidian is, also, quickly generated, by other Intermittents, especially when the Patient uses improper Aliments, is frequently ruffled by the Sallies of Passion, has the Strength of his Stomach impair'd by strong Purgatives and Emetics, uses anodyne, hot, and spirituous Substances, or, neglecting to have his *Primæ Viæ* cleansed, preposterously uses Astringents and Specifics.

An intense genuine Quotidian, arising from a want of due Tone in the Viscera, is generally long protracted, and creates a great deal of Trouble to the Physician; but erratic and epidemical Quotidians, which depend only on a peccant State of the Juices, are more easily cured.

Quotidians which have a total Intermission of the Paroxysm, are less dangerous than others; but those which incline to the Nature of the continual Kind, and which, after the Paroxysm, leave the Strength languid, the Pulse weak and frequent, and the Body, as it were, dissolved into Sweat, are protracted for some Months; these so weaken the Patient, that he is generally taken off by them.

Quotidians succeeding other Intermittents, especially of the quartan Kind, are highly obstinate, and dangerous. Thus *Celsus, in Lib. 3. Cap. 15.* tells us, *that a Quartan seldom proves mortal; but, if it degenerates into a Quotidian, the Patient is in a bad Situation:* For this Circumstance indicates, that there is a great Disorder of the Viscera; and, in this Case, the Fever generally bears an Affinity to those of the continual Kind.

When, in the Beginning of the Paroxysm, bilious and pituitous Vomitings and Stools are evacuated, it is a good Sign, unless the Strength is already unhappily exhausted, by the Length of the Disease: A gentle Eruption of Sweat, also, in the Decline of the Paroxysm, and a copious Discharge of Urine with a Sediment, after the Fit, diminish the Violence of the subsequent Paroxysms, and prognosticate a happy Termination of the Fever.

On the contrary, when there is no Excretion, the Fever is long protracted, and the Viscera acquire such a Disorder, as to bring on Cachexies, slow and hectic Fevers, Consumptions, and, in those disposed to it, a Phthisis.

The same Misfortunes, also, readily happen, when Astringents, and specific Febrifuges, are preposterously used; and if, by hot, sudorific, and spirituous alexipharmic Essences, the acrid Recrements are forced from the *Primæ Viæ* into the Blood, the Quotidian soon passes into a continual Fever, accompanied with a perpetual Sweat, and a Loss of Strength.

In Patients who die of Quotidians, the cold Fit is highly intense, lasting, and accompanied with a Rigor, a Loss of Strength, and a Perturbation of Mind: They generally have two Fits of this Kind, succeeded by Heat; but, under the third Fit, the Pulse is weak, and unequal, and the Cold terminates in a mortal Rigor.

The General Method of Cure.

Since the Causes of an intermittent Quotidian are a Collection of serous and viscid Crudities in the *Primæ Viæ*, a flaccid State of the Viscera and Glands, and an obstructed Circulation of the Blood through the Vessels of the lower Belly; so the only Intentions of Cure must be,

1. To prepare, and, by proper Emunctories, evacuate the impure and peccant Juices from the *Primæ Viæ*.

2. To corroborate the Viscera, whose Tone is impaired; and, by that means, prevent the farther Generation of Crudities. And,

3. To restore the free Circulation of the Blood through the abdominal Viscera and Intestines, which are the Organs destin'd for the Digestion of the Aliments, and the Elaboration of the Chyle.

The first of these Intentions is excellently answered, by incising and abstergent Substances, and neutral Salts; the most efficacious of which are depurated Sal Ammoniac, the digestive Salt of *Sylvius* prepared of the Caput Mortuum of urinous Spirit of Sal Ammoniac, vitriolated Tartar, the *Arcanum duplicatum*, *Epsom* Salt, *Sedlitz* Salt, and antimoniated Nitre: Such Substances, also, answer this End, as abound with an acrid aromatic Salt; such as the Roots of Cuckowpint, *Calamus aromaticus*, white Burnet, true Costus, and Zedoary; together with *Winter*'s Bark, Ginger, and white Pepper; which, when reduced to a Powder, and mixed with the above-mentioned Salts, with the Addition of a Drop or two of some carminative Oil, make an excellent antisebrile Medicine.

For answering the first, as well as the second Intentions, that is, gently to evacuate the Sordes by Stool, and, at the same time, to corroborate the Tone of the Stomach and Intestines, and restore their disturbed Motion to a due State, the most efficacious Medicines are, the balsamic Pills of *Becher*, those of *Stahl*, and those directed by myself; as, also, the *Pilulæ Aloephanginæ*, the *Pilulæ de Succino Cratonis*, and the *Pilulæ Solenandri*, especially if exhibited in Conjunction with the above-mentioned Salts.

But, for restoring Strength to the abdominal Viscera, and to prevent an Afflux of impure Juices to the Organs of Digestion, the most efficacious Medicines are, bitter Elixirs, mixed with Chalybeates, such as my temperate balsamic Elixir, prepared without Spirit of Wine, with an alcaline Liquor, or Essence of *Cascarilla*, mixed with Essence of Ginger; or stomachic Elixirs, such as my Elixir, or that of *Michaeli*, with the Addition of a few Drops of a chalybeated Tincture, prepared of the chalybeated Flowers of *Sal Ammoniac*, with rectified Spirit of Orange-peel.

By these, also, the Circulation of the Blood through the abdominal Vessels, and the Organs of Digestion, is excellently promoted: However, if the Quotidian is obstinate, and supported by an irregular Regimen, the most efficacious Medicines are, medicinal Waters, especially those of the hot and cold Kinds; such as the *Caroline* and *Egran* Springs, drank warm; which, used with a proper Regimen, and an Intermixture of bitter, balsamic, and anticachectic Medicines, dilute the viscid *Sordes*, evacuate them by Stool and Urine, together with the serous Recrements, remove Infarctions, and restore the free Circulation of the Blood.

But the particular Method of using these is to be varied, according to Temperaments, Ages, the Seasons of the Year, the Constitution of the Patient, the State of the *Primæ Viæ*, the Sex of the Patient, and the Cause of the Disease; to each of which Circumstances, both the Dose of the Medicines, and the manner of their Exhibition, are to be accommodated. It is, however, to be observed, in general, that, on the Hours free from the Paroxysm, saline Powders are to be exhibited, with inciding Liquors; and, on the third or fourth Day, the Body is to be rendered soluble, by proper Pills, but in such a manner, as that their Operation may be over before the Paroxysm begins; and the Sweat, about to make an Eruption in the Decline of the Paroxysm, is to be promoted, by Rest, and drinking warm Liquors; after which, we are to subjoin corroborative, bitter, chalybeate, and antisebrile Medicines.

Practical Cautions, and Observations.

Quotidian intermittent Fevers are to be treated with great Circumspection, lest they should degenerate into other chronical and dangerous Diseases. The Patient is, in a particular manner, to abstain from astringent and paregoric Medicines, large Quantities of precipitating earthy Substances, and all drastic, purgative, sudorific, and emetic Medicines.

It, also, contributes greatly not only to promote the Cure, but, also, to prevent the Return of a quotidian Fever, to avoid all Commotions of Mind, especially Sorrow, and long-protracted Anxiety; and to guard against insalutary Aliments, the Use of Wine, and Refrigeration, especially of the Abdomen.

As Nature often happily terminates Quotidians by a critical Flux, so her Indications are to be followed; and the Physician is to act in Concert with her salutary Efforts: For which Reason, the Patient is not to be reduced to a sudorific Regimen, nor are Sweats to be forced by Medicines: But we ought, rather, to endeavour, that the peccant Matter, and the *Primæ Viæ*, should be prepared and disposed for a Flux; which End is excellently obtained, when, a few Hours before the Paroxysm, a gentle Laxative, such as the *Pulvis Cornachini*, or the *Pilulæ Balsamicæ*, is exhibited with some of the above-mention'd Salts.

Because Quotidians are accompanied with a Vomiting, which proves beneficial to the Patient, this should be promoted by proper Doses of well-chosen Medicines, exhibited seasonably. Hence it is sometimes absolutely proper, by means of Emetics, to excite a Vomiting before the Paroxysm. I remember, in legitimate Quotidians, which used to have their Accession about Five in the Morning, I have often, towards the Evening before the Crudities were conveyed from the Organs of Digestion to the Blood, exhibited a gentle Vomit, consisting of fifteen Grains of Ipecacuanha, and half that Quantity of the *Pulvis Cornachini*: By this means, a Vomiting was happily excited, and sometimes a Purging, and the Fever, becoming considerably milder, was afterwards easily removed, by other Medicines.

If a Quotidian lasts for a Month, or longer, and seems, as it were, to degenerate into a slow Fever, we may commodiously exhibit one Grain of emetic Tartar, dissolved in some proper Liquor; by which means, I have known an incredible Quantity of stagnant bilious Juices thrown up, and the Patient greatly relieved.

When

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When Quotidians are accompanied with a Loathing of Food, a preſſory Pain, or Inflation of the Stomach, we are to apply to the epigaſtric Region ſmall Bags, either dry, or boiled in Wine, conſiſting of the Herbs Mint, Wormwood, and Roſemary; the Flowers of Spike and *Roman* Chamomile, Cloves, and Nutmegs: Theſe Bags, when applied after the Paroxyſm, are highly beneficial, by effectually promoting Perſpiration and Sweat.

In Quotidians of the legitimate Kind, we are to deal very cautiouſly with Febrifuges; but, in epidemic and erratic Quotidians, beſides the above-mentioned Medicines, we may, alſo, ſafely exhibit antifebrile Specifics, and that Electuary, the Baſis of which is *Peruvian* Bark, and that of Caſcarilla; ſince, by this means, a Solubility of the Body, and copious Stools, have been procured, without any Uneaſineſs to the Patient: But, in quotidian Fevers, the Bark of Caſcarilla is juſtly preferable to the *Peruvian* Bark, becauſe the former is more corroborative, and aſtringent, than the latter.

Veneſection is rarely proper in Quotidians which are already accompanied with a Weakneſs, eſpecially of the Stomach, and generally complicated with ſomething of a cachectic Nature: But if there is a conſiderable Plethora, eſpecially ariſing from a Suppreſſion of the Menſes, or Hæmorrhoids, and if the Urine is tinged, or the Patient accuſtomed to drink Wine, a Vein is to be opened in the very Beginning of the Diſorder, leſt the Fever ſhould be increaſed, and, according to the Obſervation of Phyſicians, ſlow, hectic, and apoſtematous Fevers brought on. *Hoffman.*

R.

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R.

R. For the Signification of this Letter in the Chymical Alphabet, see ALPHABETUM CHYMICUM. R in Prescriptions, imports *Recipe*, Take.

RABDOIDES SUTURA. The Sagittal Suture.

RABEBOIA. The Roots of the *Flammula Major*. *Rulandus.*

RABIEL, or ROHEL. Dragons Blood. *Rulandus.*

RABIES. See HYDROPHOBIA.

RABIRA. Tin. *Rulandus.*

RACEMUS. A Bunch of Grapes; or of Ivy-Berries; or of any other Fruit which grows in Clusters.

RACHAMMELCA. A new Term coined by *Dolæus* from the *Hebrew* Word רחם *Rechem*, signifying the *Uterus*, and מלך *Melech*, a King. By this Word he intended to express what they call the active Principle, or the *Plastic Spirit of the Uterus.*

RACHI, or RACHO. Mercury. *Rulandus.*

RACHITÆ, or RACHIÆI. The Muscles belonging to the Back. *Blancard.*

RACHITIS.

This Disorder, generally known by the Name of *Rickets*, is a kind of partial Tabes, and consists in an unequal Nutrition, by which some Parts are deprived of their due Nourishment, and waste away, whilst others receiving more than enough, are preternaturally increased with an Incurvation of the Bones and Spine of the Back.

This is a new Species of Disorder; for it only made its first Appearance in *England* about the Middle of the Seventeenth Century; and was afterwards spread through all the Northern Parts of *Europe*. It principally discovers itself by these Signs: The Disorder appearing about the ninth Month of the Child's Age, or later, the Proportion of various Parts of the Body gradually becomes irregular; the Skin lax, the Abdomen large, and, as it were, turgid with Flatulences. The Muscles are consumed by an Atrophy, whilst the Joints of the Arms, Hands, Knees and Feet, become protuberant. The Bones are also render'd incapable of sustaining the Body, and the Spine of the Back is frequently enervated. Hence the Patient is hardly able to walk, and often intirely incapable of moving. Then the jugular and carotid Arteries become tumid, the Head large, and frequently nodding, in consequence of the weak and flaccid State of the Neck. The Genius is for the most part more acute than is usual at that Age. The Chest is narrow, and, as it were, compressed on the Sides; the Sternum accuminated, and the Extremities of the Ribs full of Knots. As the Disorder increases, it is accompanied with a slow Fever, a Cough, a Difficulty of Breathing, and other Symptoms which generally continue till the Patient dies. But 'tis carefully to be observed, that there are certain Degrees and Periods of Duration in the *Rickets*, which don't produce the same Symptoms in all Patients; but in some, those of a violent, and in others, those of a mild Kind.

In dissecting those who die of the *Rickets*, sometimes one, and sometimes another of the Viscera is found corrupted; for in some, the Liver is preternaturally large, scirrhous, and adhering to the Diaphragm, whilst the Mesentery and Pancreas are obstructed, and full of indurated Glands. In others, the Lungs adhere either to the Pleura or Back, and are either livid or full of Vomicas. In others, the Pericardium is full of Water. Most Authors, among whom are the celebrated *Glisson*, *Bonetus*, and *Heister*, unanimously agree, that in Patients who die of the *Rickets*, the Beginning of the Spinal Marrow is preternaturally hard and obstructed; the Space between the Dura and the Pia Mater full of Water; the Brain excessively large, and the carotid and jugular Veins smaller than their correspondent Arteries.

Induced by Experience and the Authority of these Authors, we shall, as the Cause of the *Rickets*, assign the intercepted Ingress of the nervous Fluid into the spinal Marrow, either in consequence of its Obstruction or Compression. Hence the Nutrition of those Parts which receive Nerves from the spinal Marrow, such as the Arms and Legs, must necessarily be destroyed; whilst, on the contrary, those are preternaturally nourished, whose Vessels are pervious, and receive too large a Quantity of nutritive Juice; as is observable in the Heads of *rickety* Patients, which, in consequence of the intercepted Influx of the nutritive Lymph into the spinal Marrow, receive too much Nourishment; which not only renders them preternaturally large, but also their Faces ruddy and well-coloured. Nor is the Brightness of their Genius to be otherwise accounted for, than from the Soundness of the Brain and Cerebellum, which duly discharge their respective Offices. For which reason, the Parts to which Nerves are distributed from the Brain, are generally in a good Condition.

'Tis also obvious why the Bones are incurvated and deformed with Knots about their Epiphyses; for because the Muscles and their Ligaments, by which the Bones are joined, are not in this Disorder duly nourished, whilst the Nourishment is copiously conveyed through the Arteries to the Bones, it generally happens that the Extremities of the Bones, which in Children are of a soft Texture, are, in consequence of the small Resistance, distended and elevated into Tubercles. And since during this Nutrition, the Bones perpetually increase, and the Muscles become smaller and shorter, the Elongation and Extension of them is easily retarded by the Muscles which adhere to them. Hence an Incurvation of the Bones happens; and so much the more easily, because at this Age they are highly soft and flexible. Nor is the Distortion of the Spine of the Back owing to any other Cause, than the Flaccidity and the Destruction of the natural Tone of the bony Processes, Cartilages, Ligaments, and Muscles, connecting the Vertebræ of the Back; and during this Flaccidity, these Parts, upon inclining the Body, recede too far from each other, and are too much distended to be again restored to their natural Situation.

The immediate Cause of the *Rickets* is a viscid Tenacity of the Juices, which being separated from the inspissated Blood, are deposited on the spinal Marrow; and, by compressing or obstructing its Pores, hinder the due Influx of the subtile nervous Fluid into it; so that it cannot be farther distributed through the Nerves.

Among the remote Causes of the *Rickets* produced by an improper Regimen, we may reckon all those Circumstances which bring on an Atrophy; for 'tis certain, from Experience, that whatever disturbs Digestion, and generates a thick viscid Chyle, unfit for Nutrition, has a Tendency to bring on the *Rickets*.

But nothing more effectually contributes to the Production of this Disorder, than an Air which is cold, cloudy, and impregnated with various hurtful Exhalations; since such an Atmosphere, partly by debilitating the Tone of the Skin, retains the pituitous Sordes in the Body; and partly by relaxing the Lungs, hinders the intimate Mixture of the Blood in them, and prevents its due Distribution through the whole Body. A memorable Instance of this is found in *London*, which, in consequence of the prodigious Quantity of Exhalations, and the Particles of the Smoke, arising from fossile Coal, is found very fit, not only for producing, but also for supporting the *Rickets*. Nor is it surprising why, from the same Cause, this Disorder is most frequent in maritime and marshy Places, as also in the Spring and Autumn: And why in Towns situated by large Rivers, incommoded with a moist Atmosphere, clouded with saline effluvia, or the sulphureous Smoke of fossile Coal, so many Children are subject to the *Rickets*.

Nor shall I hesitate to affirm, that the Stagnation of the Humours in the spinal Marrow, is greatly promoted by the foolish Custom of Nurses, who, for whole Days, carry Children in their Arms, wrapt up in a Cloak; and not only, for a long time, keep the Spine of the Back in an incurvated Posture, but also bend the Legs unequally. Hence crooked Backs and Legs are not only produced, but a favourable Foundation laid for the *Rickets*. The like also happens, when Infants, by a Blow or Fall, have the Spine of their Back distorted; for which reason gibbous Children easily become subject to the *Rickets*.

Nor is it to be doubted, that previous Diseases dispose not only to a Consumption, but also to the *Rickets*. But among all Diseases, none so effectually contribute to the Production of this Disorder, as those which, by bringing on a Deposition of Humours on the spinal Marrow, suspend and prevent the free Ingress and Egress of the nervous Fluid to, and from it. Thus, in Practice, we often find the *Rickets* arising from this Cause, after an ill-managed Small-Pox; as also after the Repulsion of the Itch, the Crusta Lactea, or a scald Head.

As for the Prognostics of this Disease; if it is violent, and lasts till the fifth Year of the Patient's Age, or longer, it is not to be cured without Difficulty; generally renders the Body languid and deformed; and unless, as Youth advances, when the whole Body undergoes a great Change, it is totally removed, it becomes incurable during the whole of the Patient's Life. Nor is it to be cured with less Difficulty, when it is hereditary, or appears in the first Month after the Birth of the Infant. When the *Rickets* are succeeded by a Phthisis, accompanied with an hective Fever; by a Dropsy, an Asthma, or a Diarrhœa; only faint Hopes of the Patient's Recovery are to be entertained. But the *Rickets* which arise from a Fault of the Regimen or Air, which are succeeded by the Small-Pox, Itch, or other Efflorescences of the skin, and are not accompanied with a great Incurvation of the Bones, and an Inability to Motion, are more easily cured.

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The CURE.

When viſcid, tough and pituitous Humours depoſited on the ſpinal Marrow, are the Cauſe of the *Rickets*, the firſt Intention of Cure is to reſolve the Viſcidity of the Juices, remove Obſtructions, and by that means promote a free Circulation of the Humours through all the Body. For this purpoſe, in order to remove the Fountain of the Diſorder lodged in the Primæ Viæ, we are, above all things, to uſe gentle Laxatives; not neglecting, if it is neceſſary, and the Conſtitution of the Child admits, the Uſe of mild Emetics, conſiſting of a few Grains of the Root of Ipecacuanna, exhibited with Sugar and Cinamon-Water, prepared without Wine, or reduced to the Form of an Electuary, with ſome proper Syrup; for by theſe means the viſcid Sordes, collected in the Stomach and Inteſtines, are not only excellently eliminated, but alſo by the Stimulus of ſuch Medicines, a due Reſolution of the Humours, and an Opening of the obſtructed Veſſels, are ſucceſſfully obtained: Only ſuch ſtimulating Medicines are not to be exhibited to Patients whoſe Strength is exhauſted, who labour under any Diſorder of the Meſentery, or a violent Obſtruction of the Viſcera; ſince, in ſuch Caſes, it is more expedient to exhibit Medicines of the deobſtruent kind.

To the Medicines already recommended, we may alſo, now and then, add thoſe of a gently reſolvent kind, as Diaphoretics generally are; ſuch as the Tincture of Tartar, the acrid Tincture of Antimony, and Preparations of Cinnabar; which in the *Rickets* are preferable to Mercurials, and highly beneficial in eliminating the ſerous Impurities, partly by Perſpiration, and partly by Urine; eſpecially if they are exhibited in ſuch Infuſions as dilute and purify the Blood.

But in particular, for removing the Obſtruction of the ſpinal Marrow, and reſtoring the Influx of the nervous Fluid into it, various Authors recommend Frictions of the Spine of the Back, Arms and Legs, with warm Linen-Cloths; as alſo Fumigations of Frankincenſe, Amber, Maſtich, and Olibanum. But I can, from Experience, recommend as the moſt effectual Remedy, Baths of ſweet Water, boiled with Nervous Herbs, ſuch as Marjoram, Lavander, Mother of Thyme, Roſemary, Chamomile and Baum. In ſuch Baths, the Patient is to be frequently immerſed, and have the Spine of the Back and Joints rubbed and anointed with the following Nervous Ointment.

Take of human Fat, and expreſſed Oil of Nutmegs, each half an Ounce; of Peruvian Balſam one Dram; and of the Oils of Rue, Lavander and Cloves, each thirty Drops.

By theſe means I have often ſeen many Patients afflicted with the *Rickets*, not only ſurpriſingly relieved, but alſo totally recovered.

But theſe Meaſures are careſully to be accompanied with a proper Regimen; for the Patient is by no means to uſe flatulent viſcid Aliments, or ſuch as are of difficult Digeſtion: But he may frequently uſe weak Broths, prepared of Fowls or Veal, with the aperient Roots of Aſparagus, Fennel, Succory, Smallage, Celeri, Parſley, and River-Crabs bruiſed. Then, in order to corroborate his Stomach, temperate ſtomatic Elixirs, ſuch as the Viſceral Elixir, are to be mixed with his Aliments. His Drink is to be thin, and during the Time he is ſuckled, the Milk ſhould be good and ſufficiently thin; adding, at the ſame time, proper Exerciſe ſuited to his Age; ſuch as Geſtation, that his languid Body may be only gently exerciſed. If he is coſtive, his Body is to be render'd ſoluble by a Laxative, or a Glyſter. If the Diſorder is either brought on, or ſupported by a bad State of Health in the Nurſe, the ſame Medicines are to be exhibited in larger Doſes to her.

For an Incurvation of the Spine, and Members variouſly diſtorted, we muſt alſo recommend Swathing, and the Uſe of proper Stays, provided due Care is taken to do no Injury by them; ſince often, by theſe means, the Infant is thrown into another more dangerous Diſorder. *Frederic Hoffman.*

Children are never born with the *Rickets*; for this Diſorder is rarely incident to them before they are nine Months old, and hardly ever ſeizes them after they are two Years of Age, but frequently happens in the intermediate Space between theſe two Periods.

This Diſeaſe is moſt incident and fatal to Children whoſe Parents are of a lax and weak Conſtitution; who are addicted to Idleneſs and Effeminacy; who live luxuriouſly, or uſe pinguious Aliments, Diſhes prepared with Sugar, a ſmall Quantity of Bread, ſweet Wines, and large Quantities of warm Water; who are exhauſted by chronical Diſorders, Venery, Age, a Tabes, eſpecially of the Venereal Kind, and repeated Gonorrhæas; for ſuch Perſons propagate a weak and languid Offſpring.

When the Nurſe labours under ſuch Misfortunes, the *Rickets* are more quickly brought on, and increaſed in the Child.

Eſpecially if the Diſorder is treated with a cold and moiſt Regimen, and the Infant fed with aqueous and mucous Subſtances, crude Summer-Fruits, Fiſh, farinacious unleavened Bread; if the Infant has long laboured under an autumnal intermittent Fever, a chronical or acute Diſorder; if he has had the Itch, an Herpes, or Ulcers, ſuppreſſed, or ill-cured; if he is enervated by Baths, Fomentations, Liniments, Ointments, or moiſt Vapours; if he remains conſtantly without Motion in a perforated Chair, with the inferior Parts of his Body naked.

This Diſorder, when beginning, is known in thoſe who cannot walk, firſt, from the Age; ſecondly, from the preceding Cauſes; thirdly, from the Brothers or Siſters of the Infant being ſeized with the like Diſorders. Fourthly, from a flaccid Swelling of the Head and Face. Fifthly, from the lax State of the Skin. Sixthly, from the Swelling of the Abdomen. Seventhly, from the Leanneſs of the other Parts, eſpecially of the Muſcles. Eightly, from the Protuberance of the Epiphyſes at the Joints of the Radius, Ulna, Humerus, Knee, Tibia and Fibula. Ninthly, from the Largeneſs of the Jugular Arteries and Veins, whilſt the others decreaſe.

But in Children who have begun to walk, the approaching *Rickets* are known, firſt, from the before-enumerated Signs; ſecondly, from a ſlow infirm Manner of Walking, a falling forwards, and an Inſtability which terminates in a perpetual Deſire of Sitting, which ſoon degenerates into a State of conſtant Decubiture, and at laſt an Inability of moving any of the Joints; the Neck in the mean time becoming flexile, and the Head nodding: And, thirdly, from the preternatural Ripeneſs and Force of the Genius; the genuine Exerciſe of the Senſes, the Appetite and Digeſtion remaining almoſt ſound and uninjured.

When the *Rickets* are of a longer Standing, the Patient's Head is preternaturally large, and its Sutures gaping; the Thorax at the Sides is compreſſed to the Sternum, which riſes in a kind of ſharp Arch; the Extremities of the Ribs are full of Knots; the Abdomen protuberant, and the Teeth carious and black; which Symptons gradually increaſing, frequently thro' the whole of the Patient's Life, produce the like terrible Diſorders, eſpecially a Spina Ventoſa, and a Caries of the Bones.

During the whole Courſe of the Rickets, a ſlow Fever preys upon the Body, till the Patient dies; and then in the Carcaſe all the Fibres, Membranes, Veſſels and Viſcera are found ſoft and flaccid, while the Humours are colliquated and mucous.

Hence the immediate Cauſe of the *Rickets* is, a languid, mucous Cold and vapid Cacochymy, perhaps complicated with a latent Venereal Taint, and accompanied with a lax and flaccid State of the ſolid Parts.

The Cure of the *Rickets* is moſt effectually produced by light, eaſily-digeſted, dry, lean Aliments, ſeaſon'd with mild Aromatics, and frequently exhibited, tho' in a ſmall Quantity; by drinking a ſmall Quantity of generous Liquors, eſpecially of Ale, tho' not old, but long boil'd and thick; by a dry and ſomewhat hot Air; by wearing very dry, and warm Clothes, eſpecially ſuch as are made of Wool; by lying upon Couches prepared of aromatic, corroborating, and drying Herbs, laid upon Boards, in the upper Rooms of the Houſe; by Geſtation, Concuſſion, Oſcillation, Riding in a Chariot in rough Roads; by much dry and warm Friction, eſpecially of the Abdomen and Spine, performed with Clothes, impregnated with the Smoke of Aromatic Subſtances; ſometimes by the repeated Application of Cantharides, by gentle Emetics, frequently tho' prudently repeated; by Purgatives, and then by corroborating Medicines, exhibited for ſome Days ſucceſſively; and laſtly, by the long-continued Uſe of corroborating, drying, antiſcorbutic Medicines, and ſuch as rouſe the Spirits. Hence we underſtand the Uſes of Immerſion in cold Water, for the Cure of this Diſorder, which, however, is not to be put into Practice, till the Viſcera of the Abdomen are, in ſome meaſure, eaſed of the Load of Humours which oppreſs them. Hence, alſo, the proper Uſe of Liniments may be underſtood, which ought to be of the nervous Kind, and applied to the Abdomen, and Spine of the Back; but not to the prominent Parts of the affected Bones.

The beſt Aliments for Children labouring under the *Rickets* are:

1. Well fermented Bread and Biſcuit, mixed with a ſmall Quantity of Saffron, Nutmeg, Cardammons, Cinnamon, Seeds of Celeri; and other grateful and corroborating Aromatics.

2. Lean Pigeons, Fowls, Rabbits, Mutton, Kid and Veal, gently roaſted, cut ſmall and mixed with Biſcuit, Salt, and a little Parſley, Thyme, and Nutmeg.

3. Millet and Barley, boil'd with Water and Raiſins; and then ſeaſoned with a little Wine and mild Aromatics.

The moſt proper Drinks for Perſons labouring under the *Rickets* are,

Ripe, red and aſtringent *French* Wines, an Ounce of which is to be exhibited three or four Times a Day.

Half an Ounce of Hippocratic Wine, exhibited at the ſame Time.

Brun-

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Brunſwick Mum, *Britiſh* Ale, and that Species of *Dutch* Ale, which is ſold at twelve Florins.

With theſe Malt Liquors, in the Summer Time, may be mixed an equal Quantity of medicated Chalybeate Water, but rather of the Spaw Waters.

Take of the following recent Leaves dried in a Shade, *viz.* of the Male Fern, three Pounds; of Marjoram, Baum, and Mint, each two Handfuls: And of the following recent Flowers, alſo, dried in a Shade, *viz.* of Melilot, ſweet Trefoil, Elder, and Roſes, each two Ounces. Reduce to a fine Powder. Mix with double the Quantity of Barley-Chaff; and put all into Bags for Couches, on which the Patients are to lie; theſe are to be carefully preſerved from Moiſture, and frequently dried.

Take of Benzoin, Maſtick, Olibanum, Amber and Frankincenſe, each one Ounce; reduce to a Powder; of which throw a little upon live Coals, and the Steam ariſing from it is to be received in Clothes, for rubbing the Parts.

Take of the Roots of Ipecacuana, one Scruple; of white *French* Wine, one Ounce; and of Sugar, two Drams; infuſe for a whole Night; and when depurated, exhibit in the Morning. Let this be repeated every fourth Day for five Times.

Take of the beſt Rhubarb, half an Ounce; of Citrine Myrobalans, without the Kernels, three Drams; and of the Troches of Agaric, two Scruples. Infuſe in four Pints of cold ſtrong Beer, for twenty-four Hours; and let the Patient uſe this for common Drink for a Month: But if it ſhould prove too purgative, it may be diluted with an equal, or, if neceſſary, a greater Quantity of other Ale.

The corroborative, drying, exciting and antiſcorbutic Herbs proper for curing the *Rickets*, are, Agrimony, Betony, the Bark of Caper Roots, Spleen-wort, Succory, Dorder, Sanicle, Endive, Male Fern, Liver-wort, Harts Tongue, Baum, Myrobalans, Oſmund Royal, Polypody of the Oak, the Leaves and Acorns of the Oak, Rhubarb, the Leaves and Root of the Bramble, white Maiden Hair, Scabious, the Bark, Flowers and Leaves of the Tamariſk, Trichomanes, and Male Speedwell.

Of theſe medicated Ales, Wines, and Infuſions, may be prepared and exhibited with great Succeſs; as alſo Conſerves, and other Things of a like Nature, thus:

Take of Agrimony, Spleen-wort, Fern-Root, Harts Tongue, the Root of Polypody, and white Maiden Hair, each two Ounces. Having cut theſe ſmall, mixed them, and put them in a Linnen Cloth, infuſe them in twelve Pints of cold Ale, to be uſed for common Drink.

Or,

Take of the Leaves and Flowers of Betony, three Ounces; of the Barks of the Roots of Capers, Tamariſks, and wild Bramble, and of Trichomanes, each two Ounces; and of Filings of Steel, half an Ounce. Infuſe in eight Pints of cold White Wine, of which one Ounce is to be exhibited thrice a Day.

Take of *Boyle's Ens Veneris*, two Grains; which are to be exhibited every Evening in Canary Wine for three Weeks.

Take of the Filings of Steel, one Ounce; of the ſtrongeſt diſtill'd Vinegar, ten Ounces; and of Sugar, three Ounces. Boil all together gently for twenty-ſix Hours in a tall Phial; and let the Liquor, when filtrated, be kept in a cloſe Veſſel. Six Drops of it are to be exhibited every Morning and Evening in a little *Spaniſh* Wine.

Boerhaav. Aph. & Mat. Med.

RACRI, RAAN, or RANAC. Sal Ammoniac. *Rulandus.*

RADIÆUS, or RADIALIS. *Winſlow* takes Notice of three Muſcles under this Name; the firſt is the *Radialis Internus*, otherwiſe called *Flexor Corpi Radialis*. See FLEXOR. The ſecond is the *Ulnaris Externus*, or *Extenſor Carpi Radialis*. This Muſcle *Winſlow* divides into two. In many Subjects, ſays he, we find theſe two Muſcles entirely diſtinct from one End to the other, and they may be named *Radialis Externus primus & Radialis Externus ſecundus*, regard being had to the Inſertion of their Tendons. Sometimes the two fleſhy Portions adhere cloſely together, appearing to make but one Body, but the Tendons are always diſtinct and ſeparate.

The firſt is inſerted above, in the *Criſta* of the external Condyle of the *Os Humeri*, below the Inſertion of the *Supinator Longus*. The ſecond is inſerted in the ſame Condyle, below the Inſertion of the firſt; and in the neighbouring articular Ligament. From thence the two fleſhy Bodies run down very cloſe together; and having reached the Middle of the Outſide of the Radius, each of them terminates in a long Tendon.

The Radialis Externus, together with the Radialis Internus, turns the inner Edge of the Hand directly toward the Styloide Apophyſis of the Radius.

With the Ulnaris Externus it inverts the Hand, turning the Convex Side of the Metacarpus toward the lower Extremity of the Bones of the Fore-arm. It likewiſe moves the ſecond Row of the Carpus on the firſt, and thereby increaſes the tranſverſe Fold on the Convex Side of the Carpus. This Motion alſo encreaſes the Angle, which the Back of the Hand naturally makes with the Outſide of the Fore-arm; and therefore, according to the common Language, it would be more properly term'd a Flexion outward, than an Extenſion.

This Muſcle acting alone, draws obliquely, and toward the external Angle of the Radius, that Portion of the Hand, which anſwers to the firſt Metacarpal Bone, and to the Index; but not without ſome Difficulty.

Each of the two Radiales Externi may act ſeparately, and, conſequently, have diſtinct Uſes; ſince their Tendons having paſſed the Annular Ligament, are inſerted at ſome Diſtance from each other; and thereby one of them ſeems to be fitted to co-operate with the Radialis Internus, the other with the Ulnaris Externus; and they both ſerve conjointly to keep the Hand in its true natural Situation. *Winſlow.*

RADIATED FLOWERS. See FLOS RADIATUS, under the Article BOTANY.

RADICALIS. Radical. This, when join'd with *Humor*, ſeems to imply much the ſame as innate.

RADICISECA. A Servant of the ancient Phyſicians, employ'd in gathering, and cutting Roots and Herbs, and preparing them for Medicinal Uſes.

RADICULA. A Name for the *Raphanus*. According to *Blancard*, the *Romans* call'd the *Lychnis, Sylveſtris, quæ Saponaria, vulgo* by this Name.

RADIUS, in Anatomy, is the Name of a Bone in the Fore-Arm. See BRACHIUM.

RADIX ALBA, in *Hippocrates*, is the Root of the *Dracunculus*, as explained by *Galen*, in his *Exegeſis*.

RADIX BEZOARDICA, a Name for the CONTRAYERVA.

RADIX CARLO SANCTO.

This Root is found in temperate Soils, in *Mechoacan*, a Province of *America*. Its Bark is eaſily ſeparated from it, is of an aromatic Smell, and of a bitter and ſomewhat acrid Taſte. The Root itſelf conſiſts of very ſlender Fibrils, which are eaſily ſeparated from each other. The Bark is accounted ſudorific, and corroborates the Stomach and Gums. If chew'd it procures an agreeable Breath. It is good for Scurvies, Catarrhs, Epilepſies, haſtening Deliveries, and removing Hernias, and the Small Pox, if taken either in Powder or in the Form of a Decoction. The *Spaniards* have called it by the Name of *St. Charles*, on account of its uncommon Virtues. *Lemery des Drogues.*

RADIX CAVA. A Name for the *Moſchatellina Foliis Fumariæ bulboſæ; de qua Cordus.*

RADIX CHINA. See CHINA.

RADIX DULCIS. A Name for the *Glycyrrhiza, capite echinato.*

RADIX IDÆA. A Name for the *Ruſcus; Anguſtifolius; Fructu folio innaſcente.*

RADIX RINZANGO. *Sive Bengalenſis.* Supplem. 396.

This came in Uſe but very lately, for I find no mention of it in any Pharmacopœa, or Catalogue of Plants. As to its Virtues, it is recommended by Dr. *Tancred Robinſon*, as a very potent Cephalic.

RADIX SIMAROUBA, Offic. *Sima Ruba*, Geoff. Tract. 297. Ind. Med. 90.

This is the Root of a *Weſt India* Plant, which produces the *Cayan* Wood, remarkable for being very light. The Root and Bark are ſaid to be excellent Aſtringents, proper in all Sorts of Looſeneſſes, and eſpecially in Dyſenteries. The Doſe of the Root is an Ounce cut in ſmall Pieces; and of the Bark two Ounces; boil'd in three Pints of Water to a Pint. This Decoction the Patient uſes for his common Drink, till he is cured. *Geoffrey.*

RADIX URSINA. A Name for the MEUM.

The five Opening Roots are, thoſe of Apium, Aſparagus, Fennel, Parſley, and Butchers Broom: Theſe are by ſome Authors called the *greater Opening Roots*, to diſtinguiſh them from the leſſer, which are thoſe of Caper, Eryngo, Dogs Graſs, Reſt Harrow, and Madder.

RADIX SANCTÆ HELENÆ. *Cyperus Americanus.* Hernand.

This is a pretty long Root, full of Knots, black without, white within, and of an aromatic Taſte, almoſt like that of Galangals. It is brought dry from the Port of *St. Helena*, in

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in the Province of *Florida* in *America*, where it grows. This Root is good againſt Pains of the Stomach, and is of an highly aperient Nature. It is recommended againſt the Nephritic, Colic, and a Difficulty of diſcharging the Urine. It is, by ſome, bruiſed and applied to weak Parts, in order to ſtrengthen them. *Lemery Traité des Drogues.*

RADULA. A Raſpatory.

RAIA. Offic. Salv. de Aquat. 149. Schonef. Ichth. 57. Mer. Pin. 185. Bellon. de Aquat. 80. *Raia Clavata*, Aldrov. de Piſc. 450. Rondel. de Piſc. I. 353. Geſn. de Aquat. 795. Charlt. Piſc. 11. Raii Ichth. 74. Ejuſd. Synop. Piſc. 26. THE THORNBACK.

This is a Sea-Fiſh, of which the Fleſh, Liver, and Gall, are uſed in Medicine. The Fleſh is analeptic, and is ſaid to increaſe Venereal Vigour. The Gall is recommended againſt Dimneſs of Sight, and Exulcerations of the Eye; and is a Remedy for the Itch.

Pliny recommends the Gall for Diſorders of the internal Ear, *Lib.* 32. *Cap.* 7. See BATIS.

The Thornback is a Sea-Fiſh well known, of which there are ſeveral Species. Some have their Backs almoſt all over diverſified with white Points like Stars; others have none but on the Tail; another Kind taken at *Marſeilles* is greatly eſteemed.

This Fiſh is of a blackiſh Colour, multiplies faſt, feeds upon ſmall Fiſhes, and lives in muddy Places near the Shore. It affords nouriſhing, ſolid and durable Food; becauſe the viſcous Juices it contains adhere to the Veſicles of the Fibres, and make it hard of Digeſtion. It is ſubject to cauſe Wind, and produce heavy and groſs Humours, eſpecially if eaten before it is kept ſome Time. It contains much Oil and volatile Salt. It agrees at all Times with young, bilious and ſanguine People, who have good Stomachs. In ſome Places it is dried and will keep long, but it does not thus yield good Food. *Lemery of Foods.*

RAIZ-D'EMPOSE. A Name for the *Methonica Malabarorum.*

RALLUS. The Name of a River-Fowl, a Sort of Moor-Hen, frequent in *Italy*, and other Places. The Fat is eſteem'd reſolutive, emollient, and Anodyne. *Lemery des Drogues.*

RAMAG. Aſhes. *Rulandus.*

RAMALIS VENA. The *Vena Portæ*. *Theophilus de exacta Retrimentorum Veſicæ Cognitione.* C. 2.

RAMED. Rhubarb. *Rulandus.*

RAMENA-POU-MARAM. The Name of a very large and tall Tree, which grows in *Malabar*; to which I find no Medicinal Virtues aſcribed.

RAMENTUM. A Strigment, or ſmall Corpuſcle, abraded or ſcrap'd from any Body.

RAMEX. The ſame as HERNIA.

RAMIGRI. Colophony. *Rulandus.*

RAMUS. The Branch of a Tree; or Ramification of a Veſſel in the Body.

RANA. Offic. Mer. Pin. 169. Bellon. de Aquat. 54. Schonef. Ichth. 59. Rondel. de Aquat. 2. 218. Charlt. Exer. 27. Aldrov. de Quad. Ovip. 89. *Rana Aquatica* Schrod. 5. 331. Jonſ. de Quad. 130. Schw. Rept. 155. Raii Synop. A. 247. *Rana aquatica & innoxia*, Geſn. de Quad. Ovip. 46. THE COMMON FROG.

Frogs are of different Sizes and Colours, according to the Places where they are bred. Sea-Frogs are monſtrous, and not uſed for Food. Land-Frogs, called in *Latin Ranæ Sylveſtres*, nearly reſemble Water-frogs, only they are ſmaller, and not eat; but Water-frogs are much uſed.

The Water-Frog is an amphibious Animal; but keeps moſt in the Water, as in Rivers, Marſhes, Ponds and Fountains. It feeds upon Flies, Worms, Leaches, Snails, Inſects, and Herbs which grow in the Water; ſometimes alſo they devour their own Species, for ſmall Frogs are often found in the Mouths and Bellies of large ones. They ſwim faſt, and inſtead of walking, leap along.

In ſome Places they are much uſed for Food; tho' *Galen* ſo little regarded them, that he does not once mention them. Thoſe bred in Ponds and Marſhes are not ſo wholeſome as thoſe bred in Rivers, which abound with Phlegm, volatile Salt, and oily and balſamic Principles, which are proper for allaying ſharp Humours of the Breaſt, are a little nouriſhing, and of an opening and diſſolving Nature. From their Viſcoſity, however, they are hard of Digeſtion, and breed groſs Humours; and ſome Authors aſſure us, that the two frequent Uſe of them makes People look ſickly, and cauſes a Fever.

They agree at all Times with thoſe who are of young and bilious Conſtitutions, have good Stomachs, and are accuſtomed to Exerciſe; but old and phlegmatic Perſons ought to abſtain from them, or uſe them moderately.

Their Spawn is much uſed in Phyſic, is cooling and moiſtening, and proper for qualifying ſharp Humours: The Water diſtilled from it has the ſame Virtues. This Spawn is a viſcous Matter, tranſparent, cold, glewy, and full of ſmall Eggs. *Lemery of Foods.*

Emplaſtrum de Spermate Ranarum.
Plaiſter of Frog-Spawn.

Take of Frogs-Spawn, Oil of Frogs-Spawn, and Ceruſs, reduced to a fine Powder, each two Pounds; of white Vitriol and crude Alum, each an Ounce and an half; boil all together to the Conſiſtence of a Plaiſter: Then add of white Wax three Ounces; of Maſtich and Frankincenſe, each half an Ounce; and of Camphire three Drams. Make into a Plaiſter.

The Frogs-Spawn muſt be newly gathered, and mixed in a Baſon with the Oil of Frogs-Spawn, the Ceruſs, the Vitriol, and the Alum reduced to Powder. This Mixture muſt be boiled by a moderate Fire, to the Conſiſtence of a Plaiſter; then the white Wax muſt be melted in it; and when it is almoſt cold, incorporate with it the Maſtich and Incenſe reduced to a fine Powder; and laſt of all add the Camphire, diſſolved in about half an Ounce in the Oil of Frogs-Spawn. This Plaiſter is to be made up in Lumps for its better Preſervation.

It is proper for Wounds, accompanied with Inflammation; it deterges, corrects the Acrimony of the Humours, and dries. It is uſed in Wounds of the Eyes.

The Vitriol and Alum are not ordinarily mixed with this Plaiſter, till about the End of the Boiling: But as only the Phlegm can be extracted from theſe Mineral Salts by ſuch a Boiling, it is no matter whether they are put in ſoon or late. *Lemery Pharmacop.*

RANA VIRIDIS. Offic. Aldrov. de Quad. Ovip. 622. *Rana noſtra viridis*, Ind. Med. 96. *Rana aquatica viridis*, Schw. Rept. 158. *Ranunculus viridis*, Schrod. 5. 305. Jonſ. Quad. 133. *Ranunculus viridis, ſive Dryopetes*, Geſn. de Quad. Ovip. 60. *Agredula*, Iſidor. THE TREE-FROG.

The whole Frog, and its Blood, are uſed in Medicine. The Animal agrees in Virtues with the common Frog, and its Aſhes ſprinkled on Wounds are ſaid moſt effectually to reſtrain their Bleeding. The Blood is recommended as of peculiar Efficacy in a Philtre. *Dale from Schroder.*

RANCIDITAS. *Rancidity*; that ſort of diſagreeable Corruption which fat and oily Subſtances contract by Age and Heat.

RANCULA. An erratic Pain in a Wound, attended with Pain and Pulſation. *Johannes Anglicus.*

RANDIA.

The Characters are;

It hath a Flower conſiſting of one Leaf, whoſe lower Part is tubulous, but the upper Part is expanded, and for the moſt part divided into five Segments. The Flower is ſucceeded by an oval Fruit, having but one Cell, which is filled with flat cartilaginous Seeds ſurrounded by a Pulp.

Miller mentions but one Species of this Plant. *Randia fruteſcens, ſpinis bijugis, foliis ſubrotundis, floribus albis. Houſt.* Shrubby *Randia*, with Spines growing two at a Joint, roundiſh Leaves and white Flowers. This Plant is figured and deſcribed by Sir *Hans Sloan* in his Hiſtory of *Jamaica*, under the Title of *Lycium forte, foliis ſubrotundis integris, ſpinis & foliis ex adverſo ſitis.* Vol. I. p. 40.

This Shrub grows plentifully about *La Vera Cruz*, whence the Seeds were ſent by the late Dr. *William Houſton*, who gave this Name to it in Honour of Mr. *Iſaac Rand*, a curious Botaniſt.

This Shrub riſes to the Height of ten or twelve Feet in the Country of its Growth, and divides into a great Number of Branches, which are always produced by Pairs oppoſite, as are alſo the Leaves and Spines. The Flowers are ſmall, and of a white Colour, which are ſucceeded by hard oval-ſhaped Fruit, about the Size of a large *Spaniſh* Nut, which is full of flat Seeds, incloſed in a ſoft blackiſh Pulp. The Leaves continue green throughout the Year. *Miller's Dictionary.*

RANGIFER. Offic. Jonſ. de Quad. 64. Charlt. Exer. 12. *Cervus Rangifer*, Raii Synop. A. 88. *Tarandus*, Aldrov. de Quad. Biſul. 859. *Tarandus, ſive Rangifer*, Geſn. de Quad. 840. *Tarandus*, Agricol. Eliot. THE RAINDEER.

It is an Inhabitant of *Lapland*, and its Horns and Hoofs are of uſe in ſpaſmodic Affections.

RANINÆ VENÆ. The large Veins under the Tongue.

RANULA. A Diſorder of the Tongue, or rather a Tumour under the Tongue. See LINGUA.

RANUNCULO AFFINIS. A Name for the *Hydrocotyle Zeylanica, Aſari folio.*

RANUNCULOIDES. A Name for the *Hepatica; trifolia; cæruleo flore.*

RANUN-

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RANUNCULUS.

The Characters are;

The Perianthium is generally pentaphyllous, sometimes hexaphyllous, and commonly caducous. The Flower is rosaceous, generally pentapetalous, or hexapetalous, and furnished with numerous Stamina. The Fruit is round or oblong, and contained in Capsules, each of which is furnished with an incurvated Tube, which varies according to the Species. The Plant, in other Respects, resembles the *Chelidonium Minus*.

Boerhaave mentions sixty-nine Species of *Ranunculus*, none of which have any particular medicinal Virtues ascribed to them at present, that I know of, except the 1st, 2d, 3d, 6th, 11th, 13th, 16th, 61st, 62d, 63d, and 68th.

1. Ranunculus pratensis; erectus; acris. *C. B. P.* 178. *Raii Hist.* 1. 583. *Synop.* 3. 248. *Boerh. Ind.* A. 30. *Tourn. Inst.* 289. *Ranunculus acris*, Offic. *Ranunculus rectus non repens, flore simplici luteo*, J. B. 3. 416. *Ranunculus pratensis, repens, flore simplici luteo, vulgaris*, Park. Theat. 329. *Ranunculus sardous, acris, vulgaris*, Ger. 804. Emac. 951. *Ranunculus rectus sardous*, Ger. 804. Emac. 951. UPRIGHT MEADOW CROWFOOT.

It grows in Meadows and Pastures, and the Herb is used. This Species of *Ranunculus* is of a caustic Quality, and if the recent Herb bruised be applied to the Skin, it excites a Pain and Inflammation. The Roots are in Request among the Rustic Sort of People, and Soldiers, for the Cure of intermittent Fevers.

2. Ranunculus; pratensis; erectus; acris; in folii medio maculatus. *C. B. P.*

3. Ranunculus; pratensis; erectus; dulcis. *C. B. P. M. H.* 2. 439.

6. Ranunculus; pratensis; repens; hirsutus. *C. B. P.* 179. *Tourn. Inst.* 289. *Boerh. Ind.* A. 31. *Ranunculus*, Offic. *Ranunculus pratensis, repens*, Park. Theat. 329. Raii Hist. 1. 581. Synop. 3. 247. *Ranunculus pratensis etiamque hortensis*, Ger. 804. Emac. 951. *Ranunculus repens flore luteo simplici*, J. B. 3. 419. CROWFOOT.

This has a small creeping fibrous Root, from which arise several hairy Leaves, cut into three Segments, each of which is divided into as many more, and are frequently spotted with white Spots on their upper Side. The Stalks grow not so upright as those of the *Ranunculus Pratensis, radice verticilli modo rotunda*, having longer and narrower Leaves, and not so divided; bearing on their Tops, round, five-leav'd, shining, yellow Flowers, with several yellow Stamina in the Middle. When the Flowers are fallen, the Head enlarges into a round Cluster of sharp-corner'd flattish Seed. This Species sends out Flagellæ from the Roots, by which it propagates itself. It grows frequently in moist Meadows, and by River-sides, and flowers in *May*. *Miller's Bot. Off.*

This Species is quite harmless, and is often boiled with other Greens in the Month of *April*. *Dale.*

11. Ranunculus; montanus; aconiti folio; albus; flore minore. *C. B. P.* 182. *Aconitum Ranunculoides, flore albo simplici*. M. H. 2. 450.

13. Ranunculus; pratensis; radice verticilli modo rotunda. *C. B. P.* 179. *Tourn. Inst.* 289. *Boerh. Ind.* A. 31. *Ranunculus bulbosus*, Offic. Ger. 806. Emac. 953. Park. Theat. 329. Raii Hist. 1. 581. Synop. 3. 247. *Ranunculus tuberosus major*, J. B. 3. 417. BULBOSE CROWFOOT.

This is the most common, and with this our Fields about Town are covered in the Spring. It may be known from the rest by its round white tuberous Root, having several Fibres at the Bottom. Its Leaves grow on longer Foot-Stalks; but it is cut into three Sections, like the *Ranunculus pratensis, repens, hirsutus*. It grows more erect, and the Calyx of the Flower turns back, and remains till the Leaves drop; whereas, in the creeping Sort, the Calyces fall off as soon as the Flowers are opened. It flowers in *May*, and is too frequent in our Fields and Meadows, being by the Vulgar called *Butter-flowers*; they believing that the Butter receives its yellow Colour from these Flowers; whereas the Cows will meddle with none of the Crow-feet when green, by reason of their hot caustic Taste. *Miller's Bot. Off.*

The Root of this Plant is so acrid, that it may be used for Caustics and Blisters, but principally upon the Joints of those Parts which are infested with the Gout. They bruise this *Ranunculus*, and apply it to the Corns of the Feet, after they have been well softened in warm Water, and cut to the Quick. *Martyn*: *Tournefort.*

The Root is of admirable Efficacy in eroding, consuming, and drying hard Tumours; but loses its Virtue when dried.

16. Ranunculus; palustris; Apii folio; lævis. *C. B. P.* 180. *Boerh. Ind.* A. 31. *Tourn. Inst.* 291. *Ranunculus palustris*, Offic. Ger. 814. Raii Synop. 3. 249. *Ranunculus palustris rotundi folius*, Ger. Emac. 962. Raii Hist. 1. 585. *Ranunculus palustris sive minimus*. J. B. 3. 858. *Ranunculus palustris Sardonius, lævis*. Park. Theat. 1215. ROUND-LEAV'D WATER CROWFOOT.

It delights in watery Places, and flowers in *June* and *July*.

This *Ranunculus*, *Dale* supposes the fourth Species of *Dioscorides*, who writes that the Leaves and tender Stalks being applied as a Cataplasm, are exulcerating and escharotic, not without Pain. Hence they cure scabrous Nails, remove the Psora, and obliterate the Marks of such as are stigmatized. The Application hereof cures also the Myrmeciæ, Acrochordones, and Alopecia, and that in a short time. A Decoction of the same is good to foment Chilblains. The Root dried and triturated, excites Sneezing, when applied to the Nostrils, and worn as an Amulet, eases the Tooth-ach, but it breaks the Teeth. *Dioscorides, Lib.* II. *Cap.* 206.

61. Ranunculus; gramineo folio; flore caudato, seminibus in capitulum spicatum congestis. See MYOSUROS.

62. Ranunculus; longifolius; palustris major. *C. B. P.* 180. *Boerh. Ind.* A. 34. *Tourn. Inst.* 292. *Ranunculus flammeus*, Offic. *Ranunculus flammeus major*, Ger. 814. Emac. 961. Raii Hist. 1. 587. Synop. 3. 250, *Ranunculus palustris flammeus major*, Park. Theat. 1215. *Ranunculus folio longo maximus, Lingua Plinii*. J. B. 3. 365. GREAT SPEAR-WORT.

It grows in marshy Ditches, and flowers in *June*; its Virtues are the same with those of the *Ranunculus palustris*.

63. Ranunculus; longifolius; palustris; minor. *C. B. P.* 180. *Tourn. Inst.* 292. *Boerh. Ind.* A. 34. *Flammula*, Offic *Ranunculus flammeus minor*, Ger. 814. Emac. 961. Raii Hist. 1. 587. Synopf. 3. 250. *Ranunculus palustris flammeus minor sive angustifolius*, Park. Theat. 1214. *Ranunculus longifolius aliis flammula*, J. B. 3. 864. SPEAR-WORT.

It is found frequently growing in watery Meadows, and oozy Places, and flowers in *June*. The Herb, which is of Use in Medicine, agrees with the other Species in its caustic Quality. Its Leaves are sometimes even or entire, and sometimes serrated; in which latter Respect, it is called *Ranunculus flammeus serratus* by *Gerard* and *Parkinson*, and *Palustris serratus* by *C. Bauhine*.

68. Ranunculus; folio Cyclaminis; radice Asphodeli; major. *Tourn. Inst.* 285. *Boerh. Ind.* A. 35. *Thora*, Offic. *Thora Valdensis*, Ger. Emac. 966. Raii Hist. 1. 591. *Thora folio Cyclamini*, J. B. 3. 650. *Aconitum Pardalianches alterum, seu Thora minor*, C. B. P. 184. *Aconitum Pardalianches, seu Thora minor*. Park. Theat. 317. *Thora montis Baldi, sive Sabaudica*, Ger. *Aconitum Pardalianches primum, seu Thora major*, C. B. *Pardalianches, seu Thora major*, Park. LEOPARD-BANE.

It grows on the Mountains of *Switzerland*, and the Herb is endued with a caustic Quality.

The Virtues of this Plant are either of the laudable and salutary, or of the hurtful and pernicious Kind. The first, second, sixth, thirteenth, and sixteenth Species are principally kept in the Shops. Its Roots and small Bulbs, bruised and applied to the Skin, excite Pain, Redness, Inflammation, a Gangrene, and an acrimonious State of the Humours: For this Reason they are of an escharotic, caustic Quality, and cure Diseases in which the nervous System is to be roused and shaken; such as Pains of the Bones, Epilepsies, Convulsions, Spasms, hysteric Passions, fixed Pains of the Periosteum, Gouts, old Ulcers, and ischiadic Pains. They exulcerate and burn into Crust the Skin and Panniculus adiposus; and if they are left in open Wounds, they excite Fistulas. It is also customary among Soldiers and common People, to gather, wash, and bruise the Roots of the first, second, and third Species, and apply them to the Soles of the Feet, or between the Fingers, by which Means they successfully cure intermitting Fevers; but if they are too acrid, they burn the Skin.

This Herb is, by many, called *Scelerata Herba*, because with its Roots and Bulbs the Beggars raise unseemly Ulcers on their Children, in order to excite the greater Compassion. The Herb put up the Nostrils excites a violent Sneezing. Warts are eradicated by rubbing them with this Plant; and the Ancients applied the Leaves of the *Ranunculus* for the Cure of a Leprosy. This Plant is poisonous when used internally, but externally it cures the Itch in Children.

It is by some called *Apium Risus*; hence *Giulandinus*, that skilful Botanist, thought that it was the *Apiastrum* of *Pliny*, which *Dioscorides* calls *Sardonia*. This is so acrimonious, that if it is applied to the Tongue, it immediately inflames it, and produces a Gangrene in it.

It is also called *Herba Strumea*, because it resolves and discusses scrophulous and strumous Swellings; *Pes Corvinus*, because the Leaves of some Species of it resemble Crows Feet; and *Ranunculus*, from *Rana*, because it grows in moist Places. *Hist. Plant. Ascript. Boerh.*

Besides the foregoing Species of *Ranunculus*, *Dale* mentions the following:

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Ranunculus montanus, Offic. *Ranunculus montanus maximus albus*, Park. Theat. 334. *Ranunculus montanus Aconiti folio albus flore majore*, C. B. P. 182. Tourn. Inst. 290. *Ranunculus Aconiti folio*, Ger. Emac. 954. *Ranunculus flore albo Alpinus major*, J. B. 3. 861. Raii Hist. 1. 589. MOUNTAIN CROWFOOT WITH A WHITE FLOWER.

It grows on woody Hills, and flowers in *May* and *June*; and agrees in Virtues with the other Species of *Ranunculus*.

RAPA.

The Characters are;

The Pod ends in a fungous kind of Horn, and the Root is carnous and tuberous.

Boerhaave mentions nine Species of *Rapa*, which are;

1. Rapa; sativa; rotunda; radice candida. *C. B. P.* 89. *Raii Hist.* 1. 800. *Synop.* 3. 294. *Tourn. Inst.* 228. *Boerh. Ind. A.* 2. 12. *Rapa*, Offic. *Rapum hortense*, Park. Parad. 508. *Rapum majus*, Ger. 177. Emac. 232. *Rapum sativum rotundum*, J. B. 2. 838. TURNEPS.

This is a Root so well known, that it would be needless to say more than that it is round, and somewhat flat, of a white Colour, but somewhat reddish on the Outside. The Leaves are large, rough, and very much cut in, being round and broad at the End, and lying on the Ground. In the Spring it sends forth branched Stalks, clothed with smaller, but smooth and undivided Leaves, and long Spikes of four-leaved bright yellow Flowers; which are succeeded by long, slender Pods, containing round black Seed. It is sown in the Fields and Gardens, and flowers in *April*.

Turneps are much eaten with all Sorts of Flesh, in the Winter Season especially, and are a wholesome and nourishing Root, tho' somewhat windy; and are more used in the Kitchin than in the Apothecaries Shops. Some commend a Syrup made with Slices of Turneps and brown Sugar-candy, Stratum super Stratum, baked in an Oven, as a good Pectoral, and helpful for Coughs and Consumptions. *Miller's Bot. Off.*

Turneps are sown in a moist Soil with Cabbage, and are much used for Food. They are of two Kinds, Male and Female, which differ little from one another; only the Male is usually round, about the Bigness of a Child's Head, and much extended in Breadth; the Female is oblong, and most esteemed. Such as are tender, plump, of a good Taste, and grow in a fat and moist Soil, are the best. They sometimes grow to a prodigious Bigness. *Pliny* and *Tragus* say, they had seen some of the Males that weighed forty Pounds; and *Amatus* reports that he had seen some that weighed above fifty and sixty Pounds. Some of the Females have been known to have weighed thirty.

They contain much Oil, and a little essential Salt; and are very nourishing, softening, and provoke Urine, having an oily balsamic Juice, proper to correct the sharp Salts of the Humours, and to recruit the solid Parts. The Decoction of them, strained and sweetened with Sugar, is used to allay the sharp Humours of the Breast, and remove Hoarseness, and must be taken just before going to Bed.

They are hard of Digestion, windy, and sometimes cause Obstructions; because their Substance being very compact and close, they continue a long Time in the Stomach before they are wasted, ferment there, and easily stop in the small Channels or Pipes through which they pass. They agree at all times with young bilious Persons, and those whose Humours are sharp and thin, provided, however, they have a good Stomach. The Seed is reckoned good against Poison, and to kill the Worms. *Lemery of Foods.*

2. Rapa; sativa; rotunda; radice obsoletè nigricante. *C. B. P.* 90.

3. Rapa; sativa; rotunda; radice suprâ Terram viridi.

4. Rapa; sativa; rotunda; radice foris & intus flavescente. *C. B. P.* 90.

5. Rapa; sativa; rotunda; radice foris & intus pallide lutescente.

6. Rapa; radice compressa, candidâ.

7. Rapa; radice oblongâ; seu fœmina. *C. B. P.* 90.

8. Rapa; radice oblongâ; seu fœmina; radice obsoletè nigra.

9. Rapa; radice oblonga; seu fœmina; major. *Boerh. Ind. Alt. Plant.*

This Plant agrees in Virtues with the *Raphanus*; the Cortex, or Bark, of the Root has an acrimonious Taste; but the Juice of the interior medullary Substance has a Honey-like Savour. The Root boiled and decorticated is an excellent Antiscorbutic, and is thought to have a demulcent Virtue. The expressed Juice of the Root, taken in a good State of Maturity, and before it bears Seed, being boiled and clarified, with an Addition of Honey, making a third Part of the whole, is an incomparable Medicine for Ulcers in the Mouth, and to deterge Aphthæ; and being drank, is an excellent Remedy for an inveterate Cough. The Seed, heated and pressed, yields an Oil of Use on all Occasions. The Bulb roasted under the Embers, is an Anodyne in Inflammations of the Ears. The same boiled in Butter, and made into a Cataplasm, is very good to mollify Tumors. *Nicander* writes, that the *Rapa* is a very proper Ingredient in alexipharmic and theriacal Compositions; it serves also for Food and Sauce. *Galen* says, that it is a very good Aliment, but flatulent: It loses, however, its Flatulency in boiling or roasting; but as it is always deprived of its Cortex, it must still retain some Flatulency. The following Remarks on *Rapa* are worth Observation: The lesser the Bulb, and the more sandy the Soil in which it grows, the more acrimonious is its Taste; the Rind of the Bulb is always bitter, which is a Proof that the Plant is antiscorbutic. The Juice is highly commended by modern Physicians. They press the whole Body of the Bulb into a Flour, and so express the Juice, which is acrimonious; then with an Addition of Honey they make of it a Gargarism, which is a good Remedy in the Quinsey, and a Peripneumony. The eighth Species becomes the more acrimonious for being pierced by Worms, because the aqueous Juice is evacuated by the Wounds. That there is a considerable Flatulency in crude Turneps, is demonstrated by Mr. *Boyle*, who found, that by putting them with their Rinds pared off in an exhausted Receiver, and suffering them to continue therein for four and twenty Hours, they had in that Space of Time generated five Atmospheres; that is, rendered the Air within the Receiver of five Times the Weight of that without it. The same Experiment will hold good of Radishes; whence it appears, that there is in these Plants an antiscorbutic and very deterfive Quality. *Hist. Plant. Ascript. Boerhaave.*

Besides the foregoing Species of *Rapa*, *Dale* mentions the following:

Rapa Syvestris, Offic. C. B. P. 90. Raii Hist. 1. 800. *Rapum Sylvestre*, Ger. 179. Emac. 233. *Rapum sylvestre non bulbosum*, Park. Theat. 861. *Rapum sylvestre Matthioli*, J. B. 2. 841. WILD TURNEP.

It grows in Fields, and flowers in the Summer. The Root, as *Dioscorides* says, is an Ingredient in *Smegmata*, or detersive Medicines, composed of the Flour of Lupines, Wheat, Darnel, or Vetches, for clearing the Skin of the Face, and of the Body. *Dioscorides*, L. 2. C. 135.

RAPAX. A Name for Amber.

RAPHANINUM OLEUM. Oil drawn from the Seeds of the Radish. *Dioscorides* recommends it for cutaneous Disorders. L. 1. C. 45.

RAPHANISTRUM.

The Characters are;

The Pod is full of Joints, like a fasciated or filleted Column, and full of roundish Seeds, inclosed in each Joint.

Boerhaave mentions three Species of *Raphanistrum*, which are;

1. Raphanistrum; segetum; flore luteo, vel pallido. *T.* 230. *Bapistrum, flore luteo, siliqua glabra articulata.* Raii Hist. 805.

2. Raphanistrum; arvense; flore albo. *T.* 230. *Rapistrum, flore albo Erucæ foliis.* Lob. Ic. 199. *Lampsana.* Cæsalp. 355.

3. Raphanistrum; flore albo striato; siliquâ articulatâ, striatâ, minore. See ARMORACIA. *Boerh. Ind. Alt. Plant.*

It is called *Raphanistrum* from *Raphanus*, because its Root resembles that of the *Raphanus minor*. Its Virtues are the same with those of the *Raphanus*. *Hist. Plant. Ascript. Boerhaave.*

Raphanistrum is also a Name for several Sorts of *Rapistrum*, which see.

Raphanistrum dispermum. A Name for the *Erucago*; *segetum.*

Raphanistrum, monospermum. A Name for the *Myagrum monospermum*; *latifolium.*

RAPHANUS.

The Characters are;

The Pod is like a Horn, thick, spungy, divided by a thin Membrane into two Capsules, or Cells, containing round Seeds.

Boerhaave mentions five Species of *Raphanus*, which are;

1. Raphanus; major; orbicularis; vel rotundus. *C. B. P.* 96.

2. Raphanus; major; orbicularis; floribus candidis. *C. B. P.* 96.

3. Raphanus; niger; major; rotundus. *M. H.* 3. 265. *Tourn. Inst.* 229. *Boerh. Ind. A.* 2. 11. *Raphanus hortensis, Radicula*, Offic. *Raphanus*, J. B. 2. 846. *Raphanus sativus*, Ger. 183. Emac. 287. Raii Hist. 804. Synop. 3. 296. *Raphanus vulgaris*, Park. Theat. 861. Parad. 507. RADISH.

This Root is very well known to every one, to be long, single, and white; and covered with a thin reddish Skin on the

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the upper Part; the Leaves are large, rough and hairy, pretty much cut in on the Edges; the Stalks grow to three or four Foot high, much branched, having several four-leaved white Flowers, with a reddish Spot on each Leaf; which are succeeded by pretty large, light, spungy Seed-vessels, including oval, reddish, brown Seed, as big again as Rape Seed. It is planted in Gardens, and flowers in *May*.

Radishes are opening, attenuating, and antiscorbutic, and are much eaten in the Spring; but afford little Nourishment, and are very windy. They provoke Urine, and are good for the Stone and Gravel. They are but seldom used in the Shops. *Miller's Bot. Off.*

The Parts useful in Medicine are the Root and Seed, which are principally employed in wasting and expelling the Stone; in provoking Urine and the Menses; and in opening Obstructions of the Liver and Spleen. *Dale.*

The *Raphanus* has the Virtues of the *Cochlearia*; the Root is eculent, expels Phlegm from the Intestines, and is a Carminative. The Flowers, Leaves, Seeds and Roots are antiscorbutic; for which Reason they are much in request, and are proper for phlegmatic Constitutions. The expressed Juice of the Roots and Seeds, taken in the Morning with Honey, is a very wholesome Medicine, especially if a Draught of Whey be taken afterwards; for it cleanses the Stomach, Kidneys, and Lungs, and is good against an inveterate Cough and Hoarseness, proceeding from Phlegm; but it is not proper in a Cough proceeding from an Inflammation, nor for those who spit Blood. The Leaves are used among other Greens. The Root contains much of an aqueous and acrimonious Substance; and the drier it is, the more acrid it becomes; but its Acrimony is lost in boiling. Its Aquosity renders it flatulent, on which Account it is said not to be good in hypochondriacal Disorders: The daily Use of the Root, however, is of sufficient Efficacy to cure a great Dropsy in the Beginning; and it is of excellent Service in the Scurvy. It is also aperitive, inciding, and good for the Stone, the nephritic Colic, a Retention of Urine and the Menses, and in the Jaundice. The Seeds are opening; but taken inwardly by themselves, they excite a Nausea. *Hist. Plant: Ascript. Boerhaave.*

5. Raphanus; major; oblongus. *Boerh. Ind. Alt. Plant.*

Raphanus aquaticus. A Name for the *Sisymbrium*; *aquaticum*; *Raphani folio*; *siliqua breviore*; and for the *Sisymbrium*; *aquaticum*; *foliis in profundas lacinias divisis*; *siliqua breviori.*

Raphanus rusticanus. A Name for the *Cochlearia*; *folio cubitali.*

RAPHE. A Suture.

RAPISTRUM.

The Characters are;

The Shell is almost globular, and consists of one Capsule, which generally contains no more than one Seed.

Boerhaave mentions six Species of *Rapistrum*, which are;

1. Rapistrum; Orientale; Acanthi folio. *T. Cor.* 14.

2. Rapistrum; monospermum. *T.* 210. *C. B. P.* 45. *Prodr.* 37. *J. B.* 845. *Raphanistrum*, *monospermum*, *capsulis striatis*, *tenuitus*, *oblongiusculis.* M. H. 2. 267.

3. Rapistrum; maximum; rotundifolium; monospermum. *Corn.* 147. *Raphanistrum monospermum*, *maximum*, *rotundifolium*; *capsulâ rotundâ*, *glabra.* M. H. 2. 265.

4. Rapistrum; arvense; folio auriculato, acuto. *T.* 211. *Myagro similis*, *siliquâ rotundâ.* C. B. P. 109. Prodr. 52. *Raphanistrum*, *siliquâ minore*, *rotundâ*, *rugosâ*, *asperâ.* M. H. 2. 267.

5. Rapistrum; Orientale; folio Raphani; capsulis rugosis *Nissele.*

6. Rapistrum; Orientale; Dentis Leonis folio; flore albo. *T. Cor.* 14. *Boerh. Ind. Alt. Plant.*

It is called *Rapistrum* from *Rapa*, because its Leaves resemble those of the *Rapa*. All the Species are antiscorbutic, and have an acrimonious Taste, mix'd with a Savour of Garlick, whence they contain something of a heating Quality; however, they are not much commended, and are but of little Use in Medicine. *Hist. Plant. Ascript. Boerh.*

Rapistrum, is also a Name for the *Sinapi*; *arvense*; *præcox*; *semine nigro*. And for the *Sinapi*; *arvense*; *præcox*; *semine nigro*; *foliis integris.*

Rapistrum flore albo. A Name for the *Raphanistrum*; *arvense*; *flore albo.*

Rapistrum flore luteo. A Name for the *Raphanistrum*; *segetum*; *flore luteo*, *vel pallido.*

Rapistrum Italicum. A Name for the *Erysimum*; *angusti folium*; *majus.*

RAPUM. See RAPA.

RAPUNCULUS.

The Characters are;

It has all the Appearance of the *Campanula*, except in that the Flower is monopetalous, quinquefid, stellated, and furnished with a corniculated Pistil.

Boerhaave mentions two Species of *Rapunculus*; the first of which has its Flowers collected into a Head, and is known by the Name,

Rapunculus; Scabiosæ capitulo. *C. B. P.* 92. *Scabiosa*, *globularis*, *quam ovinam vocant.* J. B. 3. 25. 12. *Rapuntium montanum*, *capitatum*, *leptophyllum.* Col. 1. 227.

The second Species, which is distinguished by having its Flowers disposed in the Figure of an Umbella, is called,

Rapunculus; valerianoides; cæruleus; umbellatus. *Flor.* 2. 113. *Cervicaria*, *valerianoides*, *cærulea.* C. B. P. 95. *Trachelium*, *umbelliferum*, *cæruleum.* Ponæ. *Valerianthemum.* Hoffman. Delic. *Boerh. Ind. Alt. Plant.*

It is called *Rapunculus*, because its Root resembles that of the *Rapum*. But I find no Virtues ascribed to it.

Rapunculus is also a Name for several Sorts of CAMPANULA.

RAPUNTIUM.

The Characters are;

In Leaves, Fruit, and outward Appearance, it resembles the *Campanula*. The Flower is monopetalous, divided into Parts, shaped like a Tongue, and inclosed in a Sheath.

Boerhaave mentions four Species of *Rapuntium*, which are;

1. Rapuntium; maximum; coccineo; spicato flore. *Col. in Rech.*

2. Rapuntium; Americanum; flore dilutè cæruleo. *A. R. P.* 105. *Rapunculus*, *Galeatus*, *Virginianus*, *flore violaceo*, *majore.* M. H. 2. 466.

3. Rapuntium; Americanum; Virgæ aureæ foliis; parvo flore cæruleo. *T.* 163.

4. Rapuntium; Africanum; minus; anguftifolium; flore violaceo. *T.* 163. *Campanula*, *minor*, *Africana*, *erini facie*, *flore violaceo*, *cauliculis procumbentibus.* H. L. *Boerh. Ind. Alt. Plant.*

This Plant is not received in Medicine. The first Species serves to feed Sheep, and bears a very beautiful Flower, which, for Colour and Lustre, surpasses all others; for which reason it is called *Flos cardinalis*, the Cardinal Flower. *Hist. Plant. ascript. Boerhaave.*

RAREFACIENTIA. Medicines which rarify the Blood.

RASA. The same as RESINA.

RASA, or RASTIS. Tin.

RASAKETI, RUSATAGI, or RUSANGI. Burnt Copper. *Rulandus.*

RASCATIO. Excreation, or Hawking.

RASCETA, or RASETTA. The Wrist; or Ankle. The Word is Arabick.

RASILIS ÆRUGO. See ÆRUGO.

RASORIUM. A Raspatory, or Lenticular. See *Table* 28. *Fig.* 3, 4, and 5.

RASPATORIUM. The same as RASORIUM.

RASTETA. The same as RASCETA. *Paracelsus.*

RASTOL, or RASOES. Copper. *Rulandus.*

RASTUL. Salt. *Rulandus.*

RASURA. A Shaving, or Rasping. It is also used to express a kind of Corrosion by acrid Humours. *Rasuræ*, are Shavings, or Raspings.

RATIONIS OS. The OS SINCIPITIS. *Blancard.*

RATIS. *Marcellus Empiricus* informs us, that this is the French Name for the *Filicula*, (Polypody) which frequently grows on the Beech.

RAUCEDO. Hoarseness.

RAVED. Rhubarb.

RAXACH. Gum Ammoniac.

REALGAR. *Realgar*, or *Lisagallum*, of the Shops; Σανδαράχη of the *Greeks*; *Realgar*, *Lesegal*, and *Zarnich Ahmer*, of the *Arabians*; called by us Red Orpiment; is an arsenical Juice of the same Nature with Orpiment, differing from it only in Colour. It is of two Kinds, native and factitious: The native *Realgar* is dug out of the same Mines with Orpiment, resembling Cinnabar in Colour, and smelling like Sulphur and Garlick when burnt, and made up in solid brittle Glebes. The factitious Kind is made of Orpiment, melted and boiled for some time in subliming Vessels, by which the yellow Flowers are raised to the upper Part of the Vessels, and the Mass remaining at the Bottom, being condensed by Cold, becomes of a red Colour, like Cinnabar, and is called *Realgar*; which, if it be exposed to the free Air for a long Time, becomes covered with a saline Efflorescence. This *Realgar* is not to be confounded with the factitious red Arsenic.

Realgar is brought from *China*, in different Figures; some of which resemble the Figures of little Men, called Pagods; and I am of opinion that it is not cut into these Figures, but cast in Moulds.

Realgar is no less poisonous than Orpiment. According to *Dioscorides*, Sandaracha has a septic and corroding Virtue; but it is wonderful that he should recommend the Use of it, not only in Fumigations for Coughs of long standing, but also

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also taken inwardly, mixed with Resin for Asthmas; with Honey for a Hoarseness, or a spitting up of a purulent Matter. Even *Hippocrates*, in a Suffocation of the Uterus, accompanied with a Cough, orders the Weight of an Obolus, or about twelve Grains of Sandaracha, mixed with the same Quantity of unprepared Sulphur, and three or four blanch'd Almonds, to be taken in sweet or perfumed Wine. The *Indians* commonly drink Wine or Water out of arsenical Cups, for various Diseases, as a sovereign Remedy; though among us, this Practice has been found to be attended with very bad Consequences. It must be owned, therefore, that the Bodies of Men in hot Countries are different from ours. As insensible Perspiration is there more copious, their solid Fibres are drier, and more unfit for Motion; and, for that reason, require more strongly irritating and stimulating Medicines, to make these Fibres contract as they ought. Likewise, as the Fluids in their Bodies are thicker and more viscid than in ours, by the Evaporation of the more fluid Parts of them, they cannot be attenuated but by strong and very acid Medicines; and therefore what is a certain Poison to us, is to them an efficacious Remedy; as the cathartic Medicines which we use, have hardly any Effect on them, except they be given in three times the common Quantity, as has been often observed by Physicians. In our Climate, therefore, we ought to abstain from the inward Use of these Medicines, however prepared, corrected or mitigated; because they still retain some Part of their deleterious Qualities, and prove fatal to Persons whose Viscera are tender. Neither is the external Use of them altogether safe; for *Fernelius* relates, that by applying a large Quantity of Arsenic to a cancer'd Breast, the Patient was carried off in six Days. About three Hours after the Medicine was applied, she was seized with a Shivering, Vomiting, Pain in her Head, and frequent Fainting. Her Pulse was weak, and as the Symptoms increased by Degrees, she began to be cold in the Extremities of her Body, and then her Face and other Parts swelling beyond Measure, she soon died. From this Observation, *Fernelius* takes occasion to caution Physicians against the external Use of arsenical Medicines, except in small Quantities, and to Parts at a great Distance from the Heart and Brain; though, in the Opinion of many very great Physicians, they are thought to be very powerful and efficacious Remedies in cachetic, phagedænic, and carcinomatous Ulcers.

The Correction of *Realgar*, first proposed by *Helmont*, and afterwards published by *Dallicot*, first Physician to the Duke of *Lorrain*, which has been found successful in many Cases, is this:

Put any Quantity of *Realgar*, finely powdered, into a Glass Matrass, and pour upon it as much of a strong Lixivium of Tartar and Nitre, as will swim four Fingers Breadth above the *Realgar*. Digest them in a Sand-heat for twenty-four Hours, shaking the Matrass very often. Then pouring off, and preserving the Tincture, pour new Lixivium upon the Powder, and repeat the whole Operation, till almost all the *Realgar* is dissolved, some indissoluble metallic Parts only remaining. Afterwards mix all the Tinctures together, pass them through Cap-Paper, and pour, at several times, as much Vinegar of Lead to the strained Liquor, as will precipitate all that can be separated from it. Then pouring off the clear Liquor from the precipitate by Inclination, let the Powder be washed with warm Water till it become almost insipid; and when it is well dried, burn a sufficient Quantity of rectified Spirit of Wine upon it; and then calcine it with the Tincture of Opium extracted with Spirit of Wine. This Powder, so prepared, is a gentle Escharotic, of great Service in cancerous Swellings. *Geoffroy.*

REBIS. A Word in *Paracelsus*, importing the Excrements of the Belly. It is also a Name for his celebrated Medicine, called *Azoth.*

REBISOLA. A secret Medicine prepared of Urine, for the Jaundice. *Rulandus.*

REBOLEA. Mummy. *Rulandus.*

REBONA. Burnt Dung. Mummy. *Rulandus.*

REBUS. The ultimate Matter of all Things.

RECEPTACULUM. A Receptacle. In Chymistry, a Receiver. In Anatomy, the *Receptaculum Chyli*, or Receptacle of the Chyle, is the Part to which the Lacteals convey the Chyle, in order to be transmitted to the Blood.

RECEPTARII MEDICI. Physicians who collect or write vast Loads of Prescriptions, to the great Detriment of their Patients, are thus called by way of Reproach.

RECEPTUM. A barbarous Word, importing a Prescription.

RECESSUS. This Word is sometimes used to express an Abscess, or Apostemation.

RECHA. Marble. *Rulandus.*

RECIDIVA. A Relapse. After a Disease is once cured, the Patient often suffers a Relapse; a Disposition to which may be known by the following Signs: If, after the Disease has left the Patient, a Weakness still remains; if there be no Appetite, nor Digestion, but much Nauseating, accompanied with nidorous or acid Eructations: With equal Certainty is a Relapse portended, if the forementioned Indications be attended with a fetid Breath, a vehement Thirst, and much Watching; if the Præcordia, and Parts adjacent, are tumified; and if the Face be inflated, especially towards the upper Eye-lid. All these forementioned Symptoms indicate a Return of the Disorder with the greater Certainty, in proportion as they appear more evidently at those Times, in which there is usually an Exacerbation of the Disease.

The Kind, or Nature of the Distemper will also furnish something material for predicting a Relapse. Those Fevers which are attended with an Inflammation, are very subject to return upon the Patient; for though the Fever goes off, it leaves behind it something of a Heat and Æstuation in the Viscera. Of the same Disposition are the Epilepsy, Dimness, the Hernicrania, an obstinate Pain of the Head, a Catarrh, Asthma, Pains in the Kidneys, the Colic, Gout, and other Disorders of that Nature. The Season most favourable to Relapses is the Autumn; and every Relapse is the less dangerous for being occasioned only by bad Diet, and not from some corrupt Reliques of the former Disease. The sooner a Disorder returns, and the more impaired the Strength of the Patient, the worse is the Relapse; and whatever Disease ceases all on a sudden, and for no manifest Reason, seldom fails to return. *Lommius, Med. Obs.*

RECIPE. A Word always used in the Beginning of Prescriptions, importing, Take. It is generally wrote ℞, or ℥.

RECIPIENS. In Chymistry is a Receiver. In Pathology, *Recipiens* is the Recipient, or Subject which receives a Disease.

RECIPROCATIO. The same as ANTAPODOSIS.

RECLUSIO. The same as ANASTOMOSIS.

RECOCTA. A Sort of Cheese made of Whey or Buttermilk. *Castellus.*

RECOLATIO. A repeated Percolation, or Straining.

RECORDATIO. The same as ANAMNESIS.

RECORPORATIO. See METASYNCRISIS.

RECREATIO. The same as ANALEPSIS.

RECREMENTUM. A Recrement. It is much the same as Excrement; except that with respect to Metals, their *Scoriæ* are called Recrements.

RECRUDESCENTIA. This is used by some Authors to express a Relapse.

RECTIFICATIO. Rectification; that is, a Depuration, or Exaltation of the Substances produced by Distillations, by repeating the Distillation a sufficient Number of Times.

RECTUM INTESTINUM. See COELIA.

RECTUS. This is a Name for several Muscles. Thus there is the *Rectus Abdominis*. See ABDOMEN. There are several Muscles which assist in moving the Head, that are called *Recti.*

RECTUS MAJOR.

This is a small, flat, short Muscle, broad at the upper Part, and narrow at the lower; and though it is called Rectus, it is situated obliquely between the Occiput and second Vertebra of the Neck.

It is fixed below to one Branch of the bifurcated Spine of the second Vertebra of the Neck, at a Tuberosity, which is often found at the upper Part of that Branch. Thence it ascends a little obliquely outward, and is inserted in the posterior Part of the inferior transverse Line of the Os Occipitis, at a small Distance from the Christa, being a little covered by the Obliquus superior.

RECTUS MINOR.

This Muscle is like the former, and it has also a small Insertion below, in the posterior Eminence of the first Vertebra. From thence it ascends laterally, and is inserted immediately under the posterior Part of the inferior transverse Line of the Os Occipitis, in a superficial Fossula, on one Side of the Crista Occipitalis.

The Recti majores and minores postici, and Obliqui Superiores, turn the Head a little Backward, on the first Vertebra of the Neck; and they can neither act otherwise nor separately; the Recti Majores contribute most to this Motion, and the Minores seem likewise to hinder the articular Membranes from being pinched between the Bones in great Motions.

RECTUS ANTICUS LONGUS.

This Muscle is in some Measure of a pyramidal Figure, lying along the anterior and lateral Parts of the Vertebræ of the Neck, all the Way up to the Basis Cranii.

It is fixed to the anterior Parts of the transverse Apophyses of the third, fourth, fifth and sixth Vertebræ in a digitated Manner. From thence it runs up obliquely inward towards the

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the lateral Parts of the Bodies of the Vertebræ, passes on the Foreside of the first and second, without being inserted in them; and approaching gradually towards the same Muscle on the other Side, it is inserted near it, in the Forepart of the lower Side of the Apophysis Basilaris, or great Apophysis of the Os Occipitis.

RECTUS ANTICUS BREVIS.

This is a small flat Muscle, about the Breadth of one Finger, situated laterally on the anterior Part of the Body of the first Vertebra. It is fixed below to the Basis or Root of the transverse Apophysis of that Vertebra, near the anterior Eminence. From thence it runs obliquely upward and inward to a transverse Impression in the lower Side of the Apophysis Basilaris of the Occipital Bone, immediately before the Condyle on the same Side, being covered by the *Rectus Anticus Longus*.

The Recti Majores and Minores Antici, and the two Transversales Antici move the Head forward on the first Vertebra; and the Recti Minores and Transversales Breves, likewise defend the Capsular Ligaments. *Winslow's Anatomy.*

RECURSIO. The same as PALINDROMIA. Or the Return of a Paroxysm, or Fit.

RECUTITI. The same as APELLÆ.

REDIVIVUS. Reviv'd. This, in Chemistry, is frequently apply'd to Metals, which, after having been disguised, and concealed in a Form foreign to their respective Natures, are reviv'd, and restor'd to that which is natural to them.

REDUC, or REDUX. A Flux, or Powder, by which calcin'd Metals, or Minerals, are reduced to a Reguline Form. *Rulandus.*

METHODS OF PREPARING FLUXES.

We took four Ounces of red Lead, an Ounce of white Sand in Powder, and two Ounces of dry decrepitated Salt, and mixed them all well together in a Mortar; then putting the Mixture into a clean Hessian Crucible, fitted with a Cover, we fused the Matter in a Wind Furnace for a Quarter of an Hour; when taking it out, and letting it cool, we afterwards broke the Crucible, and found the Salt at Top, and a pure Glass of Lead at the Bottom. This Glass we carefully separated, and kept a-part as a powerful Flux.

The Salt is of no other Use in this Operation, than to serve as a Flux to the Sand, and make it more readily unite with the Red-Lead; so as to form a Glass without any great Violence of Fire, or the Necessity of being long detained therein. So that by this Means a Glass of Lead may be readily prepared for the Purpose of artificial Gems, or other Uses.

This Glass of Lead is a Flux extremely useful in the Business of Assaying; and when kept long in Fusion, passes thro' the Pores of any common Crucible, almost like Water thro' a Sieve; so as, upon the Test, readily to vitrify, or carry off all Sorts of Metalline and Mineral Matter, except Gold and Silver: On which Property, therefore, the Art of Cupelling depends.

Fluxes seem reducible to two general Kinds; the Vitreous and the Saline. By the Vitreous we understand all those which either have of themselves, or readily assume a glassy Form in the Fire; among the Principle whereof we reckon the Glass of Lead, the Glass of Antimony, and Borax.

By the Saline Kind of Fluxes, we understand all those that are composed of Salts, whether Tartar, Nitre, fixed Alkali, or the like. Among the principal of this Kind, we reckon the black Flux, Sandiver, Kelp and the like. The vitreous Kind seem more immediately destined to act upon the stony or vitrescible Matter, wherewith stubborn Ores are frequently mixed; and the Saline Kind, to act more immediately upon the Ore itself, for the due Exclusion or Separation of the Metal.

The more kindly Ores require no Flux to make them run thin, or to afford all the Metal they contain. And sometimes Ores are so kindly as to contain their own Fluxes within themselves. Thus we have met with Copper Ores, which being barely ground to Powder, and melted, without any Addition, in a common Wind-furnace, have yielded as much, or even more pure Metal at the first Operation, than we could obtain from them by Means of the usual Fluxes. Whence we see that artificial Fluxes are not always necessary; or that the principal Use of them is for the stubborn and less tractable Ores. These are sometimes so exceedingly hard to fuse, and reduce to a metalline Form, that it requires the utmost Power of Art to treat them advantageously in the larger Way of Business, where no considerable Expence can usually be allowed for Fluxes. On this Account it is, that many Mines remain unwrought, as being intractable, without great Charges. Whence the Improvement of the Business of Fluxes, so as to render them cheap and effectual, might greatly contribute to the Improvement of Metallurgy.

We would, therefore, recommend to farther Enquiry what Matter it is, in the more soft and tractable Ores, which renders them so fusible, and easy to part from their Metal. Certain Experiments we have made with this View seem to shew, that in Copper Ores it is a Kind of bituminous Substance, capable of melting by a strong Heat into a soft black Kind of Glass.

Some of the most powerful and cheap simple Fluxes hitherto known, are dried Wine-Lees, dried Cow-dung and Horse-dung, dried River-mud, Fuller's Earth, Iron Filings, common Salt Glass, Kelp, or Pot-ash, Sandiver and the like, which may be used in the larger Works; as Nitre, Tartar, Borax, Sal-ammoniac, Mercury-sublimate, and the like, may in the smaller, or for the making of Assays.

As for compound Fluxes, they are numerous, almost every Operator having his favourite Flux. And certainly some Fluxes are better adapted than others to certain Ores. But perhaps a few general Ones might be fixed upon, which should serve instead of all those hitherto commonly known and used. We will here recommend three, which are powerful, almost general, and not expensive.

1. Take of Nitre, prepared by long boiling it in Lime-Water, of Sea Salt, melted in the Fire, Sandiver and dry Wine-Lees, each one Part; Glass of Lead three Parts; and powder'd Glass, eight Parts; mix them all well together. This Flux added in an equal Weight, will fuse a very stubborn Ore.

2. For a still stronger, Take equal Parts of white Tartar, common Salt and Nitre, prepared as above; calcine them to a white Powder, and mix therewith its own Weight of Glass of Lead; and of this Flux add two Parts to one of the stubborneſt Ore.

3. For a powerful Saline Flux, Take of the strongest Soap-boilers Lees four Pounds, white Tartar and common Salt, melted in the Fire, each one Pound; boil them together with five Gallons of human Urine, to a dry Salt. This Flux is particularly proper where Sulphur and Cobalt abound, and render the Ore very refractory.

But the great Secret in making and adapting of Fluxes, is not only to separate the Metal already ripened in the Ore, but even to mature and ripen the crude immature Part of the Ore in the Fire. Something of this Kind we apprehend may be effected; as having Reason to believe, that certain Fluxes will obtain a larger Yield of Metal from certain Ores, than other Fluxes in common Use, though esteemed of the best, and though they are perhaps of the dearest Kind. Thus clean Iron Filings will often do more than Borax. But as the Scales and Crocus, or Rust of Iron, have been commonly used, instead of pure and perfect Iron itself, for a Flux, few Operators appear acquainted with the Excellence of perfect Iron, employed for this Purpose: And many Advantages are now commonly reaped by a prudent mixing of one Ore with another of the same Denomination, and with the Slags or Recrements of Metals, in the Way of a Flux. *Shaw's Chemical Lectures.*

REDUCTIO, Reduction, in Chymistry, or Resuscitation; is the Restoration of a Metal, previously disguised under the Form of a Calx, or Powder, or dissolved in a Fluid, to the Form of a Metal.

REDUPLICATIO. The same as ANADIPLOSIS.

REDUVIA. A Whitlow; or a painful Crack at the Root of the Nails.

REFE. A Thread doubled and twisted. It is the same as ACIA.

REFECTIO. The same as ANALEPSIS. *Fabricius ab Aquapendente.*

REFICIENTIA. The same as ANALEPTICA.

REFINATIO. Refination; that is, Depuration; a Term used with respect to Metals, and Sugar.

REFRIGERATIO. The same as CATAPSYXIS.

REFRIGERATORIUM. A Refrigeratory. This is a Vessel filled with Water, thro' which the Worm passes in Distillations. The Use is to condense the Vapours, as they pass thro' the Worm. *Vigani* takes Notice of another Sort of Refrigeratory, *Medull. Chym.* Tab. 2. Fig. 5. f. which consists of a Vessel filled with common Salt.

REGENERATIO. The same as PALINGENESIA.

REGIMEN. The Regulation of Diet, with a View of preserving, or restoring Health. See DIÆTA. *Regimen* in Chymistry, is the Regulation of Fires.

REGINA. The same as BASILIS.

REGINA PRATI. A Name for the ULMARIA, Meadow-Sweet.

REGIO. A Region. In Anatomy this is applied to many Parts of the Body. Thus the Parts adjacent to the Navel are denominated the Umbilical Region; and the Parts about the *Hypochondria*, the Region of the Hypochondria, or Hypochondriacal Region.

REGIONALIS MORBUS. An Endemial Disease.

REGISTERES. Registers, in Chymical Furnaces, are Air Vents, by opening or closing of which the Operator regulates the Fire at Pleasure: For when they are opened, the Heat of the Fire increases; when closed, it abates.

RE-

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REGIUS MORBUS. This Name is, by different Authors, apply'd to ſeveral Diſtempers; but *Celſus*, the Standard for Medicinal *Latin*, means by this the Jaundice. Other Authors call the King's Evil, and others the Epilepſy, by this Name.

In Chymiſtry the *Aqua Regia* is a corroſive Water, which diſſolves Gold. See AQUA. And in Pharmacy *Regius* is a pompous Epithet, apply'd to many Medicines.

REGNUM. A Kingdom. The *Materia Medica* is divided into three Kingdoms; the Animal, Vegetable and Mineral.

REGULUS. The Metalline Part of Minerals, which remains in the Bottom of a Crucible, after the Separation of the *Scoriæ*, is called *Regulus*, or *Rex*.

REGULUS, is the Wren.

REJECTIO. A Caſting up of any Thing preternaturally by the Mouth, either by way of Expectoration or Vomit.

REL, or REBUS. Sour Milk. *Rulandus*.

RELAXANTIA. Relaxing Medicines.

RELAXATIO. Relaxation. See FIBRA.

RELOLLÆUM. A Term uſed by *Paracelſus*, and his Followers, which it is not eaſy to affix any Meaning to. *Helmont*, in his Treatiſe intitled *Natura contrariorum neſcia*, defines it an efficient Quality, not proceeding from the Ferments and Seeds of Things. *Relollæa*, ſays he, are of two Sorts; one *in Corpore proprio*, the other *in alieno*. Amongſt the *Relellæa propria* ſome are ſeparable, as Cold from Water and Air; others inſeparable, as Heat from the Light of the Sun, a Candle, or Fire. The *Relollæum alienum* periſhes, if not ſupported; and is, therefore, called tranſient; of this Sort is Heat in Water.

REMINISCENTIA. The ſame as ANAMNESIS.

REMISSIO. A Remiſſion of a Diſtemper is, when it is mitigated conſiderably, but does not entirely ceaſe; for when it does, it is then called an Intermiſſion.

REMORA. Offic. Aldrov. de Piſc. 335. Bellon. de Aquat. 405. Charlt. de Piſc. 6. Jonſ. de Piſc. 7. Raii Synop. Piſc. 71. *Iperuquiba & Piraquiba Braſilienſibus*, Marcg. 180. Raii Ichth. 119. *Echenei ſeu Remora*, Imperat. 684. THE SUCKING-FISH.

It is taken in the main Sea. As to its Virtues, it reſtrains Venery, prevents Abortion, and retains the Fætus till Maturity.

RENALE EMPLASTRUM. The Name of a Plaiſter deſcribed by *Ætius*, Tetrabib. 3. Serm. 3. C. 3.

RENCHUS. The Name of a Fiſh found in *Bavaria*, celebrated for being a delicious and good Aliment.

RENES. The Kidneys. Theſe are by *Oribaſius*, *Ætius*, and *Paulus Ægineta*, repreſented to be of difficult Digeſtion.

The Kidneys are two pretty ſolid, glandular Bodies, ſituated in the poſterior Part of the Cavity of the Abdomen, on each Side of the Lumbar Vertebræ, between the laſt falſe Ribs, and Oſſa Ilium. The Right Kidney lies under the great Lobe of the Liver, and is conſequently lower than the Left, which lies under the Spleen.

The Figure of the Kidneys reſembles that of a large Bean; their Circumference being convex on one Side, and concave on the other. The concave Side is turned to the Vertebræ, and the convex Side the oppoſite Way. Their Length anſwers to the Diſtance between the laſt falſe Rib and Os Ilium; they are about half as broad as long, and half as thick as broad.

In each Kidney we obſerve a Fore and Back-ſide; an upper and lower Extremity; a great and ſmall Curvature, and a Convexity and Concavity.

The Back-ſide is broader than the Fore-ſide, and the upper Extremity is a little broader and more incurvated than the lower. The Depreſſion in the ſmall Curvature is oblong and uneven, reſembling a Sinus, ſurrounded by ſeveral Tubercles; and as it is turned a little toward the Fore-ſide, this Side is ſomething narrower than the other.

The deſcending Aorta and inferior Vena Cava, lie between the Kidneys, pretty cloſe to the Bodies of the Vertebræ, and to each other; the Artery being on the Left Hand, and the Vein on the Right. Each of theſe large Veſſels ſends out tranſverſely towards each Side, commonly one capital Branch, which goes to the Kidney, and enters the Sinus and Depreſſion thereof, by ſeveral Ramifications.

Theſe Veſſels were by the Ancients termed the emulgent Arteries and Veins, but I chuſe rather to call them the Renal Veins and Arteries. Sometimes there are more than one of each Kind, which is oftener found in the Arteries; ſometimes on one Side only, and ſometimes on both.

The Artery and Vein are not of an equal Length, and the Difference depends on the Situation of the Aorta and Vena Cava; for the Left Renal Artery is ſhorter than the Right, becauſe the Aorta lies neareſt the Left Kidney; and the Left Renal Vein is longer than the Right, becauſe the Vena Cava lies furtheſt from the Left Kidney.

Theſe Veſſels are likewiſe diſpoſed in ſuch a manner, as that the Veins lie more anteriorly than the Arteries; becauſe the Aorta lies cloſe to the Spina Dorſi; whereas the Vena Cava, which perforates the Diaphragm at ſome Diſtance from the Vertebræ, does not join them, till after it has given off the Renal Veins.

Each Renal Artery is ſurrounded by a nervous Net-work, called *Plexus Renalis*, which furniſhes a great Number of Filaments to the Kidneys, that come partly from the ſemilunar Ganglions of the two great ſympathetic Nerves, and partly from the *Plexus Hepaticus* and *Splenicus*. This Renal Plexus ſends likewiſe ſome Filaments round the Renal Veins.

The Kidneys are ſurrounded by a very looſe, membranous and cellular Covering, called *Membrana Adipoſa*, becauſe in fat Perſons the Cells of this Subſtance are filled with Fat. This was for a long time miſtaken for a Duplicature of the Peritonæum, the true membranous Lamina of which covers only the Fore-ſide of the Kidneys; and conſequently they lie without the Peritonæum; becauſe the Portion of that Membrane that covers them cannot be looked upon as an entire Coat; ſo that the only common Coat they have, is the cellular Subſtance, which likewiſe inveſts the Renal Arteries and Veins in Form of a Vagina.

The proper Coat or Membrane of the Kidneys is compoſed of two Laminæ; between which there is likewiſe a very fine cellular Subſtance, which may be made ſenſible by blowing through a Pipe between the two Laminæ.

The external Lamina is very thin, and adheres cloſely to the internal Lamina, by means of the cellular Subſtance. The internal Lamina penetrates every where by numerous Elongations, into the Subſtance of the Kidney, from which it cannot be ſeparated without Tearing.

The Surface of the external Lamina is very ſmooth, poliſhed, and ſhining, and it renders the whole Surface of the Kidney very even and uniform in Adults. In Children, this convex Surface is in a manner divided into ſeveral Lobes or Tubercles, almoſt as in Oxen and Calves; and in grown Perſons we ſometimes obſerve the ſame Inequalities.

The Blood-Veſſels having entered the Kidneys, are ramified every way; and theſe Ramifications ſend out other capillary Branches, which go all the Way to the Surface, where they appear like irregular Stars, and furniſh the proper Membrane of the Kidneys. Sometimes theſe two Ramifications penetrate to the Membrana Adipoſa, and communicate there with the Adipoſe Veins and Arteries.

The proper Membrane having ſurrounded the Kidney, all the way to the Sinus, joins the Veſſels at that Place, and accompanies all their Ramifications through the Body of the Kidney, in form of a Vagina or Capſula; and likewiſe contributes, in part, to form the Pelvis and Calyces, or Infundibula.

We ſometimes obſerve a conſiderable Veſſel to go in or come out from the convex Surface of the Kidney; but this is not common; and in that Caſe, there is a Depreſſion by which the proper Membrane enters, and communicates with that Portion which goes in by the Sinus.

The Tunica Adipoſa, or common Coat, which likewiſe inveſts the great Veſſels to their Entry into the Kidneys, does not ſeem to accompany them any farther; but terminates at the Sinus, in the Interſtices between the Ramifications.

We may diſtinguiſh three Kinds of Subſtances in the Kidney; an exterior Subſtance, which is thick, granulated, and in a manner cortical; a middle Subſtance, which is medullary and radiated, called Striata, Sulcata, or Tubularis, becauſe it ſeems to be made up of radiated Tubes; and an inner Subſtance, which is only a Continuation of the ſecond, and terminates on the Inſide by Papillæ; for which reaſon I have given it the Name of *Papillaris*.

Theſe three Subſtances may be ſeen diſtinctly in a Kidney cut into two equal Parts through the great Curvature. The cortical Subſtance may be obſerved round the whole Circumference; and by the Microſcope we perceive it to be of a ſpungy, granulated, and waving Texture; all its Parts adhering together in a radiated Manner. Its Colour is a bright whitiſh Grey.

By fine anatomical Injections and in Inflammations, we diſcover an Infinity of ſmall capillary Veſſels, which run in various Directions, between and round the different Portions of this Subſtance; and by the Help of a Microſcope, we likewiſe ſee great Numbers of ſmall red Corpuſcles more or leſs round, and diſpoſed almoſt like Bunches of Currants. Theſe ſmall Corpuſcles are, perhaps, only the Extremities of the cut Veſſels, filled either with Blood, or with a coloured Injection.

The other two Subſtances, that is, the medullary or ſtriated and papillary, are really but one and the ſame Maſs, of a more reddiſh Colour, the convex Side of which riſes at ſeveral Places into narrow Tubercles, lodged in the ſame Number of Cavities or Depreſſions. The radiated Striæ are afterwards continued to the

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the papillary Portion; and the Papillæ form, in ſome meaſure, ſo many Centers of theſe Radii, oppoſite to the Tubercles.

The medullary Subſtance is likewiſe diſtinguiſhed from the cortical, by the arterial and venal Arches, which ſend capillary Ramifications on all Hands; and its Colour is more or leſs red.

The Papillæ, which are only a Continuation of the medullary Subſtance, as has been ſaid, are often a little paler than that Subſtance. They are ten or twelve in Number, very diſtinct from each other, reſembling the ſame Number of Cones, with very broad Baſes and obtuſe Apices.

At the Point of each Papilla we ſee, even without a Microſcope, in a ſmall Depreſſion, ſeveral very ſmall Holes, through which little Drops may be perceived to run when the Papillæ are compreſſed. Theſe are little Drops of Urine, which being filtred, partly in the cortical, and partly in the medullary or tubular Subſtance, do afterwards paſs through the Subſtance of the Papillæ, and are diſcharged by theſe Orifices.

Each Papilla lies in a kind of membranous Calyx or Infundibulum, which opens into a common Cavity, called the *Pelvis*. This Pelvis is membranous, being of the ſame Structure with the Calyces of which it is a Continuation; and its Cavity in Man is not uniform, but diſtinguiſhed into three Portions, each of which contains a certain Number of Infundibula, or Calyces, together with the Papillæ which lie therein; and ſometimes we find two or three Papillæ in the ſame Infundibulum.

At the Place where theſe Infundibula ſurround the Baſes of the Papillæ, they ſend Productions into the medullary or radiated Subſtance of the Kidney, which accompany the Blood Veſſels, and ſerve for Capſules or Vaginæ to all the vaſcular Arches, both arterial and venal, and to their different Ramifications, quite through the cortical Subſtance, and as far as the Surface of the Kidney.

URETERS.

After the Infundibula have contracted in a conical Form round the Apices of the Papillæ, each of them forms a ſmall ſhort Tube or Gullet, which uniting at different Diſtances along the Bottom of the Sinus of the Kidney, form three large Tubes, which go out from the Sinus, in an oblique Direction from above downwards, and immediately afterwards unite into one Trunk.

This Trunk becomes a very long Canal, called the Ureter. In Men the three Tubes ſupply the Place of what is called the Pelvis in Brutes, and might more properly be called the Roots and Branches of the Ureters than the Pelvis; which Name would agree beſt to the Trunk, as being larger than the reſt of the Ureter. The Ureters are commonly two in Number, one for each Kidney; but ſometimes there are more than two.

The Situation of the Trunk, and of the Roots and Branches of each Ureter, with reſpect to the renal Artery and Vein, is in the following Manner; the Artery is in the upper Part of the Sinus, and partly before the Vein. The Vein is about the Middle, and between the Artery and Ureter. The Ureter is in the lower Part, a little behind the Vein, and it is partly ſurrounded by one Branch of the Artery.

This Diſpoſition appears plainer near the anterior than near the poſterior Side of the Kidney, becauſe this laſt is broader than the former; and we likewiſe ſee there the three Branches of the Ureter, of which the uppermoſt is the longeſt, and the loweſt is the ſhorteſt, becauſe of their oblique Direction downward.

From this Deſcription we ſee that in the human Kidney there is no other common or uniform Pelvis, but the Trunk or Head of the Ureter, and the three great Branches. To have a true Idea of their Diſpoſition, we muſt imagine, that the Ureter enters the Kidney by the lower Part of the oblong Sinus; that it increaſes gradually in Breadth as it advances, and that it is divided into three Branches, before it enters the Subſtance of the Kidney.

One of theſe Branches may be reckoned a direct Continuation of the Ureter, and it is longer than the reſt; being extended from the lower to the upper Part of the Sinus, and may be found without much Preparation. The other two Branches are ſhorter, and cannot be well diſcovered without an artificial Separation. The Angles between theſe Branches at their Baſes, or at the Head of the Ureter, are not pointed as thoſe of other Ramifications; but formed by a round Incurvation, which is generally ſurrounded by Fat.

Theſe firſt Branches of the Ureters produce other ſmall Branches at the Bottom of the Sinus, which are diſpoſed in Pelvis. Theſe ſmall collateral Branches extend in Breadth, and form the Infundibula or Calyces, in which the Papillæ are lodged; the great Circumference of which produces, in the Subſtance of the Kidney, the different Vaginæ of the vaſcular Arches; and of their Ramifications. The internal Lamina of the Kidney is continued round theſe Vaginæ; and the external Lamina is expanded round the firſt Branches, round the Trunk, and round all the reſt of the Ureter.

If the Trunk of the Ureter be ſplit on that Side which is next the Vertebræ, and this Section be continued to the Extremity of the ſuperior Branch; we may obſerve, immediately above the Trunk, two Holes lying near each other, which are the Oriſices of the ſmall collateral Branches, and Gullets of the Infundibula. A little above theſe Holes, there are other two very much like them; and ſo on all the Way to the Extremity of the ſuperior Branch, which terminates likewiſe by theſe Gullets of the Infundibula. And in each of theſe Gullets we may obſerve, at leaſt, the Apex of one Papilla.

A Section begun on the Convex Surface of the Kidney, and carried from thence to the Trunk of the Ureter, diſcovers the Extent of the Papillæ very plainly, and likewiſe the Infundibula, their Gullets, *&c.*

The Ureters run down obliquely, and with a very ſmall Degree of Inflexion, from the Kidneys on the lateral Parts of the inner or anterior Side of the Os ſacrum, and paſſing between the Rectum and Bladder, they terminate in the laſt of theſe Viſcera.

They are compoſed of three proper Coats; the firſt of which, that ſurrounds the reſt, is of a whitiſh Colour, and of a very compact filamentary Texture, being ſtretched with Difficulty, and appearing like a filamentary Subſtance degenerated. The next Coat is of a reddiſh Colour, ſtronger than the firſt, and made up of different Strata of Fibres, which interſect each other; but it is very hard to determine whether they are muſcular or ſimply membranous.

The innermoſt Coat is in ſome Meaſure Ligamentary, and lined by a very fine Membrane, which covers a very delicate reticular Texture of Veſſels. It is ſlightly granulated like ſhorn Velvet; and moiſtened all over by a mucilaginous Liquor. It has ſeveral longitudinal Rugæ, which are interſected by a great Number of ſmall tranſverſe Rugæ.

Beſides theſe proper Coats, the Ureters are inveſted by the cellular Subſtance of the Peritonæum, the membranous Lamina of which covers likewiſe about two thirds of their Circumference, ſometimes more ſometimes leſs, but never ſurrounds them entirely. So that when they are examined in their natural Situation, they appear like Ropes lying behind the Peritonæum, and jutting out more or leſs towards the Cavity of the Abdomen, together with that Portion of the Peritonæum, which covers them.

All that has been ſaid about the Structure of the Ureters, Pelvis, Arches, Striæ, Foſſulæ, and Holes at the Apex of the Papillæ, appears moſt diſtinctly, when theſe Parts are examined in clear Water.

GLANDULÆ RENALES, VULGO CAPSULÆ ATRABILARIÆ.

Immediately above each Kidney lies a glandular Body, called by the Ancients *Capſulæ Atrabilariæ*; by others *Capſulæ Renales*, *Renes Succenturiati*, and *Glandulæ Renales*; and they might be properly enough termed *Glandulæ ſupra Renales*. They are ſituated on the upper Extremity of each Kidney, a little obliquely; that is, more toward the inner Edge and Sinus of the Kidney, than toward the outer convex Edge.

Each Gland is an oblong Body with three Sides, three Edges and two Points, like an irregular Creſcent with its great or Convex Edge, ſharp, and the ſmall concave Edge, broad. Its Length is about two Thirds of the greateſt Breadth of the Kidney; and the Breadth of its middle Portion is about one third of its Extent between the two Extremities, ſometimes more ſometimes leſs. Its Colour is a dark yellow.

It has one anterior, one poſterior, and one lower Side, which laſt may be termed the Baſis; and it has one upper, and two lower Edges, whereof one is anterior, the other poſterior. The upper Edge may be called the Criſta, and the two lower Edges, the Labia. One of its Extremities is internal, or turned inward toward the Sinus of the Kidney; the other is external, or turned outward toward the gibbous Part of the Kidney. The Figure of this glandular Body may alſo be compared to that of a ſingle Cock's Comb, or to the Top of an Helmet.

The Surface of theſe Glands is uneven; the Foreſide is the broadeſt, and the loweſt Side or Baſis the narroweſt. Along the Middle of the anterior Side, a Ridge runs from the Edge of the inner Extremity, a little above the Baſis, to the Joint of the other Extremity, and divides this Side into two equal Parts, like the Middle Rib of the Leaf of a Tree, and on the lower Side under the Baſis, there is a kind of Raphe or Suture.

The Blood-Veſſels of theſe Glands come from the Renal and Diaphragmatical Veins and Arteries, and alſo from the *Aorta* and *Vena Cava*, and from the Cœliac Artery. Theſe Veſſels are termed the Capſular Arteries and Veins; and as they enter the Glands, they ſeem to be inveſted by a Vagina. They are not always derived from the ſame Sources, neither is their Number the ſame in all Subjects; and there is commonly a pretty large Vein, which runs along the Ridge. The Nerves

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on each Side are furniſhed by the neighbouring ſemilunar Ganglion, and by the Renal Plexus, which depends on it.

In the Inſide of theſe Capſulæ, there is a narrow triangular Cavity, the Surface of which is full of ſhort ſtrong Villi of a yellowiſh Colour; but in Children it is reddiſh, and of a dark brown in aged People. The Sides of this Cavity are connected by a great Number of Filaments; and they appear to be wholly glandular, that is, to be filled with very fine ſmall folliculous Corpuſcles. Along the Top of the Gland, theſe Sides touch each other immediately.

In Opening this Cavity, we find a granulated or ſollicular Subſtance, which fills it almoſt entirely; and the Blood-Veſſels are diſtributed on this Subſtance, as well as on the Sides of the Cavity. If the Section be begun at the great Extremity of the Capſula, and be continued through the upper Edge; and if the lateral Portions be afterwards ſeparated, the glandular Body appears like a kind of Criſta, raiſed from the Middle of the Bottom of the Cavity.

This glandular Body or Nucleus, adheres more cloſely to the Bottom or Baſis of the Cavity, than to the two Sides, eſpecially near the great Extremity; but yet it may be ſeparated both from the Baſis and Sides, being connected to them by a great Number of ſmall Filaments. It adheres leaſt to the Baſis near the ſmall Extremity.

The Capſular Vein, which comes ordinarily from the Renal Vein, is much larger than the Arteries; and it communicates with the Inſide of the Capſula, much in the ſame manner as the Splenic Vein with the Cells of the Spleen; for it may be inflated by blowing into any Part of the Capſular Cavity, and the Air alſo paſſes into the Renal Vein.

This Cavity contains an unctuous viſcid Liquor, of a yellowiſh red Colour, which, with Age, changes gradually into a yellowiſh purple, a dark yellow, and a black yellow; and ſometimes it is perfectly black; but even then, if it be ſpread thin on a large Surface, it appears yellow. I have ſometimes found it not only reddiſh, but mixed with real Blood.

The Uſes of theſe Renal Glands have not as yet been diſcovered; and all that we know about the Liquor contained in them, is, that it reſembles the Bile. They are very large in the Fœtus, and diminiſh in Adults. Theſe two Phænomena deſerve our Attention.

They lie ſometimes directly on the Top of the Kidneys, but I never found them on the gibbous Part. The Gland on the Right-Side is partly connected to the Diaphragm, under and very near the Adheſion of the great Lobe of the Liver to that Muſcle. That on the Left-Side adheres to the Diaphragm below the Spleen; and both theſe Connexions are confined to the contiguous Portions of the inferior Muſcle of the Diaphragm. They are involved together with the Kidneys, in the Membrana Adipoſa; of which a very thin Portion inſinuates itſelf between the Kidneys and Glands, and alſo between them and the Diaphragm; ſo that they adhere to both by the Intervention of the cellular Subſtance, which, in ſome Subjects, contains a Stratum of Fat.

The Venal Ridge already mentioned, ſinks ſo deep into the Fore-ſide in ſome Subjects, that the upper Part of this Side appears to be ſeparated from the lower; but this is ſeen moſt diſtinctly when the Capſula is examined in clear Water.

When the Capſular Vein is opened lengthwiſe with the Point of a Lancet, we diſcover in it a great many ſmall Holes, many of which are only the Orifices of the Branches of the Vein; others are ſimple Holes; and it is, perhaps, through theſe that the Air paſſes into the Gland, as already mentioned.

On the outer Surface of theſe Capſulæ, we obſerve a very thin diſtinct Coat, ſeparate from the cellular Subſtance that ſurrounds them. Sometimes this Coat is raiſed by an uneven Stratum of Fat, which makes it appear granulated; and for the ſame reaſon, the Capſulæ are of a pale Colour, like a *Corpus Adipoſum*.

The Liquor contained in them appears ſometimes in the Fœtus, and, in young Children, of a bluiſh Colour, inclined to red.

To be able to diſcover the Uſes of theſe Capſulæ, we muſt not only attend to the two Circumſtances already mentioned, but alſo to their external Conformation, which is commonly more regular in the Fœtus, and in Children, than in Adults and in old People. We muſt alſo conſider the Conſiſtence and Solidity of their Subſtance, which is greater before Birth, and in Childhood, than in an advanced, or Old-Age; in which they are often very flaccid, and very much decayed: And this, perhaps, may be the Reaſon why the Figures given of theſe Glands, taken out of their Membrana Adipoſa, are ſo very irregular and different from what I have demonſtrated for above twenty Years paſt.

Valſalva endeavours to prove, the *Renes Succenturiati*, or *Glandulæ Renales*, to be Organs of Generation, or aſſiſtant to them; and gives the following Reaſons for his Opinion: He obſerves the ſeminary Veſſels of ſeveral Fowls to come from theſe Capſulæ, before they are ſent from the Teſticles. In the Viper and Water Tortoiſe, he remarks ſuch membranous Connexions between the *Renes Succenturiati* and the Teſticles, as make it probable that ſome Excretions are ſent through the Capſulæ to the Teſticles. He affirms his having ſeen Veſſels that were neither nervous, ſanguiferous nor lymphatic, going from the human Capſulæ to the Teſtes. His Obſervations are much the ſame as to Females. To theſe he ſubjoins the Conſent and Sympathy obſerved by Phyſicians between the Loins and the natural or genital Parts. To confirm all, he relates the following Experiment: He cut away one Teſticle, and extirpated the Kidney of the oppoſite Side of a Whelp. The Wounds healed, but the Creature was of a very lax Habit, and was ſo far from attempting Coition with Bitches, that he did not ſeem fond of them when they were proud.

Valſalva had endeavoured to ſecure the Honour of this Diſcovery to himſelf, by entering a publick Proteſt, that no other ſhould claim it. Mr. *Ranby* ſuſpected that the Duct, which the *Italian* Literary Journals mentioned as the principal Part of this Diſcovery, was no other than an Artery ſent off from that of the Capſula on each Side, to the Teſticles of Men, and Ovaria of Women. *Edinburgh Medical Eſſays*, Vol. II. p. 372.

THE URINARY BLADDER.

The Bladder is a kind of membranous and fleſhy Pouch or Bottle, capable of Dilatation and Contraction, ſituated in the lower Part of the Abdomen, immediately behind the Symphyſis of the Oſſa Pubis, and oppoſite to the Beginning of the Inteſtinum Rectum. The Figure of it is nearly that of a ſhort Oval. It is broader on the Fore and Back-ſides, than on the lateral Parts; rounder above than below, when empty, and broader below than above, when full.

It is divided into the Body, Neck and Bottom, into an anterior, poſterior, and two lateral Parts. The upper Part is termed the Fundus or Bottom, and the Neck is a Portion of the lower Part, which is contracted like the Gullet of ſome Veſſels.

The Bladder is made up of ſeveral Coats, almoſt like the Stomach. That Part of the external Coat which covers the upper, poſterior and lateral Sides of the Bladder, is the true Lamina or Membrane of the Peritoneum; and the reſt of it is ſurrounded by a cellular Subſtance, by the Intervention of which, the Peritonæum is connected to the Muſcular Coat.

The proper Coats are three in Number, one muſcular, one nervous, and one villous, which is the innermoſt. The Muſcular Coat is compoſed of ſeveral Strata of fleſhy Fibres; the outermoſt of which are moſtly longitudinal; the next to theſe are more inclined toward each hand; and the innermoſt, more and more oblique; and they become at length almoſt tranſverſe. All theſe Fibres interſect each other in various manners, and they are connected together by a fine cellular Subſtance, and may be ſeparated by inflating that Subſtance.

The nervous Coat is nearly of the ſame Structure with the Nervous Coat of the Stomach.

The internal Coat is ſomething granulated and glandular, and a mucilaginous Serum is continually diſcharged through it, which moiſtens the inner Surface of the Bladder, and defends it againſt the Acrimony of the Urine. It appears ſometimes altogether uneven on the Inner-ſide, being full of Eminences and irregular Rugæ when empty, and in its natural State of Contraction. Theſe Inequalities diſappear when the Bladder is full, or when it is artificially diſtended by Air, or by injecting any Liquid.

At the Top of the Bladder, above the Symphyſis of the Oſſa Pubis, we obſerve a ligamentary Rope, which runs up between the Peritonæum and the Linea Alba of the Abdomen, all the Way to the Navel, diminiſhing gradually in Thickneſs, as it aſcends. This Rope had a particular Uſe in the Fœtus. It is ſufficient to add, that it is in part originally a Production of the inner Coats of the Bladder, which Production is termed *Urachus*.

This Rope is compoſed alſo of two other ligamentary Elongations, which are the Extremities of the umbilical Arteries. Theſe Arteries come from the Hypogaſtricæ, run up by the Sides of the Bladder, and remain hollow and filled with Blood, even in Adults, as high as the Middle of the Bladder, through all which Space they alſo ſend off Ramifications. Afterwards they loſe their Cavity, and become ligamentary as they aſcend. At the upper Part of the Bladder, they approach each other, and, joining the Urachus, form that Rope, which may be termed the ſuperior Ligament of the Bladder.

The external Fibres of the muſcular Coat are more numerous than the internal; and the moſt longitudinal anterior Fibres form a kind of Incurvation round the Urachus, at the Top of the Bladder, much like that of one of the fleſhy Portions, which ſurround the ſuperior Orifice of the Stomach, and lower Extremity of the Oeſophagus. This Incurvation paſſes behind the Urachus.

The Portion of the Peritonæum, which covers the poſte-

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rior Convex Side of the Bladder, forms a very prominent transverse Fold, when the Bladder is contracted, which disappears when the Bladder is extended. This Fold surrounds the posterior Half of the Bladder, and its two Extremities are elongated toward each Side; by which Elongations a kind of lateral Ligaments of the Body of the Bladder is formed, which are more considerable in Children than in Adults.

The lower Part of the Bladder, which deserves the Name of Fundus much better than the upper Part, is perforated by three Openings, one anterior and two posterior. The anterior Opening is formed by an Elongation of all the proper Coats, in Form of a Gullet, turned much in the same Manner with the inner Orifice of the Rostrum of the Head of an Alembic. This Elongation is called the Neck of the Bladder.

The other two Openings, in the true Bottom of the Bladder, are formed by the Ureters, which, in their Course downward, run behind the Spermatic Vessels, and then behind the lower Part of the Bladder, approaching each other. Each Ureter lies between the umbilical Artery and Vas Deferens of the same Side, the Artery lying on the Outside of the Ureter, and the Vas Deferens on the Inside.

Afterwards they get between the Vasa Deferentia, and the Bladder, crossing these Canals; and then at about a Finger's Breadth from each other, they begin to pierce the Coats of the Bladder. They run a little Way between the muscular and nervous Coats, and open into the Bladder obliquely, something nearer each other, than when they first entered its Coats.

The Orifices of the Ureters in the Bladder are something oval, and narrower than the Cavity of the Ureters immediately above them. The Edge of these Orifices is very thin, and seems to be formed merely by the Union of the internal Coat of the Bladder, with that of the Ureters.

The Arteries of the Bladder are furnished by the *Hypogastricæ* or *Iliacæ internæ*, being Branches of the *Arteria Sciatica*, *Epigastrica* and *Umbilicalis* on each Side. The Veins come from those of the same Names with the Arteries.

The Nerves of the Bladder come from the *Crurales*, and also from the *Sympathetici Maximi*, by Means of their Communication with the *Crurales*. It has also some Nerves from the *Plexus Mesentericus inferior*.

Besides the Ligaments already mentioned, there are also two small ones, by which the anterior Part of the true Bottom of the Bladder is connected to the Ossa Pubis. *Winslow's Anatomy.*

As the Kidneys, especially that on the Right Side, are by their Situation and Connection capable of being greatly assisted in their Excretory Office, by the Motion of the adjacent Parts; and as they are defended by the Membrane of the circumambient Peritonæum, and wrapt up in a kind of dry Fat; so they almost constantly receive the superincumbent Glands into their superior Part, which inclines somewhat to a Conease, and which is hardly ever of the same Form and Bulk in different Men. Then receiving one or more considerable Ramifications from the Aorta Descendens; acquiring, also, another Membrane, and four or five large Ramifications, they from these receive many other smaller Ramifications, from which winding Vessels, so small as to escape the Sight, are distributed through all the Parts of the Kidneys. The small Ramifications of these minute Arteries, in their vermicular Course, being mutually united in some Parts, and again separated, form as it were Conglomerations, from which seem to arise not only the small returning Veins, but also the minute lateral Ducts, which are almost pellucid, and which receive the Urine separated from the small Arteries, convey it from them; and when, after uniting, they have formed many pygonous pyramidal Bodies, they at last generally terminate in twelve membranaceous Bodies, called *Papillæ*, in which many Orifices of the renal Ducts open obliquely every where, both externally and internally.

There are also found in the Substance of the Kidneys, small round hollow Bodies, every where covered with minute Vessels, furnished with Veins and Nerves, and reaching to the urinary Ducts. This is confirmed by the Kidneys of Hedgehogs, Tortoises, and Diseases in the Kidneys, as also the Sight of the Kidneys in a Fœtus. For this Reason the Urine seems here to be secreted, by a double Apparatus, a curious and laborious one of the glandular Kind, and one more simple, which receives its Name from *Ruysch*, a Circumstance by no means repugnant to the usual Methods of Nature in other Parts; as in the Liver for Instance. But *Ruysch*, after the most strict and exact Scrutiny, thinks that these were not really Glands, but only Intorsions of small Arteries.

The other Part of the renal Artery is necessarily employed in supplying Life and Heat to the Substance of the Kidneys; and from the Blood, conveyed by this Part of the Artery, seems to arise that large Quantity of Lymph, which returning from the Kidneys, and being of the laudable and not of the excrementitious kind, mixes with the Chyle, circulates with the Blood, and does not taste like Urine. Hence, also, there will, without Doubt, arise proper corresponding Veins.

For the small Veins arising from the minute Roots of the renal Arteries being collected, become larger, are united like Arteries in their Division; and at last join Trunks whose Number is uncertain. These convey in various Manners to the Vena Cava the remaining Blood.

The Renal Papillæ drop out the Urine convey'd into the urinary Ducts into the large Cavity, form'd by the expanded Membrane of the Pelvis, which is furnished with a soft Fat. Hence being collected, retarded and mix'd, it is forced into the Ureters, which are formed by an Angustation of the Pelvis, and which convey it to the Bladder.

For from the Circumference of the Papillæ arise about eleven or twelve Canals, which receive, and convey the Liquor discharged from them into three large Ramifications, which, when collected into one, form a large Pelvis, which terminates in one membranous, thick and strong Duct, furnish'd with Arteries, Veins, Nerves, lymphatic Vessels, moving Fibres, and mucilaginous Lacunæ, fit for lubricating its Sides. This Duct is called the Ureter, which running first strait downwards, and soon after bending all along under the Lamina of the Peritonæum; and being in various Places of an unequal Breadth, is at last inserted in the posterior Part of the Bladder, about two Finger Breadths from its inferior Neck, and about the same Distance from each other. Then perforating the exterior Coat, and running, about a Fingers Breadth, between it and the anterior Coat; and running down obliquely, it penetrates into the Cavity of the Bladder. Then its Fibres being lengthened, and running downwards, it forms a round and long Body, by which the Bladder, when full, is hindered from returning the Urine to the Ureters; which, when the Bladder is expanded, are drawn downwards, and clos'd up by this Body, and convey the renal Urine safe to the Bladder: And this Structure hinders the Urine from rising again into the Ureters, however the Bladder should be compressed.

All these Observations are confirm'd by microscopical Discoveries, Injections, Ligatures, and comparative Anatomy, in Hedge-Hogs, Dormice, Tortoises, Bears, Oxen, Birds, human Fœtuses, the Dissection of Patients subject to Disorders of the Reins, and monstrous aud preternatural Kidneys.

Hence we may understand, that the mechanical Secretion of the Urine is made by the Force of the Heart and stronger Arteries, by which the aqueous Part of the Blood is forced into numberless Flexures, Gyrations, Resistences, opposite Motions, Concussions, and Commixtions; and at last its more fluid Part is secreted, propell'd, collected and expell'd through Ducts, only somewhat narrower than these Blood-Vessels.

There is, therefore, no Occasion for accounting for the Secretion of the Urine by Attraction, Emulsion, or other Powers of a like Nature.

Neither is there any Necessity for a Fermentation, in order to account for this; since, in this Affair, neither the Place, the Cause, the Time, the Matter, the Mixture, nor the Effects of a Fermentation are to be observed.

Nor for the same Reasons are we to suppose a fusing and precipitating Power in the Parts subservient to this Secretion.

'Tis sufficiently obvious, that all the Humours, which are less thick than the Urine, will be discharged this Way, provided they are only applied to these Vessels. Hence we understand, that there is a Cause which hinders them from flowing here; or if they do that, sudden and great Weakness must be produced. The Renes Succenturiati always lying on the superior Parts of the Kidneys; but being separated from them by the interposed Fat, contiguous to the Diaphragm, united by Blood-Vessels, pressed between the Diaphragm and the Kidneys, furnished with Arteries, wanting peculiar Emissaries, in Fabric resembling the Spleen, and subject to the same Things, and pouring almost all their Blood through their Veins into the emulgent Veins, perhaps here performs this Office, the venous renal Blood being, by a saline Solvent, depriv'd of its most liquid Part, after the Secretion of the Urine, as the splenic Blood does to the Blood of the Vena Portæ; or perhaps these are subservient to other Uses. But this Theory is in all Probability just.

So that a continual and uninterrupted Secretion of the Urine is the primary Cause of the Soundness of the Kidneys and Ureters, as also the Cause why they are neither obstructed nor concreted by their own Collapsion or Pressure. *Boerh. Institut.*

PROCESSES UPON URINE.

Urine is neither acid, nor alcaline, but fetid.

Take the Urine of a Man in Health, made twelve Hours after Eating or Drinking, which must therefore have remained so

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so long in the Body, and have circulated almost the same time therein, and have been mixed with nearly all the Juices in all the Vessels, by means of the vital Powers. It is therefore an aqueous Lixivium, that has washed away, and brought off with it, whatever would dissolve in Water, and run thro' the fine urinary Vessels of the Kidneys; particularly it contains the spirituous, saline, and saponaceous Matters of the Blood; and when thus long retained and digested, it acquires the true Nature of the Body, as being wrought upon by the vital Powers for twelve Hours successively; at which time the Milk has lost its own Nature in the Body, and now begins to be converted into the Serum of the Blood. And for this Reason, such Urine should be chose as is well concocted, and discharged at twelve Hours Distance from Feeding, the thinner and more crude being come away before. Such Urine, therefore, may always be collected without the Body, and yet retain and perfectly exhibit the Nature of the animal Juices, and their Principles. This Urine is not acid, because it neither tastes nor smells sour, nor gives a red Colour by mixing with these Juices, that turn red with Acid: And, lastly, because, if heated and mixed with Oil of Tartar per Deliquium, it affords not the least Sign of Effervescence. And if another Part thereof be heated and mixed with the alcaline Spirit of Sal Ammoniac, it manifests no Sign of Effervescence; besides, what seems stranger, the Urine of a Man who drank a large Quantity of Rhenish Wine, which is considerably sour, and also of sour Beer, used much Vinegar in his Sauce, and eat largely of Fruit, did not afford the least Signs of Acid, upon any Experiment, twelve Hours after Eating. So likewise the Urine discharged by young Female Persons of weak Constitutions, that use little more than acid Vegetables for their Meat and Milk for their Drink, manifests no Acid twelve Hours after Meals; the natural Powers, therefore, have in this time conquered that Tendency which the Vegetables had to Acidity, or else the Acid that was in them. *Helmont*, therefore, justly said, that Acids were Enemies to the Veins; but his Followers hence unjustly forbid the Use of Acids in Diet and Medicine, as if they were poisonous; supposing them prejudicial to the first Passages. These Experiments will be allowed by Chymists; but it may, perhaps, move them to hear, that there is no manner of Alcali contained in this Urine, and yet the thing is certain; for if, to separate Particles of this heated Urine, there be successively poured Vinegar, Lemon-Juice, Spirit of Nitre, Spirit of Salt, and Oil of Vitriol, no Effervescence ensues; but these Acids, mixed with warm Urine, discharged at the Distance of twelve Hours after Eating, unite therewith, as Water unites with Water, without Bubbles and without Hissing. Such Urine, also, does not turn the Juices of Herbs to a green Colour, as alcaline Salts do.

REMARKS.

Hence we may collect, that the Powers of the Body change Acids, so that they remain no longer the same, and prevent Things disposed to Acidity from becoming acid; and that, in Health, alcaline Salts are never produced, but only such as are neutral. This I have observed in the Urine of Persons in high Fevers, and inflammatory Diseases, where the vital Actions being increased, rendered the Urine flame-colour'd, fetid, sharp, and little in Quantity; for even such Urine, examined by the Methods above-mentioned, gave new Signs of its being alcaline; whence I was led to consider, whether, in a perfect Stoppage of Urine, where this Liquor is long detained, heated and agitated in the Body, it would not become alcaline. And it happened, that an eminent Person in Years, falling into this Distemper, which proved fatal to him, had no Discharge of Urine for five Days, but, on the sixth, suddenly made a few Ounces, which was red, turbid, and fetid; but he had hence no Relief, and made not a Drop afterwards, but died. This Urine I directly carried home with me, and presently examined by the known chymical Methods, none of which shew'd it to be alcaline; whence I understood, that Urine could not become alcaline in the Space of a hundred and twenty Hours, tho' agitated by the Heat of the Body, and the Action of Circulation. For in the Patient above-mentioned, the Bladder contained no Urine; and I have never found any of the Humours in Health to be alcaline, though they may become so from other Causes. Nor did I ever find them alcaline in the most putrid Diseases, whether acute or chronical. I remember once, an aged Corn-Merchant had a large Stone in his Bladder, but being not a fit Subject to be cut for it, his Urine would often, when he was in exquisite Torture, smell alcaline; and as he had frequent Stoppages, a skilful Surgeon was obliged often to put back the Stone from the Neck of the Bladder, with a Catheter, towards the Bottom; but being once absent, the Patient continued in Pain, without making Water for several Hours; but the Operator returning, and performing his usual Office, the Urine came out so sharp, alcaline and putrified, and with such a peculiar Stench of digested Urine, that the Surgeon inadvertently drawing the Vapour thereof into his Lungs, was thereby disordered for some Days. Whence I conceive, not having any Opportunity of examining this Urine, because it was spilt, that, being attracted into the Pores of the Spongy Stone, and lodging therein, it was thus digested by the Heat, and so, perhaps, acquired a true alcaline Acrimony. However this be, it is certain, that the Urine contains no native alcaline Salt, and, consequently, no other Humour of the Body; because the Urine contains more Salts than any other animal Liquor; and because the Salts of the Urine are more acrimonious, and easier rendered alcaline, than of any other Liquor in the Body. Whence those Artists are greatly deceived, who so loudly cry out against the natural, volatile, oily, alkaline Salts in the Body. This is an Error introduced into Medicine by an imprudent Cultivation of Chemistry, which the more prudent Cultivation thereof must correct. The fetid Smell of Urine in Health is, therefore, entirely owing to the attenuating, putrid, and volatilized Oil, which is inseparable from it; and not to a volatile, alcaline Salt. Its bitter, nauseous, and saline Taste, proceeds from the compound Salt of the Urine, and from the Oil; as also, from the Sea-Salt which Urine generally contains.

FRESH URINE, DISTILLED IN A VERY CLOSE VESSEL, AFFORDS A FETID, NAUSEOUS WATER, NEITHER ALCALINE, ACID, SALINE, NOR VINOUS.

Take well-concocted human Urine, discharged in Health, and distil it in a Glass-Body, with a gentle Fire of a hundred and fifty Degrees, uniformly kept up, till only a twentieth Part remains behind. There will come over a limpid Water; the Urine in the mean time gradually changes from its natural Straw-Colour to Red; and the more of this pellucid Water comes over, the deeper that red Colour appears; and at length the Remainder becomes almost of black Red, very thick, turbid, opake, frothy, and tenacious. The first limpid Part has a particular nauseous Smell, but not that of a volatile Alcali; but what seems strange, though it be often distilled over again, yet it always retains this nauseous Odour, and even though it should long stand in the open Air. This corrupt Odour, therefore, is inseparable, and intimately mixed with the Liquor, so as not to be destroyed even by the Addition of an Acid. It seems to resemble nothing more than that disagreeable Exhalation, which arises from Wounds in the Abdomen, or the Carcass of a Man fresh opened after a violent Death. The nauseous Taste of that Water, though somewhat putrid, is not alcaline, or any way saline, howsoever it be distilled. Again, in Distillation thereof, there appear no Veins upon the Glass Still-head, as in the Distillation of vinous Spirits; and if the Water that first comes over, be a second time distilled, neither thus will the least Quantity of any such Spirit appear; and though ever so carefully rectified, it has, so often as I have examined it, never took Flame, but always quenched Fire. Even the Urine of such Men as are great Drinkers of strong Liquors, such as Wines and distilled Spirits, never affords any thing inflammable. When this first distilled Liquor of the Urine is mixed with Acids, it never gives any Signs of Effervescence, nor changes Juices green, as Alcalies always do; nor considerably precipitates the Solutions made with Acids; and by no manner of Rectification will it afford a manifest Salt, nor ever change Acids into a compound neutral Salt. Consequently it is no alcaline Liquor; nor does it manifest the least Signs of Acidity upon any kind of Experiments; as the Addition of fixed and volatile Alcalies, the various Juices that turn red with Acids, and the like. Whence we seem to have proved our Point.

REMARKS.

We may learn many momentous Particulars in Medicine, from this slight Experiment. Thus, 1. We see the lightest, thinnest, and most volatile Part of the healthy Juices is nearly elementary Water, excepting that there is inseparably joined therewith that other equally light, thin, volatile, fetid and seemingly corrupted Matter, not proceeding from a saline Principle, but rather from an oily one, and yet no ways vinous or inflammable. 2. Hence there is no Fermentation in the Juices, nor no Production of inflammable Spirit, which is easily separated from Water; whereas this fetid Part can by no Means be separated from its Water. 3. Consequently, there is no inflammable Spirit in the vital Juices of the Body. 4. Oil, by the vital Powers of the Body, is rendered much more volatile, than any Salt in the Body, contrary to what is generally believed. This peculiar, fetid, oily Matter is scarce otherwise found, than in the Matter of Perspiration, the Sweat, and the Vapour which naturally resides in the Cavities of the Body. Vinous Spirits, when drank, do not go to the urinary

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urinary Paſſages; and may, therefore, riſe to the Head, diſturb the Brain, the common Senſory, and the Origin of the Nerves; and hence (perhaps) they ſo wonderfully affect the Actions of the Cerebrum and Cerebellum. Hence (perhaps) it is, that they ſo eaſily exhale from the Body, poſſibly at the Surface of the Skin. Our preſent Proceſs alſo ſhews, that there is no volatile Salt in the Body, capable of riſing with this Degree of Heat, whatever Chymiſts or Phyſicians may think to the contrary; and that there is no volatile Alcali, whether ſimple or oily, nor any volatile Acid in the Body; ſo that the modern Phyſic muſt be greatly corrected in theſe Particulars. The fetid Smell of the Urine always increaſes and decreaſes, as the vital Powers increaſe and decreaſe, in an healthy Body; and the more the Body is exerciſed by Labour and Motion, the more this fetid Smell is always increaſed, and *vice verſa*. If any Thing in the animal Juices is to be called Spirit, on Account of its Acrimony, Volatility, Lightneſs and penetrating Virtue, it is neither vinous nor ſaline, but really ariſes from an Oil corrupted, or turned to ſuch a Putrefaction as the Putrefaction of Vegetables.

THE REMAINS OF THE RECENT URINE, AFTER THE PRECEDING PROCESS, ARE NEITHER ACID, NOR ALCALINE, NOR TRULY SAPONACEOUS, BUT SALINE AND FETID.

If the groſs Remainder, after the preceding Diſtillation, be mix'd with any kind of Acid or Alcali, it affords no Sign of Effervescence, ſo as to appear either acid or alcaline; nor can it be manifeſted by any other Experiment. It is indeed highly ſharp, of a very ſaline Taſte, and a little bitteriſh, but not alcaline; nor has it an alcaline Odour, but ſmells fetid almoſt as before. If uſed by Fullers and Wool-Scourers, it neither cleanſes nor deterges, and therefore has no ſaponaceous Virtue, which it excellently acquires by putrefying. In this whole Inſpiſſation there appears no Signs either of Chyle or Milk. Nor have I, with the utmoſt Attention, ever diſcovered the leaſt of that Coagulation, which the Lymph and Serum of the Blood always run into by Heat. However treated, it manifeſts *nothing* of a cheeſy Nature; but conſtantly the more it is inſpiſſated by the Fire, the ſharper and deeper-coloured it becomes; and thus, by various Degrees, it increaſes and changes in Colour, Thickneſs and Acrimony, the longer the Inſpiſſation is continued, ſo as to run through all that Diverſity uſually obſerved in the Urine, under acute and chronical Diſtempers, as a *Bellini* has excellently obſerved. In acute Diſeaſes, the hotter the Fever, and the more it diſſipates the moiſt Parts, the redder, the ſharper, and the thicker the Urine becomes.

REMARKS.

There is therefore naturally no fixed or volatile Alcali in an healthy Body, nor any fixed or volatile Acid in the natural Juices, whilſt they remain ſound; but this Salt is of a particular Nature, which we ſhall hereafter examine, and much leſs volatile than Water, as not riſing even with a boiling Heat. It is ſurpriſing that no nutrimental Matter ſhould ever be contained in this Urine; for there is no Chyle, Milk, Curd, Serum, or Lymph therein, which coagulate by Fire; but Phyſicians juſtly acknowledge theſe as the original Matter of Nutrition. Nothing nutrimental, therefore, is diſcharged from the Body along with the Urine. Thus all the Parts of the Chyle, Milk, Blood, or the Humours thence prepared, that become ſharp, corrupted, ſubtile, unfit for Nutrition, and hurtful to the Body, having performed their Office, are at length ſeparated by the Vital Powers, and, by means of the Kidneys, diſcharged from the Body. Urine, therefore, exhibits the Humours highly changed by the Powers of the Body, even ſo far as never afterwards to prove healthful thereto; and therefore the ſmall Quantity, the Sharpneſs, Colour and Thickneſs of the Urine, afford many juſt Informations to the Phyſician, as indicating the Neceſſity of Water, demonſtrating the Condition and State of the Humours, the Remedies required in Diſeaſes, and what Things are principally deſtructive to the Body, by diſſolving the Texture of the Blood, and how pernicious a great Fluidity is.

RECENT URINE, INSPISSATED TO A FORTIETH PART, AND DISTILLED WITH SAND, AFFORDS AN ALCALINE SPIRIT, AN ALCALINE, VOLATILE SALT, A VERY FETID OIL, AND SALINE FÆCES.

If the Diſtillation of the Urine be continued, till of forty Pounds there remains but one; or if the like recent Urine be ſuffered to exhale in a low, capacious, cylindrical open Veſſel, with an almoſt boiling Heat, till only a fortieth Part remains, there will be found at the Bottom a groſs, thick, blackiſh, ſharp Matter, which being mixed with thrice its Weight of clean Sand, and then diſtilled in a Retort, in a ſand-heat, by gentle Degrees at firſt, and often examining the Liquors that come over, by removing the Receiver, a limpid Water will firſt riſe, as in the preceding Proceſs; and when the Matter begins to be almoſt dry, another limpid Liquor will come over, of a ſharp, fiery alkaline Nature. Continue the Operation ſo long as this riſes, and keep it ſeparate, then cloſely lute on a Receiver, and urge the Matter by Degrees of Fire, upon which white Clouds will long continue to riſe, and unctuous Veins appear, whilſt a ſomewhat oily, yellow Liquor, together with a white, ſolid and alcaline Salt will riſe. At laſt, with the utmoſt Violence of Fire, there comes over a yellow or gold-coloured Oil, and when this ceaſes, a ſaline, feculent Matter remains at the Bottom. The firſt Water is ſcarce alcaline, ſharp, ſaline, or any Way oily, but like the Water of the preceding Proceſs; the ſecond Liquor has a ſharp and manifeſt ſaline Odour, it proves pungent and fiery upon the Tongue, and has a perfect alcaline Taſte; it makes a violent Effervescence with all Acids, and when ſaturated with any Acid, concretes therewith into a compound, neutral, half volatile Salt, like Sal Ammoniac, but of a determinate Nature, according to that of the Acid. This Salt therefore is truly alcaline and volatile, like that produced from the Putrefaction of Vegetables. All this appears more in the third unctuous Liquor, which is much more intenſely alcaline, tho' oily; and hence is uſually called alcaline Spirit, as conſiſting of Water, Salt and Oil, mixed together. The whole Salt is always alcaline, but rendered very ungrateful by the fetid Oil adhering thereto. The Oil which comes over at the ſame time, and afterwards is highly fetid, and infects every Thing with its Odour, ſo as to be intolerable, and not only retains the Smell of Urine, but is ſomewhat ſtercoraceous. The remaining Fæces being calcined in an open Fire, and elixated with Water, afford a true Sea-ſalt, if the Perſon has uſed that Salt in his Food.

REMARKS.

Hence it appears that the Salt of Urine, tho' not alcaline of itſelf, may be rendered ſo by a certain Degree of Heat, and that this urinous Salt is not ammonical, becauſe Sal Ammoniac, tho' volatile with a certain Degree of Heat, yet when ſublimed thereby, never becomes alcaline, but remains compounded, how often ſoever it is ſublimed; whereas the Salt of Urine, tho' likewiſe of a half fixed Nature, and becoming volatile with a certain Degree of Heat, at the ſame time alſo becomes alcaline, and no longer retains the Nature of a compound Salt. It therefore approaches to the Nature of alcaline Salt, and Sal Ammoniac, tho' itſelf be neither of them. Hence alſo we ſee that the Salt, ſaline Spirit, and firſt Oil, are almoſt equally volatile in a ſound State; and that this unctuous Spirit conſiſts of Water, Oil, and Salt, into which it may be commodiouſly reſolved. And hence alſo we underſtand, how by the natural Powers, the mild, white, indolent, inodorous, and unctuous Matter of the Aliment, Chyle, Milk, Fat, and Marrow, may turn into another that is ſharp, yellow, inflammatory, thin and fetid; whence alſo the fetid Smell of the Urine uſually proceeds. Again, we hence learn, that there is no fixed Alcali in the animal Juices; for I never could find a Grain thereof in the largeſt Quantity of the Urine thus treated. And laſtly, that Sea-Salt may enter the Blood, mix therewith, thence paſs into the urinary Veſſels, and yet remain unchanged, ſo as to act through moſt of the Veſſels of the Body, without ſuffering an Alteration by their Re-action. All which Particulars being conſidered, our preſent Experiment, which is owing to *Helmont*, will be found of infinite Uſe in Medicine.

RECENT INSPISSATED URINE, DISTILLED WITH FIXED ALCALI.

Freſh Urine being inſpiſſated as before, pour thereon an equal Quantity of the Oil of Tartar *per deliquium*, or the Solution of Pot-aſhes, and there will inſtantly ariſe a ſharp, alcaline, volatile Vapour, ſuch as uſually proceeds from well-putrefied Urine, when it grows warm. If the Mixture be now immediately diſtilled in a Glaſs Alembic, with a gentle Fire, there comes over a limpid Liquor, running in Veins, which proves ſharp, highly alcaline, and more volatile than Water, and in every reſpect reſembling true and ſtrong Alcali. And when inſtead of the Oil of Tartar, the dry Salt of Tartar is uſed, a dry alcaline Salt often riſes firſt in this Diſtillation. And when the former alkaline Liquor is again diſtilled in a tall Body, with a gentle Fire, the Part that firſt riſes is ſaline, white and alcaline; the Oil remains at the Bottom, along with the fixed Alcali added, as if it was more fixed thereby. Laſtly, when all is become dry, if the Fire be ſtrongly kept up, there likewiſe comes over a fetid, yellow Oil after the Salt.

REMARKS.

This Experiment ſhews the Nature of the animal urinous Salts to be ſuch, that a fixed alcaline Salt can inſtantly change them, like the violent Action of the Fire in the preceding Proceſs. And hence we learn that fixed alcaline Salts being mixed

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mixed with the Juices of the Body, will presently render them sharp, alcaline, extremely moveable, and more volatile than the Water and Spirit of the Body; communicate a fiery corrosive Nature to the Spirits, and immediately give them a Tendency to Putrefaction. If the Salt and Saline Spirit thus produced be several times distilled over again with a gentle Fire, they at length become as purely alcaline as those prepared from Hartshorn, or other costly Substances: When mixed with Acids, they make a violent Effervescence, especially if shaken together, and by this Means, are so mortified and changed as to lose their Sharpness, and all their alcaline or fiery Nature, being thus also so fixed, as not to prove volatile with the Heat of an healthy Body. They lose the proper Virtue of acting like volatile Alcalies, especially that of almost mortally dissolving and attenuating the Juices of the Body. And what is more to our Purpose, Physicians may hence understand the surprizingly changeable Nature of the Salts of the Body; how variously they may alter from their native Disposition; and the proper Effects of each Alteration; and also learn the Remedies and Degree of Correction which each requires: All which were known to the Ancients from Experience. Thus in Fevers, attended with an increased Heat and Motion, *Hippocrates* allowed only of Things tending to an acid Nature, or actually acid, to be used as Food, Drink, or Medicines; and hence we see, that fixed Alcalies are destructive in the Body, as often as attended with Heat, Motion, a fetid Smell, a Flame-Colour, or small Quantity of the Urine, or the Juices are too much dissolved; so that in such Cases to exhibit these Salts is highly dangerous, especially in the Plague.

RECENT URINE, ESPECIALLY WHEN INSPISSATED, AFFORDS A FIERY SPIRIT THAT IS NOT ALCALINE, UPON THE ADDITION OF QUICK-LIME.

If Quick-Lime be thrown into recent Urine, there instantly exhales a spontaneous Vapour, which strikes the Nostrils with an extremely pungent and fiery Sensation; and if it be now directly and gently distilled in very close Vessels, it affords a limpid Water, of an intolerable fiery Odour, like the former, but much more sharp and volatile. And if, when the Urine is first inspissated to a fourth Part, an equal Quantity of Quick-Lime be mixed with the Remainder, the Odour is much stronger, and the Spirit obtained by Distillation, not to be equalled by any other for its sharp, fiery, subtile, and volatile Nature. After all this Spirit is separated by Distillation, and the remaining Mass afterwards treated by the same Operation, it will never afford a solid Salt, as in the preceding Process; but always a very fluid saline Liquor; and whatever Acid is mixed therewith, it causes no Effervescence, tho' the fiery Virtue and Volatility are greatly diminished thereby. There is Caution required in this Process; for as soon as the Quick-Lime touches the Urine, or the inspissated Matter thereof, it excites a great Ebullition, and a violent Heat, and at the same Instant the most sharp and volatile Spirit hitherto known arises; and, being agitated with the violent Heat, it is put into a furious Motion, so that being inadvertently received into the Lungs, it may instantly prove highly dangerous, and occasion an instantaneous Inflammation in the tender Vessels of the Lungs, and directly communicate it to the Blood circulating through them. For if this Spirit be held to the external warm Skin, it immediately makes the Part gangrenate and mortify; but perhaps the whole Thickness, between the circulating Blood in the Lungs, and the Air contained in the Vesicles thereof, is not the thousandth Part of an Inch; but this urinous Spirit, prepared with Quick-Lime, suddenly exhales its sharp Part in the open Air, and leaves a Water behind.

REMARKS.

Hence we may learn the Action of Quick-Lime upon the saline urinous Juices of the Body; for when assisted by Heat, and the vital Motion, it presently generates these fiery Spirits, that prove destructive to the tender pappy Mass of the Brain and Nerves; and the hotter, or the more agitated the Body, or the more it is affected with inflammatory Disorders, the more destructive the Use hereof. But when the Body abounds with Acid, Water or Phlegm, the prudent Application thereof may be sometimes of Service. We must also consider, that the Lixivium of Quick-Lime has a great Force in correcting, and extricating the muriatic, fixed Salts in the Blood, and fitting them to be easily discharged; whence it becomes an extraordinary Remedy in that Kind of Scurvy, which principally proceeds from the above-mentioned Causes; but in that Kind which proceeds from Putrefaction, and consists in a sharp Oil and Salt, it proves highly prejudicial. Whence, perhaps, we may, in some Measure reconcile the Experiments of some eminent Physicians in *France*, which shew the Lixivium of Quick-Lime to be pernicious in that Country; whereas in *Germany* it appears a very advantageous Medicine. But all this holds truer of the Quick-Lime prepared from Stone than of that from Shells. The Particulars hence arising seem to be these. 1. The violent Corrosion which happens in a live Body, upon the Application of Quick-Lime, proceeds more from those fiery saline Spirits, which the Lime produces from the Salt, that was not sharp before, than from the corrosive Body of the Lime itself. 2. Hence it may be of Use in Diseases proceeding from acid, aqueous, austere, viscous, mucous, and phlegmy Causes, where Motion and Stimulation are wanting. 3. On the contrary, it proves hurtful in acute Distempers, proceeding from alcaline, bilious, saline, putrid, acrimonious, and heating Causes, where the Body is dry and strongly agitated by Motion. 4. The mild Salts of the Body may instantaneously become extremely sharp and poisonous, by the bare Admixture of a Thing not sharp itself. 5. That an exceeding sharp Matter may be produced from healthy Juices, which is neither a Salt, Spirit, nor Oil; for this Liquor cannot, by any Art that I know of, be made to appear in the solid Form of a Salt, and can be only obtained invisible by Means of Water. 6. These Spirits therefore that do not appear to be alcaline, by any Experiments made with Acids, are much sharper than any Alcali; so that there is not any known Thing that yields a sharper and more odorous Vapour. Whence also it appears, how suddenly a very different Taste and Smell may arise from the Salt of the Body, which is almost inodorous.

THE NATIVE SALT OF URINE.

Take very fresh Urine, discharged twelve Hours after eating by a Man in Health, and immediately, by a gentle Fire of two hundred Degrees, evaporate it in a clean Vessel, till it acquires the Consistence of Cream. Then strain the Liquor hot through a Flannel Bag, that the viscous Oils may be somewhat kept back and separated, which the more exactly it is done, the better. Set a large Quantity of this inspissated Liquor, in a tall, cylindrical, glass Vessel, tied over with Paper in a cool Place, for a Year; during which Time, a saline, solid, hard, brown, and somewhat transparent Mass will concrete to the Bottom thereof; and a thick, black, unctuous Liquor float above it, as separated and excluded from the Salt. Pour off the Liquor, and putting the saline Mass into another Vessel, add very cold Water thereto, and shake it a little therein, to cleanse it from its oily Foulness, which is easily done, because the Matter does not readily dissolve in cold Water. Let this saline Mass be preserved under the Title of the native Salt of Urine. If this Salt be dissolved in Water, and several Times strained, till the Solution becomes limpid, and then exhaled to a Pellicle in a clean Glass, and set to rest in a cool Place, it shoots into saline Glebes, of its own peculiar Kind, very different from any other Salt, tho' somewhat resembling the Crystals of Sugar, in Figure and Hardness. They are not fetid or alcaline, but extremely volatile; and this is the purified Salt of Urine.

REMARKS.

This Experiment excellently shews Physicians the Nature of those Salts, which in an healthy Body are very sharp, and greatly inclining to an alcaline Nature, yet not really alcaline; and therefore require to be quickly discharged by the vital Powers, to which they however owe their Origin. And hence Physicians may know, that the other Salts contained in the other Juices, are much less sharp or alcaline. These Salts are generated in the human Body, alone, from the Meat, Drink, and Sea-Salt taken in and changed. There is Sea-Salt contained herein, but not alone. It is a saponaceous Salt, but not very unctuous. It is highly diuretic, if drank diluted with Water, and sudorific with a proper Regimen. It has such extraordinary Effects upon Metals, that some have thence promised themselves Wonders. All the fat Matter, which remains upon straining, and cleansing the inspissated Urine, is, when dried by a gentle Fire, excellent for the producing of Phosphorus; for which End it may be preserved. The Experiment also shews, that the Salt remaining in the Urine, thus inspissated, will not putrify or grow alcaline, so as to become volatile and easily fly off, tho' they are otherwise so easily changed. It should be considered what Share this Salt has in producing the Stone of the Bladder or Kidneys.

URINE, BY DIGESTION, TURNS ALCALINE, AND CHANGES ITS COLOUR, TASTE, ODOUR, AND VIRTUES.

If such Urine as was described in the first Process, be kept in an open Vessel of Glass, Earth, Wood, or Metal, in an Air of thirty three Degrees of Warmth, it begins to smell fetid, putrefy, and change its Straw Colour for a dusky brown-

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brown, depositing groſs Fæces, and thus in a few Days acquiring an alcaline lixivious Nature, and at the ſame time ſtriking a ſtony Cruſt on all the Sides of the Veſſel. The better the Air is, the ſtronger and quicker the Change of the Urine is made; whence in the Summer-time, eſpecially when the Weather is hot, all this happens in a greater Degree. To diſcover how far this changeable Nature would reach, I filled a Bottle with natural recent Urine, and corking it cloſe, ſet it in a moderately warm Place; and after three Months, I found it changed in this cloſe Veſſel, as is deſcribed in the preceding Caſe. And herein the Change principally conſiſts; the recent Urine of a Man in Health is of a ſtraw Colour, it daily proceeds through ſucceſſive Changes, till at length it ends in a deep brown; and the more it is putrified, the darker the Colour. And the ſame Thing is obſervable in the Urine of Perſons under a Fever; the State of the Juices being learnt from the Colour of the Water. Recent Urine ſmells ungrateful, though not alcaline; but digeſted Urine has a manifeſtly fetid, volatile, alcaline Odour, very different from the other. Recent Urine is of a bitter, ſaline Taſte; but digeſted Urine putrid, ſharp, alcaline, and perfectly lixivious. Recent Urine affords no Signs of containing an Alcali; but digeſted Urine makes an Ebullition, and a violent Effervеſcence, upon mixing with any Acid, and in every other Trial, manifeſts a true alcaline Nature. Recent Urine has no ſaponacious ſcouring Virtue; but digeſted putrified Urine is uſed by Scourers and Dyers, as a ſharp Lie, that cleanſes foul Wool, Silk, and the like, after the manner of fix'd Alcalies: And as theſe Changes happen, with a ſmall Degree of Heat in a cloſe Veſſel, which every one may be eaſily ſatisfied of by Trial, it is in vain for Chemiſts to deny this Property in Urine.

REMARKS.

We are here to conſider, that there is ſeparated from the Body, by the urinary Paſſages, a Water containing Salts and Oils, approaching to a State of Putrefaction; nor do we find in all the Body, another Fluid that is ſo eaſily changed by ſuch a Digeſtion in cloſe Veſſels. Urine, therefore, which is deſtin'd for Excretion, cleanſes the Blood from theſe noxious, putrid Subſtances; and, therefore, if retain'd through any Diſtemper, it produces mortal Effects, as being ſoon rendered ſharper by the Heat of the Body, and thence preſently intolerable to the finer Veſſels, and diſſolving to the Humours by a pernicious Relaxation. And as it thus eaſily and ſuddenly acquires theſe new Properties in a cloſe Veſſel, with a moderate Heat, we are ſhewn that the Body neither produces Vinegar, nor inflammable Spirit from what it takes in, and conſequently does not act by Fermentation, but introduces the true Change of a putrified Subſtance, and therefore in its Effect, approaches nearer to the Nature of the Putrefaction of Vegetables; for if bare Stagnation can occaſion this Change of the Urine, how greatly muſt it be diſpoſed to a true Putrefaction? And hence we ſee how great Neceſſity there is of Water, Acids, and ſaline Matters in thoſe Perſons who live in hot Climates, and accuſtom themſelves to daily Labour and Exerciſe; for by Meats, Drinks, and Sauces of this Kind, too great a Tendency to Putrefaction is prevented. Hence alſo the daily Neceſſity of a mild, ſomewhat acid, and a new Chyle, for ſheathing the Acrimony produced in the Blood. Hence alſo it appears, that in twenty-four Hours the neceſſary Utility and Service of this new Chyle vaniſhes; and that freſh Aſſiſtance is likewiſe required from the ſame Means. In burning Fevers, therefore, tart, acid, and mild Aliments, like Chyle, are extremely neceſſary; great Abſtinence being in theſe Caſes highly prejudicial. Hence it is that Barley Piſans, with Vinegar and Honey, are here ſo ſerviceable, as *Hippocrates* prudently inculcates, in his incomparable Book concerning the Diet in acute Diſeaſes. The Phyſician alſo, upon examining the Urine, by means of theſe Experiments, may learn many uſeful Particulars, with regard to the Change of the Oil and Salt thereof; and perceive that a true Stone may be generated from the Urine of a Man in Health, even by Reſt, and while the Urine putrifies, or grows alcaline; and therefore that Attenuation, Alcalies and Putrefaction, do not prevent the Origin of the Stone, ſince it may be generated and not diſſolved even in putrified Urine. Hence, therefore, as Tartar is generated in the beſt Wine, ſo is the Stone generated, and not diſſolved, in the Urine elaborated by the vital Powers: Therefore, volatile alcaline Salts are in vain given to prevent the Generation of the Stone. The following Experiment I have ſeen with Horror. Upon filling a clean Glaſs Bottle with the recent Urine of a healthy Perſon, and ſetting it by for ſome time, then pouring out the putrified Liquor for Diſtillation, there was a ſtony Cruſt all round the Inſide of the Glaſs. Without waſhing this off, I filled it with freſh Urine, ſet it by as before, and afterwards emptied it. And by repeating this ſeveral Times, I at length found the whole Surface of the Glaſs cruſted over with the Matter of the Stone. This Production of a ſtony Matter ſeems very deſtructive, though neceſſary to the Body. It may perhaps ſeem ſtrange, why the Body ſhould not therefore putrify by its own vital Heat and Motion, ſince it ſo ſoon putrifies the wholeſomeſt Juices; and ſince dead Carcaſes, expoſed in Air heated to eighty Degrees, in a few Hours putrify, reſolve away, and fly into Air, leaving only the Bones behind: But Chemiſtry ſupplies us with this Anſwer, that ſuch a Putrefaction is prevented by the Meat, Drink, Sauces, Air, and ſometimes the Medicines uſed, which reſiſt Putrefaction; otherwiſe, in burning Fevers, the whole Structure of the Body would preſently be diſſolved by Putrefaction.

DIGESTED URINE AFFORDS BY DISTILLATION AN ALCALINE SPIRIT, A FETID OIL, A VOLATILE, ALCALINE SALT, PHOSPHORUS AND SEA-SALTS.

Take Urine digeſted according to the foregoing Proceſs, diſtil it, with a gentle Fire, in a low Glaſs Body; there firſt ariſe Veins of Liquor running in the Form of unctuous Spirits. The Receiver being changed, and the Fire a little encreaſed, there follow dewy Drops, reſembling Water; and this Water may be accurately ſeparated till the Matter remains almoſt dry, which again being urged by Degrees, and at length by a ſtrong Fire, will afford a yellow and very fetid Oil, along with ſomething ſaline; black Fæces will remain behind, which, when burnt in an open Fire, become a white Calx, that with Water reſolves into Sea-ſalt, and a fixed, inſipid, ſubtile Earth. The firſt Water is fetid, ſharp, fiery, perfectly alcaline, and makes a violent Effervеſcence with Acids. If this be diſtilled in a tall Veſſel, by a gentle Fire, it affords a white, ſolid, truly alcaline Salt; and leaves a Water of an ungrateful Smell and Taſte behind. When the Water that came over ſecond is long diſtilled in a tall Veſſel, with a gentle Fire, it affords ſomewhat of the former Spirit; which being carefully ſeparated, and the remaining Water diſtilled in a clean Veſſel, it affords a Liquor which *Helmont* recommends, in his Treatiſe on the Stone, for an admirable Lithontriptic. There here appears no fixed Alcaline Salt, but a true Sea-ſalt, if the Perſon uſed much thereof; but when I deſire to obtain a large Quantity of the Salt, I uſually proceed thus.

I put a hundred Weight of Urine into a large low Veſſel that widens upwards, and inſpiſſate by boiling, with Care to prevent the unctuous Matter from boiling over; and being left, till the whole acquires the Conſiſtence of Honey, I put a large Quantity of this into an open cylindrical Glaſs, and expoſe it for ſome Months in a warm Room, ſo that it may be well putrefied. I afterwards put the Glaſs into an Iron Pot, to the Mouth whereof a large earthen Still-head may be commodiouſly fitted, and cloſely luted; the Head has a long Pipe, to which I apply a capacious Receiver, then raiſe the Fire by Degrees, upon which an incredible Quantity of a white alcaline Salt ariſes, next a yellow Oil that fouls the former Salt, and with it another Salt ſomewhat more fixed. I urge the Fire till the Pot begins to grow red hot, at which Time the Oil and the laſt Salt come over. Then ſuffering the Iron Pot to cool a little, while the fixed Matter continues ſufficiently hot, I take away the Receiver, and put up all that was raiſed into Glaſs Bottles, and ſtop them cloſe. This afterwards reſolves into Spirit, Salt, and Oil, as the former. If what now remains at the Bottom be mixed with twice or thrice its Weight of Wood-Coal, and then put into little coated Retorts, and urged with the utmoſt Violence of Fire for ſixteen Hours, into Receivers filled with Water, and ſo placed as to bury the Necks of the Retorts under Water, little blue Maſſes of Matter will at length come over, and fall to the Bottom of the Receivers, whence they are collected, ſo as to be gathered together under Water, in a ſmall Veſſel; which being ſet over the Fire, ſo as to be very hot, the Matter of the Phoſphorus melts without diſſolving in the hot Water, and runs into one Maſs, like melted Wax; and may be afterwards preſerved for twenty Years, or more, under Water, without loſing its Virtue. But if another Part be taken of the Maſs, as it remains in the Pot, and calcined in an open Fire to a white Calx, this Calx, when put into Water, communicates a ſaline Matter thereto; and which, when reduced, proves to be true Sea-ſalt, that remained thus unchanged through all the Digeſtions of the Body, and even after ſuch a long continued Putrefaction and Diſtillation. That it is a true Sea-ſalt, appears manifeſt from the Taſte, but more particularly, becauſe, when mixed with *Aqua fortis*, it diſſolves Gold; ſo that there is no fixed alcaline Salt found even in this Urine; but whatever it contains of ſaline, is either of the volatile Kind, or Sea-ſalt.

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REMARKS.

This is the true Analyſis of Urine after Putrefaction, where it affords all the ſame Matters as that which is diſtilled freſh, though with a leſs Heat and in an inverted Order. Putrefaction renders the Salts more volatile than Water, and makes thoſe alcaline which were not alcaline before; it renders the Oil ſharper, more fetid, and more volatile, yet produces no inflammable Spirit, no fix'd or volatile Acid, nor any fix'd Alcali. Yet theſe two Salts appear differently volatile; the firſt whereof eaſily riſes and ſeparates almoſt pure; the other with more Difficulty, ſlower, and mixed with a copious Oil, not eaſily to be ſeparated from it, and requires a large, and in part the ſtrongeſt Fire to raiſe it. I once urged the prepared Fæces of Urine, with the moſt violent Fire for the making of Phoſphorus, and was ſurprized to find how long this ſaline Matter continued to come over, after having ſo long ſuffered the Violence of a former Fire; but this Salt was ſtrangely denſe, yellow, fetid, and fix'd to the Sides of the Retort. All Acids, therefore, are here changed into a neutral, ſaline Subſtance, by the vital Powers; yet this neutral Salt becomes truly alcaline by Putrefaction, and more volatile than any hitherto known, even than Alcohol itſelf. This Putrefaction volatilizes all the ſaline Matters of Animals and Vegetables, but can neither convert Sea-ſalt into an Alcali, or render it volatile. Some eminent Chemiſts have ſaid, that an Acid might, by the Force of Fire, be drawn from the Fæces of Urine, remaining after its Diſtillation: And I have found this true, where common Salt was largely uſed by the Perſon, and not changed, as was above obſerved, but remaining plentifully in the Fæces: For being thus mixed in a large Proportion of Earth, the extreme Violence of the Fire drives over the Acid of the Salt, which has thus been haſtily taken for the Acid of the natural Juices: Yet it muſt be acknowledg'd that Phoſphorus ſpontaneouſly reſolves into an Acid by the Air, not greatly differing from the Oil, or acid Spirits of Vitriol or Sulphur; whence it makes a kind of Compound Body with Quickſilver. But whence this Acid ſhould proceed I am at a Loſs to know, as alſo of what Nature it is. Certainly it ſuits neither with Animals or Vegetables; perhaps, Alum might be added in the Preparation; for thus it may be obtained to Advantage; and the acid Spirit of Alum is very like that of Vitriol. On the other hand, it has appeared by Experiments, that Fowls feeding upon Vegetables inclined to Acidity, and drinking nothing but Water, while they were cooped up, and being afterwards calcined with an open Fire, together with all their Excrement, afforded Fæces that contained nothing either of acid, or of an alcaline Nature. If a Spirit highly ſaturated with volatile, alcaline Salt be highly rectified, it becomes limpid; but if afterwards long kept, it changes brown, and generally depoſits ſomething terreſtrial to the Bottom and Sides of the Veſſel. Let it be examin'd whether this is not that volatile Earth, which riſes with the firſt Spirit of putrefied Urine, that tarniſhes the Glaſs ſo as not to be got off again but by the other ſubſequent Spirit, which, though ſcarcely ſaline, ſpontaneouſly diſſolves it; of which *Helmont* treats ſo largely in his noble Book of the Stone. This deſerves to be thought of and tried, as being an eaſy Thing that has its Uſe. Certainly Alcalies rather generate the Stone; but if the ſecond Liquor, which is not alkaline, diſſolves the Stone, then Urine will contain both the Matter of the Stone and its Solvent. Sea-ſalt, therefore, does not generate the Stone, but rather reſolves it, as hindering by its Saltneſs, the Tendency of the Humours to an alcaline Nature and Putrefaction. Whence *Helmont* conceives, that Vinegar, Sea ſalt, and Sulphur, were the great antipeſtilential Remedies of *Hippocrates*, being uſed along with fumigated Wine; whence the Adepts declare, that Nature has lodged abſolute Perfection in Salt. It does not however commodiouſly diſſolve the Stone formed in the Urine, or the Concretions of the Gout.

Dr. *Langriſh*, in his modern Theory and Practice of Phyſic, ſays, That the Kidneys are Organs deſigned by Nature to through out of the Body a recrementitious Liquor, which in Health is ſtraw-coloured, or of a pale Yellow, and contains [illegible] or no Sediment, or feculent Matter; being in effect a Lixivium, in which a Portion of the animal Salts and Oil is diſſolved and waſhed away. If, therefore, (as we have Reaſon to believe) the ſecretory Ducts of the Kidneys are more than ordinarily contracted, in an acute Fever, either by the ſharp, acrid Salts and Oil ſtimulating them as the paſs along, or elſe by the general Tenſion of the Veſſels at that Time; or if the Union or Attraction between the ſerous and globular Parts of the Blood is ſo ſtrong as not to be ſeparated in the Renal Tubuli, we have a manifeſt Reaſon for the ſmall Quantity of Urine.

REN

Another Cauſe, indeed, may be the Velocity of the Fluids; for a ſtrong and ſwift Circulation is an Hindrance to all Secretions, by reaſon they are perform'd by lateral Branches going off at or near Right Angles; and conſequently a ſwift Circulation along or parallel to the Axis, carries along with it what ſhould be laterally ſecerned.

As to the Colour of the Urine, that depends upon the Quantity of oily and ſulphureous Particles wherewith it is impregnated; it being well known, that Oil or Sulphur is the Cauſe of all Colours in Liquors; ſince neither pure Salt, pure Water, nor pure Earth, can communicate any Colour at all. Add to this, that Oil gives the deeper Colour, the more it is attenuated and exalted by Heat and Motion. And again, when the increaſed Heat of the Body hath exalted the moſt fluid, aqueous Particles of the Blood, the Urine may become higher coloured, or intenſely red, by the Proximity of the ſulphureous Particles.

Hence we ſometimes meet with Urine, ſo ſaturated with oily, ſaline, and terrene Particles, as to be a perfect Lixivium; and at other times, the Salts and Oil are not determined to the Bladder along with the Urine; that is, when the Fibres of the Kidneys are over and above contracted, or the Salts and Oil are not attenuated and divided enough, to ſuit the Orifices of the ſecerning Ducts, the Urine is as limpid and clear as common Water. The former of theſe argues an inflammatory Diſpoſition of ſome of the inner Viſcera; and the latter threatens Deliria, and Convulſions.

The rank fetid Smell, which often attends the Urine of Perſons in ardent Fevers, proceeds from the Salts being volatilized and rendered alcaline, and the Oil tending towards Putrefaction; all which is repugnant to the natural State of the Fluids.

Towards the Criſes of Fevers, when the ſaline, ſulphureous, and terrene Particles, are attenuated and ground fine enough to paſs through the Renal Tubuli, the Urine is loaded with Contents, and lets fall a thick Hypoſtaſis, or turbid Sediment, after it has ſtood for ſome time. Since, therefore, the Urine, by its ſeveral Contents and Appearances, furniſhes us with Signs as well diagnoſtic as prognoſtic, it ought to be inſpected every Day, in order to deduce our curative Indications, or to make our medicinal Prediction with greater Certainty; either from the Cloud at the Top, the Eneoræma ſuſpended as it were the Middle, or the Hypoſtaſis or Sedimentum ſubſided to the Bottom: The laſt of which is the beſt Indication of a kindly and regular Concoction.

Thus by daily inſpecting the Urine, we are taught the State and Progreſs of the Diſeaſe; and thereby enabled not only to make our Prediction, but we are, alſo, greatly directed thereby in our medicinal Practice. *Hippocrates* laid great Streſs upon his Obſervations on the Urine. And our Countryman *Willis* is ſo ſanguine as to tell us, that the Acidulæ or *Spaw* Waters do not more certainly ſhew the Nature of the hidden Mine, through which they are ſtrained, than Urines give Teſtification of the divers Sorts of Dyſcraſies of our Bodies and their Habitudes.

If, therefore, a bare Inſpection of Urine is of ſuch Advantage towards inveſtigating the Nature, State, Progreſs, and Cure of Diſeaſes; moſt certainly the natural Hiſtory of it, or a more curious Search into the Contents of the Urine, in every Period of the Diſeaſe, will be of more moment in diſcovering the ſeveral Dyſcraſies of the Blood, and in indicating the Method of Cure, than what we can meet with in the Urinal only. For this Reaſon, I thought it worth while to make the following Experiments, that by an exact Analyſis we might ſee the different Contents of the Urine, and the various Proportions of its Principles.

A CHYMICAL ANALYSIS OF THE URINE, BOTH IN HEALTH AND IN ACUTE FEVERS.

EXPERIMENT I.

I took all the Urine that was made in the Space of twenty-four Hours, by a Man, thirty-five Years of Age, in perfect Health, and of a regular Life. I weighed out two Pound, and diſtilled it; by which means I gained

	Ounc.	Dr.	Gr.
1. Lymph — — —	30	7	2
2. Volatile Salt — —		2	18
3. Oil — — —			32
4. Cap. Mort. before Calcination —		3	17
5. Cap. Mort. after Calcination —		1	43
6. Fixed Salt — — —			32

The greateſt Part of the Lymph was pellucid, inſipid, and inodorous, and exhibited no Signs of an Acid or an Alcali; but the latter Part was very ſtrong and offenſive, and fermented violently with Oil of Vitriol, made a white Precipitate with

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with Solution of Sublimate, and turned Syrup of Violets green.

When the volatile Salt first began to rise, it shot all over the Glass-head and Recipient into most beautiful Crystals; some of which resembled fine Boughs or Feathers; while others radiating from a Point or Centre, formed Stars or Roses of various Sizes.

When the volatile Salt was mixed with an acid, a stinking Vapour arose, which smelt like a nasty Corner where People have made Water for a long time.

I repeated this Experiment three Times, but as there was no material Alteration either in the Quantity or Quality of any of the Principles, it would be encroaching on the Patience of the Reader to insert those Processes.

Experiment II.

A young Lad, ten Years old, being seized with an acute Fever, attended with a Phrenzy, Subsultuses, and many other dangerous Symptoms, it continued till the eighth Day; on which moderate Sweats broke forth, and the Urine let fall a vast Hypostasis.

All the Urine which was made on the eighth and ninth Days, being saved by my Order, it amounted exactly to two Pounds; which being committed to the Still, it afforded,

	Ounc.	Dr.	Gr.
1. Lymph — — —	30	2	
2. Volatile Salt — — —		5	46
3. Oil — — —		1	23
4. Cap. Mort. before Calcination —		5	4
5. Cap. Mort. after Calcination —		1	56
6. Fixed Salt — — —			44

Hence we may not only observe a great Difference between the Contents of healthy Urine, and that made at the Crisis of a Fever; but we plainly see the Reason of the vast Advantages which generally accrue when the Urine is loaded with Contents, and lets fall a thick and turbid Sediment. For we have good Reason to believe, from this Experiment, that the greatest Part of the Hypostasis consisted of saline and sulphureous Particles, which, while in the Blood, irritated the Vessels, and increased the Fever.

The Lymph also seemed to be much stronger in this than in the former Experiment; and as it contained more volatile Salt and Oil, it fermented more violently, and smelt stronger when mixed with Oil of Vitriol.

Experiment III.

A young Woman, seventeen Years of Age, lay ill of an ardent Fever, and from the tenth to the fifteenth Day, the Urine came away involuntary; so that none could be saved, except about a Spoonful of limpid clear Water on the twelfth Day, at which time she was raving, gather'd up the Bed-Clothes, catched at imaginary Flies, and the like. On the thirteenth and fourteenth she lay comatose. The fifteenth she raved again, had strong Subsultuses, and a black parched Tongue. On this and the next Day, we saved eight Ounces of Urine, which was something deeper coloured than a Citron, smelt strong, and had a very thin bright Cloud swimming in the middle. This Urine being distilled, we procured,

	Ounc.	Dr.	Gr.
1. Lymph — —	7	5	
2. Volatile Salt — — —			40
3. Oil — — —			32
4. Cap. Mort. before Calcination —		1	6
5. Cap. Mort. after Calcination —			21
6. Fixed Salt — —			4

Experiment IV.

The dreadful Symptoms which attended this poor young Woman on the fifteenth and sixteenth Days, were something alleviated on the seventeenth, by a gentle breathing Sweat; but the Remission was very short, a *Rigor* succeeded, and the Fever seemed to return with greater Violence than ever. All that Night she raved much. The next Day, the eighteenth, I found her delirious, with frequent Catchings of the Tendons, and her Pulse so extremely quick as scarce to be counted.

Nine Ounces of Urine being saved on the seventeenth and eighteenth Days, I distilled eight Ounces of it, and obtained,

	Ounc.	Dr.	Gr.
1. Lymph			
2. Volatile Salt — — —	7	4	45
3. Oil — — —			48
4. Caput Mort. before Calcination —			34
5. Caput Mort. after Calcination —		1	10
6. Fixed Salt — —			23
			3

It may be proper to observe, that about four Ounces of this Urine, which was made during the little Remission of the Fever, was highly red at first; afterwards it grew thick and cloudy, and the next Morning it had a laudable *Hypostasis* subsided to the Bottom. The other Part was much the same with that of the former Process.

Having one Ounce of Urine to spare, and it smelling exceedingly rancid and strong, though the Glasses were very clean in which it was contained, I thought it worth while to try if I could possibly discover any alcaline Property in this Urine, before the Fire had any share in it; and accordingly I divided it into four Parts; to the first I let fall some Solution of Sublimate, which made no Alteration in it; to the second I dropt in some Solution of Alum, which also lay very quiet; to the third I added Oil of Vitriol, which manifestly gathered together, and collected the grosser, thicker Contents of the Urine (which, by shaking the Bottle before we weighed out what was distilled, were equally scattered all over, so as to render it of an even turbid Colour) into little Rags, and left the Interstices clear. With the fourth I mixed Oil of Tartar, which immediately dispersed the Thickness or Muddiness, and rendered it clear, and almost of a Straw-colour.

Hence it is evident, that though the Urine was not alcaline enough to raise a visible Fermentation with Acids; yet as the saline and oleaginous Particles were undoubtedly attracted and collected together by Oil of Vitriol, and repelled and dispersed by Oil of Tartar, we may reasonably conclude, that the prodigious Heat of the Body had exalted the Animal Salts and Oil to an alcalescent State. For this was the most intense Fever I ever met with; and as the Heat had been continued many Days, I am persuaded it might be the Cause of these Phænomena.

Experiment V.

On the 19th Day of this young Woman's Illness, we had a Remission for four Hours; during which Time she came to her Senses, drank plentifully; her Tendons were quiet, her Pulse regular, in comparison to what they had been; and by the Assistance of a Clyster we procured two Stools. In the Evening the Rigor returned, though not with so much Vehemence as on the 17th. The Fever, Delirium, Subsultus Tendinum, *&c.* soon succeeded; so that the Night was passed with great Inquietude. On the 20th in the Morning, she had two Hours Sleep, which greatly refreshed her, and slackened the Pulse both in its Hardness and Velocity. She now began to spit a good deal of frothy Matter; her Skin felt smoother and softer than it had done before; and the Urine on both these Days was loaded with Contents, and let fall a very thick Hypostasis. Eight Ounces of this Urine afforded,

	Ounc.	Dr.	Gr.
1. Lymph — — —	7	3	32
2. Volatile Salt — —		1	38
3. Oil — —			53
4. Cap. Mort. before Calcination —		1	12
5. Cap. Mort. after Calcination —			26
6. Fixed Salt — — —			5½

Having mentioned in the former Experiment, that Oil of Vitriol plainly collected, and Oil of Tartar as manifestly dispersed the turbid Parts of the Urine, I was induced to try it again with some of this Urine before Distillation; because it seemed to be more impregnated with volatile Salts and Oil; and consequently it might exhibit the Phænomena more plainly. Accordingly I dropt a few Drops of Oil of Vitriol into an Ounce of it; from whence a fine white Froth arose to the Top of the Mixture, while the grosser Contents run together, and after some time subsided to the Bottom. The Ferment, indeed, was but weak; however, it was enough to discover, to any unprejudiced Person, an alcaline Matter in the Urine. I must confess, indeed, I have repeated this Experiment a great many times on the Urine of other Persons in ardent Fevers, and never could observe the same Appearances; but, as I said before, since all the Vessels which received this Urine were very clean, and since the Heat was most extreme, as well as of very long Continuance, I am positively sure the Phænomena proceeded from an alcaline Disposition in the Urine.

Experiment VI.

On the twentieth Night this young Woman slept well. The next Morning I found her greatly refreshed, though not free from the Fever. All that Day, and the next, she continued mending; she spit much, had little breathing Sweats, and a Multitude of Contents in the Urine. All the Urine she made on the 21st and 22d Days, being mixed together, and shook, in order to disperse the Contents equally, I distilled eight Ounces, and obtained,

1. Lymph

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	Ounc.	Dr.	Gr.
1. Lymph	7	3	20
2. Volatile Salt		1	42
3. Oil		1	8
4. Cap. Mort. before Calcination			54
5. Cap. Mort. after Calcination			29
6. Fixed Salt			4

The critical Evacuations by Sweat, Urine, and Spit, continuing on the 23d and 24th Days, my Patient was paſt all Danger; ſhe ſlept quietly, and only complained of great Laſſitude and Faintneſs: But as the Urine on theſe two Days continued to be very turbid and thick, I was invited to purſue my Enquiry, and from eight Ounces procured,

	Ounc.	Dr.	Gr.
1. Lymph	7	4	5
2. Volatile Salt		1	15
3. Oil			56
4. Cap. Mort. before Calcination			58
5. Cap. Mort. after Calcination			26
6. Fixed Salt			3

The Oil and latter Part of the Phlegm, or Spirit, which came over in thit Proceſs, being left in the Recipient all Night, I found next Morning ſeveral large and beautiful Cryſtals ſhot from them, ſome of which were as large, and much reſembled the Cryſtal Stones uſed for Mourning Rings.

From theſe five laſt Experiments we may plainly obſerve, that the Urine became more and more impregnated with ſaline and ſulphureous Parts, in Proportion to the Abatement of the bad Symptoms; till at the Criſis it contained more than double the Quantity it did at firſt. Hence the ſeveral Organs of the Body were vaſtly relieved, their Tenſion was abated, the Blood grew polite and ſmooth, and the Coheſion between the ſeveral Orders of Blood Globules became leſs and leſs, by a conſtant Diminution of the Quantity of ſtrongly attracting, acrid, irritating, ſaline and ſulphureous Particles.

Experiment VIII.

A young Man on the ſixth Day of an acute Fever, made exceeding limpid, clear, and pale Urine, which was ſoon followed with a Phrenzy, Subſultus Tendinum, and other dangerous Symptoms. From eight Ounces of this Urine I obtained

	Ounc.	Dr.	Gr.
1. Lymph	7	5	48
2. Volatile Salt			12
3. Oil			19
4. Cap. Mort. before Calcination			44
5. Cap. Mort. after Calcination			23
6. Fixed Salt			2½

It is an old Obſervation, founded on Experience, that if the Urine changes ſuddenly from a deeper Colour to a crude Palenes, without a Sediment, towards the Height of a Fever, it is the Fore-runner of ſome fatal Metaſtaſis, as of Deliria, Convulſions, and the like. And here, in this Experiment, we have plain Demonſtration of the Cauſe of it; becauſe the animal Salts or Oils are not determined to the Bladder, along with the Urine, but are accumulated in the Blood and Lymph, and generate Obſtructions.

Experiment IX.

On the tenth Day the Urine of this young Man grew exceedingly turbid, with an even white Hypoſtaſis at the Bottom, and all the bad Symptoms vaniſhed. Eight Ounces of this Urine afforded,

	Ounc.	Dr.	Gr.
1. Lymph	7	3	33
2. Volatile Salt		1	45
3. Oil		1	6
4. Cap. Mort. before Calcination			48
5. Cap. Mort. after Calcination			22
6. Fixed Salt			6

Here again we have manifeſt Proof of what vaſt Advantage it is to the animal Oeconomy, to have the Salts and Oils properly attenuated, diluted, and drained off from the Blood, by the ſecerning Tubuli of the Kidneys.

Thus, in the moſt natural Way of analyſing the Urine, without Fermentation or Putrefaction, or without the Addition of any ſuſpicious Analyſer, we have ſeparated the ſeveral conſtitutive Parts of Urine; whereby we have evidently demonſtrated, that the Urine in Fevers abounds more with ſaline and ſulphureous Particles than it does in Health; and eſpecially towards the Criſis, when the Salts and Oils are ſufficiently attenuated, ground, and comminuted, it is loaded with a Multitude of Contents, which gives great Relief to the Sick: But when it is pellucid, pale and clear, and continues ſo for ſome Time, it is a very dangerous Phenomenon, and requires the utmoſt Skill and Diligence to remove it. I ſhall only add, that the fixed Salt in all theſe Experiments, appeared, by the ſtricteſt Trials with Oil of Vitriol, and a Solution of Silver, to be Sea-Salt.

RENOVATIO. Renovation, in Chemiſtry, is defined, the Reſtoration of a mineral Body to a perfect State, from one which is imperfect. It is alſo uſed, with reſpect to the Body, in the ſame Senſe.

RENUANS MUSCULUS. A Name for the *Rectus Anticus Brevis.*

RENUNCIATIO, Renunciation; that is the Report of a Phyſician or Surgeon to a Magiſtrate upon an Inqueſt, with reſpect to the Event of a Wound, or Poiſon, or relative to contagious Diſtempers.

REPANDATIO. The ſame as LORDOSIS.

REPELLENTIA. Repellent Medicines. See INFLAMMATIO.

REPERCUTIENTIA. The ſame as REPELLENTIA.

REPLETIO. Repletion, Satiety, or a *Plethora.*

REPOSITIO. The Reduction of a luxated, or fractur'd Limb.

REPRIMENTIA. Remedies which repel by their Aſtringency.

REPULSORIA. The ſame as REPELLENTIA.

REPURGATIO. The ſame as ANACATHARSIS.

RES NATURALES. The Naturals.

In every Perſon, ſays *Boerhaave*, however diſordered, Life, the Cauſe of Life, and its Effects, remain in ſome Degree. Theſe, ſays he, are called the Naturals, or Things according to Nature, and ſometimes ſimply Nature.

RES NON NATURALES. See CAUSA.

RES PRÆTER NATURAM. Diſeaſes, their Cauſes, and Symptoms, or Effects, are thus called by the Writers of Inſtitutes.

RESEDA.

The Characters are;

The Leaves are pinnated; it hath a polypetalous anomalous Flower, compoſed of ſeveral diſſimilar Petals, out of whoſe Cup ariſes the Pointal, which afterwards becomes a membranaceous Fruit, for the moſt Part three or four corner'd, oblong, and as it were cylindraceous, pregnant with roundiſh Seeds.

Boerhaave mentions ſix Species of this Plant; which are;

1. Reſeda; maxima. *C. B. P.* 100.

2. Reſeda; alba. *J. B.* 3. 467.

3. Reſeda; vulgaris. *C. B. P.* 100. *Raii Hiſt.* 2. 1053. *Synop.* 3. 366. *Tourn. Inſt.* 423. *Boerh. Ind. A.* 251. *Reſeda*, Offic. *Reſeda Plinii*, Ger. 226. Emac. 277. *Reſeda lutea*, J. B. 3. 467. *Reſeda minor ſeu vulgaris*, Park. Theat. 823. BASE ROCKET.

It grows in chalky Soils, and flowers in *June* and *July*. The Herb is ſaid to mitigate Pains, and diſcuſs Inflammations.

4. Reſeda; minor; vulgaris. *Tourn. Inſt.* 423. *Boerh. Ind. A.* 251. *Phyteuma, Offic.* J. B. 3. 386. Raii Hiſt. 2. 1054. *Reſedæ affinis Phyteuma dicta*, C. B. P. 100. *Reſedæ affinis Phyteuma Monſpelienſium dicta*, Park. Theat. 822. *Valeriana ſeptima*, Ger. 918. Emac. 1076. SMALL BASE ROCKET.

This grows about Montpelier, and flowers in the Summer. The Herb is ſaid to increaſe Venereal Inclinations.

5. Reſeda; minor; alba; foliis dentatis. *Barr. Ic.* 588.

6. Reſeda; minor; folio inferiori parum, ſuperiori magis inciſo; perennis. *Boerh. Ind. Alt. Plant. Vol.* I.

RESINA. Reſin. See CATHARTICA.

Reſins conſiſt of Oil and Acid, and accordingly are artificially produced by mixing Spirit of Vitriol with Spirit of Wine, or of Turpentine. They are either ſolid or liquid, but theſe differ from one another only in the Proportion of Earth that enters their Compoſition. *Geoffroy.*

METHOD OF PREPARING RESINS.

Let the Tinctures prepared with Alcohol from fat reſinous Vegetables, be firſt well clarified by ſtanding, then diſtilled in a Glaſs Body, with a gentle Fire, till only one Fourth remains behind: The Alcohol thus drawn off, is to be kept for the ſame Uſe again. Then pour the thicken'd Tincture into a low Glaſs, with the Mouth wide enough to admit the Hand; and let this Veſſel contain twelve Times the Quantity of fair Water, in Proportion to the thickened Tincture. The Mixture thus will inſtantly grow thick, white, and ſoon exhibit yellow Curds, which, fallen to the Bottom, conſtitute a groſs viſcous, unctuous, and ſomewhat tranſparent Matter; then ſet the Glaſs in a Sand Furnace, and draw off the remaining Alcohol by means of an Alembic, continuing the Operation

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Operations ſo long as the Veins in the Head ſhew any Spirit to riſe, and add this Spirit to the former. At the Bottom there will remain the Water, with the abovemention'd Matter below it. This Matter liquifies in hot Weather, but grows hard in the Cold. The Water being thrown away, tho' it ſtill retains ſome Odour or Taſte, tho' but little Virtue, let the reſinous Matter collect and unite into a Maſs at the Bottom. It will firſt be flexible, ſoft, and, when touch'd, ſtick incommodiouſly to the Fingers; but when waſhed for ſome Time in ſeveral Waters, it begins to cool and harden, and when dried, appears a hard, brittle, tranſparent Body, that will run with Heat, diſſolve in Oil and Alcohol, but not in Water, and burn in the Fire like Oil. This Matter is called by the Chymiſts Roſin; and requires to be kept in a cool dry Place, and in a cloſe dry Veſſel.

This Roſin may be thus prepared from almoſt any oily, ponderous, dry and reſinous Parts of Vegetables. Nature often produces the like from Vegetables, but no where more perfect than in the Camphire Tree, which yields a pure, white, tranſparent, highly odorous, volatile Roſin, tho' hard to grind: And next to this is Benjamin, which is alſo a pure volatile Roſin, copiouſly afforded by the Tree. But when pure Alcohol acts upon reſinous Plants, whilſt yet green and juicy, the Water abounding in theſe Juices mixes with the Alcohol, and dilutes it; whence it acts like common rectified Spirit, or rectified Spirit of Wine, in Proportion as the Plant contained more or leſs Water; and thus its Action becomes different.

REMARKS.

This Experiment, which is conſiderably general, ſhews the Nature of Roſin, which in the Plant ſeems to be a pure thin Oil. And hence Chymiſts are taught under what various phyſical Forms Oils may ſubſiſt, in reſpect of Heat and Cold; for the Roſin, which in a certain Degree of Cold is hard and brittle, ſoon reſolves by Heat into a pure fluid Oil. Some have ſuppoſed that Roſins are generated, whenever any ſtrong Acid is mixed with a clear Oil, upon obſerving that the ſtrong and fiery Spirits of Nitre and Vitriol turn with Oils into a pitchy Maſs, which, when farther perfected by the Fire, becomes a true Roſin; and therefore that the Sulphur thus produced is a true Roſin of the Earth. But there is Room to doubt whether the Coagulation of the Oil proceeds from the Acid, becauſe by the natural Converſion of Balſams into Roſins, the Acid is always more ſeparated from the Balſam, the more the Balſam, which was firſt liquid, grows thick and hard; and at laſt there is leſs Acid found in the Roſin, than in the more fluid Maſs; and even the Roſins, which are thus ſaid to be produced by a Mixture of Acid and Oil, yet always differ from thoſe prepared by Nature, or by the Means of Alcohol. Theſe Roſins ſoon diſſolve in Alcohol, but Sulphur never.

The Roſins, thus prepared, manifeſt their oily Nature by being totally inflammable, and ſeem to contain their former preſiding Spirit; for the Smell, Taſte, and particular Virtue of the Subject are always found in the Roſin, though this is to be underſtood only ſo far as they remained in the oily Part of the Plant. Hence theſe Virtues are long retained and preſerved for Years, in the viſcous Subſtance of the Roſin; whereas they would otherwiſe be ſoon loſt in the Plant itſelf. And hence it often happens, that the Roſins taken in the Body paſs through it undivided, by reaſon of their Tenacity, and without having their Spirits extricated to perform their proper Actions, as not meeting with the Bile, or other ſaponaceous Fluid, to diſſolve and open them; and this is frequently regretted by Phyſicians, while they direct theſe Roſins in Form of Pills, which may paſs the Body without being diſſolved, and without producing the deſired Effect. Theſe Roſins, alſo, generally have a manifeſt, ſharp, cauſtic, inflammatory, violent Virtue; ſo that if they ſtick to the Tongue, or the Jaws, they prove very troubleſome by their Acrimony; and this Effect they often have upon the Stomach and Inteſtines, and thus they may prove miſchievous, by ſtimulating and inflaming. And thus the Roſins of Coloquintida, Euphorbium, Hellebore, Jalap, Scammony, and the like, ſometimes occaſion violent and dangerous Purgings, that cannot eaſily be ſtopt. In order to prevent both theſe ill Effects, it has been found proper to grind them in a Glaſs Mortar, for a conſiderable Time, with an equal Quantity of dry Sugar; ſo as thus to prepare a fine Powder, which being afterwards mixed and taken in any Syrup, never paſſes the Stomach undiſſolved, nor ſticks in the Folds of the Inteſtines, but proves an excellent and expeditious Kind of Purge. So likewiſe, if mixed with a little Yolk of Egg, this will diſſolve their Tenacity, and promote and increaſe their Efficacy; and when thus treated, theſe Roſins will alſo prove purgative, which are obtained from Simples not purgative themſelves, as we ſee in the Roſin of Guaiacum.

Some of the greateſt Artiſts have obſerved, that the propet diſtilled aromatic Oils, abounding with their own Spirits, grow reſinous, as often as they are deprived thereof. And this is certainly found in ſome Oils; for if pure Oil of Cinnamon be diſſolved in Alcohol, and the Alcohol be with a gentle Fire drawn over from it by Diſtillation, it carries over the Spirit with it, and leaves the Oil behind deprived thereof and reſinous. But as the purging Virtues of certain Plants partly reſide in that reſinous Matter, which Alcohol extracts, and partly in another active Part of the Plant, which diſſolves in Water, as appears in Jalap; the Remainder of ſuch a Plant, after the pure Alcohol has extracted all the Reſin, will afford another Part by being boiled in Water. And if this Decoction be ſtrained, inſpiſſated with a gentle Fire to the Conſiſtence of an Extract, and afterwards mixed along with the Reſin diſſolved in the Yolk of an Egg, there will thus be obtained an excellent Compoſition, containing almoſt the whole medicinal Virtue in a little Compaſs.

RESINA JALAPII. See JALAPA.

RESINA SCAMMONII. See SCAMMONIUM.

RESINATUM VINUM. Wine impregnated with Reſin of the Pitch-Tree. It is mentioned by *Celſus*, L. 2. C. 24. as good for the Stomach. *Dioſcorides*, L. 2. C. 43. informs us it was generally made in *Galatia*, where the Wines were ſubject to grow ſower, without this Precaution, becauſe the Climate was too cold to ripen the Grapes.

RESINOCERUM. A Mixture of Reſin and Wax.

RESOLVENTIA. Reſolvent Medicines. See FIBRA and INFLAMMATIO.

RESOLUTIO. Reſolution. See FIBRA and INFLAMMATIO.

RESOLUTIVUS. Reſolutive, a modern Epithet for that Species of Fermentation, which tends to the Reſolution of Bodies. *Caſtellus* from *Stahl.*

RESONITUS. A Contraſiſſure. See CAPUT.

RESORBENTIA. The ſame as ABSORBENTIA.

RESPIRATIO. Reſpiration. See PULMONES.

What Reſpiration is, and why it is uninterruptedly carried on without the Concurrence of the Mind, will appear from what follows. Tho' no Action ſeems to be more frequent than Reſpiration, yet it is not to be underſtood without conſiderable Difficulty, not only becauſe it is partly vital and partly voluntary; but alſo becauſe an incredible Number of Organs are ſubſervient to it; for which Reaſon its Nature is carefully to be inveſtigated, which is moſt commodiouſly done by conſidering the Phenomena with which it is accompanied, and the Organs employed in carrying it on.

The Lungs ſuſpended in the Air, which every where acts upon them, and equally preſſes them, always collapſe, contract themſelves into a ſmaller Space, and become much leſs than when they remained in the entire Thorax, as is ſufficiently evinced by Anatomy: This is principally perform'd by the contractile Force of the muſcular Fibres, which connect the ſquamous Segments of the Bronchia.

If the Lungs thus contracted are filled with Air, forcibly blown through the Glottis, they are ſo diſtended as in Bulk not only to equal that which they had in the entire Thorax, but even much to exceed it, as is ſufficiently certain from Experience.

The ſame Thing happens, if when an Acceſs for the Air thro' the Glottis, is left to the Lungs, the Air externally acting on the Lungs is either removed, or its Preſſure diminiſh'd. This may be demonſtrated by Experiments made in the Air-Pump.

Hence 'tis obvious, that the Lungs by their proper Force have always a Tendency to become leſs in all their Parts, than they are when placed in the entire Thorax. For this reaſon 'tis certain, that they are in a continual State of Diſtraction, ſo long as a Perſon is alive, ſo that they muſt collapſe, and be diminiſhed, whilſt the whole of the Animal remains in a Vacuum, obtain'd by an Exhauſtion of the Air in an Air-Pump.

For there is nothing ſimilar to a circumambient Air between the external Membrane of the Lungs, and all the internal Surface of the Pleura, in a ſound Perſon; nothing therefore externally compreſſes the Lungs, except the Diaphragm. There is, however, always an internal Air contained in them, and freely conveyed to them through the Glottis. Hence the Lungs are always ſomewhat more diſtended by the internal Air, than they are compreſs'd by the external Air, the Acceſs of which is hindered by the Diaphragm, which is ſo connected with the Ribs and Vertebræ, that the Air cannot enter the Thorax in ſuch a manner as would be requiſite for an Equilibrium.

The Truth of this Doctrine, which in accounting for Reſpiration is of the laſt Importance, is evidently demonſtrated by Anatomy; by the Production and Growth not only of the Fœtus in the Uterus, but alſo of Infants brought into the World;

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World; by the Inflation of the Lungs, by Wounds penetrating into the Cavity of the Thorax, occasioning a Collapse of the Lungs, hindering their Dilatation, and inflicted sometimes on one and sometimes on another Side of the Thorax; but most of all by the celebrated Experiment of Mr. *Hook* upon live Dogs.

Since, therefore, in Inspiration, a greater Quantity of Air enters the Lungs through the Glottis, it will extend the Lungs more, and overcome their natural Force; so that in this Action the Lungs are passive, but how far they are active is only to be discover'd from certain Phenomena.

In vital Inspiration then, especially considered in a sleeping Person, first, the Ribs, especially the nine superior ones, articulated at the Vertebræ, and by Cartilages join'd to the Sternum, with their arched Part rise so to the Clavicles, that this Motion is principally observ'd in the Middle of the Arch. Whilst three or, perhaps, four of the inferior Ribs are turned downwards, backwards, and obliquely outwards; but in such a Manner that the seventh, eighth, ninth and tenth Ribs are by their cartilaginous Segments, as it were, drawn inwards. Secondly, the whole Abdomen, to the very End of Inspiration, is gradually rendered more tumid, and press'd outwards. Thirdly, at the same Time the Cavity of the Thorax is enlarged, as is obvious by measuring with a Cord, by viewing it with the Eye, and especially by a mechanical Consideration of the Figure, Situation, Connection, and Articulation of the Ribs here placed, according to the Rules of most perfect and consummate Art, as *Borelli* has excellently demonstrated.

But during this Action the Diaphragm is drawn downwards from the convex and sinuous Situation it was in before, and assumes a plainer Figure, as is obvious from dissecting live Animals, and from large abdominal Wounds inflicted on Man. But that this Change of Figure in the Diaphragm depends upon the Contraction of its muscular Fabric, is sufficiently obvious from an anatomical Consideration of it.

Since, therefore, in Inspiration no other Things happen, its Cause must be determined by these; namely, the above-describ'd Motions of the Ribs and Diaphragm: For which Reason, we must enquire into the Causes which produce these Motions.

The ten superior Ribs, being bonny, arched, incurvated, and more depressed and flat in the Middle than in their rising Extremities, are by two Apophyses fortified with a Cartilage, articulated, first, into the cartilaginous Pit of the Vertebræ, imprinted laterally and backwards on the united Bodies, or only in the Body of the first Vertebra; secondly, in the cartilaginous Sinus imprinted on the transverse Process of the Vertebræ. The seven superior Ribs are join'd to the Sternum, by the Interposition of an arch'd, cartilaginous, and pretty elastic Segment; which in the first Rib forms an acute Angle upwards, in the second Rib an Angle almost right, and in the other five Ribs an obtuse Angle with the Sternum. So that the Angle here form'd by the Cartilages of the Ribs, with the Sternum, is the more obtuse the more inferior the Rib is; or that Segment ascending enters the lateral Cavities of the Sternum so that the more superior the Rib is, the smaller the Angle of this Insertion is from the Concourse of the superior Part of the Sternum. But the sixth, seventh and eighth Ribs join their cartilaginous Arches, not only in their uniting Extremities, which reach to the lowest Part of the Sternum, but they also coalesce by mixing broad cartilaginous Processes with each other. The two and sometimes the three inferior Ribs being only furnish'd with one posterior Apophysis, are only articulated to one Sinus in the Body of its own particular Vertebra; and their Cartilages being almost only tendinous, they do not touch the Sternum, but are inserted in the Diaphragm and Cartilages of the next Ribs. So that they seem to be subservient to directing, equally sustaining, and performing the Motions of the Diaphragm, backwards and downwards.

The external intercostal Muscles, arising from the inferior Margin of the superior Rib, descend obliquely foreward, and are inserted in the superior Margin of the Rib next to it below, through all the bonny Circumference, between all the Ribs both true and spurious. But the internal intercostal Muscles, arising from the inferior Margin of the superior Rib at a Distance from the Sides of the Spine of the Thorax, and descending obliquely backwards, intersect the former, and are inserted in the superior Margin of the next Rib below, thro' all the bonny Circumference.

But the subclavian Muscle arises fleshy from half the inferior Part of the Clavicle, where the Spine is joined to the Scapula, and going on in a forward Direction, is inserted in the superior Margin of the first Rib near the Sternum.

If, therefore, all these Muscles are contracted at once, then the first Rib is sufficiently fixed by its own Articulation, whilst, by the Force of the Subclavian, the nine following Ribs are elevated and turn'd outwards, especially in the Middles of their Arches, yet so as to remain in an equable Parallelism, and depress the cartilaginous Segments. Thus the Cavity of the Thorax is remarkably increased.

The Diaphragm already described, when contracted, becomes plain, greatly dilates the Thorax, contracts the Abdomen, draws the anterior Cartilages of the spurious Ribs inwards towards the Vertebræ, draws the two inferior spurious Ribs downwards, and distends and overcomes the Force of the abdominal Muscles.

And these Muscles alone seem to perform vital Inspiration; the intercostal Muscles receiving Nerves from the dorsal Nerves, and the Diaphragm from the vertebral, diaphragmatic, and intercostal Nerves.

When, therefore, the Cavity of the Thorax is increased between the Pleura and Surface of the Lungs, nothing presses the Lungs; so that the Air which enters them through the Glottis, inflates them till they again are, or rather remain, contiguous to the Pleura and Diaphragm; and by this means produces all the Effects already mentioned.

Whilst the Parts remain in this Situation, the Air acts upon the Lungs with a Force equal to that with which the Thorax resists; so that the Lungs will remain in a State of Rest. Hence less Blood will pass through them, and a smaller Quantity of it be forc'd into the Left Ventricle of the Heart, and consequently less Blood will be convey'd to the Cerebellum and its Nerves. The arterial Blood will also act less on the intercostal Muscles and Diaphragm; so that the Causes dilating the Thorax are weaken'd. Hence the Elasticity of the cartilaginous Segments again depresses the Ribs, in which Work they are also assisted by the muscular Fibres, arising from the Side of the Sternum within the Thorax, and inserted into the bonny Extremities and Cartilages of the true Ribs. At the same Time the distracted Fibres of the Peritonæum and abdominal Muscles restore themselves. Hence the compressed Vescera thrust the relaxed Diaphragm upwards into the Thorax, which is by this Means contracted, and the Air expelled from the Lungs. By this Means Expiration and the Actions already mentioned are perform'd. But in a particular manner, by these two Actions the Blood is not only carried through the Lungs, but its Motion accelerated.

At the same Time the Blood being again accelerated, begins to flow more strongly and copiously to the Cerebellum and Muscles, so that the Causes contracting the intercostal Muscles and Diaphragm are renew'd, Inspiration is restor'd, and thus the genuine, present, and effectual Cause of this alternate vital Motion is assign'd.

But besides these Causes of Respiration, there are also others subservient to the Will, and applied to the Ribs for the violent Dilatation of the Breast, and its Contraction. Tho' the former are subservient to the other Functions, yet they also concur to this, since they are naturally form'd for it; for first, the first Scalenus arising fleshy from the anterior Part of the transverse Process of the second, third and fourth Vertebræ of the Neck, and descending obliquely forwards, is by its Tendon inserted in the first Rib. Then the other Scalenus, arising fleshy from the lateral Part of the transverse Process of the second, third and fourth Vertebræ of the Neck, and descending tendinous above the first, is inserted in the second or third Rib. Then the third Scalenus arising fleshy from the anterior lateral Part of the transverse Process of the second, third, fourth, fifth and sixth Vertebræ of the Neck, is inserted for the most Part into the first Rib; for by means of these Muscles the three superior Ribs are elevated, sustained and supported, lest the Action of the intercostal and other Muscles should be determin'd downwards in strong Inspiration. Nor is it any Objection, that by their Action the Neck is bended or turn'd about; because if they act at the same Time, and if the Neck is fixed by its erecting Muscles, which are the Spinalis Colli, the Transversalis Colli, the Interspinalis Colli, the Longissimus Dorsi, and the Semispinatus, acting at the same Time, and fixing the Neck; the Action of the Scalenus necessarily elevates the Ribs. But in very violent Respiration, 'tis certain that many such Things concur. Fourthly, the Serratus Anticus Minor arising fleshy from the Caracoid Process, descending obliquely forwards, becoming larger, and then smaller, is inserted fleshy in the anterior bonny Parts of the second, third, fourth, and fifth Ribs. Fifthly, the Serratus Anticus Major arising fleshy, large, and thick from the Basis of the Scapula, and descending obliquely forwards, is, as it were, by notch'd fleshy Portions, inserted into the eight superior Ribs; the two, three, four, or five inferior of which are indented with similar Portions of the Obliquus External Abdominalis. For if the Muscles of the Scapula, the Trapezius, the Rhomboides, and the Levator, fix the Scapula immoveable upwards and backwards; then the Action of both the Serrati strongly elevates the Ribs from the second to the eighth, which we observe to happen in the strongest Inspiration. Sixthly, in the posterior Part, the Serratus Posticus Superior,

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Superior, arising tendinous from the Spines of the two inferior Vertebræ of the Neck, and the three Superior of the Thorax, is by fleshy Denticulations inserted into the Curvature of the second, third and fourth Ribs, which it raises upwards. Seventhly, Respiration is also assisted by the Serratus Posticus Inferior, which arising from the Spines of the lumbar Vertebræ, and sometimes from some of the thorcaic Vertebræ, is with digitated Fibres inserted almost in the Middle Arch of the ninth, tenth, eleventh, and the Extremity of the twelfth Rib; for this Muscle, by the Descent of its Fibres, almost from the horrizontal ascendant Muscle, and by drawing these last Ribs outwards, downwards and backwards, enlarges the Thorax, and prevents its Coarctation by an Approach of these Ribs, in consequence of the Contraction of the Fibres of the Diaphragm.

But if the Action of the Musculus Obliquus exterior, and of the Musculus Rectus acting in Concert, depressing the Ribs, contracting the Thorax, and resisting the Serratus Inferior Anticus, as is obvious from their Connection, concurs with the Action of the Sacro-lumbaris, which is a highly compound Muscle, hardly capable of being distinctly describ'd. It consists of a Series of muscular fleshy Fibres, arising from the transverse Processes of the Lumbar Vertebræ, and their Spines, and such as ascend upwards, and are there join'd to the fleshy Musculi accessorii, which proceed from the Ribs: This Action, I say, strongly assists a violent Expiration, the Abdomen being at the same Time contracted by Means of the *Musculus Transversus*.

In Women the Sternum is more compress'd, the Clavicles more streight, the Thorax narrower, and its anterior Part flatter, and the Superior cartilaginous Segments sooner become bonny, than the inferior. Hence in Inspiration their Sternum is turn'd upwards and obliquely outwards, and the whole Thorax as it were rises. Hence also they respire most freely whilst their Abdomen is tumid.

'Tis certain that those Muscles which are subservient to Respiration, and at the same Time under the Influence of the Will, are far larger and stronger than those which necessarily perform vital Respiration. Hence it is, that the Force of the former is capable of augmenting, diminishing, and of totally stopping both Inspiration and Expiration.

Hence we may conceive, that there are not two Moments in the Life of Man immediately succeeding each other, in which the Pulmonary Vessels retain the same Figure, Largeness and Action.

As also, that here some Muscles have what we may call an Antagonism without an Antagonist-Muscle.

Hence also we understand the Antagonism between the Action of the Fluid which moves the Muscles, and the Resistance of the simple Elasticity in the Solids.

That in order to alternate Motions in Parts to act reciprocally, it is not necessary to suppose alternate Actions of the Humours, since it is sufficient that they act in either.

The Will is capable of stopping the Force and Cause of Respiration, tho' not of directly stopping the Force of the Heart; so that the Cause of Motion in the Heart, is stronger and more constant, and its Action more frequent: There is, however, a kind of Consent between the Pulsations of the Heart, and the Number of Respirations; tho' it is hard to account for such a Consent.

Hence we perceive the Necessity of reiterated Pulsations of the Heart, in order to the Repetition of Respiration. But how long these may stop, without destroying Life, is hard to determine.

Hence also we understand, why in an asthmatic Paroxysm, a Peripneumony, a Difficulty of Breathing, and in the Agonies of Death, Respiration is performed by the vital Muscles, whilst those under the Direction of the Will greatly contribute to it: So that the Neck, Scapulæ, Breast, inferior Ribs and Back, are evidently moved.

Why in perfect Health, when the Body is at Rest, and the Person awake, Respiration is so slow and still, that it is hardly perceptible, and at the same time the Circulation of the Humours brisk.

Why in Coughing and Sighing, the Respiration being accelerated, the Motion of the Blood through all the Vessels is increased.

Why the first Action of Respiration is Inspiration, and the last Expiration.

Why when in Diseases the Respiration ceases long, the various Sinuses, the Auricles, and the Heart itself, palpitate.

And why it is, that an Air which is highly heavy, light, moist, dry, hot, or cold, compressed or rarified; as also that which being pent up in a small Space, is not soon renewed, is absolutely unfit for performing Respiration, and continuing Life. *Boerhaave Institut.*

OF PROGNOSTICS FROM A GOOD AND BAD RESPIRATION.

That a free and regular Respiration, according to Nature, is always of great Moment towards predicting the Recovery of the Patient, is, I believe, universally acknowledged. *Hippocrates*, in his Book of *Prognostics*, tells us, "That a Facility of Respiration has a great Influence towards a Recovery "in all acute Diseases, which come to a Crisis in forty Days." And he had very good Grounds for so pronouncing, when, as *Galen* says in his Commentary on the Place, "A good Respiration shews that the Thorax, Heart, Lungs, Diaphragm, "Pleura, and, in short, all the Parts contributing to Respiration, are in a sound State; for it is impossible for any of "the Organs subservient to Respiration to be injured, and the "Patient at the same time to breathe in a free and natural "manner." And therefore the same Author, *Lib.* I. *de Crisi.* among other Signs, justly reckons a good Respiration But that we may with Certainty prognosticate a good Event, there are two other Signs to be also regarded, which are, a strong Pulse, and a right Disposition of the Sick, with respect to such Things as are offered for his Sustenance; for these three Signs observed at the same time, that is to say, a just and natural Respiration, a right Disposition of the Patient with regard to Meat and Drink, and a Pulse sufficiently strong, are Indications of great Importance toward prognosticating a good Issue to the Disease, as *Galen in* 3 *Epid.* observes; and they have frequently proved salutary Indications in those who have been regarded as dying Persons. A due Respiration, therefore, in all acute Diseases, is good, and the contrary bad, as it indicates an Indisposition of some Organ belonging to Respiration. This last Sign, however, is of itself no sufficient Indication of a fatal Event, but only in Conjunction with other mortal Prognostics; in which Circumstance, it is a most fatal Indication, when attended with an Abhorrence of Food, a very dry and parched Tongue, and yet no Thirst, Excrements of the worst kind, and a very weak and low Pulse; and the Physician may, in such a Case, confidently predict the Death of the Patient. A bad Respiration then is always a bad Sign, though it be not always mortal in acute Diseases; but it is always very bad, when attended with another very bad Sign, and much more so, if attended with many such Signs. Of such a Respiration *Hippocrates* speaks, 11 *Aphor.* 50. where he says, "In a Fever not intermittent, a Dyspnœa, attended "with a Delirium, is mortal."

If it be asked, what are these bad Respirations? we answer, they are the great rare Respiration, and the small frequent one, which, in dying Persons, *Hippocrates* usually calls βραχύπνοιαι, *Brachypnus*, [See BRACHYPNOEA.] a small, slender, weak, diminished Breathing. Those Respirations are also very bad, which are performed with a Sound of the Thorax, like that of Persons on the Point of Suffocation by Drowning, being obscure, stertorous, and interrupted. Of such we find *Hippocrates* speaking, 11 *Aphor.* 67. "In Fevers, says he, the Breath striking with a Noise in its Passage [τὸ πνεῦμα προσκόπτον, See PNEUMA] is bad; for it indicates a Convulsion." By this striking or impinging Breath, *Galen*, in his *Comment* on that *Aphorism*, understands one which is interrupted in the Middle, and stops. A sobbing kind of Respiration [κλαυθμώδεις ἀναπνοαὶ] is also very bad, as we are taught by *Hippocrates*, 6 *Aphor.* 54. But the worst of all Respiration, and such as is observed in dying Persons, are the cold, as when the Breath is expired cold from the Mouth and Nostrils. Next to these, are those we find mentioned, *Coac.* 260. with the Epithets, *extended*, *urgent*, and *obscure*, [ἐκτεῖνον, καὶ καταπεῖγον, καὶ ἀφανές] where they are pronounced very bad, and Signs of approaching Death. By the first of these, we are to understand the same with the *sublime* or *apparent*, [See PNEUMA.] in which the Breast, and sometimes the Scapulæ, are distended, and the Lobes, or Pinnæ, of the Nostrils, are moved; but what is inspired, is so little as to be scarce perceptible to Sense, and yet the Inspiration is very quick and frequent, on account of the extreme Urgency of the Heat, which gives Occasion for the two other Epithets of *obscure*, and *urgent*, or *hasty*. These are the several Kinds of bad Respiration; and we shall then treat of the Prognostics, which may be drawn from them separately.

A great and quick Respiration, tho' it indicates a Redundance of fuliginous Excrements in the Body, according to *Galen*, *de Difficult. Resp. Lib.* I. *Cap.* 20. yet it shews us, he says, the Soundness and Integrity of the Faculty; and that none of the Organs serving to Respiration is injured; for their Greatness, or Fulness, and Quickness of Respiration, is occasioned by the Necessities of Nature, when there is a Promptitude of the Organs, and an entire Soundness of the Faculty. A great or full Respiration, and at the same time slow, or at long

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long Intervals, shews a Delirium; and a small and quick Respiration indicates a Collection of suliginous Excrement, or a Pain in some Part which is moved by Respiration, or, as *Hippocrates* says, in his *Prognostics*, an Inflammation of the Parts above the Diaphragm. A small and slow Respiration, as *Galen* observes, in his *Comment* on the Case of *Pythion*, 3 *Epid. Sect.* 3. *Ægr.* 3. where there is no Collection of suliginous Excrement, indicates a Pain of some Organ subservient to Respiration, or else an Inflammation of some neighbouring Part. These two last Differences of Respiration, with bad Signs, are more to be dreaded than the two former, as they indicate a great Weakness or Decay of the Faculty, or at least a Pain in some Part which moves the Thorax. Upon the whole then, a great and quick Respiration is a Sign of much Heat, and a Redundance of suliginous Excrement, but attended with a Soundness and Strength of the Faculty. A great, and at the same time a slow Respiration, is better than the former, as it approaches nearer to a sound and healthy State, and is an Indication of the Soundness of the Faculty without much Heat, and without fumous Excrements. All these are to be regarded by the Physician, in Conjunction with other Signs and Prognostics, to be formed from them altogether. But we proceed to speak of Respirations which are both great and dense, and, on the contrary, of great and rare Respirations, the Knowledge of which will afford us many Prognostics, for predicting the Fate of the Patient.

A great, and at the same time dense Respiration, is, when Inspiration is great and full, and Expiration hot and fervent through the Mouth and Nostrils. And this happens, as we read in the *Prognostics*, from a Pain or Inflammation affecting some Organ subservient to Respiration, or a Part of the Thorax; for Instance, the Heart, Diaphragm, Lungs, Pleura, or Muscles of the Thorax; for if these Parts be pained or inflamed for Want of a due Dilatation, a Denseness of Respiration must of necessity be the Consequence: Such a Symptom, however, indicates a Strength of the Faculty, which gives great Hopes of a Recovery. A great and rare [ἀραιὸν, as when the Breath is long in drawing, in opposition to *dense*, πυκνὸν] Respiration in acute Fevers, indicates a Delirium, according to the *Prognostics*. But what are we to understand by a great Respiration? Is it where there is a great Dilatation of the Thorax? By no means; for in those who are affected with a Tumor, or a Straitness of the Organs of Respiration, without any flammeous Heat, there is a very great Dilatation of the Thorax, but Inspiration is but small; we say, therefore, that a great Respiration is so called on account of the great Quantity of inspired Air, and expired suliginous Particles; and this seems to be expresly the Sense of *Hippocrates*, in those Words, μέγα δ' ἀναπέμπων [πνεῦμα] which must be understood of the great Quantity of Breath in Respiration, and not of the Dilatation of the Thorax. To this it may be added, by way of Confirmation, that among the Differences of Respiration, what they call the sublime and apparent one, tho' attended with a very remarkable Dilatation of the Thorax, is yet but small and slender, as appears from *Galen*.

But why is a great and rare Spirit an Indication of a Delirium? *Galen*, *Lib.* 2. *de Difficult. Resp.* has demonstrated the Truth of this Observation at large; but then it does not follow, that all delirious Persons should breathe after this manner; for a Delirium may be attended with a Straitness of the Breast, or a Pain, or a Decay of Strength; all which occasion a small and rare Respiration. All, however, who labour under this Symptom of great and rare Respiration, are certainly delirious, as was particularly observed by *Hippocrates* of *Philiscus*, *Silenus*, the Wife of *Dromeades*, and others. As to Prognostics, from this kind of Respiration, they are always of Importance, because a Delirium is always bad, though not mortal, except when it is attended with other bad and mortal Signs, as it was in the Cases of *Philiscus*, *Silenus*, the Wife of *Dromeades*, and the phrenetic young Man of *Melibœa*. Of *Philiscus*, 1 *Epid. Ægr.* 1. it is said that his Breath was constantly ὥσπερ ἀναχαλώμενον, ἀραιὸν, μέγα, "as if it were "revoked inwards, rare, great, [See PNEUMA] his Spleen "was elevated into a round Tumor; he was always in a cold "Sweat, and he had Exacerbations on even Days." In this Sense, cold Sweats were one fatal concomitant Sign. *Silenus*, *Ægr.* 2. "had, from the Beginning to the End, a great and "rare Respiration, accompanied with a continual Palpitation "of the Hypochondrium," which at length proved mortal; for in the Beginning he made black Urine, which deposited a black Sediment, was delirious, and had pinguious Stools. On the sixth Day he sweated a little above his Heart, and his extreme Parts were cold and livid, with other Symptoms, which in Conjunction with his great and rare Respiration, were more than sufficient Indications, not so much of a Delirium, as of the Fatality of the Disease. Of the Wife of *Dromeades*, *Ægr.* 11. we read, "That on the sixth Day in the Morning, "she was seized with a Rigor, which was soon succeeded by "an universal Heat, then by a Sweat all over, and a Cold"ness of the Extremities, a Delirium, and a great and rare "Respiration; and a little after she was seized with Convul"sions, which began at the Head, and carried her off on a sud"den." The young Man of *Melibœa*, 3 *Epid. Ægr. ult.* "had a rare and great Respiration, and at long Intervals, "with a solstish Tension of the Hypochondrium, of an oblong "Figure, was continually molested with a Palpitation of the "Heart, and made Urine like Oil."

A small Respiration is what *Galen*, *Com.* 3. *in* 3 *Epid.* after *Hippocrates*, calls *slender* and *diminished*, [λεπτὸν καὶ μικρόν] and also *obscure*, because the Patient can hardly be perceived to breathe. Such a Respiration is always bad, as proceeding from Weakness, and a Decay of the natural Heat; and if this small Respiration be also frequent, it is an Indication, according to *Galen*, of a Pain or Inflammation in some Part above the Diaphragm. But the Author of the *Coac.* 260. says, that a frequent and small Respiration indicates a Pain or Inflammation in the principal Parts. Such a Respiration is very much to be dreaded in acute Diseases; and the more, if it be consequent upon a great Respiration; for it is an Indication either that Nature is very much sunk, as was before observed, or that some principal Part suffers under a Pain or Inflammation, or both together; nothing, however, can, with Certainty, be predicted from this Respiration alone, unless it be confirmed by other Signs; for many under acute Diseases, whose Respiration has been small and frequent, have recover'd. But when it is accompanied with other bad Signs, we have the greatest Reason to be apprehensive of the Event, and most when from frequent it becomes small, as is observed in the last Stage of a Consumption. A frequent, then, or quick, and at the same time a small Respiration, with bad Signs, is mortal, as it was in the Case of the Sister of *Temeneus*, 4 *Epid. T.* 28. who, on the sixteenth Day, was observed to have such a Respiration, and died soon after.

A small, and at the same time rare, or an unfrequent Respiration, is perhaps the worst of all, as it indicates that Nature is oppressed and exhausted to such a Degree, that it must of necessity sink under the Disease; for which Reason it is by Physicians justly called a cold Respiration, as being a Sign of an extreme Degree of Cold, or an Extinction of the natural Heat, agreeably to that of *Galen*, *Com.* 3. *in* 3 *Epid.* where he says there is a kind of small and rare or unfrequent Respiration, which, when cold, shews that the vital Faculty is extinguished. This is confirm'd by *Hippocrates* in his *Prognostics*, where a cold Expiration from the Nostrils is pronounced mortal in a high Degree, as it was for instance, in dying *Pythion*, 3 *Epid. Sect.* 3. *Ægr.* 3. and others observed by the same Author.

Having made these Remarks on Respirations, and what is indicated and portended by them, we shall proceed to examine in particular those Respirations which are observ'd in dying Persons, of which Nature are the cold, the sublime or apparent, the stertorous, or what is attended with Noise, and sometimes the sobbing and interrupted. Of a cold Respiration, which is the most mortal of all, and never observ'd but in those who are very near Death, *Hippocrates*, 6 *Epid. Sect.* 4. *Aph.* 27. thus speaks; "Among deadly Signs is to be reckon"ed a hot Vapour exhaling through the Skin and the Nostrils, "when a cold Expiration through the Nostrils has preceded "it." This is better expres'd by *Galen* in the following Words: "One of the most mortal Signs is a hot Vapour "proceeding from the Skin, after a cold Breath discharg'd "by Expiration; but the Exhalation of a hot Vapour thro' "the Skin and Nostrils, is not always a sufficient Warrant "for predicting Death; for, *as he says a little after*, such a "Symptom only happens to those who die of a very hot Fe"ver, which having torrefy'd the very Substance of the "Heart, ends at last in a Refrigeration of the same; the "vital Faculty then ceasing to act as the Heart dies. Some"times there is an Eruption of Sweat, as when the Body is "full of Humours; but when it has been before exhausted and "dried by the Heat of a violent Fever, a hot Vapour instead of "Sweat seems to exhale, and offer itself in a sensible manner "to the Touch." Hence in *Coac.* 160. "A febrile and suligi"nous Respiration is pronounced mortal, tho' in a less De"gree than the cold." Physicians, therefore, usually call these three Signs deadly, which are, a Burning Fever, a cold and rare Respiration, and a hot Vapour from the Skin, which we may sometimes call Sweat, or Moisture, and which in Fevers is a Forerunner of Death.

An obscure Respiration, also, as when the Patient can hardly be known to breathe, is no less mortal than a cold Respiration. An *obscure* Respiration is when hardly any Breath is discharg'd by the Mouth and Nostrils. In this Sense a Respiration may possibly be very obscure, and yet appear very manifest to all, as when the Thorax, Scapulæ, and Lobes of the

Nostrils

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Noſtrils are moved, which kind of Reſpiration Phyſicians properly call the *ſublime* and *apparent*, tho' a very ſmall Quantity of Breath be expired, on which Account it may be very obſcure. Of ſuch a Reſpiration we read, *Coac.* 260. where it is ſaid, " The worſt of all Reſpiration, and what ſhews " Death to be very near, is the extended, urgent, and ob- " ſcure."

We come next to treat of a ſtertorous Reſpiration, or ſuch as is perform'd with a Sound or Noiſe. A ſtertorous Reſpiration is when, in Breathing, there is perceived in the Throat a kind of Ebullition, or Noiſe, which we call a *Stertor*, or ſuch as Perſons make in Snoring. This Word is expreſs'd in *Latin* by the Words *Strepitus*, *Sonus*, and *Ebullitio*; and in *Hippocrates* by ῥόγχος (*Rhencos*,) ῥόγξις (*Rhenczis*) and ſometimes by κάρηνος (*Cerchnos*). In thoſe who die of acute Diſtempers this Fervor or rattling Noiſe in the Throat is generally heard for a little more than a Day before their Deceaſe, and indicates an Extinction of the Faculty, which is become too weak to expel the excrementious Particles from the Fauces. In others, who labour under Diſeaſes of the Thorax, as a Pleuriſy or Peripneumony, this Stertor is occaſioned by a Straitneſs, or a Retention of the Spit, attended with a ſmall Reſpiration, and oftentimes with an Orthopnœa, the moſt difficult of Reſpirations. In almoſt all dying Perſons this Fervour, or Stertor, is perceived a little before their End; but moſt of all in thoſe who die of Pleuriſies, Peripneumonies and Suppurations of the Lungs, who are every one affected with it, for which reaſon we muſt pronounce it a mortal Sign. But we are carefully to diſtinguiſh here with reſpect to the Time when this Stertor firſt comes upon the Patient, as whether it be in the Beginning, or Increaſe of the Diſeaſe; for if it is to be fatal, it never comes but after ſome other mortal Signs, as it did in the Caſe of the pleuretic Son of *Antiphanes*, 7 *Epid.* 28. and of *Menon*, another pleuretic Patient, 47. of whom *Hippocrates* ſays: " On the ſixteenth Day his Reſpiration was ſtertorous; he " had a Sweat about his Neck and Forehead, but ſeldom " about his Breaſt; his Forehead and extreme Parts were " perpetually cold in a moderate Degree. He had a conti- " nual Palpitation of the Veins about the Temples; and for " ſome Time before his Death, was affected with a Coma, " which held him Night and Day." A ſtertorous Reſpiration, therefore, in acute Diſeaſes, is generally pernicious; and when preceded by, or attended with other bad Signs, the moſt fatal of all Symptons, as it proved in the Caſe of *Menon* before-mention'd, who, among other bad Signs, had a Sweat about his Neck and Forehead, which *Hippocrates* in his *Prognoſtics* pronounces mortal in acute Diſeaſes, and a Coldneſs of the extreme Parts, one of the worſt of Symptoms. But in a Pleuriſy, or Peripneumony, and that they call a catarrhous Fever, becauſe conſequent or attendant upon a Catarrh, a Stertor is ſometimes occaſion'd by the Plenty of excrementitious Particles, or a Redundance of the Matter of the Catarrh falling down upon the Breaſt and Fauces, and is no more a mortal Sign, than it is in an Aſthma or Orthopnœa, where the Patients are frequently relieved by an Excretion or Reſolution of the Humour. But a mortal Stertor is diſtinguiſhed from another, in that it not only begins, but increaſes more and more with the Diſeaſe, and is ſtill more and more ſenſible; for ſuch a Stertor is mortal in the higheſt Degree, and is attended with all the mortal Signs: Whereas a Stertor, which begins with the Diſtemper, and in a little Time after, as the Diſeaſe increaſes, either through a plentiful Excretion of Humours by Means of a Cough, or the Conſumption of it by the igneous Heat of the Fever, leaves the Patient, is not ſo much to be dreaded, as occaſioned only by a Redundance of Humours, eſpecially if it ceaſes for ſome obvious Reaſon. But a Stertor, which tho' it be occaſion'd in the Beginning of a Diſeaſe by a copious Catarrh, yet every Day increaſes, muſt of Neceſſity be pernicious, becauſe it is a ſure Sign that Nature is ſo far burden'd and oppreſs'd with the Multitude of Humours, as to be rendered incapable of making the neceſſary Excretions, whence a Suffocation is to be apprehended. Thus it was with the Wife of *Polemarchus*, 5 *Epid.* 62. of whom it is ſaid, " That about the fifth Day ſhe had a painful Tumor of the " Left Knee, and ſomething ſeemed to be gather'd about the " Region of the Heart, and her Reſpiration was like that " of one on the Point of Suffocation by Submerſion, with " a rattling Noiſe in the Breaſt. On the ſeventh Day ſhe " died." The Son of *Antiphanes* alſo, 7 *Epid. T.* 28. who was affected with an Empyema, died with a Stertor upon him. To this we may add, that *Hippocrates*, 1 *Prorrhet.* 25. tells us, " That under an Aphony, or Loſs of Voice, a conſpicuous [πρόχειρος. See PNEUMA.] Reſpiration like that of Perſons ſuffocated, is pernicious." And ſo much for a ſtertorous Reſpiration, called alſo by ſome *Regmos* and *Cerchnos*.

We come now to conſider the ſublime or elevated, and apparent Reſpiration, which alſo is never obſerv'd but in dying Perſons. Some call this kind of Reſpiration *ſublime*, ſome *apparent*, ſome *conſpicuous*, [πρόχειρος, *promptum*, readily offering itſelf to View] and ſome erroneouſly a *great* Reſpiration, becauſe they obſerve the Thorax very much moved and dilated under it. Perſons under this Circumſtance, as *Galen Com. in* 1 *Prorrhet* ſays, may very properly be ſaid to be ſtrangled, becauſe they want Air. And it is cuſtomary with the ſame Author to call this kind of Reſpiration φαινόμενον (*Phænomenon*) " apparent." The Patient in this Caſe ſeems in drawing his Breath, to move his whole Scapulæ; ſo that their Motion appears conſpicuouſly through his Cloths, and the upper Parts of the Thorax ſeem to labour in the Work. For this reaſon *Galen* calls it, alſo, μετέωρον (*meteoron*) " ſublime," becauſe the Patient in ſuch a Caſe ſeems to move the higher and more elevated Parts of the Thorax. He gives us alſo the Cauſes of this kind of Reſpiration in what follows. " Such " a Reſpiration, he ſays, may be owing to a Straitneſs of " the Organs, or to ſome Diſorder in the Origin of the Nerves, " which latter *Hippocrates* juſtly thought might be the Cauſe " of a *great* Reſpiration, he had more properly ſaid not a " *great Reſpiration*, but a *great Dilatation of the Thorax*, by " which ſome being deceived, have erroneouſly called it a " *great Reſpiration*, tho' Expiration in this Caſe be but ſmall." We may add that *Galen* and *Hippocrates* beſtow the Epithet of *ſublime*, not only on this kind of Reſpiration juſt deſcrib'd, but on that alſo under which the Lobes of the Noſtrils and the Muſcles about the Scapulæ are viſibly moved, which latter Reſpiration happens in acute Diſeaſes from an extreme Weakneſs. *Galen*, *Com. in* 3 *Epid.* 24. ſpeaking on this Subject, ſays, " By thoſe who are ſaid to fetch their Breath " by the Extremity of the Noſe, [ἄκρῃ τῇ ῥινὶ] are meant thoſe " I ſuppoſe, who in Reſpiration move the Lobes of their No- " ſtrils, for we have ſeen many ſick Perſons breathe in ſuch " a manner as to contract thoſe Parts in Expiration, and di- " late them in Inſpiration." This is a uſual Symptom with thoſe who are ſuffocated by a Quinſey, Peripneumony, or Suppurations of the Lungs, as well as thoſe who are extremely weak and exhauſted, and proceeds from an Obſtruction of the Paſſage for the Breath by an Inflammation of the Aſpera Arteria, whence the Patient is under a Neceſſity of fetching his Breath ſhort, and with all his Thorax, and often ſtrives to raiſe himſelf up when juſt ſuffocated, and attracts the external Air with all the Remainder of his Strength, and with his whole Thorax; and perhaps this Sort of Reſpiration was by *Hippocrates* called *ſublime*, or elevated (μετέωρον) becauſe the Patients in ſuch a Circumſtance ſtrive to raiſe themſelves. This *ſublime* Reſpiration, then, is uſual in Perſons labouring under a Quinſey, Peripneumony and Empyema, and for the Reaſons aſſigned.

In other acute Diſeaſes, under which the Patients are not ſuffocated by the Straitneſs of the Organs, this Reſpiration by the Extremity of the Noſe has another Cauſe, of which *Galen*, *de Diffic. Reſp. Lib.* 1. *Cap.* 23. gives the following Account. " If any one would have the proper Signs of a Diſ- " order in the Faculty of Reſpiration, or of any Animal Fa- " culty in general, and eſpecially when under a Perfrigera- " tion, he will have for thoſe Signs the Motion of the Lobes " of the Noſtrils, the Action of all the Muſcles about the " Scapulæ, and the precipitate Collapſion of the Thorax; " for when the Faculty by which Reſpiration is perform'd, " moves with leſs Vigour than it ought, it is aſſiſted in In- " ſpiration by the Lobes of the Noſtrils, which alſo help to- " wards attracting the external Air, after the ſame manner as " when we would draw in any Thing by the Mouth, we " contract the Lips; and thus again in Expiration there is a " precipitate Collapſion, and not a gradual Demiſion of the " Thorax." In ſhort, then we may conclude from what has been ſaid, that what we call a *ſublime Reſpiration*, however occaſioned, is always mortal, as indicating an extreme Straitneſs of the Organs of Reſpiration, by which Nature is in imminent Danger of Suffocation; or elſe an utter Decay of Strength, and Extinction of the natural Faculties, for which Reaſon it is never obſerv'd but in dying Perſons. It is, alſo, never without ſome other precedent, attendant, or ſubſequent mortal Symptoms, for this kind of Reſpiration never appears without ſome other deadly Sign; whence it is ſaid by the Author of the *Coac.* 260. that " The worſt Kind of Reſpira- " tion, and what ſhews Death to be juſt at hand, is the ex- " tended, urgent and obſcure." We obſerved that tho' this Sign alone was a ſure Prognoſtic of Death, yet it was always attended with other deadly Signs; as it was, for inſtance, in the Wife of *Olympiades*, 7 *Epid.* 49. of whom it is ſaid, " That her Eyes were caſt down, and that ſhe drew her " Breath in the ſublime Manner through her Noſtrils; that " ſhe was ill-coloured; and juſt before ſhe died, had a Sweat " about her Feet and Legs." Such, alſo, was the Caſe of dying *Ariſtocrates*, 52. of whom *Hippocrates* ſays, " That to- " wards Night his Reſpiration was ſublime, that he had a " ſmall Sweat about his Forehead, his lower Parts were cold, " and he was reſtleſs."

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To the other mortal Kinds of Reſpiration, we add the ſobbing, [κλαυθμώδης] but ſmall and rare Reſpiration, agreeably to the Judgment of *Hippocrates*, 6 *Aph.* 54. "In acute Diſeaſes attended with a Fever, a ſobbing Reſpiration is bad." An interrupted Reſpiration is no leſs pernicious, but this perhaps is the ſame with the former, which Opinion ſeems to be favour'd by *Galen* in his *Comment* on the before-cited *Aphoriſm*, where he ſays that "Children when they cry ſeem to draw "in their Breath for a-while, then to have their Inſpiration "interrupted, their Thorax ſtanding the mean time un-"mov'd, and afterwards to draw in a freſh Supply of Breath "to what was wanting;——this is occaſioned ſometimes "from a Wearineſs of the Faculty, ſometimes from a Hard-"neſs of the Organs, and ſometimes from both Cauſes in "Conjunction. It may proceed, alſo, from a convulſive "Diſpoſition of the Muſcles of the Breaſt." But whatever be the Cauſe, this ſobbing and interrupted Reſpiration in acute Diſeaſes is bad; and if the Strength of the Patient happens at the ſame time to be very much exhauſted, pernicious in the higheſt Degree. Such a Reſpiration is alſo but ſmall and ſlender, and in acute burning Fevers indicates a Hardneſs and convulſive Diſpoſition, and is always bad, as well as Convulſions from the ſame Cauſe, which is a Dryneſs of the nervous Parts. Of this Kind of Reſpiration it is, alſo, that *Hippocrates* ſpeaks, *Aph.* 67. where he ſays, "That an im-"pinging or colliding, [περισκύπλον, which *Galen* explains by "*interrupted*] Reſpiration is bad; for it indicates Convul-"ſions." And Convulſions excited by Dryneſs in very hot Diſeaſes are incurable, and conſequently in acute Diſorders mortal. But that we may rightly form our Prognoſtics concerning the Event of a Diſeaſe, from ſuch Convulſions, we are to conſider the Signs which precede, accompany or ſucceed them; and if none of theſe Signs are bad, we are to ſuſpend our Judgment of the Fate of the Patient. *Proſper Alpinus de Præſag. Vit. et Mort.* p. 252.

RESSELLA. An obſcure Term in *Paracelſus*, which he explains no farther than by telling us, that *Reſella* is what removes Heat, and *Aſſa* what promotes it.

RESTA BOVIS. Reſt-Harrow. See ANONIS.

RESTINCTIO. *Rulandus* defines Chymical Reſtinction, A Gradation by which Subſtances heated red hot, are extinguiſhed in an exalting Liquor, and thus brought to their greateſt Perfection.

RESTITUTIO, Reſtitution, in Surgery, is the Reduction of a luxated or fractur'd Limb.

RESTORATIO. The ſame as ANALEPSIS.

RESUMPTIVA. Reſtoratives.

RESUSCITATIO. Reſuſcitation, in Chemiſtry, is the Reſtoration of any diſguiſed Body to its original Form.

RETE MIRABILE. A Congeries of Blood Veſſels in the Brain is thus called. See CEREBRUM.

RETENTA. Things retain'd in the Body; or which ought to be retain'd in a State of Health.

RETEPORA. A Name for the *Eſchara Rondeletii*.

RETICULARIS, or RETIFORMIS. Reticular, or like a Net.

RETICULUM. The ſecond Ventricle of a ruminating Animal.

RETINA. The Expanſion of the Optic Nerves on the internal Surface of the Eye, is thus called. See OCULUS.

The *Retina* is liable to two Sorts of Diſeaſes; the firſt is a Separation of ſome Parts of this Membrane from the Choroides. At the Place where this Separation is made, there follows an Elevation or Fold, which ſtops the Light, and hinders its Paſſage to that Part of the Choroides, which is cover'd by this Fold; this occaſions a ſort of a Shade, which the Patients ſee in the Air. The ſecond Diſeaſe of the *Retina* is an Atrophy or Waſting of that Membrane.

The Cauſe of the firſt Diſeaſe may, with a great Shew of Reaſon, be thus accounted for, that the Blood Veſſels of the *Retina* become varicous; for it is eaſily conceived, that the Dilatation of theſe Veſſels may ſeparate the *Retina* from the Choroides, in that Part which anſwers the dilated Veſſels. I have always obſerved this Diſeaſe to proceed from a Cold in the Head, after ſome violent Exerciſe, or whatever elſe may have put the Blood into a violent Motion. Hence I infer, that the external Cold, by obſtructing the Pores of the Skin, has ſtopt the Perſpiration of ſome Part of the Humours rarefied in the Blood Veſſels, on the Surface of the *Retina*, which, from the Fineneſs of its Texture, is damaged by this Infarction, after the above-mention'd manner. I call this Diſeaſe a Separation of the *Retina* from the Choroides. As this Membrane fills a conſiderable Space in the Eye, this Separation is often made in ſeveral Places; ſo that the Signs of this Diſeaſe anſwer to the Number of the Parts ſeparated.

Its Signs are certain Appearances in the Air, more or leſs diſtant from the Patient's Eyes. They are a kind of Shadows of different Figures, modified according to the Size and Form of the Parts of the *Retina*, which is ſeparated.

As to the Prognoſtic, there is no Danger of loſing the Sight in this Diſeaſe; it is only troubleſome to the Patient. As this Diſeaſe begins with the ſame Signs as a Cataract, one Diſorder may be taken for the other; but to prevent the like Miſtake, we ſhall propoſe the Difference. In a Cataract the Sight ſhortens and decreaſes daily; whereas, in the preſent Diſeaſe, the Sight continues the ſame both in Quickneſs and Extent.

Though Remedies do not perfectly cure this Diſeaſe, and that the Perſons once attack'd with it ſee ſome of theſe Shades all their Life their Number and Compaſs, in Breadth may be ſtill be leſſened. The following Remedies are of Service; ſuch are Broths made of Crabs, repeated Purges, Eye-Bright Tea drunk in the Morning, Powder of Vipers, Wood-Lice, and Eye-Bright mixed together.

In an Atrophy of the *Retina*, as the Rays of Light are not ſufficiently modified in that Membrane, they make too vivid an Impreſſion on the Choroides, which is very detrimental to it. Hence enſues a confuſed Viſion; ſo that the Patients, at the firſt Look, can ſee very well; but if they continue to read any time, or to look at any ſhining Object, they feel a ſudden Wearineſs in their Head, and a Dimneſs in their Sight, which obliges them to cloſe their Eyes; then opening them a Moment after they ſee, as at the firſt Look, but for a ſhort Time.

Embroiderers, Stocking-Weavers and Shoemakers are ſubject to this Diſeaſe; the firſt becauſe the Brightneſs of the Gold, Silver, and other Colours, damages the Sight by the lively Impreſſion it makes on the Eye; and the Shoemakers, in order to find the Hole made by their Awl, to run the End through it, by this continual Attention fatigue and weaken their Sight ſo much that they are obliged to quit their Trade. Theſe People can work but a few Days in the Week.

There are ſome People, though they do not work as theſe Handicrafts, cannot, however, make uſe of their Sight a Quarter of an Hour, but their Head is diſordered; of thoſe I chiefly treat.

No Remedies cure this Diſeaſe. Nothing avails, but reſt and little Exerciſe of the Sight. All thoſe Perſons who are employed at fine or ſhining Work, if they have a mind to continue, muſt make uſe of green Spectacles.

RETINACULUM. A Chirurgical Inſtrument, uſed in Caſtration, and the Operation for a *Hernia*, in order to prevent the Inteſtines from falling into the *Scrotum*.

RETORTA. A Retort; a chymical Veſſel with a large Belly, and crooked Neck, reſembling a Horn; for which reaſon the *French* call it *Cornüe*.

RETRACTIO. The ſame as ANTIPASIS.

RETRAHENS AURICULAM. The Name of a Muſcle called alſo *Triceps Auris*, becauſe it has ſometimes three Beginnings. M. *Du Verney* ſays it is compoſed of five or ſix fleſhy Fibres, which have their Origination from the ſuperior and Fore-part of the *Apophyſis Maſtoides*, and deſcend obliquely to their Inſertion in the Middle of the *Concha Auriculæ*. *Cowper*.

RETRANSMUTATIO. When a Subſtance originally in a fluid, but afterwards in a ſolid State, is again reduced to a Fluid, this is called, by *Paracelſus*, a Retranſmutation.

RETRIMENTUM. An Excrement, or Recriment of Metals, or any other Subſtance.

RETROCESSIO. The ſame as EPANACLESIS.

REVERBERATIO. The Calcination of a Body in a Reverberatory Heat.

REVERBERATORIUM, or REVERBERIUM. A Reverberatory. See IGNIS.

REVERSIO. A Relapſe.

REVIVIFICATIO. Revivification. The ſame in Chemiſtry as RESUSCITATIO.

REVIVISCENTIA. The ſame as REVIVIFICATIO.

REVOCATIO. The ſame as EPANACLESIS.

REVULSIO. Revulſion. See INFLAMMATIO, and PHLEBOTOMIA.

REX. A King. The Invention of ſeveral Branches of Phyſic is aſcribed to Kings and Heroes, ſome of which in ancient Times were very ſkilful in this Science. I don't know that this Word relates farther to Medicine, unleſs the Royal Touch could be thought medicinal; in which there is nothing ſo wonderful, as that a Man of the celebrated *Wiſeman's* Underſtanding, ſhould treat it as a Reality.

RHA. See CENTAURIUM.

RHABARBARUM. Offic. J. B. 11, 989, 1075. Ger. C. B. 316. Ogilb. Chin. 1. 212. *Rhabarbarum Officinarum*, Theat. P. 116. *Rhabarbarum genuinum Officinarum*, Park. Rhabarbarum 156. *Rhabarbarum ſiccatum*, Ger. Emac. 393. *Rhabarbarum lanuginoſum, ſive Lapathum Chinenſe longifolium*, Munt. Herb. Brit. 196. Raii Hiſt. 1077. *Rhabarbarum, ſive Rheum. Officinarum*, Geoff. Tract. 296. TRUE RHUBARB.

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We do not certainly know the Plant of which Rhubarb is the Root; it is probably a Species of *Lapathum*, called by *Herman*, *Lapathum Sinense*. It is brought from *China*, but *Munting'ius* pretends that he cultivated it in *Holland*, in his Book *De Vera Herba Britannica*.

It is one of the beſt and mildeſt Catharticks in the whole *Materia Medica*; it operates very well on the Bile, and on all the Viſcera of the Abdomen, and at the ſame time ſtrengthens the nervous Fibres. On theſe Accounts, it is proper in weak Stomachs and Inteſtines. It is given in Subſtance from twelve Grains to half a Dram; and in Infuſion, from half a Dram to a Dram and a half; and in a ſmall Doſe, it becomes an excellent Alterative. It purges the Bile very effectually, and has a greater Force than any other Purgative, in opening Obſtructions of the Liver. It is found by certain Experience, to evacuate the Bile, preferably to any other Fluid. On this account, it is the Panacea of Children; and alſo becauſe it ſtrengthens the Stomach, and carries off all ſorts of Matter that ſtagnate therein. It is a very good Remedy for Worms, and is given to Children ſubject to chronical Diſeaſes, in a Ptiſan, called Rhubarb-Water. The Uſe of Rhubarb is, however, dangerous, when the Kidneys or Bladder are ſuſpected to be inflamed, becauſe it heats conſiderably; and for this Reaſon it is improper in Hæmorrhages. It is very good in a Looſeneſs, becauſes it purges and ſtrengthens at the ſame time. In Cachexies, it ought to be given in ſmall Quantities for a conſiderable time. *Geoffroy.*

There are two Sorts of *Rhabarbarum* ſold; an Oriental, imported from *China*; and this is ponderous, diſtinguiſhed by gold-coloured and red Veins, bitteriſh and aſtringent, ſweet-ſcented, rather of a yellow Colour; and being moiſtned, ſtains the Hand with a Colour like that of Saffron; and is much eſteemed for its Virtues. The other Sort comes from *Ruſſia*, and is ponderous, and of a darker Yellow, and leſs valued than the other.

Rhubarb is a mild and gentle Purger of yellow Bile, and viſcous and tartareous Phlegm from the Stomach and firſt Region. It is a Specific for the Liver cures a Jaundice, and for its aſtringent Quality is commended beyond other Medicines, for all Diſorders proceeding from Relaxation, as a Diarrhæa, Dyſentery, and the like.

This Root was unknown to *Dioſcorides* and *Galen*; and therefore ſome are very erroneous, in confounding the *Rha*, or *Rheum*, of the Ancients, with our Rhubarb; for the *Rheum* of *Dioſcorides* has leſs of a cathartic Quality, and wants the Characters of the true Rhubarb, which is a compact Subſtance, ponderous and dry, of a bitter Taſte and acrid Smell, of a reddiſh Colour on the Outſide, and of a light Red inclining to Yellow within, with ſome Veins of a deeper Colour, and being macerated or chew'd, dyes of a Saffron-Colour. *Rapontic*, on the contrary, is not of a cloſe but thin Subſtance, and not ponderous but light, and wants the ſweet Scent of Rhubarb. *Dale*, from *Le Brun.*

A Decoction of the Leaves very gently evacuates the Belly, reſiſts the Scurvy, and ſtrengthens the ſolid Parts. Some old Perſons ſay, that the Root of this Plant is the only Cathartic which ought to be given in Diſeaſes; and one of eighty Years in particular tells us, that he was deceived in all other Medicines but Rhubarb. Some aſſert it to be effectual for correcting a vitiated Bile, and for removing chronic Diſorders which owe their Riſe thereto. The Root conſiſts of ſubtile Parts, whence it penetrates through the thinner Parts of the Blood, and tinges the Blood with the Colour of Saffron; for if you take ten Grains of it in the Morning, it will communicate its Saffron-like Colour and Smell to the Urine, which proves it to be of very tenacious Parts with reſpect to Colour. Hence it becomes effectual for depurating the Blood from thinner Impurities, for cleanſing the Kidneys from Sand and Gravel, and for reſolving lubricous, grumous, and pituitous Matter. It is an excellent Remedy in all Extravaſations and Stagnations of Blood; and it is ſaid to be of extraordinary Efficacy in the Stone, Jaundice, Dropſy, and other Affections of the Liver, proceeding from a vitiated Bile. It is commended alſo againſt Inflammations, Weakneſs of the Stomach, and all Pains incident to it; for Convulſions, for Diſorders of the Spleen, Liver and Kidneys; for racking Pains of the Bladder, and Diſorders of the Thorax; for Diſtenſions of the Hypochondria, Affections of the Uterus, and the Sciatica; for ſpitting of Blood, attended with Difficulty; for the Hiccups, Dyſentery, Cæliac Paſſion; to prevent the Return of the Fits in Fevers, and for the Bites of venomous Animals; outwardly applied with Vinegar, it removes the livid Marks of Blows, and the Impetigo. The Root is a very good Remedy in Contuſions; cleanſes the firſt Paſſages, ſtrengthens the Inteſtines after purging, and is an admirable Cathartic for Infants whoſe Fibres are too lax. It deſerves all the high Commendations beſtowed on it for the Dyſentery, Diarrhæa, and all Diſeaſes proceeding from a ſchirrous and cancerous Matter, being exhibited to the Quantity of two Scruples. Ten Grains given every Morning, ſo as to be juſt enough to purge, is the beſt of Deobſtruents in inveterate, hypochondriacal and ſcorbutic Diſeaſes, and reſtores the Strength of the Viſcera, and the obſtructed Fibres. The Virtue of the Root conſiſts in the Mixture of a ſubtile and acrimonious Salt, with mucilaginous and earthy Particles; thoſe ſaline and acrimonious Particles, in proportion as they are more or leſs diſengaged from the Mixture of mucilaginous and earthy Particles, in which they ſtuck and were intangeld, the more or leſs they exert of their ſtimulating Force. Sometimes they excite ſo great a Commotion, as to preſs upon the Liver itſelf, and eſpecially the Gall-Bladder, whence may follow a double Excretion of Bile; which proves the Root of extraordinary Efficacy in the Jaundice, as was before obſerved. Its cathartic Virtue conſiſts in its Salt, and not at all in its Reſin or oleous Particles, as appears from its Tincture, which is extracted with Water. Now it is clearly demonſtrated from Chymiſtry, that Water can never reſolve reſinous nor oleous Subſtances; and beſides, the Tincture extracted by Spirit of Wine is not ſo potent a Cathartic as what is extracted with Water; nay the Water itſelf, after Mixture, does not become milky, as it happens in all other Tinctures, which are extracted from oily and reſinous Subſtances; and it is further to be obſerved, that theſe ſaline Particles may be ſo diſſipated or diſſolved by the Quantity of Liquids, as to be incapable of exerting their Force. The Root when dried up with Age, loſes its Acrimony, and all its cathartic Virtue; as it does, alſo, in Boiling. The Smell of it in ſome provokes to Stool. It is of Service in a Gonorrhæa, by allaying the Heat of Urine, expelling the Malignity, and ſtopping the Flux. It is uſually preſcribed in Subſtance from half a Dram to two Drams; the Doſe of the Extract is two Drams, of the Tincture one Dram. The Root roaſted or dried is aſtringent, and as effectual in a Dyſentery as Terra Sigillata; and being mixed with Nutmeg and Laudanum, proves an excellent Remedy for an immoderate Flux of the Belly, its aſtringent Virtue diffuſing itſelf into all Parts. *Pechlius* employed it for Hæmorrhages of the Noſe, and ſuch like Caſes. The Root is ſometimes hurtful in a Vertigo; it deſtroys Worms, and is an Ingredient in many officinal Compoſitions. *Hiſt. Plant. aſcript. Boerhaave.*

Alexander Trallianus, in the Opinion of Dr. *Friend*, was the firſt Phyſician that mentioned Rhubarb, who recommends it in a Weakneſs of the Liver, and a Dyſentery, tho' Mr. *le Clerc* tells us, that the *Arabians*, indeed, in tranſlating *Dioſcorides* and the *Greek* Phyſicians, confound this Root with the *Rhaponticum*, and aſcribe the Virtues, which the Ancients have obſerved in this latter, to what is properly the *Rhabarbarum*; as may be evident to any who will look into the Deſcription, which *Rhazes* gives of it. And I believe *Alexander* himſelf, tho' 'tis plain Rhubarb was known in his Time, was in the ſame Miſtake; for he mentions it only as an Aſtringent, as the elder *Greeks* deſcribe the *Rhaponticum*, without the leaſt Hint of its purging Virtue. *Paulus* ſeems to be the firſt who takes any Notice of the purging Faculty in the *Rheum*, (he calls it ſimply ſo) and tells us, how we may make ſome laxative Medicines ſtronger, by the Addition of this. And *P. Alpinus* ſays, that ſome have obſerved, that even the *Rhaponticum* would ſometimes purge, tho' in a leſs Degree than Rhubarb. The modern *Greeks* gave this Root the Name of *Barbaricum*, not from the Place of its Growth, but from the Place it was imported to; for the Country in the *Upper Æthiopia* was called *Barbaria*, as *Salmaſius* well obſerves, from its lying upon the *Sinus Barbaricus*, in which were many great Emporiums, particularly *Rhapta*, the Metropolis of this Region. This Gulf, upon the Eaſt, joins with the *Indian* Ocean; and therefore *Actuarius*, and after him *Myrepſus*, calls this Plant Ῥῆον Ἰνδικὸν. No doubt, in thoſe times it was imported this way to *Alexandria*, and ſo might be known to theſe latter *Greek* Phyſicians. However, I muſt obſerve, that *Salmaſius* does not take notice of *Alexander*'s mentioning Rhubarb; but quotes *Paulus* for it, who does not mention it, but only in general ſpeaks of, and deſcribes the *Rha*. *Garcias ab Horto*, Phyſician to the *Spaniſh* Viceroy, tells us, he had learnt in *India*, that all the Rhubarb which was imported thither, and into *Perſia*, grew in *China*; that it was brought thither by Sea and Land; but that the latter way of bringing it over *Tartary* to *Ormuz*, was much the beſt; for by Sea-Carriage, 'twas more ſubject to rot. *Freind's Hiſtory of Phyſic.*

RHABDOIDES. Ῥαβδοειδὴς. A Name for the Sagittal Suture.

RHACHIA, or RECHIA. Ῥαχία, or Ῥαχη. An Overflowing or Redundance of Humours. *Galen. Exegeſ.*

RHACHIS. Ῥαχις. The Spine of the Back.

RHACHISAGRA, from Ῥαχις. The Spine of the Back, and ἄγρα, a Prey. A Species of Gout fixed upon the Spine of the Back.

RHACHITÆ, or RHACHIÆI. Ῥαχιται, or Ῥαχιαῖοι. The Muſcles belonging to the Spine of the Back.

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RHACOS. Ῥάκος, from ῥήσσω, to break or tear. A Rag uſed by Surgeons in dreſſing Wounds.

RHACOSIS, Ῥάκωσις, is a Relaxation of the Skin of the Scrotum without that of the contained Bodies, being an Affection very indecent to the Sight.

The Method of Cure uſed by *Leonides*, was to lay the Patient upon his Back, and to cut off the ſuperfluous Skin againſt a Board, or a Piece of hard Leather, after which he ſewed up the Wound. But *Antyllus* uſed to take up the ſuperfluous Skin with three or four Stitches of a Needle, and then with a Knife or ſharp Pair of Sciſſars, cut off what was without the Stitches; then ſecuring the Place with a Suture, he cured it as he did other bleeding Wounds. *P. Æginet. Lib.* 6. *Cap.* 67.

RHÆBOS. RHÆBOIDES. Ῥαιβός, Ῥαιβοειδής. Incurvated, or intorted. *Hippocrates.*

RHAGADES. Fiſſures, or Chaps.

RHAGADIÆ. Apoſtemations of the *Pudenda*. *Rulandus.* Or Abſceſſes of the Knees. *Paracelſus.*

RHAGADIOLUS.

The Characters are;

The Calyx conſiſts of narrow-channel'd Leaves, which, after the Flower is fallen off, become membranaceous Vaginæ or Sheaths, each containing a ſingle Seed.

Boerhaave mentions two Sorts of *Rhagadiolus*, which are,

1. Rhagadiolus; alter. *Cæſalp.* 511. *Hieraceum Stellatum.* J. B. 2. 1014. Raii Meth. 31. *Intybus, ſive Endivia lutea; humilis, ſtellato ſemine.* M. H. 3. 53.

2. Rhagadiolus; Lampſanæ foliis. *T. C.* 36. *Boerh. Ind. Alt. Plant.* Vol. I. p. 92.

It has its Name, perhaps, from the *Rhagades* or Fiſſures of the Anus, Uterus, and Hands, which it is ſaid to cure. *C. Bauhine* gives it the Name of *Hieracium Feliatura Siliquoſa. Hiſt. Plant. aſcript. Boerhaave.*

RHAGADIOLUS, is alſo a Name for the *Hedypnoſis*; *Annua.*

RHAGE. Ῥαγή. A Fiſſure, or Chap.

RHAGES. Ῥάγες. The Stones of Grapes; but the Extremities, or Pulp of the Fingers, are called by this Name. *Caſtellus.*

RHAGIUM. The Name of a venemous Inſect, mentioned by *Ætius*, *Tetrabib.* 4. *Serm.* 1. C. 18.

RHAGOIDES. An Epithet for the *Tunica Uvea* of the Eye.

RHAMMA. Ῥάμμα. The ſame as ACIA.

RHAMNOIDES.

The Characters are;

It has the prickly or thorny Appearance of the *Rhamnus*; the Flower, which grows only on the Male Plant, is male, apetalous, and conſiſts of a few Stamina, which ariſe from a bifolious Calyx. The Fruit on the Female Plant conſiſts of a monoſpermous Berry, containing a roundiſh Seed.

Boerhaave mentions three Sorts of *Rhamnoides*; which are,

1. Rhamnoides; florifera; ſalicis foliis. *T. Cor.* 53. *mas.*

2. Rhamnoides; fructifera; ſalicis foliis; baccis aureis; *T. Cor.* 53. fæmina.

3. Rhamnoides; fructifera; ſalicis foliis; baccis leviter flaveſcentibus. *Tourn. Coroll.* 53. *Boerh. Ind.* A. 2. 174. *Raii Synop.* 3. 445. *Oleaſter Germanicus*, Offic. *Rhamnus ſecundus Cluſii*, Ger. Emac. 1334. *Rhamnus primus Dioſcoridis Lobelio, ſive littoralis*, Park. Theat. 1006. *Rhamnus ſalicis folio anguſto, fructu floreſcente*, C. B. P. 477. Raii Hiſt. 2. 1592. *Rhamnus, ſive Oleaſter Germanicus*, J. B. 1. 33. SALLOW-THORN.

It grows in ſandy maritime Places, flowers in *June*, and the Fruit is ripe in *September*. An acid Rob is prepared of the Berries, which is recommended for the Dyſentery. *Dale.*

RHAMNUS.

The Characters are;

The Flower is monopetalous, Funnel-ſhaped, and tetrapetaloidal or pentapetaloidal. The Piſtil, or Pointal, becomes a ſoft Berry, full of Juice, and full of four callous Seeds, which are gibbous on one Side, and flat on the other.

Boerhaave mentions eleven Sorts of *Rhamnus*, which are,

1. Rhamnus; Catharticus. *J. B.* 1. 55. C. B. P. 478. *Raii Hiſt.* 2. 1625. *Synop.* 466. *Tourn. Inſt.* 593. *Boerh. Ind.* A. 2. 212. *Rhamnus Catharticus, Spina Cervina*, Offic. *Rhamnus ſolutivus, ſive Spina infectoria vulgaris*, Park. Theat. 243. *Spina Cervina Geſneri & Officinarum*, Volck. Flor. Nor. 368. *Cervi Spina*, Rapp. Flor. Jen. 74. BUCK-THORN.

This is a Hedge-tree or Buſh, whoſe Branches are full of long ſtiff Thorns, and yellowiſh green Leaves, about as big as the Sloe-tree, more neatly ſerrated about the Edges. The Flowers grow ſeveral together, being ſmall, four-leaved and yellow, which are ſucceeded by little round Black-berries when ripe, yielding a purpliſh bitter Juice, and having three or four angular Seed. It grows in Woods and Hedges, and flowers in *June*, the Berries being ripe about the latter End of *September.*

The Juice of the Berries purges ſerous, watery Humours pretty briſkly, and is good againſt the Dropſy, Gout, Jaundice, and Scurvy, and very ſerviceable againſt the Itch, and all manner of Eruptions on the Skin.

The only Officinal Preparation is the *Syrupus è Spina Cervina*, Syrup of Buck-thorn. *Miller's Bot. Offic.*

By the Chymical Analyſis, the Berries yield a great deal of acid Phlegm and Oil, a little fixed Salt and Earth: They are purgative, and very good to remove ſerous Humours in chronical Diſeaſes; by which it relieves thoſe who have the Gout, Palſy, Cachexy, Sciatica, and Rheumatiſm. Take a Dram, or a Drachm and a half of its Berries, powdered and mixed with a little Conſerve of Orange-Flowers. They boil fifteen or twenty Berries in common Broth, adding half a Dram of Cream of Tartar; ſtrain it through a Cloth, and give it the Patient to drink; ſome mix with it two Drams of Tincture of Steel, or boil half an Ounce of Iron-Ruſt in a Rag tied up in a Knot, for the Green-Sickneſs. The moſt common Uſe of theſe Berries is to make a Syrup of them. The Doſe is from one Ounce to two, and even to three, when neceſſary; but it is proper to eat ſome Pottage after taking it. *Martyn's Tournefort.*

The Berries of this Shrub appear under three Colours; in the firſt Place, being gathered in the Time of Harveſt, then dried, bruiſed, and macerated in Water and Alum, they appear of a yellow, or rather a Saffron like Colour. Secondly, in Autumn, when through Maturity they have acquired a Blackneſs, being gathered, bruiſed, and kept in a Glaſs-Veſſel, they repreſent a beautiful green Colour, which they call a SAP-GREEN. And, laſtly, if they be gathered about the Feaſt of St. *Martin*, at which Time they ſtill adhere to the Tree, they appear, according to *Tragus*, of a Scarlet-Colour. *Raii Hiſt.*

SYRUPUS DE SPINA CERVI.

Syrup of Buck-Thorn.

The College-Diſpenſatory orders it to be thus made.

Take of the Juice of ripe and freſh Buck-Thorn Berries, gathered in the Month of *September*, two Pints: Let the Fæces ſubſide, and to the clear Liquor add of Cinnamon and Nutmeg, each three Drachms; and let them ſtand in Maceration for the Space of a whole Day; then ſtrongly preſs it out, and put to it one Pound and an half of white Sugar, to be boiled up to the Conſiſtence of a Syrup in a Bath-heat.

This has not, till lately, been received by the College into their Diſpenſatories. The Spices are commonly tied cloſely in a thin Bag, and ſuſpended in the Syrup while boiling to a Conſiſtence.

The *Edinburgh Diſpenſatory* directs it in the following manner.

Take of the clarified Juice of ripe Buck-Thorn Berries, three Quarts; brown Sugar, four Pounds; and with a gentle Fire boil them to a Syrup; and while it is yet warm, mix therewith a Dram of the diſtilled Oil of Cloves, received upon a little Sugar.

To add the Corrector here in the Form of a chymical Oil, ſaves the Trouble of ſteeping the Spices ordered for that purpoſe in the *London Diſpenſatory*, and anſwers the End more certainly.

Sydenham obſerves, that Syrup of Buck-Thorn alone evacuates Water plentifully and little elſe, without diſturbing the Blood, or rendering the Urine high-coloured, as other Purgatives generally do, and has only one bad Quality, as occaſioning great Thirſt during the Operation. But if it be given, even in the largeſt Doſe, to ſuch as are difficult to purge, it will neither give many Motions, nor carry off enough of Water.

I remember well, adds the ſame celebrated Author, for it was my firſt dropſical Patient, that I was called about twenty ſeven Years ago to Mrs. *Saltmarſh* in *Weſtminſter*, who had the Dropſy in the greateſt Degree I have yet ſeen, her Belly being ſwelled to an incredible Size. I gave her an Ounce of Syrup of Buckthorn before Dinner, according to the Cuſtom of that Time, and it brought away an almoſt inconceivable Quantity of Water, without cauſing any Diſturbance or Faintneſs. Encouraged by this Succeſs, I gave it every Day, interpoſing only a Day or two occaſionally, when ſhe ſeemed weaker than ordinary. And the Water being by theſe Means

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carried off by Degrees, the Swelling of the Belly diminiſhed daily, and ſhe recovered.

And now being young and unexperienced, I could not help thinking that I was poſſeſſed of a Medicine effectual for the Cure of any kind of Dropſy; but in a few Weeks I diſcovered my Error. For being called afterwards to another Woman, afflicted with the Dropſy, which ſucceeded an inveterate Quartan, I gave this Syrup, and repeated it frequently, increaſing the Doſe by Degrees; but having ineffectually attempted to evacuate the Water, inaſmuch as the Medicine did not operate, the Swelling of the Belly increaſed, and ſhe diſmiſſed me; and if my Memory does not fail me, recovered by the Aſſiſtance of another Phyſician, who adminiſtered more efficacious Remedies.

The uſual Doſe is an Ounce, or an Ounce and an half.

2. Rhamnus; ſpinis oblongis; Cortice albo Monſpelienſium. *J. B.* 1. 6. 31.

3. Rhamni primi; altera Species. *Cluſ. H.* 109.

4. Rhamnus; ſpinis oblongis; flore candicante, *C. B. P.* 477. *Boerh. Ind. A.* 2. 212. *Raii Hiſt.* 2. 1592. *Rhamnus ſativus*, Offic. *Rhamnus primus Cluſii*, Ger. Emac. 1334. *Rhamnus ſecundus Monſpelienſium ſive Primus Cluſii*, Park. Theat. 1005. *Rhamnus Cortice albo Monſpelienſis.* J. B. 1. 31. RAM-THORN WITH WHITE FLOWERS.

This is a thorny Shrub, with a ſmaller Fruit, conſiſting of a humid Pulp, incloſing a ſingle Seed.

It is a Native of *Spain*, *Portugal*, and other ſouthern Countries, flowers in *May*, and the Fruit is ripe in Autumn. A Catapaſm of the Leaves, as *Dioſcorides* ſays, is good for an Eryſipelas, and ſpreading Ulcers.

5. Rhamnus; Hiſpanicus; folio Buxi; minor, *T.* 593. *Lycium, Hiſpanicum, folio Buxi.* C. B. P. 478.

6. Rhamnus; Aſer; folio Pruni ſylveſtris leviter ſerrato; ſpinis brevioribus.

7. Rhamnus; Americanus; folio Buxi rotundo; ſpinis alternis.

8. Rhamnus; Aſer; ſpinis longis; cortice albo; fructu cæruleo. *Ind.* 246.

9. Rhamnus; Afer; folio Pruni longiori, ſubrotundo; flore candicante; ſpinis longiſſimis. *Lycium Pruni folio ſubrotundo, flore candicante. Ind.* 246.

10. Rhamnus; Hiſpanicus; folio Buxi ampliori. *T.* 593.

11. Rhamno ſimilis; Africana; fructu triloculari; folio Pyracanthæ. *Lycium Æthiopicum, Pyracanthæ folio.* H. A. 1. 163. *Boerh. Ind. Alt. Plant. Vol.* 2.

The Berries of the firſt Species are gathered in the End of *September*, or Beginning of *October*, and their Juice expreſſed while they are freſh, and boiled up with Sugar, makes what they call Syrup of Buckthorn, which is an excellent Cathartic, and a Specific againſt a Dropſy, but excites a great Thirſt. It is commended by *Hippocrates* for its purgative Quality, but is of no Virtue, as he ſays, on other Accounts. The Berries purge Bile and Phlegm, but principally ſerous Humours, whence it is of good Service in a Cachexy, Rheumatiſm, Arthritis, and Palſy. The Decretion of the Berries, with an Addition of aperient Tincture of Steel, is a very good Medicine for the Chloroſis. *Hiſt. Plant. Aſcrip. Boerhaave.*

RHAMNUS is alſo a Name for the *Paliurus*, and alſo for the *Rhamnoides*; *fructifera Salicis foliis*; *baccis leviter flaveſcentibus.*

Rhamnus tertius, Dioſcorides, a Name for the *Meſpilus*; *ſpinoſa*; *Pyrifolio.*

Beſides the foregoing Species of *Rhamnus*, *Dale* mentions the following:

Rhamnus niger, Offic. *Rhamnus niger Theophraſti*, Park. Theat. 1007. Raii Hiſt. 2. 1593. *Rhamnus tertius Cluſii*, Ger. 1152. Emac. 1334. J. B. 1. 34. *Rhamnus tertius, flore herbaceo, baccis nigris*, C. B. P. 477. Tourn. Inſt. 593. BLACK RAM-THORN.

It is ſometimes found in our Gardens, and flowers in *May*. The Decoction of the Fruit is good in Relaxations and Weakneſſes of the Limbs, and for the Pains of the Gout. *Dale.*

RHANTERES. ῥαντῆρες. The internal Angles of the Eyes.

RAPHANEDON. ῥαφανῆδον. The ſame as CAULEDON.

RAPHANELÆON. Oil of Radiſh-Seeds.

RHAPHANUS. See RAPHANUS.

RHAPHE. ῥαφή. A Suture.

RAPHIS. ῥαφὶς. A Needle for Chirurgical Uſes.

RHAPONTICUM.

Rhaponticum Offic. Alpin. Exot. 187. *Rhaponticum Thracium*, Boce. Muſ. 127. *Rhaponticum folio Lapathi majoris glabri, Rha & Rheum Dioſcoridis*, C. B. P. 116. *Rha verum antiquorum*, Ger. Emac. 393. Raii Hiſt. 1. 170. *Rhabarbarum Officinarum*, Elem. Bot. 75. *Rhabarbarum fortè Dioſcoridis & antiquorum*, Tourn. Inſt. 89. *Rhabarbarum rotundi folium verum ſive Lapathum ſativum rotundi folium ampliſſimum flore albo, vel Rheum antiquorum*, Munt. Herb. Brit. 192. *Rhabarbarum Muſcoviticum*, Mont. Plant. Gen. p. 6. *Rhabarbarum Witſoniarum*, Ogilb. Chin. 2. 680. quoad. Fig. *Lapathum præſtantiſſimum*; *Rhabarbarum officinarum dictum.* Boerh. Ind. A. 2. 84. *Lapathum exoticum, folio ampliſſimo inſar foliorum Braſſicæ*, Rupp. Flor. Jen. 44. *Hippolapathum maximum rotundi folium exoticum, ſive Rhaponticum Thracicum, ſed verius Rhabarbarum verum*, Park. Theat. 154. TRUE RHAPONTIC.

This has a large thick Root, at the Head, and divided into many Branches, of a dark Brown on the Outſide, and a deep yellow Colour within, of a bitteriſh Taſte. From this Root ariſe ſeveral large, ſomewhat crumpled green Leaves, roundiſh but pointed at the End, of a ſouriſh Taſte, growing on reddiſh Foot-ſtalks. From among theſe ariſes a thick Stalk, three or four Foot high, having ſmall Leaves, and a numerous Company of white, ſtaminous, ſix-leaved Flowers, ſucceeded by large, ſhining, triangular, brown Seed. It is planted in Gardens. The Root of this Plant, if carefully dried, pretty much reſembles the fineſt *Turkiſh* Rhubarb, eſpecially the Heads, having the ſame reddiſh Veins, and may deceive thoſe who are not very well acquainted with the Difference. This is what ought to be uſed in the Shops, as being the true Raphontic; what the Druggiſts uſe formerly to ſell for it, being the Root of the *Rhaponticum Folio Helenii incano* C. B. which is a Species of the great Centaury, and of far leſs Virtue than this.

Rhapontic, as to its purgative Quality, is much weaker than Rhubarb; but is accounted more reſtringent, and good for Fluxes and Weakneſs of the Stomach, ſpitting of Blood, and making bloody Urine. It is likewiſe good againſt the Bites of venomous Creatures. It is an Ingredient in the *Theriaca Andromachi. Miller's Bot. Off.*

This Root is very like Rhubarb, but may be diſtinguiſhed from it by its leaving a mucous Taſte in the Mouth, its Mucilage being diluted by the Saliva; and becauſe when it is cut it appears regularly marbled, of a red, white or yellow Colour; and theſe Colours are diſpoſed in a radiated manner. It is leſs purgative than Rhubarb, requiring a double Quantity to produce the ſame Effect. It is alſo a little aſtringent. *Geoffrey.*

It is common enough in the Gardens of Botaniſts, and flowers in *May*. There is ſcarce any Difference between this and true Rhubarb, only this is more acrimonious, leſs ſolid, and more of a Saffron Colour. Rhapontic is leſs purgative, and more aſtringent than Rhubarb. It is vulnerary and anodyne, and is of Uſe in Diarrhœas, Dyſenteries, Convulſions, Ruptures, the Orthopnœa, periodical Fevers, and venemous Bites. The Doſe in Powder is two Drams, in Infuſion ſix Drams.

It is much controverted among Botaniſts, as Mr. *Ray* obſerves, whether the *Raphontic* of the Ancients, and the Rhubarb of the Moderns, are one and the ſame Plant; ſome affirming, others denying it; and ſome among the reſt are inconſiſtent with themſelves, ſometimes making them to be the ſame, at other times different. The various Opinions and Reaſons for them may be found in *J. Bauhine's* Appendix to his *Hiſtory of Plants*; we ſhall only obſerve with *Proſper Alpinus*, that our *Rhapontic* is the true *Rhapontic* of *Dioſcorides*, but quite different from the Rhubarb of the Shops. *Dale.*

RHASPE. ῥάσπη. A Species of Wine mentioned by *Nicolaus Myrepſus*, Sect. 1. C. 500. It is not known what Sort he means.

RHASTONE. ῥαστώνη, from ῥᾴδιος, ῥᾴων, eaſy, in *Hippocrates*, 3 *Epid.* ſignifies a Remiſſion or Alleviation of a Pain or Diſeaſe. The Word in *Plutarch*, *de Precept. Sal.* means a Sort of Indolence, or middle State between Pleaſure and Pain. It occurs alſo in *Hippocr. de Artic.* where it imports an eaſy and gentle Method of Curing, in oppoſition to a violent Way of Management, and is there recommended to Practice.

RHASUT ET RUMIGI *Maurorum* Rauwolff. Lugd. Append. *Ariſtolochia orientalis Foliis lanceolatis*, Pit. Tournef.

A Species of exotic *Ariſtolochia*, growing principally among the Moors and about *Aleppo*; its Root may be uſed in Medicine inſtead of thoſe of the other Species of *Ariſtolochia*. It contains Plenty of Oil and Salt, and is vulnerary, deterſive, drying and reſolvent, being outwardly apply'd. *Lemery des Drogues.*

RHECHIA, ῥηχία, *Jon.* for ἀναχία. See RACHIA.

RHEGMA, ῥῆγμα, of ῥήγνυμι, to break, a Rupture, is a Species of Solution of Continuity in a ſofter Part, made by a violent Blow, or Fall, without Section or Puncture, and proceeding from an immoderate Diſtenſion. *Galen, de M. M. Lib.* 3. *et Lib. de Conſtit. Art. Med.* And the ſame Author, *Com. ad 6 Aph.* 22. ſays that a *Rhegma*, or Rupture, happens when the carnous Part of a Muſcle is broken or torn aſunder. Ῥηγμία, in a peculiar Senſe, is a Name, as *Hippocrates* ſays, *Lib.* 1. *de Morb.* given by ſome to thoſe ſlight Spaſms which

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which affect the fleshy Parts without a Suppuration. In *Epid.* near the Beginning, those little ulcerated Fissures which affect the Lips and Gums, are called ῥήγμαλα τῶν ἑλκέων, "Ruptures "of Ulcers," where *Rhegmata* signifies no more than *Rhagades*, or Fistures; and *Lib.* 3. *de Morb.* Abscesses breaking internally are called ῥήγμαλα, *Rhegmata.*

RHEGMATIAS, ῥηγμαλίας ἢ ῥηγμαλίης from the preceding Word, *Lib.* 1. *et* 2. *de Morb.* is one who labours under the inward Rupture of an Abscess. *Rhegmatiæ*, ῥηγμαλίαι, *Lib. de Aere, Aqu. et Loc.* are Persons affected with a Rupture of some internal Vessels.

RHEGMOCHASMOS, ῥηγμοχασμὸς, from ῥῆγμα, a Rupture, and χάσμα, a gaping Orifice; a Rupture with a subsequent Hiatus, is one of the three Causes of an Hœmoptoe, assigned by *Celsus*, *Lib.* 4. *Cap.* 4. the other two being ANASTIMOSIS and DIABROSIS. See these Words.

RHEMBE, ῥέμβη, from ῥέμβω, *to wander*, is the same as *Plane*, πλάνη, an Error or Aberration, *Galen in Exeges.* where he seems to have an Eye to that Passage, 7 *Epid* ϰ καλὰ φωνῶν ὁ ἐν τῷ ῥέμβῃ, "He stumbled in his Speech," (mistook, and spoke one Thing for another.) Here *Galen*, for ῥέμβῃ, reads ῥέμβῃ. Hence ῥεμβώδεις πυρετοὶ in *Artæus de Cauf. et Sign. acut. Morb. Lib.* 2. *Cap.* 2. are erratic, or rather desultory, Fevers in Opposition to συνεχεῖς, *continual Ones.*

RHENANUM VINUM. Rhenish Wine. See VINUM.

RHENCHOS, ῥέγχος, from ῥέγχω, *to snore.* Snoring. This Affection is otherwise called *Stertor*, which is a Sound like that of the *Cerchnon*, but greater and more manifest. Many confound those Affections, and make them to differ only in Place and Magnitude, calling by the Name of *Stertor* that Sound or Noise which is heard or supposed to be made in the Passage between the Palate and the Nostrils, as in those who sleep; that boiling or bubbling Noise which in Respiration proceeds from the Larynx, or Head, or Orifice, of the Aspera Arteria, they call *Cerchon*; but if the Sound comes from the Aspera Arteria itself, they will have it called *Cerchnos*, that is, as some understand it, a rattling, or as others, a stridulous, or wheezing Roughness of the Aspera Arteria. In dying Persons this Affection is called by the *Greeks* ῥέγχος, *Rhenchos*, which is a Snoring or rattling kind of Noise, proceeding, as it were, from a Conflict between the Breath and the Humours in the Aspera Arteria.

This and such like Affections are owing to a Weakness of Nature, as when the Lungs are full of Pus, or Humors, to which purpose we read in the *Prognostics* of *Hippocrates*: "It "is a bad Sign when there is no Expectoration, and no Dis- "charge from the Lungs; but a Noise, as from an Ebul- "lition, is heard in the Aspera Arteria, from a Plenitude of "Humor." Expectoration is suppressed either by the Viscidity of the Humor, which requires to be discharged, and which adhering to the Asperia Arteria, and being there agitated by the Breath, excites that bubbling Noise, or Stertor; or by an Obstruction of the Bronchia; or, lastly, by a Compression of the Aspera Arteria, and Throat; whence the Passage is straitened, in which the Humours being agitated, excite such a kind of Noise as before described. Hence *Galen* calls those who are strait-breasted *stertorous.* That Author assigns but two Causes of this Symptom, which are either the Straitness of the Passage of Respiration, or the Redundance of Humours, or both together; but is is necessary to add a third, which is the Weakness of the Faculty, which is the Cause of the *Rhenchos* in dying Persons, where Nature is too weak to make Discharges.

From what has been said, we conclude that this Symptom, or this Sort of Fervor, or Ebullition in the Throat, is not always mortal; but only when Nature is oppressed with the Redundance of Humor in such a manner, that the Lungs cannot discharge themselves by spitting; or the Passage appointed for the Breath, being the Aspera Arteria, is very much obstructed, upon which account many dying Persons labour under a Stertor with their Mouths gaping. An Instance of this you have in *Menon.* 7 *Epid.* 47. of whom it is said, "That he had a Wheezing in his Throat, or Aspera Arte- "ria, with a Stertor;" and in the Wife of *Theodorus*, 27. where we read, "That she was affected with a stridu- "lous kind of Hoarseness of the Breast and Aspera Arteria, "with a bubbling kind of Noise, and Fluctuation of Pus." Again, *Text.* 9. it is said of the Wife of *Polycrates*, that "she "was affected with a Wheezing about the internal Parts of "the Aspera Arteria and Fauces, and a *Cerchnon*, that is, as "*Valesius* renders the Word, *Asperitas rancida*," a harsh kind of Rattling or Snoring. And *Hermoptolemus*, *Text.* 16. afflicted with a Peripneumony, on the seventh Day spit a pale kind of Matter, and fell into a Stertor. The Woman, also, *Text.* 20. who laboured under a Quinsey, dy'd at last in Convulsions with a Stertor. And, to name no more, the Son of *Amphiphrades*, who lay sick of a Pleurisy, was much molested with a Wheezing or *Cerchnon* about the Fauces. In all these Instances this Symptom must be ascribed partly to the Weakness of Nature, and partly to the Redundance and Viscidity of the Pus or Humor. It is indeed always a bad Sign, and much to be dreaded; but is highly pernicious in the Progress of a Distemper, when the Strength is very much exhausted, as it plainly indicates that Nature is no longer capable of making Excretions, and is on the Point of Suffocation; and this Symptom, in such a Case, is necessarily attended with some other mortal Sign. But in the Beginning of a Disease there frequently happens a kind of Ebullition, or Fervor, in the Throat, from the Redundance of Humour, or its Viscidity, which disposes it to adhere to the Aspera Arteria; but when this Humour comes afterwards to be concocted, and discharged by Spitting, the *Cerchnos*, or Ebullition ceases. And such a favourable Event may be predicted from the Appearance of other good Signs, at the same time, without the Attendance of any bad Sign, as it happen'd in the Case of *Pisistratus*, 7 *Epid. Text.* 56. "who had a Stertor "in the Fauces, but supported himself under the Distemper "very well, and had the Use of his Reason. His Fever re- "mitted, he had the Benefit of due Excretion, the Stertor "ceased, and he recover'd his Health." *Prosper Alpinus de Præsag. Vit. et Mort. Ægrot.*

RHEON. A Name given by Authors both to the true Rhubarb and Rhapontic.

RHETINE, ῥητίνη. Resin.

RHEUM. The same as RHEON.

RHEUMA. ῥεῦμα. A Flux, or Fluxion, from ῥέω, *to flow.*

RHEUMATISMUS. A Rheumatism.

The Ancients called all kinds of Pains affecting the external Parts, or the Joints, by the common Name of Arthritis, whilst the Word *Rheumatismus* was not so much as known among them. Thus *Aretæus*, in *Lib.* 2. *Chron. Cap.* 12. *de Arthritide*, uses the following Words. "This Disorder in some "Patients wanders over the whole Body, and is at last convey'd "to the Muscles of the Back and Thorax. 'Tis hardly cre- "dible how far this Misfortune spreads and diffuses itself; "the Vertebræ of the Back and Neck become painful, as also "the Top of the Os Sacrum; and soon after this Pain is "communicated to the Kidneys and Bladder." But in the last Century some celebrated *French* Physicians, such as *Carolus Piso*, *Riverius*, *Ballonius* and *Chesneau*, have called the Pains afflicting the intermediate Spaces between the Joints, and Muscles of the Neck, or of either Arm, or of the anterior or posterior Part of the Thorax, the Shoulders, Scapulæ, Thighs, the Hands, by the Name *Rheumatism.* Whilst they called those Pains Arthritic, which afflicted only the Joints and Articulations; tho' these Pains received different Denominations according to the different Parts they affected; thus when they appeared in the Feet, they were called *Podagra*; in the Hands, *Chiragra*; in the Elbows, *Onagra*; in the Teeth, *Dentagra*; in the Vertebræ of the Back, *Lumbago*; and in the Articulations of the Os Ischium, *Dolor Ischiadicus*, or the Sciatic Pain: And even at this Day, 'tis customary to call a Beginning and easily-remov'd *Arthritis*, *Chiragra* or *Podagra*, by the Name of *Rheumatism.*

But as rheumatic and arthritic Pains differ very considerably with respect to the Parts affected, the Causes, Symptoms, and Method of Cure; so the more sagacious Physicians have considered them as distinct and separate: Nor is the Difference between a beginning and inveterate Arthritis of small Importance in the Practice of Medicine.

In a Rheumatism the Muscles, with their common Membrane, and their Tendons, where they are inserted in the Bones, are in various Limbs, and other Parts of the Body, affected with violent Pains and Spasms; whereas, in an Arthritis, the tendinous and nervous Ligaments, by which the Bones are articulated, in consequence of their Cohesion with the Periostium, are violently afflicted. But as in a beginning Arthritis and Podagra the Pain is rather lodg'd in the Surface of the Ligaments, so in an inveterate Disorder of this Kind the peccant Humor, which is the Cause of the Pain, is seated deeper, and rather possesses the Space between the Cavities of the Articulations. A true Arthritis and a Rheumatism, also, differ in this, that the former frequently recurs, miserably torments the Patient, continues long, and is not to be cured without Difficulty; whereas a Rheumatism sometimes attacks the Patient but once or twice in his Life, does not continue so long, is more easily removed, and capable of a more expeditious Cure. The Pain in these two Disorders is, also, frequently of a different Kind; for in a Rheumatism it is accompanied with Tension, Oppression, a Sense of Weight and Coldness, without any conspicuous Tumor or Redness; whereas, in an Arthritis, the Pain is more lancinating, distending, pungent, and, as it were, threatning a Rupture, with a considerable Tumor and Redness.

As the Cause of every uneasy Sensation is either a Redundance or peccant Quality of the Juices, stagnating and congested

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geſted in the minute Veſſels of the Coats and Membranes, by which they are violently diſtended, vellicated and corroded, ſo 'tis not to be doubted but theſe Cauſes concur to the Production of rheumatic and arthritic Pains.

'Tis certain, from Experience, that not only Perſons who are young, of ſanguineo-ſerous Conſtitutions, and of ſpongious Habits, by the Admiſſion of Cold, or a northerly Wind impetuouſly ruſhing in upon any Part; but alſo that plethoric Patients, Women, and Men otherwiſe of a robuſt Habit, by neglecting Veneſection or Scarification, eſpecially after an obſtructed Perſpiration, feel rheumatic Pains in the Neck, Scapulæ, Shoulders, Back, Sternum and Thorax, or are even afflicted with gentle Degrees of an Arthritis. Whereas thoſe who are naturally of lax and leſs fibrous Habits, who are deſcended from arthritic and gouty Parents, or whoſe Strength and the Tone of whoſe Parts are highly weakened by the immoderate Uſe of Venery, Wine, Luxury, or violent Fatigue and Commotions of Mind, are afflicted with a true, a deeper and more obſtinate Arthritis, eſpecially in the Feet.

Thoſe labouring under a violent Arthritis, eſpecially of the inveterate kind, when this ceaſes, are eaſily afflicted with an Inflammation of the Kidneys from the Stone; and when this ceaſes, they relapſe alternately into an Arthritis. Beſides, 'tis certain, from daily Experience, that arthritic Patients, eſpecially thoſe afflicted with the Gout in the Feet, generally labour under ſome Fault of the Digeſtion, and have their Primæ Viæ turgid with Eructations, Flatulences, Spaſms, and a Load of peccant Humours; whilſt, at the ſame time, their Bodies are not ſufficiently ſoluble. Beſides, we obſerve, that many Perſons afflicted with the Gout, are alſo ſubject to the hemorrhoidal Diſcharge, tho' without any Relief, violent Pains ſeizing the Os Sacrum, and the Veins of the Anus ſometimes becoming tumid.

As the Nature and Condition of the Humours, which generate and ſupport rheumatic and arthritic Pains, are not always the ſame, ſo theſe Diſorders often differ widely with reſpect to their Degrees, Genius and Symptoms; for where there is only a Redundance of Blood, as yet not much contaminated by impure Particles, the Pains are generally mild and ſlight, which happens in a ſimple Rheumatiſm, and the beginning Arthritis of plethoric Patients. But the Pains are far more violent, when they are ſuſtained and ſupported by a Collection of impure and excrementitious Serum; for I have often obſerved, that as in all Pains, ſo alſo in thoſe which violently afflict the external and nervous Parts, it rarely happens that a Redundance of temperate and pure Blood alone produces the Effect, ſince it is generally mixed with an excrementitious Serum; for 'tis either too thin, ſerous, and impregnated with a ſmall Quantity of red Globules, or contaminated by a viſcid, glutinous and tenacious Serum. The excrementitious and impure Salts in the Maſs of Blood alſo differs much with reſpect to their volatile, fixed, ſaline and tartarous Acrimony, and conſequently produce different Symptoms. So that, according as the Nature and Genius of theſe Cauſes differ, the Rheumatiſm may properly be diſtinguiſhed, by Phyſicians, into the ſanguineous, cacochymic, ſcorbutic, fix'd, and wandering.

Hence it happens, that in different kinds of Pains, Blood taken from the Veins differs both with reſpect to Colour and Conſiſtence: For ſometimes, when it is received in warm Water, it is obſerved to abound with a large Quantity of viſcid Mucus, conſiſting of Fibres variouſly interwoven. Sometimes the Serum, which floats above it, is immediately form'd into a Concretion reſembling Glew or Leather, juſt as it happens in thoſe afflicted with a violent Peripneumony. At other Times the Serum is very thin, and the Blood of a florid red Colour, which frequently happens in a Rheumatiſm and wandering Gout, and is a certain Sign, that a Salt of a ſomewhat alcaline and volatile Nature is mix'd with it. *Carolus Piſo*, in *Libr. de Morb. ex Colluv. Seroſ. oriund. Sect. 5. Cap. 3.* in Pains of the external Parts, tells us, That he has obſerv'd the Blood ſo full of ſerous Sordes, that when it was ſet by in a Baſon, hardly a twentieth Part which had the Colour and Conſiſtence of Blood ſubſided to the Bottom, whilſt the remaining Part, which floated above, was entirely aqueous, but cover'd with a viſcid white Pellicle. *Ballonius*, in *Libr. de Rheumatiſmo*, tells us, that he frequently found the Blood, which he had taken in a large Quantity from the Arm, impure and reſolv'd into a putrid Serum. And I myſelf have often obſerv'd, that tho' in the Beginning of theſe Pains the Blood was of a laudable Conſiſtence, yet in Proceſs of Time, or when the Diſorders were deeply rooted, it was highly ſerous, corrupted, and covered with a tough Pellicle. For a Redundance of Blood is the firſt Cauſe and Origin of theſe Pains; but in the Courſe of the Diſeaſe, it is, by the hot inteſtine Motion, and the continual Agitation, converted into a peccant Serum; for which Reaſon *Carolus Piſo* claſſes all the Species of the Arthritis and Rheumatiſm among the Diſeaſes ariſing from a ſerous Sordes; which ſeems to be confirmed by the thin and copious, as alſo the ſlimy and turbid Urine, together with the profuſe and fetid Sweats which generally accompany theſe Diſorders.

It is a Queſtion of no ſmall Importance in the Theory of Medicine, how and in what manner, ſince the Blood is in a perpetual Motion through the Veſſels, the peccant Serum is ſeparated from it, becomes ſtagnant, and is depoſited in the external nervous Parts. And tho' the Theory of the Ancients was entirely deſtitute of the Succours of natural Philoſophy and Anatomy, in inveſtigating the Cauſes and Generation of Diſorders, yet *Hippocrates*, in *Lib. de Flatib.* has, as it were, from the Principles of natural Philoſophy and Mechanics, made a beautiful Attempt to explain the Cauſes of theſe painful Defluxions, and the Method of their Generation; for he tells us, that Blood naturally hot, when forcibly convey'd through a narrow Paſſage, cannot, in conſequence of Obſtacles and Obſtructions, paſs quickly through it: So that the thinneſt Part of the Blood is not received into the Veins, but being accumulated, flows through other Veſſels, and when it ſtagnates, produces Fluxions and Pains in particular Parts.

But that we may have a more adequate Idea of the Generation of theſe Diſorders, we muſt firſt conſider the occaſional and accidental Cauſes, and then the manner in which theſe Pains generally attack the Patient. Now, 'tis certain, from Experience, that rheumatic Pains of the Limbs are moſt incident to thoſe Perſons, who, after intenſe Labour, Motion, and Exerciſe, the Uſe of the warm Bath, or an intenſely hot Atmoſphere, ſuddenly expoſe themſelves to a cold Air, or a northerly Wind. Soon after which they are ſeiz'd with a certain Horripilation and Wearineſs, and then with a heavy, oppreſſive, and contractory kind of Pain in various Parts; ſuch as the Neck, the Scapulæ, the Shoulders, the Back, the Loins, or in that particular Side into which the Cold and northerly Wind has penetrated, and ſometimes all over the Body: And the Diſorder is the more violent, the more turgid the Body is with Blood. I have, alſo, frequently obſerved Perſons, after liberal Veneſection, Women after copious menſtrual Diſcharges, or Fluxes of Blood, from the Uterus produc'd by Abortion, Patients after violent Fluxes, whether ſpontaneous or induced by ſtrong and draſtic Purgatives, when they have too long expoſed their Bodies to a cold northerly Wind, or to a moiſt and cold Night-Air, afflicted with violent rheumatic Pains; for no other Reaſon, than that by the Violence of the Cold penetrating the Pores, the ſmall lymphatic Veins and Arteries, which contain and convey the Blood for the Nutrition of the Parts, are compreſſed, contracted, and cloſ'd up. Hence it happens, that the Serum being no longer capable of being contain'd in and convey'd thro' its Veſſels, overflows like a River, and is depoſited ſometimes in one Part and ſometimes in another, or is placed without the Veſſels and the Laws of the Circulation. But ſince all extravaſated Humours, in Proceſs of Time, loſe their mild and natural Craſis, aſſume a foreign Nature, and become partly glutinous and tenacious, and partly acrid and ſaline; hence it happens, that by the Tenſion, Compreſſion, Lancination, and violent Stricture of the fibrous and nervous Parts, intenſe Pains, frequently accompanied with a Senſe of chilly Cold, are produc'd. Sometimes it alſo happens, that the extravaſated Serum, like the White of an Egg, degenerates into a thin and corrupted Sordes, which cannot be again coagulated by a ſtrong Heat, and paſſes from one Part to another; eſpecially from the ſuperior to the inferior Parts, through the fleſhy and porous Subſtance of the Parts. For nothing more frequently recurs in Practice, than to obſerve a Rheumatiſm changing its Place, and falling from the Head to the Neck, the Scapulæ, the Shoulders, and Breaſt, eſpecially in young Perſons, whereas in Adults it falls down to the Back, the Parts about the Coccendix, and the Thighs.

'Tis alſo certain, from Experience, that about the Spring, and in the Month of *October*, when there are remarkable Changes of Weather, from hot to cold, and from cold to hot, or when contrary Winds ſuddenly ſucceed each other, arthritic and rheumatic Diſorders moſt frequently attack Perſons who abound with an impure Blood and Serum, prey upon the Body, and afflict it with a kind of febrile Commotion. Theſe Diſorders are preceded by a ſpontaneous Laſſitude, and Heavineſs of the Limbs, accompanied with a Reſrigeration of the Extremities, a Horripilation, and a certain Senſe of Cold. This State is ſucceeded by an uneaſy internal Heat, eſpecially about the Præcordia, a quick and contracted Pulſe, Reſtleſſneſs, Thirſt, Loſs of Appetite, Coſtiveneſs, and ſometimes a Difficulty of Breathing. Afterwards a violent and acute, or an oppreſſive Pain, accompanied with Tenſion, ſeizes ſometimes one and ſometimes another Part, and is increaſed in the Night time, juſt as it uſually happens in catarrhal Fevers. And tho' this febrile Commotion is in ſome mild, and in others violent, and

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is eaſily remov'd, yet a Pain remains in the Part affected, and often continues for a long time to rack them. But ſince every febrile Commotion is of ſuch a Nature, as ſpaſmodically to affect the external and nervous Parts, and by contracting and compreſſing the minute Roots and Extremities of the Veſſels, accumulates the Blood and Humours in the large interior Veſſels, and produces a quicker Syſtole in the Heart and Arteries, it can hardly happen otherwiſe, but that the Blood being convey'd with a great Impetus into the lateral Ramifications of the ſmall Arteries, which do not contain red Blood, ſhould at laſt depoſite its ſerous Portion without the Veſſels; and this is the Origin of the Pain. But 'tis to be obſerv'd, that theſe painful ſpaſmodic Strictures of the ſenſible Parts are not produced by a thin Serum entering into them, ſince this Species of Serum is in a great meaſure diſſipated; but rather by its more viſcid Parts, and its ſaline pointed Spiculæ intimately inſinuating themſelves into their Pores. Hence theſe Diſorders do not quickly and eaſily yield to Medicines, becauſe the peccant Matter is deeply impacted in the Parts.

From what has been ſaid it is ſufficiently obvious, that an Obſtruction of the Circulation of the Blood, and of its Regreſs through the minute Veſſels, conſtitutes the immediate and evident Cauſe of theſe rheumatic Pains; which may be more clearly demonſtrated from this, that, as I have often obſerv'd, when a tight Bandage, after Veneſection in the Feet for ſome ſevere Wound, is left applied for twenty-four Hours, an uneaſy Pain, like that of the Gout, and which laſts for many Days, ſeizes the Articulations of the Foot, and eſpecially of the great Toe. An Accident of this Nature lately happened to a celebrated Phyſician, who for certain Reaſons had a Vein opened in the Calf of his Leg, but was obliged to uſe a tight Ligature, becauſe the Vein lay low. Next Morning a violent Pain and Tumour had ſeized not only the Calf of his Leg, but alſo the Articulations of his Foot; ſo that there was a Neceſſity for a careful Diſcuſſion of the Tumor, by internal and external Medicines, leſt it ſhould degenerate into a greater Misfortune. From what has been ſaid, we, alſo, ſee that there is a great Affinity betwixt a Rheumatiſm and an Arthritis, ſince the former ſometimes ſo effectually counterfeits the latter, as by ſome to be called an univerſal and wandering Arthritis, which ſometimes ſuddenly ſeizes ſeveral Articulations, violently afflicts the Vertebræ of the Spine, and the Joints of the Bones. Nor is it ſtrange to obſerve, in Practice, that fix'd and wandering Rheumatiſms, in thoſe who are frequently ſubject to them, eſpecially if they have beſides contracted a Weakneſs, are at laſt transform'd into a true Arthritis. And ſince an Hemicrania, a Pleuriſy, a ſpurious Hepatitis, and a Tooth-ache, are Species of Rheumatiſms, 'tis not to be doubted, but they are generated by the ſame Cauſes, and in the ſame manner.

'Tis certain, from Experience, that the Rheumatiſm ſpares neither that Age nor Sex, which *Hippocrates*, in *Sect. 6. Aph.* 29, & 30. in ſome Circumſtances, pronounces free from the Arthritis. But 'tis in a particular manner obſervable, that thoſe who in their Youth have been ſubject to frequent Hemorrhages of the Noſe, which have afterwards ceaſed, are ſubject to Rheumatic Pains; which is alſo obſerv'd by *Hippocrates*, in *Prorrhet. Lib.* 2. where he informs us, that thoſe who have Pains and Tumors about the Joints, have large Viſcera provided in their Childhood and Youth, the Blood has ceaſed to flow from their Noſtrils; for which reaſon he orders us carefully to enquire, with reſpect to the Eruption of the Blood, whether it happen'd in the Patient's Youth, as alſo whether there are pruriginous Prickings, as it were, with a Nettle, either in the Breaſt or Back, ſince theſe are ſufficient Proofs of the Impurity of the Serum. But what *Hippocrates* affirms, with reſpect to Hemorrhages of the Noſe, may, in my Opinion, be aſſerted concerning all other ſalutary Excretions of the Blood: For nothing more frequently occurs in practice, than that Women, eſpecially of a ſanguineous Complexion, after the fiftieth Year of their Age, when their Menſes totally ceaſe, are afflicted with wandering Pains here and there, unleſs ſuch a Misfortune is prevented by ſeaſonable Veneſections. 'Tis alſo ſufficiently known to Practitioners, that an uſual Diſcharge from the hæmorrhoidal Veins, proceeding duly and at proper Seaſons, may render Perſons free both from arthritic and rheumatic Pains; to which they become ſubject, when that Diſcharge ceaſes or is ſuppreſs'd: Tho', at the ſame time, I have known Inſtances of weak and cachectic Patients, in whom neither the arthritic nor nephretic Pains ceaſed, even under a due hæmorrhoidal Diſcharge.

As for the Generation of theſe Diſorders, 'tis to be obſerv'd, that Perſons who have ſtrong Exerciſe, live ſparingly, and drink Water, are free from them; whereas thoſe who indulge themſelves in Idleneſs, drink Wines and ſpirituous Liquors, live luxuriouſly, and are addicted to immoderate Venery, eſpecially when young, are frequently afflicted with violent arthritic and rheumatic Pains.

'Tis alſo to be obſerv'd, that a remarkable Diſpoſition to theſe Diſorders is produced by other previous and long-protracted Diſeaſes, particularly intermittent Fevers, eſpecially when ill-manag'd. Thus *Ballonius*, in *Lib. de Rheumatiſmo*, informs us, that he has obſerv'd many, towards the End of chronical quartan Fevers, afflicted with violent Pains of all the Joints. I have, alſo, known long-continued Colics, and Pains of the Abdomen, ſucceeded by wandering ſevere Pains of the Joints recurring at ſtated Periods.

There is alſo a ſcorbutic Rheumatiſm, in which the whole Maſs of Lymph and Serum is contaminated with impure, excrementitious, ſalino-ſulphureous and acrid Particles, which now and then diſcover themſelves by Efflorescences, Spots, and a Purple Fever; and this Species of Rheumatiſm draws its Origin from an improper, heavy, and ſaline Diet; an idle and ſedentary Life; a continual Living in a foggy and vapid Air; and long-protracted Sorrow: For which Reaſon it is very frequently incident to the Inhabitants of Maritime Countries.

But a venereal Rheumatiſm is of a more terrible kind, and in the Night-time, eſpecially, afflicts certain nervous Parts in thoſe who by impure Coition, have contaminated their whole Maſs of Lymph and Blood, with a virulent and putrid Miaſma. But all the Cauſes hitherto enumerated, ſeem to have a Tendency to increaſe the Serum, render it impure and intemperate, and impair the Strength of the ſolid Parts, by diminiſhing the ſalutary Excretions; by which means Stagnations and Defluxions of the Serum, together with intenſe Pains, are produced.

Hence the reaſon is obvious, why rheumatic and arthritic Pains are happily terminated by copious Diſcharges of Urine, ſpontaneous Sweats, and natural Hemorrhages; and why the Patients receive great Relief from various Efflorescences of the Skin. Thus *Hippocrates*, in *Aph.* 74. *Sect.* 4. tells us, "That where there is a Probability of an Abſceſs about "the Joints, the Patient is reliev'd by diſcharging a large "Quantity of thick white Urine, like that which in ſome "Patients begins to be diſcharg'd on the fourth Day in Fe-"vers accompanied with Wearineſs. But if an Hemorrhage "of the Noſe happens, the Diſorder is ſoon terminated." By Fevers accompanied with Wearineſs, we may juſtly underſtand thoſe of the rheumatic Kind, which ſeize with a Senſe of Pain and Wearineſs all over the Body. I have, alſo, frequently obſerv'd, that arthritic Pains have ceaſed upon the ſpontaneous Appearance of Ulcers in the Legs; and again ſeized the Patient when theſe were artificially conſolidated. I have alſo known violent arthritic Pains totally removed by the Appearance of a Pſora, or an Itch, reſembling a white Leproſy; for as a Tranſlation of the peccant Matter from the internal to the external Parts is highly ſalutary, ſo, on the contrary, a Tranſlation of it from the external to the internal Parts and Viſcera, is highly prejudicial.

So long as rheumatic Pains and beginning Gouts remain in the external Parts, and the peccant Humour is not preſterouſly drawn inwards to thoſe of a more noble Kind, they are free from Danger, and do not readily prove fatal to the Patient: For as in the firſt Years of Life, and in Youth, theſe troubleſome catarrhous Defluxions in the Head, and thoſe of a rheumatic Kind in the muſcular Parts, accompanied with frequent Hemorrhages of the Noſe, denote a remarkable Weakneſs of Nature, or a diminiſh'd Tone and Strength of the Solids; ſo, in Youth and Manhood, they prognoſticate various chronical Diſorders, which in their Cauſes and Genius have a near Affinity with theſe, eſpecially when the Patients are deſcended from morbid and hypocondriac Parents.

THE CURE.

From what has been ſaid, 'tis ſufficiently obvious, that the whole Intention and Method of Cure conſiſts in duly conſidering the particular Habit of the Patient, and the different Cauſes of the Diſorder; whether it is recent, and proceeds from a Redundance of Blood; or, from a Collection of impure Serum, and is of long-ſtanding and deep-rooted; then in forming proper curative Intentions from theſe Circumſtances; and, laſt of all, in preſcribing Medicines proper for anſwering theſe Intentions.

When, therefore, the Patient is evidently plethoric, and an univerſal Rheumatiſm, accompanied with a febrile Commotion, has ſeized all his Limbs, and is therefore, as the Ancients called it, of the ſanguineous Kind; the moſt effectual and expeditious Means of Relief conſiſts in Veneſection, uſed in the Beginning of the Diſorder, as is juſtly obſerv'd by the moſt ſkilful Phyſicians. Thus *Alexander Trallian*, in *Lib.* 11. ſpeaks in the following manner: "When you ſuſpect that "the Humour collected about the Joints is of the ſanguineous "Kind, you are, if nothing contra-indicates, to uſe Vene-"ſection:

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" ſection: For by this means I have known many either to-
" tally cured, or rarely afflicted with Defluxions; becauſe,
" in the very Beginning of the Diſorder, they had Blood
" taken from them, both for the Purpoſes of Evacuation and
" Preſervation." This Doctrine is confirm'd by my own Ex-
perience, for I have known many plethoric Patients, who, by
external Cauſes, having Perſpiration totally obſtructed, have
been ſeized with intenſe Pains of the whole Body, accompanied
with a Stupor and Immobility of the Parts; but were totally re-
covered by ſeaſonable Veneſection in the Beginning, which may,
if Neceſſity requires, be ſafely and boldly repeated about the
fourth Day. I have, alſo, known Perſons of a middle Age, and
of ſanguineo-choleric or melancholic Conſtitutions, ſeized with
a mild Gout in the Hands or Feet; but have had theſe Misfor-
tunes prevented, or entirely removed, by Veneſection about the
Equinoxes, or ſometimes about the Summer Solſtice.

And as the ſanguineous Rheumatiſm is in no Country more
frequent than in *France*, on account of the ſanguineous Com-
plexion of the Inhabitants, and the Tendency of their Ali-
ments to generate a large Quantity of Blood; ſo 'tis not ſur-
priſing, that the *French* Phyſicians, who firſt wrote well on
a Rheumatiſm, ſhould greatly recommend Veneſection for its
Cure. Thus *Ballonius*, in *Lib. de Rheumatiſmo*, ſpeaks thus:
" I recommend Phlebotomy in a Rheumatiſm, and affirm it
" to be a ſalutary Remedy." *Carolus Piſo* alſo affirms, that
repeated Veneſection is of great Importance, both in prevent-
ing and curing a Rheumatiſm, and furniſhes us with many
memorable Inſtances of it. *Riverius*, in *Cent.* 3. *Obſ.* 42.
and *Cent.* 4. *Obſ.* 42. mentions an obſtinate Rheumatiſm, re-
moved in two young Men, by Veneſection ſeven times re-
peated. *Leon. Botallus*, the firſt Author of Veneſection in
France, in *Lib. de Curat. per Sang. Miſſion. Cap.* 12. evinces,
by many Reaſons and Inſtances, how uſeful repeated Vene-
ſection is in rheumatic Pains, and how ſpeedy a Relief is af-
forded by it. *Sydenham* alſo affirms, that the Cure of this
Diſorder is to be expected from nothing but Phlebotomy,
which is to be repeated in a few Days. In *M. N. C. Dec.* 4.
An. 9. *Obſ.* 120. there is a memorable Inſtance of an univer-
ſal Rheumatiſm cured both happily and expeditiouſly by repeat-
ed Veneſection alone. But Veneſection is ſtill more neceſſary
both for the Prevention and Cure of a Rheumatiſm in Women,
whoſe Menſes are either defective or totally ſuppreſſed; and in
Men who have an uſual hemorrhoidal Diſcharge ſuppreſſed.

Supported both by Reaſon and Experience, I aſſert, that be-
ſides Veneſection, in a hot Arthritis and Rheumatiſm, when
beginning and accompanied with a febrile Heat, a preſent and
ſpeedy Relief is afforded by mild Diaphoretics, moderately
mixed with nitrous Subſtances, and exhibited in ſmall but re-
iterated Doſes, perſiſted in for a conſiderable Time; ſince by
their Means the intenſe Heat, Fervour and Orgaſm of the
Blood, is not only allayed, but alſo the peccant Humour gent-
ly, ſucceſſively, and equally diſcuſſed. The moſt proper Su-
dorifics for this purpoſe, are the Powder of Crabbs Eyes, foſ-
ſile Unicorn, burnt or unburnt Hartſhorn, diaphoretic Anti-
mony, or its Ceruſs, Amber, prepared Shells, and Cinnabar,
with the Addition of a ſufficient Quantity of purified, or rather
artificial Nitre, which are to be exhibited in pectoral and gently
anodyne Waters; ſuch as thoſe prepared of the Flowers of
Elder, the Egyptian Thorn, Meadow-ſweet, and the Lime-
Tree; of black Cherries, Carduus Benedictus, Ladies Thiſtle,
and Scabious. Nor is it improper, in order the better to check
the febrile and erratic Heats, to add to theſe a due Quantity of
Citron-Juice; or to render the Medicine more grateful, of the
Syrup of Citron-Juice. For common Drink, we recommend
Whey, acidulated with Cream of Tartar, or impregnated with
Tamarinds; or Water boiled with the Shavings of Hartſhorn,
the Roots of Vipers-Graſs, Succory, Liquorice and Graſs, to-
gether with the Seeds of Fennel.

But when Rheumatic Pains ariſe not ſo much from a Re-
dundance of pure and well-conditioned Blood, as from a Pleni-
tude of Blood of the impure and ſerous kind, eſpecially in
weak Perſons of ſerous and phlegmatic Conſtitutions, than Ve-
neſection, eſpecially in the Cure, is not to be uſed without
the greateſt Caution. Hence *Galen*, in *Lib.* 6. *Aphor.* 47.
juſtly obſerves, " That Patients afflicted with a Plethora, are
" to be relieved by Veneſection; but that to ſuch as abound
" with corrupted Juices, we are to exhibit Purgatives." And
by theſe Evacuations, he affirms, that he not only cured many
who for a long time before had been every Year afflicted with
Diſeaſes, but alſo removed and warded off a beginning Gout
and Arthritis for many Years. But thoſe who have been often
harraſſed with Defluxions of this kind, receive more Injury
than Benefit from Veneſection, eſpecially if they are old or
of weak Conſtitutions.

Hence 'tis obvious that the Ancients were of opinion, that
the Differences of Pains, eſpecially of the arthritic kind, with
reſpect to their Cauſes, were to be carefully obſerved in the
Cure; for there is one Method of curing a Rheumatiſm, or
a beginning Arthritis, tho' univerſal, in a plethoric Habit,
which is produced by a Redundance of Blood, in conſequence
of an obſtructed Perſpiration: But the Method of Cure is
quite different, where an intenſe Pain is obſtinately fixed in
one Part, accompanied with a violent Senſe of Cold, and ex-
cited by Cold imprudently admitted to that Part in ſerous Bo-
dies. But ſtill different Meaſures are to be taken, when a
plethoric Patient, under a long Courſe of the Diſeaſe, or by
means of a prepoſterous and unſkilful Cure, degenerates into a
cachectic or cacochymic State, and little laudable Blood of a
due Conſiſtence, but a great deal of ſerous and excrementitious
Sordes, is contained in the Veſſels; for in Caſes of this kind,
thoſe Remedies are principally indicated as proper, which
gently, tho' effectually, eliminate the peccant Serum through
proper Emunctories, that is, by Stool, Urine and Perſpira-
tion.

With reſpect to the Uſe of Evacuants, Violence is in this
Caſe by no means to be uſed; but the bilious, viſcid, and ſe-
rous Sordes, are to be gently and gradually eliminated by
mild and temperative Laxatives. This Intention I have from
Experience found excellently anſwered by Infuſions prepared of
Water, mixed with half the Quantity of Wine, and gently
boiled with the Roots of Succory, Burnet, and Polypody,
Rhubarb, Senna Leaves without the Stalks, Carduus Benedic-
tus, the Tops of the leſſer Centaury, Agarick, Orange and
Citron Peel, the Bark of Saſſafraſs Wood, Raiſins, and *Tar-
tarus Tartariſatus*. It is alſo beneficial to chew about two
Scruples or a Dram of Rhubarb, with fat Raiſins or Currans;
for I can from Experience affirm, that Rhubarb taken in Sub-
ſtance evacuates twice as much as if it was exhibited in De-
coctions or Infuſions; and at the ſame time it remarkably cor-
roborates the Tone of the Inteſtines and Viſcera. But it is
expedient to exhibit ſuch an evacuating Medicine thrice, or at
leaſt twice a Week, that the Sordes left in the Primæ Viæ by
a bad Digeſtion may be eliminated; ſince otherwiſe they greatly
contribute to cheriſh the Diſorder, and augment its Force.
And I have learned from repeated Experience, that alterative
and evacuating Medicines of this kind are of ſingular Service
in ſuch Pains as recur periodically and at ſtated Hours.

When the *Primæ Viæ* are thus cleanſed, 'tis not only ex-
pedient but neceſſary to eliminate the peccant Serum, by ſuch
Decoctions as gently promote Tranſpiration and Sweat; ſuch
as thoſe prepared of China-Roots, the Roots of Sarſaparilla,
Succory, Liquorice, and Vipers-Graſs; the Wood and Bark
of Saſſafraſs, the Wood of yellow Sanders and Guajacum, to-
gether with Figs and Currans. When the Diſorder is deep-
ſeated and inveterate, I have often found from Experience,
that great Relief is afforded by crude Antimony, mixed with
double the Quantity of the bezoardic and diaphoretic Powder,
above deſcribed, and exhibited at proper Seaſons, and in due
Doſes. Inſtantaneous Relief is alſo afforded by a celebrated
diuretic and diaphoretic Liquor, which reſtores the Tone of
the Parts, and is prepared of the Tincture of Tartar, the acrid
Tincture of Antimony, the anodyne mineral Liquor mixed in
due Proportions, and exhibited in proper Doſes.

When a Rheumatiſm either of a fixed or wandering kind,
ſeizes a ſcorbutic Habit, and diſcovers itſelf by evident Signs
and Symptoms, the Cure is pretty long before it is perfected;
for it is neither an expeditious nor an eaſy Task to reſtore the
whole Maſs of Lymph and Serum, when become intempe-
rate, corrupted and impregnated with ſaline and excrementi-
tious Parts, to its native Sweetneſs and Conſiſtence. In this
Caſe, the moſt efficacious Medicines are thoſe of a diluting and
demulcent kind, pretty copiouſly uſed and perſiſted in. The
moſt conſiderable of this ſort are ſweet Whey, either impreg-
nated with Manna, acidulated with Tamarinds, or mixed with
the Juices of antiſcorbutic Herbs; as alſo the temperate mine-
ral Waters, ſuch as thoſe of *Selteran*, *Wildungen*, and *Tounſtei-
nen*; or in robuſt Conſtitutions, thoſe of *Pyrmont* and *Egra*,
mixed with half the Quantity of Aſſes or Cows Milk, and
uſed with a proper Regimen, almoſt anſwer all the Intentions
of Cure.

If a Rheumatiſm draws its Origin, as it frequently does,
from the Remains of a Lues Venerea contained in the Maſs
of Blood, more powerful and draſtic Medicines become neceſ-
ſary; for unleſs ſudorific Decoctions of the Woods, heightned
by an Addition of crude Antimony, or even of *Mercurius
Dulcis*, are prudently uſed, the Cure is rarely brought about.

As for Topics for the gentle and ſucceſſive Diſcuſſion of the
Humour lodged in any particular Part, great Caution is neceſ-
ſary in the Choice and Exhibition of them, leſt they ſhould do
more harm than good. If the Rheumatiſm is of the ſangui-
neous kind, it is moſt proper totally to abſtain from them, and
only to cheriſh the Parts affected with a moderate Heat of the
Bed and other Coverings. Since by this means the peccant
Matter is more mildly and happily exhaled, than it can be by
the Aſſiſtance of various Topics. But if a thick, immove-
able, and cold Humour is deeply and obſtinately ſeated in any
Part,

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Part, and accompanied with a Senſe of Cold, and a Conſtriction of the Pores, then Frictions with rough-warm Cloaths powerfully remove the tenacious Humour from its fixed Seat; and after theſe Frictions, Cupping-Glaſſes, either with or without Scarification, are to be applied; but 'tis to be obſerved, that Cupping-Glaſſes, with Scarification, applied to ſuch painful Parts, even tho' the Inciſions are pretty deep, procure an Evacuation of but very little Blood: A ſatisfactory Proof that the Ramifications of the Blood-Veſſels are ſo contracted and compreſſed by the ſpaſmodic Stricture, as to obſtruct the Circulation of the Blood: So that 'tis highly probable that theſe Pains are not ſo much excited by a Redundance of Blood congeſted in theſe Parts, as by a viſcid and acrid Humour ſtagnating in them.

When therefore the Humour is deep-ſeated, and produces violent Pains of the Limbs, we can hardly be entirely without external Remedies. But tho' for this purpoſe various Medicines are by different Authors highly extolled, yet I have found none more effectual than my nervous Liniment, which is prepared in the following Manner:

Take of *Anhalt* Water two Ounces, of *Peruvian* Balſam two Drams, and of old Theriaca one Dram; Infuſe and extract by Digeſtion: To the ſtrain'd Liquor add of the Eſſences of Saffron, Caſtor and Nutmegs, each two Drams, and of Camphire one Dram; make into a Liniment, with which the pained Limbs are to be often anointed.

But if after a long protracted Pain, a Rigidity and Immobility, accompanied with a Stupor, remain, which Diſorder is called a Pareſis, the following Liniment uſed in the ſame manner, I have often found to produce admirable Effects.

Take of human Fat two Ounces, and of *Peruvian* Balſam and Oil of Cloves, each two Drams, mix up into a Liniment according to Art.

Baths alſo, whether natural or artificial, are of ſingular Uſe in the Cure of theſe Diſorders, when cautiouſly uſed: But they ought never to be uſed in the Beginning or in the Height of the Diſeaſe, but rather in its Decline, both to draw the Remains of the Diſorder from their remote Seats, by moderate Sweats, and to ſoften the rigid Members, and corroborate ſuch as are weakened by the painful ſpaſmodic Strictures and Agitations. But I can from Experience aſſert, that I have found better Effects produced by none, than by a Bath prepared of the Waters of *Lauchſtad* in *Meiſſen*, which contain a delicate Crocus Mortis, and are of a highly ſubtile and light Nature.

Tho' in Pains of the external Parts ariſing from a Redundance of thick Blood, and a Suppreſſion of the ſalutary Excretions, copious Veneſection, eſpecially in the Beginning, is a powerful and divine Remedy; yet when a long-protracted Pain has ſo deſtroyed Digeſtion, a laudable Chyliſication and Strength, that the Body rather abounds with Serum than with Blood, or is already weaken'd by Age, Veneſection is not to be uſed without the greateſt Caution. Neither is Phlebotomy to be uſed when under the Paroxyſm, accompanied with a febrile Commotion; Nature attempts Tranſlations of the peccant Matter to the external Parts; at which time, juſt as in an Eryſipelas, it is by no means expedient to diſturb and counteract the ſalutary Work of Nature for the Patient's Relief.

I have often obſerved, that Veneſection properly inſtituted before the Æquinoxes, excellently preſerves Perſons of conſtricted Habits, as alſo thoſe of ſanguineo-melancholic and ſanguineo-choleric Conſtitutions, not only from catarrhous Defluxions, but alſo from rheumatic and arthritic Pains, to which they were before frequently ſubject; ſo that there is not a more powerful Remedy for preventing theſe Diſorders, than Veneſection, eſpecially if the Patient uſes due Exerciſe, and abſtains from ſpirituous Liquors and a rich Fleſh-Diet.

Tho' a Milk Diet is of ſingular Service in wandering arthritic Pains, and where the Diſorder is produced by a ſubtile and bilious Acrimony, yet 'tis expedient to abſtain from it, when the Veſſels are too full, either of a ſtagnant or too ſerous Blood, and the Tone of the Stomach and Inteſtines is deſtroyed, leſt by its Means Infarctions of the Viſcera ſhould be produced, and the Way pav'd for a ſucceeding Cachexy.

When a Suppreſſion of the hemorrhoidal Diſcharge is the Cauſe of rheumatic or arthritic Pains, this Evacuation is with all Expedition to be recalled, tho' for this Purpoſe we are by no Means to uſe Veneſection in the ſuperior Parts, but in the Feet. Then we are to exhibit thoſe Medicines which gently promote this Diſcharge, ſuch as the *Pilulæ Aviennæ*, the *Pilulæ Becherianæ*, and others of a like Nature, interpoſing, at proper Intervals, the temperate and nitrous Powders, which allay the internal Heat, that greatly contributes to the Suppreſſion of the Hæmorrhoids. If theſe Meaſures ſhould not prove effectual, but Gripes and Vomitings ſhould accompany the external Pains, we are without Heſitation to apply Leeches to the Veins of the Anus, a Remedy which ſometimes proves ſurprizingly efficacious.

Thoſe who are ſubject to catarrhous, rheumatic, or arthritic Diſorders, as alſo thoſe who are diſpoſed to ſpaſmodic Commotions, or Congeſtions of the Blood and Humours, ought carefully to abſtain from all ſtrong, hot, diuretic and diaphoretic Medicines, from acrid Purgatives, from all ſpirituous balſamic Subſtances, which throw the Blood into a preternatural Orgaſm, from rich ſpirituous Liquors, after which the Urine is red and deeply tinged; and from all Malt Liquors, except of the medicinal Kind, ſuch as that which does not oppreſs the Head, is freely diſcharged by Urine, and aſſiſts Digeſtion: But they ought for common Drink to uſe either pure Spring Water, temperate mineral Waters, or ſome grateful Decoction, which creates no loathing. And theſe Meaſures are ſtill more carefully to be obſerved by thoſe whoſe Juices are contaminated by ſcorbutic Purples, a very common Diſorder in our Age.

When a violent and obſtinate Pain for a long Time afflicts the inferior Parts of the Body, ſuch as the Os Iſchium, and the Os Coccygis, and the Patient is of a robuſt and vigorous Habit of Body, more powerful chymical Medicines, ſuch as *Mercurius Dulcis*, Solar Precipitate well prepared, and medicinal Regulus of Antimony, which may alſo be added to ſudorific Decoctions, are of ſingular Efficacy in removing the thick, tough, tartarious and vellicating Humour, from its deepeſt and moſt remote Seats.

When the Pains are ſo violent, which happens in delicate Conſtitutions, as to deprive the Patient of his Appetite and Sleep; and when neither Veneſection, the nitrous and temperate Powders, nor any anodyne Liquor prove effectual to allay them, it is expedient gradually to paſs from gentle Anodynes, ſuch as the Emulſion and Syrup of white Poppy Seeds, to thoſe of a more powerful Nature, ſuch as the *Pilulæ Wildeganſii*, the *Pilulæ Storckii*, the *Pilulæ de Stryace*, or even a Grain or two of Laudanum Opiatum, with an Addition of a ſmall Quantity of the Extract of Saffron. But in other Caſes, Opiates are not to be raſhly uſed, ſince it has been often obſerved, that they render theſe Diſorders ſo obſtinate, as hardly to yield to the moſt efficacious Remedies, but create a great deal of Trouble both to the Patient and Phyſician.

In a beginning Rheumatiſm of the Scapulæ, nothing is more efficacious than the Application of a Veſicatory between them; but if this Misfortune ſhould happen in plethoric Habits, as I have often obſerved in Women about fifty Years of Age, when their Menſes ceaſe, great Relief is afforded by applying Cupping-glaſſes with Scarification, to the inferior Parts every Month.

As Perſons naturally diſpoſed to anomalous Motions of the Solids and Fluids, and to Tranſlations or Congeſtions of the latter, are of a tender Habit, of a delicate Turn of Mind, and eaſily injured by the exorbitant Workings of Paſſions, which lay a Foundation for the Generation of theſe Diſorders; ſo Tranquillity of Mind, ſufficient Exerciſe, and an Abſtinence from every Thing which has a Tendency to ruffle and diſcompoſe the Mind, are of great Uſe in the Cure of theſe Diſorders. *Frederic Hoffman.*

The Rheumatiſm, a very frequent Diſorder, bears a very near Affinity to the Arthritis, the Gout, and the Scurvy.

The preceding Cauſes of this Diſorder are, a ſanguineous Habit, accompanied with an acrimony of the Juices, a mature Age, luxurious Living, a ſudden Admiſſion of the Cold to the Body, when over-heated, the Influence of the Weather in the Autumn, an Obſtruction of Perſpiration, and a tough inflammatory State of the Fluids, to be diſcovered by a pleuretic Blood. It begins with a continual Fever, and creates a violent dilacerating Pain, which is greatly increaſed upon the ſmalleſt Motion, is long fixed in one Place, ſeizes the Joints of any of the Limbs, and is particularly incident to the Knees, the Loins, and the Coxendix. It alſo ſometimes affects the Brain, Lungs, and Viſcera, is accompanied with a Tumour and Redneſs of the Part, and comes and goes periodically.

If it remains for a conſiderable Time, and is increaſed, it often, after the moſt violent Pains, deprives the Limb of Motion, and produces an Anchyloſis, which will hardly yield to any Medicine.

The immediate Cauſe of a Rheumatiſm ſeems to be ſo mild an Inflammation as not to degenerate into a Suppuration, in the lymphatic Arteries of the Membranes contiguous to the Ligaments of the Joints. It is cured by Veneſection; repeated antiphlogiſtic Purgatives, every Evening after which a proper Narcotic is to be exhibited; by mild tepid Baths, and antiphlogiſtic Fomentations applied to the Parts affected; by deſtic Veſicatories and Cauteries; by highly diluting and emolli-

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cent Medicines; by attenuating Food; by Reſt and the Warmth of the Bed; and towards the End of the Cure by Frictions with warm dry Cloths, together with the Uſe of Antiſcorbutic Medicines.

A Lumbago or Rheumatiſm ſeizing the Loins, and ſciatic Pains, are cured in the ſame Manner, tho' with ſomewhat greater Difficulty.

Hence appear the Reaſons why this Diſorder is ſo frequent, and its Appearances ſo various; why 'tis highly dangerous, when it ſeizes the Brain or Lungs; why in theſe Parts it is not diſcovered without the greateſt Difficulty; and why the Uſe of hot Subſtances, or the too ſpeedy Exhibition of Narcotics, muſt be dangerous in it. *Boerhaave Aphor.*

This Diſeaſe happens at any Time, but eſpecially in Autumn, and principally affects ſuch as are in the Vigour of Life. 'Tis generally occaſioned by expoſing the Body to the cold Air, immediately after having heated it by violent Exerciſe, or ſome other Way. It begins with a Chilneſs and Shivering, which are ſoon ſucceeded by Heat, Reſtleſſneſs, Thirſt, and the other Concomitants of a Fever. In a Day or two, and ſometimes ſooner, there ariſes an acute Pain in ſome one or other of the Limbs, eſpecially in the Wriſts, Shoulders and Knees, which, ſhifting between whiles, affects theſe Parts alternately, leaving a Redneſs and Swelling in the Part laſt affected. In the Beginning of the Illneſs the Fever, and the abovementioned Symptoms, ſometimes come together; but the Fever goes off gradually, whilſt the Pain continues, and ſometimes increaſes, occaſion'd by the Derivation of the febrile Matter to the Limbs; which the frequent Return of the Fever, from the Repulſion of the morbific Matter by external Remedies, ſufficiently ſhews.

This Diſeaſe, when unattended with a Fever, is frequently taken for the Gout, though it differs eſſentially therefrom, as will eaſily appear to thoſe who are thoroughly acquainted with both Diſeaſes; and hence it is, perhaps, that phyſical Authors have not mentioned it; unleſs we ſhould eſteem it a new Diſeaſe. But however this be, it is at preſent very frequent, and though, when the Fever is gone off, it ſeldom proves fatal, yet the Violence of the Pain, and its long Continuance, render it no contemptible Diſeaſe. For in caſe of wrong Management, it frequently remains not only ſeveral Months, but ſome Years, and even during Life; though in this Caſe it is not equally painful, but has its periodical Returns, like the Gout; and the Pain may poſſibly go off ſpontaneouſly after it has been of very long ſtanding. But in the mean time, the Patient is depriv'd of the Motion of his Limbs during Life, the Joints of the Fingers being contracted inwards, with ſtony Concretions as in the Gout, which rather appear in the internal Parts of the Fingers than the external, while the Appetite may be very good, and the general Health not amiſs.

There is another Species of this Diſeaſe, though it is not generally eſteemed of this kind, which may properly be called a rheumatic Lumbago. It is a violent fix'd Pain of the Loins, reaching ſometimes to the Os Sacrum, and reſembling a nephritic Paroxyſm; only the Patient does not Vomit. For, beſides the intolerable Pain near the Kidneys, the whole Conduit of the Ureters, even to the Bladder, is ſometimes affected with the ſame, though in a leſs Degree. I have been formerly led into an Error hereby, as imagining it to ariſe from ſome Gravel lodged in theſe Parts; whereas, in reality, it proceeds from the peccant and inflamed Matter of the Rheumatiſm, which affects only thoſe Parts, leaving the reſt of the Body free. Unleſs this acute Pain be removed in the ſame Manner as the former Species, it continues as long, and proves equally violent; ſo that the Patient cannot lie in Bed, but is forced either to leave it, or ſit upright therein, and be perpetually moving his Body backwards and forwards.

Since both the Kinds of this Diſeaſe ſeem to ariſe from Inflammation, as appears from their Concomitants juſt mentioned, and eſpecially by the Colour of the Blood taken away, which exactly reſembles that of Perſons in a Pleuriſy, which is univerſally allowed to be an inflammatory Diſeaſe; ſo I judge that the Cure ought to be attempted only by Bleeding, the Heat of the Blood being in the mean time abated by cooling and incraſſating Medicines, along with a proper Regimen.

Accordingly, as ſoon as I am called, I direct ten Ounces of Blood to be immediately taken away from the Arm of the Side affected, and preſcribe a cooling and incraſſating Julap, nearly after the following Manner.

Take of the diſtilled Waters of Lettice, Purſlain, and Water Lilly, each four Ounces; Syrup of Lemons, an Ounce and Half; Syrup of Violets, an Ounce; mix them together for a Julap, of which let the Patient drink at Pleaſure; or of the following Emulſion.

Take ſeven blanched ſweet Almonds; of the Seeds of Melons and Pumpions, each Half an Ounce; the Seeds of white Poppies, two Drams; beat them together in a Marble Mortar, then pour on, by Degrees, a Pint and Half of Barley-Water; mix them well, and when ſtrained, add two Drams of Roſe-Water, and Half an Ounce of white Sugar.

To eaſe the Pain, I order a Cataplaſm, prepared of the Crumbs of white Bread and Milk, impregnated with Saffron; or a Cabbage-Leaf to be applied to the Part affected, and frequently renewed. With reſpect to Diet, I enjoin a total Abſtinence from Fleſh, and even the thinneſt Fleſh-Broths, ſubſtituting in their Place Barley-Broth, Water-Gruel, Panada, and the like. I allow only ſmall Beer for Drink, or which is more proper, a Ptiſan prepared of Pearl-Barley, Liquorice, Sorrel Roots, and the like, boiled in a ſufficient Quantity of Water. I, alſo, adviſe the Patient to ſit up ſome Hours every Day, becauſe the Heat which proceeds from always lying in Bed, promotes and augments the Diſeaſe.

The next Day I repeat the Bleeding in the ſame Quantity; and in a Day or two after, as the Strength will permit, I bleed again; then interpoſing three or four Days, as the Strength, Age, Conſtitution of the Patient, and other Circumſtances indicate, I bleed a fourth Time, which is generally the laſt, unleſs too hot a Regimen has preceded, or heating Remedies have been exhibited without Neceſſity. But the Uſe of Opiates requires more frequent Bleeding; and therefore, though the Pain be ever ſo violent, during the whole Courſe of the Diſeaſe, yet when I intend to effect the Cure ſolely by Bleeding, I judge it highly neceſſary to refrain from Opiates, becauſe the Diſeaſe is fixed thereby, and does not yield ſo readily to Bleeding; ſo that where ſuch Medicines are given too frequently, Bleeding muſt in conſequence be oftner repeated than is otherwiſe neceſſary. Beſides, in the Height of the Diſeaſe they do not anſwer the Expectations we have conceived of them.

While the abovementioned Remedies and Regimen are carefully continued, I inject Clyſters made of Milk and Sugar, between times on the intermediate Days of Bleeding; earneſtly recommending the exact Obſervance of theſe Directions, for at leaſt eight Days after the laſt Bleeding; and then I preſcribe a gentle purging Potion to be taken in the Morning, and in the Evening a large Doſe of Syrup of white Poppies in Cowſlip Flower Water; whereby a Check is put to the tumultuary Motion of the Blood, which might otherwiſe endanger a Relapſe. This being done, I allow the Patient to return by Degrees to his cuſtomary way of Living, with reſpect to Diet, Exerciſe, and Air; but at the ſame time caution him to refrain, for a conſiderable time, from Wine, and all ſpirituous Liquors, ſalt or high-ſeaſon'd Fleſh, and in general from all Food of difficult Digeſtion.

After having repeated Bleeding, as above ſpecified, the Pain is greatly abated, though it does not go quite off; but as ſoon as the Strength returns, which Bleeding had greatly impair'd, the Symptoms will vaniſh, and the Patient recover perfectly; eſpecially upon the Approach of the following Seaſon of the Year, which will be more conducive to recruit the Strength, than that wherein he was firſt attacked with the Diſeaſe.

But though this, or a ſimilar Method, ſeaſonably uſed in the Beginning of the Diſeaſe, generally proves ſucceſsful; yet it frequently happens, when the Cure is attempted by a contrary Procedure, that the Patient is ſeverely afflicted during Life with flying Pains, which are ſometimes violent, and at others more gentle; whereby the Unſkilful are eaſily deceived, and they are commonly reckoned Symptoms of the Scurvy.

But it is here to be obſerved, that when the Rheumatiſm hath taken deep Root by a Continuance of ſome Years, it is improper to repeat Bleeding at ſuch ſhort Intervals as in the Beginning of the Diſeaſe; and better to interpoſe ſome Weeks between the Operations. By theſe Means the morbific Matter will either be quite exhauſted, or at leaſt in ſo great a Degree, that the Remains of it may be carried off entirely, by an Iſſue made in one of the Legs, and exhibiting a proper Quantity of ſome volatile Spirit, every Morning and Evening, in Canary.

But though there is a remarkable Difference between the true Rheumatiſm and the Scurvy, it muſt nevertheleſs be own'd, that there is another Species of the Rheumatiſm, which is near a-kin to the Scurvy: For it reſembles it in its capital Symptoms, and requires nearly the ſame Method of Cure; and therefore I call it a ſcorbutic Rheumatiſm. The Pain ſometimes affects one and ſometimes another Part, but it rarely occaſions a Swelling, as in the other Species, neither is it attended with a Fever. It is, alſo, a leſs fixed Pain, and accompanied with irregular Symptoms; ſometimes it affects one Limb, and ſometimes another; ſometimes it only attacks the internal Parts, and cauſes Sickneſs, which goes off again upon the

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the Return of the Pain of the external Parts. In this manner the Patient is alternately afflicted, and the Diſeaſe proves of long Duration, like thoſe Diſtempers which are eſteemed moſt chronical. It principally attacks the Female Sex, and Men of weak Conſtitutions; ſo that I ſhould have concluded it ought to be referred to the Tribe of hyſteric Diſorders, had not repeated Experience taught me, that it would not yield at all to hyſteric Remedies.

Such, likewiſe, as have gone through a long Courſe of the Peruvian Bark, are ſubject to this Diſeaſe, which, by the way, is the only ill Effect I have ever obſerved from the Uſe of this Medicine. But however it be, this Diſeaſe, whether it proceeds from this or any other Cauſe, is eaſily conquered by the Uſe of the following Remedies, which I ſhould have conceal'd, had I not preferred the Good of Mankind to any private Intereſt.

Take of the Conſerve of Garden Scurvy-Graſs, 2 Ounces; Conſerve of Wood-Sorrel, an Ounce; compound Powder of *Arum*, ſix Drams; Syrup of Oranges, enough to make the whole into an Electuary; two Drams of which is to be taken three Times a Day, for a Month, drinking after it three Ounces of the following diſtilled Water.

Take of Garden Scurvy-Graſs, eight Handfuls; of Water-Creſſes, Brook-Lime, Sage, and Mint, each four Handfulls; the Peel of ſix Oranges; Nutmegs bruiſed, Half an Ounce; infuſe them in ſix Quarts of Mum, and draw off only three Quarts for Uſe, in a common Still.

A CONSUMPTION FROM A RHEUMATISM.

In a Gout and Rheumatiſm, eſpecially thoſe of the legitimate and humoral Kind, which draw their Origins from an acrid Ferment ſupply'd by the Nerves, there is ſo manifeſt a Colliquation of the whole Maſs of Blood, that we have no Reaſon to wonder if a Phthiſis ſhould ariſe from theſe Diſorders, eſpecially when they are obſtinate, chronical, or ſubject to recur frequently. Hence we may obſerve, that Rheumatic Pains, ariſing from a contracted Cold, ſeldom or never invade the Joints, without being accompany'd with a pulmonary Cough. And as I obſerv'd that the illuſtrious Mr. *Orlando Bridgman*, Mr. *Philips*, Mr. *Tibs*, and a great many others, have at laſt died either of a Phthiſis or Aſthma, after long-continued arthritic and rheumatic Paroxyſms; ſo I have, alſo, ſometimes remark'd, that an acute and fatal Phthiſis ſucceeded the very firſt Paroxyſm of the Rheumatiſm.

It ſometimes happens that a Phthiſis ſucceeding the firſt Acceſs of the Rheumatiſm is of the acute Kind, ſince it draws its Origin from the Colliquation of Humours in the acute Paroxyſm of the humoral Rheumatiſm. As it, therefore, partakes of the Nature of a common Phthiſis, its Cure ought to be attempted in the ſame manner; that is, by lubricating and incraſſating Subſtances, Opiates and other pulmonary Medicines. And even in Caſes where there is neither a troubleſome Cough, nor a Difficulty of Breathing, I uſe, and that with great Succeſs, in all Paroxyſms of the Rheumatiſm, to preſcribe large Quantities of *Apozems* and *Eclegmas*, of a pectoral, lubricating and incraſſating Nature, not only with a View to give a proper *Craſis* and Softneſs to the Blood; but, alſo, in order to guard againſt a *Phthiſis*, which frequently acknowledges a Rheumatiſm for its Cauſe.

When a Phthiſis ariſes either from a Gout, or an inveterate and often recurring Rheumatiſm, it is plainly of the chronical Kind, and may happen for a long Tract of Years gradually to injure the Lungs and other Parts, deſtin'd for the ſeveral Purpoſes of Reſpiration. And, indeed, a Phthiſis of this Kind partakes of the Nature of an Aſthma; ſince, by reaſon of the Viſcidity of the Phlegm, it is more frequently accompany'd with a Difficulty of Breathing than an obſtinate Cough, and ſeems rather to ariſe from a *Stupor* of the nervous Syſtem, than a Colliquation of the Humours.

But this aſthmatic Phthiſis has, in my Opinion, ſomething ſingular in its Nature, ſince the Choice of Air has not the leaſt Influence upon it; for I have obſerv'd, that Patients labouring under this Species of Phthiſis, even though they were aſthmatic, breath'd as free and eaſy in an Air that was damp, and impregnated with the Smoke of Coals, as in that which was pure and ſerene. Hence it happens, that lubricating and expectorating Medicines are, at leaſt, of no Service in this Caſe; whilſt, at the ſame time, Opiates and incraſſating Subſtances produce the moſt fatal Effects. Greater Relief is juſtly to be expected from frequent and copious Exhibitions of the Spirit of Harts-horn, Sal-Ammoniac, chymical Oil of Juniper, and ſuch other Medicines as rouze the Spirits and comfort the Nerves, than from any Opiates or pectoral Medicines whatever.

The rheumatic Pains and Swellings are generally leſſened in proportion as this Aſthmatic Phthiſis advances and gains Ground. And indeed a true and legitimate humoral Rheumatiſm degenerates into a nervous one, accompanied with flitting Pains, without any apparent Swelling, long before it proves mortal.

A rheumatic Phthiſis, ariſing from a chronical Rheumatiſm, and invading old People, is, for ought I know, altogether incurable, ſince 'tis a ſure Sign that weakened Nature is now no longer able to maintain the laborious Struggle, and grapple with ſo formidable an Enemy as the Rheumatiſm.

Gentle Vomits, repeated at proper Intervals, eſpecially if they happen to work eaſily, and are not called in too late, contribute very much to the Cure of this Species of Phthiſis, ſince they prove Deobſtruents to the Brain and Nerves, allay the rheumatic Pains, and leſſen the Stupor and Rigidity of the nervous Syſtem in general; by which Means the procatarctic Cauſe, or Fomes of this kind of Phthiſis is in a great Meaſure removed, or at leaſt diminiſhed.

Veneſection, in the Beginning of this Diſorder, before the Strength of the Patient is too much exhauſted, is alſo of ſingular Service, not only by leſſening the hectic Heat, and the rheumatic Pains, but alſo by proving a grateful Relief to the Difficulty of Breathing.

But when the Diſeaſe is conſiderably advanced, and the Patient labours under an univerſal and preternatural Languor, I have often obſerved, that Veneſection not only gives an additional Shock to Nature, already too much weakened, but alſo increaſes the Difficulty of breathing. And indeed I have not the leaſt Reaſon to doubt, but this aſthmatic Phthiſis frequently proceeds from profuſe and often repeated Veneſections, under the Paroxyſms of a Rheumatiſm; ſince by that Means, as well as by other immoderate Hemorrhages, the due *Craſis* of the Blood is deſtroyed, and its whole Maſs impoveriſhed.

I have alſo had many Proofs of the ſingular Efficacy of the Peruvian Bark in extinguiſhing the hectic and colliquating Heat, excited and left in the Maſs of Blood, by the Force and Violence of the Rheumatiſm; and indeed if this Heat is not removed and carried off, either by the Efforts of Nature, or the Aſſiſtance of Art, it paves a direct Way, and lays a ſure Foundation for a pulmonary Phthiſis.

I have alſo obſerved, that for this very Reaſon, chalybeate Medicines, and eſpecially chalybeate mineral Waters, provided they were drunk betimes, and paſs'd off freely and copiouſly by Urine, were of ſingular Uſe in the firſt Stages of this Diſtemper, for procuring a Reſpite, at leaſt, if not for perfecting the Cure.

Hot Baths, and artificial Baths, uſed before the Patient's Strength is too much exhauſted, have generally a lucky Influence upon this Species of Phthiſis in its firſt Stages, by removing the Obſtructions of the Fibres.

In the Beginning of this Diſtemper, a Milk Diet is alſo of ſingular Service, by diminiſhing the Heat, and allaying the preternatural Acrimony of the Blood. But I muſt own it is not ſo proper when the Diſeaſe is advanced, and a Difficulty of breathing already brought on; becauſe, in that caſe, it generally renders the Phlegm impacted in the *Bronchia* more glutinous than it was before. Nor perhaps is it a groundleſs Conjecture, that the too plentiful Uſe of Milk in Rheumatiſms very much diſpoſes the Patient to an aſthmatic Phthiſis.

CASE I.

One Mrs. Laurence, about thirty five Years of Age, happening, when big with Child, to be ſeized with an univerſal Rheumatiſm, was ſo unfortunate as to commit the Care of her Health to a certain Apothecary for ſome Months, till at laſt conſidering her Complication of Symptoms, her Cough, her Difficulty of breathing, her hectic Fever, her Languor, and other Symptoms of a like Nature, it became uncertain whether ſhe was to fall a miſerable Sacrifice to a Rheumatiſm or a Phthiſis, ſince her Rheumatiſm, which was formerly of the legitimate Kind, had by this Time degenerated into a nervous one, accompanied with a certain Rigidity and flitting Pain of the Joints, but without any Tumour or Swelling. When the Patient was in this deplorable State, I was called on the 25th of *October* 1686; and in order to allay the rheumatic and hectic Heat of the Blood and Spirits, together with the hyſteric Indiſpoſition ariſing from them, I preſcribed her the following Electuary and Julep.

Take of the old Conſerve of red Roſes and of Hipps, ſtrained through a Sieve, of each an Ounce, Lavender Flowers powder'd, Magiſtery of Coral; of each a Dram, of Syrup of Corals a ſufficient Quantity, mix them, and make an Electuary, of which let her take the Quantity of a Nutmeg every ſix Hours.

Take

Take the Waters of Rue, and black Cherries, of each four Ounces; of Barley-Cinnamon Water three Ounces, the compound Waters of Piony, and of Briony, of each an Ounce and half; of prepared Pearl a Dram and half; of fine Sugar a ſufficient Quantity to ſweeten them; mix them, and make a Julap, of which let her take four or five Spoonfuls after every Doſe of the Electuary, and likewiſe at other Times when ſhe has a Mind to it.

To help the Pains and Stiffneſs of her Joints, I ordered that ſame Night bliſtering Plaiſters to be applied to the Inſide of her Arms, near the Arm-Pits; and I tried a gentle Evacuation by Stool, with two Ounces of Tinctura Sacra, which ſhe bore well. I ordered the following Paregoric Draught to be taken when ſhe was to go to Reſt.

Take of red Poppy Water three Ounces, Barley-Cinnamon Water an Ounce, of compound Piony Water two Drams, Salt of Wormwood ſix Grains, Syrup of Mecconium ſix Drams, mix them, and make a Draught.

October 28. I gave her the following Vomit.

Take of the Infuſion of *Crocus Metallorum* an Ounce, Syrup of Violets two Drams; mix them, and let them be given for a Vomit about five o'Clock in the Afternoon, with due Care and Management; and (if it be neceſſary) let her take between her Vomiting a Scruple of Salt of Vitriol, twice or thrice in a Draught of warm Poſſet Ale.

I ordered alſo the following Paregoric Draught to be taken when the Vomit had done working.

Take of Mint-Water half an Ounce, Dr. Stephen's Water three Drams, Barley-Cinnamon Water, Alexiterial Milk Water, of each an Ounce, of Diacodium ſix Drams; mix them, and make a Draught.

From the Vomit ſhe found an univerſal Relief, and that not only from the Symptoms of her Conſumption, but alſo of her Rheumatiſm. And therefore, after three Days, I ordered the Repetition of the Vomit; and then I endeavoured to extinguiſh the hectic Flame, which had been kindled in the Blood by the Rheumatiſm, and thereby to take Care of her Lungs, which had been injured by it, in the Manner following.

Take a ſufficient Quantity of the Ingredients of the pectoral Decoction, of the Peruvian Bark an Ounce, Balſam of Tolu a Dram; boil them in a ſufficient Quantity of ſpring Water, to a Pint and half; to the Liquor, when it is ſtrained, add diſtilled Treacle Water, the Balſamic Syrup, of each an Ounce and half; mix them, and make an Apozem, of which let her take four Ounces three Times a Day for ſix Days together, taking always in the Night-Draught fifteen Drops of Helmont's liquid Laudanum, if any Gripes, or Looſeneſs, or want of Reſt ſhould trouble her.

When ſhe had done uſing the Apozem, I ordered the emetic Potion to be repeated, and afterwards, *Novemb.* 13. I preſcribed the following Pills.

Take of the *Peruvian* Bark, finely powdered, an Ounce, Mucilage of Gum Tragacanth, a ſufficient Quantity. Mix them, and make them into Pills of a middle Size, to be gilt; of which let her take ſix Morning and Evening, every Day.

With the Uſe of theſe ſhe grew perfectly well, being evidently freed not only from the Pains and Stiffneſs of her Limbs, but likewiſe from her Cough, Difficulty of Breathing, Oppreſſion, Fever, and all the other Symptoms of a pulmonary Conſumption. Her Appetite alſo returned, and at length ſhe likewiſe recovered her Strength, and her Fleſh, and ſtill enjoys very good Health, without any Return of her Rheumatiſm or Conſumption. *Morton.*

RHEXIS, ῥῆξις, from ῥήγνυμι, to break, a Rupture, in *Hippocrates*, 5 *Aph.* 15. ſignifies the breaking of an Abſceſs; and alſo 6 *Epid. Sect.* 6. *Aph.* 24. In other Places it is applied to a Rupture of ſome Blood-Veſſel, whence an Hæmorrhage is occaſioned.

RHICNOSIS, ῥικνωσις, from ῥικνὸς, rugous or wrinkled, is a Corrugation of the Skin, attended with an Extenuation of the Body, and oppoſed to *Ectaſis*, ἔκτασις, a Diſtention of the Skin from Repletion.

RHIGOS, ῥῖγος, *Lat. Rigor*, a Rigor, is defined by *Galen*, *Lib. de Trem. & Palp. &c.* a Perfrigeration, with an Uneaſineſs, and irregular Agitation and Concuſſion of the whole Body. This is the Definition of a morboſe *Rigor*, ῥῖγος νοσῶδες, or αὐτόματον, as he calls it, *Com.* 3. *in* 1 *Epid.* or ῥῖγος νοσῶδες, as it is called by *Hippocrates*, *Lib.* 4. *de Morb.* when the Diſorder ariſes, or has its Original in the internal Parts, and proceeds from no external violent Cauſe, but invades and comes upon the Body, as it were ſpontaneouſly; for *Rigor* in a more univerſal Senſe, or as it ſignifies any uneaſy Perfrigeration, may be incident to Perſons in Health. That a *Rigor* is not a Senſe of Perfrigeration, with a Trembling, is largely proved by *Galen* in the Book above cited, where he gives the diſtinguiſhing Characters of a *Rigor*, and a *Tremor*, or Trembling; and at laſt concludes, that a *Rigor* is a ſtrong and urgent Senſe of a Refrigeration of the natural Heat. *Hippocrates*, alſo, *Lib.* 1. *de Morb.* ſays, that a *Rigor* proceeds from a Refrigeration of the whole Body, occaſioned by a Refrigeration of the Blood; and *Lib.* 4. he makes a *Rigor* to take its Riſe from a violent Irruption of acrimonious Humours into ſome Part, and a vehement Conflict of the jarring Humours, attended with a Concuſſion of the whole Body; and ſuch a *Rigor* as this was always accounted by the Ancients an Attendant upon a Fever, as appears from *Hippocrates*, *Lib.* 1. & 4. *de Morbis*; for a ῥῖγος ἀπυρέτιον, or a *Rigor* not ſucceeded by an intemperate or feveriſh Heat, was, as *Galen* ſays, *Lib.* 5. *de Sympt. Cauſ.* unknown to the ancient Phyſicians, on account of their extremely frugal Way of Living, being no more than a Senſation of a kind of Horror, and having very little of the true *Rigor* in it. This owes its Original to a vitreous Phlegm, and cold and crude Juices, Intemperance in Diet, a lazy and idle Life, and to the frequent Uſe of Bathing; and is very familiar to the Female Sex, as *Galen* in many Places aſſures us. *Hippocrates*, *Lib.* 1. *de Morb.* makes a *Horror* to be a weak kind of *Rigor*; and *Celſus*, *Lib.* 8. *Cap.* 2. uſes the Word *Horror* for *Rigor*, from 4 *Aph.* 58. where he ſays, "That a burning "Feve, which the *Greeks* call Καυσώδης, *Cauſodes*, meets with a "Solution from the ſudden Coming of a *Horror*." The *Latins* alſo call thoſe Shiverings and Shakings, which affect the Patient under the Fits of Fevers, indifferently by the Name of *Horrores* or *Rigores*.

Rigor is alſo taken in another and quite different Senſe, for an inflexible Hardneſs and Tenſion of the Nerves and Muſcles, which ſeems more properly expreſſed by *Rigiditas*.

RHINARION, ῥινάριον, the Name of a ſmectic or deterſive Collyrium, deſcribed by *Paulus*, *Lib.* 7. *Cap.* 16.

RHINE. The ſame as SQUATINA, which ſee.

RHINEMA, RHINISMA, ῥίνημα, ἡ ῥίνησμα, Scrapings, Shavings, Filings, and the like. *Hippocrates*, *Lib.* 1. περὶ γυναικ. and *Galen*, *Lib.* 3. κατὰ τόπ.

RHINENCHYSIS, ῥινέγχυσις, from ῥὶς the Noſe, and ἐγχύω, to infuſe; an Infuſion into the Noſtrils, which is performed by an Inſtrument called

RHINENCHYTES, ῥινεγχύτης, a Syringe for the Noſtrils, mentioned by *Cælius Aurelianus*, *de Morb. Chron. Lib.* 2. *Cap.* 4. and *Lib.* 3. *Cap.* 2. where the vulgar Reading is *Rinenchytos*; but *Rhodius*, *ad Scrib. Larg.* reads *Rhinenchytes*.

RHINION, ῥίνιον, the Name of a Collyrium in *Galen de C. M. S. L. Lib.* 4. *Cap.* 7. and of another deſcribed by *Celſus*, *Lib.* 6. *Cap.* 6. for a dry Opthalmy, and ſcabrous Eyes. *Caſtellus.*

RHINOCEROS, Offic. Schrod. 5. 305. Raii Synop. A. 122. Mont. Exot. 5. Aldrov. de Quad. Biſul. 878. Charlt. Exer. 12. Geſn. de Quad. 842. Jonſ. de Quad. 66. *Avada ſive Rhinoceros*, Bont. THE RHINOCEROS.

The Part in Uſe is the black, fiſſile, pyramidal Horn, a Cubit in Length, of the Figure of a Buffalo's Horn, and perfectly ſolid, or without Cavity.

This Horn is commended againſt contagious Poiſons, and other Diſtempers which require Sudorifics, and therefore in ſuch Caſes may ſupply the Want of the Unicorn's Horn. *Schroder.* *Monti* writes that the Horn is alexipharmic, cardiac, ſtomachic, diaphoretic, and a Sweetner.

Though there are various Kinds of Quadrupeds with one Horn, deſcribed by Authors, I take them all, ſays *Dale*, to be fictitious, except the *Rhinoceros*, which is the only Unicorn, or one-horn'd Quadruped, and perhaps the very ſame with that of the Ancients, whoſe Horn *Ælian* affirms to be black. And *Schroder*, as well as others, aſcribe the Virtues ſaid to be in the Horn of the Unicorn, to the Horn of the *Rhinoceros*.

RHINOPTES, ῥινόπτης, from ῥὶς, or ῥῖνες, the Noſtrils, and ὄπτομαι, to ſee, is a Perſon who from a Diſeaſe in the great *Canthus* of the Eye, which has laid open the Paſſages to the Noſe, is enabled to ſee through the Noſtrils; an Inſtance of which we have in *Rungius de Viſus Sympt.*

RHINOS, ῥινὸς, in *Eratian*, is expounded by δέρμα, the Skin.

RHIPIDION, ῥιπίδιον. A Fan. *Moſchion.*

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RHIPTASMOS, ῥιπτασμὸς, from ῥίπτω, to toss or cast. A Tossing and Restlesness, a Symptom very frequent in Fevers. See ALYSMOS.

RHIZA, ῥίζα. A Root.

RHIZAGRA. The Name of a Chirurgical Instrument, for extracting the Roots or Stumps of Teeth.

RHIZIAS, ῥιζίας. A Liquor collected from Roots by Incisions made therein. *Silphium* is particularly thus called.

RHIZOPHORA. The Name of a Vegetable, of which *Boerhaave* mentions two Species; the first of which is the *Rhizophora*; *Indica*; *Bryoniæ nigræ similis*; ad foliorum ortum verrucosa. *Plukn. Phyf. T.* 220. *F.* 50.

The second is the

Rhizophora; Americana.

RHIZOTOMUS, ῥιζοτόμος. The same as RADICISECA.

RHOA, ῥοὰ. The Pomegranate.

RHODAPSINTHATON, ῥοδαψίνθατον. A Preparation of Roses. *Ætius* describes several of these, Tetrabib. 4. Serm. 4. C. 117.

RHODELÆUM. Oil of Roses.

RHODIA RADIX, Offic. Ger. 426. Emac. 532. Raii Hist. 1. 690. Park. Theat. 729. C. B. P. 286. J. B. 3. 683. *Telephium luteum minus, radice Rosam redolente*, Hist. Oxon. 3. 468. *Anacampseros radice Rosam spirante major*, Tourn. Inst. 264. Boerh. Ind. A. 269. Raii Synop. 3. 269, ROSEWORT.

It grows on hilly Places, and flowers in the Spring. The Part in Use is the tuberous and brittle Root, which is of a dark-brown Colour on the Outside, and whitish within, and of a rosy Smell and Taste. This Root is heating and drying, and cephalic; its principal Use is in Pains of the Head. *Dale.*

RHODIACON, ῥοδιακὸν. The Name of a Plaister described by *Galen* from *Asclepiades. L.* 2. *de Comp. Medic. p. G. Cap.* 17.

RHODIDES, ῥοδίδες. Troches of Roses, described by *Dioscorides. L.* 1. *C.* 131.

RHODINON, ῥόδινον. Oil of Roses. Or Vinegar of Roses.

RHODITES VINUM. Wine impregnated with Roses; the Manner of preparing it is described by *Dioscorides, L.* 5. *C.* 35.

RHODIUM LIGNUM. See ASPHALTHUS.

RHODODAPHNE. The same as RHODODENDRON.

RHODODENDRON. The Oleander, or Rose-Bay. See NERIUM.

RHODOMELI. Honey of Roses.

RHODOMELON. ῥοδόμηλον. A Confection of Roses, Quinces and Honey.

RHODON, ῥόδον. A Rose. Sometimes it imports the Oil of Roses.

RHODOSACCHARUM. Sugar of Roses.

RHODOSTACTON, ῥοδόστακτον. Honey of Roses. *Paulus Ægineta. L.* 7. *C.* 17.

RHODOSTAGMA, ῥοδόσταγμα, from ῥόδον, a Rose, and στάζω, to distil. Dr. *Freind* remarks, that *Actuarius* is the first *Greek* Author who makes mention of distilled Liquors, as the *Rhodostagma*, and *Intybostagma*, which the Translator calls *Stillatitius Liquor Rosarum, & Aqua quam Intybus stillavit*; and which are by the Author used as Ingredients in a Julap. *Gesner* indeed contends, that these Liquors here specified, are not prepared by any chymical Process, and are nothing more than Syrups of those Plants, just like the *Rhodostacton* described in *Paulus*. M. *le Clerc*, following the Opinion of *Langius*, thinks otherwise; and has shewn very plainly, that the stillatitious Liquor of Roses mentioned by *Actuarius*, is very different from the *Rhodostacton* of *Paulus*, which is only made with the Juice of Roses and Honey boiled up together. His Judgment seems to be very right in this Matter; and as a further Proof of it, give me leave to observe a Passage or two in *Niclaus Myrepsus*, one of the last of the *Greeks*, and who often copies from our Author. He describes the *Rhodostacton* of *Paulus*, only with this Difference, that he says it may be made with Sugar, as well as with Honey: Then he describes the *Hydrorosatum*, as it is delivered down to us by *Ætius* and *Paulus*, a Medicine much like the former, with this Variation alone, that Water is added to the Roses: And after that, he proceeds to give this very Julap in *Actuarius*, which proves, at least, that he thought it a Preparation very distinct from the other two. And it must appear very evident to any one who considers the Composition itself, that it is a very absurd one, unless the distilled Rose-Water be meant; for otherwise it is just a double Trouble, and making the Medicine twice over, with the very same Ingredients, to little purpose.

RHOE. The same as RHUS.

RHOEAS, ῥοιὰς, or ῥοὰς, from ῥέω, to flow, or ῥόος, to draw, is a Flux of the Eyes, occasioned by a Diminution of the Flesh in the greater Canthus, or Angle of the Eye. *Galen, Com.* 2. *in* 6 *Epid.* makes four Kinds of it, according to the different Causes; for either it is occasioned, he says, by the Closure or Obstruction of the Passage at the great Canthus, or by a Collection of so much Excrement in the Eye, that this Passage, by reason of its natural Straitness, is incapable of receiving it, and therefore discharges it. Or thirdly, it may proceed from the Stopping of the Passage by a Cicatrix growing therein, as it happens after a Section of the *Encanthides*. [See ENCANTHIS.] Or lastly, from any other Ulceration of the Part. The Author of the *Definitiones Medicæ*, defines a *Rhœas* to be a Consumption of the Flesh in the Angles of the Eye, occasioning a Flux of the Tears. And in the *Isagoge* ascribed to *Galen*, we read that the Eye is affected with a *Rhœas*, when either the *Canthus*, by some unknown Cause, is perverted, or by a chirurgical Operation so raised, as to be incapable of containing the Tears, or preventing their Efflux.

According to *Ætius*, in *Tetr.* 2. *Serm.* 3. *Cap.* 88. the Disorder by the *Greeks* called *Rhœas*, which is a Diminution or Decrease of the Flesh in the large Angle of the Eye, happens when by an Exulceration, or the Removal of a Pterygium, or the natural Flesh, the Angle of the Eye is removed, falls down on the Cheek, and becomes uncapable of retaining the Tears. This Disorder also sometimes happens from an ill-cured *Ægilops*. Those Persons are, also, called *Rhœades*, who in Consequence of continual Defluxions of the Eyes, perpetually discharge Tears. Those, the Angle of whose Eye is totally removed, are to be cured by Medicines of a corroborating and consolidating Quality. But if a Callus is induced, the Parts must be stimulated by some more acrid Medicines. But manual Operation is also necessary for the Cure of this Disorder; for a Ligature is to be applied about the Neck, and some Blood-Vessel about the Nose, are to be marked out and afterwards opened with a two-edged Knife. Then a Sponge being applied to the Eye, a triangular Cautery is to be applied to the Part, tho' not so deep as the Bone, but only so as to affect the Skin and Wound. Afterwards a Lentil with Honey is to be applied. When the Ulcers are sufficiently clean, the Eye is to be kept open till the Angle is filled with laudable Flesh, for fear of a Concretion. In the Cure of this Disorder, Allum and Turpentine are of singular Service.

RHOGME, ῥογμὴ. A Rupture, Fracture, or Fissure.

RHOGMOS, ῥογμὸς. A Snoring.

RHOICOS, ῥοϊκὸς. Fluid. An Epithet for Bodies abounding with Humidity.

RHOIDARIUM, ῥοϊδάριον. The Name of a Medicine described by *Ætius, Tetrabib.* 1. *Serm.* 2. *C.* 68.

RHOITES, ῥοΐτης. A Sort of *Rob* of the Juice of Pomegranates, described by *Dioscorides*, L. 5. C. 34. But a Confection made of three Sextaries of the Juice of Pomegranates, and one of Honey, boiled to the Consumption of one Third, is thus called by *Paulus Ægineta. L.* 7. *C.* 15.

RHOMBOIDES MUSCULUS.

This Muscle is a thin, broad and obliquely square fleshy Plan, situated between the Basis of the Scapula and the Spina Dorsi; and it is from its Figure that it has been termed *Rhomboides*.

It may be divided into two Portions, one superior, the other inferior, which sometimes appear separate. The superior Portion, which seems in some Subjects to be made up of two, is fixed by an Insertion wholly fleshy in the two or three lowest spinal Apophyses of the Neck, and partly in the posterior cervical Ligament. The inferior Portion is fixed by a tendinous Plane in the three or four uppermost spinal Apophyses of the Back.

These two Portions, of which the inferior is by much the broadest, being united, are inserted in the Edge of the Basis Scapulæ from the small triangular Space to the inferior Angle, the superior Portion covering a small Part of the Insertion of the *Angularis*.

This whole Muscle is covered by the *Trapezius*, and covers immediately the *Serratus Posticus Superior*, being joined to each of these Muscles by a filamentary or cellulous Substance.

According to the Insertions and Direction of the *Rhomboides*, its general Use must be to draw backward and upward the subspinal Portion of the Basis Scapulæ.

It is also a Moderator to the *Trapezius* and *Serratus Major*, when they raise the Shoulder or carry the *Acromium* upward, and it brings the Scapula back to its natural Situation, when the Action of these Muscles ceases.

It may draw the Scapula directly backward, if the inferior Portion of the *Trapezius* acts at the same time. For as this Portion draws obliquely downward and toward the Spina Dorsi, and the *Rhomboides* obliquely upward and toward the same Spine; the joint Action of both must produce a Motion directly backward, as it happens when we pull back both Shoulders equally, in order to disengage them.

It

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It may also, together with the radiated Portion of the *Serratus Major*, draw the Basis of the Scapulæ directly backwards. This, however, is but an inconsiderable Motion, and not so easy as the rest; for the *Serratus Major* contributes to it only in proportion to the Action of the *Rhomboides*, which is but very small; and in this Case the *Acronium* can rise but a very little Way. *Winslow's Anatomy.*

RHOMBOS, ῥόμβος. A Species of Bandage mentioned by *Galen*, thus called from its Figure.

RHOMBUS. A Fish called a Turbot.

There are several Sorts of Turbot, of different Sizes; some have Prickles on their Head, and towards the Tail, and others none. They have a delicious Taste, and are best while they are fresh, firm, white, tender and juicy. Some call it *Phasianus Aquaticus*, the Water-Pheasant, because its Taste resembles that of a Pheasant. It contains a just Proportion of oily and volatile saline Principles, and has but few viscous and gross Juices. It is, therefore, nourishing and easy of Digestion; is reckoned good against the Distempers of the Spleen, when applied thereto, and produces no ill Effects, unless immoderately used. It agrees at all times with any Age and Constitution.

There are very large Turbots in the Ocean and Mediterranean. *Rondeletius* says, he had seen some which were five Foot long, four in Breadth, and a Foot thick. This Fish sometimes lives about the fat Soils, and near the Shores, but generally at the Mouths of Rivers, where it watches the small Fishes, on which it feeds, especially the Cray-Fish. *Lemery on Foods.*

RHOMMA, ῥόμμα. The same as ROPHEMA.

RHONCHOS, ῥόγχος. Snoring or Snorting; from ῥέγχω, to snore.

RHOPALOSIS, ῥοπάλωσις. A Disorder of the Hair, which should seem to resemble the *Plica Polonica*, as it consists in a Matting or Concretion of the Hairs together. *Galen Defin.*

RHOPE, ῥοπή, from ῥέπω, to verge, or incline. A violent Tendency of the Humours to any particular Part.

RHOPHEMA, ῥόφημα, from ῥοφέω, to sup. This Word is frequently used by *Hippocrates*. *Cælius Aurelianus* translates it, *Serbilis Cibus*. It is the Cremor of Ptisan, that is the Pulp of Barley decorticated and boiled.

RHOX, ῥώξ. The *Tunica Uvea* of the Eye. Or the Pupil of the Eye, in *Moschion de Morbis Mulierum.*

RHUS.

The Characters are;

The Leaves are pinnated, or triphyllous; the Calyx is quinquefid, small and dentated. The Flowers are rosaceous, pentapetalous, and disposed in Bunches. The Ovary in the Bottom of the Calyx becomes a roundish Capsule, pregnant with a single and almost globular Seed.

Boerhaave mentions twelve Sorts of *Rhus*, which are;

1. Rhus; folio Ulmi. *C. B. P.* 414. *Tourn. Inst.* 611. *Boer. Ind. A.* 2. 229. *Rhus Obsoniorum, Sumach.* Offic. *Rhus Coriaria*, Ger. 1291. Emac. 1474. *Rhus, sive Sumach.* J. B. 1. 555. Raii Hist. 2. 1590. *Sumach, sive Rhus Obsoniorum & Coriarium*, Park. Theat. 1450. COMMON SUMACH.

This Rhus grows not to be a Tree of any great Magnitude, having its Branches cloathed with long pinnated Leaves, whose single Pinnæ resemble the Leaves of the Elm-Tree, but are somewhat longer; the Flowers grow in large white Clusters, which are succeeded by small, flat, round, hairy Seed, of a restringent earthy Taste. It grows in *Italy*, *Spain* and *Turkey*. The Leaves and Seed are used.

They are both very restringent and stiptic, good for all Kinds of Fluxes and Hæmorrhages, both used inwardly and outwardly. They resist Putrefactions and Gangrenes, and Mortifications. It is an Ingredient in the *Syrupus Myrtinus.*

The *Unguentum Sumach* takes its Name from the Seed. *Miller. Bot. Off.*

It is refrigerating, drying and astringent, and is principally used in Fluxes of the Belly, Uterus and Menses. It restrains the Hæmorrhoids, and corrects Bile. We think fit to observe, that the *Rhus Obsoniorum, Coriariorum*, and *Rubeum* (the *Rhus* of the Cooks, of the Tanners, and the red *Rhus*) of *Galen*, are not different Species of Trees; but the *Rhus Obsoniorum* is no other than the Fruit; the *Rhus Coriariorum*, the Leaves and small Branches; and the *Rubeum* the Seed of the same Tree. This is the Opinion of that very learned Botanist, Mr. *J. Ray*, with whom we agree in our Sentiments on this Head. *Dale.*

2. Rhus Virginianum. *C. B. P. App.* 417. *Raii Hist.* 2. 1591. *Tourn. Inst.* 611. *Boerh. Ind. A.* 2. 229. *Park. Theat.* 1450. *Sumach sive Rhus*, Ind. Med. 114. VIRGINIAN SUMACH.

It is a Native of *Virginia*, but cultivated with us in the Gardens of the Curious, and is esteemed to have the same Virtues as the common Sumach.

3. Rhus; Americanum, Rachi, cui adnascuntur folia, rubrâ; folio lato, utrimque glabro, non serrato, Pistachiæ simili.

4. Rhus; Americanum; Rachi, cui folia adnascuntur, rubrâ; foliis præcedenti angustioribus.

5. Rhus; Americanum; Rachi, cui folia adnascuntur, rubrâ, alatâ; foliis molle Clusii brevioribus.

6. Rhus; Africanum; trifoliatum; majus; folio subrotundo, integro, molle & incano. *Plukn. Phyt.* 219. 8.

7. Rhus; Africanum; trifoliatum; majus; foliis obtusis & incisis, hirsutiè pubescentibus. *Plukn. Phyt.* 219. 7.

8. Rhus; Africanum; trifoliatum; majus; foliis acutioribus, incisis, suprâ viridibus, glabris, infrâ argenteis, glabris. H. R. D.

9. Rhus; Africanum; trifoliatum; majus; foliis acutioribus, arguticis denticulatis, glabris, subtus argenteis. H. R. D.

10. Rhus; Africanum; trifoliatum; majus; foliis subtus argenteis, acutis, & margine incisis. *Plukn. Phyt.* 219. 6.

11. Rhus; Africanum; trifoliatum; minus; glabrum; splendente folio, subrotundo, integro. *Plukn. Phyt.* 219. 9.

12. Rhus; Africanum; trifoliatum; majus; glabrum, splendente utrimque folio, subrotundo, medio quandoque crenato. H. R. D. *Boerh. Ind. Alt. Plant. Vol.* 2.

It is called *Rhus*, ῥοῦς, from ῥέω, *rheo*, to flow, because it stops Fluxes. The Fruit, which is disposed as it were in Clusters, and is of a red Colour, and an acid and grateful Taste, is of excellent Service in a Diarrhæa and Dysentery, especially when it is boiled with the Rinds of Pomegranates in Water. It is no less useful in an immoderate Flux of the Menses, in the Diabætes, Hæmorrhoids, and Gonorrhæa. The Seeds of the Sumach are only the dry'd Grains, taken out of the Clusters, and are not of so much Virtue, on account of their Dryness; and therefore the recent Berry is to be chosen, being excellent, particularly in resisting Putrefaction, and a Gangrene in a Paronychia. The Gum put in a Tooth eases the Tooth-ach. The tender Buds, and green Fruits before they are rendered succulent by Maturity, are of Service in a kind of hectic Fever, attended with profuse Sweats, on account of the too great Tenderness, Flaccidity and Humidity of the Fibres. *Hist. Plant. ascript. Boerhaave.*

Dioscorides tells us, that the Herb *Phœnix*, φοῖνιξ (which is a kind of *Lolium* distinguished among the Latins by the Epithet *Murinum*) is called by some ῥοῦς, and by others *Anchinops*, ἀγχίνωψ; but the ῥοῦς ἐρυθρός, *Red Rhus*, of the Greeks, is the Seed of the *Frutex coriarius*, or Sumach. As to this last Plant, there is no small Controversy among the Learned, whether there be several Species thereof, or only one, because there are several mentioned, and those under distinct Names, in the Writings of the antient Physicians. One they call ῥοῦς μαγειρικὸς (*Rhus Obsoniorum*), another ῥοῦς Βυρσοδψικὸς (*Rhus Coriariorum*) and a third ῥοῦς Συριακὸς (*Syrian Rhus*). Some perhaps will say that these are but different Names for the same Thing; but when all these three are mentioned in order one after another, it can scarce be supposed that they are meant of the same Thing. Now these three before named are mentioned one after another, as so many several Ingredients, in Hundreds of Compositions of *Myrepsus*, for Example, in his *third Plaister*, where we read, κιναμώμου, σιδίου, ῥοῦ μαγειρικοῦ, ῥοῦ Συριακοῦ, ῥοῦ βυρσοδψικοῦ, "Cinamon, Malicorium, *Rhus Obsoniorum*, *Rhus Syriacum*, and *Rhus Coriariorum*." Upon this Consideration *Fuchsius* concluded, and not without Reason, that there were as many Species as distinct Names of *Rhus*. But against his Opinion we have a strong Argument from *Dioscorides*, who affirms that the *Rhus Obsoniorum*, which some call *Erythrus* (red) is the Seed of the *Rhus Coriariorum*, where you may also observe a Difference in the Gender, for the Shrub is called ἡ ῥοῦς (*hæc Rhus*), but the Seed ὁ ῥοῦς (*hic Rhus*). When therefore we read ῥοῦς μαγειρικὸς in Authors, we must understand it of the Seed, which was applied to culinary Uses, but when we meet with ῥοῦς Βυρσικὸς, or Βυρσοδψικὸς, it is meant of the Shrub, whose Leaves were used in dressing of Leather. The *Rhus Obsoniorum*, or Seed, was also called absolutely ῥοῦς, *Rhus*, as we find in *Galen's* Exegesis, and had also the Addition of ἐρυθρὸς, *Red*, because when mature it turn'd red.

But the chief Difficulty lies in determining the *Rhus Syriacum*, which *Myrepsus* separates both from the *Rhus Obsoniorum*, and *Coriariorum*. *Theophrastus* says, that the Shrub *Rhus* grows every where; he therefore described the *Rhus* which grew in *Greece*. But *Pliny* accommodates the Description of *Theophrastus* to the *Syrian Rhus*, and reckons the *Rhus* among the Number of exotic Plants which were peculiar to *Syria*, tho' *Theophrastus* makes it to grow every where. Where we read in *Pliny*, *quod vocatur Rhus*, in a certain Manuscript is expressed *quod vocatur Ros*; and agreeably to this we find in *Celsus* *Ros Syriacus*, which *Bradæus* and *Crinitus* interpret of Manna, as if he had spoken of the *Syrian Ros*, or Dew, and not of the *Syrian Rhus*, or *Rhus*. *Pliny*, *Lib.* 24 *Cap.* 11 reckons two Kinds of *Rhus*, as distinct from the *Rhus Syriacum*, where

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where he says, *Nec* Rhus *Latinum habet*, &c. "Nor have "we a Name in Latin for *Rhus*, tho' it be useful on many "Accounts." He goes on to describe three Kinds of *Rhos*, or *Rhus*; one an Herb with Leaves like the Myrtle, another which is the *Frutex coriarius*, and the third under the Name of *Rhus erythros*, which is the Seed of the second. As to the Herb *Rhus*, some take it for what some call *Rhus Montispessulanorum*, which is a Shrub with the Leaves of the *Oxmyrsine*; but the *Frutex coriarius* there mentioned, is the very same with that, *Lib.* 13, under the Name of the *Rhos Syriacum*. Many called the Seed ῥοῦς ἐρυθρὸς, to distinguish it from the Shrub. The Medicinal Lexicons of the modern *Greeks* take the ῥοῦς μαγειρικὸς, ἐρυθρὸς and Συριακὸς for the same Thing, and expound them all three by σουμακιν, *Sumacin*, or σουμάκιον, *Sumacion*, and and it is certain that the Shrub which the *Greeks* called ῥοῦς, *Rhus*, is the same with what the *Arabians* now call *Sumac*, but as for the ῥοῦς Συριακὸς, *Rhus Syriacum*, I imagine there is no Difference between it and the common *Rhus*, in Genus or Species, but only in Goodness, and perhaps the Seed was brought out of *Syria*, as being the best and most proper for seasoning of Meat, in which it was employed, as *Pliny* says, instead of *Salt*, and with an Addition of *Silphium*, was thought to render all Flesh-meat more savoury and grateful to the Palate, *Salmasius de Homonym Hyl. Iatr. Cap.* 58.

RHYAS. ῥυὰς. The same as RHOEAS.

RHYEMA. ῥύημα. A Sort of Cake made of Honey and fine Flower.

RHYMA. ῥῦμα. A Remedy. *Castellus, Gorræus.*

RHYME. ῥύμη. The same as RHOPE.

RHYMMA. ῥύμμα. From ῥύπλω. to absterge. An Abstergent Medicine.

RHYNDACE, ῥυνδάκη. A Sort of Bird about the Size of a Dove. *Hesychius.*

RHYPODES, ῥυπώδης. An Epithet for Medicines of a strigmentitious Consistence; from ῥύπος, *Sordes. Galen, de Comp. M. P. G. L.* 2. *C.* 1.

RHYPOS, ῥύπος, Sordes, Filth, in the Galenical Stile, is an Excrement of the third Concoction, and collected on the Superficies of our Bodies. For as each of the two Concoctions, both that which is performed in the Stomach, and that which is afterwards made in the Liver, leaves two Kinds of Excrement, one moist, and the other dry; so from the third Concoction arise, also, two Kinds of Excrement in every Particle of an Animal, being produced from the very Juices with which they are nourished. One of these Excrements is Sweat, which was before a Vehicle for transmitting Aliment, and is a thin serous Humour, like Urine; the other consists of half-concocted Reliques, which could not be assimilated to the Part in order to its Nourishment. This also is of a thin Substance, as being the same which is evacuated through the Pores of the Skin by insensible Transpiration; but it is mixed also with some grosser excrementitious Parts, whence it very frequently stops and stays at the Skin; and hence have the Hairs their Original, and, also, those *Sordes* which are still accumulated and diffused over the Skin. These *Sordes* were not unknown to the Ancients, who very carefully absterged them from human Bodies, for various Uses, giving them the Name of *Strigmenta*, Strigments, as well as *Sordes*; the *Greeks* called them not only ῥύπος, *Rhypus*, but γλοιὸς, *Gloias*. They have the Virtue of moderately heating and discussing, which they acquire not so much from the Nature of our Bodies, as from the Mixture of Oil and Dust. For those *Sordes* which were absterged with the Strigil in Baths, were a Mixture of Oil and Sweat; but those which were procured from the *Palæstra*, or Common-Place of Exercises, had, besides, an Addition of Dust, both that which was sprinkled on the Combatants after they were anointed with Oil, and also what was raised by stirring in the Heat of the Conflict: That kind of Sweat which was thus excited, was called by a peculiar Name πάτος, *Patus*. Those *Sordes* then which had a greater Mixture of Oil, must be acknowledged to have more of an emollient Virtue; but those which had more of Dust in them, were more drying, discutient and digestive, especially if the Dust had more of Asperity and Acrimony than ordinary. For that Dust which is of a finer and more pinguious Substance than usual, and is what *Galen*, *Lib.* 5 *de Sanit. Tuend.* calls κόνις λιπαρὰ, "fat or greasy Dust," is of a more emplastic Nature, and prevents a Diffluence and Resolution of the Particles of the Body on which it is sprinkled. But of all *Sordes*, or *Strigments*, those are most discutient, as well as moderately drying and emollient, which were scraped off, by the Ancients, from Statues and Vessels of Brass or Copper, in which Oil was reserved for the Uses of the *Palæstra*, as having contracted somewhat of an *Ærugo* from the Metal, as *Paulus, Lib.* 7. observes. *Gorræus.*

RHYPTICOS. ῥυπτικὸς, from ῥύπλω, to absterge. Abstergent.

RHYSIS. ῥύσις. A Flux, a Term much used by the Physicians of the Methodic Sect. See the PREFACE. In other Medicinal Writers, it imports a Hæmorrhage, a *Diarrhœa*, a Gonorrhœa, or a Falling of the Hair.

RHYSSEMATA. ῥυσσήματα. The Wrinkles and Sordes which appear upon the Skins of old People. *Castellus. Gorræus.*

RHYTHMOS. ῥυθμὸς. The Cadence or Harmony of the Pulse; or the due Proportion betwixt one Pulsation, and those which are subsequent. See ARYTHMOS.

RHYTIDOSIS. ῥυτίδωσις. A Wasting, and Corrugation of the Eye. *Galen.*

RIAL ARMENIGOS. ῥιαλ ἀρμένιγος. A barbarous Name for an Antidote in *Nicolaus Myrepsus, Sect.* 1. *C.* 510.

RIBES.

The Characters are;

It is a Shrub without Prickles, with large Leaves; the Pedicle ends in an Ovary, crowned with a large Calyx, divided into five great Segments; the Flower is pentapetalous, five small Petals arising from the Interstices of the Segments, and is furnished with five Stamina; the Ovary emitting a long Tube from the Centre of the Apex, becomes a round Fruit, which is umbilicated, produc'd in Clusters, and full of small Stones.

Boerhaave mentions six Species of *Ribes*, which are; 1. Ribes; vulgaris, acidus; ruber. *J. B.* 2. 97. *Boerh. Ind. A.* 2. 54. *Ribes, Ribesia*, Offic. *Ribes, Grossularia*, Ind. Med. 56. *Ribes vulgaris fructu rubro*, Ger. Emac. 1593. Ind. Rait Hist. 2. 1485. Synop. 3. 456. *Ribes fructu rubro*, Park. Theat. 1561. *Ribes rubra*, Parad. 558. *Grossularia multiplici acino, sive non spinosa hortensis, rubra sive Ribes Officinarum*, C. B. P. 455. Tourn. Inst. 639. RED CURRANTS.

The Currant-tree is well known to be a somewhat taller Tree than the Goose-berry, with larger Leaves and Thorns without. The Fruit grows in small Bunches of a red Colour, and of a sharp sweetish Taste; it is usually planted in Gardens, but is said to grow wild in the North of England. It flowers in *April*, and the Fruit is ripe in *June*. They are cooling and grateful to the Stomach, quench Thirst, and are somewhat restringent; a Jelly made with the Juice and Sugar, is cooling and grateful in Fevers. Currants are very rarely used in the Shops. *Miller's Bot. Off.*

The Jelly of Currants is saponaceous and resolvent, and an excellent Medicine, as well in Fevers, as chronical Obstructions, if taken for a long Time together, diluted with Water.

Currants are of two Sorts, red and white, which have nearly the same sharpish Taste, which proceeds from the acid Salts plentifully contained in them, which are dissolved in a sufficient Quantity of Phlegm. These acid Salts render them cooling, and proper for allaying the Heat of the Bile, and other Humours. They contract the Stomach a little, and resist Poison. The frequent eating of Currants sometimes occasion little Prickings in the Stomach; but the over-sharpness may be qualified by mixing a little Sugar with them. Good Sweet-meats are made of Currants, and also a Liquor, with Water and Sugar called Currant-wine, used in the Heat of Summer to cool and moisten the Body. A cooling moistening Jelly is, also, made of them, which is used in Physic, and in Food, being very agreeable to the Taste; this mixed with Water is given feverish Patients to drink. Currant Leaves are astringent. *Lemery on Foods.*

2. Ribes; flore rubente. *J. B.* 3. 98. *Grossularia, hortensis, majore fructu rubro.* C. B. P. 455.

3. Ribes; quæ Grossulariæ; hortensis; majore fructu albo. *H. R. Par.*

4. Ribes; vulgaris; acidus; albas baccas ferens. *J. B.* 2. 98. *Grossularia, Hortensis, fructu Margaritis simili.* C. B. P. 455.

5. Ribes; alpinus; dulcis, *J. B.* 2. 98. *Grossularia, vulgaris, fructu dulci.* C. B. P. 455.

6. Ribes; nigrum vulgo dictum; folio olente. *J. B.* 2. 98. *Raii Hist.* 2. 1486. *Synop.* 3. 456. *Boerh. Ind. A.* 2. 254. *Ribes nigra*, Offic. Park. Parad. 558. *Ribes fructu nigra*, Theat. 1562. Ger. Emac. 1593. *Grossularia non spinosa, fructu nigro*, C. B. P. 455. THE BLACK CURRANT.

It flowers in June. The Fruit is recommended in a Quinsey, whence they are called Squinancy Berries. *Raii Hist. Plant.*

RIBESIA, a Name for the RIBES.

RICINOIDES.

The Characters are;

The Male Flowers consist of several Leaves, which are placed in a circular Order, and expand in Form of a Rose; these are barren. At remote Distances from these Flowers, upon the same Plant, are produced the Embryo's, which are wrapt up in the Flower-Cup, and afterwards become triple capsular Fruit, containing one oblong Seed in each Cell.

Boerhaave mentions two Species of *Ricinoides*, which are; 1. Ricinoides; Americana; folio Gossypii. *Tourn. Inst.* 656. *Boerh. Ind. A.* 253. *Nuces è Barbadoes*, Offic. *Ricinus Americanus*, Ger. 339. Emac. 496. Park. 183. Raii Hist. 1. 166.

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166. *Ricinus Americanus major semine nigro*, C. B. P. 432. *Ricinus major Americanus Curcas dictus*, & *Faba Purgatrix Insulæ Occidentalis*, J. B. 3 643. *Ricinoides, seu Pincus purgans*, vel *Pinhones Indici*, Cod. Med. 97. *Munduy-Guacu, sive Nux Cathartica Americana*, Pis. 169. *Mundubi-Guacù Brasilienses*, *Pinhones Lusitanis, mihi Nux Cathartica*, Marcg. 96. *Quauhay-ohuatli* 1. *Avellana Cathartica*, Hern. 87. BARBADOES NUTS.

This grows in *Barbadoes*, and other Parts of the *West-Indies*. The Fruit is oblong, oval, of the Size of a small Bean, having one Side convex, the other depressed, including under a hard Pellicle a white Kernel. It agrees with the *Ricinus* in Virtues.

2. Ricinoides; Arbor; Americana; folio multifido. *Tourn. Inst.* 566. *Boerh. Ind. A.* 253. *Palma Christi*, Tourn. Mat. Med. 75. *Ricinus Americanus tenuiter diviso folio*, Raii Hist. 1. 167. *Avellana purgatrix*, C. B. P. 418. Raii Hist. 2. 1386. *Avellana purgatrix Novi Orbis*, J. B. 1. 322. *Avellanæ purgatrices*, Park. Theat. 1621. *Nuces purgantes*, Ger. 1362. Emac. 1546. PURGING NUTS.

This is an *American* Plant. The Nuts are of a whitish Colour, and are excessively cathartic. It is said, that a single Nut both vomits and purges for several Days, but that if the Pellicle is taken off, and it is divided into smaller Doses, it purges gently. *Hist. Plant. Boerh. ascript.*

RICINOKARPOS.

The Characters are;

The Male Flowers, which are dispos'd in a Spike, are produced in the following Manner: At the End of a little Tender, hairy Pedicle, grows a naked, tripetalous, herbaceous, Floscule, the Petali, which are acute, being expanded in the Form of a Star. From the Center of this Floscule, which is raised in the Form of a Cone, are produced nine Stamina, each furnished with one Festiculus.

Almost in the same Place of the Plant arise the Ovaries, furnished with shorter Pedicles, round, hairy, triangular, tricapsular, and tricircous, like the *Ricinus*. The Place whence the Flower and Ovary have their common Origin, is surrounded with a Sort of common Calyx, from which the Ecdicles of the Flowers are produced.

Boerhaave mentions two Sorts of *Ricinokarpos*, which are;

1. Ricinokarpos; Afra. *Mercurialis procumbens, dicoccos, Africana, folio violæ tricoloris.* Par. Bat. App. P. 10.

2. Ricinokarpos; Americana; flore albo spicato, foliis Circææ acutiori. *Boerh. Ind. Alt. Plant. Vol.* I.

RICINUS.

The Characters are;

The Root is fibrous; the Leaves are alternate, large, and ragged; the Flowers are some Male, some Female, on the same Spike of the same Plant. The Male Flower consists of a monophyllous quinquefid Calyx, expanded like a Star, from whose Center arise Multitudes of fertile, Male Stamina, which appear, while they are beheld united, like a brachiated Thyrsus.

The Female Flower, or Ovary, consists of three Cells growing to one Avis, and so resembling a triangular Fruit, whose Apex is adorned with many Pinnulæ, from the Middle of which arise three Tubes, each of which has a rough, bifid Apex. Each Cell contains a single Seed, in Shape and Bigness resembling a Pine Kernel.

Boerhaave mentions five Sorts of *Ricinus*, which are;

1. Ricinus; vulgaris. *C. B. P.* 432. *J. B.* 3. 642. *Raii Hist.* 1. 166. *Tourn. Inst.* 532. *Boerh. Ind. A.* 2. 253. *Catapuția major, Ricinus*, Offic. *Granadilla Peruviana* Pharmacop. *Ricinus*, Ger. 399. Emac. 496. *Palma Christi*, Cod. Med. 88. *Ricinus sive Catapuția major vulgatior*, Park. Theat. 182. *Nhambu-Guacu sive Ricinus Americanus*, Pis. 180. MEXICO SEEDS.

This Plant grows to be as tall as a little Tree, with a smooth jointed hollow Stalk, a Finger thick or more, covered with a glaucous Mealiness. The Leaves are large, roundish in Circumscription, but cut into five, seven, or sometimes nine sharp pointed, and serrated Divisions; the Foot Stalks are long, centring in the Middle of the back Part of the Leaves. The Flowers are small and staminous, growing on the Top of the Stalks, but lower down, and upon the Body of the Plant grow Bunches of rough triangular Husks, each including three white Seeds less than Horse Beans, which, in their brittle Shells, contain spotted Kernels, of a sweetish oily Taste. These Kernels, which are the only Part used, are given by some Persons to purge watery Humours, which they do both upwards and downwards with great Violence; but considering we have much better and safer Purges to answer all Intentions, they are but seldom used. The Oil expressed from the Seeds, is good to kill Lice in Children's Heads. *Miller's Bot. Off.*

2. Ricinus; Americanus; major; caule virescente, *H. R. P.* 156.

3. Ricinus; Africanus; maximus; caule geniculato, rutilante. *H. R. P.*

4. Ricinus; Americanus; perennis.

5. Ricinus; vulgaris; minor. *C. B. P.* 432. *Erawai, Ricini pusillum genus.* Clus. Exot. 48. *Ricinus minor.* H. Eyst. Æst. o. 8. F. 11. F. 1. *Boerhaave Ind. Alt. Plant. Vol.* I.

It is called *Ricinus*, because the Seed resembles the Animal of that Name, which so greatly infests Dogs and Black-Cattle; it is also called *Palma Christi*, because the Leaves are said to resemble the Palm of a Hand; and some believe it is the Tree which shaded *Jonas* after he was discharged from the Whale.

The fifth is called the *Purging-Bean*; of this is prepared the Oil of *Kerva*, the *Oleum Cicinum*, called the *Oleum Ficus Infernalis*; so much celebrated in the *Indies* as a Lenitive, tho' this be the most acrimonious of all the Species. If it be stripped of its Pellicle, it purges upwards and downwards to such a degree, as to be prescribed by *Hippocrates* in the room of the *Grana Cnidia*, or *Cervus Cnidius*. But being taken with this Pellicle, it purges so violently as to cause an Inflammation of the Stomach and Intestines, whence it may pass for Poison. But tho' the Seeds are highly acrimonious, the Oil is very lenient, and excellent for a Rigor or Stiffness of the Limbs, and also for the Itch, Ulcers, and to destroy Worms. The fourth and fifth Species taken inwardly, work violently both by Stool and Vomit, whence they are prescribed in Apoplexies, Lethargies, and as Hydragogues in Dropsies. *Hist. Plant. ascript. Boerhaave.*

RICINUS is also a Name for an Insect, which is thus distinguished.

Ricinus, Offic. Schrod. 5. 345. Aldrov. de Insect. 559. Jonst. de Insect. 91. Charlt. Exer. 52. *Ricinus Octapes*, Raii Hist. Insect. 10. THE TICK.

It is a nasty little Animal, of a livid Colour, with a blunt and roundish Tail, and full of Blood, and very much infects Cows, Swine, Goats, Sheep and Dogs.

The Blood of those Ticks which live about Dogs, as *Pliny* says, is a *Psilothrum*, or Medicine to take off Hair, and mitigate an Erysipelas; and we are told by *Amatus*, that it is an admirable Remedy for an obstinate and malignant Impetigo. *Dale.*

RIGOR.

Before we treat of the Prognostics which may be drawn from *Rigors*, with respect to the Death or Recovery of the Patient, it will be necessary, first to settle the Notion of a *Rigor*; for if this be omitted, no certain Judgment in Diseases can be formed from such a Symptom. A *Rigor* then is a sudden and violent, or as *Galen*, *Lib. de Trem. Palp. Convulf. & Rigore*, says, "A dolorific Per-"friction or Refrigeration of the natural Heat, with an un-"equal Concussion and Agitation of the whole Body, pro-"ceeding from the expulsive Faculty of the sensible Part, en-"deavouring to expel the noxious Humours." It is distinguished from a *Tremor*, in that a *Tremor* is only a Vibration of one Member, but a *Rigor* of the whole Body. But of this we shall speak more accurately a little below. A *Rigor* sometimes happens without a Fever, but generally attends it. That a *Rigor* may be excited without a Fever, we are taught by *Galen* in the Book abovementioned, *Cap.* 7. and *de Cauf. Symptom. Sect.* 2. *Cap.* 5. and in his Book *de Inæqual. Temper. Cap.* 8. where he has demonstrated, against the Ancients, that *Rigors* may happen without a Fever. And he himself observed at *Alexandria*, a young Man who was seized with a *Rigor*, after eating unripe Dates, from the gross Humour obstructing the Veins. That a *Rigor* could be without a Fever was unknown to the Ancients, except *Hippocrates*, who, 1 *Epid. Sect.* 3. *Ægr.* 5. says of the Wife of *Epicrates*, that "when the "Time of her Labour approached, she was seized with a "Rigor, but had no Increase of Heat, as was said; the next "Day the same Symptom continued, and the third Day she "was delivered of a Daughter." There may be therefore a Rigor without a Fever, which *Galen* and the *Greeks* call ῥῖγος ἀπυρεξίας, "a Rigor without Heat;" but the *Rigor* which admits of Heat, as being succeeded by a Fever, is a violent, concussive and morbous Affection.

But how are we to distinguish a *Rigor* from a Coldness and a *Horror*? Since we are told by *Galen*, *de Trem.* &c. before cited, *Cap.* 6. "For a sick Person to be under a *Rigor*, is "certainly not the same as to be under a *Horror* or *Coldness*." And it is usual to say, that the Approach of the Fit is attended in one Patient with a *Rigor*, in another with a *Horror*, and in another perhaps only with a *Coldness*; and this is the common Language and Use of Words in the Writings of Physicians. Thus when a Person becomes vehemently cold, without any Concussion or Agitation of the Body, he is not affected with a *Rigor*; for to deserve that Name, it must be attended with an unequal and involuntary Motion. If this Coldness be accom-

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accompanied only with a gentle and unequal Commotion of the Skin, it is called a *Perfriction*; but if this Commotion of the Skin be very conſiderable, and attacks the Patient by Fits, without attacking the whole Body, it is called a *Horror*; ſo that a *Horror* is ſuch an Affection of the Skin alone, as a *Rigor* is of the whole Body.

The Cauſes of a *Rigor* are, firſt, immoderate Heat or Cold: That theſe produce ſudden and great Alterations in the Body, and induce *Horrors* and *Rigors*, is very well known to ſuch as enter an immoderately cold or hot Bath, and is demonſtrated by *Galen*, *de Cauſ. Symptom. Lib.* 2. *Cap.* 5. Juſtly therefore it is ſaid by *Hippocrates*, that "Cold irritates "Ulcers, hardens the Skin, cauſes intolerable Pains and ſe- "brile *Rigors*." Some are ſeized with a *Horror* from an Exceſs of Fear, as others are with a *Tremor* from Ulcers and Abſceſſes under a Suppuration; and that *Rigors* are ſometimes induced by Section and Inuſtion, we are told by *Galen*, *in* 6 *Epid. Com.* 3. where he ſays, that "ſuch Operations in- "duce a *Rigor*, as from ſomething acrimonious affecting the "ſenſible Fleſh."

Agreeably to this Notion, the ſame Author rightly pronounces the principal Cauſes of a *Rigor* to be bilious and acrimonious Humours; for theſe, by vellicating the ſenſible Parts, provoke the natural Heat, which, in ſtriving with great Force to expel them, excites that unequal and concuſſive Motion of the whole Body, as he expreſſes it, *de Cauſ. Sympt. Lib.* 2. *Cap.* 5. Theſe *Rigors* are very apparent in bilious Fevers, eſpecially of the intermittent Kind. In theſe Caſes, the thin, bilious, and highly acrimonious Humours being expelled without the Veins, are under continual Impulſes from all the ſenſible Corpuſcles, and forced from one Place to another, till they take their Courſe either towards the Skin, and there diſcharge themſelves through its Pores in Sweat, or are thrown upon the Stomach, and diſcharged in vomiting, or forced downwards into the Inteſtines, and evacuated by Stool. Hence Rigors are uſually ſucceeded by bilious Evacuations, as *Galen*, *Com.* 2. *in* 6 *Epid.* obſerves, where he ſays, "In our Diſ- "courſe of a *Rigor* we have ſhewn, that Excretions of bitter Bile, which hurries through the ſenſible Bodies in order to be diſcharged, are the Conſequence of that Diſorder. This then is the Origin of a *Rigor*: The noxious and acrimonious Humours are, by the expulſive Faculty of the Veins, forced without thoſe Veſſels upon the other Parts, from which, ſince they as much inſeſt and irritate them by their Acrimony, and excite their expulſive Faculty, as in the other, they are equally expelled and forced upon others; and thus ſucceſſively, till they make their Retreat to the Skin, Stomach or Belly, where they find a Vent, as has been ſaid. Now the injured and irritated Parts, in ſtriving to expel the noxious Humour, call in the natural Heat to their Aſſiſtance, whence the extreme Parts are refrigerated, being deſtitute of that Heat. But when the Expulſion of the Humours is finiſhed, which is when they have made their Way to the Skin, or ſome other Place, whence they may be excreted, the Heat is recalled, and the extreme Parts recover their Heat, and the ſooner and more effectually, if the natural Heat be vigorous; but if this be very weak, thoſe Parts are very ſlowly and inſufficiently heated, or hardly return to their uſual Warmth. Under this Expulſion of the Humours happens that unequal or irregular Concuſſion and Vibration of the whole Body, which we call a *Rigor*; during which the extreme Parts are refrigerated, the natural Heat retiring inwards; for which reaſon the Body is always cold under a *Rigor*.

This Affection, which we call a *Rigor*, is not only excited by acrimonious Humours, but ſometimes by a groſs Humour obſtructing the Veins. Of this Nature was the *Rigor* of the young Man of *Alexandria*, obſerved by *Galen* as above-mentioned; for which he accounts in the following Manner: "In "this Caſe a *Rigor* is occaſioned by an Obſtruction of the "Motion of the natural Heat by Force. For this Heat, being "entire and unimpair'd, both in Subſtance and Strength, "ſtrives to expand itſelf, and to be diſtributed into all Parts of "the Body; but being forcibly reſtrained, and repelled to the "more inward Parts, it retreats to its own Original; but "being incapable of making any Stay there (for to a Sub- "ſtance of a moveable Nature, Conſiſtence in Place is Death) "collecting, and, as it were, concentrating itſelf, it recurs "not with an equable and free Motion, but ruſhing forth "with an Impetus, and as it were a Horſe ſtarting from the "Barrier, it directs its full Force againſt what obſtructed its "Paſſage, endeavouring to propel the ſame, and clear the "Way; but being repelled, and its Violence check'd in the "Midſt, the whole Body is ſhock'd at the Encounter. For "beſides other Effects, it is rendered vaporous by daſhing "againſt theſe Obſtacles, and recoils inwards, as tho' from "Repercuſſion, and retreats again to its Principle or Origi- "nal; thence again breaking forth, it falls on with more "Violence, and being again repulſed, renews its Attacks till "it has removed the Nuiſance." A *Rigor* begins at the Back and Loins; to which Subject relates that of *Hippocrates*, 5 *Aph.* 69. where he ſays, "A *Rigor* in Women begins prin- "cipally at the Loins, and proceeds by the Back to the "Head: In Men, they begin in the anterior rather than the "poſterior Parts of the Body, as in the Cubits and Thighs. "In Men alſo the Skin is of a rare Texture, as appears by "the Hairs."

But let this ſuffice for illuſtrating the Notion of a *Rigor*; we are now to examine what may be predicted from it; and here we ſhall treat firſt of ſuch *Rigors* as are of good Prognoſtication. Among *Rigors* obſerved in Fevers, thoſe are good which are periodic, and the proper Symptoms of Fevers. Periodic *Rigors* which happen every Day, or every ſecond or third Day, and precede intermittent Fevers, are all ſalutary, and by *Hippocrates*, 4 *Aph.* 43. pronounced void of Danger; and the more ſo in proportion to the Greatneſs of the Intermiſſion, and the Shortneſs of the Fit. *Hippocrates*, 4 *Aph.* 63. tells us, that "quotidian *Rigors* are ſolved by quotidian Fe- "vers;" for, as *Galen* ſays in his Comment on the Place, ſince *Rigors* happen with Commotion, through the whole Habit of the Body, ſucceeded by an Expurgation and Evacuation of the Humours, the Intermiſſion of ſuch Fevers may be rationally expected to terminate at laſt in an utter Ceſſation of the Diſorder. What he *(Hippocrates)* ſays of quotidian *Rigors*, that they are ſolved by quotidian Fevers, is as true of tertian and quartan *Rigors*, as appears from Obſervations on Tertian and Quartan Fevers, whoſe Returns are always preceded by a *Rigor*.

But the moſt ſalutary of all *Rigors* are critical ones; ſuch are thoſe which attend a Fever upon ſome critical Day, with Signs of Concoction, and are ſucceeded by copious and kindly Sweats, or Vomitings, or Stools, or an Hæmorrhage from the Noſtrils, which are followed by a perfect Removal, or at leaſt a remarkable Abatement of the Fever. Of ſuch *Hippocrates* ſpeaks, 4 *Aph.* 58. where we are told "if one under a bura- "ing Fever be ſeized with a *Rigor*, he becomes freed from "the Diſeaſe." There ſeem to be two Properties belonging to a good *Rigor*; the firſt is, that it be ſucceeded by a remarkable Heat, of which *Galen*, *Lib. de Trem. &c. Cap.* 6. aſſigns three Cauſes; firſt, that the natural Heat being repreſſed from the Superficies, is collected in the internal Parts, in order to aſſiſt in expelling the noxious Humours; after which being cheriſhed and increaſed by the Humour which reſides within, it breaks forth all at once, and expands itſelf with more Vehemence. Secondly, that in its violent Recourſe, its Motion being much accelerated, it kindles in ſtriking upon the external Parts, and is increaſed after the ſame manner as Stones and Iron acquire a conſiderable Heat by Motion and mutual Attrition. And laſtly, that the Heat, in its Return to the Superficies, brings along with it ſome hot Humour, which muſt have its Effect in heating the external Parts; and the more vigorous the State of the natural Heat, the hotter is the Body after a *Rigor*, and the weaker this Heat, the leſs Warmth will accrue to the Body. Hence it is a good Sign for Bodies to be well heated after a *Rigor*, ſince it indicates a Firmneſs and Strength of Nature, as on the contrary, which will appear hereafter, for a Patient, after a *Rigor*, to acquire little or no Heat, ſhews him to be in a very bad State, and that Nature is very weak and low. For the Body therefore to acquire an extraordinary Degree of Heat after a *Rigor*, by what Cauſe ſoever procured, is a very good Sign.

The other Property of a beneficial *Rigor* is, that it be ſucceeded by very beneficial Evacuations or Purgations; to which we may add, that it wholly removes, or at leaſt diminiſhes, the Fever. Such were the *Rigors* obſerved by *Hippocrates* in many of his Patients, particularly the Wife of *Epicrates*, *Charion*, the Virgin of *Lariſſa*, the Woman which lay ill at the Houſe of *Timeneus*, and *Philiſtis*. Of the Wife of *Epicrates*, 1 *Epid. Sect.* 3. *Ægr.* 5. he ſays, "On the four- "teenth Day (of her Illneſs) ſhe was ſeized with a new *Rigor*, "ſucceeded by a high Fever; on the fifteenth ſhe vomited at "ſeveral times bilious yellow Matter, ſweated, and was free "from a Fever; towards Night was highly feveriſh, and her "Urine was thick, with a white Sediment." And of *Charion*, 3 *Epid. Sect.* 2. *Ægr.* 5. we are told, that "on the "ſeventh Day he was ſeized with a new *Rigor*, had a high "Fever, ſweated all over his Body, and had a Criſis." In the ſame manner when he relapſed on the ſeventeenth Day, "he was taken with a new *Rigor*, ſucceeded by a high Fe- "ver, ſweated, had a Criſis, and was freed from his Fever." In his Account of the Virgin of *Lariſſa*, 3 *Epid. Sect.* 3. *Ægr.* 12. he tells us, "On the ſixth Day ſhe had a copious "Hæmorrhage from the Noſe, and was ſeized with a Horror, "ſucceeded by a copious and hot Sweat all over the Body, had "a Criſis, and was freed from her Fever." The Woman alſo at the Houſe of *Timeneus*, 4 *Epid. T.* 25. had a *Rigor* ſucceeded by a happy Criſis. The ſame was the Caſe of *Philiſtis* the Wife

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Wife of *Heraclides*, 7 *Epid.* 136. Sometimes a *Rigor* is a good Sign in an Hæmorrhage, as we find it pronounced, 1 *Prorrhet.* 150. where it is faid, that "they who in the Be- "ginning are molefted with a copious Hæmorrhage, have the "Courfe of it ftopped by a fupervening *Rigor*;" and not without Reafon, fince, under an immoderate Evacuation, the Heat, together with the Blood, fometimes retire to the inward Parts. A *Rigor*, however, in Difeafes of this Kind, portends their long Continuance; for as *Galen* fays, in his Comment on the Place, "If an Eruption of Blood does not mitigate the "Diforder, but is fucceeded by a *Rigor*, both this and the "Difeafe are rendered of long Duration, becaufe the Body "is difficult to be heated." Sometimes *Rigors* portend a Crifis upon the Coming on of a *Tremor*, according to *Coac.* 27.

We have treated enough of fuch *Rigors* as are eftecmed of good Prognoftication in Difeafes, and are now to fay fomething of the contrary Kind, or thofe which portend nothing but the Deftruction of the Patient. Of this Nature, in the firft Place, is a *Rigor* fucceeded by little or no Heat; for this is an Indication of great Weaknefs of Nature, agreeably to 1 *Prorrhet.* 65. where we read, that "Refrigerations from a "*Rigor* not fucceeded by Heat, are bad." And the Reafon is, as *Galen* obferves, becaufe it indicates an Extinction of the Heat, as it did in the Cafe of the Woman who lay ill in *Mendacium Foro*, 3 *Epid. Sect.* 2. *Ægr.* 12.

Thofe *Rigors* are alfo pernicious which are fucceeded by none, or a bad Evacuation, and are properly reckoned among thofe bad or imperfect critical Signs which determine nothing. *Galen*, in 1 *Prorrhet.* difcourfing on this Subject, fays, "They "who underftood this of a *Rigor* in general, fhould have "always remember'd, that if it happened on the third or "fourth Day, it was a peculiar Symptom of fuch Fevers; "but if it appeared after that Time, and was not attended "with a Crifis, it was of very bad Signification."

Rigors are of a very bad kind, when they are attended with fome bad Excretion, becaufe they are of the Number of unde- termining critical Signs, which *Galen* affirms to be either mor- tal, or of difficult Crifis [that fhew the Difeafe will have a fa- tal, or at leaft a very hard and dangerous Turn.] On the fame Point we read, 1 *Prorrhet.* 66. "If Heat returns not "upon a Perfriction, or extreme Perfrigeration, attended "with Sweating, it is a bad Sign; and if to thofe there be an "Acceffion of a burning Heat and Pain of the Sides, with "frequent Attacks of a *Rigor*, the Patient is in a dangerous "State." Now all cold Sweats are dangerous, efpecially fuch as affect the upper Parts, and thofe which, tho' copious and profufe, remove not the Fever. We find an Inftance to this purpofe, 1 *Epid. Sect.* 3. *Ægr.* 11. in the Wife of *Dromeades*; in the Account of whofe Cafe it is faid, "that on the "third Day about Noon fhe had the Return of a *Rigor*, with "a high Fever, Urine as before, a Pain of the Hypochon- "drium, had a Loathing and Naufea, a troublefome Night, "without Sleep, with a cold Sweat diffufed over all her Bo- "dy." She died on the fixth Day. The Woman alfo who lay fick in *Foro Mendacium*, had feveral Fits of a *Rigor*, at- tended with a cold Sweat before her Death. A copious Sweat alfo, tho' not cold, in a crude State of the Difeafe, which neither removes the Fever nor its Symptoms, is mortal; and efpecially if it appears on the fixth or eighth Day. Such was that obferved by *Hippocrates*, 1 *Epid. Sect.* 3. *Ægr.* 12. in the Perfon who was taken ill of a Fever after Supper, of whom he fays: "On the eighth Day he was feized with a *Rigor*, had "a high Fever, fweated much, feemed to be without a Fever, "flept little, and was cold after Sleep." On the eleventh Day he died. And we read, *Coac.* "that repeated Fits of a "*Rigor*, with Sweating, are mortal." All *Rigors* therefore, fucceeded by a bad Evacuation, or none at all, are bad.

With Refpect to a Fever, *Rigors* which neither remove nor alleviate the Diforder, are of a very bad Kind. Thus has *Hippocrates* determined, 4 *Aph.* 56. "A *Rigor*, he fays, "coming upon a Fever, if the Difeafe is not mitigated, is a "bad Sign." [In that Aphorifm it is a *Sweat*, and not a *Ri- gor*; but the Aphorifm which would pretty well anfwer the Purpofe, is 4 *Aph.* 46. which is, "that a *Rigor* coming up- "on a Fever, and the Difeafe not intermitting, if the Pa- "tient be weak before, is mortal."] But the Cafe is worft of all, when a *Rigor* of this Nature is fucceeded by a copious Evacuation, as *Galen* rightly obferves in his Comment on 4 *Aph.* 46. "For if, he fays, an Evacuation follows a *Rigor*, "and the Fever be not alleviated thereby, the Patient muft "probably fink under them in Conjunction; both becaufe the "weak Condition of his Body cannot bear the Agitation of "the *Rigor*, and alfo becaufe the Evacuation is fufficient to "caufe his Diffolution." But if the Strength of the Patient be very much exhaufted by the Difeafe, a *Rigor* will prove mortal, according to 4 *Aph.* 46. before quoted; for all *Ri- gors*, of what kind foever, which happen under a great De- cay of Strength, are pernicious, as indicating an Extinction of the natural Heat. And to this purpofe are we to underftand the Author of 1 *Prorrhet.* 65. where he fays, that "a Re- "frigeration from a *Rigor*, where the Heat returns not a- "gain, is a bad Sign." And *Coac.* 221. "a *Rigor* coming "upon a fevere Fever, with a Diftortion of the Eyes, proves "mortal." Perhaps alfo what *Hippocrates* fays, 7 *Aph.* 7. "A *Rigor* and Delirium after a Debauch, are bad," may be applied to thefe Kinds of *Rigors*; for fuch a *Rigor* is occa- fioned, as *Galen* on the Place obferves, from an Extinction of the Heat by an Oppreffion, in the fame manner as a Fire is extinguifhed by heaping too much Wood upon it, or a Lamp by pouring on too much Oil.

The pernicious Signification of *Rigors* is alfo known from other preceding, concomitant or fubfequent bad Signs. In a continual Fever, a *Rigor*, attended with bad Signs, is always to be dreaded. This will appear from what *Hippocrates* fays of them, 1 *Epid.* "When burning Fevers, he fays, began "(to be epidemic) they afforded Signs by which one might "judge when they were like to prove mortal; the Patients "were firft feized with a high Fever fucceeded by a *Rigor*, "were incapable of Sleeping, were extremely reftlefs, thir- "fty, and loathed every thing." In Phrenfies alfo accom- panied with white Stools, or white Urine, the Acceffion of a *Rigor*, is a bad Sign, as we are told, 1 *Prorrhet.* 13. and *T.* 64. it is faid, "that for a Perfon under a *Rigor* not to "know his familiar Acquaintance, and to be forgetful of "what is paft, is a bad Sign;" as it indicates, as *Galen* fays in his Comment, that the natural Heat is overcome by the extraordinary Refrigeration. And a little after, 1 *Prorrhet.* 67. "Burning *Rigors* [Καυματώδεα ῥίγεα] are not without Dan- "ger; and when accompanied with a fiery Redneſs [τὸ φλο- γῶδες] of the Face, and a Sweat, are bad Signs." This is re- peated, *Coac.* 7. And again, *T.* 89. fpeaking of thefe Kinds of *Rigors*, he fays, "For a Perfon labouring under a Fever, "and a Laffitude, with a Diftortion of the Eyes, to be feized "with a *Rigor*, is of pernicious Signification; and a coma- "tous Difpofition in fuch Cafes is bad." Again, *Coac.* 14. "Severe *Rigors*, inducing a *Torpor*, are malignant," as in- dicating an Extinction of the natural Heat. And, *T.* 22. "*Rigors* accompanied with Head-ach and Faintings, are "mortal;" becaufe they indicate a conſiderable Inflammation of the Brain. Our Judgment, therefore, of the bad Event of a *Rigor*, is juftified by the Concomitance of other bad Signs. This is further illuftrated, *Coac.* 20. or more clearly, 1 *Pror- rhet.* 101. where it is faid, that "fuch as labour under repeated "Fits of a *Rigor*, which is exafperated towards Night, with "Watchings or Agitations of the Veins [Φλεβοδονήσια, fee the "Article PHLEBODONODES] in Sleep, and involuntary "Difcharges of Urine, fall at laft into a Coma and Convul- "fions." *Rigors*, therefore, in an acute Fever, in Con- junction with other bad Signs, render the fatal Event more eafily to be prognofticated.

Continual and frequent *Rigors* are alfo of a bad kind, as we find them pronounced, *Coac.* 9, 10. fince they indicate either a Suppuration of fome one of the Vifcera, or vain Efforts to- wards a Crifis, or elfe an Extinction of the natural Heat. We have an Inftance to this purpofe, in the Woman who lay ill in *Foro Mendacium*, before quoted; and whofe Hiftory will greatly ferve to illuftrate what has been faid of mortal *Rigors*; for fhe was often feized in the Progrefs of the Difeafe with *Ri- gors*, which were always attended with pernicious Signs. The Cafe is as follows, 3 *Epid. Sect.* 2. *Ægr.* 12. "A Woman "who lodged in the *Forum Mendacium*, after hard Labour "with a male Child, was taken ill of a violent Fever, at- "tended at firft with a Thirft, Loathing, and Cardialgia; "her Tongue was dry, her Stools were thin, and little in "Quantity, and voided after much Pain and Gripings, and "fhe had no Sleep. The next Day fhe felt fomewhat of a "*Rigor*, fucceeded by a high Fever, and fomething of a cold "Sweat about the Head. On the third Day, the Stools were "crude, thin, much in Quantity, and voided with Pain. On "the fourth fhe had a new Fit of a *Rigor*, all the Symptoms "were exafperated, and fhe could take no Sleep. On the "fifth fhe was very ill; and on the fixth continued in the "fame State, and voided Plenty of liquid Matter by Stool. "On the feventh Day fhe was feized with another Fit of a "*Rigor*, fucceeded by a high Fever, a great Thirft, and "continual Toffing, and towards Night, with a cold Sweat "all over the Body, with a Coldnefs of the extreme Parts, "into which the Heat could not be recalled. At Night fhe "had another Fit of a *Rigor*, and her extreme Parts reco- "vered no Warmth; fhe had no Sleep, was a little delirious, "but foon came to herfelf again. On the eighth, about "Noon, fhe recovered Heat, had a Thirft, with a Coma, "and a Naufea, and vomited up fome bilious yellowifh Mat- "ter, tho' but little in Quantity; fhe had a bad Night, paf- "fed it without Sleep, and great Plenty of Urine came from "her involuntarily. On the ninth, all the Symptoms were remitted.

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" remitted, and she was inclined to a Cerna; in the Even-
" ing she had something of a *Rigor*, and vomited a little bi-
" lious Matter. On the tenth she had a new Fit of a *Rigor*,
" the Fever was exasperated, and she had no Sleep; in the
" Morning she made great Plenty of Water, which had no
" Hypostasis, and her extreme Parts recovered Heat. On
" the eleventh she vomited virulent, bilious Matter, and soon
" after was again seized with a *Rigor*, and a Refrigeration of
" the extreme Parts; towards Evening she fell into a Sweat
" with a *Rigor*, vomited much, and had a very bad Night.
" On the twelfth she vomited up much black, fetid Matter,
" and was much molested with the Hiccup, and a Thirst.
" On the thirteenth she was seized with a *Rigor*, and vomit-
" ings of much black Matter, which had a very ill Smell;
" about Noon she lost her Voice. On the fourteenth Blood
" came from her Nose, and she died. The whole Course
" of the Disease was a Looseness and a Horror. The Wo-
" man was about seventeen Years of Age." *Prosper Alpinus de Presag. Vit. & Mort. Ægrot.*

RIGOR. A Stiffness or Inflexibility.

RIGOR NERVORUM, is the same as Tetanus.

RILLUS, is defined by *Rulandus*, a chemical Utensil, into which melted Metals are poured, in order to impart to them an oblong Form.

RIMA. A Fissure, or Chap. In Anatomy it imports, the Fissure of the Female Pudenda.

RIMULA. The Aperture of the *Glottis*.

RINÆUS MUSCULUS. The Name of a Muscle of the Nose mentioned by *Douglas*, which he, also, calls *Nasalis*, and says it arises fleshy from the Extremity of the Os Nasi, and adjacent Part of the Os Maxillare.

It is inserted into all the Cartilages of the Ala.

Its Use is to open and dilate the Nostril, by pulling that Part outwards.

RINAR. *Rulandus* explains this, *Limatura*.

RIPARIUS. An Epithet of Animals which frequent the Banks of Rivers, or the Sea-shore.

RISIGALLUM. The same as AURIPIGMENTUM.

RISTORUM. A kind of nourishing Aliment prepar'd of the Yolks of Eggs. It seems to be a Sort of Egg Caudle.

RISUS. Laughter. See RESPIRATIO. See SARDONIUS.

RITRO, Offic. *Echinopus minor*, J. B. 3. 72. Tourn. Inst. 463. *Carduus globosus minor*, Ger. 990. Emac. 1151. Park. Parad. 332. *Carduus Sphærocephalus cæruleus minor*, C. B. 381. Raii Hist. 1. 383. *Scabiosa Cardui folio Sphærocephala humilior*, Herm. Cat. 539. LITTLE GLOBE THISTLE.

It is cultivated in Gardens, and flowers in *June*. The Root is used, and possesses the same Virtues as that of the ECHINOPUS MAJOR.

RIWAND, and RIWANDTZINI, are Arabic Words, importing Rhubarb.

ROADES, in *Paracelsus*, is an unskilful, simple Physician.

ROB. See DECOCTIO.

ROBERTIANUM. See GERANIUM.

ROBES. Vinegar. *Rulandus*.

ROBIGO. The same as RUBIGO.

ROBORANTIA. Strengthening Medicines. See ANALEPTICA.

ROBUR. The Oak. See QUERCUS.

ROBYS. An Epithet for the best Sort of Wheaten Bread. *Castellus from Langius*.

ROCELLA. See FUCUS.

ROCHETTA. *Antonio Neri* informs us, that *Polverine* or *Rochetta*, which comes from the Levant and Syria, is the Ashes of a certain Herb growing there in Abundance: There is no doubt but that it makes a much whiter Salt than *Barillia* of Spain, and therefore when you would make a Crystal very perfect, make it of Sut extracted from Polverine or Rochetta of the Levant. For tho' Barillia yields more Salt, yet Crystal made of it inclines to a Blueness, and has not the Whiteness and Fairness of that made of Polverine.

Upon this *Merret* remarks, that Polverine and Rochetta are the same Thing, and are nothing more than Ashes extracted from the same Plant, but differing in Goodness. The Name of the latter is wholly unknown to our Glass-Houses, and has now no Distinction at *Moran* itself. The Name of Polverine is still kept, and 'tis given to all Ashes which come from the Levant to make Glasses with. The Reason then of their different Names seems to be, that the Polverine was that which was brought in small Powder, and the other in hard Pieces or Stones, and therefore named *Rochetta*. And indeed the Workmen observe, that the harder and bigger Lumps yield a whiter and stronger Salt than that which comes over in small Pieces or Powder. And whether this proceeds from the Seasons of their Growth, Gathering and Burning, or from some Sophistication from other fixed Salts mixed with it, or from Sea-Salt or other Moisture with which they are damaged, I determine not. But certain it is, that to make the strongest Salt, and such as will come into hard and stony Lumps, they make a Lee of their first burnt Ashes, and therewith water the Herbs to be next burnt, and so water the Herbs with new Lees at every Burning, and this will make a most strong Pot-ash for Soap-boylers and Dyers: Tho' I cannot affirm that this Method has been practised in making *Rochetta*, and that it is now omitted.

ROCHUM ALUMEN. Rock Alum.

RODODENDION. See NERIUM, and ÆGOLETHRON.

ROGGA. A Name for the *Secale*; *Hybernum, vel majus*.

ROHOB. The same as ROB.

ROMANA ADRIANA ANTIDOTUS. The Name of an Antidote described by *Nicolaus Myrepsus*. Sect. 1. C. 5.

RONAS. A Root used much by the Persians, for dying a red Colour. I don't know that it is used in Medicine.

RONDELETIA.

The Characters are;

It hath a Salver shaped Flower, consisting of one Leaf, which is tubulous, and rests on the Empalement; which Empalement afterwards becomes a roundish coronated Fruit, divided into two Cells, containing many small Seeds.

Miller mentions but one Sort of this Plant, which is, *Rondeletia arborescens, tini facie*, Plum. Nou. Gen.

This Plant was discovered by Father *Plumier*, in *America*, who gave it this Name in Honour to *Gulielmus Rondeletius*, a famous Physician of *Montpelier*.

The Seeds of this Plant were sent to England by Mr. *Robert Millar* Surgeon, who collected them on the North-side of the Island of Jamaica, where the Trees grow plentifully, as also in several Parts of the *Spanish* West Indies. *Miller's Dictionary, Vol.* II.

RONDESSA. A Sort of American Cat, which is said to take her Young into her Belly, and bring them out again at Pleasure. *Castellus* from Eph. N. C.

RORELLA. A Name for the *Ros Solis*.

RORIFERUS. Roriferous. An Epithet applied by some Anatomists, to the lacteal and lymphatic Vessels.

ROS. Dew.

If in a long continued Summer's Drought, the Surface of the Earth comes to be greatly parched with the Heat of the Sun, not only Water, but, also, other less volatile Substances, of an unctuous and saline Nature, will thus be raised to some Height into the Atmosphere, tho' invisibly, so long as such Exhalations are agitated by the Sun's Heat, which coming to lessen towards the Evening, the Air soon grows cooler; while at the same time, the Earth retaining the Heat much longer than the Air, still continues to breath out hot Exhalations, whence arises a white, dense, visible Vapour, hotter below than above; this Vapour appears, therefore, first in low watery Places, thence gradually diffuses itself, so as in the Night to cover the Surface of the Earth with a Mist, which is dissipated by the Rising Sun. This Moisture, called by the Name of Dew, is a very compound Substance; nor can we assert any Thing that will hold universally true of its peculiar Nature. It must needs be a Chaos, as it is a Collection of all Sorts of volatile Particles, promiscuously jumbled together by the Heat of the Sun, acting upon the Earth; it must, also, be different in different Parts of the Earth, according as different Kinds of Particles lodge therein. Thus in large Tracts of gravelly or Heath Ground, which lie dry and high, it will be small in Quantity, and almost totally aqueous; as in fat bituminous Earths, near Marshes, and standing Waters, it is far different in Quantity and Quality, and prejudicial to Health; whence it is no Wonder that Chymists, in their analysing of Dew, should find such different Results, that scarcely any two are agreed about them. Certainly they who seek for the Spirit of Life, the universal Solvent, the Mercury of Life, the Nitre and Steel of *Sendivogius*, in Dew, seem not to understand them right; it is better to say, that Dew is of a subtile saponaceous Nature, capable of supporting Vegetables. Some Dew that had been collected in a certain Part of the Earth, has afforded a Liquor, by Distillation, which struck the Colours of the Rain-bow upon Glass, so strong as not to be effaced by Friction, alcaline Lixiviums, or *Aqua Regia*; it, also, burnt like Spirit of Wine. Again, some distilled Dew having been digested with gentle Heat, for eight Days, and then rectified six Times over, till it was exceedingly subtile, is reported to have broke three Glass Vessels successively, tho' it still remained perfectly insipid. Again, some Dew is described to be like a yellowish Butter, that melts by being rubbed upon the Hand, yet grows hard and dry with a moderate Heat, being of a fetid Odour, and to be found in pretty large Lumps in the Night, especially in the Spring and Winter. The Nature of Dew, also, differs surprisingly with the different Seasons of the Year, and the various Successions of Meteors; hence exceedingly small Seeds of Vegetables, and invisible Eggs

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Eggs of minute Animals, with numerous other Things coming to be digested, fermented or putrefied therein, it must afford many very different Productions by Distillation; whence Chemists have formed very odd Opinions about it. We can only say that the greatest Part of it is Water; and that the other Parts cannot be ascertained on Account of their infinite Variety. *Boerhaave's Chemistry.*

ROSA.

The Characters are;

It is a Shrub generally covered with a prickly or thorny Bark; the Leaves are pinnated, and end in an odd Lobe. The Extremity of the Pedicle forms an Ovary almost spherical, and surrounded on the Top with a Crown deeply cut into five Parts, radiated, and with its five long laciniated Segments resembling a Calyx. The Flower is pentapetalous, the Petals arising from the internal Margin of the Calyx; whence also are produced very numerous Stamina. The Ovary produces from the Center of the Apex a small Head, adorned with a Multitude of fimbriated Tubes, and becomes an unicapsular Fruit, full of vast Numbers of angulous hairy Seeds, and furnished with a foliaceous Apex.

Boerhaave mentions thirty-nine, and *Miller* forty-nine Species of Roses; but those principally used in Medicine are the seven following:

1. ROSA CANINA. *The Common Briar or Dogs-Rose.* See CYNOSBATOS.

2. ROSA DAMASCENA, *pallida*, Offic. *Rosa Provincialis, sive Damascena*, Ger. 1079. Emac. 1261. *Rosa Damascena*, Park. Theat. 1017. Parad. 413. Raii Hist. 2. 1468. *Rosa Purpurea*, C. B. P. 481. Tourn. Inst. 637. *Rosa Damascena, flore pleno*, Boerh. Ind. A. 2. 152. *Rosa rubella, flore majore, multiplicato, sive pleno, incarnata vulgo*, J. B. 2. 36. *An Rosa incarnata vulgaris*, Mont. Ind. 51. THE DAMASK-ROSE.

The Damask-Rose grows not so tall, nor so large as the white Rose, but yet taller and fuller of Prickles than the red, especially about the Stalk. The Leaves are whiter and more hairy. The Flowers are less double than the *Provence* Rose, and the Beards prickly; they are of a pale red Colour, and of a most pleasant Scent.

The Flowers are of a gentle cathartic Nature, purging choleric and serous Humours, being given to Children and weakly Persons, and mixed frequently with stronger Cathartics.

Officinal Preparations of Damask-Roses, are the *Syrupus è Succo Rosarum*, *Syrupus Rosaceus solutivus*, the *Aqua Rosarum Damascenarum*, and the *Electuarium è Succo Rosarum. Miller's Bot. Off.*

AQUA ROSARUM DAMASCENARUM. WATER OF DAMASK-ROSES. See AQUA.

ELECTUARIUM E SUCCO ROSARUM. ELECTUARY OF THE JUICE OF ROSES. See ELECTUARIUM.

SYRUPUS E SUCCO ROSARUM.
Syrup of the Juice of Roses.

This is prepared without any Infusion, from the expressed Juice of the Flowers, with the same Proportions of Sugar to the Quantity of Juice as directed in the *Syrupus Rosaceus Solutivus.*

SYRUPUS ROSACEUS SOLUTIVUS.
Solutive Syrup of Roses.

Take of boiling Water, four Pound; stir into it as much fresh Damask-Rose Leaves as it will contain; let them stand together in a warm Infusion for twelve Hours, and then press it out strongly. Let this again be heated, and new Flowers stirred in, and steeped as before; and proceed to a third Repetition of the same, every Time increasing the Quantity of the Flowers put in, in proportion to the Liquor, which every time will increase almost one Third. When this is all finished, to six Parts of the Liquor put four Parts of white Sugar, and boil into a Syrup with a Bath-Heat, according to Art.

This is the same as in the former Dispensatory of the College, but at first was ordered to be repeated nine times in the Infusion; but the Shops have been hitherto most accustomed to make it from the clarified Juice of the Roses, or from their Refiduum after Distillation.

3. ROSA PALLIDA, Offic. Ind. Med. 98. Chomel. Lob. Icon. 2. 207. *Rosa sativa*, IV. Dod. Pempt. 187. *Dale* makes a Doubt whether this be not of the same Species with the Damask-Rose.

4. ROSA PALLIDA, Offic. *Rosa maxima multiplex*, C. B. P. 481. Tourn. Inst. 637. *Rosa Hollandica, sive Batava*, Ger. 1081. Emac. 1262. *Rosa Provincialis, sive Hollandica Damascena*, Park. Parad. 413. Raii Hist. 2. 1469. *Rosa Hollandica rubella plena quibusdam, centifolia, spinosa frutice*, J. B. 2. 37. THE DAMASK PROVINCE ROSE.

It is common in Gardens, and flowers in *July*; the Virtues are the same with those of the common Damask-Rose.

5. ROSA RUBRA, Offic. Ger. 1079. Emac. 1261. Raii Hist. 2. 1468. *Rosa rubra multiplex*, C. B. P. 481. Tourn. Inst. 636. *Rosa rubra Anglica*, Park. Parad. 412. *Rosa rubra valde plena*, J. B. 2. 34. THE RED-ROSE.

This Rose generally grows in lower Bushes than the White Damask Roses; the Flowers have very few Prickles on the Stalks, and the Calyx or Beards are shorter and smoother; they are less double than either the White or Damask, having a great many yellow Anthera in the Middle.

The Red-Rose is more binding and restringent than the Damask and White, and good against all Kinds of Fluxes; they strengthen the Stomach, prevent Vomiting, and stop tickling Coughs, by preventing the Defluxion of Rheum, and are of great Service in Consumptions. The Antheræ or Apices are accounted Cordial, though they are but seldom used.

Officinal Preparations are, a *Simple Rose-Water*, *Conserva Rosarum*, *Saccharum Rosarum*, *Syrupus è Rosis siccis*, *Mel Rosarum*, *Oleum Rosarum*, *Unguentum Rosarum*, *Tinctura Rosarum*, & *Species Aromaticum Rosatum. Miller's Bot. Off.*

The Parts in Use are the Flowers and the *Antheræ*, which are yellow Floscules, which adhere to the Capillaments in the Middle of the Flowers.

The Flowers are of principal Use in Fluxes, Fevers, Thirst, and Loss of Appetite. Outwardly they are of Service in Vomitings, Head-ach, want of Sleep, Pains of the Ears and Gums, and of the Anus; in Ulcers of the Mouth, Fauces and Eyes. The Antheræ dried, are used in Dentifrices for Astriction of the Gums. *Dale.*

Roses are of singular Service in Medicine, since the Water distilled from them in Consequence of its fragrant Oil, is highly friendly to Nature; and whether internally exhibited, or externally applied, excellently calculated for recruiting the Strength, and alleviating Pains and Inflammations in all hot Diseases. Conserve of Roses, by means of its cordial and astringent Virtues, is peculiarly adapted and appropriated to pthisical and hectic Patients. Vinegar of Roses, mixed with the Spirit and Water of Roses, adding Nitre and a little Camphire, makes an Epithem, which, when applied to the Head, I have, from repeated Experience, found to be of incomparable Efficacy in removing Head-achs, preventing Deliriums, and stopping immoderate Hæmorrhages from the Nose. *Hoffman de Præst. Remed. Domest.*

CONSERVA ROSARUM. See CONSERVA.

MEL ROSARUM. Honey of ROSES. See MEL.

OLEUM ROSARUM. See OLEUM.

SACCHARUM ROSATUM TABULATUM.
Lozenge-Sugar with Roses.

Take of Red-Rose Leaves without the white Heels, and hastily dried in the Sun, one Ounce; of the whitest Sugar, one Pound. Melt the Sugar over the Fire in Rose-Water, and the Juice of the same, each two Ounces; and after due Evaporation, mix with it the Roses in fine Powder, and pour it upon a Marble, so as to make it into Lozenges.

SPECIES AROMATICUM ROSATUM. See AROMATICA.

SYRUPUS E ROSIS SICCIS.
Syrup of dried Roses.

Take two Quarts of hot Spring-Water, and in it infuse half a Pound of Rose-Leaves, hastily dried in the Sun; the next Day press out the Liquor, and with two Pounds of Sugar boil it up to a Syrup.

TINCTURA ROSARUM RUBRARUM.
Tincture of Red Roses.

Take half an Ounce of Red-Rose Leaves, well cleared of the white Heels, and thirty Drops of Oil of Vitriol; pour upon them in a glazed earthen Vessel two Pints and an half of boiling Spring-Water, and let them stand close covered for three Hours; then strain off the Liquor, and put to it three Ounces of fine Sugar-Candy.

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UNGUENTUM ROSATUM.
Ointment of Roſes.

Take of Hogs-Lard, cleared from all its Membranes, and well waſhed, one Pound; and add to it one Pound of freſh Red-Roſes; which ſuffer to ſtand together for ſeven Days; then boil them over a gentle Fire, and preſs out the Lard; then macerate again with freſh Roſes the ſame Space of Time, and boil and ſtrain as before. Laſtly, put to it ſix Ounces of the Juice of Red-Roſes; of Oil of ſweet Almonds two Ounces, and boil over a ſlow Fire, to a Conſumption of all the Juice; then ſtrain it again, that it may become an Ointment.

6. ROSA ALBA, Offic. Ger. 1079. Emac. 1260. Raii Hiſt. 2. 1473. *Roſa Anglica alba*, Park. Parad. 412. *Roſa alba vulgaris major*, C. B. P. 482. Tourn. Inſt. 637. *Roſa alba, flore pleno*, Boerh. Ind. A. 2. 251. *Roſa candida plena*, J. B. 2. 44. THE WHITE-ROSE.

The White-Roſe Tree grows taller than moſt other Kinds of Roſes, having fewer Prickles on the Branches, and thoſe pretty large; the Leaves are of a dark green Colour; the Flowers are white, and more double, or fuller of Leaves than the Damaſk or Red, having a leſs fragrant Scent than either of them.

The Flowers only are uſed, being drying, binding and cooling, and the Water diſtilled from them, is much uſed in Collyriums for ſore inflamed Eyes, being the only officinal Preparation from them. *Miller's Bot. Off.*

7. ROSA MOSCHATA, ſimplici flore. *C. B. P.* 482. *Tourn. Inſt.* 637. *Roſa Moſchata minor, flore ſimplici*, J. B. 2. 45. Raii Hiſt. 2. 1474. *Roſa Moſchata ſimplex*, Park. Parad. 417. THE MUSK-ROSE.

It grows in warm Places, but was never uſed among us; it purges violently.

ROSA HIERICHUNTICA. A Name for the *Myagrum*; *ex Sumatrâ, & Syriâ; ſemine ſpinoſo, ſimili Capiti Aviculæ.*

ROSALIA. A Name for the Meaſles; or for a Diſtemper reſembling the Meaſles, conſiſting in Petechial Eruptions, or Aſperities of the Skin. *Caſtellus* from *Martianus.*

ROSBOTH. A ſoft Excreſcence of a hard Part. *Caſtellus* from *Avicenna.*

ROSCA. An *Eryſipelas.* Rulandus.

ROSCOLÆ. The Meaſles.

ROSIO. Corroſion.

ROSMADIAN. Mercury of the Philoſophers.

ROSMARINUS.

The Characters are;

It is a verticillate Plant, with a labiated Flower, conſiſting of one Leaf, whoſe upper Lip or Creſt is cut into two Parts, and turns up backwards, with crooked Stamina, or Chives; but the under Lip, or Beard, is divided into three Parts, the middle Segment being hollow, like a Spoon; out of the two or three teeth'd Flower-Cup riſes the Pointal, attended as it were by four Embryos, which afterwards turn to ſo many Seeds, that are roundiſh, and are incloſed in the Flower-Cup.

Boerhaave mentions ſix Species of *Roſmarinus*, which are;

1. Roſmarinus; hortenſis; anguſtiore folio. *C. B. P.* 217. *Tourn. Inſt.* 195. *Boerh. Ind. A.* 179. *Roſmarinus*, Offic. *Roſmarinum coronarium*, Ger. 1109. Emac. 1292. *Libanotis coronaria, ſive Roſmarinum vulgare*, Park. Theat. 71. ROSEMARY.

This is a Plant very well known, growing almoſt in every Garden. It grows larger and more woody in *England* than in many other Countries, having woody tough Branches, with long narrow thick Leaves, that are hoary and ſomewhat hollow underneath, and green above; among theſe grow the Flowers ſeveral together in Cluſters, of a pale purple Colour, each having a large Galea, and is ſet in a thick, hoary, five-corner'd Calyx, at the Bottom of which lie four round Seeds. It grows wild in *Spain*, and the Southern Parts of *France*; but with us is planted in Gardens, and flowers in *April*. The Leaves and Flowers are uſed.

Roſemary is a Plant of great Service in Affections of the Head and Nerves, helping the Apoplexy, Palſy, and all Kinds of Convulſions, Pains, and Dizzineſs of the Head. It ſtrengthens the Sight and Memory, and opens Obſtructions of the Liver and Spleen. The dried Herb burnt is good to ſweeten the Air, and correct noxious filthy Smells.

Officinal Preparations are the *Conſerva Anthos, Aqua Reginæ Hungariæ*, and the Chymical Oil and fixed Salt. *Miller's Bot. Off.*

Roſemary, with reſpect to its Virtues, bears a great Affinity to Spike and Lavender; and as it abounds with a penetrating balſamic Oil, its Spirit proves equally efficacious in Diſorders of the Head, with Spirit of Lavander. An Infuſion of Roſemary in Water or Wine, is highly beneficial in the *Fluor albus*, and Sterility proceeding from it, in Hoarſeneſs, in Aſthma's and a diſagreeable Breath. *Arnaldus de Villa Nova* affirms, that he has often ſeen Cancers, Gangrenes, and Fiſtulas dried up and perfectly cured, tho' they would yield to no other Medicines, by frequently waſhing them with an Infuſion of Roſemary in Spirit of Wine. *Hoffman de Præſt. Remed. Domeſt.*

AQUA HUNGARICA.
Hungary, or the Queen of Hungary's Water.

Take of Flowers of Roſemary, twenty Ounces; rectified Spirit of Wine, thirty Ounces; let them infuſe for ſome Days, then draw off as much as there was Spirit put in.

This is moſt conveniently made by the Copper Alembic, taking Care that the Receiver is cloſed with a Bladder to the end of the Worm. And this Way common Spirit may be as well uſed as the rectified, obſerving not to draw it ſo low as to be cloudy; for after a certain Standard, the oily Part of the Flowers, which is conſiderable, will turn it milky. What runs afterwards, as a great deal will, which yet ſmells and taſtes ſtrong of the Flowers, may either be kept to throw into the Still again, when the ſame is to be made, or uſed in the Shop for a ſmall Spirit of Roſemary; and the laſt Runnings of all may paſs for a good ſimple Water, under the ſame Title. The College have rejected this out of their new Diſpenſatory; and indeed what is imported from *France*, and Countries where the Roſemary moſt abounds, is ſo good and cheap that it is hardly worth any Body's while to make it here, unleſs the Wholeſale Dealers: For theſe Gentlemen can in an Inſtant brew the largeſt Quantity, at a very ſmall Expence. Their Way is, to impregnate rectified Spirit of Wine with chymical Oil of Roſemary and that of Lavender, and this, with a *French* Title, they palm upon the Nation for *right French Hungary Water.*

CONSERVA ANTHOS. *Conſerve of Roſemary. Flowers.* See CONSERVA.

For the chemical Oil of Roſemary, ſee OLEUM.

For the fixed Salt, ſee SAL.

2. Roſmarinus; ſtriatus; five aureus. *Park. Theat.* 74.

3. Roſmarinus; hortenſis; anguſtiore folio; argenteus. *H. R. Par.* 158.

4. Roſmarinus; ſpontaneus, folio eleganter variegato. *H. R. D.*

5. Roſmarinus; ſpontaneus; five latiſolius. *C. B. P.* 217.

6. Roſmarinus; ſpontaneus; five latiſolius, folio Apice inhamum curvato. *Boerh. Ind. Alt. Plant. Vol.* 1.

Roſemary Leaves are antihyſteric, uterine, emmenagogue and cephalic; when uſed in Fomentations and Cataplaſms, they are of an alleviating and detergent Nature. Roſemary, in conſequence of its heating and diſſipating Quality, is an excellent Remedy in a *Fluor albus* ariſing from Languor. The Leaves bruiſed, made up in Form of a Paſte, and ſwallowed, powerfully ſtrengthen the Stomach and rouſe the Spirits. This Plant is an excellent Medicine in Diſorders of the Head and Nerves, ſuch as a Vertigo, a Carus, an Epilepſy, a Palſey, a Cholic, hyſteric Fits, and Weakneſs of Memory. Its Leaves, when put in a Bath, are excellent againſt Barrenneſs, render the Sight clear, remove a diſagreeable Breath and Difficulty of Breathing, and reſolve Obſtructions of the Liver and Spleen, for which Reaſon they are highly beneficial in the Jaundice; externally they contribute to ſtrengthen the Nerves, prevent Gangrenes, and reſolve cold Humours. In Catarrhs, and the Diſorders ariſing from it, the Smell of this Plant is beneficial; Roſemary is produced in *England*, *Spain*, and ſome Parts of *France*. Its Leaves ſmell like Camphire; and from its Flowers are obtained a Spirit, an Oil, and a Quinteſſence. The Water diſtilled from its Flowers is, *The Queen of Hungary's Water*, ſo called becauſe a certain Hermit taught its Compoſition to that Queen. This Water is excellent in *Deliquiums*, and what we call a Sinking of the Spirits. Melancholic and hyſteric Patients are greatly relieved and exhilerated by the grateful Smell of this Water, which is, alſo, excellent for thoſe who faint upon ſeeing the Blood ſpring from an opened Vein; for it excellently revives the Spirits, when applied to the Noſe, an Organ of all others the moſt eaſily affected. In the ſame Caſe, it is taken internally in Rain or Spring Water, and externally the Temples, Noſtrils, and nervous or muſcular Parts, are to be rubb'd with this Water. In Contuſions, Wounds, Tooth-achs, Gangrenes, and Congeſtions of cold Humours, this Water is uſed with great Succeſs. Of Roſemary Flowers, gathered in the Middle of the Day, bruiſed with Sugar, and afterwards preſerved from the Air in a Galley-pot, is made the celebrated Engliſh Conſerve, known in the Shops by the Name of *Conſerva Florum Anthos.* This Conſerve is an excellent Remedy in Vertigos, ariſing

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arifing from a cold Cauſe, as alſo in cold Diſtempers. Hence 'tis an excellent Stomachic, and proper in that Diſorder of the Eyes called *Lema Lippea*, when not proceeding from an Inflammation. The Leaves of Roſemary, boiled in Wine, ſtrengthen the Nerves. A Conſerve is alſo made of its Leaves for the Uſe of the Poor. The Oil obtained from the Flowers and Leaves of this Plant is cephalic, anti-ſcorbutic, emmenagogue, and in Virtues greatly approaches to the Savin. It is an excellent Medicine in Epilepſies, cures the various Symptoms of the hyſteric Paſſion, and promotes a Diſcharge of the Lochia and Menſes; for when the Fœtus or Menſes are retained, 'tis cuſtomary among the Women to exhibit ſome Drops of this Oil in Wine. *Hiſt. Plant. Aſcript. Boerhaav.*

ROSMARUS. The Sea-Cow. See MANATI.

ROSANIA or ROSALIA. The ſame as ROSEOLÆ.

ROS SOLIS.

The Characters are;

The Leaves are thick ſet with briſtly Hairs diſtilling Drops. The End of the Pedicle becomes an oblong tubulated Calyx, divided into five acute Segments, within which is ſeated a roſaceous pentapetalous Flower, furniſhed with five Stamina. The Ovary from the Center of the Calyx, within the Flower, is of a conic, accuminated Figure, gaping when mature, and full of a Multitude of Seeds.

Boerhaave mentions two Sorts of *Ros Solis*, which are;

1. Ros Solis; folio ſubrotundo. *C. B. P.* 357. *Raii Hiſt.* 1100. *Synop.* 3. 356. *Tourn. Inſt.* 245. *Boerh. Ind. A.* 216. *Ger. Emac.* 1556. *Ros Solis*, Offic. J. B. 3. 761. *Ros Solis major*, Ger. 1366. *Ros Solis ſive Rorella vel Roſa Solis*, Park. Theat. 1052. *Ros Solis, Roſa Solis, Sponſa Solis, Rarida & Rorella etiam dicta.* Chab. 559. ROSA SOLIS.

This is a ſmall low Plant, having a little fibrous Root, from which ſpring ſmall round hollowiſh Leaves, on Footſtalks of about an Inch in Length, covered and fringed with ſhort red Hairs or Briſtles, which make the whole Leaf appear red; from among theſe ariſe naked Stalks three or four Inches high, having ſeveral ſmall five-leav'd Flowers on the Top, ſtanding one Way, which are ſucceeded by little longiſh Seed Veſſels, containing very ſmall Seed; it grows in boggy Grounds, and flowers in *June* and *July*.

Roſa Solis is commended by ſome as a great Cordial, and good for Conſumptions, Convulſions, and the Plague. Formerly a cordial Water, in which this Herb, with ſeveral Spices, was a principal Ingredient, was in great Repute, under the Name of *Roſa Solis*, tho' now almoſt out of Date. *Miller's Bot. Off.*

Some Authors affirm it is a Cauſtic, and improper for internal Uſe.

2. Ros Solis: folio oblongo. *C. B. P.* 357. *Boerh. Ind. Alt. Plant. Vol.* I.

ROS SYRIACUS. The ſame as ELÆOMELI; which ſee.

ROSTRIFORMIS. The ſame as CORACOIDES.

ROSTRUM. The Beak of a Bird. Hence ſeveral Chirurgical Inſtruments are, from their Similitude, called by this Name. Thus there is the *Roſtrum Corvi*, the Crows Bill Forceps; the *Roſtrum Gruis*, Crane's Bill; the *Roſtrum Pſittacinum*, Parrot's Bill; and the *Roſtrum Vulturis*, Vulture's Bill. *Roſtrum Leporinum*, is a Hare Lip.

ROTANG. The Name of a Species of Reed mentioned by *Piſo*.

ROTATORES. The Trochanters. See TROCHANTERES. The Alchymiſts are called *Rotatores* by Way of Deriſion.

ROTILA, in *Paracelſus*, is the ſame as RUBRICA.

ROTULA. The *Patella*, or Cap of the Knee. In Pharmacy, *Rotula* is a Troche.

ROTUMHA. A Veſſel like a Cucurbit. *Rulandus.*

ROTUNDUS MAJOR. The Name of a Muſcle of the Shoulder. See TERES MAJOR.

ROTUNDUS MINOR. See TERES MINOR.

ROUCOU. See ACHIOTL.

RUB, in *Rulandus*, is the ſame as ROB.

RUBEA ICTERITIA, in *Paracelſus*, is an Eryſipelas.

RUBECULA. Offic. Jonſ. de Avib. 87. Mer. 178. Bellon. des Oyſe. 349. Geſn. de Avib. 681. Charlt. Exer. 97. *Erithacus ſive Rubecula*, Aldrov. Ornith. 2. 742. *Rubecula ſive Erithacus*, Raii Ornith. 219. Ejuſd. Synop. A. 78. THE ROBIN-RED-BREAST, or RUDDOCK.

This Bird, when eaten, is by ſome eſteemed to excite Venereal Inclinations.

RUBEFACIENTIA. Topics which excite a Redneſs of the Skin; the ſame as PHÆNIGMI.

RUBELLA. This is defined by *Dornæus*, a ſpiritual Eſſence, extracting a Tincture from Bodies by its reſolutive Power.

RUBELLIANÆ. The Berries of the white Bryony. *Rhodius in Scribon. Larg.* N°. 249.

RUBELLIO. The Sea-Roach.

This Fiſh has two ſharp Fins on the Back, and feeds upon ſmall Crabs and other little Fiſhes; it is more eſteemed in Winter than in Summer; and this may be occaſioned by its different Way of feeding in theſe two Seaſons; for in Winter it keeps in the open Sea, but in Summer it draws near the Shore; or, according to ſome Authors, the Difference may ariſe from its ſpawning in the Summer.

This Roach is eaſy of Digeſtion, becauſe 'tis tender, delicate, not very compact in its Parts, and has but little groſs Juice. It is nouriſhing, reſtorative, and promotes the *Semen*, by Reaſon of the balſamic, oily Parts, and volatile Salts with which it abounds. It is, alſo, reckoned good for ſtopping a Looſeneſs; operating on this Occaſion, by calming and ſuppreſſing the ſharp and pungent Humours, which cauſe this Inconvenience, by its oily Principles. It agrees, eſpecially in Winter, with any Age and Conſtitution. *Lemery on Foods.*

RUBEOLA.

The Characters are;

The Leaves grow four, or more together; the Flower is monopetalous, Funnel ſhap'd, and quadrifid, reſting upon one, or a double Ovary; the Ovary becomes a Fruit containing two Seeds.

Boerhaave mentions two Species of *Rubeola*, which are;

1. Rubeola; latiore folio. *T.* 130. *Rubia, latifolia, ſpicata.* C. B. P. 334. *Pſeudo-Rubia, latifolia, ſpicata*, M. H. 3. 333.

2. Rubeola; anguſtiore folio. *T.* 130. *Pſeudo-Rubia, ſpicata, anguſtifolia.* M. H. 3. 333. *Boerh. Ind. Alt. Plant. Vol.* I.

This Plant is recommended in a Quinſey. *Hiſt. Plant. Boerh. Aſcript.*

RUBETA. The Toad. See BUFO.

RUBIA.

The Characters are;

The Leaves are rough; the Fruit conſiſts of two ſucculent Berries, which contain each an umbilicated Seed.

Boerhaave mentions four Sorts of *Rubia*, which are;

1. Rubia; Tinctorum; ſativa, *C. B. P.* 333. *Boerh. Ind. A.* 147. *Tourn. Inſt.* 114. *Rubia Tinctorum*, Offic. Ger. 957. Emac. 1118. Raii Hiſt. 1. 480. Synop. 3. 223. *Rubia ſativa*, J. B. 3. 714. *Rubia major ſive hortenſis*, Park. Theat. 274. MADDER.

The Roots of Madder are about as thick as a large Gooſe-Quill, round and much branched, of a reddiſh Colour, clear, and ſomewhat tranſparent, having a ſmall, ſlender, hard, tough String in the Middle, of a ſweetiſh Taſte, with a little Bitterneſs; from theſe ſpring many ſquare, rough, weak Stalks, full of Joints, about which are ſet five or ſix long ſharp-pointed Leaves, that are broadeſt in the Middle, and narrow at both Ends, rough almoſt to Pricklineſs. The Flowers grow in long Spikes, coming forth at the Joints with the Leaves, ſmall and yellow, of one Leaf cut into four Segments, each ſucceeded by two ſmall, moiſt, blackiſh Berries, containing two round umbilicated Seeds. It is planted in Fields and Gardens, and flowers in *May*.

The Roots of Madder are opening and attenuating, good for Obſtructions of the Liver, help the Jaundice and Dropſy, and cleanſe the Kidneys of tough and ſlimy Humours, and are of Uſe againſt the Stone and Strangury. They are accounted good to diſſolve congealed Blood, and to be ſerviceable in Wounds and Contuſions. A great Quantity of the dried Roots are uſed by the Dyers to dye a red Colour. *Miller's Bot. Off.*

2. Rubia; ſylveſtris, aſpera; quæ Sylveſtris Dioſcoridi. *C. B. P.* 333. *Raii Hiſt.* 1. 480. *Synop.* 3. 223. *Boerh. Ind. A.* 147. *Rubia ſylveſtris & Rubeola.* Offic. *Rubia ſylveſtris*, Park. Theat. 274. WILD MADDER.

It grows wild in Hedges. The Root agrees in Virtues with the *Rubia Tinctorum Sativa.*

3. Rubia; ſylveſtris; Monſpeſſulana; major. *J. B.* 3. 715.

4. Rubia; quadrifolia; aſperrima; lucida; peregrina. *Boerh. Ind. Alt. Plant. Vol.* I.

RUBIA SYNANCHICA, Offic. *Rubia Cynanchica*, C. B. P. 333. J. B. 3. 723. Raii Hiſt. 1. 485. *Rubeola vulgaris quadrifolia, lævis, floribus purpuraſcentibus*, Tourn. Inſt. 130. Raii Synop. 3. 225. *Synanchica Lugdunenſis*, Ger. Emac. 1120. *Aſperula repens Geſneri, ſeu ſaxifraga altera Cæſalpini*, Park. Theat. 453. SQUINANCY-WORT.

It has a black, thick, woody Root, which runs to a great Depth in the Earth, and is furniſhed with very numerous fine capillary Fibrils, divided into a Multitude of Heads, and ſhoots up many ſmooth, ſlender angulous Stalks, a Span in Length or more, clothed at the Joints, which are frequent near the Head of the Root, with four Leaves, very ſhort and broad, ſo as that the Length is ſcarce the third Part of the

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the Breadth. About the Middle of the Stalk the Joints are frequent, and the Leaves longer, narrower, sharper, and grow also by Fours. The Flowers on the Tops of the Stalks and Branches, form a kind of Umbellas, as in the *Valeriana*, and are expanded from an oblong Tube into four Segments, of a beautiful red Colour, and a pleasant Smell; sometimes they are white like those of the *Jasminum*, which they resemble in Colour and Smell, but are of the Size of the *Rha* of *Dioscorides*.

These are succeeded by a Coacervation of Seeds, which grow two together, and are rugous or rough, oblong, and bear like those of the *Phaseolus*, double the Size of those of the common *Gallium*, and when dry of a yellowish Colour.

It abounds in barren Places, and chalky and sunny Hills, as on *Gogmagog Hills*, *Sussex Downs*, and the like Situations.

It is supposed to be of extraordinary Efficacy in the *Squinancy*, (whence its Name) a Quinsey, whether inwardly or outwardly used. *Dale.*

RUBICILLA Offic. Mer. Pin. 176. Schw. A. 346. *Rubicilla*, *Pyrrhula*, Charlt. Exer. 17. *Rubicilla seu Pyrrhula*, Gesn. de Avib. 664. Will. Omith. 180. Raii Omith. 247. Ejusd. Synop. A. 86. *Pyrrhula seu Rubicilla*, Aldrov. Ornith. 2. 744. Ions. de Avib. 87. *Rubecula*, Bellon. des Oyse. 349. *Pyrriola*, Scaliger. THE BULL-FINCH, ALP, or NOPE.

The Flesh of this Bird is recommended against the Cholic.

RUBIFICANTIA. The same as RUBEFACIENTIA.

RUBIGO. The Rust of Metals, or Mildew; or Smut of Corn.

RUBINUS. See CARBUNCULUS.

RUBRICA FABRILIS. Offic. Mer. Pin. 218. Matth. 1359. Calc. Mus. 134. Dougl. Ind. 80. *Rubrica*, Charlt. Foss. 2. Worm. 4. Aldrov. Mus. Metall. 257. *Rubrica Fabrilis Mollis*, Kentm. 8. RED OKER, RUDDLE, MARKING STONE.

This is an earthy, ponderous, and intensely red Substance, found in many Parts of *England*, and is used in vulnerary and drying Plaisters.

RUBRICA SINOPICA. Offic. Matth. 1354. *Rubrica Sinopis* Agricol. 583. *Terra Sinopiana*. Tourn. Voy. Ed. Lond. 2. 159. EARTH OF SINOPE.

This ought to be thick, heavy, and all of one Colour, resembling Liver; and when diluted with Water, it ought to diffuse itself therein.

It is dug out of the Earth in *Cappadocia*, is esteemed drying, and is said to restrain a Diarrhæa.

RUBUS.

The Characters are;

The Calyx is quinquifid; the Flower is rosaceous, pentapetalous, and furnished with a great Number of Stamina; the Placenta is in the Centre of the Calyx, to which it grows; the Fruit is round, and compos'd of a great Number of succulent *Acini*, fixed to the *Placenta*, and furnished with oblong Seeds, each being furnished with a long Tube.

Boerhaave mentions seven Species of *Rubus*, which are;

1. Rubus vulgaris; sive Rubus fructu nigro. *C. B. P.* 479. *Tourn. Inst.* 614. *Boerh. Ind. A.* 2. 60. *Rubus vulgaris*, Offic. *Rubus*, Ger. 1089. Emac. 1272. *Rubus vulgaris major*, Park. Theat. 1013. *Rubus major fructu nigro*, J. B. 2. 57. Raii Hist. 2. 1639. Synop. 3. 467. THE BRAMBLE OR BLACK BERRY BUSH.

The Bramble has many long, creeping, angular, tough Branches, beset with a Multitude of very sharp crooked Thorns. The Leaves grow on the younger Twigs, usually five on one Foot Stalk in the lower Parts, and three on the upper Part next the Flowers, which grow in Clusters at the End of the Branches, consisting of five Leaves a-piece, in some Plants white, in others of a pale Red, with several Stamina in the Middle. The Fruit is a Cluster of *Acini*, green at first, then red, and when ripe, of a black Colour, and of a pleasant sweet Taste. It grows every where in the Hedges, flowering in *June* and *July*, and the Fruit is ripe at the latter End of *August* and in *September*. The Leaves and Fruit are used.

The Leaves are accounted Restringent, and are frequently prescribed in Gargarisms for sore Mouths and Throats; the unripe Fruit is very binding and restringent, useful for all Kinds of Fluxes and Bleeding; for Thrushes and sore Mouths. The Juice of the ripe Fruit made into Syrup, is accounted good against Heat of Urine. *Miller's Bot. Off.*

The Leaves of the Bramble are styptic, and of an earthy Taste; they stain the blue Paper with a deep red; the Fruit gives it a much deeper, and almost as deep as Alum; this Fruit is vinous, and of a very good Smell upon some Brambles, and insipid and disagreeable upon others. It is very probable that the acid Part of the natural Salt of the Earth, which in the Leaves is very little disengaged from the other Principles, is almost entirely freed from them in the Fruits, and produces there, with the terrestrial Parts, a Salt which resembles Alum; so that the Antients had a great deal of Reason to use the Fruit of this Plant to bind. The Bramble is astringent, detersive and absorbent; the Decoction of its Branches, as *Dioscorides* affirms, stops a Looseness and the Fluor albus. Its Leaves, chew'd, clear the Ulcers of the Gums and Mouth; bruis'd and applied to the Tetters they kill them, and cure the Piles. The Juice of the young Shoots thickened in the Sun, acts more powerfully. *Galen* was of the same Opinion; he made Use of the Leaves for Wounds; of the Flower and Fruit for spitting Blood, and of the Root for the Stone. *Pliny* has stollen out of *Dioscorides* what he has said of the Bramble; but he adds to the Virtues of this Plant that of being diuretic. This Plant is now used to cleanse and bind, taken either outwardly or inwardly. The Decoction of it is used for the Wounds of the Legs. *Tabernæmontanus* says, that a Bolster dipped in the Juice of the Bramble, and put into the Fundament, will stop the Flux of the Piles. Mr. *Ray* relates, that Dr. *Needham* set a great Value upon the Syrup of Black-berries for the Heat of Urine. A simple *Diamoron* may be prepared of it for the Diseases of the Throat. The Juice of the Bramble is an Ingredient in the *Diamoron Nilai usitatum*. The Gun-powder made of the Coals of this Plant is quicker and stronger than the common Sort. *Martyn's Tournefort.*

2. Rubus; repens fructu cæsio. *C. B. P.* 479. *Tourn. Inst.* 614. *Boerh. Ind. A.* 2. 60. *Ger. Emac.* 1271. *Chamæbatos* Offic. *Rubus minor Chamærubus sive Humirubus*, Park. Theat. 1013. *Chamærubus spinosus fructu cæruleo.* Jons. Dendr. 272. *Rubus minor fructu cæruleo*, J. B. 2. 59. Raii Hist. 2. 1640. Synop. 3. 467. THE DEW BERRY.

It is found amongst the Corn. It flowers in *May*. The Fruit becomes ripe in *Autumn*. The Fruit is in Use. It agrees in Virtues with the *Rubus vulgaris*, or the Bramble or Black-berry Bush. *Dale.*

3. Rubus; Idæus; spinosus; fructu albo. *C. B. P.* 479. *J. B.* 2. 59.

4. Rubus; Idæus; spinosus; fructu rubro. *J. B.* 2. 59. *Raii Hist.* 2. 1640. *Synop.* 3. 467. *Boerh. Ind. A.* 2. 69. *Rubus Idæus*, Offic. Ger. 1089. Emac. 1272. Park. Theat. 557. *Rubus Idæus spinosus*, C. B. P. 479. Tourn. Inst. 614. THE RASPBERRY-BUSH.

The Raspberry-Bush has slender brittle Stalks, covered with an ash-colour'd Bark, beset with small weak Prickles; it has five high-vein'd, oblong, sharp-pointed Leaves, growing upon one Foot-stalk, white underneath and green above, indented about the Edges. The Flowers consist of five Leaves, of a white Colour, with a Cast of Red; each of which is succeeded by a roundish Fruit made of a Cluster of Acini, for the most part red, but in some Plants they are of a white Colour. It grows wild in some Parts of *Wales*, and the North of *England*; and flowers in *May*, and the Fruit is ripe in *June*.

The Fruit, which is the only Part used, has a pleasant grateful Smell and Taste, is cordial, and strengthens the Stomach, stays Vomiting, is somewhat restringent, and accounted good to prevent Miscarriage.

The only Officinal Preparation is the *Syrupus de Rubo Idæo*. *Miller's Bot. Off.*

They make a Wine, a Syrup, a Ratafia, and a Vinegar, of the Fruits of this Plant. Spirituous Water is also drawn from them. These Preparations are strengthening, and good in malignant Fevers and the Small-Pox. Nitre dissolved, and chrystallized with the Juice of Raspberries, is very agreeable. *Martyn's Tournefort.*

The red Raspberry is more common than the white; such as are large, full of sweet and vinous Juice, and pleasant to the Taste and Smell, are the best.

They are of a moistening and cooling Nature, cordial, and fortify the Stomach; they sweeten the Breath, purify the Blood, and are reckoned to be antiscorbutic and antinephritic.

Their refreshing Taste and Smell proceed from their essential Salt, intermixed with some oily Parts a little refined, which lightly pricking the Nerves of the Taste and Smell, excite an agreeable Sensation in them. They have nearly the same Principles, and consequently the same Effects as Strawberries; but they are moister and more phlegmatic, and not so compact in their Parts; for which reason they easily corrupt in the Stomach, if they continue there too long. The Flowers are used against the St. *Anthony's* Fire and Inflammations of the Eyes.

Raspberries are proper in warm Weather, and suit young bilious People, and those whose Humours are too sharp, and over-much agitated. *Lemery on Foods.*

5. Rubus; odoratus. *Cornuti*, 158.

6. Rubus; flore albo, pleno. *H. R. Monsp.*

7. Rubus; Alpinus; humilis. *J. B.* 2. 61. *Tourn. Inst.*

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115. *Boerh. Ind. A.* 2. 60. *Chamærubus*, Offic. *Chamærubus Saxatilis*, C. B. Pin. 479. Raii Hiſt. 1. 654. Synop. 3. 261. *Rubus Saxatilis*, Ger. 1090. Emac. 1273. *Rubus Saxatilis*, Park. Theat. 1014. STONE-BRAMBLE.

It grows on high Mountains, flowers in *June*, and the Berries have the ſame Virtues with Raſpberries.

All theſe Species of the *Rubus* are received in Medicine; the Roots of the firſt, ſecond, third and fourth Species, digged up in *February* or *March*, about the Full Moon, and boiled in Honey, are a very good aperient Medicine, whence it is proper for a Dropſy. The Fruit boiled in Red Wine, was accounted by the Ancients a ſovereign Remedy, where the Caſe required Strengthening, and for the Hæmorrhages, and Fluxes of the Belly. The ripe Berries are full of a nitrous and aromatic Juice, which is highly aperitive, reſolves dry and harden'd Coagulations, and expels them by Urine, and is on that account very ſerviceable in Diſeaſes, which require laxative and lenient Remedies, and ſuch as are endowed with a ſaponaceous Quality. The Leaves, which way ſoever prepared, are corroborative and aſtringent; the Fruit is laxative and aperient, and the expreſſed Juice of the Leaves is of Uſe in all acute Diſeaſes. Hence the *Syrupus de Rubis*, or *de Rubo Idæo*, is very good in all Diſorders proceeding from Bile, and Inflammations. A few Berries of the fourth and fifth Species, put into Wine, communicate to it a fine Colour and Fragrancy, and greatly exhilerate the Heart. They call this Wine *Rubides*. Of the ſame they prepare a Jelly, which is commended for hot Diſtempers. The Leaves and Fruit are commended in a Diarrhæa, Fluor Albus, Vomiting, and immoderate Fluxes of the Uterus and Noſtrils; they cure Ulcers of the Gums, and are an excellent Remedy for the Aphthæ and Ulcerations of the Mouth. The bruiſed Leaves extirpate Warts, cure Wounds and Ulcers, and remove the Itch. *Hiſt. Plant. aſcript. Boerhaave.*

RUCMA, or LUCMA. *De Laet.* An *American* Fruit, ſomewhat like an Orange with reſpect to Size and Shape. It is not eſteemed a good Food, nor is it uſed in Medicine.

RUCTUS, or RUCTATIO. An Eructation, or diſcharging of Wind upwards.

RUELLIA.

The Characters are;

It hath a funnel-ſhaped Flower, conſiſting of one Leaf, which is cut into ſeveral Parts at the Brim, from whoſe Empalement ariſes the Pointal, which is fixed like a Nail in the Bottom of the Flower, and afterwards becomes a membranaceous Pod, which opens into ſeveral Parts, and is filled with ſmall Seeds.

Miller mentions three Species, which are;

1. *Ruellia*; *Americana*; *humilis*; *Aſphodeli Radice*. Plum. Nov. Gen.

2. *Ruellia*; *Carolinana*; *foliis oblongis anguſtis, flore purpureo*. Houſt.

3. *Ruellia*; *Americana*; *humilis, parvo flore cæruleo, capſulis teretibus*. Houſt.

The firſt Sort was diſcovered by Father *Plumier* in *America*, who gave this Name to the Genus in Honour of Dr. *Ruellius*, a Perſon learned in Natural Hiſtory, who flouriſhed in the Sixteenth Century. The ſecond Sort grows plentifully in *South-Carolina*, from whence it was brought into the *Engliſh* Gardens. This Sort grows much taller than the other two. The third Sort was diſcovered by the late Dr. *William Houſton* in *Jamaica*, who ſent the Seeds into *England*. The Flowers of this Kind are much ſmaller than thoſe of the other Sorts, and are of ſhort Duration, ſeldom continuing above one Day. *Miller's Dictionary.*

RUFUS EPHESIUS, or RUFFUS EPHESIUS. This ancient Phyſician lived under the Emperor *Trajan*, and was eſteemed by *Galen* one of the moſt ſkilful of his Profeſſion. The ſame Author tells us, that *Rufus* wrote of the *Materia Medica* in Verſe; he alſo wrote a Treatiſe of the *Atra Bilis*, and ſome others cited by *Suidas*, but now loſt; and we have nothing left of his Works, but a ſmall Treatiſe of the *Greek* Names of the different Parts of the Body, and another of the Diſeaſes of the Kidneys and Bladder, with a Fragment of a Treatiſe of Cathartic Medicines. His principal Scope in the firſt of theſe Works, was to give a general Idea of Anatomy, and in particular to prevent the Miſtakes of his Cotemporaries, who ſtudied Medicine in reading ancient Authors, ſome of whom had diſtinguiſhed certain Parts of the Body by Names different from thoſe given them by others. Beſides this, we may infer from what *Rufus* ſays in this Book, that Anatomic Operations, in his Time, were only exerciſed upon Beaſts. "Thoſe, ſays he, an Animal the moſt like Man that can be, "you will not find all the Parts in every Reſpect reſembling "thoſe of the Human Body; but they will, however, have "at leaſt ſome Relation one to another. Formerly, he adds, "Anatomical Demonſtrations were made upon human Bo-"dies." We learn alſo from the ſame Book, that the Nerves, which were afterwards called *recurrent*, were then newly diſcovered. "The Ancients, ſays *Rufus*, called the Arteries of "the Neck *Carotides*, or *Carotics*, as much as to ſay, *ſopo-"rific*, becauſe they believed, that by a ſtrong Compreſſion "of theſe Arteries the Animal was laid aſleep, and loſt his "Voice; but it has been diſcovered in the preſent Age that "ſuch an Accident proceeds not from a Compreſſion of thoſe "Arteries, but from that of the Nerves contiguous to them." This Phyſician ſeems alſo to have ſeen certain Veſſels of the Matrix, of which Anatomiſts before him had made no mention. "*Herophilus*, ſays he, believed that Women had "nothing of varicoſe Paraſtatæ, but we have found, by exa-"mining the Matrix of a Brute, certain Veſſels which ariſe "from the Teſticles, and being reflexed on both Sides in the "Form of Varices, proceed to terminate in the Cavity of the "Matrix. They alſo yield a glutinous Humour when preſſed, "and it is undoubtedly believed that they are ſeminal Veſſels of "that Kind which they call *varicoſe*." *Rufus* had before obſerved, that there are four ſpermatic Veſſels in Man, two varicous, and two glandulous; and that the Extremity of the firſt, which joins to the Teſticles, went by the Name of *Paraſtatæ*. The little Treatiſe of the Diſeaſes of the Kidneys and Bladder contains nothing particular. *Rufus* alſo wrote ſome Commentaries upon *Hippocrates*.

The Three Books of *Rufus Epheſius*, of the Names of the Parts of the Human Body, were publiſhed in *Greek* by *Jac. Goupylus*, at *Paris*, 1554, in Octavo, *Typis Regiis, ex Officina A. Turnebi*. They had been tranſlated, together with *Aretæus*, into *Latin*, by *Junius Paulus Craſſus*, and printed at *Venice*, 1552, in Quarto, and were reviſed by the ſame *Goupylus*, and reprinted at *Paris*, 1554, in a ſmaller Size; and again, among the *Medici Principes* of *Hen. Stephanus*, 1567, in Folio. They were alſo reviſed a ſecond time by *Craſſus*, and reprinted at *Venice*, 1555, and at *Baſil*, 1581, in Quarto.

His Book of the *Diſeaſes of the Kidneys and Bladder*, with his Fragment of *Cathartic Medicines*, were publiſhed in *Greek* with the other three Books of *Rufus* abovementioned, and *Soranus de Utero & Muliebri Pudendo*, by the ſame *Goupylus*, at *Paris*, *ex Officina Turnebi*, 1554, in Octavo, and printed the ſame Year in *Latin* in a leſſer Size; and were afterwards reprinted in *Latin* among the *Medicæ Artis Principes* of *Hen. Stephanus*, 1567, Folio.

A new Edition of *Rufus* in *Greek* and *Latin*, reviſed and compared with the *Bern* Manuſcript, was deſigned by *Martinus Bogdanus*, as we are told by *Bartholinus*, *Cent.* 4. *Medic. Epiſt.*

Labbeus, *Bibl. nov. Manuſcript.* mentions *Rufus de Venereis, & de Oſſibus*; and *Rhaſis* aſcribes to *Rufus* the Books περὶ ὑγιείας, "Of Health," which are found among the Writings of *Galen*.

Works of *Rufus* which are loſt, are five Books, περὶ διαίτης, "Of Diet," mentioned by *Suidas*, and the ſecond of them quoted by *Oribaſius*. Four Books, περὶ βοτανῶν, "Of Herbs," in Hexameter Verſes, mentioned by *Galen*, *Præf. Lib.* 6. *de Simp. Med.* who ſeems alſo to quote ſome of them. *Galen* in the Place juſt mentioned, quotes alſo the Θεραπευτικὰ βιβλία, "Books of Therapeutics;" whence moſt of the Fragments of *Rufus*, which we find in *Ætius*, ſeem to be taken. *Galen* alſo commends a Treatiſe of *Rufus* concerning Melancholy, or *Atra Bilis*.

Beſides theſe Works of *Rufus* mentioned by *Galen*, *Suidas* takes notice of his Treatiſe of the *Diet of Corpulent Perſons*; of another on *Vulnerary Medicines*; and a Treatiſe of *Ficous Tumors or Excreſcences*; another of *Ancient Medicine*; and a Treatiſe of *Milk, Wine, and Honey*. There was another *Rufus*, called *Menius Rufus*, mentioned by *Galen*, *Lib.* 7. *Le C. M. P. G. Fabricii Biblioth. T. G.* p. 102.

RUGA. A Wrinkle. The following Preſcription is an approved Coſmetic in Wrinkles of the Face. Boil Hartſhorn, not old, in Water, till it yield a Sort of Juice. Then ſtrain the Water, and with the ſame knead Bean-Meal, which afterwards reduce into Troches, and dry them in the Shade. When Occaſion requires, diſſolve a ſufficient Quantity of theſe Troches in Water, till it becomes of the Thickneſs of a liquid Cerate, with which anoint the Face, and when it is agglutinated, waſh it off with warm Water. *Ætius*, *Tetrab.* 2. *Serm.* 4. *Cap.* 4.

RUGITUS. A Murmuring of the Inteſtines; the ſame as BORBORYGMOS.

RUMA. The *Gula*, or the external Part of the Throat.

RUMEX. The ſame as ACETOSA.

RUMINANTIA ANIMALIA. Ruminating Animals, that is, thoſe who chew the Cud.

RUMPHAL. A Species of *Indian Arum*, called alſo IGNOME. The Juice is poiſonous; but the Roots are recommended as an excellent Application to the recent Bites of Serpents;

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pents; but if the Wounds are not fresh, cut them open, and then apply the Roots. It is, farther, esteemed an excellent Topic for Parts affected with the Venereal Disease.

RUPICAPRA. See CAPRA ALPINA.

RUPTORIUM. A Caustic used in Surgery for breaking or opening Abscesses.

RUSCUS.

The Characters are;

The Calyx is monophyllous, and multified, from the Middle of which proceed monopetalous, campaniform, and globous Flowers; the Ovary becomes a globous soft Fruit, filled with one or two Seeds, which are generally hard.

Boerhaave mentions four Sorts of *Ruscus*, which are;

1. Ruscus; anguſtifolius, fructu folio innascente. See BISLINGUA.

2. Ruscus; latifolius; fructu folio insidente. *Tourn. Inst.* 79. *Boerh. Ind. A.* 2. 63. *C. B. P.* 305. *Laurus Alexandrina*, Offic. J. B. 1. 574. Raii Hist. 1. 663. *Alexandrina genuina*, Park. Theat. 700. *Hippoglossum Matthioli*, Ger. 761. Emac. 909. LAUREL OF ALEXANDRIA.

The Root of this Bay is hard and knotty at the Head, sending out several long Strings and small Fibres; the Stalks are tough and limber, growing not to any great Height, having the Leaves set alternately upon them, which are hard, firm, and full of straight Nerves, of an oval Shape, but sharp-pointed at the End, about two Inches long; on the Middle of the Back-Part of each grows a small mossy green Flower, which is succeeded by a red Berry about as big as a Juniper-Berry. This Plant grows in the mountainous Parts of *Italy* and *Hungary*.

It is commended by *Dioscorides* and *Galen* to open Obstructions of the Kidneys and the Womb; to provoke Urine and the Menses, and as helpful in long and hard Labour. It is also accounted a good vulnerary Plant, and useful to dry up old Ulcers and Sores; but is rarely used in our Days. *Miller's Bot. Off.*

3. Ruscus; anguſtifolius; fructu summis ramulis innascente. *T.* 79. *Laurus Alexandrina, fructu longis pediculis caulibus alligato.* M. H. Bloes.

4. Ruscus; myrtifolius; aculeatus. See BRUSCUS. *Boerh. Ind. Alt. Plant. Vol.* 2.

RUSMA. A Preparation of Honey which the *Turks* and *Tartars* use by way of *Dropax* or *Psilothrum*. It is made by boiling Honey to the Consistence of a Rob or Sapa.

RUSTICULA. The same as GALLINAGO. The Woodcock.

RUTA.

The Characters are;

The Leaves are divided into Segments; the Calyx is monophyllous, quadrifid, quinquefid, and stellated; the Flowers are rosaceous, tetrapetalous, and pentapetalous, furnished with eight or ten Stamina, four or five of which arise from the Unguis of the Petals, and four or five from the Interstices of the Petals; the Ovary seated in the Bottom of the Calyx, becomes a roundish, quadrangular, or pentangular Fruit, consisting of as many Capsules, in which are contained kidney-shap'd or angular Seeds.

Boerhaave mentions ten Species of *Ruta*, which are;

1. Ruta; major; hortensis; latifolia. *Boerh. Ind. A.* 260. *Ruta*, Offic. *Ruta hortensis*, Ger. 1070. Emac. 1255. *Ruta hortensis major*, Park. Theat. 132. *Ruta hortensis latifolia*, C. B. P. 336. Tourn. Inst. 257. *Ruta sativa, vel hortensis*, J. B. 3. 197. Raii Hist. 1. 874. GARDEN-RUE.

Rue is a shrubby Plant, whose elder Branches are tough and woody, having smooth blueish green Leaves, divided into an uncertain Number of small oval Sections, which are somewhat thick and fat, and round-pointed at the End, abiding all Winter. The Flowers grow on the Top of the younger Shoots, consisting usually of four yellow, hollow, scoop-like Leaves, torn in about the Edges, and having eight yellow Stamina, encompassing a roundish green Head, cut as it were into four Parts, growing large, and seemingly punched full of Holes, containing small black rough Seed. The Root is woody, having many Fibres. Rue is planted in Gardens; the Leaves and Seeds are used; the whole Plant has a very strong Scent.

Rue is a Plant of many Virtues, being alexipharmic, and good against infectious pestilential Diseases, and the Plague itself, and all Kinds of Fevers. It helps Disorders of the Head, Nerves, and Womb, Convulsions and hysteric Fits, the Colic and Weakness of the Stomach and Bowels; it resists Poison, and cures the Bites of venomous Creatures, and mad Dogs. It is an Ingredient in the Compound-Water of Briony, and in Treacle-Water.

Officinal Preparations are a simple Water, and a Conserve of the Leaves, and an Oil by Decoction. *Miller's Bot. Off.*

That Rue was greatly esteemed by the Ancients, is sufficiently certain; since it was the principal Basis of the Antidote of King *Mithridates*. Rue abounds with a highly acrid and penetrating Oil, capable of stimulating the languid Fibres to a brisker Motion, and consequently imparting an additional Strength to them. The Leaves of Rue mixed with recent Butter, and eaten in the Morning with Rye-Bread, are beneficial to those who abound in Phlegm, and an excellent Preservative against the noxious Influences of a moist and vapid Atmosphere, and the contagious Miasmata of epidemical Disorders. The Leaves bruised with Pepper, common Salt, and strong Vinegar, and applied to the Arteries of the Carpus, provided the morbid Matter is before duly managed, excellently check the febrile Impetus, and are often used with more Efficacy and less Danger, in stopping obstinate Quartan Fevers, than internal Astringents, and the so much celebrated *Peruvian* Bark. Strong Wine-Vinegar, richly impregnated with the Juice of Rue, when applied to the Mouth and Nostrils, is not only an excellent Preservative against the Contagion of epidemical Disorders, but also more effectual in preventing Deliquiums, than all the cephalic, rich, balsamic and apoplectic Spirits. *Hoffman. de Præstant. Remed. Domest.*

Rue is an Herb very much commended as an Alexipharmic, and is esteemed one of the best Simples for Hysterics, Epilepsy, Apoplexy, Convulsions, Pestilence, Inflammations and Gangrenes; in which last Case, the Herb bruised and applied with Wine and Salt, quickens the dead Part, prevents a Suppuration, and effects a Cure. *Nicander* commends it against the Bites of all venomous Creatures. There is no better Herb in the Pestilence; it has something of an aromatic, acidish, fragrant and oily Quality, and is heating in a high Degree, with a kind of Acidity. The Smell revives Women under a Syncope, and raises them under hysteric or epileptic Fits. It is of mighty Efficacy against Phlegm, and is very good, externally applied, for cold and pituitous Tumors; and it is highly celebrated for clearing and sharpening the Sight. It has a very acrid but not burning Taste, and abounds with a Salt, Oil, and a very penetrating Spirit, and is on that Account of singular Service in moving and stimulating the Nerves, and in attenuating gross Humors, and expeling them by insensible Perspiration and Sweat. It is an excellent Plant, as *Pliny* assures us, against all Sorts of Poison, and for all hysteric Melancholy, and hypochondriac Disorders, and for Faintings. It provokes the Menses, and expels the Lochia, Fœtus, and Secundines; and drank in the Morning instead of Tea, and the Vapour received into the Eye, sharpens the Sight. The Seed is much commended for the Worms, and the Gonorrhœa, and consumes the Semen by its excessive Heat and Dryness. The Herb is of Service in the Small-Pox and Measles, the Epilepsy, lethargic Disorders, and the flatulent Colic. Rue externally used is good for cold, humid and watry Tumors. A Cataplasm is prepared of Rue bruised and boiled with Wine, which resists an Inflammation. Rue may be given inwardly in the most acute Diseases. *Hist. Plant. ascript. Boerhaave.*

2. Ruta; hortensis; latifolia; arbusculæ similis, *C. B. P.*

3. Ruta; Africana; maxima, *Catal. Schwerin.*

4. Ruta; Chalepensis; tenuifolia; florum petalis villis sententibus, *M. H.* 2. 508.

5. Ruta; Chalepensis; latifolia.

6. Ruta; hortensis; minor; tenuifolia, *M. H.* 2. 507.

7. Ruta; hortensis; minor; tenuifolia; foliis variegatis argenteis.

8. Ruta; sylvestris; minor, *C. B. P.* 336. *J. B.* 3. 200. *Peganium Narbonense*, Lob.

9. Ruta; sylvestris; major, *J. B.* 3. 200. *C. B. P.* 336. *Park. Theat.* 133. *Raii Hist.* 1. 874. *Tourn. Inst.* 257. *Boerh. Ind. A.* 260. *Ruta Montana*, Offic. Ger. 1071. Emac. 1255. WILD RUE.

It grows on Mountains, and flowers in *July*, and is supposed to have the same Virtues as the Garden-Rue, but is more acrimonious.

10. Ruta; sylvestris; linifolia; Hispanica, *Boec. Mus. Part.* 2. 82. *Tab.* 73. *Boerh. Ind. Alt. Plant. Vol.* 1.

RUTA is also a Name for the HARMALA; which see.

RUTA CANINA. A Name for the *Scrophularia*; *Ruta Canina dicta vulgaris.*

RUTA CAPRARIA. *Goats Rue.* See GALEGA.

RUTA HYPERICOIDES. A Name for the *Hypericum*; *fœtidum*; *frutescens.*

RUTA MURARIA. See ADIANTHUM ALBUM.

RUTA PRATENSIS. A Name for the *Thalictrum*; *pratense*; *anguſtifolium.*

RUTACEUM. Vinegar of Rue. See ACETUM.

RUTETA. The same as TARANTULA; which see.

RUTI-

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RUTICILLA. A Bird called the Red-Tail, or Red-Start. The ſame as PHOENICURUS.

RUTILUS. Offic. Schonf. Ichth. 63. *Rutilus, ſive Rutilus fluviatilis*, Geſn. de Aquat. 821. *Rutilus fluviatilis, ſive Rubellus fluviatilis Geſneri*, Jonſ. de Piſc. 99. *Rutilus, ſive Rubellus*, Raii Ichth. 262. Ejuſd. Synop. Aldrov. de Piſc. 732. 621. *Rutilus, ſive Rubellus*, Mex. Pin. 190. THE ROCHE. Piſc. 122.

The Fleſh of this Fiſh, which is very common in Rivers, is ſaid to promote Venereal Inclinations.

RUYSCH. A celebrated Anatomiſt of *Holland*. See a farther Account of him under the Article ANATOME.

RUYSCHIANA.

The Characters are;

The Root is perennial, and the Leaves are not ſo thick as thoſe of Roſemary; the Galea is hollow, bifid and trifid, the Beard trifid, the middle Segment hanging forward, bifid, and ſpirally convolved. The Flowers are beautiful, generally ſet at firſt by Sixes in thin Whorles, but afterwards collected into a Spike.

Boerhaave mentions but one Sort of this Plant, which is,

Ruyſchiana; flore cæruleo, magno. *Hyſſopus Auſtriaca, magno flore, folio Chamæpitidis*. H. L. *Chamæpitys, cærulea, Auſtriaca*, C. B. P. 250. *Prunella, Hyſſopi folio viridi, amplo flore cæruleo*, M. H. 3. 364. *Boerh. Ind. Alt. Plant. Vol.* 1.

S.

S. For the Signification of this Letter in the Chymical Alphabet, ſee ALPHABETUM CHYMICUM.

S. ſ. or ſs. immediately following any Character importing Quantity, ſignifies *Semis*, Half.

SAAMOUNA. A Name for the PAVIA.

SABDARIFFA. A Name in *Boerhaave* for the *Ketmia*; *Indica; vitis folio; ampliore.*

SABINA.

The Characters are;

The Leaves reſemble thoſe of the Cypreſs, but are more compact; the Berries are verrucoſe; it has a very ſtrong and ſingular Smell.

Boerhaave mentions two Sorts of *Sabina*, which are;

1. Sabina; folio Tamariſci; Dioſcoridis. *C. B. P.* 487. *Boerh. Ind. A.* 2. 207. *Sabina*, Offic. Park. Parad. 607. *Sabina vulgaris*, Theat. 1027. Raii Hiſt. 2. 1415. *Sabina ſterilis*, Ger. 1193. Emac. 1376. J. B. 288. SAVINE.

Savine is an ever-green ſhrubby Tree, that ſeldom grows very tall, having the Branches ſet cloſe together, cloathed with narrow, ſhort, ſomewhat prickly Leaves, pretty much reſembling Cypreſs, of a very ſtrong Smell; among theſe, after the Tree is old, and has ſtood long in a Place, grow ſmall moſſy greeniſh Flowers, which are ſucceeded by ſmall flattiſh Berries, leſs than thoſe of Juniper, of the ſame blackiſh, blue Colour. It is planted in Gardens, where it ſeldom produces Fruit, and has therefore generally been reputed barren.

Savine is hot and dry, opening and attenuating, and a powerful Provoker of the Catamenia, cauſing Abortion, and expelling the Birth. It is very good to deſtroy Worms in Children. Mr. *Ray* recommends the Juice of it, mixed with Milk, and ſweetened with Sugar, as an excellent Medicine for that Purpoſe; beaten into a Cataplaſm, with Hog's Lard, it cures Children's ſcabby Heads.

Officinal Preparations are, the *Oleum Sabinæ per infuſionem decoctionem*, and the *Oleum Sabinæ chymicum. Miller's Bot. Off.*

Boerhaave, in his Chymiſtry, aſſerts, that a Water prepared from Savine, by repeated Cohobations, is a moſt excellent Ecbolic, Emmenagogue, and Promoter of the Hæmorrhoides; that it is heating, and a moſt excellent Medicine, if uſed diſcreetly. He farther informs us, that the chymical Oil of Savine is a moſt powerful Promoter of the Menſes, when their Retention proceeds from a Languor and Debility only.

A Cataplaſm, made of the Seeds of Savine, bruis'd with Sal Gem and Oil, is ſaid to be good for an Anchyloſis; and a Cataplaſm of the ſame Leaves, mixed with Honey, is frequently applied to the umbilical Region, in order to deſtroy Worms in the Belly.

2. Sabina; folio Cypreſſi. *C. B. P.* 487. *Boerh. Ind. A.* 2. 207. *Sabina* Offic. *Sabina baccifera*, J. B. 1. 288. Ger. 1193. Emac. 1376. *Sabina baccifera major*, Park. Theat. 1026. *Cedrus baccifera fructu minore cæruleo*, Raii Hiſt. 2. 1415. *Juniperus Alpina Sabinam referens*, Pluk. Almag. 201. BERRIED SAVINE.

This Plant is cultivated in Gardens, and is ſaid to be attenuating, and inciding; powerfully to provoke the Menſes, to promote the Expulſion of the Secundines, and to deſtroy Worms in the Inteſtines.

SABON, or SABENA. Soap, or a Lixivium from whence Soap is made.

SACCELLUM. The ſame as SACCULUS.

SACCHAR, or SACCHARUM. σάκχαρ, or σάκχαρον. Sugar.

With reſpect to the Sugar, or σάκχαρον, *Saccharum*, of the Antients, which is ſaid to be the ſame with μέλι καλάμινον, "Honey of Reeds," of *Theophraſtus*, and which others called ἅλας Ἰνδικὸν, "Indian Salt," *Salmaſius* ſays, that it was gathered from ſome Reeds or Canes, as tall and big as Trees, and that it is the ſame as they now call *Sacar Mambu*. The *Arabians* gave it the Name of *Tabaxir*, which is ſtill in Uſe in *Turkey* and *Perſia*, to ſignify that Kind of Sugar. But as neither the *Arabians*, any more than the *Greeks*, had ever ſeen in their own Country the Reed which produced it, and ſpoke of it only by Hearſay, they entertain us with nothing but mere Fables on that Subject. *Avicenna* tells us, that it is ſuppoſed that the Canes of the *Tabaxir* being agitated by the Wind, ſhock and bruiſe one another in ſuch a Manner as to take Fire, and kindle into a Flame, and that the Aſhes which are collected after this Combuſtion, at the Bottom of the Canes, is the *Tabaxir*. He confeſſes indeed, that this is a vulgar Story, to which he gives no Credit; but he believes, however, that the *Tabaxir* is the Aſhes of *Indian* Reeds, or of their Roots, which are burnt on Purpoſe; and *Averroes* ſays, that it is the Charcoal made of the Joints of the ſame Reeds.

Salmaſius obſerves, that this Error of the *Arabians*, in ſuppoſing their *Tabaxir* was a Kind of Aſhes, becauſe it was in the Form of a greyiſh Powder, gave Occaſion to the modern *Greeks*, who tranſlated thoſe *Arabians*, to render the Word *Tabaxir* by *Spodium*, which comes from σποδὸς, *Spodos*, Aſhes. And this has been the Cauſe of great Confuſion in Medicine; for the antient *Greeks* gave the Name of *Spodium* to what we now call *Tutty*, [*Dale* ſays the *Spodium Græcorum* was Putty] but the modern *Greeks*, and all the Phyſicians and Apothecaries after them, have called burnt Ivory by that Name; ſo that there are three very different Things, a Kind of Sugar, the Aſhes or Soot of a Mineral, and the Aſhes of Ivory, all under one Denomination.

To return to the *Spodium*, which is the *Tabaxir*, it is further to be obſerved, that the *Arabians* diſtinguiſhed it from the Sugar of the Ancients, tho' it was, as we ſaid, the very ſame Thing, becauſe they believed that their *Tabaxir* was a Kind of Aſhes, whereas the Sugar of the Antients was deſcribed as a Dew which fell upon the Canes, or as a ſweet and fat Juice which flowed from the Cane itſelf, when it was burnt. On the other hand, they believed that our Sugar was the ſame which they found in the Writings of the *Greeks* under the Name of σάκχαρον, *Saccharon*, and upon that Account they called it *Suchar*, or *Zuchar*, tho' there be really a good deal of Difference between thoſe two Sugars. The firſt, or that of the Antients, beſides, that it proceeded from a very large Reed, as we before obſerved, flow'd from it naturally and ſpontaneouſly, like a Kind of Manna, whereas our Sugar is the Juice of a much ſmaller Cane, which muſt be ground and preſſed in order to extract its Juice; and this Juice muſt afterwards be boiled and purified, to acquire the Conſiſtence it has.

Salmaſius ſhews, that the Sugar which we now uſe was abſolutely unknown to the Antients. *Seneca*, ſays he, tells us, "It is reported that Honey is found among the *Indians* in "the Leaves of Reeds, which is generated either by the Dew "of that Climate, or the ſweet and fat Humour of the Reed "itſelf." You ſee by this how little known and uſed the *Tabaxir* was by the Antients, ſince *Seneca* ſpeaks of it only by Hearſay. The *Arabian* Authors who reckon ſeveral Kinds of Sugar, omit this which was the only kind known to the Antients by that Name; and the Reaſon was, as we hinted before, they did not take it for a Sugar, but a Spodium. Thus *Salmaſius*,

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Salmaſius, who believes, however, that the Antients, tho' utterly unacquainted with our modern factitious Sugar, might have heard ſpeak of the Cane which produces it, and of its Juice; but that the *Indians* themſelves of thoſe Times knew not how to make the Sugar, and only uſed the expreſſed Liquor of the Cane, which is ſweet, for a Drink. As a Proof that the Antients had ſome Knowledge of the Sugar-Cane, he quotes thoſe Verſes of *Varro Atacinus*:

Indica non magna nimis Arbore creſcit Arundo,
Illius è lentis premitur radicibus humor,
Dulcia cui nequeant ſucco contendere Mella.

"In *India* there grows a Cane of a moderate Bigneſs, from "whoſe viſcid Roots is expreſſed a Liquor with which Honey "itſelf cannot be compared for Sweetneſs." *Salmaſius* however intends not to prove that the Invention of Sugar, or the Way of preparing it as we now have it, is very new; but acknowledges that it was diſcovered above eight hundred Years ago, and that it was grown very common in the Time of *Avicenna*.

The Cane which produces the common Sugar is thus diſtinguiſhed.

Arundo Saccharina, J. B. 2. 531, Ger. 35. Emac. 38. Raii Hiſt. 2. 1278. *Arundo Saccharifera*. C. B. Pin. 18. Theat. 193. Boerh. Ind. A. 2. 162. *Harundo Saccharifera*, Park. Theat. 1210. *Canna Saccharifera*, Ogilb. Chin. 1. 228. *Arundo Viba Braſilienſibus dicta*, Piſ. (1648.) *Tacomaree ſive Arundo Saccharifera*, Ejuſd. (1658.) *Vubæ & Tacomaree Braſilienſibus*, Marcg. 82. THE SUGAR CANE.

This Species of Cane is produced in large Quantities in the *Eaſt* and *Weſt Indies*, and the Iſlands moſt contiguous and adjacent to them. Its Stalk and Leaves reſemble thoſe of the common Cane, only its Stalk or Trunk is not ſo high as that of the other, ſince it is only ſix or ſeven Feet in Length. The Stalk of this Species is of a Colour like that formed by a Mixture of yellow and green. 'Tis more than an Inch in Circumference, furniſhed with Knots or Joints, and full of a ſpongeous, white and ſweet Pith. Its Root is not unlike that of the common Cane, but is not ſo woody, tho' it abounds with a ſweet Juice. *Lobelius in Adverſar.* informs us, that its Root dried and reduced to a Powder, is a Meal uſed by many of the *Indians* for making a Species of Bread of a very agreeable Taſte. The beſt Cane is produced in the *Canary* and *Madera* Iſlands. That growing at *Java* and *Madagaſcar* is alſo excellent. This Species of Cane yields the Sugar by *Latin* Writers called *Saccharum*, *Zuccharum*, *Zuccorum* and *Sucharum*. The *Arabians* call it *Zuchar*, *Zuccara*, *Succhar*, *Zozar*, and *Sutter*, and the *Greeks*, Σακχαρον, Σακχαρ, Σακχαρι, and Σακχαριον. Many call it *Mel Arundinaceam*, after it is boiled, evaporated, and put in wooden Veſſels for Exportation.

There are in the Shops various Species of Sugar, which receive their Appellations either from the Parts in which they are produced, or from their Goodneſs and Fineneſs. Thus we have *Canary Sugar*, *Valentian Sugar*, *Malta Sugar*, *Powder Sugar*, *Refined*, and *Double Refined Sugars*, *Thomaſian Sugar*, from an Iſland of the *Indies* bearing the Name of *St. Thomas*, *Sugar Candy* and *Penidian Sugar*, and *Coarſe Red Sugar*, moſt generally uſed in Clyſters, on Account of its abſtergent and reſolvent Quality. *Barley Sugar* is alſo a factitious Sugar, and is accounted good for the Breaſt and Throat. The beſt of it is white, ſpongious, large, and eaſily broken. For Coughs in Children it is exhibited with Oil of ſweet Almonds, or Syrup of Violets. The Diapenidion of the Shops cures Diſorders of the Breaſt, alleviates Coughs, is good againſt pleuretic Pains, a Difficulty of Breathing, Conſumptions, Diſorders of the Lungs, and Spittings of Blood. Liquid Sugar remains always in the Conſiſtence of Honey or Syrup, and is no more than the Froth gathered in refining the other Sugars. As for the Nature and Qualities of Sugar in general, it is temperate, heating, emollient, reſolvent, purgative, and calculated to reſiſt Putrefaction. If it is properly uſed, it nouriſhes the Body; for according to *Claud. Diodat. Panth. Hygiaſt*, *L.* 1. *Cap.* 21. nothing nouriſhes which is entirely free from Sweetneſs. It is good for the Stomach, Lungs and Breaſt, cures Coughs, and all Diſeaſes of the Thorax, promotes Expectoration, ſoftens internal Tumors, cleanſes Ulcers of the Kidneys, Bladder, and Inteſtines, hinders all corroſive Subſtances from ſo eaſily corroding the internal Parts, makes agreeable Sweet-meats, and renders ungrateful Medicines agreeable. But the more white and pure Sugar is, the leſs ſweet it, alſo, is, as we are informed by *Piſ. l.* 4. *de Facultat. Simpl. cap.* 1. and *Eraſm. Francis*; for if coarſe brown Sugar is diſſolved in a Lixivium of Lime Water, refined and ſeparated from its groſſer and more impure Parts, it aſſumes an acid Taſte, different from what it had before, and overheats the Blood; for which Reaſon, Perſons of hot and bilious Conſtitutions ought to be very cautious in uſing it, except in Medicines, ſince it will ſoon be converted into Bile: For according to *Ettmuller*, by its volatile Acidity it diſturbs the Bile, and excites a preternatural Orgaſm in it. And according to *Henricus ab Heer*, *Obſ. Med.* 5. it is principally injurious to ſcorbutic, hypochondriac, cachetic, and feveriſh Patients, if they uſe a conſiderable Quantity of it; becauſe, being eaſily converted into Bile, it augments the Fever and all its Symptoms. It is alſo injurious to Women who labour under a Suffocation and Strangulation of the Uterus, relaxes the Mouth of the Stomach, and, according to *Ettmuller*, on account of its eaſily fermentable Quality, ſoon becomes aceſcent in the Stomach, and *Primæ Viæ*. It weakens Digeſtion, and produces Flatulences, and ſudden Heats, impairs the Appetite, generates a corroſive Blood, produces Pains of the Belly and Dyſenteries. According to *Jo. Chr. Fromman. Tr. de Hæmorrhoid. Part.* 1. *Probl.* 33. it lays a Foundation for the Hemorrhoids. This Opinion is alſo confirmed by *Melch. Sebiz. L.* 2. *de Facult. Aliment.* and *Val. Henr. Volger. Diætet. Comment. cap.* 9. *Simon Pauli in Quadriport. Botan.* informs us, that in *England* an exceſſive Uſe of Sugar produces Conſumptions; and *Ehrenfr. Hagendorn*, *in Hiſt. Med. Phyſ.* 23. *Cent.* 3. tells us, that Sugar produces an irregular Gout. Not only Women, but, alſo, ſeveral Phyſicians are of Opinion, that Sugar and Honey generate Worms in Children; but if we reflect on the Generation of theſe Animals, we ſhall eaſily perceive that it is hindered by nothing more than by Sugar and Honey. *In Act. Med. Leipſ. An.* 1700. Sugar copiouſly uſed is recommended againſt Worms. This Piece of Practice is alſo authoriſed by *Levinus Lemnius*, *L.* 1. *de occult. Nat. Mir. Cap.* 21. *J. Heurn. de Peſte*, *Cap.* 21. *J. Varand. de Morb. Inteſtinor. Cap.* 2. *Laur. Strauſſ. Palæſtr. Med. L.* 3. And *A. Vincent de Petrone*, in his *Conſilium de Vermiculis quibuſdam in Corvorum & Aprorum Hepate inventis*; for 'tis certain that Worms are generated either by a coarſe, crude, and verminous Matter, ſubject to Putrefaction, or by the Eggs of Inſects taken in with the Aliments. But Sugar and Honey never putrefy, as we are told by *Galen*, *in Lib.* 3. *de Simpl. Med. Facultat. cap.* 15. On the contrary, Sugar and Honey, by means of their balſamic Quality, which reſiſts Putrefaction, are very proper for preſerving Subſtances for a long Time. For this Reaſon in the Shops, Conſerves, Syrups, Electuaries, Linctuſes, and Confections, cannot be made without Sugar: Neither can Roots, and various other Things be preſerved without it; for it not only aſſumes the Smell, Taſte, and Colour of all the Ingredients, but alſo preſerves their Virtues and Qualities for many Years. For this Reaſon alſo the Ancients embalmed their Dead with Honey. Confirmations of this may be found in various practical Authors. *Ant. Mizald. in Cent.* 5. *Aph.* 27. informs us, that not only Butter, but alſo ſweet Subſtances and Raiſins kill Worms. And *Sanctor. in Lib.* 5. *Meth. Vitand. Error. Cap.* 11. tells us, that Honey and Sugar are poſſeſſed of a certain intenſe Acrimony and Heat, by which they are greatly defended againſt Putrefaction. Externally Sugar cures recent Wounds, purifies Ulcers, removes white Spots and Films from the Eyes, according to *Marc. Gatinar. in Prax. Med. cap.* 21. The *Turks*, in order to cure their Wounds, waſh them twice a Day in Wine, and afterwards put Sugar in them. *Joh. Haricus*, in his *Theſaurus aureus*, *Part.* 2. informs us, that Sugar ſprinkled on the Crown of the Head, removes Head-achs. *In Riedlin. Lin. Med. An.* 2. we are told that Sugar, mixed with Oil of Marjorum or Cloves, and taken up the Noſtrils, removes a Coryza. According to *Joh. Beguinus in Tyrocin. Chym. L.* 2. *cap.* 6. Oil of Sugar relieves Pains of the Breaſt, Coughs, Aſthma's and Hoarſeneſs, in ſome Meaſure ſtops Catarrhs, and promotes Digeſtion. The ſame Author alſo informs us, that Tincture of Sugar, exhibited in Cinnamon or Roſe Water, is excellent in Syncopes and Deliquiums.

Sugar is the eſſential Salt of the *Arundo Saccharifera*, or Sugar-Cane, the different Kinds of which are theſe:

Muſcovado, the firſt Sugar got from the Juice of the Canes.

Caſſonada, Sugar refined from the former by the Whites of Eggs, Lime-Water, *&c.* which being more oily than the more refined Sorts, is to be preferred for all inward Uſes. It is alſo moſt proper for Confectioners, becauſe it does not candy ſo eaſily.

Leaf-Sugar; *Caſſonada*, ſtill further refined, and clarified in different Degrees. It has the ſame Qualities with the former, but in a leſs Degree for inward Uſe. They both cut Phlegm, promote Expectoration, and animate the Blood; but they excite Vapours and the Tooth-ach. They who uſe much Sugar, are liable to Fevers and to rotten Teeth. In *Braſil*, the Skimmings of Sugar are given to the Hogs, by which they are ſoon fattened, and their Fleſh becomes very delicate.

Sugar

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Sugar Candy, or Cryſtals of Sugar is of three Kinds, white, yellow, and red; which are only the three former Sorts boiled to a due Conſiſtence. White Sugar Candy comes from the *Loaf Sugar*; yellow from the *Caſſonado*, and red from the *Muſcovado*. Sugar Candy is moſt proper in Colds, becauſe it melts ſlowly, and thereby gives Time to the Saliva to mix with it, and thus to blunt the Acrimony of the Phlegm.

Red Sugar. This was uſed very much formerly in Looſenеſſes; but at preſent Oil of Sweet Almonds, and other Things of that Kind are ſubſtituted for it.

Syrup of Sugar, or *Moloſſes*, is the glutinous Part which drains from Sugar, and was formerly uſed for the red Preſerves or Sweet Meats; but it gave them a diſagreeable burnt Taſte. In the *Weſt Indies* they ferment and diſtil it; but the Brandy or Spirit which it yields is unpleaſant and very intoxicating. A much better Spirit might be made of refined Sugar.

To theſe we may add the *Saccharum Acernum*, Maple Sugar; which is the Product of *Canada* and *New England*, in which Countries the Natives collect the Juice that runs from a kind of Maple Tree by Inciſion, and then evaporate that Juice to the Conſiſtence of Sugar, which, while it remains unctuous, is better for internal Uſe than any other Kind; and the famous Syrup of Maiden-Hair of *Canada* is made with it. As it is brought to us, it is of a greyiſh Colour, and taſtes like other Sugar. With this Sugar the Inhabitants of theſe Countries prepare alſo a Sort of Liquor, which is their common Drink; and alſo make Brandy and Vinegar from it. *Geoffroy*.

As Sugar is a temperate Salt, friendly to Nature, and capable of producing an intimate Union of oleous and pinguious Parts with Water, hence appears the Reaſon why ſome both among the Ancients and Moderns, uſed to mix Honey, Sugar, Figs, and dried Grapes, with the Food intended to fatten old Animals; for the pinguious Parts of the Aliments, which, when intimately incorporated with the aqueous Parts, conſtitute the Milk and Chyle, are by this Means more quickly diſſolved, united with the aqueous Parts, and form a large Quantity of Chyle, which is conveyed with the Blood to all the Parts of the Body.

Hence alſo appears the Reaſon why either Honey or Sugar, mixed with Milk, prevents its Elaboration into Butter; for the Sugar more firmly unites with the Phlegm the numerous oleous Particles in the Cream; whereas, in order to the Churning of Butter, or its Collection into one Maſs, theſe ought rather to be ſeparated and disjoined from each other.

Hence we may alſo learn, that Sugar is not ſo unfriendly to the Mixture of the vital Fluids, as is commonly believed, ſince it neither induces any Change on the Blood, Milk or Serum, when mixed with them, but rather by ſtimulating the inteſtinal Fibres, facilitates the Excretion of the Fœces by Stool. And as it greatly promotes the Union of the oleous with the aqueous Parts of the Aliments, hence 'tis probable that it greatly contributes to the Generation of a large Quantity of Chyle. This accounts for the uſual Method of fattening Capons and Geeſe, by mixing a little Honey, Sugar, or Salt with Wheaten or Barley-Meal for their Food. *Hoffman. Obſervat. Chym. L. 1. Obſ. 7.*

I have had Reaſon to give a great Character of Sugar, on account of ſome extraordinary Effects it ſeemed to have on my Grandfather forty Years ſince. He made it his daily Practice to take or lick up as much Sugar as his Butter ſpread upon Bread would receive, for his conſtant Breakfaſt, unleſs he happened to exchange it for Honey ſometimes. He frequently ſweetened his Ale and Beer with Sugar: He had Sugar put to all the Sauces he uſed with his Meat: He had all his Teeth in his Mouth at eighty Years, ſtrong and firm; never had any Pain or Soreneſs in his Gums or Teeth; never refuſed the hardeſt Cruſt. In his eighty ſecond Year one of his Teeth drop'd out, and ſoon after that a ſecond, which he put into my Hand, and was one of the Fore-teeth: He bid me feel the Cavity, where I ſtruck my Nail upon a Bone. In ſhort, all his Teeth came out in two or three Years, and young ones filled up their Room: He had a new Set quite round. His Hair, from a very candid white, became much darker. He continued in good Health and Strength without any Diſeaſe, and died in his 99th or 100th Year, of a Plethora, as I gueſs, for want of Bleeding. He was a *Bedfordſhire* Gentleman of an old *Engliſh* Family, and the Caſe well known. This reconcil'd me much to vindicate Sugar, which I have formerly done before the Royal Society; and have ſhewn the unjuſt Calumny of the famous *Willis* againſt Sugar, who charges it with a corroſive Liquor, as bad as *Aqua Fortis*; he calls it *Aqua Stygia*. I examined it, and found the Charge unjuſt; that Sugar contained no worſe Subſtance in it, than Milk and Honey, and Manna, nay even Bread itſelf. The Experiments were approved of, and are in your Journals. *By Dr. Slare*, in the *Philoſophical Tranſactions abridged*, *Vol. 5. p. 311.*

Mr. *Sarrazin*, a Phyſician of *Quebeck*, and Correſpondent of the Royal Academy, found in *North America* four Species of Mapple-Trees, which he ſent as a Preſent to the Royal Garden, after having given a Name to each. The fourth of theſe Species, which he calls *Acer Canadenſe Sacchariferum, fructu minori, D. Sarrazin*, is a Tree about ſixty or eighty Feet high, whoſe Sap, which aſcends from the firſt of *April* to the Middle of *May*, is pretty often richly impregnated with Sugar, as the Natives of that Country and the *French* have found. For obtaining this Sap they make an Inciſion in the Tree, from which it flows into a Veſſel. This Juice, when evaporated, leaves about a twentieth Part of its primitive Weight, which is true Sugar, and proper to be uſed in making Confections, Syrups, and other Things, in which Sugar is generally employed. One of theſe Trees, which is three or four Feet in Circumference, will in one Spring yield ſixty or eighty Pints of Juice, without loſing any Thing of its Vigour. But if more was drawn from it, it is obvious that the Tree would be weakened, and a proportionable Decay brought on. This Juice, in order to be impregnated with Sugar, requires very ſingular Circumſtances, which one would not eaſily conjecture, but which Mr. *Sarrazin* has carefully adverted to; for, firſt, at the Time the Juice is drawing, the Root of the Tree muſt be covered with Snow, which muſt be brought for that Purpoſe, if it is not there already: Secondly, this Snow muſt be melted by the Sun, and not by a warm Air: And, thirdly, it muſt have been a Froſt the Night before. This Method uſed by Nature in forming the Sugar of the Mapple-Tree, reſembles ſome delicate chymical Operations, where the Chymiſt does Things apparently oppoſite, and where thoſe Things which appear the moſt ſimilar do not produce the ſame Effects.

Another curious Remark of Mr. *Sarrazin*'s is, that the Juice of this Species of Mapple-Tree, which is not good for making Sugar, will become ſo half an Hour, or an Hour at moſt, after the Snow with which the Root of the Tree is covered, begins to be melted. This Snow muſt therefore enter the ſmall Filaments of the Mapple-Tree, and operate in them with great Expedition.

Mr. *Sarrazin* alſo informs us, that the *Apocynum Majus Syriacum rectum*, furniſhes a Juice of which they make Sugar in *Canada*; for this Purpoſe they alſo gather the Dew found in the Bottom of its Flowers. *Hiſt. de l'Acad. Royal des Sciences, An.* 1730.

SACCHARUM HORDEATUM. *Barley Sugar.*

It is made from Sugar boiled over a ſlow Heat, in a Decoction of Barley, briſkly beat up with the Whites of Eggs, and frequently ſcummed whilſt upon the Fire. It is then to be ſtrained through a Flannel, and again ſet upon the Fire, where it muſt boil ſlowly till it riſes in large Bubbles, and upon Trial is found not to ſtick to the Teeth. It is to be poured upon a Marble-Stone rubbed over with Oil of ſweet Almonds, as ſoon as the Bubbles ſubſide, and its Extremities, as it runs out, turn back again, till it grows of the Conſiſtence of a thick Turpentine, when it muſt be faſtened to ſomething, and nimbly drawn out by Hands rubbed over with Starch, into thin or thick, long or ſhort Threads at Pleaſure, and laid upon a Plate provided on Purpoſe, till it hardens into Lozenges.

SACCHARUM NITRATUM. *Sugar with Nitre.*

Take Cryſtal Mineral, one Dram, fine Loaf Sugar three Drams, mix together.

This is cooling and diuretic, and alſo ſerviceable in the ſcalding of Urine in a Gonnorhœa; but it is principally good to cool the Inflammation of the Uvula, and eaſe a ſore Throat, by letting it melt gently in the Mouth.

SACCHARUM ROSATUM. See ROSA.

SACCHARUM SATURNI. See PLUMBUM.

SACCHARUM SCORBUTICUM. *An Antiſcorbutic Sugar.*

Take any Quantity of the Juice of Scurvy-Graſs, keep it in a Glaſs Bottle cloſe ſtopped up till the Fœces are precipitated; then decant the clear, put a good Quantity of Sugar in a Marble Mortar, and work it well together, then gently dry it. Afterwards put more Juice to the ſame Sugar, dry it again, and repeat this Operation ſeveral Times, and keep it cloſe ſtopt for Uſe.

SACCHARUM TABULATUM SIMPLEX ET PERLATUM. *Simple and Pearl Lozenge Sugar.*

The firſt is made by pouring Sugar, which hath been ſufficiently boiled with half its Quantity of Damaſk Roſe-Water upon a Marble: And the latter by adding to every Pound of the former, towards the End of its boiling, half an Ounce of prepared and levigated Pearl, with eight or ten Leaves of Gold.

SAC-

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SACCHARUM TABULATUM COMPOSITUM. *Compound Lozenge Sugar.*

Take of fine Rhubarb four Scruples, of the Troches of Agaric, of Coralline, burnt Hartſhorn, of the Leaves of Cretan Dittany, of Worm-ſeed, of the Seeds of Purſlain and Sorrel, of each one Scruple; of Cinamon, Zedoary, Cloves, and Saffron, of each half a Scruple; of the fineſt Sugar powdered one Pound. Let the Sugar be diſſolved in five Ounces of ſimple Wormwood Water, and one Spoonful of ſtrong Cinnamon Water; and the forementioned Species mixed with it, ſo as to make it into Tablets.

SACCITONIUM. Wine ſtrained through a Bag. *Caſtellus* from *Codronchius.*

SACCULI ADIPOSI. The Cells of the Cellular Membrane filled with Fat.

SACCULI MEDICINALES. Medicinal Bags; that is, Bags filled with Medicinal Ingredients.

SACCULUS CHYLIFERUS. The Receptacle of the Chyle.

SACCULUS CORDIS. The *Pericardium.*

SACCUS. The *Inteſtinum Cæcum.*

SACCUS LACTEUS. The *Receptaculum Chyli.*

SACER. Sacred or holy. But it is uſed in a very different Signification, that is, to expreſs *dreadful*, *horrid*, or *execrable.* Thus *Virgil* calls the Love of Gold, *Auri ſacra fames.* In both theſe Significations it is uſed by Medicinal Writers. Thus,

SACRA FISTULA, is the Spinal Marrow, according to *Blancard.*

SACER IGNIS, is a malignant Species of ERYSIPELAS.

SACER MORBUS, is the Epilepſy.

SACER MUSCULUS, is the Name of a Muſcle, called by *Winſlow Tranſverſo-Spinalis Lumborum.*

This Muſcle is compoſed of ſeveral oblique converging or tranſverſo-ſpinal Muſcles in the ſame Manner as in the Back and Neck; and it lies between the ſpinal and oblique Apophyſes of the Loins, reaching to the *Os Sacrum.*

The loweſt of theſe Muſcles are fixed to the ſuperior lateral Parts of the Os Sacrum, to the *Ligamentum Sacro-Iliacum*, and to the poſterior ſuperior Spine of the Os Ilium. The reſt are fixed to the three loweſt tranſverſe Apophyſes, and to the four loweſt oblique Apophyſes of the Loins, and to their lateral Tuberoſities. From thence they run up to all the ſpinal Apophyſes of theſe Vertebræ, the external, or thoſe that appear firſt, being longer than the internal, which lie immediately on the Vertebræ, eſpecially toward the lower Part. *Winſlow's Anatomy.*

SACRUM OS.

The *Os Sacrum* is ſituated in the poſterior and lower Part of the Trunk, as the Baſis by which the whole Spine is ſupported, and from hence it has by ſome been termed *Os Baſilare.*

Its Figure comes near that of a long Triangle, with the Baſis upward, and the Apex downward. It may be divided into the upper Part or Baſis; the lower Part or Apex; two Sides, the anterior or concave; and the poſterior or convex; and two lateral Parts or Edges. We here conſider it as one Bone only, as it is in an adult Subject.

In young Subjects it is made up of ſeveral diſtinct Pieces, termed falſe Vertebræ, united together by Cartilages, which in time diminiſh, grow hard, and diſappear, leaving no Marks behind them, but little Ridges or Lines more or leſs prominent. Theſe Pieces are five in Number, and ſometimes ſix, all of them reſembling the Vertebræ in ſomething. The firſt is much larger than any of the true Vertebræ; but their Size diminiſhes by very great Degrees as they deſcend, ſo that the loweſt, which makes the Point of the *Os Sacrum*, has ſcarcely the Appearance of a Vertebra.

In the anterior or concave Side, we commonly ſee four Pair of large Holes, and ſometimes more (according to the Number of falſe Vertebræ) diſpoſed in two longitudinal Rows, and appearing to be formed by the Notches in the original Pieces meeting each other. Between theſe two Rows of Holes, through the whole Length of the Middle of this Side, we obſerve the Bodies of five or ſix falſe Vertebræ cemented together, of which the uppermoſt or firſt comes nearer to the Structure of a true Vertebra than the reſt. The laſt is very ſmall, and below the Holes it has a Notch on each Side, and ſometimes a Production in the Shape of a little Horn.

The poſterior or convex Side is very uneven. The ſame Number of Holes appear here, as in the fore-ſide, and diſpoſed in the ſame Order, but they are not ſo large. Between the two Rows of Holes, is a Sort of ſpinal Apophyſis more or leſs imperfect, eſpecially toward the upper Part. In theſe Apophyſes we often find Openings, ſometimes in the ſuperior, ſometimes in the inferior, and thus perpendicular Fiſſures are formed of different Breadths. Sometimes a tranſverſe Opening is left between the ſeveral Spines; but in all that has been here ſaid, great Varieties are obſervable. On the Outſide of each Row of Holes are Tuberoſities which appear like tranſverſe and articular Apophyſes confounded together. At the Baſis or upper Part of the *Os Sacrum* are two articular Apophyſes, anſwering to the inferior ones of the laſt Vertebra of the Loins. Below each of theſe Apophyſes, laterally, is a large Notch; and between them, we ſee diſtinctly enough the upper Side of the Body of the firſt falſe Vertebra, which is like that of the Lumbar Vertebræ, being very much inclined backward; ſo that the Body of this falſe Vertebra, as well as of the laſt true one, is longer before than behind. From this Obliquity it happens, that the *Os Sacrum* and laſt Lumbar Vertebra, form, at their Connexion, a very conſiderable Angle.

Behind the Body of this firſt Vertebra of the *Os Sacrum*, between the articular Apophyſes lies the Orifice of a large Canal, triangular and flat, which runs down in the Middle Subſtance of the Bones between the two Sides, and between the four Rows of Holes, behind the Bodies of all the falſe Vertebræ. It contracts as it deſcends, and communicates with all the large Holes, being the Continuation of the great Canal of the Spine. It is often broke into by the Fiſſures already mentioned, on the Back-ſide.

The lateral Parts are broad toward the Top, forming on each Hand, a large, uneven, irregular, cartilaginous Surface, in the Figure of a great S, and ſometimes of a Bird's Head. By theſe two Sides the *Os Sacrum* is connected with the *Os Innominata*, by a cartilaginous Symphyſis. Between each of theſe lateral Sides, and the neareſt poſterior Holes, there is a large rough Depreſſion, and under that, another not ſo large. Theſe Depreſſions are often pierced by ſeveral Holes, which loſe themſelves in the inner Subſtance of the Bone. *Winſlow's Anatomy.*

SACRA TINCTURA. See HIERA.

In *Paulus Ægineta*, L. 7. C. 8. there are ſeveral *Hieras* deſcribed, which imports the ſame as *Sacra.* Thus there is the *Hiera Archigenis*, *Hiera Antiochi*, *Hiera Juſti*, *Hiera Galeni*, and *Hiera Ruffi.*

SACRA VASA. The Veſſels which belong to the *Os Sacrum*, and Parts adjacent.

SACRANUS COLOR. A Purple Colour. *Johnſon.*

SACRES. Pigs about ten Days old. *Caſtellus* from *Langius.*

SACRO-LUMBARIS MUSCULUS. This is a long complex Muſcle, narrow and thin at the upper Part, broad and thick at the lower, repreſenting a kind of flat Pyramid. It lies between the Spine and poſterior Part of all the Ribs, and along the back Part of the *Regio-Lumbaris*, all the Way to the *Os Sacrum.*

Through all this Space it is cloſely accompanied by the *Longiſſimus Dorſi*, which lies between it and the Spinal Apophyſes of the Vertebræ, a narrow, pinguious, or cellular Line running between them. The Name of *Lumbo-Coſtalis* would better expreſs the Situation of this Muſcle than that of the *Sacro-Lumbaris.* It might be termed *Medius Dorſi*, to diſtinguiſh it from the *Latiſſimus* and *Longiſſimus Dorſi*, between which it is placed.

It is fixed below by a broad thin tendinous Aponeuroſis to the ſuperior Spines of the *Os Sacrum*, and to the neighbouring lateral Parts of that Bone; and laſtly, to the external Labium of the poſterior Part of the *Criſta Oſſis Ilium*, all the Way to the great Tuberoſity. The Aponeuroſis covers and adheres very cloſely to the lower Part of the *Longiſſimus Dorſi*, and where it is fixed to the *Os Sacrum*, it is a little covered by ſome Inſertions of the *Glutæus Maximus.*

From thence this Muſcle runs upward, and a little laterally, over all the *Regio-Lumbaris*, the Aponeuroſis ſending off from its Inſide a Maſs of fleſhy Fibres, which are divided from below upwards, into ſeveral large Faſciculi inſerted in all the tranſverſe Apophyſes of the Loins.

Afterwards it runs up obliquely over all the Ribs, ſometimes as high as the two or three loweſt Vertebræ of the Neck, ſometimes higher, and ſometimes it ends at the firſt Vertebra of the Back.

Through all this Extent the Side of the Muſcle next the *Longiſſimus Dorſi*, or Vertebræ, is very even; but that next the Ribs is divided into ſeveral Portions, in an oblique Diſpoſition from below upwards, reſembling in ſome meaſure the Branch of a Palm-Tree. Theſe Portions or Digitations are fixed in the tranſverſe Apophyſes of the Neck, in the Tuberoſity of the firſt Rib, in the lower Part of the angular Impreſſions of the ten following Ribs, and near the Extremity of the laſt Rib.

This Digitation belonging to the laſt Rib is broad, and more fleſhy than tendinous. Thoſe of the other Ribs are tendinous, flat and narrow, and thoſe of the Neck are ſomething fleſhy, but very ſlender. The moſt ſuperior Portions are longer and narrower than thoſe below them, they growing gradually ſhorter and broader as they deſcend.

In diſſecting this Muſcle with Care, between theſe Portions and

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and the Ribs, we meet with several long thin muscular Fasciculi, which crossing the Portions, and adhering to them, are afterwards fixed in the Ribs above and behind the Insertions of the several Portions.

These muscular Fasciculi begin at the transverse Apophyses of the same Vertebræ of the Neck, from whence they run down and are fixed in the eight or nine following Ribs. Sometimes they pass over several Ribs without being inserted in them; but this varies in different Subjects, and sometimes in the two Sides of the same Subject.

In this manner these Fasciculi form a particular Plane, which some take for the internal Portion of the *Sacro-Lumbaris*; others, after *Stene*, call it *Musculus Accessorius Sacro-Lumbaris*. Some take it for a distinct Muscle, calling it the *Cervicalis Descendens* of *Diemerbroeck*.

The two *Sacro-Lumbares* maintain the Back and the *Regio Lumbaris* in their natural Situation when we stand or sit; and by the Relaxation of their Fibres more or less, the Trunk is proportionably bent forward by the Weight of the Head and Breast. They also extend the Back and Loins in all Postures, keep them steddy and fixed under the Weight of Burdens, and bend the Loins backward.

One of them acting alone, may have the same Uses of bending forward, extending, resisting, and bending backward, but with less Strength, and in an oblique Direction, as when the Body is inclined obliquely forward, and to one Side at the same time, or extended from that Posture. They also serve to counter-balance the oblique Muscles of the Abdomen, in turning the Thorax upon the Pelvis.

These Muscles may in some respects be compared with the *Splenii*; that is, their superior Insertions with the Mastoide Insertions of the *Splenii*, and their inferior Insertions with the vertebral Insertions of these Muscles. The Mastoide-Portion of the *Splenius* is longer, more distant from the Articulation, and more disposed to perform large Motions, and to resist great Efforts than the vertebral Portion. In like manner, the Costal Portion of the *Sacro-Lumbaris*, by the Length of the tendinous Series, by their graduated Insertions in the Ribs, and by their Obliquity, is better disposed for the Uses already mentioned than the vertebral Portion.

The small muscular Fasciculi which cross these tendinous Portions, called *Musculus Sacro-Lumbaris Accessorius*, seem to counterbalance and moderate the Depression of the Ribs in the great Efforts of the *Sacro Lumbaris*.

The Use of these Muscles in progressive Motion, is not sufficiently demonstrated. It is supposed that while we list one Leg to make a Step, the *Sacro-Lumbaris* of the other Side sustains the Vertebræ of the Loins and Back, to prevent their yielding to the *Psoas* which lifts the Leg, and puts it in Motion; but the Direction of the greatest Part of the Fibres of the *Sacro-Lumbaris* is very improper for such an Use.

The Use of the *Sacro-Lumbaris* in Respiration is also attended with Difficulties; for when the Body is very much inclined forward, and even much loaded, the Ribs continue still to be raised with the same Ease as they are depressed, tho' the *Sacro-Lumbaris* is principally employed in this Case; but it is to be remembered that I speak here only of bending and loading the Back, not of loading the Shoulders. In the first Case, the Ribs move easily, but not in the second. *Winslow's Anatomy.*

SACTIM. Vitriol. *Rulandus.*

SADIR. The same as SCORIA. *Rulandus.*

SÆPÆ. Large eroding Pustules. *Castellus*, from *Foesius.*

SAFFATUM, is, according to *Johnson*, a Species of Salt, but he does not explain what.

SAGADENON. σαγαδηνον. A Name for the best Species of Opobalsamum, which *Galen*, *de Antidot.* L. 1. C. 4. says, was produced in *Palestine.*

SAGAPENUM. Offic. C. B. P. 494. Raii Hist. 1. 1844. Schrod. 214. Park. Theat. 1544. Ger. 898. Emac. 1056. Mill. Bot. Offic. 384. *Sagapenum Veterum.* J. B. 3. 156.

This is a Gum flowing, as is supposed, from a Species of Ferula, which grows, according to *Dioscorides*, in the Country of *Media*, though it comes to us from *Alexandria*. It is of a reddish-brown Colour, made up of Drops usually clung and clotted together, of a somewhat clear horny Colour in the Inside, a little like Assa Fœtida, but harder, with somewhat of the Garlick Smell. We sometimes see it in small Drops not clotted together, of a light yellowish brown Colour; but this is not often to be met with.

Sagapenum is opening and attenuating, cleansing the Breast of tough Phlegm, helping the Asthma and Difficulty of Breathing. It is likewise good for the Dropsy, promotes the menstrual Evacuation, and prevents hysteric Disorders. Outwardly applied, it helps hard Tumors and Swellings. *Miller's Bot. Off.* See FERULA MAJOR, seu FÆMINA PLINII.

This Gum is imported from *Alexandria*. That is most esteemed which is pure, pellucid, on the Outside of a fallow, or brownish Colour externally, but within whitish; of an acrid Taste, and strong Smell like Garlick. It is attenuating and opening, and purges off viscid and serous Humours, lodged in the Stomach, Intestines, Uterus, Kidneys, Brain, Nerves, the Joints and Breast. Hence it is serviceable in a Dropsy, inveterate Cough, Asthma, Head-Ach, Convulsions, Epilepsy, Palsy, Tremors of the Limbs, Obstructions and Tumors of the Spleen, and Cholic. It provokes the Menses, and excites Urine; but destroys the Fœtus. *Schroder.*

SAGDA. The Name of a Gem mentioned by *Pliny*, *L.* 37. *Cap.* 10. of a green Colour, which he informs us, the *Chaldæans* find adhering to Ships. In *Samo-Thracia*, he farther tells us, a light black Gem is found, resembling Wood, which bears the same Name.

SAGIMEN VITRI. Alcaline Salt. *Rulandus.*

SAGITTA.

The Characters are;

The Root is fibrous, thick, fungous and creeping. The Leaves at first resemble those of Plantain, but afterwards the bearded Head of an Arrow; the Stalk is just as usual in umbelliferous Plants; the Flower is tripetalous, like that of the *Plantago Aquatica*; and the Fruit consists of a Collection of Seeds like a Strawberry.

Boerhaave mentions four Sorts of *Sagitta*, which are;

Sagitta; aquatica; major. *C. B.* 194. *Ranunculus, palustris, folio sagittato, maximo.* T. 292.

2. Sagitta; aquatica; minor; latifolia. *C. B. P.* 194. *Boerh. Ind. A.* 46. *Sagitta*, Offic. J. B. 3. 789. Raii Synop. 3. 258. *Sagitta minor*, Ejusd. Hist. 1. 619. *Sagittaria minor latifolia*, Park. Theat. 1247. *Ranunculus, palustris, folio sagittato minori*, Tourn. Inst. 292. ARROW-HEAD.

It grows in Brooks and Waters, flowers in *May* and *June*, and the Parts in Use are the Herb and Seed. It is, says *Matthiolus*, of a cold and moist Temperament, and has the same Virtues as the *Plantago Aquatica.*

3. Sagitta; aquatica; minor; angustifolia. *C. B. P.* 194. *Ranunculus, palustris, folio sagittato, angustiori*, T. 292.

4. Sagitta; aquatica; major; folio angustiore.

It has the Virtues of the *Plantago Aquatica*, but the Smell and Taste shew it to be of a heating Quality. *Hist. Plant. ascript. Boerhaave.*

SAGITTALIS SUTURA. The Sagittal Suture of the *Cranium.* See CAPUT.

SAGITTARIA. The same as SAGITTA.

SAGITTARIA ALEXIPHARMICA. Offic. *Canna Indica, radice alba, Alexipharmica.* Raii Hist. 3. 573. *Arundo Indica, angustifolia, flore rutilo, pediculis donata*, Hist. Oxon. 3. 250. *Agutiguepeobi Brasilienſibus*, Raii Hist. 2. 1203. *Radix quædam in Malaca, quæ adversus vulnera Sagittis toxico illitis facta, præsentaneum remedium est Garzias*, C. B. P. 301. *Radix Malaca quædam toxicis Sagittis resistens*, J. B. 2. 173. ARROW-ROOT, DART-WORT.

This Plant has a Root two or three Inches in Length, geniculated, of the Thickness of a Man's Thumb, white, and of a conic Figure, every Interpode or Space between the Joints being half an Inch in Length, and every Joint sending forth several Fibres two or three Inches long, for attracting Nourishment. From the Root arise various Leaves on Pedicles three Inches in Length, and of a good Breadth, embracing one another, or the outer ones wrapping themselves about the inner, and surrounded with a white Ring at the Place of Apposition. The Leaves are four Inches long, and two Inches broad near the round Base where they are broadest, and are thin, fibrous, and grassy, and of a greenish-yellow Colour. In other Respects it is like the *Canna Indica.*

Sir *Hans Sloane* observed this Plant in the Gardens of *Jamaica* and the *Charibbee* Islands. It was transplanted to *Jamaica* from the Island of *Dominica*, and is highly valued on account of its alexipharmic Virtue, and its Efficacy against Wounds inflicted by poisoned Darts and Arrows; for which purpose it is frequently used by the *Indians*, who bruise the Herb, and apply it to the injur'd Place. *Raii Hist. Plant.*

SAGMINALIS HERBA. Vervain. See VERBENA.

SAGOU. See *Palma*, *Japonica*; *spinosis pediculis*; *Polypodii folio.*

SAGZENEA. A Name for two Medicines described by *Avicenna*, the greater and the less, which are recommended against cold Disorders of the Stomach, Intestines, and Uterus.

SAHAFATUM, or SAHAFATI. The same as ACHOR.

SAHARA. The same as PERVIGILIUM.

SAIC. Quicksilver.

SAIRE. The same as ESSERE.

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SAKMUNIA. The Arabic Name for Scammony.

SAL. Salt. For an Account of Salt, conſidered as a Chymical Principal. See PRINCIPIA, and ACIDULÆ.

A Salt is, by *Geoffrey*, defined to be a ſolid, friable, pellucid and ſapid Mineral Body, diſſoluble in Water, fuſible by Fire, and eaſily concreſcible in Form of Chryſtals. This Definition agrees to alimentary Salt, Nitre, Vitriol, Alum, Sal-Ammoniac, and Borax.

OF ALIMENTARY SALT.

Alimentary Salt, or that which is uſed in Food, is diſtinguiſhable from all other ſaline Bodies by the cubical Figure of its Cryſtals, which it retains even in the leaſt Particles, which are the Objects of Senſe. It is of two Kinds, being either dug out of the Earth, from whence it is called Foſſile Salt, or Sal Gem; or prepared by evaporating the Sea-Water, being from thence termed Sea-Salt; or by evaporating the Water of Salt-Springs.

OF FOSSILE SALT OR SAL-GEM.

There are ſeveral Kinds of this foſſile alimentary Salt, differing from each other only in their Colour, which is white, grey, of a yellowiſh red, or pellucid like Chryſtal; which laſt, moſt properly called Sal-Gem, is preferred to all the reſt, as being judged moſt pure. It is of an octagonal or cubical Figure, and ſalt Taſte, pellucid like a Gem, and often reſembles Cryſtal, both in Colour and Brightneſs. In the Mountains of *Catalonia*, near the City of *Cardona*, and alſo in deep Mines in *Poland* near *Cracow*, huge Rocks of this Salt are found, and they beat them to pieces with proper Inſtruments of Iron.

The Virtues of Sal-Gem are the ſame as thoſe of Sea-Salt. This Salt is uſed as a Stimulus in Clyſters and Suppoſitories given to ſoften and evacuate the indurated Fæces, in this or the like Manner:

Take of deſpumated Honey two Ounces; Sal Gem, a Dram and a half; boil them to a due Conſiſtence for a Suppoſitory. Or, take of Honey, boiled to a due Conſiſtence, one Ounce; Sal Gem, and Species of Hiera, of each half a Dram, Diagridium, fourteen Grains; mix and make them into a Suppoſitory.

Take of the Root of *Spaniſh* Pillitory half an Ounce; Leaves of Marjoram and Rue, of each one Handful; Leaves of Senna, Agaric, and the Pulp of Coloquintida, of each two Drams, boil in a ſufficient Quantity of common Water to twelve Ounces, of ſtrained Liquor, in which diſſolve of Sal Gem two Drams, and add of Emetic or Antimonial Wine, three Ounces, for a Clyſter in Apoplexies, and other ſleepy Diſeaſes.

In theſe Affections even the ſtrongeſt and moſt ſtimulating Clyſters are ſometimes of no Effect, becauſe the Inteſtines are become paralytic; and they are never to be uſed in an Inflammation of the Inteſtines. The Chymical Preparations of Sal Gem are the ſame as thoſe of Sea-Salt. *Geoffroy.*

Foſſile Salt is dug out of very deep Mines in *Tranſylvania*, *Hungary*, *Ruſſia*, *Siberia*, *Tartary*, and many Places in *Germany*. But the moſt remarkable Salt Mines are thoſe of *Bochna* and *Viliſke*, not far from *Cracow* in *Poland*.

The Salt Mines near the ſmall Town of *Viliſke*, which (the Church excepted) is altogether dug hollow under Ground, have four Deſcents; of which the two principal being in the Town itſelf, are thoſe through which the Salt is drawn up; the other two ſerve for letting down Timber and other Neceſſaries. Theſe Deſcents or Holes are four or five Foot ſquare, lined all the Way downwards with Timber. Above is a great Wheel, with a ſtrong Rope of the Thickneſs of a luſty Arm, drawn about by a Horſe, like as in a Horſe-mill.

He that will deſcend, muſt cover himſelf with a Frock, and have another Man that faſtens another Rope to the aforeſaid big Rope, and having ſo tied it about himſelf as to ſit in it, he takes him in his Lap, and holds him faſt about; whereupon the big Rope being ſomewhat let down, another faſtens likewiſe a Piece of Rope to the other thick Rope, and does like the former, ſeating himſelf in it, and taking and claſping another Man in his Lap, and being alſo let down a little Way, gives Place to others to do the like; in which manner, thirty, forty, and more Perſons, may be let down all at once; of whom the firſt having touched the Ground, ſteps out and goes aſide, the reſt following him, and doing the like; and thus they deſcend to the Depth of a hundred Fathoms. But then they take a Lamp, and lead People about by ſtrange Paſſages and Meanders, ſtill more and more deſcending, till they come to certain Ladders, by which they go down an hundred Fathoms deeper, where there are double Paſſages and Holes, one above another, in Abundance; for the Mine-men dig on ſtill, and cut out every where, and on all Sides, as long as the Salt Vein laſts. The great Holes, to ſecure both the Town above, and the Work below from falling in, are carefully ſupported by ſtrong and well-compacted Timber.

Theſe Mines were firſt diſcovered in 1251. Within them is found a kind of ſubterraneous Republic, which has its Poliſity, Laws and Families, and even public Roads, Carriages, and Horſes for drawing the Salt to the Mouth of the Quarry, where it is taken up by Engines. Theſe Horſes, when once they are down, never ſee the Light again; but the Men take frequent Occaſions of breathing the Village Air. When a Traveller is arrived at the Bottom of this ſtrange Abyſs, where ſo many People are interred alive, and where ſo many are even born, and have never ſtirred out, he is ſurprized with a long Series of lofty Vaults, ſuſtained by huge Pilaſters cut with the Chiſſel, and which, being themſelves Rock-Salt, appear, by the Light of Flambeaux, which are inceſſantly burning, as ſo many Cryſtals or precious Stones, of various Colours, ſhedding a Luſtre almoſt intolerable to the Eye.

The Rocks of Salt are hewn in the Form of huge Cylinders; the Workmen uſing Hammers, Pick-axes, and Chiſſels, much as in our Stone-Quarries, to ſeparate the ſeveral Banks of Stone. As ſoon as the maſſive Pieces are got out of the Quarry, they break them into Fragments, fit to be thrown into the Mill, where they are ground and reduced to a coarſe Farina or Flower, which ſerves all the Uſes of Sea-Salt.

In theſe Mines there are three Kinds of Sal Gemmæ, one is common, coarſe and black; the ſecond ſomewhat finer and whiter; the third very white, hard and tranſparent, which laſt is the Sal Gemmæ of the Druggiſts and Dyers. It cuts like Cryſtal, and is frequently uſed for Toys, Chaplets, little Vaſes, and the like; the other Sorts are leſs compact, and only fit for Kitchen Uſes. The coarſe and black Salt is cut out in great Pieces, roundiſh, and three *Polonian* Ells long, and one Ell thick, which are ſold from fifty to ſeventy *Polonian* Florins.

The greateſt Pieces lie before their Doors, where they are lick'd by the Cattle as they paſs. The Colour of theſe Salt-Stones is darkiſh grey, with ſome Mixture of yellow.

But the principal Wonder of the Place is, that through theſe Mountains of Salt, and along the Middle of the Mine, there runs a Rivulet of Freſh-water, ſufficient to ſupply the Inhabitants.

The Imperial Salt-works at *Soowar*, near *Eper* in *Upper Hungary*, are alſo remarkable for many curious Particulars; of which Dr. *Bruckman* gives the following Account. They are at leaſt an hundred and forty Fathoms deep. In the Cuts of them, one ſometimes finds Alleys of Rock-Salt, of the moſt delicate blue and yellow Colours. He obſerved, that the firſt Colour being expoſed to the Sun for ſome Days, loſt entirely that beautiful Ultra-marine, and became white as the other Rock-Salt, which did not happen to the yellow, which preſerved its Colour; but when you pound them together, the Salt was neither blue nor yellow, but extremely white.

Meliſſantes, in his Geography, ſpeaking of Salt-works which the *Spaniards* have in *Catalonia*, ſays, that there is Rock-Salt, the Colour of which is ſo diverſified, that it comes near the Rain-bow, in having green, red, yellow, and blue Colours; but that, by firſt preparing, and then grinding it, it became white. The ſame happens alſo to the red Rock-Salt of *Saltzburg*, which being pounded becomes white.

But one Thing very remarkable, in the Mines of *Soowar*, is a Chapel, which can eaſily contain a hundred People, cut in the Rock-Salt, with an Altar, a Pulpit, a Sacriſty, Chairs and Forms cut in the ſame Rock. They celebrate once every Year, the Week after *Epiphany*, divine Service in this Chapel, and the Sermon is always preached by a Jeſuit of *Eper*. This Service was founded for the Officers of the Exciſe and the Miners.

But that which is moſt curious in theſe ſubterraneous Foſſes, are the Flowers of Salt, which grow as the Beard of a Goat, with this Difference only, that theſe are much whiter and finer. One cannot enough admire theſe Efferveſcences, which ſeem to vegetate, yet one cannot find them in all the Cuts, nor at all Times, but they appear and grow according to the Temperature of the Seaſons, which in thoſe Parts is very wholeſome. Theſe Sort of Plumes of Salt are very brittle, they melt alſo in moiſt Places, and diſſolve into an Oil; but are nevertheleſs the moſt pure Salt, the fineſt, the moſt acid, the whiteſt and moſt beautiful; ſo that it is not without Reaſon they have given it the Name of the Flower of Salt.

At *Neuſol*, there is a Statue of Rock-Salt, as large as the Life, which ſerves as the Barometer of the Town; for when it begins to ſweat or grow moiſt, it preſages Rain or wet Weather; but when it is dry you may certainly promiſe yourſelf ſettled Fair.

There are alſo ſeveral Salt-mines in *England*, about the *Wyches* in *Cheſhire*.

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OF SEA-SALT.

The artificial Sea-Salt is obtained by the Heat of the Sun, or by Coction from Sea-Water, or Salt Springs or Wells. In *Britany* in *France*, the Manner of making Sea-Salt is, to dig ſhallow broad Trenches, which are lined with Clay. Theſe being filled with Sea-Water by the Tide, the Heat of the Sun evaporates the Water, and a large Proportion of Salt remains behind. In *Normandy* they make ſmall Heaps of Sand upon the Shore, which imbibe the Sea-Water, and the inſipid Humidity being afterwards evaporated by the Heat of the Sun, the Salt remains among the Sand. To ſeparate it, they firſt boil it in freſh Water, and then having ſtrained off the Lixivium, containing now only a Solution of Salt in freſh Water, they boil it again with a gentle Heat in leaden Cauldrons, to a certain Degree of Thickneſs; then putting out the Fire, the Salt chryſtallizes.

Salt is made from Salt Fountains likewiſe, by boiling the Water till the Humidity exhales; and whilſt it is boiling, they mix with it either Gall or Bullocks Blood, which makes the Salt form itſelf more eaſily into larger Lumps; for the Parts of the Gall or Blood inviſcate or entangle the bituminous or earthy Parts, which hinder the Concretion of the Salt, and are altogether thrown up as a Scum, or at leaſt remain in the Strainers. Sea-Salt, prepared by the Heat of the Sun, is preferable both for culinary and officinal Uſes. The Taſte of it is well known; the Colour is greyiſh, becauſe of the Particles of Earth mixed with it; but if it be diſſolved and chryſtallized by a gentle Heat, it is formed into very white cubical Grains. Salt made by boiling is white, but the Grains thereof are not exactly cubical, becauſe of ſome Mixture of different Salts.

Before Sea-Salt has felt the Fire, it changes neither the Syrup of Violets, nor Tincture of Heliotropium, it makes no Effervеſcence with the Oil of Tartar per Deliquium, but diſcovers, however, ſome ſmall Signs of Acidity. It leſſens the Tranſparency of the urinous Spirit of Sal-Ammoniac, and darkens the Colour of the Infuſion of Gall. By other Trials it ſeems likewiſe to diſcover an alcaline Nature; for it turns a Solution of corroſive Sublimate white, and makes an hot Effervеſcence with Oil of Vitriol. A Solution of Salt in Water being evaporated to a Pellicle, and then ſet in a cool Place, the greateſt Part of it will be formed into cubical Chryſtals; but the Remainder cannot be brought to concrete without Heat; and even then it is formed into no regular Figure, and ſoon runs per Deliquium in the moiſt Air. Hence it is evident, that Sea-Salt is made of an Acid of a peculiar Kind, and of a mineral Alcali, and that the acid Portion is ſo far entangled and involved in the other, as hardly to be able to exert its proper Virtues in a concrete Form.

From Sea-Salt, by Diſtillation in a Retort, we obtain an acid Spirit, which turns the blue Tincture of Heliotropium into a purple Colour, and ferments vehemently with Oil of Tartar, but without any ſenſible Heat; but does not raiſe any Effervеſcence with Lime-Water. This acid Spirit is the only Diſſolvent of Gold and Tin, but cannot diſſolve Silver or Lead; and it communicates this Quality to Spirit of Nitre and of Vitriol; which, by being mixed with it, becomes *Aqua Regia*. If this Spirit, when very pure, be ſaturated with the alcaline Salt of Tartar, it concretes into a *Sal Salſus*, reſembling Sea-Salt in Taſte, and in the cubical Figure of its Cryſtals; whence it appears that Sea-Salt is an Acid perfectly ſaturated with an alcaline Salt. The Chryſtals of Sea-Salt crackle and crepitate in the Fire.

Its Virtues are, to check too great Fermentation, and prevent Putrefaction; and for that Reaſon, it is uſed by Chymiſts for macerating Plants, to keep them from rotting; and what it does to Plants in macerating, is not different from its Effects on the Aliment in the Stomach; where it both checks too great Fermentation, and prevents Putrefaction. It likewiſe calms the too great Ebullition of the other Fluids of the Body; and, as it readily joins with volatile urinous Salts, and changes them into a Sal-Ammoniac, it is fitted to ſoften the Acrimony of the Fluids, and promote the Depuration thereof by Urine. By its little Points it likewiſe ſtimulates gently the ſolid Parts, and thereby increaſes their oſcillatory Motion, by which Means all the Functions of the Body are better performed. On theſe Foundations are built all the Virtues aſcribed to Sea-Salt, of drying, heating, deterging, digeſting, opening, attenuating, increaſing the Appetite, exciting to Venery, and of reſiſting Poiſons and Putrefaction.

It is ordered in an *Apepſia*, or want of Digeſtion, in want of Appetite, in Coſtiveneſs, and Obſtructions of Urine, and is an Ingredient in the *Unguentum Enulatum*. It is much eſteemed by the Chymiſts, as being the only Menſtruum for Gold. *Geoffroy.*

ANALYSIS OF SALT.

Take any Quantity of Salt, procured either from the Rock, Sea-water, or briny Springs, and as pure as poſſible; diſſolve it in a ſufficient Quantity of Water, and digeſt it for a long Time, in a Veſſel ſo cloſely ſtop'd, that none of the Water may evaporate; and, by theſe Means, an inſipid Earth will fall to the Bottom, which cannot again be diſſolved in Water. Pour off the clear Liquor, and let it evaporate in a Place free from Duſt, till a Pellicle or Scum like a thin Skin appears on the Top; and then ſet it in a cool Place, and the Salt will ſhoot into tranſparent Chryſtals of the Figure of a Cube or Dye. Pour off the clear Water from the Cryſtals, and evaporate again to a Pellicle, and ſet it in a cool Place, as before, and more Chryſtals will be formed, but leſs pure and tranſparent than the former. Repeat this Evaporation and chryſtallization ſo long as any Chryſtals will ſhoot, and then an oily, ſaline Liquor will remain, which is not rendered dry without a good deal of Difficulty, and a conſiderable Heat long continued. After this has been evaporated to Dryneſs, it will attract the Moiſture of the Air, and run into an Oil *per Deliquium*, more readily than any other Subſtance whatever, and then lets fall a ſmall Quantity of inſipid Earth not diſſolvable by Water; dry the remaining Oil and calcine it, then expoſe it to the Air till it runs again into an Oil, which will let fall more inſipid Earth. If theſe Calcinations and Solutions are repeated a ſufficient Number of Times, nothing will be left at laſt but pure inſipid Earth, of which there will be a pretty large Quantity, if all that is left after each Solution be collected together. All the other Parts being rendered volatile fly off into the Air.

By the Analyſis of Salt it appears that common Salt conſiſts of a pure inſipid Earth, an acid Spirit extremely volatile, and Water; and it is highly probable that this Earth, before it was united to the acid volatile Spirit, was of an alcaline Nature, and perhaps exactly the ſame with the *Natron* of the Ancients. What makes this the more likely is, that if any fixed alcaline Salt is impregnated with the acid Spirit of common Salt, a Salt will be formed very nearly the ſame with common Salt, which the Chymiſts call regenerated Salt.

Common Salt has many very extraordinary Properties.

1. The ſmalleſt Chryſtals of common Salt are always of a cubic Figure, that is the Figure of a Dye.

2. Upon the Application of Fire to it, it crackles. This Decrepitation or Crackling of Salt, ſeems to proceed from the Air contained in its Pores, which being rarified by the Fire, breaks its Priſon and makes its Eſcape.

3. Spirit of Salt is the only Thing in Nature that will diſſolve Gold; but not without being joined with the Spirit of Nitre.

4. Salt preſerves all vegetable and animal Subſtances from Putrefaction, as alſo Water, and is itſelf incorruptible. This Property it entirely owes to the Acid it contains.

5. A greater Quantity of common Salt will be diſſolved in a given Quantity of Water, than of any other Salt whatever; for ſix Ounces of common Salt may be diſſolved in ſixteen of Water; but it muſt be obſerved, that warm Water will diſſolve more Salt than cold, and that in Proportion to the Heat of the Water. Thus Water in that Degree of Heat which makes it boil, diſſolves more Salt than in any leſs Degree of Heat, inſomuch, that as it grows cool, it will every Moment let fall more and more of the Salt which was diſſolved in it, which will appear at the Bottom of the containing Veſſel undiſſolved; and when the Water is ſo cold as to freeze, it will expel almoſt all the Salt, which will ſtick to the Bottom of the Ice in a ſolid Form.

6. Salt diſſolved in Water of a Heat equal to that of the Atmoſphere, renders the Water conſiderably colder. And yet,

7. Notwithſtanding this Increaſe of Coldneſs, the Salt will keep the Water from freezing, inſomuch that Water, wherein Salt is diſſolved, ſhall not freeze near ſo ſoon as pure Water: And hence we may obſerve, that Salt, when interpoſed between the ſmall Particles of Water, has the Power of preventing their Aſſociation, that is, their Concretion into Ice; otherwiſe Salt, by increaſing Cold, would promote Freezing.

8. If Spirit of Salt is poured upon Ice reduced to Powder, it will increaſe the Coldneſs thereof to a ſurprizing Degree; to a Degree much greater than ever was produced naturally, and in which every Animal muſt die.

9. Salt thrown upon burning Coals greatly increaſes their Heat. This proceeds from the Air, Water and Acid contained in the Body of the Salt; for the Air being forced out of the Salt by Heat, acts upon the Fuel like a Pair of Bellows; and that this will increaſe the Heat of Fire is known to all Smiths, who, when they would make their Fires intenſely hot, frequently ſprinkle Water upon the burning Coals.

10. Salt

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10. Salt made extremely dry, attracts the Moisture of the Air considerably, even in the dryest Seasons, insomuch that it is a common Thing for People who deal in Salt, to buy it at the *Wyches* very dry, and to sell it a great many Miles distant, for less *per* Hundred than it cost them; yet are they considerable Gainers, because the same Quantity of Salt that weighs a Hundred at the *Wyches*, will be much heavier, after having imbibed the Moisture of the Air.

With respect to these Properties of Salts, it may be remarked, that as Putrefaction is, always, in Proportion to Heat, that vast Body of Water, which we call the Sea, would putrefy and stink, (as we find, in effect, fresh and stagnating Waters do) especially in hot Climates and calm Weather. Now this Putrefaction would be fatal not only to all the Animals contained in the Sea, but also to those Land Animals that came within the Influence of the Vapours arising from this vast Body of putrefying Waters, which probably would be all Animals upon the Face of the Earth.

Now we find, by the fourth Property of Salt, that it preserves all vegetable and animal Substances from Putrefaction, as also Water; and that there is a great Quantity of this Salt in the Sea, is a Proposition unnecessary to be proved.

By Property the fifth, we find, that a greater Quantity of Salt will be dissolved in warm Water than in cold; and by this it should seem, that more Salt should be dissolved in hot Climates, and in hot Weather, where there is more Occasion for it to guard against Putrefaction, than in cold Climates and cold Weather, where there is less Occasion for it; accordingly we find, by repeated Experience, that in the *Mediterranean* Sea, where the Climate is hot, one Pint of Water contains an Ounce of Salt; but in the *Baltick*, where the Climate is cold, the same Quantity of Water contains only half an Ounce. 'Tis as certain, that under the Equator, the Sea-Water contains still a greater Proportion of Salt, and those Seas that lie more Northward than the *Baltick*, a less.

Agreeable to this is an Observation made by a Friend of Mr. *Boyle*, at his Desire, who found, by a Glass Instrument made on Purpose, that the Sea-Water increased in Weight, and consequently in Saltness, the nearer he approached the Line.

The same Author farther informs us, that at *Manar*, near the great Cape of *Comori*, where the famous Pearl-Fishing is carried on, and the Climate is very warm, the Ocean is so salt as to deposite a good Quantity at the Bottom in hard Lumps.

We learn farther, from Property the sixth, that Salt renders Water, wherein it is dissolved, colder than it would otherwise be. Now, as Putrefaction is in Proportion to Heat, this Property must also guard against Putrefaction in hot Climates, and in hot Seasons.

Dr. *Halley*, in the Philosophical Transactions, has a Dissertation, to shew, that as Salt is perpetually conveyed to the Sea by Rivers, the Sea must daily acquire a greater Degree of Saltness; insomuch, that if we had any authentic Observations relative to the Degree of Saltness of the Sea, made at distant Periods of Time, we might from these calculate the Age of the World.

But if there is any Truth in these Observations I have made above with respect to the Saltness of the Sea, as there undoubtedly is, Dr. *Halley*'s System, however pretty and ingenious, must entirely fall to the ground; as the Reader will easily perceive, if he considers, that the Sea was, in all probability, as salt a Fortnight after the Fall of *Adam* as at this time, since the Necessity and Convenience of it were as great then as now: And it is very unlikely that the Almighty should create his Works imperfect, and leave them to be brought to Perfection by a long Series of Time.

I must add, that although Salt is incorruptible, yet it is capable of being so far destroyed, as to remain no longer in the Form of Salt; as appears by its Analysis. Now, though what the Doctor says be true, that Salt is perpetually brought into the Ocean by Rivers, and that the Exhalations of Water from the Sea are perfectly fresh, yet the Consequence which he thence draws, that the Sea grows every Age more salt, may not be true; for it is highly probable that Salt, by the alternate Actions of other Bodies upon it, may undergo such a Sort of Transmutation, as we have above described in its Analysis; and then the volatile Parts, which constitute the specific Nature thereof, and render the fixed Part, or Earth, dissolvable in Water, being disunited from the fixing Earth, may very likely fly off, and mix with the Air; and then the fixing Earth, now no longer dissolvable in Water, will sink by its own Gravity to the Bottom. And if we consider (as Sir *Isaac Newton* observes) that Nature delights in Transmutations, it will appear more probable, that there is a perpetual Generation and Dissolution of Salt carrying on in the World.

Before Sea-Salt is distilled, some Preparations are necessary, and especially Calcination or Decrepitation; for since the Grains of Salt fly and crackle in the Fire, they would burst all the Vessels used in the Distillation, except the watery Fluid, with which they abound, was first carried off by Calcination. This Decrepitation arises from the watery Fluid contained and inclosed between the Particles of the Salt, which being dissolved by the Heat, burst the Prison wherein they were detained, separating the Particles that surround them with a kind of Explosion. The Decrepitation or Calcination of Salt is performed in this Manner:

The Salt is set on lighted Charcoal, in an open earthen Vessel, and stirred constantly with an Iron Spatula. As soon as the Salt begins to be thoroughly heated, it makes a crackling Noise, which increases for some time, and then ceases altogether. When all the Noise is over, the Salt is decrepitated, calcined, dried and burnt, and remains in the Vessel in Form of a Powder. This decrepitated Salt serves for cementing Minerals or Metals, for the Distillation of Spirit of Salt, and for many other chymical Operations.

THE DEPURATION AND CRYSTALLIZATION OF SEA-SALT.

Dissolve common Sea-Salt in six times its Quantity of Rain-Water, strain the Solution hot through a close Linen-Bag, so often as to render it perfectly limpid; then exhale away in a Glass-Vessel one sixth Part of the Water; set the Remainder in a quiet cool Place for three Days, in a Vessel covered to keep out the Dust; if it deposites any Fæces, pour off the Liquor from them by gently inclining the Vessel; if it deposites none, the Liquor is perfect, and may now be evaporated to a Pellicule: Again set it in a cool quiet Place for twenty four Hours, during which time it will shoot into cubical Crystals. Carefully pour off the Liquor remaining after Crystallization, dry the Salt with a gentle Heat, and keep it separate. This is the Salt that I commonly employ for chymical Uses. Let the remaining Solution be again evaporated to a Pellicle, and set to shoot as before. By thus continuing to repeat the Operation, the Liquor will at last become thick, unctuous, austere, and hard to dry, and scarce afford any Crystals. If the Salt thus purified be decrepitated in the Fire, and afterwards fused with a strong Heat, then poured out upon a dry Marble, it resolves in the Air, and deposites earthy Fæces; from which the Liquor being carefully separated, then inspissated, calcined, poured out, and suffered to run in the Air; the Operation being thus repeated, the Salt at length vanishes into the Air, as a very ancient chymical Writer has truly observed.

REMARKS.

Crystallization is the only Method of procuring Salts pure and simple, when their innate Virtue, whilst the Salts are diluted with a certain Proportion of Water, unites the similar Parts together, and separates the dissimilar; and the Water, being attracted more by one Salt than another, one Salt sooner extricates itself than the other. And unless Salts be thus previously depurated, it is in vain to expect they should afford pure Spirits, which are necessary to certain Operations. If any Sea-Salt were in Nitre, the Nitre, upon Distillation, would afford not an Aqua-fortis, but an Aqua-Regia; and the same holds true of Sea-Salt, if any Nitre be mixed among it. The Salt thus obtained is such a Dissolvent of Gold, that, without its Addition, Gold can no otherwise be dissolved, except by fusing with Metals. This Salt is a wonderful Preservative, by means whereof all the Parts of Animals and Vegetables are preserv'd from Putrefaction.

GLAUBER'S SPIRIT OF SEA-SALT.

1. To three Parts of Sea-Salt, prepared as above, and put into a Glass-Retort, pour one Part of the strongest Oil of Vitriol, at the Instant they mix, a volatile white Vapour rises, which is to be carefully avoided, as being suffocating, and capable, if but once drawn in with the Breath, to stop the Action of the Lungs irremediably. Directly apply a large and cold Glass-Receiver, lute the Juncture, apply a very small Quantity of Fire at first, for a furious Spirit will long continue to come over so as to blow through the Luting, or break the Vessel; so that the Fire must be kept gentle for three or four Hours: Then increase it a little, and a less volatile Liquor will come over. After eight Hours have been employed upon the Operation, urge the Fire till the Iron-Pot becomes ignited, and no more Liquor rises; then let all cool, and when the Neck of the Retort is no longer hot, take off the Receiver; the Liquor will fume; and beware of receiving the Fume in with the Breath. Pour it into a Glass well-fitted with a Glass-Stopper, and set it in a cold Place, other-

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wise the Glass often bursts, by means of the Motion of the Vapour. If thus kept for Years, a white suffocating Vapour immediately breaks out upon opening the Vessel; but if the Spirit thus produced be carefully distilled in a Glass-Body, under a Chimney, into a Receiver, the volatile Spirit will come over, while there remains at the Bottom a more fixed Liquor, of a Colour betwixt a yellow and a green. This Liquor remains quiet without exhaling, but that which comes over into the Receiver has a violent suffocating Volatility, and may be kept apart as a pure volatile Spirit of Salt in a close Vessel.

2. To three Parts of purified and dry Sea-Salt, put into a Retort, add two Parts of clean Rain-Water, and one Part of the strongest Oil of Vitriol. Let the Oil of Vitriol fall in by slow Drops, to prevent the Bursting of the Vessel, by the sudden Heat that would rise from mixing in the whole at once. The Mixture will grow hot, place the Retort in a Sand-Furnace, and apply a capacious Receiver; distil gently for the first four Hours, while the Water comes over slowly; otherwise, if made to rise briskly, it always cracks the Receiver. After this, increase the Fire gradually; the Spirit of Sea-Salt will come over, which is then known to rise, when the Liquor runs in spiral Veins. Now raise the Fire, and gradually urge it, till at length the Iron-Pot grows of a red Heat, and no more Liquor comes over; at which time the Spirit will not fume. Then suffering all to cool, pour out the Spirit, which is now neither suffocating nor smoaking. If this be distilled again with a gentle Fire, in a Glass-Body, there will come over a limpid ungratefully acid Water, of excellent internal Use, being mixed with Juleps, in such Distempers as require it; an excellent fat Spirit will remain in the Bottom, of a Colour betwixt green and yellow.

3. In both Cases there will be left behind a very white and fixed Salt, that can only be fused with a violent Fire.

REMARKS.

It seems surprising that Oil of Vitriol should raise so volatile a Spirit, by being barely poured upon so fixed a Salt as Sea-Salt; which Spirit is again fixed by adding fair Water to it, and is not generated when the Oil of Vitriol is mixed with a strong Solution of Sea-Salt for Distillation; or again when the Oil of Vitriol is diluted with Water, and added to the Sea-Salt; in which three Ways this surprising and suffocating Volatility is fixed, and render'd unhurtful; but when the Spirit, thus fixed and render'd wholesome, is urged with the Heat of a hundred Degrees, it lets go its Water, and remains rich, very fat, thick, gratefully acid, fragrant, and of a greenish Colour, and as perfect as can be any way obtained. But here again are certain Limits, for only one Part of the Salt is thus converted into acid Spirit, while the others remain fixed with the Oil of Vitriol. I could scarce gain more than a third Part of pure Spirit, separable from the Water, in proportion to the Salt. This Spirit has some Properties in common with other Acids, and some particular. It is particularly grateful to the Stomach, excites the Appetite, attenuates mucous Humours, resists Putrefaction, and corrects the Bile, when either too acrimonious, large in Quantity, or corrupted. It is of excellent Use in curing Gangrenes of the Gums, Mouth, or Tongue, it prevents the Generation of the Stone, and, according to *Helmont*, helps to dissolve it. It is serviceable in the Strangury attending Old-Age. If the strongest Spirit of Salt be mixed with thrice its Weight of Alcohol, and the two be thoroughly united together, by two or three Distillations, they make a volatile, oily, acid, fragrant, and balsamic Spirit of great Virtue. This acid Spirit dissolves Gold when very strong, or render'd more noble by being several times drawn over from Sea-Salt. In short, this Liquor exceeds all that can be said of it; and this is a highly useful Experiment, which we owe to the Industry of *Glauber*.

SPIRIT OF SEA-SALT WITH BOLE.

1. Take six Pounds of pure dry Sea-Salt, put it into two earthen long Necks, each of them containing three Pounds of Salt; put the long Necks into the Fire, and cover them with Tiles to prevent any thing falling in. Let the Fire be placed around them at some Distance first, and afterwards gradually nearer, and at length up to their Sides. The Salt will for a long time continue to crackle strongly; but this Decrepitation at length ceases, when both the long Necks are thoroughly ignited. When the Fire is burnt down, the Salt is found white, pulverized, and will not crackle, when thrown into the Fire. It loses always one Fourth in the Decrepitation, but seems otherwise unchanged, though it would easily grow moist in the Air. It is now fit for Distillation; wherein had it been employed without Decrepitation, the Action of the Fire would have made it leap into the Receiver, so as to disturb the Operation, and sometimes to burst the Vessels; but its wild crackling Spirit being drawn out by Calcination, it will afterwards calmly endure the Fire.

2. Take three Pounds of this Salt, as soon as it is decrepitated; grind it in a large hot Mortar, and presently mix therewith ten Pounds of common red Bole; divide the Mixture into two Parts, and charge two Long-Necks therewith, so that the Matter may not come into the Mouths of the Vessels, as they lie horizontally in the Furnace. Then fit them into the Reverberatory, building up the open Side of the Furnace with Bricks and Mortar, so as to leave the Necks of the Vessels to come through the Wall. Apply Adopters and large Receivers, and also a gentle Fire, increased by Degrees for twenty-four Hours, that all may become thoroughly hot and dry. Then light up a strong Fire in the Morning; a copious white Vapour will come over, like white Clouds, into the Receivers, and dewy Drops appear in the internal Surface thereof. Keep the Fire thus for two or three Hours; then increase it, upon which the Receivers usually become clearer, and the Spirit runs in unctuous Veins. And now the Fire may be increased to the utmost Degree, and continued thus for six or eight Hours, that the Vessels may be thoroughly ignited. When no more Spirit comes over, leave off; let all cool; carefully take away the Receivers, and empty the pure Liquor: It will be acid, gratefully fragrant, of a green Colour, and in the Quantity of about six Ounces from a Pound. The Bole remains saline. I have boiled it in Water, filter'd, and inspissated the Lixivium, and thereby procured a large Quantity of a yellow, saline, styptic Salt, that was not alcaline, but appeared a new Kind of Salt. And this has generally been my Success; whence I wonder *Beguinus*, and others, should write, that they could convert the whole Quantity of Salt into excellent Spirit of Salt. For my own part, I never could, with the utmost Care and Caution, in the most exact manner, and with the strongest Fire, long continued, obtain above half the Quantity, unless there had chanced to be any Moisture adhering to the Salt, or the Bole. This Distillation of Sea-Salt requires a stronger Fire than that of Nitre.

REMARKS.

This Spirit shews that a certain Part, but not the whole of the Salt, is here converted into Acid, by means of the Fire and Bole. In this Distillation, towards the End, a yellowish Matter, inclining to white, always fixes to the upper Part of the Receiver, and has a sweetish, styptic, saline Taste; and I have found this in great Plenty, when the Operation was performed with Brick-Dust instead of Bole; it seems to proceed from the Salt and fat Earth mixed together. The Salt obtained from the Caput Mortuum is highly commended by *Helmont* for the Preparation of *Butler*'s Stone; and the Spirit is recommended for the same Purposes as that of the preceding Process, where the Particulars relating to this are already considered.

GLAUBER'S SAL MIRABILE.

Take the white, saline, fixed Salt remaining at the Bottom of the Retort, in the Preparation of *Glauber*'s Spirit of Sea-Salt, to be got out by breaking the Glass; bruise it, melt it in a Crucible at the Fire, with Care to prevent any Coals falling in, and afterwards dilute it with common Water. Or else dissolve the Salt, as it remains in the Retort, by pouring hot Water to it; strain the Lixivium hot, evaporate it to a Pellicule, and set it in a quiet cold Place; it usually coagulates into a Mass like Ice, or if it remains somewhat fluid, it turns solid upon being poured into another Vessel. If the Salt be dissolved in six times its Quantity of hot Water, then thickned again, and set by in a large Glass, it shoots into beautiful Crystals, of a particular Figure, considerably large, that remain solid, and do not run in the Air.

REMARKS.

The famous Inventer of this Salt justly called by the Name of *Wonderful*, not only on account of its being new, but of the surprising Effects it produces. I know some Chymists who are fond of Systems, pretend that no more than a true *Tartarum Vitriolatum*, is here produced, which was long known before the Time of *Glauber*. But *Tartarum Vitriolatum* has not the Properties which are found in this Salt, either with respect to Figure, Taste, or any Thing else; for if this Salt be properly prepared, reduced to Powder, and mixed with thrice its Weight of Vinegar, Beer, Wine, or Water, and set apart, it freezes them. When melted in a Crucible, if a fourth Part of Antimony be thrown to it, by a Piece at a Time, it wonderfully resolves it, and has many other Effects, as to which *Glauber*, *Boyle*, *Becher* and *Stahl* deserve to be consulted; all of them Men of the utmost Penetration,

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tration, in giving Light to the more abſtruſe Parts of Chymiſtry; to whom we muſt alſo add the great *Homberg*. In Surgery this Salt is of excellent Uſe againſt Putrefactions and Gangrenes; it is alſo of Uſe, when internally taken, by gently ſtimulating, reſolving, purging, and promoting of Urine.

SEA-SALT REGENERATED.

Dilute four Ounces of Oil of Tartar per Deliquium, with thrice its Weight of fair Water; put them into a tall and large Glaſs Body, with a narrow Mouth, and heat the Liquor ſtrongly: Then, by Means of a Funnel let fall into it, by a Drop at a Time, *Glauber*'s Spirit of Salt, or that prepared with Bole, a great Effervecence will be excited. When this is over, ſhake the Glaſs, and mix all well together; then drop in more Spirit, and mix as before, till the Alcali be perfectly ſaturated with the Acid. Now let the Liquor reſt, and gently pour it from the Fæces into a Filter; evaporate to a Pellicule, ſet it in a cold quiet Place, and perfect Chryſtals of Sea-Salt will be obtained. Treat the remaining Liquor in the ſame Manner, after the firſt Chryſtallization is over, and this will afford the ſame Salt, which will be fixed in the Fire, and have all the other Properties of native Sea-Salt.

REMARKS.

The vegetable Alcali, which indifferently receives any Acid, is here determined by the Acid of Sea-Salt; and being ſaturated therewith, aſſumes the Nature of that Salt.

OF THE SUBTILTY AND SPECIFIC VIRTUES OF THE SPIRIT OF SALT.

Common Salt is of the neutral Kind, and conſiſts of an Acid and Alcali as is ſufficiently evident from its artificial Compoſition, from Spirit of Salt, and Salt of Tartar mixed in a due Proportion to the Point of Saturation. But this Acid cannot be more commodiouſly diſengaged from the common Salt, than by an Addition of Oil of Vitriol, which, when mixed in equal Quantity with it, not only excites a violent Ebullition, becauſe the Acid of the Vitriol acts powerfully upon the alcaline Principle of the Salt, but alſo a thick, white, and highly penetrating Smoke aſcends, which, when concentrated, affords an highly acid fuming Spirit, which muſt be kept in Glaſſes well cloſed with Glaſs Stoppers. If this Spirit is very ſtrong, it becomes hot on the Affuſion of Water, almoſt in the ſame Manner with Oil of Vitriol.

The Diſtillation of this Spirit with Oil of Vitriol, is moſt commodiouſly made from a Glaſs Cucurbit by an Alembic; for by Reaſon of the violent Effervescence and Froth, the Diſtillation cannot be commodiouſly made from a Retort, becauſe 'tis to be apprehended that the Froth may paſs over. A proper Quantity of common Water is to be added, which aſſiſts the Ingreſs of the Acid of the Vitriol into the interior Parts of the common Salt, by which Means a larger Quantity of Spirit is obtained.

The Rectification may be made from the Retort; thus a Spirit of a yellowiſh Green, which is its genuine Colour, is yielded, and the groſſer Parts of the Acid of the Vitriol remain in the Bottom. This Spirit tinges the Skin with a Colour reſembling that of Roſes.

The highly penetrating and ſubtile Nature of this Acid is obvious from this, that in a gentle Heat, or even in *Balneo Mariæ*, it paſſes over the Helm of the Alembic, and when lodged in open Glaſſes, ſo exhales as ſoon to fill the whole Room; and that the penetrating Nature of this acid Salt ſurpaſſes that of Nitre I am induced to believe, becauſe the acid of Salt has a freer Acceſs into the Pores of Gold than that of Nitre, which diſſolves all other Metals; for without an Addition of common Salt, the firm Compages of Gold cannot be diſſolved.

So great is the Subtilty of the Acid of common Salt, that when taken internally, it diffuſes its Operation and Efficacy to remote Parts, eſpecially thoſe of the membranous Kind. But it in a particular Manner exerts its Influence on the nervous and ſenſible Membranes of the Lungs, by ſtimulating and agitating which, it excites a gentle Cough; for which Reaſon, the Acid of common Salt ought to be very cautiouſly uſed, without loſing its Texture; it, alſo, by its powerful Stimulus, penetrates to the urinary Paſſages; for there is hardly a more efficacious Medicine for exciting a Diſcharge of Urine, than Spirit of common Salt.

Thoſe who have Fontanels in their Bodies, and frequently uſe Spirit of Salt in Broths prepared with Fleſh, perceive pungent Pains in their Fontanels. The great Subtilty alſo of this Spirit, is the Reaſon, why by acting on the nervous Coat of the Stomach, it excites the Appetite far better than all other acid and mineral Spirits.

Strongly concentrated Spirit of common Salt has this peculiar to it, that it does not, like other corroſive and highly concentrated Acids, ſuch as Oil of Vitriol, and my fuming Spirit, by the Addition of a ſufficient Quantity of highly rectified Spirit of Wine, loſe its acid Taſte, and aſſume a ſweet Taſte and Smell. The ſtrong Acid of common Salt remains entire in the Bottom of the Cucurbit; for 'tis ſufficiently known to Chymiſts, that Oil of Vitriol, after the Addition of a ſufficient Quantity of highly rectified Spirit of Wine, at different Times, may, by Diſtillation, be converted into a very penetrating Spirit, of a grateful Taſte and Smell.

Thus alſo my fuming Spirit, upon an Admixture of twelve Parts of highly rectified Spirit of Wine, becomes ſweet, and aſſumes a grateful Taſte and Smell, becauſe by the oleous and ſulphureous Parts of the Spirit of Wine, the acid Spicula are ſo corrected and ſheathed up, as to aſſume a quite different Nature, Texture and Efficacy. But this is not found to happen in the Spirit of Salt, which rejects this Union of the oleous and phlogiſtic Spirit; for it retains its Acidity entire, except that its thinner ſulphureous Part being united with the inflammable Spirit, in ſome Meaſure changes its Smell, and renders it more grateful.

'Tis alſo peculiar to Spirit of Salt above that of Vitriol and Nitre, that it does not ſo quickly diſſolve Filings of Steel, but leaves the *Lapis hæmatitis*, and the moſt ſubtile *Crocus martis* entirely untouched; whereas common Salt, or which is ſtill better, Sal-ammoniac, acts more quickly and powerfully on chalybeate Minerals, the *Lapis hæmatites*, and Filings of Steel, and by diſſolving them, converts them into a highly aſtringent Vitriol, provided they are intimately mixed in a Crucible, and kept on the Fire for a conſiderable Time, which neither happens with Vitriol nor Nitre.

No Acid ſo ſoon extracts the Sulphur, with which Iron is richly impregnated, as the Acid of common Salt; for whether a Solution of Steel, with Spirit of Salt, is inſpiſſated, or whether Sal-ammoniac, with Filings of Steel, is treated by a cloſe Fire, a Vitriol is obtained of a yellowiſh Colour, an aſtringent Taſte, a grateful Smell, and which is not capable of Cryſtallization, but melts away in the open Air; and if duly dephlegmated Spirit of Wine is poured upon it, the ſulphureous Part of the Steel, and the thinner Portion of Salt immediately enter it, and by this Means is prepared a Tincture of Steel, which is of a yellow Colour, a fragrant Smell, a ſubaſtringent Taſte, and highly efficacious in reſtoring the Tone of the Parts; for by this Means the ſulphureous Subſtance of Steel, which is of great Uſe in Medicine, may be moſt commodiouſly ſeparated.

'Tis, alſo, to be obſerved, that highly concentrated Spirit of Salt, when mixed with Oil of Vitriol, produces a greater Effervescence, than any other acid Spirit. *Hoffman. Obſ. Phyſ. Chym. Lib.* 2. *Obſ.* 17.

OF THE SOLUTION OF SALTS.

It has hitherto been received as an inconteſtable Maxim among Chymiſts, that phlogiſtic or inflammable Spirits are the moſt commodious Menſtruums for oleous, reſinous, and ſulphureous Bodies, but not at all for Salts, whoſe Solution is obtained by aqueous Menſtruums. This Doctrine ſeems to be confirmed by Experience, which convinces us, that Spirit of Wine highly rectified, or deprived of all its Phlegm, neither diſſolves and imbibes neutral Salts, nor thoſe of the fixed alcaline Kind, when poured upon them, but leaves them untouched. We ſhall therefore ſhew, that this Maxim is not ſo univerſal as it is generally thought, but that it has many Exceptions, in which it may be demonſtrated to the Eye, that highly rectified Spirit of Wine does not reject Salts of all Kinds, but readily diſſolves them, and is incorporated with them; for as for fixed alcaline Salts, we obſerve, that in the Abſtraction of highly rectified Spirit of Wine from Salt of Tartar, eſpecially when frequently repeated, a large Quantity of this Salt is diſſolved in the Spirit, which by this very Means becomes highly acrid, alcaline, and proper for the Diſſolution of Oils; for when I took ten Ounces of the Salt of Tartar, well calcin'd, and by a gentle Heat drew off two Quarts of highly rectified Spirit of Wine from them, I obtained a Spirit richly impregnated with the Salt of Tartar. But as the Salt of Tartar always ſeparates a great deal of Humidity from the rectified Spirit of Wine, hence it aſſumes a liquid Form in the Bottom of the Cucurbit. This Humidity I abſtracted by a proper Evaporation, and afterwards calcined the Salt in a Crucible, and upon examining the Weight, found that it had loſt three Ounces, becauſe only ſeven Ounces remained. I repeated this Experiment, and poured the ſame Spirit on the Salt of Tartar, to be abſtracted by a gentle Heat, but had only half the Quantity drawn off; and in the Cucurbit there remained two Liquors, one of which floating above the Liquor of the Salt of Tartar, was of a yellow Colour,

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ture, of a highly acrid Taste, and full of an alcaline Salt. This is by Chymists called the Tincture of Tartar. The other, which was below it, was only a Solution of the Spirit of the Salt of Tartar, by Means of the Phlegm left. This, when dried and calcined, had its Weight considerably decreased.

From this Process 'tis sufficiently obvious, that tho' the Salt of Tartar sustains the Force of the Fire and Air, so as to have no Part of it exhaled, yet it may, by frequent Abstraction, by an inflammable Spirit, become not only volatile, but also capable of being resolved by such a Spirit.

'Tis, also, to be observed, that Salt of Tartar, however strongly calcined, always separates, by Digestion, and Abstraction, from the highest rectified Spirit of Wine, a Portion of Phlegm, in which it dissolves; a certain Proof that the phlogistic or vinous Spirit is nothing but the Oil of those Things which have undergone a Fermentation, resolved into Phlegm, by the intestine fermentative Motion. This I shall afterwards evince by other Experiments.

The yellow Colour of the Tincture of Tartar is owing to no other Cause, than that the Oil of the Spirit of Wine, intimately mixed with the Salt of Tartar, is capable of tinging it with that Colour, which may be confirmed by many Experiments, especially in the Elaboration of the acrid Tincture of Antimony.

Not only fixed alcaline Salts may be rendered soluble, in highly rectified Spirit of Wine, but I can also prove, from various Experiments, that there are neutral Salts, which are more expeditiously dissolved in highly rectified Spirit of Wine, than any fixed alcaline Salt; so that six Parts of the Spirit are capable of receiving and retaining in their Pores one Part of the Salt.

These are two artificial Salts; the one is prepared thus: We take any given Quantity of pure and dry volatile Salt of Sal Ammoniac in a Glass, into which we gently drop Aqua Fortis, or Spirit of Nitre, till the Point of Saturation is found, by which Means the neutral Nature of this Salt ought to be accurately investigated. This Liquor, which is of a nitrous and acrid Taste, we evaporate in a warm Furnace, by which Means we obtain a highly white and dry Salt, of a nitrous and acrid Taste, which, when thrown upon the Coals, flames, and leaves only very few terrestrial Parts. The other of these Salts is prepared thus: We take volatile and dry Salt of Sal Ammoniac; this we saturate with Spirit of Salt instead of Aqua Fortis, by which Means there is produced a third Salt, exactly like Sal-Ammoniac, and which is quickly united with rectified Spirit of Wine.

But when this same volatile Salt is converted into one of a third Kind, like Sal-Ammoniac, with Spirit, or Oil of Vitriol, it is by no Means susceptible of an Union with the Spirit of Wine, but flies its Embraces. For which Reason, if rectified Spirit of Wine is poured upon a Solution of this Salt made with common Water, the volatile Salt forthwith subsides, which does not at all happen, if this Spirit is poured upon the beforementioned Salts when dissolved; for the Solutions of these are capable of an intimate Union with Alcohol of Wine.

The Reason of this Difference seems to be, that the Spirit of Vitriol is a highly fixed Acid, whereas the Spirit distilled from Nitre and common Salt is of a highly volatile and subtile Nature, for which Reason, there is a close Union between these Spirits and this volatile Salt; but its Union is less with a more fixed Acid. For the same Reason, if the Salt prepared of the Oil of Vitriol and the volatile Salt of Sal-Ammoniac is by a brisk Fire urged in a Glass Cucurbit, the volatile Salt flies off, and the Acid of the Vitriol is left; which, however, does not happen with the two forementioned Salts, which, when treated with a brisk Fire, fly totally off in the Air, and leave no Marks of themselves.

These neutral Salts, capable of a Solution in Alcohol of Wine, are of singular Efficacy, both in Medicine and Chymistry; for Nitre thus dissolved in my Bezoardic Spirit, my anodyne or camphorated Liquor, is an excellent Medicine for preventing and discussing internal Inflmamations, and for duly expelling exanthematous Disorders.

'Tis also well known, that Nitre is excellent for discussing erysipelaceous Inflammations of the Skin, when mixed with camphorated Spirit of Wine, which is by itself too hot and burning. But as common Nitre is incapable of such an Union, hence the End may be most commodiously obtained by my volatile artificial Nitre.

As for the other Ammoniacal Salt dissolved in Spirit of Wine, it may be rendered a Stomachic Medicine of singular Efficacy, when 'tis invigorated by the Addition of a proper Quantity of the Spirit of Salt; for twenty or thirty Drops of it thus prepared, and exhibited in a proper Vehicle, are excellent for restoring a languid Appetite, resolving those Crudities which are the Causes of various Disorders, and may be properly used as a Succedaneum to the aperitive Tincture of *Moebius*, whose Virtues it in some Measure surpasses; for 'tis sufficiently known that this Physician got a great deal of Money Means of his aperitive Tincture, which he prepared of rectified Spirit of Salt, somewhat corrected by the Addition of a proper Quantity of Salt of Tartar; for which Reason, its Virtues are derived partly from the subtile Spirit of the acid Salt, and partly from the neutral Salt produced from the Spirit of Salt and the Salt of Tartar. But since we, instead of Salt of Tartar, take the volatile Salt of Sal-Ammoniac, and since the Virtues of this Salt are far more efficacious in correcting the Disorders of the Stomach than those of common Salt, hence it follows that the Tincture prepared from it must be also more efficacious. But *Moebius*, in my Opinion, gave the Name of Tincture to this Liquor, because he tinged it with the Flowers of Daisies or Roses, in order the better to conceal the Secret.

That there are in Nature Salts of very different Kinds, is sufficiently known, since some are natural, and others artificial, some acid, and others alcaline, whilst others are of the neutral Kind. 'Tis also known, that the Effects of these are very different, and that they are all capable of being dissolved in Water, which is, as it were, their specific Menstruum; but at the same time, 'tis to be doubted whether many know that their Solution is very far from being equal, but widely different, since some are sooner and more quickly dissolved, and enter the Interstices of Water in a much larger Quantity, whilst others are dissolved slowly and with Difficulty, and are received into Water in smaller Quantities. Concerning this I made the following Experiments.

One medicinal Pint of Water quickly dissolves four Ounces and an half of common Salt, and one Pint common Measure dissolves six Ounces of it.

A medicinal Pint of Water, by sufficient Agitation, receives six Drams of Nitre, and the same Quantity of Vitriol is dissolved by the like Quantity of River Water.

Only two Ounces of Alum can be dissolved in one Medicinal Pint of Water, and, which is more surprizing, the same Quantity of the *Arcanum Duplicatum* can only be dissolved in the like Quantity of Water.

Among the Salts which are most easily dissolved, and with which the whole Water is, as it were, saturated, the most considerable is the artificial purgative *Epsom* Salt, which is quickly dissolved by an equal Quantity of Water; so that one medicinal Pint of River Water commodiously receives twelve Ounces of this Salt.

The Salt of Tartar, which is alcaline, is also easily dissolved, since one Pint of Water is capable of receiving almost nine Ounces of it. Tho' these Experiments may at first Sight appear trifling, yet they are of singular Importance in Chymistry, since from them we learn,

1*mo*, How much Water is requisite to resolve and depurate these impure Salts.

2*do*, From a Solution of common Salt, we learn, that there can be no saline Waters, sixteen Ounces of which can possibly contain more than six Ounces of Salt.

3*tio*, These Experiments, in a great Measure account for the Separation of Salts, when mixed with Waters of various Kinds. Thus, for Instance, if Alum is added to a Solution of Salt, by previous Boiling and Inspissation, the Alum is first separated in the Form of Crystals in the aqueous Menstruum, but the common Salt is left, which by continuing the Inspissation, may also at last be obtained in the Form of Crystals. The Reason of this is, because the Alum requires a greater Space in order to be contained in the Water than the common Salt. Hence this Space being lessened, it is forced to a Separation, and quits the Pores of the Water. Besides, 'tis known that common Salt almost always adheres to Nitre, but this Salt ought carefully to be separated from it, because it not only hinders its Inflammability, but resists the Separation of a laudable and good Aqua Fortis; for when a large Quantity of Salt adheres to the Nitre, an Aqua Regia is rather obtained, which dissolves Gold and not Silver. The Method of Separation is this. The Nitre is dissolved in a due Quantity of Water, and after gentle Boiling, the Vessel exposed to a moderately cold Air, by which Means the Nitre descends in form of pyramidal Crystals, whilst none of the Salt is precipitated. Afterwards, upon Inspissation and Crystalization, the Nitre is separated, and the common Salt remains in the rest of the Liquor. The Reason of this is to be deduced from the more easy Solution and Retention of the common Salt in the Water than of the Nitre.

'Tis sufficiently known that the Arcanum Duplicatum is prepared of Nitre and Vitriol, if these two Salts are duly calcined; nor do they however at all Times so closely unite with each other, as to form the Sal Duplicatum, but the vitriolic and nitrous Parts often remain separate. If therefore we would separate from these two Salts the Arcanum Duplicatum, which is a neutral Salt, the Lixivium duly boiled, must be subjected to Crystallization, by which Means the Arcanum Duplicatum is precipitated, whilst the Vitriol

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Vitriol and Nitre remain in the Lixivium; for from what has already been said, 'tis obvious that one medicinal Pint of Water can hardly contain an Ounce of this Salt.

4to, If we intend to separate Salts of different Kinds from each other, this muſt be obtained by a Solution with Water: For thoſe Salts which are copiouſly conveyed into the Pores of the Water are moſt ſpeedily diſſolved, whereas thoſe which with Difficulty enter the Pores of the Water, require a longer Time for their Solution. Thus, for Inſtance, if we intend to ſeparate the Arcanum Duplicatum, from another neutral Salt, ſuch as Nitre or Vitriol; or Sal Ammoniac from common Salt or Nitre, we muſt pour common Water upon them, which imbibes the common Salt or Nitre, and leaves the Arcanum Duplicatum in the Bottom. In like manner, if we intend to ſeparate the Arcanum Duplicatum, or vitriolated Tartar, from an alcaline Salt or Pot-aſh, this End muſt be obtained by an Effuſion of Water, which quickly diſſolves the alcaline Salt, and leaves the Neutral. Thus alſo Alum is ſeparated from Vitriol; for the latter is more quickly diſſolved than the former.

5to, Since there is no Phenomenon in Nature without its adequate Cauſe, the Reaſon why ſome Salts are more eaſily diſſolved than others ſeems to be placed in the Water itſelf. The Salts which are moſt eaſily diſſolved, ſeem to conſiſt of highly ſubtile, much divided, and ſmall Particles, whereas thoſe which are with Difficulty diſſolved conſiſt of groſs, coarſe, firmly cohering, and conſequently fixed terreſtrial Parts; for the highly ſubtile and minute Particles are capable of entering the minute Pores and Interſtices of the Water, from which the groſſer Particles are excluded. From what has been ſaid 'tis obvious that *Epſom* Salt is of a highly ſubtile Nature, becauſe an Ounce of it is received by an Ounce of Water, which is very ſurpriſing, and ſeems hitherto to have been adverted to by none. Hence it alſo happens, that highly rectified Spirit of Wine, when poured upon a ſaturated Solution of this Kind, forthwith coagulates it into a firm and ſtable Maſs, like Ice, becauſe the rectified Spirit of Wine has an eaſy Acceſs into the Water. Hence 'tis neceſſary that the ſolid Particles of the Salt, which, when joined together, form ſuch a firm Maſs, ſhould be ſuddenly forced from the Pores of the Water. This Subtilty of *Epſom* Salt is owing to this, that there is a ſmall Quantity of fixed Earth in it; for 'tis remarkable that this Salt, when mixed with Powder of Charcoal, and expoſed to the Fire in a Crucible, is totally evaporated, and fills the Room with a ſulphureous Smoke. This Salt alſo, in conſequence of its Subtilty, is preferable to others for purging, becauſe it inſinuates itſelf more deeply into the inteſtinal Coats than any other Salt, ſuch as the *Arcanum Duplicatum*, Nitre, or common Salt. And becauſe common Salt is more ſubtile than Nitre, it is alſo more purgative. But a Solution of Alum is not to be procured without great Difficulty; for which Reaſon, on account of the large Quantity of Earth it contains, it braces up the Pores, and is of a more aſtringent Quality than Vitriol, becauſe it contains a greater Quantity of Earth, as is obvious from Calcination, in which the Alum affords a greater Quantity of *Caput mortuum* than the Vitriol. Common Salt is, beſides its Salubrity, excellently calculated for preſerving Fleſhes, and preventing Putrefaction, becauſe it enters the Pores of the Fleſh to be preſerved, and extracts its Humidity, which cannot be ſo ſpeedily done by other Salts: And on account of the Subtilty and eaſy Solution of *Epſom* Salt, I am apt to think that Bodies might be better preſerved by it than by any other Salts. *Hoffman. Obſervat. Phyſ. Chym. Lib.* 2. *Obſ.* 5. & 6.

OF THE CAUSTIC QUALITIES OF SALTS.

That the cauſtic and virulent Quality of Salts conſiſts in the great Subtilty of their Parts, may at firſt appear a Paradox, tho' the Truth of the Obſervation is ſufficiently evinced from the following Conſiderations. 'Tis an important Circumſtance, both in Natural Philoſophy and Chymiſtry, to know the various and ſurprizing Natures of the Mixtures of Bodies, ſince from theſe ariſe the various Phenomena and different Operations of theſe Bodies. Thus, for Inſtance, tho' the *Pyrmont* Mineral Waters far exceed all others, in their penetrating and ſaline Taſte, yet in twenty four Hours, if they are expoſed to the free Air in a large Veſſel, they loſe all their Taſte and Efficacy, and only reſemble common Water, ſince all the ſaline, ſpirituous, and medicinal Parts are evaporated in the Air. 'Tis alſo to be obſerved, that if *Pyrmont* Water is ſubjected to Diſtillation in a cloſe Veſſel, the Vapour and Water diſtilled retain no Taſte, nor is any Thing of a ſaline or vitriolic Nature to be found either in the *Caput Mortuum* or in the Water itſelf.

It may ſeem ſurpriſing, that ſo efficacious a Salt ſhould thus vaniſh, and be evaporated. But our Surprize will ceaſe, when we know from Chymiſtry and Natural Philoſophy, that the moſt acrid Salts, and even mild alcaline, and fixed acid Salts, when treated in the like Manner, are found to conſiſt of a ſubtile, volatile and inſipid Vapour. Thus quick Lime, by an Affuſion of Water, acquires a highly acrid Taſte, but by Boiling loſes all its acrid Taſte and Efficacy. This ſame quick Lime, with an Addition of Pot-aſh, when diſſolved and boiled in Water, and then inſpiſſated, affords a Cauſtic ſo powerful, as by ſingle Contact to corrode Leather, Paper, Cloths, and other Subſtances, and convert them into a kind of Mucilage. Notwithſtanding this, if a few Ounces of this Salt, diſſolved in Water, are boiled and, inſpiſſated, and after the Addition of freſh Water, the Boiling and Inſpiſſation frequently repeated, there at laſt remains a fourth Part of inſipid Earth. The ſame happens to all fixed alcaline Salts, and to common Salt, which, if they are diſſolved, boiled, coagulated, calcined, and afterwards diſſolved and coagulated ſeveral Times, afford nothing but an inſipid Earth.

But the Curious are not equally appriſed of another Thing, which happens with reſpect to the Boiling of Salts, which is, if the Water, which is a Vehicle for the Elements and Seeds of the Salt, is not boiled by a gentle and gradually decreaſing, but by a violent Fire, a fourth Part of the Salt is loſt, and a great Part of it diſſipated in the Air. Nor is it to be doubted but the like happens to vitriolated Tartar, and the *Arcanum Duplicatum*, if they are boiled by too ſtrong a Fire.

'Tis alſo obſervable, that an acid Corroſive, if duly managed, degenerates into a ſimilar inſipid Matter. Thus Oil of Vitriol, which is a highly fixed and powerful Cauſtic, degenerates into a black and inſipid Earth, and a ſomewhat acid Phlegm, of a ſulphureous Smell. Now that the Oil of Vitriol is a highly concentrated and fixed Acid, is a Thing too well known to ſtand in need of a Demonſtration; yet if this Oil is drawn from ſulphureous Subſtances, whether of the vegetable or animal Kind, ſuch as Opium, Orpiment and Antimony, this highly fixed and ſtrong Acid is converted into an evaporable Smoke, of a highly volatile Nature, almoſt without any Degree of Acidity, and only leaves an inconſiderable Remainder of Acid in the *Caput Mortuum*. From theſe Experiments 'tis obvious, that this fixed Acid is compounded of very active and ſubtile Parts, which active and ſubtile Nature they immediately aſſume upon the Admixture of a ſmall Quantity of any pinguious and ſulphureous Body.

My Spirit, which, when poured into diſtilled Oils, produces a Flame, is ſo highly corroſive, as in a ſhort Time to attack, corrode, and diſſolve the moſt ſolid Metals, yet it is totally evaporated in the Air, and reſolved into Smoke, which can hardly be contained in the cloſeſt Veſſels; a ſure Proof that it conſiſts of highly ſubtile Parts.

Hence we can eaſily account for Glauber's Experiment, which is, that common Salt, by an Admixture of a due Quantity of Oil of Vitriol, is diſſolved into a highly ſubtile Vapour, which fills the whole Room. But if this Smoke is concentrated and collected, it is an highly acid and corroſive Spirit.

If we conſider Vegetables, we find large Numbers of them compoſed of highly ſubtile Parts, cloſely cohering with each other, whilſt at the ſame Time they are poſſeſſed of ſingular Efficacy. This is ſufficiently obvious from draſtic Purgatives and Emetics, which exert their Efficacy by a highly ſubtile, acrid, and cauſtic Salt, ſuch as White Hellebore and Aſarabacca, which are poſſeſſed of a very draſtic, purgative and emetic Quality, yet theſe, when infuſed in Water, and boiled for a conſiderable Time, loſe all their draſtic Quality. Tobacco is alſo a draſtic Purgative and Emetic, and works in a very virulent Manner on the human Body; yet if it is boiled in a ſufficient Quantity of Water, its draſtic Quality is loſt, and an Extract obtained from it, highly extol'd by ſome Phyſicians for its Efficacy in reſolving viſcid Humours, which ſo far injure Expectoration, as to threaten a Suffocation. Aloes, tho' not ranked among the Claſs of draſtic Purgatives, yet purges ſo ſtrong, and throws the Maſs of Blood into ſo violent Commotions, that a few Grains of it are ſufficient for a Doſe; but if it is diſſolved in River Water, and boil'd for a conſiderable Time, its cathartic Quality is ſo much impaired, that it is not in the leaſt purgative, unleſs exhibited in a very large Doſe. Scammony and Coloquintida may in like Manner be deprived of their purgative Quality by Boiling.

It may ſeem ſomewhat more difficult to deprive mineral Subſtances of their draſtic, emetic and purgative Quality by Boiling. But the Truth of this is confirmed by the following Experiment. When in preparing emetic Tartar from *Crocus Metallorum* and Cream of Tartar, the Infuſion is boiled long, we obſerve, that by this Means the Efficacy of the Medicine is greatly impaired, ſo that ten Grains of it muſt be exhibited for a Doſe, whereas otherwiſe two or three are ſufficient.

All theſe Experiments ſufficiently evince, that not only the Acrimony of Salts, but alſo the virulent and draſtic Qualities of other Bodies, are to be aſcribed to their highly ſubtile and moveable

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moveable Parts, which, when closely joined, exert a corrosive and acrid Virtue, which the Air, Water, and Heat destroy, by disjoining them; nor is it surprising that Salts consist of highly subtile Parts, because the more subtile any Body is, the quicker Motion it receives and propagates, as is observable in the Æther, the Air and Water.

But the Corrosion and Dissolution of Bodies by Salts are promoted by the intense Motion of their Parts, as is obvious from their Effects. The more concentrated therefore the moving Force is, the more conspicuous and noble is the Effect. Thus the fuming concentrated Spirit corrodes more powerfully than the Spirit of Salt, which again is more corrosive than Oil of Vitriol, because the Spirit of Nitre consists of more subtile Parts than the Spirit of Salt, and the Spirit of Salt of more subtile Parts than Oil of Vitriol.

From all these Considerations, we may conclude, that all Salts are made up of a subtile, penetrating, and, as it were, ætherial Matter, and that their Parts, when joined with the Earth, as a Kind of Cement, are of a highly acrid and corrosive Quality, but when disjoined and separated, totally destitute of Virtue and Efficacy. This may be excellently illustrated by a Burning-glass; for, as by its Means the Rays of Light, when much concentrated, produce an intense Heat, so when they are more diffused, they operate in a proportionably more languid and faint Manner. *Hoffman. Obs. Physic. Chym. Lib. 2. Obs.* 15.

SAL ACIDUM. An acid Salt. See ACIDA.

SAL ALEMBROT. See ALEMBROT. *Schroder* describes the Preparation of a *Sal Alembrot*, thus:

Take of common Salt, Sal Gem, and alcaline Salt, each an Ounce; make a Lixivium with the Juices of Mint, and Clove-Gilly-Flowers each two Ounces, and two Pints of Fountain Water; filter and coagulate.

SAL ALCALI, or ALKALI. See ALCALI.

SAL AMMONIACUM. See AMMONIACUM.

SAL ANATRON. See NITRUM.

SAL ANIMALIUM. Animal Salt. See ALCALI.

SAL CATHARTICUM AMARUM. The bitter purging Salt, commonly called *Epsom Sal.* This was first made by Dr. *Grew*, by evaporating the *Epsom* Waters. Some Years after, several other bitter purging Springs were found in different Counties, and Salts in small Quantities were boiled up from them, but from no Place, nor all the Places put together, in such large Quantities, as from the Springs on one Side of *Shooter's Hill* in *Kent*, about the Year 1700, which were then in the Possession of those two ingenious Chymists, Mr. *George* and Mr. *Francis Moult*, and where they made such large *Apparatus* for evaporating the Water, that they have sometimes boiled down 200 Barrels in a Week, from which, in a dry Season, and when the Land Waters did not get into their Drains, they have obtained 224 Pounds of Salt. After these Works had gone on some time, Dr. *Hey* found out a more expeditious Way of making a purging Salt, so nearly resembling that from the purging Springs, in all its Properties, that it soon passed on the World for the other, and continued so to do. The great Consumption of these Salts (which then went only by the Name of *Epsom Salts*) as well at home as abroad, engaged some of our Physicians (many Years before *M. Boldue* took Notice of it) to suspect, that even what was made at *Shooter's Hill* was spurious, and received an Addition of something to increase the Quantity. But these Suspicions, I dare positively affirm, were entirely groundless, as to the Salts made there, and readily believe the same of any other Place, where the Spring Waters were boiled down for Salt. But upon a Consideration, that there were greater Quantities of this Salt consumed than all the Places where the Waters were boiled could produce, which was the real Fact at that Time of Day, there was sufficient Room to suspect that some of them were not genuine, as appeared to be true some time after. For the Secret, which was then in a few Hands, of making these Salts cheap, gave those who had it an Opportunity of underselling those who made it from the Waters, and, in a Year or two, rendered them incapable of making it to any Advantage: So that the Work on *Shooter's Hill* was thrown up; and I believe there has not been 100 Pound of Salt made from the Waters since that Time in any Part of the Kingdom.

Some Time before this Work at *Shooter's Hill* was broke up, some Pains were taken to discover the Secret those had, who sold the Salt so cheap; and upon examining the several Salts, that were sold about Town, those disposed of by Mr. G. and F. *Moult*, were certainly genuine, and were therefore a proper Standard to judge of the rest by. But from all the Experiments then made, there could no material Difference be found between the Salt made from the Waters, and that made by them who were in the Secret. There was indeed a Salt sold by some, which, in the Course of those Trials, was found to be a *Sal mirabile*, made from the *Oleum Vitrioli* and common Salt, but shot into such small Crystals, as not at first Sight to be distinguished from the other. Necessity being Mother of Invention, it was not long before it was discovered, and the Experiment was tried at the Lady *Carrington's* Salt-Works near *Portsmouth*; where it was found the same Thing could be done, as at another Work not far from it, and in which Dr. *Hey* had been concerned. It was some Years after this Salt had been made at *Portsmouth*, before the Salt-Makers at *Lemington* attempted, or indeed knew the Method of making it, who are now the greatest Traders in it, and have sent several Ton in a Year to *London*, besides what has been directly exported from thence.

I remember it to have been the Opinion of the Proprietors of the Salterns near *Portsmouth*, that this purging Salt could not be made at any other Salt-Works except theirs, and that the bitter Taste in the Salt was communicated from the Earth to the Sea-Water, whilst it stood exposed in their Sun-Pans. But Time has proved this Opinion false; for besides what has been said of its being made at *Lemington*, it was about four or five Years ago begun to be made near *Newcastle*, where it is still continued to be made, and doubtless may be made at any Salt-Works, where the common Salt is made from Sea-Water by Evaporation. Whether any Thing of this Kind has been attempted at any of our Inland Salt-Springs, either in *Cheshire* or *Worcestershire*, I am not yet satisfied. There is some Difference in the making the common Salt in *Hampshire*, from that about *Newcastle*: At the first of these Places, in the Beginning of the Summer, at Spring Tides, or at New and Full Moon, the Sea-Water is let into their feeding Ponds, which are their Reservoirs for their Summer's Working, and from hence is conveyed into small square Pans, and again, after some time, from these it is conveyed into larger Pans, or Beds, which they call Brine or Sun Pans, all which are made of Sea-mud and Earth. In these last Pans, or Beds, it lies exposed to the Sun and Wind, in order to exhale the weakest Waters; and it is in these Beds, if the Weather prove very favourable, that they can make as good Bay Salt as any we have from *France*; and at such a Time they never bring their Brine to the Boilers. But if the Weather is not hot enough for that Purpose, their Brine is exposed so long in these Pans, till it becomes of such a Strength as to support their Eggs made of Glass or Wax, to a certain Height above the Surface of the Brine, which from thence is conveyed into large Stone Cisterns, and then into Boiling Pans made of Iron, where it is boiled down (after having been frequently scummed) to a Sea-Salt. 'Tis observable, that whilst the Brine is boiling, there precipitates a hard crusty Matter, which is partly taken out by Vessels placed in proper Parts of the Pan for that Purpose, and Part of it fixed on the Bottom of the Pan so hard, as to be afterwards dug off, and this the Workmen call *Scratch*, and is what Dr. *Collins*, concerning the Sea-Water boiled at *Shields*, calls a Stone Powder. When the Operation for the Sea-Salt is finished, it is taken out hot, and put into wooden Troughs, with Holes at the Bottom, through which runs the superfluous Liquor: Under these Troughs are set other Vessels (with Sticks fixed in them in a perpendicular Posture) to receive what runs through. In these Vessels the Liquor is suffered to continue some time, and according to the Quantity of Sea-Salt still left in it, will crystallize to the Sticks, something like Sugar-candy, but in much larger Shoots; and this they call Cat-Salt, or Salt-Cats, and it holds some Share of the bitter Salt. When this Salt is broken small, or rather powdered, it is so white, that some Gentlemen choose it for their Tables; but the greatest Consumption of it is among the Cake Soap-boilers. The Liquor that will not shoot to these Sticks, is what, at these Works, they call the *Bittern*, fit for making the *Sal Catharticum.*

Near *Newcastle*, their Method is to receive the Sea-Water into their Reservoirs at High Water, at any Time of the Moon, if there be no Fresh in the River, occasioned by Rain in the higher Country; and from these Reservoirs, without exposing of it in Beds, as at *Lemington*, they pump it into their Boiling-Pans, where evaporating it almost to a Pellicle, they fill it up again eight or nine Times, and then waste it with a gentle Heat for the common or Sea-Salt. The Liquor that runs from this Salt, when taken out, and put into proper Vessels, is what they call the *Bittern*, which, if it stands some Time in those Vessels, a Salt will shoot and crystallize to the Sides, in Taste pretty much like Sea-Salt, but with a Share of Bitterness, and seems to answer to the Cat-Salt of the *Lemington* Works, and very probably would shoot after the same Manner, if they made Use of the same Apparatus.

I could not but mention this general and loose Account of making the common Salt, as necessary to introduce the Liquor called *Bittern*, which, before Dr. *Hey* found out an Use for it, was always flung away; being so different in its Properties from

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from the Brine made uſe of to produce the Sea-Salt, that it would not boil up into the Operator, to determine the Time when to take out the Sea-Salt from the Pans, before the Bittern incorporated with it, which would otherwiſe ſpoil the whole Making.

The *Bittern* at *Lemington* (as obſerved before) not ſhooting to the Sticks, is carried by Channels into Pits made tight with Clay, where it ſtands for ſome Months, and there will ſhoot again. What Liquor remains is boiled down, till it is obſerved to be in a Diſpoſition to cryſtallize, and then is conveyed into wooden Coolers lined with Lead. The Liquor, which will not ſhoot there, is boiled down after the ſame Manner, in order for another Cryſtallization. By this Time the Liquor ſeems to have altered its Property, and becomes of a very pungent biting Taſte, and, if boiled down, will not longer ſhoot into Cryſtals, as before, but precipitates, during the Boiling, a ſmall grained Salt; and if you ſhould continue to boil down the Liquor, ſeparated from this Salt, each Quantity of Salt thus produced will be ſtill more pungent than the other. If you boil down the whole Quantity of this Liquor, it will produce a Salt, which, if expoſed to the Air, will run *per Deliquium*. The Liquor that produces this Salt is always flung away wherever the *Sal Catharticum* is made.

This is what at preſent I can give no other Name to, than a third Salt produced from the Sea-Water, differing, in ſome Reſpects, as much from the other two, as they differ from one another.

To return to the ſeveral Cryſtallizations, ſuch as mentioned to be ſhot from the Bittern, theſe will be of different Sizes, as to their Figures, and hold ſome Share of the third Salt, but now taken Notice of, which makes them ſubject to give and diſſolve; nor is their Taſte come yet to that ſimple Bitter of the pure Salt. Theſe therefore are either ſeparately, or altogether, to be flung into a Copper, with as much common Water as is ſufficient to diſſolve them, and allow of a gentle Evaporation, till they are again ready to be poured into the Coolers, in order for Cryſtallization. This generally proves to be the pure *Sal Catharticum*, throughly freed (as far as the Experiment I have tried can be convincive) from either a Sea-Salt, or the third Salt. The Liquor decanted from this Shooting may be boiled down again, in order for a ſecond Shooting, and after that a third; but as the Liquors from theſe Shootings are boiled away more or leſs, ſo you will ſooner or later meet with the pungent Liquor, which contains the third Salt, as you did in the former Shootings from the *Bittern*, from which the pure *Sal Catharticum* is as neceſſarily required to be freed as from the common Salt; a Proof of which cannot be better determined than by one of the Experiments to be taken Notice of hereafter, *viz.* that with the *Oleum Vitrioli*, which will certainly ferment with this Salt, if the Sea-Salt has not been well ſeparated from it, or if it ſtill holds ſome of the third Salt. And when any of the Cryſtallizations will not ſtand the Teſt of this Experiment, they ought to be diſſolved and ſhot again, as before, by which Means the pure Salt is to be obtained. I do not mention this as a Trial made Uſe of at the Salt-Works, but what I have by Experience found to be true. And the ſame Experiment will ſerve to diſtinguiſh a *Sal mirabile* made at theſe Works, from that made with Oil of Vitriol and common Salt. The Account they give of it is this: They take any Quantity of coarſer grained Cryſtals boiled from the Bittern, which, when diſſolved and evaporated, more than they would otherwiſe do for making the *Sal Catharticum*, they throw into a Wooden Bowl, with ſome Oil of Vitriol, where it ſtands for ten Days, and ſhoots into large Cryſtals, tranſparent, and like the *Sal mirabile*. But as this Salt, by this Method, is not ſufficiently ſatiated with the Oil of Vitriol, (if they uſe any) ſo it is eaſily diſcovered by the Oil of Vitriol, which will readily ferment with it; whereas it has no Effect on the other *Sal mirabile* made as above.

By the Aſſiſtance of *Robert Cay*, Eſquire, at *Newcaſtle*, I have received the ſeveral Shootings of Salts from their Bittern, as alſo ſome of the Bittern itſelf; from which I have obtained a pure *Sal Catharticum*, as alſo the like Kind of third Salt, as mentioned from the *Lemington* Bittern. The Method I took for doing it is agreeable to that I have already mentioned, and many Years ago tried at the Salt-Works near *Portſmouth*. It is by Mr. *Cay* that I am informed they ſometimes boil their Bittern, without letting it ſtand any Time to ſhoot of itſelf. The Difference is not very material.

If this Account be intelligible, what the *Sal Catharticum* is, will no longer be a Myſtery, and the next Thing worth the enquiring into will be, whether this Salt deſerves the Reflections that have diſcouraged the Preſcription of it? And why it may not paſs for a Salt as excellent in its Kind, and be of the ſame Nature, and have the ſame Properties, as that produced from the *Epſom*, or any other bitter purging Springs? Dr. *Grew*, in his Treatiſe, *de Natura Salis Cathart. Amari*, *Cap.* 2. ſays, that in the Evaporation of any of the bitter purging Waters, they yield a Cream at Top, as alſo a Sediment, both together weighing ſix, eight or ten Drams, from a Gallon of Water; and that the leſſer Part of this Sediment is, in Subſtance, the ſame with the Cremor; the reſt is all Salt, but conſiſts of two Sorts, one a muriatic Salt, the which is proper or peculiar to theſe Waters. In the *Epſom* Water, the muriatic Salt is about a twentieth Part of the ſaline Mixture; in the *Dukwich* it is in greater Proportion, and the ſame in ſeveral others; it is both in its acrimonious Taſte, and Figure of its Cryſtals, not unlike to common Salt. The other Salt is that which he ſays is particular or proper to the purging Waters, and is made by Evaporation and Cryſtallization. In this Preparation, firſt the earthy or plaiſtery Part is to be ſeparated, next the muriatic Salt, and laſtly a brown and dark Liquor from the proper Salt of the Waters. And in the fourth Chapter of the ſame Part, having ſhewn the Difference of the Figure betwixt the Cryſtals of this Salt and thoſe of Alum, he goes on, Neither is there any better Ground to account the purging Salt a Species of common Salt, from which being perfectly freed, it differs as much in Taſte as from Alum. And in the ſame Chapter, he ſays it will appear, the bitter purging Salt, altho' it hath ſome Qualities in common with other Salts, yet is truly, or ſpecifically different from them all. Thus far Dr. *Grew*.

Now I cannot ſee any thing in this Account, but what will, conſidering all things, very well agree with the Purging Salt from the Sea-Water: For, firſt, there is an earthy or plaiſtery Part contained in theſe Waters, and this muſt be ſeparated. The very ſame is in the Sea-Water, and is precipitated in the boiling them down, as has been obſerved, and by the Operators is called *Scratch*. Next there is a muriatic Salt allowed to be in theſe Waters; in ſome more, in ſome leſs; and this is alſo to be ſeparated. The very ſame is done from the Sea-Water, tho' in a vaſtly larger Proportion. And laſtly, there is a black and dark Liquor to be ſeparated. Tho' this is but an obſcure Way which the Doctor makes uſe of to expreſs himſelf, it cannot be better explained than by what has been found to be fact in boiling down the Waters at *Shooter's Hill*: That after ſeveral Shootings of Salts, by repeating the Boilings of the Waters, there would at laſt remain a Liquor of a deep brown Colour, which would no longer yield a cryſtallized Salt; but if boiled up dry, would afford a Salt of the ſame kind with the third Salt already mentioned. And this explaining Dr. *Grew*'s black and dark Liquor, helps at the ſame time to prove, in this Article too, that the Sea-Water affords the ſame kind of third Salt. I have tried ſeveral of the Experiments mentioned by the Doctor, by which he diſtinguiſhes his Salt from other Salts. Such as not affecting the Colour of Syrup of Violets; Curdling of Milk when boiled; in the Figure of its Cryſtals; in its eaſy Diſſolution in the ſame Quantity of Water; in its coagulating with the Oil of Tartar per Deliquium, in its Calcination; and in the Bitterneſs of its Taſte, as well before as after Calcination, *&c.* and find this Salt thus ſeparated from the Sea-Water anſwer to all the Trials. Some few Experiments, that the Doctor has not taken notice of, I ſhall here ſubjoin, and then leave the whole to the Opinion of better Judges, whether there is any ſpecifical Difference between thoſe two Salts.

In order to have a Standard for theſe Experiments, I purpoſely got Mr. *Hyet*, Apothecary at *Epſom*, (whoſe Fidelity I could depend on) to boil me down ſome of their Waters; which he did from the Well in the Town, and ſent me a ſufficient Quantity of the Salts, to anſwer the Purpoſe I wanted them for. I procured, alſo, ſome of the firſt Salts from the *Lemington* Bittern: Theſe do not hold ſo much of what I have already diſtinguiſhed by the Name of the third Salt, as I find the *Newcaſtle* Salts do. This *Lemington* Salt, I (for Diſtinction-ſake) call the firſt *Lemington* Salt. Part of this I diſſolved, and ſhot into pure *Sal Catharticum*, being freed as well from the Sea-Salt, as the third Salt; and this I call the ſecond *Lemington* Salt. I procured, alſo, from *Newcaſtle* the firſt Salt ſhot from their Bittern, which I call the firſt *Newcaſtle* Salt. Part of theſe I diſſolved and ſhot, and obtained a pure *Sal Catharticum*; and this is what I call the ſecond *Newcaſtle* Salt. I am obliged to make uſe of the *Sal Mirabile*, made from Oil of Vitriol, and common Salt, that having been taken for the *Sal Catharticum*, as alſo common Salt, that having been repreſented as the principal Subſtance of the *Sal Catharticum*.

I took half an Ounce of each of theſe Salts, and diſſolved them in about two Ounces of Water to each half Ounce of Salt. A ſmall Quantity of each Diſſolution I poured into as many Glaſſes, and dropped into them all ſome Butter of Antimony. The Precipitation that followed, ſeemed to be alike in them all; and upon dropping a little Oil of Vitriol into each, what was precipitated being more powerfully attracted by the Oil, the ſeveral Liquors became clear. Theſe are the two

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two only Experiments in which I found the Consequences so much alike in them all.

In the following Experiments, the *Sal Mirabile* is sufficiently distinguished from all the rest. Slices of Gall cut into these several Solutions have no manner of Effect upon any, except that of the *Sal Mirabile*, which is soon tinged of the Colour of Sack, or rather deeper. Spirit of Sal Ammoniac, with Tartar dropped into the several Solutions, turns them all milky, except that of the *Sal Mirabile*, which keeps its Transparency. The Spirit of Sal Ammoniac with Lime, the Oil of Tartar per Deliquium, the Tincture of Cochineal prepared with Spirits of Wine do every one, used after the same manner, sufficiently distinguish the *Sal Mirabile* from all the rest.

In the following Experiments, the *Epsom* Salt, the second *Lemington* Salt, and second *Newcastle* Salt, agree together, and differ from the common Salt, the first *Lemington* Salt, and the first *Newcastle* Salt. In the several Solutions I dropped a Solution of Silver in Aqua Fortis, from which followed these Consequences. The Solutions of the *Epsom* Salt, second *Lemington* Salt, and second *Newcastle* Salt, became equally milky, before the Precipitation. The Solution of the Sea-Salt, and first *Newcastle* Salt, let the Precipitation pass without receiving any milky Tinge. The first *Lemington* Salt, as holding less of the third Salt than the first *Newcastle* did, took a little milky Tinge. The Precipitation fell nimbly through the Solution of the *Sal Mirabile*, leaving it milky.

In the Condition these were in, I poured some Oil of Tartar per Deliquium to each of them; on which, after some time, a blueish Scum arose on the Surfaces of the *Epsom* Salt, second *Lemington* Salt, and second *Newcastle* Salt. There also appeared a little on the first *Lemington* Salt, but not on the rest.

A Solution of corrosive Sublimate was made in Water, ten Drops of which, mixed with the several Solutions, produced little or no Alteration; but upon dropping in the Oil of Tartar per Deliquium the following Appearances were produced: In the Solution of the *Epsom* Salt, second *Lemington* Salt, and second *Newcastle* Salt, the Precipitations were red; in the Solution of the common Salt, and first *Newcastle* Salt, the Precipitations were white; in the Solutions of the first *Lemington* Salt, the Particles precipitated approached pretty near the Colour of the three first.

I took some of these several Salts in Substance, and to each of them poured a little Oil of Vitriol, which is one of the Experiments Dr. *Grew* tried upon his Salt, and which he says causes a moderate Ebullition, whereby it appears to partake of an alcaline Principle: But without looking for this alcaline principle from its fermenting with an Acid, (Terms justly exploded by the learned Dr. *Freind* in his *Prælectiones Chymicæ*) I am inclined to believe, that the Salt in which he tried the Experiment had not, according to his own Directions, been thoroughly separated from his muriatic Salt. For this Oil poured on the *Epsom* Salt, second *Lemington* Salt, and second *Newcastle* Salt, produced no sensible Fermentation. On the Sea-salt it acts with Violence, forcing off its acid Spirit with an insufferable Gas. The same Effect in Proportion it had on the first *Lemington* Salt; none at all on the *Sal Mirabile*, as being a Sea-salt already satiated with the Oil.

What I have all along called the third Salt, answers in most of these Experiments to the Sea-salt, and yet has some Properties exceedingly different from it; to those I have mentioned, these may be added; it will decrepitate like Sea-salt; it readily melts, when put in a Crucible in the Fire; and when calcined till red hot, affords a Calx equal to, if not stronger than, a Lime-stone, and ferments violently, as well with Water as with Oil of Vitriol. This Calx, when exposed to a moist Air, will Part of it run per Deliquium; but not so soon as before Calcination. All these Properties differ in every respect from the common Salt, and leave me still in doubt what to call it, as also how far Experiments of this kind may be deemed conclusive. By Mr. *John Brown* Chymist, in the *Philosophical Transactions abridg'd*, Vol. VIII. P. 730.

THE METHOD OF PRESCRIBING THE BITTER PURGING SALT.

It may be taken in any Liquor agreeable to the Patient's Constitution or Palate. I often use the following Method:

Take of Spring-Water, two Quarts; Mace, a Dram; boil them a little, and in the Liquor dissolve such a Quantity of the bitter Purging Salt, as may be agreeable to the Constitution and Disease of the Patient; for an Apozem, to be drank hot, warm, or sometimes cold, in the Morning fasting, in the Space of two Hours, with a little Exercise. This Apozem may be either taken by itself, or in the Working of other Physic.

The Operation of the Salt may be quickened by the Addition of Sena and Manna in the following Manner:

Take two Quarts of Spring-Water; Mace, a Dram, *Alexandrian* Sena, two Drams or three; boil them a little; and then add an Ounce of the Salt; an Ounce and half or two Ounces of the best *Calabrian* Manna; and run the Liquor through a Sieve.

The Salt may also be safely taken thus:

Take three Pints and a half of Spring-Water; of the bitter purging Salt an Ounce, or ten Drams. Mix them, and when the Water boils, pour upon it half a Pint of new Milk, and strain the Liquor from the Curd.

The most proper Vehicle for this Salt in Summer is the *Tunbridge*, or any other chalybeate Water. For instance a Dram or a Dram and half of this Salt, taken in the first three or four Draughts of *Tunbridge* Water, and repeated for some Mornings, prepares the Humours, and clears the Way for the intended Course. The chalybeate Waters do sometimes bind; which Inconvenience is remedied, by putting a little of this Salt into the first or last Glass.

Every Draught of the Purging Waters themselves may be, also, usefully impregnated with a Dram of the Purging Salt; three Drams or half an Ounce of which is also extremely proper for sharpening Clysters.

TO QUICKEN A DECAYED APPETITE.

Take a Flask of Spaw-Water, or a Quart or three Pints of any other chalybeate Water; or if not to be had, of maced Water; of the bitter Purging Salt, half an Ounce, six Drams, or an Ounce; mix and drink them fasting.

TO STAY VOMITINGS.

Take of any chalybeate Water, three Pints or two Quarts; or instead thereof maced Water; of the bitter Purging Salt, six Drams, an Ounce, or ten Drams; mix them, and drink them fasting warm or cold. Repeat them thrice either every Day or every other Day.

IN THE PAIN OF THE STOMACH.

Take of the best Sena, two Drams; Mace, a Dram; boil them in a sufficient Quantity of Spring-Water, to three Pints or two Quarts; and to the strained Liquor, add six Drams, an Ounce, or ten Drams of the bitter purging Salt; of the Syrup of Steel, an Ounce and half; for a purging Apozem to be drank in the Morning after the usual Manner. Or it may be made without Sena.

IN THE HYPOCHONDRIACAL AFFECTION WITH HEAT.

Take of any chalybeate Water a Quart, three Pints, or two Quarts; dissolve in each Draught half a Dram, or a Dram of the bitter Purging Salt; drink it at seven or eight Draughts cold. Or instead of Chalybeate Waters, it may be taken in simple Milk-Water, or distilled from the Leaves of Borage and Burnet. The Salt may be, also, successively taken in this Manner for the Heart-burn.

IN THE COLIC.

Take of Spring or River Water seasoned with Mace, three Pints and a half; Chamomile Flower Water, or Mint Water, six Ounces; the bitter Purging Salt, an Ounce or ten Drams; Manna, an Ounce and half or two Ounces. Mix them for an Apozem. Let the Patient take about half a Wine Pint at a Draught hot, and all of it in an Hour, or an Hour and half, altho' he should vomit some Part of it. A Spoonful or two of the Tinctura Sacra may be taken before every Draught of the Apozem.

IN THE WORMS.

Mix a Dram or a Dram and half of the Salt with any Food commonly made for Children, without Milk.

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IN NEPHRITIC PAINS.

Take of Chamomile Flowers, a Handful; Cumine Seeds, ſweet Fenil Seeds, and Parſley Seeds, all bruiſed, of each an Ounce; Marſh-mallow Root ſliced and bruiſed, two Ounces: Boil them in a ſufficient Quantity of fair Water. To the ſtrained Liquor add half an Ounce of Turpentine, diſſolved in the Yolk of an Egg; of the bitter Purging Salt, half an Ounce; and Syrup of Marſh-mallows, three Ounces; mix them for a Clyſter. If the Pains are very great, add to the Clyſter forty or fifty Drops of cydoniated Liquid Laudanum.

If the Pains ſtill continue, Recourſe muſt be had to the following Apozem:

Take of the Decoction of Pearl Barley, ſeaſoned with Mace, three Pints, or two Quarts; ſix Drams, or an Ounce, of the bitter Purging Salt; Syrup of Marſh-Mallows, three or four Ounces: Mix them for an Apozem, to be taken hot, in an Hour, an Hour and half, or two Hours, although the Patient ſhould vomit Part of it.

This Apozem may alſo be uſed ſucceſsfully in an ISCHURY or HEAT OF URINE.

IN A DIABETES.

By this Salt, or the Waters, in conjunction with the conſtant Uſe of Chalybeate Waters, and Hypnotics, I have reſtored ſome, but indeed young Patients to perfect Health.

IN THE JAUNDICE.

In any Sort of Jaundice, with or without Stones in the Gall, the Purging Water or its Salt is very properly given in the following or other like manner:

Take of Pilula Ruffi, half a Dram; Rhubarb, and volatile Salt of Urine, each half a Scruple; Syrup of Wormword enough to make them into ſix Pills to be taken going to Bed. In the Morning following let the Patient drink this Apozem.

Take two Ounces of the Shavings of Harts-Horn; boil them in three Quarts of Spring-Water, to two: Then add Mace and Turmeric, each a Dram; and having boiled them a little, diſſolve in the ſtrained Liquor the bitter Purging Salt, and Syrup of Steel, of each an Ounce; for an Apozem to be drank as uſually.

IN MADNESS.

To quicken the Operation of purging Medicines, uſe the following Apozem:

Take of the Leaves of Baum and Borage, each a Handful; infuſe them in two Quarts or five Pints of boiled Spring-Water while it is hot, and let them ſtand in a Veſſel well covered for half an Hour. Add to the ſtrained Infuſion an Ounce or ten Drams of the bitter Purging Salt; of the Syrup of Violets, three Ounces. Mix them for an Apozem to be drank by itſelf, or with any convenient Purge inſtead of Poſſet-Drink. Or,

Take an Ounce of the bitter Purging Salt; diſſolve a Dram in a Draught of any chalybeate Water, and let the Patient drink eight ſuch Draughts.

The ſame Water or Salt may alſo be taken uſefully in the Intervals of other Purgations.

IN THE HEAD-ACH.

After Bleeding, and (if neceſſary) Vomiting, exhibit the following Medicines:

Take prepared Scammony, powdered Rhubarb, and Mercurious Dulcis, of each ten, twelve, or fourteen Grains; Syrup of Buck-Thorn, enough to make them into five Pills, to be taken at four or five o'Clock in the Morning, and let the Patient ſleep upon it. After three Hours let him drink this Apozem.

Take of Spring-Water ſeaſoned with Mace, three Pints or two Quarts; of the bitter Purging Salts, ſix Drams or an Ounce; Syrup of Violets, two Ounces. Mix and let the Patient take them by convenient Draughts, being kept warm in the Working.

Let the Pills and Apozem be repeated every third and fourth Day, and the Apozem by itſelf on the intervening Days, continuing this Courſe, if neceſſary, for a Fortnight or three Weeks.

IN THE MEGRIM.

With other proper Remedies, uſe the following:

Take of Pilula Maſtichina, two Scruples; Chymical Oil of Marjoram five Drops: Mix and take them going to Bed. Next Morning drink this Apozem.

Take of Spring-Water ſeaſoned with Mace, a Quart, or three Pints; the Water of Sage of Virtue, four Ounces; ſweet Marjoram Water, two Ounces; the bitter Purging Salt, ſix Drams; mix and take them in the uſual manner.

IN FITS OF THE MOTHER.

If a temperate Purge be neceſſary, uſe the Purging Salt diſſolved in Spaw-Water, or that of Baum.

IN THE WANDERING GOUT.

The Purging Waters or their Salt may be taken, with other proper Remedies, in the following manner.

Take of the Powder of reſinous Jalap, half a Dram; of prepared Scammony, ſix Grains; Calomel, half a Scruple; Syrup of Buck-Thorn, enough to make a Bolus, to be taken at five in the Morning, the Patient ſleeping upon it. After three Hours let him drink this Apozem.

Take of Pearl-Barley, an Ounce and half; Currants, three Ounces; boil them in Spring-Water, to two Pints and a half; adding, towards the End of the Boiling, half a Dram of Mace; in the ſtrained Liquor, diſſolve an Ounce of the bitter Purging Salt, and half an Ounce, an Ounce, or an Ounce and half of the beſt Manna, for an Apozem.

If the Patient is not eaſily wrought upon, let him take ſix Drams, or an Ounce of the Syrup of Buck-Thorn in the firſt Draught: And let the Bolus be repeated with this or the like Apozem, every other, or third, or fourth Day.

This Apozem is alſo excellent in ſome Sorts of Itch, not that which is contagious, but in that which proceeds from the Scurvy. It is likewiſe beneficial after the Small-Pox is ſhelled off, and with moſt Purges in the Room of Poſſet-Drink.

Thoſe who on a long Journey, eſpecially in Summer, are uſually coſtive, by two or three Drams of this Salt taken in a Draught or two of Spring-Water, will hereby keep themſelves ſoluble and very cool.

DISEASES IN WHICH THE BITTER WATERS AND THEIR SALTS MAY BE PREJUDICIAL.

In all Dropſies; in a continual Fever; in an Ague; the Green-Sickneſs; Spitting of Blood; Cholera Morbus; and the Palſy. Nor are they to be allowed to Women with Child, without great Circumſpection.

They may alſo prove hurtful in a Suppreſſion of Urine, which depends upon an Ulcer in the Bladder, or a Stone too big to paſs; in either of which Caſes the Patient is to abſtain from all Diuretics. But otherwiſe I have often given this Medicine ſucceſsfully; that is to ſay, in bringing away the Urine, and Stones with it not of the leaſt Size. *Grew on the Bitter Purging Salt.*

SAL CATHARTICUS HISPANICUS.

This is a Salt produced near *Madrid* from the Waters of a certain Spring, which ſpontaneouſly form themſelves in Cryſtals. It is a Salt of the neutral Kind, and in Properties exactly agrees with *Glauber's* Salt, and 'tis even obſerved to purge more gently, ſurely and copiouſly than *Epſom* Salt. *Al. Bullet. Mem. del Acad. Royal, An.* 1724.

SAL SEDATIVUM, Sedative Salt.

This Salt invented by Mr. *Homberg* is a perfect *Sal Solfatarum*, which ariſes in the Form of Flowers, or a Kind of white, light, dry Species of Meal, in the Diſtillation of a Solution of Borax and Oil of Vitriol, which contains a very ſtrong Acid. It neither alters the Colour of the Juice of Violets, nor acts ſenſibly on the Solution of corroſive Sublimate, nor upon the Solution

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Solution of Mercury by the Spirit of Nitre; it is a Salt very useful in Medicine, tho' it is only ſedative, that is, tho' it only alleviates the violent Paroxyſms of Fevers for ſix or ſeven Hours, during which Time the Phyſician may preſcribe more efficacious Medicines, which could not have been otherwiſe uſed. *Hiſt. de l'Acad. Royal, An.* 1732.

SAL POLYCHRESTUM DE SEIGNETTE. This Salt, which has been uſed in Medicine for many Years, takes its Name from Mr. *Seignette* a Phyſician of *Rochelle*, who invented it, and during his Life kept it a Secret, which he only tranſmitted to his Children, who in their Turn kept the Secret ſo inviolably that no Chymiſts have hitherto been able certainly to diſcover the Myſtery, ſome taking it for one, and ſome for another Thing.

The great Reputation of this Medicine, from its firſt Diſcovery to our preſent Times, induced Mr. *Boulduc* to attempt a Diſcovery of its Compoſition.

The firſt Experiment, ſays that Author, which I made with this Salt, was to put ſome of it upon a live Coal, upon which it became fuſed, bubbled, yielded a Smoke, and at laſt left a Coal-like Matter. But among all theſe Effects, what moſt engroſſed my Attention was the Smell exhaled from it, which could not well be miſtaken by Chymiſts, ſince it was the ſame with that of Tartar, or Cream of Tartar, which do not differ from each other. I did not confine myſelf to the Fuſion and boiling of this Salt upon the Coals, becauſe theſe are Properties common to many Salts; but taſting the Coal which remained, after all the Smoke was evaporated, I found that it made nearly the ſame Impreſſion on my Tongue with fixed and lixivial Salts.

Theſe two Properties, the Smell of burnt Tartar, and the lixivial Taſte, joined to its eaſy Solution in cold Water, made me at firſt ſuſpect that it might poſſibly approach to the Nature of ſoluble Tartar. But not ſatisfied with this Proof, which to me appeared ſuperficial, I proceeded to Diſtillation. Two Ounces therefore of this Salt, puſhed by the Fire in a Retort, yielded a ſufficiently clear Liquor, with a black Oil floating on its Surface. Upon examining both, I found the Liquor to be the Spirit of Tartar, and the Oil was what we call the empyreumatic or fetid Oil of Tartar. Then I diſtilled two Ounces of ſoluble Tartar, and the Produce was the ſame as in the preceding Diſtillation.

Hitherto I thought I had Reaſon to believe, that the Salt of Mr. *Seignette*, and ſoluble Tartar, were one and the ſame Thing, but at laſt ſome Circumſtances made me ſuſpect that they were different.

After the two Diſtillations now mentioned, I viewed the Reſiduums which to me appeared the ſame, ſince they were both a black, Coal-like, porous and rarified Matter, which I took for a calcined Tartar, and from which I could only obtain a fixed alcaline Salt. Accordingly, upon pouring Spirit of Nitre upon both, they both produced a Fermentation; however, the Reſiduum of the ſoluble Tartar apparently fermented much more briſkly than that of Mr. *Seignette*'s Salt, and carrying my Reſearches farther, I calcined both Reſiduums in an open Fire, and after having diſſolved them in Water, and filtrated them, I found in the Reſiduum of the ſoluble Tartar, a Taſte ſimply lixivial, and upon the Filtre a kind of Aſhes. But the Lixivium of Mr. *Seignette's* Salt had ſome Smell reſembling that of a rotten Egg; and when filtrated, had not the Colour of Water like that of the ſoluble Tartar, but a bluiſh Colour. Upon pouring diſtilled Vinegar upon this Solution, the Liquor became turbid, and after ſome Time, precipitated a white and apparently ſulphureous Matter.

But after all theſe Experiments, there was nothing certain to diſtinguiſh Mr. *Seignette's* Salt from the common ſoluble Tartar; and tho' I have had frequent Opportunities of converſing with the two Mr. *Geoffroys*, who frankly communicated their Sentiments on this Subject to me, I confeſs I always remained uncertain as to the Matter of which this Salt conſiſted, and for ought I know, might have done ſo all my Life, if my Friend Mr. *Groſſe* had not one Day opened my Eyes, by communicating to me what he had obſerved in making Experiments on the Salt of Kali; for he ſhewed me a Salt which gradually ſeparated or ſubſided from a Solution of that Subſtance, and which, tho' in Figure it reſembled *Glauber*'s Salt, yet it fermented with all Acids, and eſpecially very briſkly with mineral Acids, but more ſlowly with vegetable Acids, ſuch as Lemon Juice, Vinegar, and ſome others, and moſt faintly of all with Cream of Tartar. But however ſlow its Diſſolution with Cream of Tartar when cold was, yet it was in proceſs of Time perfectly diſſolved; and Mr. *Groſſe* added, that this Mixture deſerved to be examined by Evaporation and Cryſtallization.

I immediately laid hold of this Hint, and imagined that this Mixture would afford a new Species of neutral Salt, or ſoluble Tartar; and from that Time forth, I ſuſpected that Mr.

Seignette endeavouring to make a new Cream of Tartar, which, as is well known, is nothing elſe but Tartar rendered ſoluble by the fixed Alcaline Salt of the ſame Tartar, might have believed, with ſome other modern Chymiſts, that all alcaline Salts obtained from Plants by Calcination, are the ſame, and that the Fire leaves no eſſential Part of the Plant from which they are obtained; that conſequently one might be indifferently ſubſtituted for another, and at laſt, that according to this Principle, having eaſy Acceſs to the Salt of Kali, he could of it make his ſoluble Tartar; and that upon executing this Deſign, he had obtained from it a Salt, which was not found to be preciſely the common ſoluble Tartar, known for ſo long a Time, but a new Salt, or rather a new Species of ſoluble Cream of Tartar, to which he afterwards gave the pompous Epithet of *Polychreſt*, on account of the many good Effects it produced.

In this Opinion I remained for a long Time, without making any Trial whether it was really ſo or not, tho' I had frequently communicated my Sentiments to ſeveral Chymiſts upon this Subject.

But at laſt I reſolved to put the Deſign in Execution, which Mr. *Geoffroy* did at the ſame Time; and tho' none of us knew that the other was engaged in this Taſk, yet we both found preciſely the ſame Thing.

In order to make Mr. *Seignette*'s Salt, we take the Salt of the beſt calcin'd, whiteſt and hardeſt *Alicant* Kali, reduced to a Powder; of this we make a ſtrong Lixivium by boiling in Water, and filtrate the Lixivium, which is very tranſparent.

Then we take ſeparately ſome Cream of Tartar in Powder, upon which we pour this Lixivium, when warm. This Mixture excites a Fermentation, which laſts for a conſiderable Time, and which even after it has ceaſed, is renewed at certain Intervals. In the Time of this Fermentation, the Cream of Tartar is reſolved; after which there is a copious Precipitation of a ſpongeous and light Earth, which is to be ſeparated from the Liquor by Filtration. Then we evaporate this Mixture to the Conſumption of about a third Part. Then it is to be left at reſt in earthen Veſſels, by which Means, after ſome Days we find Cryſtals tranſparent like Cryſtal, which when diſengaged, and not ſupported by the Veſſels, are formed into Cylinders or Columns, which through all their Length have many flat Surfaces, above nine of which I have ſometimes counted, tho' they are not generally found in ſo great a Number.

In my Opinion, it is impoſſible exactly to determine the preciſe Proportion of the Salt of Kali, and the Cream of Tartar, ſince ſome Kinds of Kali contain a larger Quantity of Salt than others. But the moſt natural Way of finding this Proportion, is to diſſolve in the Lixivium as much Cream of Tartar as it will receive, that is, to the Point of Saturation.

A Lixivium of ſix Pounds of Kali generally abſorbs two Pounds and three or four Ounces of Cream of Tartar, and when the Kali is very white and richly impregnated with Salt, the Lixivium of ſix Pounds ſome times abſorbs an equal Weight of Cream of Tartar. This Difference, as we may eaſily conceive, can only depend upon the Quality of the Kali, according as it is more or leſs impregnated with alcaline Salt.

But when I took the Salt which ſubſided in the Solution or Lixivium of Kali, and the Configuration of which nearly reſembles that of *Glauber*'s Salt, half a Pound of this Salt diſſolved, eaſily received thirteen or fourteen Ounces of Cream of Tartar, and the Mixture precipitated ſcarcely any Earth. This is the juſteſt Proportion I can propoſe for the Subſtances which enter the Compoſition of Mr. *Seignette*'s Sal Polychriſtum. If we only wait for a ſhort Time, we have the Cryſtals of Kali, after which the Mixture is more equally made, and is not ſubject to the Precipitation of the different hetorogeneous Subſtances which the Kali communicates to the Lixivium.

In a Word, my Salt when formed into Cryſtals, and compared with that of Mr. *Seignette* alſo cryſtallized, was found to be preciſely the ſame in all Circumſtances; for they are figured like each other, are eaſily diſſolved in cold Water, when reduced to a Powder, have the ſame Taſte, and communicate a certain Coldneſs to the Tongue. When put upon a live Coal, they become fuſed and bubble, yield the Smell of burnt Tartar, and are at laſt reduced to a black and ſpongeous Coal, which yields Tartar.

If after this Examination, we ſhould doubt of the Conformity of this Salt with Mr. *Seignette*'s, we may be convinced of it by an Experiment, which makes a ſpeedy Decompoſition of it: For if we diſſolve equal Quantities of both Salts ſeparately in warm Water, and pour into each Solution Oil of white Vitriol, till its Action ceaſes, in Proportion as theſe Solutions become cold, a ſaline Concretion is formed, which when examined, is found to be true Cream of Tartar, in Cryſtals regenerated or ſeparated from the Alcali, whilſt the

Oil

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Oil of Vitriol is united with it, and afterwards by Cryſtallization, forms with it a *Glauber*'s Salt, in the ſame Manner as if this Oil had been poured upon the Lixivium of the Kali.

Mr. *Seignette*'s Sal Polychriſtum is therefore a Cream of Tartar rendered ſoluble by the Alcali of Kali. *Mem. de l'Acad. Royal des Sciences, An.* 1731.

SAL CORALLII. Salt of Coral. See CORALLIUM.

SAL CORUM CERVI. Salt of Hartſhorn.

SAL EX DUOBUS. A Name for the ARCANUM DUPLICATUM, which ſee.

SAL EBSHAMENSE. See SAL CATHARTICUM AMARUM.

SAL ENIXUM PARACELSI. See ENIXA.

SAL ESSENTIALE. An Eſſential Salt. See ACETOSA.

SAL FIXUM. A fixed Salt. See ALCALI.

SAL FLUOR. An acid Salt in a liquid Form, before it is fixed by uniting with a terreſtrial Subſtance. *Lemery*'s *Pharm. Univerſ.*

SAL FOSSILE. Sal Gemmæ.

SAL GEMMÆ. See SAL ALIMENTARIS.

SAL INDICUM. Sugar. See SACCHARUM.

SAL JOVIS. Salt of Tin. See JUPITER.

SAL LIXIVIOSUM. A lixivial Salt. See ALCALI.

SAL MARINUM. Sea Salt. See SAL ALIMENTARIS.

SAL MARTIS. Salt of Iron. See MARS.

SAL MEDIUM. A Neutral Salt.

SAL MERCURIALE. *Hartman* informs us, that this imports *Sal Ammoniac*. But ſome call Mercury Sublimate by this Name.

SAL MIRABILE GLAUBERI. *Glauber*'s Salt. See SAL ALIMENTARIS.

SAL NEUTRUM. A Neutral Salt. See NEUTER.

SAL NITRI. Nitre. See NITRUM.

SAL POLYCHRESTON. See NITRUM.

SAL PRUNELLÆ. See NITRUM.

SAL SUCCINI. See AMBRA.

SAL SULPHURIS. Salt of Sulphur.

Take of Sal Polychreſtum, four Ounces, powder it in a Glaſs Mortar, with a Peſtle of the ſame; put it into a flat wide-mouth'd Glaſs, and add to it of the Spirit of Sulphur two Ounces, ſtir them well together, and evaporate in a Sand Heat, which will leave a pleaſant acid Salt, which put up in a Vial for Uſe.

This is not, ſtrictly ſpeaking, the Salt of Sulphur, but Nitre fixed by Sulphur, and afterwards impregnated with its Spirit. It is diuretic, and if given in a large Doſe, cathartic, as moſt Salts. In the former Intention it is given from ten Grains to one Dram, in the latter up to four Drams, diſſolv'd in Broth, or any proper Vehicle warm.

SAL TARTARI. Salt of Tartar.

SAL THERIACALE.

The Ancients made Uſe of a Compound, which they call Salt of Vipers, or *Sal Theriacale*.

Dioſcorides deſcribes it, as made by burning a Viper in a new earthen Pot, with ſome Figs, common Salt and Honey, and when it was reduced to Aſhes, adding a little *Spica Nardi* or *Malabathrum*. *Pliny* adds nothing to the Viper, but the Juice of Fennel, and a Grain of Incenſe. But *Galen*, *Paulus* and *Aetius* deſcribe a much more compound *Sal Theriacale*. *Le Clerc*.

SAL VITRI. Salt of Glaſs, or Sandiver. See AXUNGIA VITRI.

SAL VOLATILE. A Volatile Salt. See AMMONIACUM, and ALCALI.

SAL VOLATILE OLEOSUM. See AMMONIACUM.

SAL URINOSUM. A Urinous Salt; that is, a volatile Salt, which riſes in the Diſtillation of Animals, and Vegetables, and ſmells ſomewhat like Urine.

Beſides the Salts above taken notice of, there are ſome very curious Salts mentioned in the Memoirs of the Royal Academy of Sciences; as the Salt of *Dauphiny*; the *Spaniſh* Salt; and the ſedative Salt.

SALT OF DAUPHINY.

This Salt was firſt of all accidentally diſcovered near *Grenoble*, the Capital of *Dauphiny*, by ſome Miners, who ſearching in ſome of the old metallic Mines, which as yet remain'd open, miſſed what they ſought for, but in its ſtead found an Earth impregnated with ſmall ſhining Subſtances, which ſome of them knew to be of a ſaline Kind. Thus imagining that they had found an Earth abounding with Salt Petre, they made a ſtrong Lixivium of it, and perceived, in the Evaporation of this Lixivium, Cryſtals, which bore ſome, tho' a very imperfect, Reſemblance to thoſe of Salt Petre.

But tho' the Cryſtals of this Salt had borne a greater Reſemblance to thoſe of Salt Petre than they did, it does not hence follow, that the former ought to be taken for the latter, if the other ſpecific and diſtinguiſhing Properties of Salt Petre were wanting; ſince the Configuration alone of any Salt does by no means aſcertain its Eſſence or Characters.

But in order the more effectually to diſcover what this Salt is, we ſhall conſider its external Properties, and the Principles or Elements of which it is compoſed.

This Salt then generally comes from *Dauphiny* in large Lumps, the inferior Part of which is about an Inch in Circumference, irregular, white, opaque, and pretty firm; whereas the ſuperior Part, which is about two or three Inches in Circumference, repreſents a Cluſter of ſmall, tranſparent, and ſhining Cryſtals, ſome of which are diſpoſed in flat Laminæ: But the greater Part are formed into oblong Squares, tho' ſo much interfering with each other, that they ſeem to have been prevented in the Configuration to which they had a natural Tendency; for there are very few of them which form ſmall Columns perfectly, conſiſting of four Sides.

This Irregularity and Confuſion is the Effect of too precipitate an Evaporation and Cryſtalization. But this Salt, in whatever State and Condition, is eaſily diſſolved in about an equal Quantity of common Water, is friable, and becomes tarniſhed by Heat, and in proceſs of Time by the Influence of the Air. It is eaſily melted on a live Coal, but does not become fuſed and take Flame like Salt Petre; for it only bubbles by means of the Water it contains, which being diſſipated by the Heat of the Fire, it is transformed into a ſaline Calx. This Salt, when taſted firſt, conveys a ſenſible Bitterneſs to the Tongue, which is ſoon ſucceeded by a Senſation of Cold.

By theſe Marks and Properties, tho' only external, we generally uſe to judge of the *Sal Mirabile Glauberi*, ſimilar to which is the Salt of *Dauphiny*, ſince it is poſſeſſed of the ſame Qualities. But that the Analogy, or rather Identity, of theſe two Salts may be the more effectually evinced, we ſhall enquire into their conſtituent and component Principles.

With reſpect, therefore, to artificial *Glauber*'s Salt, we certainly know that it conſiſts of a ſaline and an earthy Principle; the former is a fixed vitriolic Acid; and the latter, an Earth of Sea-Salt with which the Acid mixes and incorporates itſelf; ſo that the Salt of *Dauphiny* muſt have the ſame two Principles, in order to be entirely ſimilar to that of *Glauber*.

Tho' it would be ſufficient to prove the ſaline Principle of the Salt of *Dauphiny*, and deduce the other from it as a juſt Conſequence, ſince we are convinced that a vitriolic Acid can with no known Subſtance, except the Baſis of common Salt, form a Salt of the ſame Configuration and Properties which *Glauber*'s Salt ought to be poſſeſſed of, yet I ſhall not entirely overlook the ſecond or earthy Principle of the Salt of *Dauphiny*.

In order, therefore, to prove the true Principle of the Salt of *Dauphiny*, 'tis needleſs to obſerve, that by means of inflammable Subſtances, it is eaſily converted into a Liver of Sulphur, which in this Change can be nothing but a vitriolic Acid. Nor ſhall I inſiſt upon the Precipitations which it produces of Lead diſſolved in Aqua Fortis, or of Sugar of Lead diſſolved in Vinegar. I ſhall only confine myſelf to its Effects with Quick-Silver; and upon one Experiment made for this Purpoſe build another, in order to prove its earthy Principle.

I therefore diſſolve an Ounce of Quick-Silver in an equal Quantity, or a little more, of good Spirit of Nitre: I pour this Solution into five Ounces of the Salt of *Dauphiny*, diſſolved in common Water. Upon which the vitriolic Acid, contained in the Salt of *Dauphiny*, immediately abandons its earthy Baſis to the Spirit of Nitre, from which, as being the ſtronger of the two, it ſeparates the Quick-Silver; and after having intimately united itſelf with it, they both ſubſide to the Bottom of the Veſſel, in a yellow Powder like Turbith Mineral, which is commonly prepared with Quick-Silver and Oil of Vitriol.

After having removed this yellow Powder, which is really a Turbith Mineral, as we ſhall afterwards ſhew; and having waſhed and dried it, I mix an Ounce of it with two Ounces of well-dried Sea-Salt. This Mixture I puſh in a Sand-Heat, in a Veſſel whoſe ſuperior Part is very convex; upon which a new Scene appears, for the Acid of the Sea-Salt proves ſuperior, and in its Turn ſeparates the Quick-Silver from the vitriolic Acid concentrated in the Turbith, and riſing together to the Top of the Veſſel, they form a kind of ſublimate Mercury; whilſt the vitriolic Acid finding an Earth like that which it had abandoned to the Spirit of Nitre, and which in this Caſe is the Earth left by the Acid of the Sea-Salt, it joins itſelf to it, and remains with it at the Bottom of the Veſſel, in the Form of a ſaline Powder; which, when diſſolved in Water, regenerates a Salt perfectly ſimilar to that which I had employed to precipitate the Mercury, having the ſame Configuration of Cryſtals, the ſame Properties, the ſame Principles; and, in a word, the genuine Characteriſtic of *Glauber*'s Salt.

Thoſe who are ignorant of Chymiſtry may poſſibly be ſurprized

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prized at the different Changes which happen in these two Experiments: For in the former, which is the Mixture of the Salt of *Dauphiny*, with a Solution of Mercury, the vitriolic Acid contained in this Salt, enjoys its full Force. "For, almost on all Occasions, it is superior to other Acids; and according to particular Occurrences, separates "from them the Salts and Earths they contain. It, also, "so, separates from them their metallic Substances, as "it does in this Case with respect to the Mercury, which "the Spirit of Nitre had dissolved. It also forces this "Acid to yield to it, and is afterwards precipitated with it "into a Turbith Mineral." But a Circumstance apparently small produces a very considerable Change in the second Experiment, which is the Mixture of this Turbith with Sea-Salt. Chymistry, as well as other Arts, has Exceptions from its general Rules, one of which occurs in this Experiment, which is, "That every time that certain metallic "Substances are dissolved by any Acid, in which there is "Sea-Salt, or its Principle, or if these are added to the "Acids, they deprive them of their metallic Substances, be"cause they have more Analogy with these than with the "other Parts of such Acids. Perhaps this Analogy or Rela"tion depends on the mercurial Nature of these metallic "Substances." This Effect is, however, produced by the saline Principle of this Salt upon the Mercury; for it separates it from the vitriolic Acid, which kept it confined in the Turbith, and raises it along with itself into a Sublimate, leaving its Earth behind it, which Effect was in its Turn produced by the vitriolic Acid.

By these two Experiments the constituent Principles of the Salt of *Dauphiny* are rendered conspicuous: For it quickly precipitates Mercury into a Turbith Mineral, which can only be done by a vitriolic Acid. This Salt has, therefore, such an Acid for its saline Principle.

The Salt of *Dauphiny* must, also, for its other Principle, have the Earth of Sea-Salt: Because, as we have already observed, the vitriolic Acid cannot, without the Concurrence of that Substance, form a Salt possessed of such Properties, and such a Configuration of Crystals, as those of the Salt of *Dauphiny*, and which it has in common with the Salt of *Glauber*. This is confirmed by the second Experiment, where the vitriolic Acid of the Salt of *Dauphiny*, which was added to the Mercury, finding in the Sea-Salt an Earth similar to that which it had abandoned to the Spirit of Nitre, again forms with it a Salt crystalized in the same manner, and possessed of the same Properties with the first I employed.

Thus the Salt of *Dauphiny* has the same Principles with *Glauber*'s Salt, and is for that Reason a genuine *Glauber*'s Salt of the natural Kind, because Art contributes nothing to its Production; so that 'tis to be hoped a due Regard will in process of time be paid to this Salt, since it produces the same Effects on the human Body with a true *Glauber*'s Salt, and is perfectly possessed of all its Characteristics; which are, That it does not become moist in the Air; does not alter the Tincture of Tournsol and Flowers of Violets; and that itself is not altered by the Oil of Vitriol, like other Salts, which still retain some Portion of Sea-Salt. *Mem. del Acad. Royale des Sciences, An.* 1727.

1. SALAMANDRA Offic. Schrod. 5. 345. Aldrov. de Quad. Ovip. 639. Schw. Rept. 163. Gesn. de Quad. Ovip. 80. *Salamandra terrestris*, Raii Synop. A. 273. Jonst. de Quad. 137. *Salamandra terrestris maculis luteis distincta*, Charlt. Exer. 28. THE SALAMANDER, or QUENCH-FIRE.

The Salamander is a Species of Lizard, of a black Colour, mark'd with yellow Spots. Its Head and Belly are thicker than those of the common green Lizard, but its Tail is shorter. It has a sharp Snout and full Eyes. Each of its Feet is armed with four pretty big Claws, but it is much slower in its Pace than the common Lizard. On its Back is a Figure much resembling that of a Cross, and it is mark'd with two Lines, which reach from the Neck to the Tail. There are two kinds of Salamanders, the terrestial and the aquatic; the first is found in cold and moist Places, the other delights in Fountains and running Streams.

Salamanders are found in *Italy*, *Germany*, and in *Normandy*. It was formerly believed, that they could live in the Fire, because it was observed that they remained a longer Time in the Fire, without being consumed, than other Animals; because they are full of a lacteous and viscid Humour, which for some time diminishes the Heat of the burning Coals, but at length the Fire penetrates and burns them. The Bite of this Reptile is esteemed as dangerous as that of a Serpent. In Biting it discharges a lacteous, virulent, and very acrimonious Juice. It contains a good Quantity of caustic volatile Salt, Oil and Phlegm.

The Salamander is corrosive, burning and depilatory, being outwardly applied. It can hardly be touched without hurting the Fingers. *Lemery des Droguez.*

The Ashes of a Salamander are an excellent and effectual Cure for scrophulous Ulcers, being sprinkled on the Parts affected. *Schroder.*

2. SALAMANDRA AQUATICA. This is distinguished in the following manner:

Lacertus aquatitis, Offic. Schrod. 5. 343. *Lacertus aquaticus niger*; Mer. Pin. 169. *Salamandra aquatica*, Raii Synop. A. 273. Charlt. Exer. 28. Rondel. de Aquat. 2. 230. *Salamandra aquatica, aliis Lacertus aquaticus*, Jonst. de Quad. 137. *Scincus aquaticus quibusdam.* THE WATER EFT.

It is found in Fish-Ponds and standing Waters. The Powder of it is commended for facilitating the Evulsion, or Drawing the Teeth.

SALAPPA. Jalap.

SALCÆ OLEUM. Oil of *Salca*. The best Preparation of Oil of *Salca*, and as I prepared it in *Alexandria*, says *Aetius*, is in the following Manner:

Take of Aspalathus, half a Pound; of Xylobalsamum, nine Ounces; Cyperus, four Ounces; Elecampane, both Sorts of Iris, each half a Pound; Calamus Aromaticus, eighteen Ounces; Flowers of the Juncus Odoratus, two Ounces and half; of fat Storax two Ounces; two *Indian* Nuts; Malabathrum, eight Ounces; Spikenard, one Ounce; Cloves, Zedoary, each one Ounce and an half; Amomum, three Ounces; Casia, two Ounces; Castus, one Ounce; Myrrh, one Ounce; Hypnum (a Species of Moss) Xylocasia, each three Ounces; Oil, ten Sextaries. Then boil together in the Oil the Xylobalsamum, Iris, Cyperus, Elecampane, and Xylocasia, decorticated, grossly pounded, and macerated two or three Days in Water; stir them continually, instilling Water by Degrees, when they begin to grow dry. When they have boiled three Hours or more, take them off, and let them stand covered for a whole Night. The next Day take them out, and separating the Water from the Oil, boil them again in pure Water mixed with a small Quantity of Wine; and as soon as they begin to boil up, put in the Calamus, the Flowers of the Juncus Odoratus, all first steeped in old scented Wine. The third Day take them out in like manner as before, and adding more Water, boil them a third Time, putting in the rest of the Ingredients as soon as they begin to boil. They make a secondary Sort, which is done by adding six Sectarii of Oil to what remains after the third; and after boiling it a sufficient time, adding three Ounces of good white Myrrha Stacte; half a Pound of *Siroma* [Water of Opobalsamum;] half a Pound of Mastich; and an Ounce of good Storax. Oil of *Salca* is used by the Women to anoint their Heads, and what I have here given is by far the best Way of preparing it. *Aetius, Tetrab.* 1. *Serm.* 1.

Another Preparation of Oil of *Salca.*

Take of Oleum Omphacinum, twenty Sectarii; Iris Illyrica, one Pound; Amomum, one Ounce and an half; Aspalathus, Hypnum, each one Pound; Calamus Aromaticus, two Pounds; Cloves, Malabathrum, Carpobalsamum, each one Pound; Xylocasia, five Ounces; Casia, four Ounces; Costus, fat Storax, Saffron, each one Ounce; Myrrh, Zedoary, each three Ounces; Spikenard, four Ounces. Boil them all in Water, and manage them as it is directed in the former Preparation. *Aetius, Tetrab.* 4. *Serm.* 4. *Cap.* 114.

SALEFUR. Garden-Saffron. *Rulandus.*

SALEP. See ORCHIS.

SALICARIA.

The Characters are;

The Calyx is tubulous, striated, and multifid; the Flowers are rosaceous, hexapetalous, and grow out of the upper Incisures on the Inside of the tubulated Calyx, almost in a Series of Whorls, and are furnished with a Multitude of Stamina, sometimes no fewer than eighteen. The Ovary, which is adorned with a long Tube, that has an Apex shaped like a Bason, when ripe becomes an ovated, bicapsular Shell involved in the Calyx, and full of small Seeds.

Boerhaave mentions four Sorts of *Salicaria*, which are;

1. Salicaria; vulgaris; purpurea; foliis oblongis. *Tourn.* *Inst.* 253. *Boerh. Ind. A.* 221. *Raii Synop.* 3. 367. *Lysimachia purpurea spicata.* Ger. 386. Emac. 476. Park. Theat. 549. Raii Hist. 2. 1036. *Lysimachia spicata purpurea forte Plinii*, C. B. P. 246. *Lysimachia purpurea quibusdam spicata*, J. B. 2. 902. *Blattaria rubra spicata major, glabra, communis folio*

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folio acuto, Hist. Oxon. 2. 490. SPIKED WILLOW-HERB.

It grows in marshy Places, and by the Banks of Rivers, and flowers in *July*. The Herb, which is used in Medicine, is an Opthalmic. *Mont.* The distilled Water is a present Remedy for Wounds, Punctures and Sugillations of the Eyes, as well as Dimness of Sight and all other Infirmities incident to those Parts. *Park.* It is a Specific in Inflammations. *Raii Hist.* The Decoction of the Herb is an excellent Remedy for the epidemic Diarrhœa of *Ireland*. *Throk. Synop. Hib.*

2. Salicaria; purpurea; foliis subrotundis. *T.* 253. *Lysimachia, spicata, lanuginosa, folio subrotundo, flore purpureo.* H. R. Par. *Blattaria, rubra, spicata, major, lanuginosa, folio subrotundo.* M. H. 2. 490.

3. Salicaria; Hyssopi folio, latiore. T. 253. Lysimachiæ spicatæ, purpureæ affinis, hyssopifolia. H. L. 397. Hyssopifolia, major, latioribus foliis, C. B. P. 218. Hyssopifolia, aquatica, J. B. 3. 792.

4. Salicaria; Hyssopifolia; angustiore. *T.* 253. *Hyssopifolia, minor, angustioribus foliis.* C. B. P. 218. M. H. 3.613. *Boerh. Ind. Alt. Plant. Vol.* 1.

There has been no Virtue observed to belong to this Plant, tho' it be the *Lysimachia* of *Dioscorides*, and it only serves as an Ornament in Gardens, on account of its beautiful Flowers. *Hist. Plant. Ascript. Boerhaave*, p. 299.

SALICORNIA.

The Characters are;

It is aphyllous, smooth, succulent, and has the Appearance of Houseleek, consisting of Scales articulated box-wise. The Flower is apetalous, naked, and grows out of the Commissures of the Scales. The Fruit is a Vesicle containing one Seed.

Boerhaave mentions but one Sort of *Salicornia*, which is, Salicornia *Dod. p.* 82. *Salicornia, geniculata, annua.* T. Cor. 51. *Kali, geniculatum, majus.* C. B. P. 289. M. H. 2. 611. *Cali, geniculatum, sive Salicornia.* J. B. 3. 704. *Boerh. Ind. Alt. Plant. Vol.* 2.

A Decoction of the Leaves is very opening, provokes Urine and the Menses, accelerates the Birth, expels the Fœtus and Secundines, and purges watry Humours, whence it is of Service in a Dropsy. Its Ashes are used in making Soap and Glass; and being infused in Water, cure the Itch and all cutaneous Diseases, the Parts affected being washed therewith. *Hist. Plant. Ascript. Boerhaave.*

SALIVA.

By *Saliva* we mean in general, that Fluid by which the Mouth and Tongue are continually moistened in their natural State. This Fluid is principally supplied by Glands, called for that Reason Salival Glands, of which they commonly reckon three Pairs, two Parotides, two Maxillares, and two Sublinguales. These are indeed the largest, and they furnish the greatest Quantities of Saliva; but there are a great Number of other lesser Glands of the same Kind, which may be reckoned Assistants or Substitutes to the former. All these may be determined salival Glands, and they may be enumerated in the following Manner:

Glandulæ Parotides.	Glandulæ Linguales.
Glandulæ Maxillares.	Amygdalæ.
Glandulæ Sublinguales.	Glandulæ Palatinæ.
Glandulæ Molares.	Glandulæ Uvulares.
Glandulæ Buccales.	Glandulæ Arytenoidææ.
Glandulæ Labiales.	Glandula Thyroidæa.

The Parotides are two large, whitish Glands, irregularly oblong and protuberant, situated on each Side, between the external Ear and the posterior or ascending Branch of the lower Jaw, and lying on some Part of the neighbouring Masseter Muscle. The superior Portion of this Gland lies before the cartilaginous Meatus of the Ear, and touches the Apophysis Zygomatica of the Os Temporis; and it is extended forwards and backwards under the Lobe of the Ear, as far as the Mastoide Apophysis.

From the anterior and superior Portion of this Gland, a white membranous Duct or Canal is produced by the Union of a great Number of small Tubes, representing so many Roots. This Duct runs obliquely forwards on the Outside of the Masseter, and then perforates the Buccinator from without inward, opposite to the Interstice between the second and third Dentes Molares, where the Hole or Orifice represents the Spout of an Ewer.

This Canal is named Ductus salivalis Stenonis, or Ductus Superior. It is about the twelfth Part of an Inch in Diameter, and in some Subjects is partly covered by small glandular Bodies, united with it in different Quantities. The Arteria and Vena Angularis run up over this Duct, and the Portio Dura of the Auditory Nerve runs through the Gland itself; and it also receives Filaments from the second vertibral Pair.

The maxillary Glands are smaller and rounder than the Parotides, and are situated each on the Inside of the Angle of the lower Jaw, near the Musculus Pterygoidæus Inferior. From the Inside, or that which is turned to the Musculus Hyo-glossus, each of them sends out a Duct in the same Manner as the Parotides, but it is smaller and longer, and goes by the Name of Ductus Salivalis *Whartoni*, or Ductus Inferior.

This Duct advances on the Side of the Musculus Genio-glossus, along the inner Part and superior Edge of the Glandula sublingualis, to the Frenum of the Tongue, where it terminates by a small Orifice in form of a Papilla.

The Glandulæ Sublinguales are likewise two in Number, of the same Kind with the former, something oblong, and flatted like a blanched Almond. They are situated under the anterior Portion of the Tongue, one on each Side, near the lower Jaw, on the lateral Portions of the Musculi Mylo-Hyodæi, which sustain them. The two Extremities of each Gland are turned backward and forward, and the Edges obliquely inward and outward.

They are covered on the upper Side by a very thin Membrane, which is a Continuation of the Membrane that covers the under Side of the Tongue. They send out laterally several small short Ducts, which open near the Gums by the same Number of Orifices, all ranked in the same Line, at a small Distance from the Frenum, and a little more backward. In many Animals we find particular Ducts belonging to these Glands, like those of the Glandulæ Maxillares; but they are not to be found so distinctly in Men. The Musculi Genio-glossi lie between the two sublingual Glands, and also between the two maxillary Ducts.

The Molares are two Glands nearly of the same Kind with the former, each of them being situated between the Masseter and Buccinator; and in some Subjects they may easily be mistaken for two small Lumps of Fat. They send out small Ducts, which perforate the Buccinator, and open into the Cavity of the Mouth, almost over-against the last Dentes Molares; and from thence M. *Heister*, who first described them, called them Glandulæ Molares.

All the Inside of the Cheeks, near the Mouth, is full of small glandulous Bodies, called Glandulæ Buccales, which open by small Holes or Orifices through the inner Membrane of the Mouth. The Membrane which covers the Inside of the Lips, a Continuation of that on the Cheeks, is likewise perforated by a great Number of small Holes, which answer to the same Number of small Glands, called Glandulæ Labiales. The Glandulæ Linguales are those of the Foramen cæcum of the Basis of the Tongue.

The Glandulæ Palatinæ belong to the Arch and Septum of the Palate; the Glandulæ Arytenoidææ are described under the Article LARYNX. The uvular Glands are only a Continuation of the Membrane of the Palate, in form of a small Bunch of Grapes. We might likewise reckon among the salival Glands, those of the superior Portion of the Pharynx; and also the glandular Bodies of the Membrana Pituitaria of the Nares, and of the Sinuses that communicate with these.

The Amygdalæ are two glandular Bodies of a reddish Colour, lying in the Interstices between the two lateral half Arches of the Septum Palati, one on the right the other on the left Side of the Basis of the Tongue. Their Appearance is not unlike that of the Outside of an Almond Shell, both because their Surface is uneven, and because it is full of Holes big enough to admit the Head of a large Pin.

These Holes, which represent a Sieve or a Piece of Network, are continued to an irregular Sinus or Cavity within the Gland, filled commonly with a viscid Fluid, which comes from the Bottom of the Sinus, and is from thence gradually discharged through these Holes into the Throat. To see the true Structure of the Amygdalæ, they must be examined in clear Water, having first been washed in lukewarm Water, and handled very gently.

The Thyroide Gland is a large whitish Mass, which covers the anterior Convex Side of the Larynx. It seems, at first Sight, to be made up of two oblong glandular Portions, united by their inferior Extremities, below the Cricoide Cartilage, so as to resemble a Crescent, with the Cornua turned upward. It is of a moderate Thickness, and bent laterally like the Thyroide Cartilage from which its Name is taken. The two lateral Portions lie on the Musculi Thyro-Hyoidæi, and the Middle, or inferior Portion, on the Crico-Thyroidæi. The Thyro-Pharyngæi Inferiores send Fibres over this Gland, and they communicate on each Side by some such Fibres with the Sterno-Thyroidæi and Hyo-Thyroidæi.

This Gland seems to be of the same Kind with the other salival Glands, but it is more solid. Some Anatomists thought they had discovered the excretory Duct, but they mistook a Blood-Vessel for it. We sometimes meet with a Kind of glandular

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glandular Rope, which runs before the Cartilago Thyroides, and disappears before the Basis of the Os Hyoides.

This glandular Rope goes out from the common Basis of the lateral Portions of the Thyroide Gland, and is lost between the Musculi Sterno-Hyodæi, behind the Basis of the Os Hyoides, or between that Basis and the Epiglottis. There are likewise small Openings on the Side of the anterior Ligament of the Epiglottis, or that by which it is connected to the Basis of the Tongue. One of these Openings appears like a small Papilla; and this is the farthest that I have been able to trace the glandular Rope. *Winslow's Anatomy.*

The Saliva is a thin pellucid Humour, incapable of being concreted by the Fire, almost without Taste and Smell, and frothing much when shaken. It is an Humour of the glandular Kind, secreted from the pure arterial Blood: In hungry Persons it is fluid, acrid, and copiously discharged. And in those who have fasted long, it is highly acrid, penetrating and resolvent. In farinaceous and succulent Vegetables, it not only produces a Fermentation, but also augments one already begun. It is swallowed not only by Brutes, but also by human Creatures in a sound State, even when asleep. Too copious an Evacuation of it made voluntarily, produces Loss of Appetite, bad Digestion, and an Atrophy. It consists of a pretty large Quantity of Water and Spirits, and is, also, of a saponaceous Nature in consequence of a small Quantity of Oil and Salt it contains.

By Manducation, therefore, the Saliva is expressed and accurately mixed with the attenuated Food, which contributes, first, to the Assimilation of the Aliments to the Nature of the Body to be nourished; secondly, to the due Mixture of the oleous with the aqueous Parts; thirdly, to the Solution of the saline Parts; fourthly, to Fermentation; fifthly, to a Change of the Taste and Smell of the Aliments; sixthly, to an Augmentation of the intestine Motion; seventhly, to a momentaneous Relief from Hunger; and eighthly, an Application of the sapid Parts, tho' it is insipid itself.

The Saliva, therefore, which is in a curious and surprising Manner elaborated from the arterial Blood, and which, when discharged, is mixed with the Aliments, cannot on other Occasions be evacuated without bad Consequences; but after it is swallowed, has performed its Offices, and is corrected by a fresh Circulation, it assumes a better Quality, as is obvious from certain Disorders, the Remedies appropriated to their Cure, and their several Crises.

An excessive Evacuation of the Saliva disturbs the first, and consequently all the succeding Concoctions; induces Thirst and Dryness of the Parts; generates black Bile, and forms a Tabes and Atrophy. If the Saliva is not at all secreted into the Mouth, or secreted in a smaller Quantity than usual, the Manducation, Taste, Deglutition and Digestion of the Aliments, are hindered, and the Patient's Thirst is augmented. *Boerhaave Institut.*

SALIVALES DUCTUS. The Salival Ducts. See SALIVA.

With respect to these Ducts, Mr. *Monro* gives the subsequent Case in the *Medical Essays, Vol.* 2.

Mr. *Ker* of *Frogton*, a young Gentleman of a delicate Constitution, and threatened with a Consumption from an Ulcer in his Lungs, was seized, after riding in a cold Night, with a very hard Tumour about the Middle of his left Cheek, which the Gentleman who attended him, endeavoured at first to resolve; but observing a Suppuration to come on, it was opened with a Lancet on the Inside, and afterwards an external Orifice was also made, and Escharotics were applied to waste down the hard Stool of the Tumor that still remained. When no more Hardness was felt, his Surgeon endeavoured to incarn and cicatrize, but was disappointed by a constant plentiful Discharge of a thin clear Lymph. The Orifice was again enlarged, and it was dressed a considerable Time with Astringents and Dryers, in different Forms, but without any Success.

In *September* 1727, being accidentally in the Neighbourhood of *Kelso*, where Mr. *Ker* lived, I was sent for to advise with Dr. *Abernethy* and Dr. *Scot*, Physicians there, and with Mr. *Jamieson* Surgeon concerning his Cure. The external Orifice in his Cheek was as large as would have received the Point of my Thumb, and at the Bottom of it we could distinctly see some Part of the superior salivary Duct laid bare, with a Hole in the outer Side of it, large enough to allow the Bottom of a middle sized Probe to enter it; and when he moved his lower Jaw at our Desire, the Saliva ran out plentifully at that Orifice. When the Jaw was not moved, a very small Quantity of the Spittle ouzed out; but in Time of Dinner, it made a Napkin, laid eight Fold over the Plaister that covered the Ulcer wet all through.

We agreed to make an artificial Opening for the Saliva into his Mouth, which I did in the following Manner; having with two Fingers of one Hand stretched his Cheek outwards, I directed the Point of a large Shoe-maker's Awl, which I held in the other Hand, into the open Breach of the Duct, and thrust the Awl obliquely forwards, through the Cheek into the Mouth, betwixt my two Fingers; then drawing back the Awl, I passed an eyed flexible Probe, mounted with a small Cord of Silk, through the Passage made by the Awl, and brought it out between his Lips with my Fingers, leaving one half of the Cord hanging from the external Ulcer; then the Ends of the Seton being disengaged from the Probe, were tied loosely near the Angle of the Mouth; and his external Ulcer was dressed up with dry Lint kept on with a Plaister. He was desired to rinse that Side of his Mouth frequently with Brandy; and the Sides of the external Ulcer were kept from going out too fast, or turning callous, with the lunar Caustic. In less than three Weeks this Management had the desired Effect, of rendering the Passage in which the Cord was engaged, callous, (which the Looseness of the Cord, and the Want of Pain when it was drawed, plainly shewed;) when Mr. *Jamieson* took out the Cord, and healed the external Ulcer very soon. In a little Time I saw our Patient at *Edinburgh*, with a firm Cicatrice on the Part where the Sore had been.

This Operation is plainly directed by my Friend Mr. *Cheselden*, in these Words: "When this Duct is divided by "an external Wound, the Saliva will flow out on the Cheek, "unless a convenient Perforation be made into the Mouth, "and then the external Wound may be healed." None, however, of the chirurgical Writers whom I have looked into, give any Instance of this Operation having been formerly performed.

THE EXTIRPATION OF THE SALIVAL GLANDS.

Though many Methods have been proposed for removing scirrhous and indurated Glands in other Parts of the Body, yet the Method of extirpating the parotid and maxillary Glands, which are sometimes exceedingly tumified, and are connected with the larger Branches of the carotid Artery, has not hitherto been mentioned. What has been hitherto advanced in particular Treatises and Theses, with regard to these Glands, relates very little to their Extirpation; an Operation which has been reckoned by some very pernicious and extremely dangerous.

Nor can I altogether discommend this Opinion; for the Branches of the carotid Arteries passing through these Glands, are so large, that when they are wounded, the Patient may bleed to Death, unless attended by a skilful Physician or Surgeon.

Tho' the Hemorrhage may, in this Operation, be very large, yet it does not follow, that it never can be stopped by a prudent Physician; for whom it is not sufficient that he can relieve the Patient in slight Disorders, but he must also make Experiments where the Case is doubtful, or in the Opinion of some, desperate. And I have often had Recourse to this Method of Extirpation, when these Glands have been violently swelled, and severely indurated, even approaching to a carcinomatous Nature, after they had been treated by other Physicians with Digestives, Corrosives, and other Medicines.

In performing this Operation, it is necessary to be provided with a good styptic Liquor, Linnen Rags, much scraped Lint, a Puff-ball, thick Compresses of different Sizes, and a Bandage about six Ells long. Then let the Patient be placed in a Seat with his Face towards the Light, having his Head and Hands secured by Assistants. The Operator must next open the Skin above the Tumor, with a longitudinal Incision, and carefully separate the scirrhous or indurated Gland from the contiguous Parts with the Knife, and at last from the Arteries with which it is connected. The Blood then rushes out so profusely, that near a Pound will be lost before the Operator can lay aside his Knife and take up the Dressings. He must therefore immediately dip a Ball of Linen Rags in the styptic Liquor, and press it, also, upon the larger wounded Arteries. The Remainder of the Cavity of the Wound must be well filled with scraped Lint and dry Rags, and compressed with the Finger, then apply a large Piece of Puff-ball, with three or four thick Compresses; securing the whole with a proper Bandage. Thus, by Degrees, the Hæmorrhage will be assuaged, especially if the Patient be laid upon the Bed, and the wounded Part compressed for three or four Hours, by the Hand of an Assistant. But it is necessary to observe, that if the Tumor be extremely large, it may more easily be extirpated by a crucial Incision. The Patient must then rest in Bed for the three or four following Days, without loosening the Bandage, to prevent a fresh Hæmorrhage. That this Time is necessary, I not only know from the Nature of the Wound, but from Experience; for having performed the Operation on a Girl, she was impatient under the Stricture of the Dressings, which

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which I attempted to relax a little the next Day; but so violent an Effusion of Blood immediately ensued, that I thought her Life was in Danger, and I was obliged to make the Bandage tighter than before.

After the third or fourth Day, the Bandage and the Compress, filled with the fetid Blood, may be gently removed, being first softened with warm Wine, or Spirit of Wine; so much of the Puff-ball as is loose may also be removed, leaving every Thing that has a strong Adhesion. New Compresses, dipped in warm Spirit of Wine, or digestive Fomentation, such as Lime-Water, or camphorated Spirit of Wine, must be directly applied, and secured with the Bandage as before, but a little more relaxed, that the Patient may be able to take some Aliment, which was before impossible, or extremely difficult. The second and third Dressings must be performed only every other Day, and the rest must be renewed every Day, because the Wound will discharge much Matter. In every Dressing it must be carefully observed, that none of the Compresses, Puff-ball or Lint be removed, but what are quite loose; and when any of the first Lint comes away, the Wound must be again filled with fresh Lint, spread with some digestive Ointment, till all the Linf and Puff-ball come away spontaneously, which usually happens about the eighth or tenth Day. Then the Wound may be cleansed by some digestive Ointment, and incarned with a vulnerary Balsam; and the Cure may be completed with dry Lint, as in other Wounds. But it ought to be observed, in performing the Operation, to make the Wound behind the Cheek or maxillary Angle, that the Cicatrix may not deform the Face.

It is surprizing that *Garengeot*, who is so ample in other Parts of Surgery, and even bestows a Chapter on this Operation, should take no Notice of the Method of stopping the Hæmorrhage. He even asserts that there is no Occasion for any Remedies for suppressing the Effusion of Blood, in extirpating these Glands, or even indurated Breasts; because only a few Drops of Blood will be emitted in removing the largest of these Tumors; and that the Wound itself may be easily healed, by closing its Lips with a Suture. Hence, I think, it is evident, that in his general Doctrine he little regarded these indurated, parotid or maxillary Glands, or perhaps never saw the Operation. Hence we may see the pernicious Consequences of writing in general Terms, without Specifications of Exceptions. For it is certain, that whoever follows *Garengeot*'s Directions in this Operation, must unavoidably destroy the Patient by the Effusion of Blood, as happened to a Surgeon at *Jena*. This Case is related in the *Commerc. Lit. Norimberg. An.* 1733, where the Author adds this Observation, "That we may hence learn how much safer "it is to relinquish these Tumors than to extirpate them." This Remark, however, should not deter the skilful Surgeon from the Operation, which I have often successfully performed myself, without the Death of one Patient. I must however allow, that *Garengeot*'s Assertion may hold in the Extirpation of scirrhous Glands in most other Parts of the Body. Extirpations of this Kind we meet with in *Roenhuysen*, Obs. I. and in the Additions of *Tilingius* to *Scultetus*, published at *Leyden* in 1693.

As this Operation, however, is extremely dangerous, and often leaves a large Cicatrix, as these Tumors may sometimes be resolved by proper Remedies; this Method ought certainly to be tried first, rather than to proceed directly to Extirpation. For this Purpose, anoint the scirrhous Tumors daily with Oil of Bricks or of Soap, and a little Camphire, or with warm Oil of Amber, or of Juniper; apply over the indurated Part a Plaister of Diachylon, with the Diaphoretic Mercury of *Mynsicht*, or the Soap Plaister of *Barbette*, with Oil of Amber or Juniper, or the like proper Digestive; warm medicinal Bags will likewise be proper for this Purpose.

In the mean time, internal Medicines are not to be neglected; such as resolvent Decoctions of Swallow-wort and Fig-wort, which may be drank two or three times a Day, or taken in the Morning in Bed to raise a Sweat. Between these Draughts take every Day the Powders of burnt Sponge, Sal Gemmæ, Diaphoretic Antimony, or others of the like digestive Nature. Some prescribe as much bruised Lizards as will lie on the Point of a Knife. I have often found excellent Effects from the Æthiops Mineral and Mercurius Dulcis; tho' in the Use of these Medicines it is proper to exhibit Purges at proper Intervals. But if all these Remedies prove ineffectual, it may not be improper, if agreeable to the Patient, to proceed to a Salivation; which, according to *Agricola*, and other celebrated Physicians, has been very efficacious in discussing scirrhous Tumors in the Neck; and I have experienced its Virtues in some Cases.

But when a Scirrhus of this Kind is attended with an Inflammation, and resolvent Medicines prove ineffectual, it may be proper to bring the Tumor to Suppuration, and treat it like an Abscess. And I have known Instances, wherein Discutients have made these indurated Glands, and also other Tumors of the Neck degenerate into an Abscess. But when the Disorder is inveterate, emollient suppurative Medicines will turn the increasing Tumor into a malignant Ulcer, or even into a Cancer; and the same Effects are produced by the Application of Corrosives, which also occasion a great Effusion of Blood, and consequently Danger of immediate Death, as I had lately an unhappy Instance in a Person of Quality. *Heister*'s *Surgery*.

SALIVANTIA. Medicines which excite a Salivation.

SALIVARIS. Pellitory of *Spain*. See PIRETHRUM.

SALIVATIO. A Salivation. See MERCURIUS.

A copious and artificial Evacuation of the Saliva is indicated:

1*mo*, By Crises which tend that Way.

2*do*, By the particular Nature of a Disease, especially when lodged in the Glands and Membrana adiposa. But in no Case is it more indicated than in a Lues Venerea. And,

3*tio*, By the Nature of an epidemical Disease.

The Body is most commodiously prepared for a Salivation, by the previous, duly continued, and liberal Use of attenuating, diluent, lenitive, and warm Decoctions of scabious, Pellitory of the Wall, Burdock, China Root, Sarsaparilla, Sassafras and Sanders.

A Salivation is excited,

1*mo*, By washing the Mouth with certain Liquors.

2*do*, By the slow and protracted Mastication of some viscid Matter, such as Mastich, Wax, and Myrrh, especially if acrid Substances are mixed with these, such as Pellitory of *Spain*, the Leucanthemum Canariense Sapore Pyrethri, Ginger and Pepper.

3*tio*, By drawing into the Mouth acrid and irritating Vapours, such as those of Tobacco, Sage, Rosemary, Marjoram, Thyme, and Mother of Thyme.

4*to*, A Salivation is excellently excited by the Action of such Medicines as produce a gentle but long continued Nausea, such as Antimony, neither entirely fixed nor totally emetic, taken with a small Quantity of common Vitriol.

5*to*, By such Substances as totally dissolve all the Parts of the Blood, convert it into Lymph, and render it fit for a Discharge by Way of Saliva; such as crude Quicksilver, Cinnabar, a Solution of Quicksilver in Aqua fortis, white Precipitate, red Precipitate, Turbith Mineral, and sublimate Mercury dissolved. The Action of these Medicines is promoted by warm Fomentations applied to the Head, Neck and Face.

An excessive Salivation is lessened or stop'd:

1*mo*, By a large and continued Use of mild and tepid Drinks, such as Decoctions of Mallows, and Liquorice, in Milk and Water.

2*do*, By allaying the Impetus of the Humours by means of mild, oleous, and anodyne Emulsions, with a proper Addition of Diacodium or Opium. And,

3*tio*, By making a Revulsion of the Humours to other Parts, by any large Evacuation, especially that by Stool. But great Caution is necessary, lest the Impetus of the moved Matter, which in this Case is always acrid, should rush to other Parts, and produce a greater Danger; so that here the Caution of the Physician is necessary for the Safety of the Patient. *Boerhaav. Institut.*

It was no doubt owing to Chance that Mercury was discovered to be a Cure for the Pox, by Fluxing. But the Discovery, that it had such a Power of Fluxing, was not made at the same time. For *Guido* recommends an Ointment, which he calls the saracenical Ointment, for the Scabies, which *G. Forella* says, throws out the Humours by the Mouth. Now *Guido* wrote in 1363, long before the Pox was known in *Europe*. Besides, it is plain that this Property of Mercury was known to *Theodoric*, and even by the Way of Unction; for he describes several Sorts of these Ointments, lays down the Rules, how often, and how long, the Unction should be continued, till the Flux rises. The Humour, he says, will flow out at the Mouth like a River; and this Method he knows to be attended certainly with Success, in the Malum Mortuum and Scabies. This Author wrote soon after 1252.

These mercurial Applications were taken from the *Arabians*. *Rhazes* and *Avicenna*, and the rest, prescribe them in cutaneous Affections, without any View or Apprehensions of Fluxing. *Alsaharavius*, who was later, seems to have a Notion of this Effect; for he treats of the Cure, when the Mouth, the Tongue, and the Throat were swelled, attended with Corrosion, and great Stinking, from mercurial Unctions.

The first Instance we have upon Record, of a Salivation being recommended, is in *Joh. de Vigo*, who wrote in 1518. He says there is nothing to be done in the Pox, but to use mercurial Unctions, which, by Salivation, cure it in a Week. The famous *Jacobus Carpus*, or *Berengarius Carpensis*, who was in great Reputation in the Beginning of this Century, is supposed

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supposed to be the first who was Master of this Secret. Perhaps *J. de Vigo* might have learnt this Way of Unction from him. Indeed *G. Torella*, Physician to *Cæsar Borgia*, and to Pope *Alexander the Sixth*, afterwards made Bishop of St. *Justa* by that Pope, mentions mercurial Unctions, but condemns them as pernicious; and takes notice how many Persons ignorant Quacks had killed by this Practice. *G. Torella* practised about 1498.

Fracastorius recommends mercurial Unctions and Fumigations of Cinnabar. Some time after *Aloysius Lobera*, a *Spaniard*, in a Treatise of his upon the Subject of the Pox, delivers the Method of Unction with great Exactness; orders the Room to be kept close and warm, and the Patient not to shift; and that the rubbing in of the Mecury should be continued till the Salivation comes on well, and the Symptoms abate. But the Time this may take up is undetermined. *Nicolaus Massa*, one of the best Anatomists of his Age, succeeded these Writers. He says the most secure and certain Method of curing the Pox, is Salivation; which may be done safely, even in Children, and Women with Child. He gives several Forms of Unctions, the Basis of all which are Lard and Mercury. He lays down Rules for preparing the Body, and guarding it against all Inconveniencies, and ill Accidents which may happen both during the Course and after it. He observes, that the Humour sometimes runs off, not only at the salivary Glans, but by Stool, Urine, or Sweat; and that not seldom with Success. He uses this Method of Unction sometimes for thirty-seven Days; continuing or intermitting it by Intervals, as Circumstances require. *Brasavolus* wrote in 1551. He has no new Instructions in him. *Fallopius*, his Scholar, read Lectures upon this Subject, about the Year 1555. He is the first who is particular in some Points relating to Salivation, either as to the Quantity of the Discharge, or the Length of the Course. The Measure he mentions is from seven to ten Pints a Day; and though sometimes ten Days, or thereabouts, be a sufficient Time for the Flux to continue, yet there are Cases, where he thinks it may be proper to prolong it, till the twentieth. However, he thinks this Method ought never to be attempted but where Sarsa and Guajacum fail. *Freind*'s *History of Physic*.

THE METHOD OF RAISING A SALIVATION BY FUMIGATIONS.

The Patient being first duly prepared, is placed naked in a proper Chair, or Stove; and small Pieces of Cinnabar, to the Quantity of two or three Drams, being thrown upon live Charcoal, the Steam is received through the Pores of the Skin. The Patient grows soon very warm, and sweats more or less, in Proportion to his Strength. This Operation is repeated every Day, or every other Day, till the Gums begin to swell and ulcerate, and the Spitting rises to a sufficient Quantity.

Some prefer Plaisters to Ointments; and it is certain, that the Effects of them are slower and milder. They are applied to the same Places, and with the same Precautions as the Ointment. (See below.) Others are of Opinion, that a Salivation is most safely raised, and afterwards either increased or diminished, as the Physician shall judge the Patient's Strength to require, by the internal Use of the mercurial Panacea: And it must be owned, that both Fumigations and Ointments are hazardous and uncertain; for Fumigations sometimes affect the Head, and produce direful Symptoms; and Ointments raise sometimes too great a Salivation, sometimes none at all; because a greater or smaller Quantity of the Quicksilver enters the Blood, according as the Pores of the Skin are wider or narrower; and this can never be known but by the Event. But the Usefulness and Excellence of the Panacea consists in this; that being given at first in small Doses, the Quantity of it may be encreased at Pleasure, till the Patient spits the Quantity required; and this Quantity is either encreased, diminished or continued the same at the Pleasure of the Physician, without any Fear of Danger. The other Methods of Salivating are not, however, altogether to be rejected; for it is sometimes necessary to mix them with the Use of the Panacea, which being slow in its Operation, the Ointment is to be used once or twice in some Cases, to bring the Spitting speedily to the desired Pitch. In Persons, therefore, of a very strong Constitution, the Salivation ought to be raised by Unction, and afterwards kept up by the Panacea; but in weak Habits the Panacea alone is to be depended on, or, at least, with the Assistance of only a few Plaisters. In Cases of violent continual Pains, Nodes, or Exostoses, Plaisters are, also, to be applied; as in the pocky Itch, Herpes, Ulcers, Scabs or Pustules spread over the Body, Ointments are most proper. Lastly, Fumigations are usefully mixed with Unction, or with the Panacea, when there are Ulcers, Verrucæ or Condylomata in the Pudenda or Anus.

THE METHOD OF SALIVATING BY THE PANACEA.

The Patient is first to be let Blood once or twice, according to his Strength and the Fulness of his Vessels. The Day after the last Bleeding he ought to take a purging Potion, and at a proper Distance of Time, as two Hours or more, four Grains of Tartar Emetic, dissolved in weak Broth. The next Day he should go into a warm Bath, and repeat Bathing once or twice a Day for six or seven times.

By these Preparations the *Primæ Viæ* are cleared of their gross Contents, the Vessels are relaxed, the Blood circulates more clearly, the Juices become more fluid, and the solid Fibres softer, or less rigid. We ought, however, to take Care not to weaken the Patient too much, by Bleeding or Bathing, lest he be unable to bear a due Salivation; neither are Cathartics to be repeated, because they retard the Spitting: For though Venereal Diseases may be cured by Purging, yet Salivation is much more safe.

The Patient's Body being thus prepared, the next Day after his last Bathing, he ought to take ten Grains of Panacea in the Morning, and five in the Evening; the second Day fifteen Grains in the Morning, and eight in the Evening; the third Day twenty Grains in the Morning, and ten in the Evening; the fourth Day twenty-five Grains in the Morning, and fifteen in the Evening; and thus the Dose may be increased every Day from five to ten Grains, till the Quantity spit in twenty-four Hours amounts to three or four Pints; or the Evacuations by Stool are proportionable to that Quantity. No more Panacea is from thence to be given, except the Evacuations begin to lessen before all the venereal Symptoms disappear. In that Case, Recourse must again be had to the Penacea, beginning with the same Dose which the Patient took last, and continuing it till we are assured of a perfect Cure. If, after the Panacea is left off, the Salivation should increase, a Cathartic ought immediately to be thrown in, and frequently repeated at small Intervals. If, during the Salivation, a Looseness should happen with violent Gripings, and a Dysentery be apprehended, detergent, lenient, and strengthening Clysters are to be exhibited. During the whole time of the Cure, the Patient's Nourishment ought to consist of Broths, Eggs, Panada, and other Spoon-meats, but of nothing solid.

The Panacea ought to be given in some proper Conserve, drinking a Draught of Broth after each Dose; and for three or four Hours afterwards no kind of Nourishment should be given. When the Effects of the Panacea are quite over, the Patient ought to be purged two or three times, and then use a Milk Diet for a considerable time.

Nothing can be with Certainty fixed concerning the Quantity to be evacuated in a Salivation: For after the most copious Evacuations, some Patients have remained uncured; whereas others have been perfectly restored after a very slight Course. This, therefore, must be left to the Judgment of the Physician; as also, whether the Patient has Strength to go through a Salivation, when the venereal Disease is complicated with others. Thus, in a Constitution inclining to a hectic Fever, where the Blood being already too much dissolved, passes out of the Body in profuse Sweats, the Mercury, by dissolving it still more, would undoubtedly evacuate it by all the Emunctories of the Body, and Life along with it. In scorbutic Affections, though the Juices are said to be viscid and concreted, yet the Use of Quicksilver has often been fatal; because, as in these Diseases, the Salts in the Fluids are in greater Quantity and more caustic, than in those of the venereal Kind, yet their Force and Energy is much weaken'd by the Lentor of the Fluids; but, if by the Use of Quicksilver this Lentor is taken off, and the Juices made more fluid, the saline Spicula then prove greatly detrimental to the tender Membranes, by pricking and tearing them to Pieces; whence follow those intolerable Pains, Hæmorrhages, Inflammations and Exulcerations, which arise from taking Mercury.

Quicksilver is said to be a great Enemy to the Nerves, being thought to bring on Weakness, Tremblings, and Palsies; but these Symptoms are not to be attributed to Quicksilver, so much as to the injudicious Use of it: For by giving it in very small Doses, the coagulated Humours are unequally dissolved, so that the concreted Portions which still remain, being hurried along by the more fluid Parts, enter the smallest Canals of the Body, and there stick and form Obstructions; which gradually increasing, both in Strength and Number, the Tone of the solid Parts is weakened and destroyed.

It has been often asked, on what the salivating and antivenereal Virtue of Quicksilver depends. To explain this, some have, without Ground, had Recourse to Acids and Alcalies: But in the Cure of Venereal Diseases, this Medicine acts

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acts neither as an Acid, nor as an Alcali, since it produces the same Effects, whether it be mixed with acid Salts, or be conveyed into the Blood perfectly crude and unmixed, as by Friction and Fumigation. Neither is their Opinion probable, who say that the venereal Poison is an Acid, since the Saliva of those affected with this Disease discovers no Signs of Acidity; but on the contrary, shews itself to be of an alcaline Nature, by turning Syrup of Violets green, raising an Effervescence with acid Liquors, and by corroding Copper. We are not, therefore, to imagine, that Quicksilver acts like an Absorbent or Alcali, by sheathing the acid Parts of the Poison, for other Absorbents would better answer that Intention. It is more probable, that all the Virtues and Energy of Quicksilver depend on two Qualities, its great Divisibility, and the spherical Figure of its Particles; by which it is enabled to penetrate the most inward Recesses of the Body, insinuate itself between all Parts of the Blood and Serum, and divide all Concretions found therein; not only by preventing their mutual Contact, but by increasing their Fluidity; a small solid Sphere being interposed between each two larger Molecules of the Juices. Again, as these Molecules stagnate at the Orifices of the very small Vessels, with the Globules of Mercury between them, they are fully exposed to the Force of the Solids, and of the circulating Fluids, and thereby divided and broke to Pieces, so as to be capable of passing through the smallest Canals of the Body.

Now, when we consider those Emunctories of the Body, which are capable of transmiting a thick viscid Lymph, we find them all reducible to the intestinal and salival Glands; for those of the Kidneys and Skin give Passage only to the finer Parts of the Lymph, because of the Smallness of the Vessels of which they are composed. And, hence it is, that sudorific Medicines have not a sufficient Effect in venereal Complaints, because they drive through the Pores of the Skin only the thinner Parts, leaving the more thick and viscid behind, which they cannot dissolve; but the salival and intestinal Glands are capable of secreting these more concreted Parts. Therefore, on taking Mercury, both or either of these Emunctories transmit this viscid Lymph, according as it is found in the Body in greater or smaller Quantities. This Excretion is made most commonly and most copiously by the salival Glands, because they are the most exquitsitely sensible. But when the Lymph to be evacuated is very acrid, and capable of irritating and stimulating even the intestinal Glands to a sufficient Deegree, it passes off, also, by these; so that the Determination of this Lymph to both, or to either of these Emunctories, depends on its Acrimony; and for this Reason it is, that when the Irritation of the intestinal Glands is very much encreased by a Cathartic Medicine, the Excretion is principally made that Way, and the Salivation decreases, or may be totally stopped. *Geoffroy.*

There are many ways of raising a Salivation, and all by Mercurial Preparations. The Preparations which I have used myself, says *Turner*, as the safest and most commodious, are Calomel and *Mercurius Dulcis* six times sublimed, given inwardly, in the milder Pox; or the same being faster radicated, and got into the Bones, the crude Mercury externally, in the way of Unction.

The *Mercurius Vitæ*, *Arcanum Corallinum* with the red, yellow and green Precipitates (however in Use with some) I think too churlish, and scarce safe for tender Constitutions; nor indeed can I see any Reason for their Use, whilst we have better and less hazardous Medicines to supply their Room.

In salivating by the internal Method, to an adult Person, of a tolerably good Habit, as to his Strength, and who has not been much used to the Medicine, I generally give fifteen Grains of Calomel with a little Conserve of Roses in the Morning, and the like Dose in as much of Diascordium without Honey, at Night, which I prefer to the larger given once, or, as customarily, twice a Day; because it is now less liable to run suddenly through them, or too hastily sublime, and endanger them that way, by the Inflammation. Besides, in this gradual way of proceeding, it comes on more certainly, easily, and also more securely to the Patient; the Effect of each Dose affording Opportunity of foreseeing readily, what more be requisite, and when you must intermit, if not entirely forbear its farther Exhibition. I know a Physical Writer hath lately acquainted us, that we are each time to double the Dose of Calomel; as for the first, fifteen Grains, for the second half a Dram, for the third a Dram, and so till the Spitting comes on; but I would advise, that no Person take this Author for his Guide in this Affair, lest inadvertently he destroy his Patient, together with his own Reputation.

After three, four, or five Days of this Management, we usually observe the Fauces to enflame, the Inside of the Cheeks to become tumid, or high and thick, being ready to fall in betwixt the Teeth, upon shutting of the Mouth; the Tongue looks white and foul, the Gums also stand out, the Breath stinks, (which is a favourable Omen of its coming on) and in general, the whole Inside of the Mouth appears shining, seems as it were parboiled, lying in Furrows, as it appears, after strong Spirits have been retained in the Mouth. They now begin to refuse their Nourishment, while the Tongue, Gums and Cheeks are swelled, and so sore that they cannot chew, especially solid Food, but must be now content with Liquids and the softer Aliments. Besides, they are often sick at the Stomach, and frequently puke, or bulk up a thin Phlegm, another promising Forerunner of a good Salivation, when the Pukes are moderate and easy, and come by Intervals. But if attended with *Cardialgia*, or violent Pains and Torture at the Stomach, perpetual and incessant Reachings, Fainting and cold Sweats, nothing is more dangerous.

The Inside of the Mouth beginning to appear thus whealed, you may expect soon after to find it ulcerated, especially about the salival Glands; and then it may be proper to desist for a Day or two, if not give over, that you may the better observe the Increase of the Ulcers, what Sloughs are likely to be raised, and of what Depth and Dimension they are like to prove; from which a near Conjecture may be made, of the Duration as well as Quantity of the Spitting, now begun; the Consistence of the effluent Lymph, being at the same time considered.

When the Salivation is thus raised, the Patient ought to be encouraged to proceed chearfully; and to be sometimes refreshed with a little mulled Wine, of what Sort he likes best; but Red is preferable, if there be any Tendency to a Diarrhæa, adding a third, and sometimes one half of Water. Let his Diet be a small Chicken Broth, Water-Gruel and Panada; his Drink a small Sack-Whey, or Posset-Drink, with a Draught of good Small Beer and a Toast between whiles: But in Gripes or a Looseness, the white Drink, prepared of calcined Hartshorn, or Rice-Water; also the Decoction of the Shavings of Hartshorn and Ivory, boiled with a Crust of Bread, and sweetened to the Patient's Taste, are to take Place of the rest.

Thus having given him some few Days Respite, if after the coming on of the Ptialism, you find him hearty, and his Chops but moderately swelled on the Outside, and not very sore within, the Ulcers not increasing, and few or no Sloughs appearing, the Flux also inconsiderable in Quantity, you may now again give him a Scruple of Calomel in Diascordium, as he goes to Rest, repeating the same for two or three Days following, as you find Occasion.

When in this Way he has taken about half an Ounce of Calomel (tho' there is seldom Occasion to go so high) with but little Alteration as to the Swelling or Soreness of his Mouth, and as little Appearance of the Ptialism; his Pulse and other Circumstances, with respect to any ill Symptom attending, favouring the same, he may be vomited with eight, nine, or ten Grains of the Turpeth Mineral by itself, only made into a Bolus with Conserve of Roses, or farther mixed up with half a Scruple, or fifteen Grains of the Calomel, encouraging the Operation with small Draughts of common Posset-Drink between whiles, upon each Motion to reach; but without loading his Stomach, as is customary in other Emeticks, lest happening to run downwards, it invert the Order or Course of its intended Operation. The same Vomit, if found requisite, may be repeated two or three Days after, which at these Times often answers our End, by raising the Humours towards the Jaws, and forwarding the Salivation much more effectually, than more Doses of the Calomel, simply repeated, would have done; and if, after this, it should so happen, as in spite of all Endeavours to the contrary, it sometimes will, whether from some singular Idiosyncrasy, the Tenacity of the Lymph, or some Defect in the glandular Secretion, that the Spitting will not rise to any Quantity, notwithstanding the Tumefaction, Inflammation, Stench and Putrefaction, and sometimes Ulceration also in the Patient's Mouth, you must forbear and purge it off. The Relief of the Patient must now be attempted some other Way, as by giving Calomel once or twice a Week, and purging it off again next Day, or two Days after; and on the intervening Days, direct some other antivenereal Specific, such as the alterative Pill of Gum Guaicum, diaphoretic Antimony, and the Æthiops Mineral, with a good strong Decoction of the Woods, well chosen and energetic, suiting also with the Temperament of the Patient; as, if cold and phlegmatic, the Scobs of Guaiacum; if hot and dry the Sarsaparilla and China Roots; which, however slighted by some as insignificant, yet observed with a strict Discipline, as to the other Non-naturals, have certainly very great Advantages attending them, as well perspiring the noxious Particles, and drying up the superfluous Serum by the one, as contemperating the acrid and sour Juices by the other. By this Method, duly prosecuted, tho' it may be somewhat longer, the Purpose may be at length effected, which by the former

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former was not to be obtained. Some have remarked, that those Persons who are purged with great Difficulty, are with great Difficulty salivated; which may arise from the same Cause, the Toughness of the Humours, and slower Secretion. Altho' in the Evacuation downwards, we often find thin, choleric, and dry Bodies, are more easily moved by Lenients, as common Oil, Manna, Jenitive Electuary, Cassia, Diaprunnum, even a Bit of fresh Butter, or fat Broth, than by stronger Purgatives of Scammony, Colocynth, and the like.

When the Ptialism proceeds successfully, it may be left to take its Course, till it declines spontaneously, which, in Proportion to the Ulcers or Thickness of the Sloughs about the Parts of the Mouth, may happen at the Expiration of one and twenty Days, or sometimes a Month from the Time of its first Rising, which is usually long enough to subdue this Disease, after it is confirmed. I said, from the Time of its rising, or spitting perhaps a Pint and a half a Day, till it comes to three, four, or five Pints, in twenty four Hours, and so gradually goes off again; for often the first four or five Days, and sometimes a whole Week, is spent in bringing it to the first Proportion.

Besides, this Way of salivating by the Calomel, in the more stubborn and rebellious Pox, attended not only with cruel nocturnal Pains, Gummata, Tophs and Nodes, but also rotten or foul Bones; where the Patient has been long used to the taking of Calomel, or a like mercurial Preparation internally, and has perhaps been often salivated by such Preparations to no Purpose, it is better to attempt the Cure by salivating with the Unction, in which little Regard is to be had as to the Choice of the Ointment with which the Quicksilver is to be incorporated, since the Stress is entirely laid on the Quicksilver. In this Method, as well as in the other by Calomel, Care must be taken not to proceed too hastily.

If you have one Ounce of the Quicksilver to three Ounces of *Axungia* (which is the Proportion I have usually observed) about an eighth Part may be used Night and Morning; letting the Patient rub it gently with his own Hands, into his Limbs before the Fire, beginning from his Ancles up his Shins to his Knees, all round his Joints; and so to his Thighs, which are presently after to be covered close up with his Yarn Stockings and Flannel Drawers; then let him use the Remainder of this eighth Part about his Elbows, and so to his Shoulders, wiping his Fingers and Hands clean about the Glands of his Armpits, or those of his Groin: His Body being all the while defended from the cold Air, by a Screen or Blanket hung behind him, and after wrapt up warm in his Flannels, as he must also be in the other Method of salivating, such I mean as a Flannel Shirt or Shift, Waste-coat and Drawers, a Cap and Muffler pinning up thereto behind, and covering well his Throat, Chin, and Cheeks before, to keep these Parts from the cold Air, which above all is highly necessary.

Some also anoint the Trunk, especially the Spine; but I always found the Pores of the other Parts sufficient to let the Globules of the Mercury into the Blood; and it is not material by what particular Pores it had first its Admittance.

For those who are very weak, once a Day may suffice; but the robust and strong may be anointed twice, or, which is as well, and will save Trouble, divide the Unction into four Parts, and consume one Part about him every Night, after which let him enter into a warm Bed, with Flannel Sheets or Blankets, disposing him to a gentle breathing Sweat, with a Draught of warm Posset-drink, Mace-ale, or, if very feeble, a Cup of his mull'd Wine; by which the Pores being opened, the mercurial Particles may have the freer Entrance.

It is usual to increase the Mercury and Ointment to four Times the Quantity which we have directed. Thus *Harvey* prescribes one Pound of Axungia to be mixed with three Ounces, and sometimes six Ounces of Quicksilver, adding also a little white Ellebore and crude Antimony in fine Powder, pretending thereby to forward the Salivation, and increase the Force of Medicine in mastering any Malignity. Mr. *Wiseman*'s Composition was also six Ounces of Mercury to one Pound of the other Materials, of which he used one Ounce, or two Ounces at a Time, once or twice a Day, for four, six, or eight Times, according to the Patient's Strength, and the Ease or Difficulty of raising the Flux. *Hildanus* discreetly fix Ounces of Mercury to twenty Ounces of Axungia, and the other Ingredients. But I can see no Reason for using so much Axungia, provided a Half, or a fourth Part of it be sufficient to convey the Quicksilver into the Blood; nor to what End any other Ingredients should be added to the Axungia, unless the Turpentine, being, as I conceive, more like to Powder, especially the Species or Powders, by stopping up the Pores, than to forward the Operation. But leaving every one to follow the Proportion he likes best, in relation to my own, I must further observe, that if after the third Unction, supposing the whole divided into four Parts, the Patient begins

to complain of his Chops, or that the Inside thereof appears ulcerated, you must stay a Day or two to see the Effect of what is already done, before you proceed farther. The like must be observed when Gripes, or bloody Stools approach. But if the Spitting comes not on, and no supervenient Symptom contra-indicates, you may expend the remaining fourth Part in like Manner; and perhaps in some Bodies, there may be Occasion for a Half, or full as much more. However, it will always be found safest to proceed leisurely, when you have gone thus far, and sometimes to wait a Day, two, or three, before you continue the Unctions; since altho' at first it may seem as if the Medicine had taken no Effect, you may soon after find it sufficient. For, tho' a Day or two after the fourth Unction, the Flux may be longer than usual in coming forwards, and the Excoriations about the Chops or Inside of the Mouth appear inconsiderable, yet in a Day or two more they may be seen to spread and increase to a copious Spitting, beyond what was expected. But when after rubbing in an Ounce, or an Ounce and a Half of the Mercurial Ointment, the Salivation appears not, it may also be necessary here to administer a Dose or two of the Turpeth Mineral, at a Day or two Days Distance; and where there are Gummata, Tophs and Nodes, you are in the Unction more especially to rub the Ointment well into these Parts, laying over them afterwards the *Emplastrum de Ranis*, with a double Quantity of Mercury. This will both help the Resolution of them, and encourage or keep up the Ptyalism, which being arrived to the Quantity of four, five, or six Pints, in a Day and Night, is accounted a sufficient Discharge. Yet this is no absolute Rule to go by, or upon which we can safely pronounce the Patient whole and sound, any more than the Quantity of the Medicine to be used, can be limited to any one certain, or constant Proportion. Since we have known some who have spit more, yet miss their Cure; whilst others who have come very short of such a Quantity, have notwithstanding obtained theirs. However, during the Salivation this Way raised, upon its too sudden Declension (tho' it commonly happens that the Sloughs being deeper, and their Mouths sorer, they usually spit longer than by proceeding internally with the Calomel) it is often expedient to give a Scruple of the same, every Day, or every other Day, for two or three Times, as there may be Occasion; and toward the Conclusion, you are to purge your Patient with two or three Ounces of the common Infusion of Senna, and one Ounce of the Syrup of Buckthorn, or for those that are very weak, an Infusion of sliced Rhubarb, Senna Leaves and Tamarinds, with Salt of Tartar, adding to the strain'd Liquor one Ounce of the best Manna, or solutive Syrup of Roses, which may be repeated once or twice a Week for two or three Times; and when he is a little easy, his Chops growing pretty well, he may be permitted to eat a little Meat, as the Flesh of a Chicken or Rabbit, also Veal or Mutton, but well roasted, without Sauce or Gravy. About this Time also, it is usual to sweat them, at least before they go abroad, in their Bed, or Stove, or under the Cradle, with Spirit of Wine burning just by, to be continued as their Strength will bear, for an Hour or two, and to be repeated at two or three Days Distance, if there be Occasion, observing that the utmost Care be now taken, that your Patient be not injured by the cold Air, and that he gradually cool himself, by lessening or withdrawing the Heat or Bed Cloths he lies under, lest getting Cold, he make some fresh Complaint of Pains, which, tho' arising from this new Occasion, he may impute to the old one, and think the worse of his Cure for some Time.

During his Sweat, let him rub his Body thoroughly with warm Napkins, conveyed to him in the Bed; and when faint, let his Spirits be kept up with three or four Spoonfuls of some proper cordial Julap, or a Draught of his burnt Wine.

In order to promote this Diaphoresis, he may take a little *Venice* Treacle, with a Scruple of the Cinnabar of Antimony, or half a Scruple of Bezoar Mineral, upon which let him drink a Draught of his Diet-drink, made as hot as he can bear it. This Drink he ought to be strictly confined to, for three Weeks or a Month after he comes out of the Salivation, that having by this Evacuation secured his Body from any Relicks of the Disease, or its Remedy, the redundant Serosity remaining after the Colliquation may be dried up, before the Blood is supplied with fresh nutritious Juices. By the Neglect of this Circumstance, and by running over hastily to their wonted Liberty and Custom of Living, they too suddenly fill their Blood with a Load of improper and unsuitable Juice, at this Time in a weak infirm State, and despising their Purging, Sweating, or Diet, as needless Pieces of Formality, or an useless Penance, too often incur the Misfortune of an unhappy Relapse.

Dr. *Sydenham* indeed tells us, that the Salivation must take its Course, by which the Mercury, together with the pocky Venom, sufficiently spend themselves needing no other Help or

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or Way of Evacuation. But certainly, as I have ſometimes found, 'tis ill truſting hereunto; for the Sluices being ſet open, ſo great a Colliquation, both of nutritive, as well as excrementitious Juices, has then happened, that if the Current were not otherwiſe to be diverted, and the Tone of the Blood after invigorated, ſome Patients would be in Danger of loſing their Lives by the Ptyaliſm, or at leaſt of falling into a Conſumption; others from the impoveriſhed and languid State of the Blood, are ſubject to incurable Dropſies; which has been the Fate of ſome, even where Endeavours have not been wanting to turn the Stream.

Yet I think this Author was not miſtaken in his Opinion of the Pre-requiſites of a Salivation, propoſed as neceſſary by ſome; ſuch as purging the Patient plentifully; which he has juſtly cenſured, as only needleſsly harraſſing the Body, impairing the Strength, and weakening the Spirits, of all which the Patient is now ſuddenly more than ever to ſtand in need, by reaſon of the Conflict which will be unavoidably excited by the Mercurial Particles in the Blood. However, a lenient Purgative two or three Days before, and the taking a little Blood, from thoſe eſpecially of a plethoric Habit, as alſo a more than ordinary Abſtinence for ſuch Space of Time, may be neceſſary to keep under a Fever, Dyſentery, and Inflamation of the Parts; as alſo to moderate ſome other Symptons which might create Trouble, when theſe Remedies are not ſo fit to be put in Practice. Bathing alſo in warm Water, for ſome lean, hot, and emaciated Patients, has been found ſerviceable. If the Caſe admits of Delay, the beſt Time for ſalivating is the more temperate Seaſon, about the End of the Spring or the Beginning of Autumn; otherwiſe it may be enterprized at any other time, only taking Care to provide a good cloſe Room with a Fire ſuitable, in the Winter or extreme cold Weather; and one more large and airy in the exceeding Heat of Summer. Let the Women, alſo, be laid down, juſt after the menſtrual Purgation is over.

One thing of no ſmall Moment in this Affair is, the Choice of a Nurſe, who (if poſſible) ſhould be a Perſon thoroughly acquainted with the Buſineſs, knowing how to ſuccour them under their ſeveral Difficulties, taking care not only of their Mouths, by ſyringing where it is wanting, but of their Bowels, by Clyſters, when they are called for to appeaſe their Gripes, and remove the Teneſmus.

The firſt Accident which uſually attends a Patient under a Salivation, is a *Diarrhæa* at the Beginning; and if not timely prevented, ſometimes ſoon terminating in a Dyſentery, accompanied with bloody Stools, and horrid Torture of the Bowels; which Accident may be removed in the following Manner.

Take of Diaſcordium, and Conſerve of red Roſes, each half an Ounce; Red Coral, finely triturated, and Japan, Earth, and true Bole, pulverated, each a Dram; Diacordium, enough to make them into an Electuary: Of which take about the Size of a Cheſnut every fourth Hour, or oftner, during the Continuance of the Flux, drinking after three or four Spoonfuls, of the following Julap.

Take of Barley-Cinnamon Water ſix Ounces; Mint-Water, and Aqua Mirabilis, each two Ounces; Syrup of Quinces, one Ounce; mix them for a Julap.

Let his Drink be prepared of the Decoction of burnt Harts-Horn, coloured with a little Cochineal; and, when the Pains are very urgent, attended alſo with a Teneſmus, or perpetual Deſire of going to Stool, diſcharging only a bloody Mucus, in the Intervals betwixt them, exhibit the following Clyſter:

Take of the Decoction of burnt Harts-Horn, half a Pound; Diaſcordium, or Venice Treacle, half an Ounce; diſſolve them in the White of an Egg, with two Ounces of Canary Wine. To be repeated as Occaſion may require.

Which will, as a Fomentation, not only comfort the Inteſtines, and alleviate the griping Pain, but alſo, by its abſorbent Quality, correct the ſharp Humour, and thereby abate the Stimulus. But if, notwithſtanding this Remedy, the Looſeneſs ſtill continues, preſcribe thus:

Take of Diaſcordium without Honey, and Conſerve of red Roſes, each half an Ounce; the Barks of yellow Myrobalans, and the Cinamomum Acutum, a little bruiſed, each a Dram; Barley-Cinnamon Water, half a Pound: Infuſe them warm for an Hour, then ſtrain it; and add, of Mint-Water, an Ounce; Dr. *Stephens*'s Water, two Ounces. Mix them, and (firſt ſhaking the Bottle) take two or three Spoonfuls after every Stool.

Let him, alſo, at ſome times drink four or five Spoonfuls of Red Wine or Claret, boiled up with a third of Water and a little Spice, ſweetened with double-refined Sugar; which will ſerve as well as any Cordial, and into which, under great Extremity of Pain, may be inſtilled twelve, fifteen or twenty Drops of the cydoniated Liquid Laudanum, eſpecially at the Hour of Reſt. Now although it muſt be allowed, that at theſe times there is nothing to be done without the Help of Opiates, yet the leſs Occaſion we have for them the better; becauſe by retarding or ſlackening the Motion of all the Fluids in general, together with the glandular Secretion, they are ſubject, alſo, to thicken the Lymph itſelf, which ſhould be diſcharged by the Glandules of the Fauces. Wherefore, ſo ſoon as ever this Accident is overcome, you muſt lay them aſide, forbidding Poſſet-Drink, Water-Gruel, Sack-Whey, but eſpecially Malt Liquors, for ſome time; inſtead of which, as before adviſed, let him be kept ſtrictly to the Decoction of burnt Harts-Horn, or Rice-Water. Let his Chicken be, alſo, boiled with a Cruſt of Bread, a little Rice, or a few Shavings of Harts-Horn. All which are gradually to be left off, and changed again for the more diluting Drinks, when the Diarrhæa is checked, and the Salivation comes forward; which is ſcarce to be expected ſo long as the Looſeneſs continues, by which the Humours are carried downwards, the direct contrary way that they ought now to take.

In giving Opiates, the Conſequence of one Doſe is always to be obſerved, before another be ordered; which muſt be at about two Hours Diſtance, if there ſhould be Occaſion for a Repetition; the Quantity being increaſed according to the Age, Sex, Habit, and Strength of the Patient.

The next Accident we ſhall take notice of in raiſing a Mercurial Salivation, is the Sickneſs and Vomiting; which, if mild and gentle, may be let alone, only ordering the Patient to drink freely of a ſmall Chicken-Broth, Poſſet-Drink, or thin Water-Gruel, that his Retching may be the eaſier; and giving a Sup of mulled Wine with a Sprig of Mint, a little Lemon-Peel, a Blade of Mace, or a bruiſed Clove infuſed in it, to comfort the Stomach, and refreſh him between whiles; by which this Complaint (the Salivation ſoon after riſing) goes off in few Days, without farther Trouble. But if Cardialgia, or racking and intolerable Pains about the Mouth of the Stomach appear, with inceſſant or perpetual Vomiting, Spaſms of the Members, continual Sickneſs without Reſpite, Leipothymia or Fainting, with cold Sweats upon the Forehead and Eyebrows, the Patient is in the utmoſt Danger; and Mercury muſt not only be deſiſted from, but the Courſe of what has been given muſt be turned downwards, eſpecially if coſtive, by directing the common emollient Clyſter, with two or three Ounces of the coarſe Sugar, and as much of Olive Oil; adding, if there be Occaſion, as a Stimulus, a Dram or two of the *Species Hieræ*, and as much Sal-Gem; while, in the mean time, you are uſing all Endeavours to take off the Orgaſm in the Spirits, to compoſe the enraged Stomach, with ſome proper Cordial Julap, or the burnt Wine; with which, if his Pulſe allow, you may mix an Opiate, in ſuch Quantity as the Importance of the Complaint, and the Strength of the Patient ſhall indicate. A little mulled Sack, with Spice and a few Drops of Liquid Laudanum, after his Bowels are emptied by the Clyſter, will ſometimes anſwer: Or you may direct the following Mixture.

Take of the Water of black Cherries, and Barley-Cinnamon Water, each two Ounces; Spirit of Mint, one Ounce; prepared Crabs Eyes, and red Coral finely levigated, each half a Dram; Salt of Wormwood, one Dram; Syrup of Lemons or Quinces, an Ounce; *London* Laudanum, carefully diſſolved, and mixed with the reſt, two Grains. Mix them, and (after ſhaking the Bottle) give two Spoonfuls, every two Hours, ſooner or later, as the Exigency may require, during the Vomiting and Pain of the Stomach.

Three or four Spoonfuls of ſimple Mint Water, well freed from the Empyreumatic Oil that comes over in the Diſtillation, and ſwims on the Top, ſupped hot as Tea is drunk, is, alſo, proper to alleviate this Illneſs; likewiſe Epithems of Decoctions of the Tops of *Roman* Wormwood, with ſome of the Aromatics, as the Roots of Galangals and Zedoary, the Calamus Aromaticus, Cloves, Nutmegs and Mace, in red Wine, are not improper. Flannel Cloths ſhould be expreſſed from the ſame Decoction made hot, and applied to the Fit of the Stomach; after which the whole Region of the Stomach may be anointed with the expreſſed Oils of Mace and Nutmegs,

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Nutmegs, adding a few Drops of the distilled Oil of Wormwood, and afterwards applying the great Stomachic Plaister.

For this Purpose I have likewise successfully prescribed the following.

Take of Hungary Water, and Liquid Laudanum, each one Ounce; dissolved Camphire, half a Dram; mix them for an Epithem; in which, when warmed, soak a piece of soft woollen Cloth, folded to the Breadth of four Fingers square; which, being strongly wrung, apply to the Pit of the Stomach, to be renewed when dry, or as Circumstances may require.

But this Symptom is often too powerful for these or any other Remedies, and frequently carries off the Patient in a few Hours; usually proceeding from the Ignorance of the Undertaker in hurrying on the Flux, giving disproportionate Doses of the Medicine, repeating them too fast, or continuing them longer than was proper; by which means the Patient is hurried to the Grave.

A third Complaint very usual at these Times (and which is always to be expected) is the soreness of the Chaps. For easing which, at least in some Measure, let the Patient hold in his Mouth, sometimes a little Barley Water, or Chicken Broth, made lukewarm; also now and then a little warm Milk, which is proper to lenify or asswage the Pain. But let them by no means use any restringent Mouth-waters or Garglisms of Alum, Sage, Plantain, Bramble or the like; nor the digestive ones of fat Figs, the Roots of Marsh-mallows and Liquorice, Raisins, &c. lest by the one, you harden and dry the Ulcers, and stop the Current of the Rheum; by the other you too soon digest, and hasten off the Sloughs before their Time, and healing the Sores too soon, shorten the time of the Ptyalism. However when the mercurial Salts with those of the acrid Lymph, have eaten deep into the Parts, by which the Putrefaction spreading there may be danger, by the Loss of Substance, of a foul Jaw Bone, at such Times the Surgeon must be careful to check the farther Erosion, and promote the Digestion of the Ulcer; consuming the rotten Flesh, by touching the Parts with fifteen or twenty Drops of the Spirit of Vitriol, mixed with an Ounce of the Honey of Roses. Let him also take a Gargarism of the Decoction of Barley, with the Leaves of Plantain, Horse-tail and Strawberries, with which may be mixed a small Quantity of the Tincture of Myrrh and Aloes, with Honey of Roses. If the Putrefaction still increase, let the Parts be touched two or three times a day, with an armed Probe dipped in the following Mixture made hot,

Take of Honey of Roses, one Ounce; Tincture of Myrrh, extracted with White Wine, two Drams; or rectified Spirit of Wine, one Dram; of the Flos Unguenti Ægyptiaci, one Dram; mix them for Use.

It also frequently happens that the Jaws are so locked up, that the Patient cannot without Difficulty receive his Sustenance, nor the Surgeon inspect the Ulcers; for obviating which Inconveniences I have been under a Necessity of thrusting a bit of Stick, covered with a soft Rag, in at the Corner of the Mouth, between the backward Teeth. But if notwithstanding, any Adhesion happen of the Inside of the Cheek to the Gum, occasioning a Stricture, and hindering the Patient in the free opening of his Mouth, or in the Performance of Mastication, such a Stricture is carefully to be divided.

It is not unusual in raising a Salivation or during the Course of it, especially where there are some rotten Teeth, for a Blood-Vessel or some small Artery to burst open, by reason of the stronger Pulsation than ordinary at such times, the Circulation being somewhat impeded by the Fluxion of Humor and Tumefaction of the Parts, and consequently the Vibration of the Coats of the Artery stronger than at another Time; or this Misfortune may proceed from the Erosion of the Coats of the Vessel by the caustic Salts; whence great Hæmorrhages have ensued. At these times a little Pellet of Lint covered over with the fine Powder of Crude Alum, or of Vitriol, or dipped in and expressed from the Aqua Styptica Regalis, and thrust close down into the Cavity, stops the Effusion, being held tight with the Finger for a little while; or if the Situation will admit, a Compress dipt in Oxycrate with the White of an Egg, and the Jaws close shut may be sufficient. *Wiseman* recommends an Egg boiled hard, and held between the Teeth, provided the bleeding Vessel can be compressed by it. I once met with a Flux of this Nature so very impetuous, that I found it the safest way to clap a red hot Steel Probe into the Socket of a rotten Tooth which had been some time before extracted, whence the Blood spurted out, and thus fearing the Vessel restrained the Flux. The like Accident sometimes happens at the Separation of the Sloughs on the Sides of the Cheeks; but here a little Oxycrate held in the Mouth will be sufficient; or where the Bleeding is inconsiderable, it may be suffered to run off with the Lymph, which is only streaked or discoloured with it, perhaps three or four Days, without any other Detriment. If it should last longer, discharging in any considerable Quantity, to the weakening of the Patient, some restringent Liquor, such as the Decoction of Oak-bark, or a strong Infusion of the Leaves of red Roses, unripe Galls, Pomegranate Bark, and Balaustine Flowers in Forge Water, acidulated with Spirit of Vitriol, or the like, may be held in the Mouth and spit out again as often as there is Occasion.

We have already taken Notice of the Diarrhæa, and directed how it may be repressed; but if upon renewing the mercurial Medicine either inwardly or outwardly, notwithstanding all Endeavours, because of some Idiosyncrasy, in the Patient, it will fly to the intestinal Glands, the Discharge may be permitted to proceed that way, if the Strength of the Patient permits, and the Symptoms are not too pressing, and by this way have I known the venereal Venom entirely removed; only taking Care to sheath the Intestines, which are deprived of the Mucus, by frequently injecting as a Clyster some good Flesh Broth, or the Broth of a Sheep's Head, or of the Entrails of a Capon, in which dissolve the Whites of new laid Eggs. These not sufficing you must proceed to greater Anodynes, and even to Opiates themselves. The contrary to this Accident is an over Costiveness, which seldom happens, so as to hinder the Salivation in comparison of the Looseness and Bloody Flux. If the Body be hot and dry, and the Patient spits but little, although his Chaps be much inflamed and sore, if he has been without a Stool for some Days past, it may be proper to throw up a laxative or emollient Clyster, such as warm Milk, with Sugar and Oil; or if the intestinal Fibres are very sluggish, a little common Salt may be put in; also a Suppository of the Species of Hiera Picra, Sal Gem, and Honey, boiled and made up in a proper Size; which emptying his Bowels, and cooling his Body, may probably dispose him to a freer spitting. Now also a greater Liberty may be granted him in his Liquors, of which, for the better diluting of his Blood, let him drink freely; as of Small Beer warmed with a Toast, Barley-water, a small Sack-whey or Posset Drink; also by way of Diet, Water-gruel, Oatmeal Caudle, small Chicken or Veal Broth, sometimes allowing him a roasted Pippin, if his Mouth will suffer it, or a few stew'd Prunes, with such other opening, cooling and diluting Liquids, as are forbidden those who are subject to the Diarrhæa.

There are two other supervenient Accidents which sometimes perplex a mercurial Ptyalism, and endanger the Patient's Life, I mean the too sudden Rise of the Salivation, as it were all at once, by which he may be choaked or strangled; and its Continuance, after the Time of its expected Declension, by which the nutritious Juices being thus constantly drained away, an Atrophy or Consumption must necessarily ensue.

The best Way to prevent the former is to begin with the lesser Doses, and when you find the Humors tending upwards, to proceed warily, intermitting the Repetition of the Medicine a Day, two, or three as there may seem Cause. But if by any unforeseen Accident the Fauces should suddenly inflame and tumefy, the Patient is brought into apparent Danger, and Derivation and Revulsion must be immediately attempted; as of sharp Clysters prepared of the common Decoction for Clysters, in which are to be dissolved Confectio Hamech, Species Hieræ Picræ, Sal Gem, or a small Quantity of the Pulp of Coloquintida tied up in a Rag may be boiled with the other Ingredients. Also some cathartic Medicine may be taken by the Mouth when it can be swallowed. Bleeding under the Tongue, in the Arms, and Cupping with Scarification on the top of the Shoulders, sharp and large Blisters between the Shoulders and behind the Ears, extending along the Jugulars on each Side of the Neck, may be very beneficial; at the same time some moderate attenuating Injection may be thrown into the Throat with a Syringe, to clear it from any viscous Phlegm, such as the Decoction for the Syrup of Marsh-mallows, with the Syrup of the five Roots, and Lemon Juice; or the Pectoral Decoction, a little sharpened with dulcified Spirit of Nitre, Spirit of Sulphur or Vitriol, adding Syrup of Mulberries, Honey of Roses, and Syrup of Brambles, or the like, taking Care not to use repercutient or restringent Gargarisms, which incrassating and locking up the Humors in the Glands, would farther hazard a Suffocation. If the Humours are viscous, besides the above Injection, the Patient may drink warm Draughts of the same Decoctions, and where his Lungs are more than ordinarily stuffed with a tough and viscid Phlegm, as is usual in some cold, bulky and asthmatic Persons, he may take a Spoonful of fresh Linseed Oil drawn without Fire, if his Stomach can bear it, with a like Proportion of simple Oxymel; or Oxymel of Squills may be taken between whiles in a Draught of

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of the pectoral Decoction; which is an excellent Promoter of Expectoration.

Purging Clysters and Cathartics are, also, to be repeated at proper Intervals, when the Spitting holds longer than it should; by which the Patient's Strength is daily impaired, and a hectical Indisposition contracted. But here the sharper Purgatives are not so proper, the Humours being more gently carried off downwards, or moved that Way at repeated Distances. Diuretics are here, also, requisite, to divert the serous Humours by the Glands of the Kidneys, from those of the Mouth: For this Effect the Salt of Tartar is excellent; after which, in order to fix the Mercurial Particles, and restrain the farther Colliquation, Sulphur is esteemed one of the best Remedies. Wherefore let half a Dram or a Dram of the Flowers of Sulphur, or from a Scruple to half a Dram of its Magistery, called Lac Sulphuris, with a little Conserve of Roses, be administered two or three times a Day; or a little of the following Composition.

Take of the Conserve of red Roses, and Quinces, each half an Ounce; Milk of Sulphur, two Drams; Cinamon Bark, Japan Earth, and red Coral, all prepared, each a Dram; Leaves of Gold, twelve; Syrup of Myrtle, enough to make them into an Electuary.

Let the Patient's Drink be a chalybeated Tincture of Roses, gratefully sharpened with Spirit of Vitriol, or a small Lime-Water. Mean while, let his old Stockings, Drawers, Shirt, Muffler, Cap, and Sheets, with whatever he had on during the time of the Unction, and in his Spitting Course, be changed for others very well aired before they are put on. If the Patient be already in a hectical State, Asses Milk and testaceous Powders are the fittest Medicines; which may be ordered for him in the following Manner:

Take of the Conserve of red Roses, an Ounce; prepared Crabs Eyes, prepared Pearls, and prepared red Coral, each a Dram; of the Species Diatragacanthi frigidi, a Dram and half; Syrup of Marsh-mallows, enough to make them into an Electuary; of which take about the Size of a Nutmeg, early in the Morning; drinking afterwards half a Pint of new-milked Asses-Milk, and sleeping after it an Hour. Let the Dose be repeated at four in the Afternoon, with the same Quantity of Asses-Milk.

But if there be any febrile Paroxysm, the Bark must be prescribed, which, by its specific Property, will not only take off the Fits, but by its manifest Stypticity, invigorate also the languid Condition of the Blood, and so put a Check to the Salivation.

If a Dropsy happen to ensue, from the broken Texture of the Blood, accompanied with anasarcous Swellings of the Feet, Legs and Thighs, and sometimes, also, an Ascites of the Abdomen, the Indications and Remedies are the same as in other watery Tumours.

If a Palsy should be the Consequence, such inciding, volatile, and warm invigorating Medicines, as may open the obstructed Tubes, and restore the nervous Fluid to be carried on in its accustomed Channels, together with such local or topical Application, as may excite the Spirits, and give a new Tensity to the Nerves themselves, are most effectual. *Turner's Syphilis.*

A CONSUMPTION FROM A SALIVATION.

Salivation is either natural, or procured by Art; and both of them is a plentiful Separation of the nutritious Juice by the Glands which supply the Spittle; upon which Secretion and Expence of the nutritious Juice, after a long Course of Salivation, the Blood becomes sharp and grows hot, and the muscular Parts being deprived of their due Nourishment, fall into an Atrophy, or Consumption.

A natural Salivation, or Spitting, for the most Part happens to those that have the Scurvy, and that because the Blood, by reason of its Acrimony, is not able to assimilate the new Chyle, and reduce it to its own Nature, and therefore as it circulates continually, throws it off by the Glands, which supply the Spittle. From whence it comes to pass, that even silly Women know, that Spitting too much inclines Men to a Consumption; for which Reason they do well to prescribe the swallowing of the Spittle to prevent a Consumption. Whereby not only the Progress of the Salivation is hindered, (for Spitting does by a certain continual Drawing, as it were, suck the Glands, which afford the Spittle, and put them upon a new Separation of it) but also the Chyle, which is separated by the salivatory Ducts to no purpose, is restored to Nature, to make up the Loss which the Mass of Blood sustains.

It is, also, as certainly true, that every Salivation procured by Art, that is, raised, with Mercurial Medicines, (if it continues long) brings on a hectical and consumptive Disposition.

In this Case (the Salivation being ended) the Patient must be put into a Milk Diet for a long time, by which the Sharpness of the Blood may be corrected, and a consumptive Disposition may be prevented. After that he must be sent into an open and benign Air, and be nourished with the plentiful Use of such Food as affords good Juice; and besides all this, (if it be necessary) he must drink the chalybeate Waters.

I met with a very remarkable Instance of this kind of Consumption in the Daughter of Mr. *Daulton*, an Apothecary, who, from a Salivation that was raised with Mercury to cure the King's Evil, fell, as soon as ever the Salivation was ended, into a fatal Consumption; and by reason of the great Expence of the Humours caused by her Spitting, she could never be restored, either by the Help of the Air, or by a Milk Diet, or any other Art; but being gradually wasted away with a Consumption, after a Month or two from the End of the Salivation, she died without any Sign of a Consumption of the Lungs. *Morton's Phthisiologia, Lib. 1. Cap. 9.*

SALIUNCA NEAPOLITANA, *sive Nardus ex Apulia, Italian* Spikenard.

SALIX.

The Leaves are entire; the Flower, which is Male, and grows on a separate Plant, is amentaceous, spiked, and consists of a Multitude of Stamina. The Ovary, which is found only on the Female Plant, is furnished with a long Tube, adorned with four Horns, is of a conoidal Figure, and constituted in such a manner as to become a spiked Fruit, containing a Multitude of Capsules resembling Horns, and gaping by Maturity into two Parts. These Capsules are full of many downy Seeds.

Boerhaave mentions eighteen Sorts of *Salix*, which are;

1. Salix; vulgaris; alba; arborescens. *C. B. P.* 473. *Tourn. Inst.* 559. *Boerh. Ind. A.* 2. 210. *Salix*, Offic. Ger. 1203. Emac. 1389. Raii Synop. 3. 447. *Salix arborea angustifolia, alba, vulgaris*, Park. Theat. 1430. *Salix maxima, fragilis, alba hirsuta*, J. B. 2. 212. Raii Hist. 2. 1419. COMMON WILLOW.

This is the largest of all our Willows, having tough, slender, green Twigs, clothed with long narrow Leaves, green above and whitish underneath, serrated about the Edges, and set on alternately. Early in the Spring come long, slender, loose Catkins, which inclose very small Seed in a white Down. It grows every where in moist Places, and by River-Sides.

The Bark, Leaves, and Juli, are cooling and binding, and useful against all kind of Fluxes and Hemorrhages. The Sap which flows from the wounded Bark, is accounted good for inflamed and bloodshot Eyes. The Ancients used to put the Branches of the Green Willow about the Beds of those who were sick of Fevers, to cool and temperate the Air. *Miller's Bot.*

It grows in watry Places, and by the Sides of Brooks. The Leaves, which are used in Medicine, are refrigerating, drying, and somewhat astringent, tho' its principal Use is in restraining venereal Diseases. Outwardly they are of Service in Hemorrhages from Wounds, or from the Nostrils, and the like Disorders.

The Leaves of the Willow being laid in Water, and the same placed in a Room where the sick Person lies, are comfortable and refreshing in an extraordinary manner. They are, also, very grateful Food to Cattle. A Decoction of the Leaves is very proper in an Hæmoptoe; and a Clyster is prepared of the same for a Dysentery. The Leaves, externally used, are of Service in Baths for the Feet in order to procure Sleep, and cool the Heat of Fevers. The Bark of the Tree has the same Virtues; and besides, the Ashes thereof, as *Dioscorides* says, are effectual for extirpating Warts and Corns. *Hist. Plant. Ascript. Boerhaave.*

2. Salix; vulgaris; nigricans; folio non serrato. *C. B. P.* 473.

3. Salix; vulgaris; rubens. *C. B. P.* 473. *Tourn. Inst.* 590. *Boerh. Ind. A.* 2. 210. *Salix rubens*, Offic. *Salix angustifolia purpurea seu nigra*, Park. Theat. 1430. *Salix rubra minime fragilis, folio longo angusto*, J. B. 1. 215. Raii Hist. 2. 1421. COMMON RED WILLOW.

It grows in watry Places, and the Leaves and Bark, which are the Parts used in Medicine, have the same Virtues with the common Willow.

4. Salix; lutea; sativa; folio crenato. *C. B. P.* 473.

5. Salix; folio amygdalino, utrimque virente, aurito. *C. B. P.* 473. *Boerh. Ind. A.* 2. 210. *Tourn. Inst.* 591. *Salix nigra*, Offic. *Salix Spontanea Amygdalino folio, fragilis auriculata*, J. B. 1. 214. *Salix viminalis nigra*, Park. Theat. 1430.

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1430. *Salix folio ſplendente auriculato flexilis*, Raii Hiſt. 2. 1420. Synop. 3. 448. SHINING WILLOW, or FRENCH WILLOW.

It grows in Plantations among other Willows, but I find no peculiar Virtues aſcribed to it.

6. Salix; oblongo, acuto, incano, folio. *C. B. P.* 474.

7. Salix; folio longo, anguſto, acuto, leviter ſerrato, ſupra viridi, infrâ albeſcente; viminibus luteis.

8. Salix; Platyphyllos; Leucophlæos; Dalechampii. *Lugd.* 276.

9. Salix; foliis longiſſimis, anguſtiſſimis, ſuprâ atroviridibus, infra incanis, margine criſpo.

10. Salix; folio longo, utrimque viridi, acuto, ſerrato.

11. Salix; montana; major; foliis Laurinis. *H. R. Par.*

12. Salix; latifolia; rotunda. *C. B. P.* 474.

13. Salix; folio ex rotunditate acuminato. *C. B. P.* 474.

14. Salix; humilis; capitulo ſquamoſo. *C. B. P.* 474. *Salix, Helice Theophraſti.* Lugd. 277.

15. Salix; folio longo, non auriculato; viminea rubra. *Cat. Cantabrig.*

16. Salix; pumila; foliis utrimque candicantibus & lanuginoſis. *C. B. P.* 474.

17. Salix; pumila; brevi anguſtoque folio, incano. *C. B. P.* 474.

18. Salix; minima; flore eleganti luteo. *An Salix, pumila, montana, folio rotundo.* Raii Hiſt. 1423? *Boerh. Ind. Alt. Plant. Vol.* 2. *p.* 210.

Beſides the foregoing Species of *Salix*, *Dale* mentions the following.

Salix, Helice. Offic. *Salix, Helice Theophraſti*, Park. Theat. 1435. *Salix Roſea Anglica*, Ger. 1204. Emac. 1390. ROSE WILLOW.

It grows by the Sides of Brooks, and is eſteemed only a *Luſus Naturæ*.

SALLENA. A Species of Salt-Petre. *Rulandus.*

SALMERINUS, or SALMERO. A Fiſh very like the Salmon, but ſmaller; it is found in Rivers and Lakes. This Fiſh has ſomething of the Trout, and is at leaſt of as good a Taſte as it and the common Salmon. It is tender, delicious and ſhort, and not at all viſcous; but on the contrary, ſo eaſy of Digeſtion, that ſome Phyſicians allow the Sick to eat it. It corrupts very ſoon, if not ſalted, and produces very near the ſame Effect as the Salmon.

Some pretend this Fiſh does not at all differ from the common Salmon, and that in time it grows as big as the other. However, *Johnſton* makes a different Species of it; and we may eaſily apprehend by the Deſcription this Author has given us of its Form, that there is ſome ſmall Difference between it and the Salmon. Beſides, *Geſner* ſays, he once conſulted a very experienced Fiſherman and Man of Probity upon this Subject, who aſſured him, this Fiſh would never grow ſo big as a common Salmon, tho' it were to continue many Years in the River. *Lemery on Foods.*

SALMO. The Salmon.

The Salmon is a Fiſh of an excellent Taſte, and covered with numerous ſmall Scales, marbled with red or yellow Spots. It is uſually two or three Foot long, and very thick, tho' there are ſome ſix Foot long; ſome have weighed from twenty four to thirty ſix Pound. It has been ſaid that this Fiſh will not live but in troubled and muddy Waters; but ſmall Fiſhes have been found in its Belly; nor is it probable that ſo large and ſtrong a Fiſh ſhould live only upon troubled Water, and his numerous Teeth ſeem deſigned for ſolid Food.

Tho' the Salmon be a Sea-Fiſh, it uſually comes up the Rivers in the Beginning of Spring, where it is obſerved that he fattens. But when he has tarried above one Year in a River, he grows pale, dry, lean, and ill-taſted. This Fiſh lives ſeveral Years, and may be kept a long Time out of the Water before it dies.

The beſt Salmon is well fed, large, of a middling Age, tender, ſhort, reddiſh, and taken in fine clear and running Water. It is eat either freſh or ſalted; the firſt is much more agreeable to the Taſte, but ſoon corrupts. It is tender, ſhort and ſavoury, and abounds with volatile Salt, and oily and balſamic Principles, which render it nouriſhing, ſtrengthening and reſtorative; it alſo promotes Urine, is pectoral and reſtorative; but if eat immoderately, being very fat, it cauſes Reachings and Indigeſtions; and if too old, it is dry, hard, and heavy upon the Stomach. *Lemery on Foods.*

SALOMÉ. Σαλώμη. The Name of a Plaiſter deſcribed by *Galen*, de Comp. M. p. G. Lib. 2. C. 7.

SALOMONIS SIGILLUM. Solomon's Seal. The ſame as the POLYGONATUM.

SALPA. Stock-Fiſh.

This is a Sea-Fiſh pretty large, long, and reſembling a common Cod. It feeds upon Sea-ware, and Excrements, but is not much eſteemed for Food, becauſe its Fleſh is hard, and has no great Taſte. They are dried till they are as hard as Wood, ſo that before they are prepared, they muſt be beaten in order to make them tender. They are ſaid to be of an aperient and reſolvent Nature. *Lemery des Drogues.*

SALPETRA. Nitre.

SALPINGO-PHARYNGÆUS, according to *Valſalva* and *Douglas*, is one of the Origins of the Muſcle of the *Pharynx*. It ariſes from the Extremity of the bony Part of the *Tuba Euſtachiana.*

SALPINGO-STAPHILINUS MUSCULUS. A Muſcle of the *Uvula*, thus deſcribed by *Douglas.* It ariſes fleſhy from the bony Part of the Tube of the Ear, and is inſerted into the Baſis of the Uvula, where it joins Fibres with its Partner Muſcle on the other Side.

Its Uſe is to draw the Uvula upwards and backwards.

SALSAMENTUM. The ſame as TARICHOS, which ſee.

SALSAPARILLA. The ſame as SARSAPARILLA.

SALSATURA. In the Preparation of the Philoſophers Stone, is Dealbation.

SALSEDO. Saltneſs.

SALSEDO MUCRUM. Salt Petre, that is, Nitre.

SALSUGO. Pickle, or Brine.

SALTABRI. The ſame as *Sal Alembrot.* See ALEMBROT and SAL.

SALVATELLA. A Vein in the Back of the Hand, the opening of which ſome Phyſicians have fancied to be of ſingular Uſe in Melancholly. It is the Vein which comes from the little Finger, and that next to it; or, according to others, that which proceeds from betwixt the Thumb and Fore-Finger.

SALVIA.

The Characters are;

It agrees almoſt in every Character with *Sclarea*, or Clary. The Galea is ſulcated, or formicated, the Beard triſid, the middle Segment thereof being almoſt excavated. The Stamina of the Flowers, by their Inflexion, repreſent the Fabric of the Os Hyoides.

Boerhaave mentions twenty Species of *Salvia*, which are;

1. Salvia; major; an Sphacelus Theophraſti? *C. B. P.* 237. *Tourn. Inſt.* 180. *Boerh. Ind. A.* 166. *Salvia hortenſis major*, Offic. *Salvia major*, Ger. 623. Emac. 764. *Salvia major vulgaris*, Park. Theat. 49. *Salvia latifolia*, J. B. 3. 304. Raii Hiſt. 1. 509. COMMON SAGE.

Sage is a ſhrubby Plant that grows in every Garden, and is well known to have long, rough and wrinkled Leaves, ſometimes of a hoary Green, and ſometimes of a reddiſh Purple Colour, of a pretty ſtrong Smell; the Flowers grow on long Stalks, ſet on Verticillatim in Spikes; they are large and galeated, having the Galea crooked and hollow, and the Labella broad, of a bluiſh Purple Colour, ſet in large clammy Calyces, in the Bottom of which grow four round ſmooth Seeds; it is planted in Gardens, and flowers in *May*; the Leaves and Flowers are uſed. *Miller's Bot. Off.*

It grows in Gardens, and flowers in *June*, and the Parts in Uſe are the Leaves and Flowers. Sage is diuretic; it provokes the Menſes, when retained through Thickneſs, and moderates their Exceſs; it is alſo ſerviceable in Palſies, Vertigos, Tremblings and Catarrhs; outwardly it abſterges Aphthæ in the Mouth. *Dale from Schroder.*

Sage, which is produced almoſt in every Garden, is an excellent Cephalic, and was always highly eſteemed by the Inhabitants of the Eaſtern Nations, who at preſent prefer its dried Leaves to Tea. In Conſequence of the ſubtile, vaporous, and ſedative Oil it contains, a Decoction or rather Infuſion of it by Way of Tea, is highly efficacious in ſpaſmodic Diſorders, in Contractions of the Members, and chronical Epilepſies. Baths of it prepared with an Addition of nervous Subſtances, ſuch as Iron-wort, Origanum, and Mother of Thyme, are very ſerviceable in curing paralytic Members, and reſtoring the Tone of the Uterus. In order to allay Inflammations of the Fauces, and other Diſorders of the Teeth and Mouth, Surgeons order a Decoction of Sage to be uſed as a Gargariſm. *Hoffman. de Præſtant. Remed. Domeſt.*

See BUFO.

2. Salvia; major; an Sphacelus Theophraſti; floribus candidis? *C. B. P.* 237.

3. Salvia; perelegans; tricolor; argentea; Belgarum. *H. R. Par.*

4. Salvia; major; foliis ex viridi & luteo variegatis. *H. R. Par.*

5. Salvia; major; foliis ex viridi & albo variegatis.

6. Salvia; latifolia; ſerrata. *C. B. P.* 237. *Prodr.* 113.

7. Salvia; major; arboreſcens; foliis vietis, laceris, Fimbriâ aureâ donatis.

8. Salvia; Cretica; non pomifera. *Cluſ. H.* 343.

9. Salvia; folio lato, amplo, ſubrotundo.

10. Salvia; minor; aurita & non aurita, *C. B. P.* 237. *Tourn. Inſt.* 181. *Boerh. Ind. A.* 166. *Salvia hortenſis minor*, Offic. *Salvia minor*, Ger. 623. Emac. 764. Raii Hiſt. 1.

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510. *Salvia minor auriculata*, J. B. 3. 305. *Salvia minor five pinnata*, Park. Theat. 50. SAGE OF VIRTUE.

This Sage is ſmaller than the common Sort, having leſſer, narrower and ſmoother Leaves, of a whitiſh hoary green Colour, with frequently two ſmall Pieces or Ears growing on them next the Stalk, which in ſome Plants are wanting, and in others but on one Side; it is of a milder Scent than the common, and has rather ſmaller Flowers, but much of a Colour, flowering at the ſame Time, and is alſo planted in Gardens.

The Virtues of both this and the common Sort are much the ſame; the common is uſed more in the Kitchen; they are Cephalic, and good for all Diſeaſes of the Head and Nerves, as the Palſey, Convulſions, *&c.* They are likewiſe diuretic, and good for uterine Obſtructions, and are much uſed in Fevers of all Sorts, in Tea or Poſſet-drink. *Miller's Bot. Off.*

11. Salvia; anguſtifolia; ſerrata. *C. B. P.* 237.

12. Salvia; Orientalis; latifolia; Abſinthium redolens; florecarneo magno.

13. Salvia; Orientalis; latifolia; hirſatiſſima; viſcoſa pinnata; flore & calice purpureis; inodora.

14. Salvia; Africana; fruteſcens; folio ſubrotundo, glauco; flore aureo, magno. *H. A.* 2. 183.

16. Salvia; baccifera. *C. B. P.* 237.

17. Salvia; bacciferæ ſimilis; ſed foliis magis undulatis.

18. Salvia; Cretica; fruteſcens; pomifera; foliis longioribus, incanis, criſpis. *T. C.* 10. *T. Voy.* 1. 77.

19. Salvia; Hiſpanica; folio Lavandulæ. *T.* 181.

20. Salvia; Abſinthium redolens. *J. B.* 3. 307. *Boerh. Ind. Alt. Plant. Vol.*

The firſt Species of *Salvia* is called *Sphacelus Theophraſti*, becauſe its Leaves bruiſed and applied to a gangrenous Place, cure a Gangrene, and prevent a Sphacelus. Some of the Species are ſaid to be pomiferous; the Occaſion why they are ſo called is, that in hot Countries a certain Inſect half penetrates the Leaf, principally of thoſe Plants which have wrinkled Leaves, and there lays its Seed, whence in the following Year is produced what we name a Gall. Theſe Species being tranſported hither, are furniſhed with thoſe Galls for the firſt Year, which diſappear in the next, becauſe we have no ſuch Inſects in theſe Countries.

Salvia is ſo called from *Salvus*, ſound, healthy, becauſe no Plant has a greater Reputation for Healthfulneſs and Wholeſomeneſs, whence the Queſtion in the old Verſe,

Cur moriatur Homo cui Salvia creſcit in Horto?

Why dies the Man whoſe Garden Sage affords?

All the Species have a very fragrant Smell beyond all other Plants, and if ſmelled to for a conſiderable Time, cauſe a Sort of Ebriety, and at length a Vertigo; for examining this Plant upon an empty Stomach, I found myſelf almoſt drunk with the Smell thereof, and when I had taken ſome of the Flowers, I felt a Heat, with an Acceſſion of Strength from them. The Leaves infuſed in Water blacken it like Tea, and Ink may be made with the ſame as well as with Galls. Drank after this manner, it is aſtringent, ſtimulates the Fluids, and corroborates and dries the Fibres and Bones; whence I conclude it to be a Strengthener, Heater, and Raiſer of the Spirits. It is juſtly, therefore, by *Dioſcorides* eſteemed a moſt effectual Sudorific, Cardiac and Cephalic, and has given Occaſion for the Verſe in the *Schola Salernitana* above cited. The Leaves infuſed in Wine faſten looſe Teeth and Gums, and are good for the Scurvy, and by their balſamic Virtue corroborate the Parts. It is an excellent Plant for all Diſeaſes of the Head proceeding from Weakneſs of the Stomach, and is of Service in the Palſy, Lethargy, Apoplexy, Epilepſy, Podagra, Arthritis, Vertigo, Leucophlegmatia, and Chloroſis or Cachexy of Virgins. It is ſubject, however, to one very great Inconvenience, which is, that it harbours Toads under its Roots; the Way to avoid which is to plant near it Rue, which theſe Animals cannot endure. Hence the rhyming Verſe,

Salvia cum Ruta faciunt tibi Pocula tuta.

Sage indeed was by the Ancients juſtly eſteemed alexipharmic, ſudorific, cardiac, and eſpecially cephalic, but it was only in cold Diſeaſes, where Phlegm abounded. The diſtilled Water, and the Conſerve of the Flowers, were uſually exhibited as Preſervatives againſt all Sorts of Poiſon, by their ſudorific and ſtrengthening Virtues. Sage is alſo reckoned to have an antiſeptic Virtue, which renders it very ſerviceable in ſeaſoning Carcaſes, and therefore of great Uſe and Eſteem in the Seraglio of the Grand Signior; for, firſt, it defends the Parts from Worms and Inſects; ſecondly, by its aſtringent Virtue it cauſes a Conſtriction of the Parts; and laſtly, by its grateful Fragrancy reſiſts Corruption. The *Chineſe* are ſaid to have ſo great a Love for it, that when you preſent them with ſome of it, they cannot forbear aſking how the *Europeans* can take ſuch Delight in their Tea, when they have ſo much Sage of their own Growth. Sage corroborates and conſtringes the ſolid Parts, and is employed by the Surgeons in repreſſing Hæmorrhages from Wounds, by Conſtriction of the Arteries; and the Herb boiled in Wine is very good for a paralytic Limb, being of an aromatic and aſtringent Quality, attended with ſomewhat of Auſtereneſs. All the Species have the Nature of the *Quercus*, whence they are binding, excite the Spirits, and move the Nerves; hence they are a very good Remedy in a Laxneſs and Inertneſs of the Nerves. A Conſerve of Sage is very proper for a Weakneſs of the Stomach in Women, for thoſe of that Sex who have for Years together laboured under an Infirmneſs or Debility of the Stomach, are cured by taking half a Dram of the Conſerve. *Hiſt. Plant. aſcript. Boerhaave.*

SALVIA AGRESTIS. A Name for the *Scordium*; *alterum*; *ſive Salvia agreſtis*.

SALVIA MONTANA. A Name for the *Sclarea*; *glutinoſa*; *floris lutei*, *variegati*, *Barbâ amplâ cavâ*.

SALVIA SYLVESTRIS. A Name for the *Stachys*; *Canarienſis*; *fruteſcens*; *Verbaſci folio*.

SALVIA VITÆ. A Name for the *Ruta*; *muraria*. See ADIANTHUM ALBUM.

Beſides the foregoing Species of *Salvia*, *Dale* mentions the following,

Salvia folio tenuiore, C. B. P. 237. Tourn. Inſt. 181. Raii Hiſt. 1. 510. *Salvia Indica*, Ger. 623. Emac. 765. *Salvia minor aurita odoratiſſima Hiſpanica*, Park. Theat. 50. *Salvia tenuifolia*, J. B. 3. 306. SPANISH SAGE.

It is cultivated in Gardens, and the Leaves, which are the Part uſed in Medicine, are endued with the ſame Virtues as thoſe of the common Sage.

SALZ, SULZ, or SELENIPPUM. Brine.

SAMBACH. A Name for the *Jaſminum*; *ſive Sambach Arabum Alpini*.

SAMBUCUS.

The Characters are;

The Branches are full of a fungous Pith; the Flower is monopetalous, rotated, multifid, as it were roſaceous, and diſpoſed in Umbellas, or Bunches. The Ovary, which penetrates the Bottom of the Flower, becomes a Berry full of Juice, and generally containing three oblong Seeds.

Boerhaave mentions eight Species of *Sambucus*, which are;

1. Sambucus; fructu in umbella nigro. *C. B. P.* 456. *Tourn. Inſt.* 606. *Boerh. Ind. A.* 2. 223. *Sambucus* Offic. Ger. 1234. Emac. 1422. Raii Synop. 3. 461. *Sambucus vulgaris*, Park. Theat. 407. J. B. 1. 544. Raii Hiſt. 2. 1609. COMMON ELDER.

The Elder-Tree is a common Hedge-Tree, whoſe ſpreading Branches have a ſpungy Pith in the Middle. The outſide Bark is of an Aſh-Colour, under which is another that is green. The Leaves are pinnated, of two or three Pair of Pinnæ, with an odd one at the End, which is larger than the reſt: They are oval, ſharp-pointed, and ſerrated about the Edges. The Flowers grow in large flat Umbels. They are ſmall, of one Leaf cut into five Sections, with as many ſmall Stamina, and are ſucceeded by ſmall, round, deep, purple Berries, full of Purple Juice. The Elder-Tree grows frequently in Hedges, eſpecially in moiſt Places, and flowers in *May*, and the Berries are ripe in *September*. The Bark, Leaves, Flowers, and Berries are uſed.

The inner green Bark purges thin ſerous Humours, and is much uſed for the Dropſy, the Leaves are only uſed outwardly, being good for Inflammations, St. *Anthony's* Fire, and the Piles. The Flowers are helpful for the ſame, and are frequently put in Fomentations and Cataplaſms, for all kinds of Swellings and Tumours, and Pains of the Limbs. Inwardly uſed they expel the Wind, and help the Colic. The Berries are cordial and uſeful in hyſteric Diſorders. They are diuretic, and good for the Dropſy; and are frequently put into Gargariſms for ſore Mouths and Throats.

On the Trunk of this Tree frequently grows a fungous Excreſcence, wrinkled and turned up like an Ear, whitiſh on the Outſide and black within, with ſeveral little Veins. Theſe are called Jews Ears, or *Auriculæ Judeorum*. They are accounted good for the Swelling and Inflammations of the Tonſils, ſore Throats and Quinſeys.

Officinal Preparations of the Elder, are the *Aqua Flerum Sambuci*, the *Oleum Sambucinum*, the *Unguentum Sambucinum*, and the *Syrupus Sambuci*. *Miller's Bot. Off.*

Its Leaves have a Taſte at firſt herbaceous and ſaltiſh, afterwards bitter. The Fruit is ſweetiſh, and gives a deeper Red to the blue than to the white Paper.

Its Leaves yield, by the Chymical Analyſis, beſide ſome acid and alcaline Liquors, ſome volatile concrete Salt, a great deal of Oil and Earth. Thus it may probably operate by a Sal Ammoniac, loaded with more Acid than ordinary, and joined

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joined with a great deal of Oil and Earth. The Salt of the Elder-Berries resembles Alum rather than Sal Ammoniac. It affords only a little urinous Spirit from these Parts, but a great deal of Acid, Oil and Earth. *J. Bauhin* and Mr. *Ray* took its Flowers to be pentapetalous; but it is monopetalous.

Hippocrates says it purges both by Urine and Stool. *Dioscorides*, also, says, that an Infusion of the Roots and Leaves in Wine evacuates Serosities, and affords Relief in hydropic Cases. He, also, commends Elder Wine, especially that of the Berries, for the Biting of Vipers, and in hysteric Cases; and adds, that it asswages Inflammations and the Gout, cures Burns, Ulcers, and the Bitings of mad Dogs. *Tragus* and *Dodonæus* prescribe either the Juice of the middle and green Bark, or an Infusion of them in Wine or Milk, to evacuate Bile and Serosities. *J. Bauhin* gives an Ounce and an half of Elder-Bark Water to be drank thrice a Day, in the Morning, Noon, and at Night, in hydropical Cases. Fresh (not dried) Elder-Flowers fried with Eggs, are said to purge well enough.

Infuse dried Elder-Flowers in Whey, and take a Glass of it Morning and Evening for the Small-Pox, and St. *Anthony's* Fire; bathing the Face, in the mean time, with two Parts of Elder infused in one Part of Spirit of Wine.

A Conserve and a Syrup is made with these Flowers. They boil them gently in Vinegar and Honey for Clysters. *Camerarius* prescribes the Decoction of the young Shoots of Elder, with a little Saffron, to provoke the Terms. They are, also, used in a Conserve and Syrup, or Powder, to keep the Belly open, and purify the Blood. A Rob, Extract, Spirit, Wine, Vinegar, Syrup, and Oil, is made of the Berries of *Elder*. To make the Rob, take one Pound of the Juice, half a Pound of Sugar, thicken them over the Fire. *Quercetan's* Receipt of the Extract is, make a Tincture of dried Elder-Berries, with a sufficient Quantity of Spirit of Wine, add a little Spirit of Sulphur; let them digest in a close-stopped Bottle five or six Days; filtrate the Tincture, drink half a Spoonful or a Spoonful, which is very good in the hysteric Passion; or draw off the Spirit of Wine by Distillation, and the Extract will remain in the Bottom of the Cucurbit; the Dose is from a Scruple to a Dram, in the same Disease and the Looseness. The burning Spirit of Elder-Berries is very sudorific, as also the Juice of the Berries, which are easily preserved either with Oil, or by mixing a third Part of good Spirit of Wine. That which they call Elder-Wine is this Juice kept a Year: Some boil it with Sugar to the Consistence of a Syrup. The Stones of the Berries, by Expression, yield an Oil which eases the Pain of the Gout. An Oil is, also, made for this Distemper by Dissolution of its Leaves. They bruise the Ribs of its Leaves, put them into a Stone Pot, and bury it pretty deep, after having luted it well with Plaister. At the End of the Year a Sort of Oil subsides to the Bottom of the Pot, which is very lenifying. The Stones given from three Drams to half an Ounce, in Powder, are purgative, or else an Emulsion of about an Ounce may be drawn from them; being macerated in white Wine, they are scarcely purgative. The Leaves boiled in thick Wine are very resolvent; they abate the Swelling of the Legs of hydropic Persons, by placing them so as to receive the Vapours or Steam from a Bath of it, or by frequent fomenting and applying the Fæces as a Cataplasm to them. The Leaves and Flowers of Tansey may be mixed with it.

Matthiolus prescribes an excellent Ointment for Burnings: Take Oil of Olive, two Pound; middle Bark of Elder contused, one Pound; boil them together, (adding now and then Elder Water) till the Bark be hard and black. Strain and boil it up to an Ointment, with four Ounces of new Wax, and as much of the Juice of young Elder Shoots, to keep it from burning. Before it is removed from the Fire, add Turpentine, and Male Frankincense, of each four Ounces; two hard Yolk of Eggs; keep it in a Stone Pot for Use. Or boil the middle Bark of Elder-Branches, contused in Oil of Olive or Nuts; bring it up to the Consistence of an Ointment with Bees-Wax, and Yolks of Eggs; keep it in a Bason with fresh Water. This is very good for the Gout, Inflammation of the Piles and Burnings. Apply some Honey, add afterwards some Nut-Oil boiled with Elder. This gives great Relief to Burnings by Gunpowder. Wash Ulcers produced by Burnings with a Decoction of Elder and Ash-Bark. *Zwelfer* prescribes an Ointment for Burnings thus:

Take of fresh Butter two Pounds; Elder-Oil, and green Juniper Berries bruised, of each a Pound; fresh Elder Flowers, six Ounces; white Roses, four Ounces; macerate all these together some Days, then boil them a little, and mix them up with five Yolks of hard Eggs. Apply this Ointment to the Burning with a Feather, and cover it with brown Paper. *Martyn's Tournefort.*

Martin Blockwitz has written a whole Book of the Virtues and Use of Elder, under the Title of *Anatomia Sambuci*, "The Anatomy of the Elder-Tree."

The inner Bark (the middle of the Stem) evacuates serous Humours, whence it is of Service in Dropsies. The Buds, or tender Leaves, boiled in Wine, or eaten in Sallads, are not so effectual, but fittest for weak Constitutions. The same pulverized, and taken in Pease-Broth, are good for Costiveness. The inner Bark applied to Ambustions, is said to be effectual to extinguish the igneous Heat. *Dioscorides* recommends a Cataplasm prepared of the fresh and tender Leaves, with Polenta, for Combustions. *Actuarius* also highly commends the *Sambucus* for a recent Combustion. The Flowers are discutient, emollient, resolvent, sudorific, and anodyne. Their principal internal Use is in preventing or curing an Erysipelas; and externally, they are of Service, also, in an Erysipelas, Combustions and the Colic. Our Domestics, says *J. Bauhin*, take the Bunches of Flowers, and fry them in a Pancake, and make thereof a grateful and wholesome Food. They may as well be mixed with other Meats, or fried with Eggs, being gently loosening of the Belly. The Flowers dried lose their purgative Quality with their Humidity; but retain their digestive and attenuating Virtue. Vinegar, in which the Flowers have been macerated, is grateful to the Stomach, excites an Appetite, and cuts and attenuates gross and crude Humours. The Berries are alexipharmic and sudorific. The Spirit drawn from the Berries is one of the principal Sudorifics, and also a very noble antifebrile Medicine. And the Wine prepared of the Juice, with white or *Rhenish* Wine, is of admirable Efficacy in the Dropsy. *Camerarius* writes, that the Juice of the Berries, mix'd with Cock-Broth, in which a good Quantity of Parsley-Root has been boiled, and expressed, is very good for hydropical Persons. The Stones, or Seeds of Elder are abstersive, and purge violently both by Stool and Vomit. The Decoction of the middle Bark of Elder, or Dwarf-Elder, with Syrup of Poppies, are an effectual Sudorific: For Narcotics added to Diuretics or Diaphoretics are the more provocative to Sweat, as appears from the Mixture of Opium in Theriaca Andromachi, and Mithridate. For Inflations of the Feet, take a sufficient Quantity of Leaves of Elder, and boil them in Oil and Salt, and therewith foment the Parts.

For the Arthritis, take Leaves of Elder, and put them in a glased Pot, so as that they may fill it without being wrinkled; press them very well and often, then put a Cover upon them, and bury them a Year under the Earth. After which you will find a Crust above, and Oil below, than which Oil nothing is of greater Efficacy, as it has been often tried. A Conserve of the Flowers has the same Virtue.

The *Sambucus* is less hurtful to the Stomach than the *Ebulus*, and the Leaves have not so strong a Smell, nor so much of a cathartic Force as those of the other. The *Germans* frequently use the inspissated Juice of the Berries as a Sudorific, and give it to their Children with Bread; and sometimes exhibit it with good Success to those who are inclined to a Dropsy. The Berries are boiled in Water, and strained; and then boiled again to the Consistence of a Sapa, or Rob.

A Plum-Tree grafted on an Elder-Tree, bears purging Fruit, according to *Camerarius*, who says he has tried it, tho' he could not easily comprehend the Reason. I think neither of them probable, says *Ray*, and cannot comprehend either the Insition of a Plum-Tree into an Elder-Tree; nor, if this be granted, how it should bear a Fruit of a purgative Quality.

For an Erysipelas, we have a Fomentation much in Use, which is prepared of two Parts of Elder-Water, and one Part Spirit of Wine. This Practice is grounded on Reason and Experience: For the Spirit of Wine, by the Subtilty and Activity of its Parts, is disposed to reduce the ruffled and distorted Tubes and Fibres of the Skin into their natural Order; and besides, the Parts affected with the Erysipelas are often eased and relieved by it in a remarkable manner. This is the common Remedy in *London*; but I have often in this Case, says Dr. *Hulse*, successfully made use of Water of Elder-Flowers, mixed and shaken together with Oil of Elder, to which I have sometimes added Spirit of Elder-Berries. I have frequently cured this Disorder with Oil of Elder and Canary Wine, mixed and shaken together.

For a quotidian Fever, take of the Bark of the Root of Elder, one Ounce; of Asarabacca, three Ounces, with a Dram and half of Cinnamon; boil them in Milk, and give it in the Beginning of the Paroxysm. It provokes to Stool, and excites Vomiting at one and the same time.

For Burns, or Combustions, take of the green middle Rind, or Bark of Elder, a Quantity at Discretion, and boil it in Oil till it be withered, and add thereto a little Wax, in order to render it a lucid Ointment. This, says *Chesneau*, I have several times tryed with Success. *Raii H. P.*

The Root rasped and infused in Wine, to the Quantity of an

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an Ounce, purges Water in great Abundance. The Juice of the middle Rind of Elder, expreſſed in a glaſed Mortar, and exhibited from a Dram to half an Ounce, is the beſt of Hydragogues, for a Perſon who is juſt ſuffocated with a Dropſy, provided the Viſcera be ſound, for it always cures in a few Days. It diſſolves the Humours to ſuch a Degree, that the Body runs with Streams of Water in every Part, and the Patient faints away on Occaſion of ſo great and ſudden an Evacuation. The Bark of the Root is eſteemed much the beſt for Uſe. The Leaves and Tops are commended by *Dioſcorides* in the hyſteric Paſſion, Inflammations, Combuſtions and Gout. The ſame Author exhibited the Juice of the Middle Rind, infuſed in Milk or Wine, to thoſe who laboured under the Peſtilence, in order to provoke Sweat. The bruiſed Leaves are very effectual in diſcuſſing all ſcirrhous and inflammatory Tumors, in eaſing the Pain of the Gout, and diſſipating aqueous Swellings, whence they are of Service in an aqueous Hernia. The Flowers are very ſalutary, and being infuſed in the manner of Tea, are very proper in all hot, ſeveriſh, variolous and morbillous Diſtempers. Their Decoction is very good to increaſe Milk in Women's Breaſts; and outwardly they are of Service in an Eryſipelas, Phlegmon, Head-ach, and Want of Sleep, being applied in a dry or humid Form, by their demulcent Virtue procuring a kindly and quiet Sleep. Of the Flowers are prepared a Conſerve and Syrup, of Uſe in Clyſters. The Tops are good to provoke the Menſes; and the Flowers are proper in all cancerous and ſcirrhous Diſeaſes, the Pain of the Cholic, and a quartan Ague. Of the Berries is prepared a Rob, which is juſtly accounted of univerſal Uſe in chronic as well as acute Diſorders, where is required a Diſſolution, or an Evacuation by Stool, Urine or Sweat, according to the different Determination or Tendency of the Humours. I never found any Remedy which gave ſo much Relief under a Cancer as theſe Flowers. There was an old Man, who lived to above one hundred and twenty-five Years, who regarded this Rob of Elder as his Arcanum, and happily ſurvived many contagious Seaſons, by uſing no other Remedy, but taking every Day ſome of this Rob, to which only, and to no other Thing, he imputed his Health and long Life. The Extract is very good in Hyſterics, and the Berries are of Service in all kinds of Dyſenteries and Diarrhæas; and the Oil is very good in the Gout. The Leaves, or middle Bark, made into an Ointment with Oil, are uſeful in the Hæmorrhoids, Gout and Combuſtions; and half an Ounce of the bruiſed Seeds mitigate Pains of the Belly, and deſtroy Worms. The outer Bark is aſtringent; and the Pith dried and torreſy'd is of Service in humid Ulcers. *Hiſt. Plant. Aſcript. Boerhaave.*

Bartholine, in *Diſſert. de Medic. Dan. Lib.* 1. informs us, that Elder is at once more ſafe and efficacious than the celebrated Antidotes prepared of Theriaca and Mithridate. The Flowers and Rob of Elder are highly and juſtly eſteemed by the common People; for the former are with great Succeſs externally applied for alleviating all eryſipelaceous Swellings, Toothachs and Gouts; as alſo for ſoftening Abſceſſes and hard Tumours, produced by coagulated Milk. The Water of theſe Flowers, in conſequence of its anodyne Quality, is of ſingular Efficacy in all Diſeaſes, whether acute or chronical; but eſpecially in thoſe Diſorders where Expulſion is proper, where the Pain is intenſe, and where there is an Inflammation of the internal Parts. The Rob prepared of Elder-Berries, is, as it were, the Panacea of the Country People, who uſe it as the beſt Preſervative, and the ſafeſt Medicine in the Beginning of Diſeaſes, mixing it either with warm Ale or Elder Flower Water; for it not only promotes the Excretions by Stool and Perſpiration, but is alſo poſſeſſed of an anodyne Quality. Some, in order to render this Rob more diaphoretic, add about a Dram of calcined Hartſhorn to it. If this Rob is mixed with an equal Quantity of Sugar-Candy, and a due Quantity of Brandy poured upon the Mixture, and kindled after a ſufficient Agitation, it affords a Medicine, one Spoonful of which is of ſingular Service in long protracted Coughs, and before the Paroxyſm of intermittent Fevers. The frequent Uſe of this Rob generally mitigates, and ſometimes ſtops the Impetus of theſe Fevers, provided the Crudities of the Primæ Viæ have been previouſly treated with Laxatives and Correctors. The Middle Bark of the Elder Tree, if boil'd in Ale, Water or Wine, powerfully promotes Sweat, Urine, and the Menſes, for which Reaſon it is highly proper for cachectic Patients. This Bark, when externally applied, removes oedematous and eryſipelacious Swellings, as alſo Pains and Tumors of all Kinds. *Hoffman. de Præſt. Remed. Domeſt.*

AQUA FLORUM SAMBUCI. See AQUA.
OLEUM SAMBUCINUM. See OLEUM.

ROB BACCARUM SAMBUCI.

Rob of Elder Berries.

Take of the Juice of Elder Berries any Quantity, and let it leiſurely be inſpiſſated over a gentle Fire, either by itſelf, or in Conjunction with a fourth Part of Sugar.

After the ſame Manner is prepared the Rob of Dwarf Elder, of Juniper and Veronica; unleſs that in the latter, the Sugar and Juices are required of equal Quantities. After the like Manner others, alſo, may be prepared.

UNGUENTUM SAMBUCINUM.

Ointment of Elder.

Take of Elder Leaves gathered in *May*, ten Handfuls, of the young Shoots growing about the Bottom of the Tree, two Pounds, of the inner Bark of the ſame, one Pound. After theſe are all cut ſmall, boil them in twelve Pounds of freſh Butter, over a ſlow Fire, continually ſtirring them all the while. Preſs out the Butter and ſtrain it: to it put the ſame Quantity of freſh Leaves, Shoots and Bark, and repeat the Proceſs as before, and then preſs it out again with leſs Force, ſo that it might be an Ointment.

This is entirely new, and wonderfully well contrived to preſerve all the Virtues of the Elder, as much as ſuch a Form will admit of: The Meaſure of Boiling is until the Leaves, *&c.* grow criſp.

2. Sambucus; fructu in umbella viridi. *C. B. P.* 456.

3. Sambucus; racemoſa; rubra. *C. B. P.* 456. *Park. Theat.* 407. *Raii Hiſt.* 2. 1610. *Tourn. Inſt.* 606. *Boerh. Ind. A.* 2. 223. *Sambucus montana*, Offic. *Sambucus racemoſa acinis rubris*, J. B. 1. 551. *Sambucus racemoſa vel Cervina*, Ger. 1234. Emac. 1422. MOUNTAIN ELDER.

This Elder differs not a great deal from the common, in Branches or Leaves; theſe are pinnated, and rather narrower than thoſe of the common Elder, having five ſerrated Pinnæ on a Stalk. The chief Difference is in the Flowers, which are yellower, and grow in thicker Cluſters, and in the Berries, which are not ſo deep, but of a reddiſh Colour. This Elder is ſeldom to be met with in *England*, but grows plentifully in *Germany*, and flowers in *May*.

It is not much uſed inwardly, being accounted ſomewhat Narcotic. It is an Ingredient in the Unguentum Populeon, but being rarely to be had, the common Elder is uſed in its Stead. *Miller's Bot. Off.*

4. Sambucus, laciniato folio. *C. B. P.* 456.

5. Sambucus; humilis; ſive Ebulus. *C. B. Pin.* 456. *Raii Hiſt.* 2. 1611. *Synop.* 3. 461. *Tourn. Inſt.* 606. *Boerh. Ind. A.* 2. 223. *Ebulus Chamæacte*, Offic. *Ebulus ſive Sambucus humilis*, Ger. 1238. Emac. 1426. Park. Theat. 208. *Ebulus ſive Sambucus herbacea*, J. B. 1. 546. DWARF-ELDER, or DANEWORT.

This is a much leſs Plant than the common Elder, ſeldom growing to be above three or four Foot high, having ſeveral long pinnated Leaves, growing two at a Joint; they are longer and narrower than the common Elder, and ſharper pointed. The Stalks are ſquare and ſtriated, dying down every Year, and riſing again in the Spring; on the Top of theſe grow Umbels of white Flowers, having frequently a Daſh of Purple, each of one ſmall Leaf, divided into five Segments; which are ſucceeded by round Berries, when ripe, of a deep Purple, or black Colour, and full of a purpliſh Juice. The Root is thick, and creeping on the Surface of the Earth.

Dwarf-Elder is much of the Nature of common Elder, purging ſerous watery Humours by Stool, and is therefore good for the Dropſy, and other Diſtempers ariſing from a Glut of Serum. It is likewiſe very ſerviceable againſt gouty ſcorbutic Humours, both given inwardly, and applied outwardly, boiled in a Lixivium. *Miller's Bot. Off.*

The Leaves are a little bitter, and the Fruit is more ſo. It is ſtiptic, and does not redden the blue Paper. By the chymical Analyſis the Leaves and Tops yield a little acid and urinous Spirit, no concreted volatile Salt, and a good deal of Oil and Earth. The Leaves are emollient and reſolving, they are heated under the Fire, and uſed as a Cataplaſm for the Gout, and all Kind of Tumors. The young Shoots and Bark are purgative. They often infuſe half an Ounce of its Seeds in a Glaſs of White Wine; then ſqueeze them a little, and give the Wine to hydropical Perſons to drink, but it purges very gently. It is better to make an Emulſion with ſix Drams or an Ounce of them, to diſcuſs the dropſical Swelling of the Legs, or to cure the Rheumatiſm, make a Balneum vaporis, with the Leaves of Dwarf-Elder, Tanſey, Sage, and ſuch like Plants, or elſe boil theſe Leaves in thick Wine to bath the Parts, and apply the Fæces to them. The Oil expreſſed

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preſſed from the Seed is ſweetening and reſolving. This Herb is a Succedaneum to Elder. *Martyn's Tournefort.*

The *Ebulus* is ſuppoſed to be endued with the ſame Virtues as the *Sambucus*, but in a ſuperior Degree. The Bark and Seeds are Hydragogues, and therefore of Service in the Dropſy, Gout, and other Diſeaſes proceeding from Serum. A Decoction of the Root and Seeds is celebrated by almoſt all Botaniſts for the Evacuation of Water in hydropic Caſes, but it ought to be corrected on Account of its Violence. An Infuſion of the Bark of the Root of *Ebulus* is a very violent Medicine, but the Decoction is milder, the Cathartic Virtue thereof being much diminiſhed, according to *Fernelius*, in the Boiling. *C. Hoffman* ſays the Berries and Seeds are inferior in Efficacy to the Root of the *Ebulus*; and I ſuppoſe, ſays *Ray*, the tender Shoots and Leaves are, alſo, of a milder Nature. The Leaves of the *Ebulus* being bruiſed and applied, are no leſs effectual in curing Combuſtions than thoſe of the *Sambucus*. The Leaves boiled in a Lixivium, and externally applied in Fomentations, are of Service, alſo, in mitigating the Pain of the Gout, as we ourſelves have in Part experienced; the Oil of the Seeds by Expreſſion does the ſame more effectually; the Berries, as well as thoſe of the *Sambucus*, dye the Hair.

For Affections of the Spleen, take of diſtilled Water of *Ebulus* to the Quantity of about four Ounces, for ten or twelve Days in the Morning faſting. This is an approved Preſcription of *Du Val*, a Doctor of Phyſic, for Pains, Inflations, and Obſtructions of the Spleen.

6. Sambucus; humilior; fruteſcens; foliis eleganter variegatis. *Suth.*

7. Sambucus; humilis; ſive Ebulus; folio laciniato. *C. B. P.* 456.

8. Sambucus; major; folio nigriori. *Boerh. Ind. Alt. Plant. Vol.* 2.

SAMBUCUS PALUSTRIS. A Name for the OPULUS.

SAMBUCUS ROSEA. A Name for the *Opulus*; *flore globoſo.*

SAMECH, in Paracelſus, according to *Rulandus*, is Tartar, or Salt of Tartar.

The *Balſamum Samech Paracelſi* is thus prepared.

Take of the beſt and pureſt Salt of Tartar, one Pound; reduce this to a ſtrong Lixivium, with a ſufficient Quantity of Rain-Water; then diſſolve and boil in Rain-Water one Pound of Cream of Tartar; mix both Solutions, Drop by Drop, till you obſerve the Effervеſcence totally gone; then ſuddenly filtrate what is capable of Filtration, and evaporate to the Form of a Salt; and thus you have the *Balſamum Samech* of *Paracelſus*; which may be rendered more perfect in the following Manner.

Take of this inverted Salt of Tartar any Quantity; pour upon it a Quantity of alcohol of Wine, ſufficient to riſe three Finger-Breadths above it: Let them ſtand in Digeſtion till the Spirit of Wine has aſſumed a highly red Colour; then pour off the Spirit of Wine, and add a freſh Quantity of it. Continue this till you have enough of the Tincture; then mix all the Portions of the Tincture together, and evaporate to an Half; for by this Means is prepared a Medicine, which powerfully carries off the Tartar of the Blood by Urine, and effectually expels Sand and Stones from the Kidneys.

The Doſe of the Salt is from half a Scruple to a whole Scruple, in ſome proper diuretic Liquor; and the Doſe of the Tincture from one Scruple to half a Dram. *Collectan. Chym. Lond.*

SAMEN. Barley. *Rulandus.*

SAMIA TERRA, Offic. Charlt. Foſſ. 3. Aldrov. Muſ. Metall. 239. Matth. 1391. Worm. 5. EARTH OF SAMOS.

This is an argillaceous, ſebaceous, pinguious, and ponderous Subſtance, of a white or pale Colour, and aſtringent Taſte. It was brought from the Iſland of *Samos*; and is recommended by *Dioſcorides* for checking Fluxes. It agrees in Virtues with the *Lemnian* Earth.

SAMIES. An obſcure Term in *Paracelſus*, which is ſaid to import the ſecret Effect, or Influence of the Air.

SAMIUS LAPIS. The *Samian* Stone. It is found in the Iſland of *Samos*, and is uſed by Goldſmiths in poliſhing and brightening Gold; the white and ponderous is the beſt.

The *Samian* Stone is aſtringent and refrigerating; for which Reaſon, being taken inwardly, it is of Service in ſtomachic Diſorders. It quickens and preſerves the ſenſitive Organs [for ἀφαιρῶν I read ἀφαιρεῖν], and uſed with Milk, is effectual in Defluxions upon the Eyes, and in Ulcers. Employed as an Amulet, it is ſuppoſed to accelerate the Birth, and to prevent Miſcarriage. *Dioſc. Lib.* 5. *Cap.* 173. See ALANA TERRA.

SAMOLOIDES.

The Characters are;

It hath a Flower conſiſting of one Leaf, which is cut into four Parts almoſt to the Bottom, and expands in form of a Star. In the Centre of the Flower ariſes the Pointal, which is ſurrounded at Bottom by a Number of ſlender Threads, which are expanded, and accompanied by four Chives. This Pointal afterwards becomes an oblong Seed Veſſel, which is Vivalve, and contains flat Seeds.

Boerhaave mentions but one ſort of *Samoloides* which is; Samoloides; quæ Capraria, Curaſſavica; Cabritta vulgò dicta. *H. A.* 1. 79. *Boerh. Ind. Alt. Plant. Vol.* 2.

This Plant is very common in *Jamaica*, and ſeveral other Places in the *Weſt Indies*, where it hath been by ſome People dried and uſed as Tea, from whence it had the Name. In *Curaſao* the Goats feed on this Plant, from whence the Inhabitants gave it the Name of *Cabritta*. But at preſent it is not uſed by any of the Inhabitants of *America* ſo far as I can learn. *Millers Dictionary Vol.* 2.

SAMOLUS.

The Characters are;

It hath a Wheel ſhaped Flower, conſiſting of one Leaf, which is cut into ſeveral Segments; the Pointal ariſes from the Empalement, and is fixed like a Nail in the Centre of the Flower; which uniting with the Empalement, is turned into a Fruit or Pod, opening at the Top, and incloſing many ſmall Seeds.

Boerhaave mentions but one ſort of *Samolus*, which is

Samolus Valerandi. *J. B.* 3. 791. *Veronica, aquatica, folio ſubrotundo, non crenato.* M. H. 3. 323. H. L. 622. *Anagallis, aquatica, folio rotundo, non crenato*, C. B. P. 252. *Boerh. Ind. Alt. Plant. Vol.* 1.

This Plant grows wild in ſwampy Places, where the Water uſually ſtands in Winter, and is ſeldom preſerved in Gardens; it is an annual Plant, which flowers in *June*, and the Seeds are ripe in *Auguſt*.

It approaches in Reſemblance to the *Veronica*, but theſe have a tetrapetaloidal Flower, whereas the *Samolus* is pentaphylloidal; it is endued with a ſlight, nitrous and antiſcorbutic Virtue.

SAMPARANTAM. The Indian Name for an orbicular Fruit, the ſame as the *Lobus Echinatus Moluccenſis.* Ponæ. *Lobus Orbicularis fuſcus, ſpinoſis Tuberculis obſitus, binos Phaſeolos nigros continens.* C. B. *Cluſius* ſuppoſes theſe to have ſome uſe in the *Indies*, becauſe all thoſe he ſaw had Holes bor'd thro' them, in order to be ſtrung; but he could not diſcover for what they were employ'd.

SAMPSUCHINUM. A Compound Ointment deſcrib'd in *Dioſcorides. L.* 1. *C.* 57.

SAMPSUCHUM. See AMARACUS.

SAMSTRAVADI. See JAMBOS.

SANALIA. The Syrian Name for thoſe Species of Tumors which the Greeks call *Melicerides. Aetius, Tetrabib.* 2. *Serm.* 4. *C.* 15.

SANAMUNDA. A Name for the CARYOPHYLLATA; VULGARIS.

SANCTUM LIGNUM. See GUAIACUM.

SANDARACHA. See AMBRA.

SANDARACHA GRÆCORUM. The ſame as REALGAR.

SANDARACHA, Officin. *Vernix Arabum.*

This is a Gum Reſin, which flows from the *Cedrus Lycia major Dodon.* It is attenuant and reſolvent, but is ſeldom uſed in Phyſic, though very much by the Varniſhers, being firſt diſſolved in Spirits of Wine. It is, alſo, uſed to embelliſh Writings, being firſt ſcattered on the Paper, and afterwards rubb'd with a Wolf's Tooth; for by this Means the Paper continues to bear Ink, and all Eraſions diſappear. It is ſometimes confounded with Juniper Gum, and is very different from that kind of Orpiment, which was the *Sandaracha* of the ancient Greeks. *Geoffroy.*

SANDASTROS. A precious Stone call'd, alſo, *Garamatites*, mark'd with yellow Spots. It is eſteem'd Cordial, and good to reſiſt Poiſons, being powder'd, and taken in the Quantity of half a Scruple, or a Scruple. But *Lemery* is of Opinion, that it only acts as an *Alcali*, and Abſorbent.

SANDILZ ANGLORUM, *ſive Anguilla de Arena.* The foreign Writers upon the *Materia Medica*, in particular *Lemery*, have miſtaken this Word. They mean Sand-Eels; a ſmall Fiſh, dug out of the Sea Sand in many Parts of *Britain.* They are ſomewhat longer than a Finger, about as thick, of a blue Colour on the Back, and white on the Belly. They are uſed in Food, and are eſteem'd aperitive.

SANDIVER. See AXUNGIA VITRI.

SANDIX. See CERUSSA.

SANDYX, in *Dioſcorides*, L. 5. C. 103, is Ceruſs calcin'd in a Pot, till it acquires the Colour of *Sandarach*, that is, *Realgar.*

SANGUICULUM. The ſame as HÆMATIA.

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SANGUIFICATIO. Sanguification; that is, the Elaboration of Blood.

SANGUIFLUUS. The Name of a poiſonous Serpent; the ſame as HÆMORRHOUS.

SANGUIFUCA. A Filtre. *Rulandus.*

SANGUINALIS HERBA. A Name for the *Polygonum.* Knot Graſs.

SANGUINARIUS. The ſame as ENÆMOS.

SANGUINEA. Nitre. *Rulandus.*

SANGUINEUS. Sanguine; that is, full of red Blood.

SANGUINIOLUM, in *Paracelſus*, is a Sign in the Urine of a future Exulceration, and Apoſtemation.

SANGUIPURGIUM. A ſlight Fever, thus call'd by ſome Authors, becauſe it is thought to purge the Blood.

SANGUIS. Blood.

As the Welfare of the Animal Oeconomy depends ſo much upon the Blood, and its due Circulation thro' the Veſſels adapted to convey it to all Parts of the Body, it will be of ſome Importance to examine the Nature of this Fluid, and enquire into the Vital Powers by which it is elaborated, and render'd fit to ſupport the Body in a State of Health.

All our Food conſiſts of Animal or Vegetable Subſtances, Salt alone excepted, and Water, and many of theſe require a Culinary Preparation, in order to render them the more eaſily diſſolvable by the Actions employed for their Reſolution. The Buſineſs of Cookery, therefore, is to diminiſh the Coheſion of the Parts of Alimentary Subſtances, and partially digeſt them before they are taken into the Mouth; and to harden them by Dreſſing, as is ſometimes done, is an Error of the worſt Conſequence with reſpect to Health, however it may indulge the Palate.

Aliments, then, prepar'd, or crude, are taken into the Mouth, where they are comminuted by chewing, mix'd with the *Saliva*, and prepar'd for a future perfect Digeſtion, towards which this is the firſt Step. Manducation, or Chewing is performed by means of the *Biventer*, or *Digaſtric* Muſcles, which acting, draw the Chin towards the Breaſt, and open the Mouth; which again is cloſed by the Contraction of the Temporal Muſcles, the Maſſeters, the external Pterygoide, and Internal Pterygoide Muſcles, which being very ſtrong, preſs the Jaws together with a prodigious Force.

The firſt Part of Manducation is, the inciding, or cutting the Aliment with the fore Teeth, which is called biting; the Food is then apply'd to the double Teeth call'd Grinders, by the varied Actions of the Buccinators, the Orbicular Muſcle of the Lips, the Zygomaticks, the *Elevator Labiorum Communis*, the *Elevatores Labii Superioris propriæ*, the *Elevator Labii inferioris proprius*, the *Depreſſor Labii inferioris proprius*, the *Depreſſor Labiorum communis*, the *Obliquus Labii inferioris*, and the *Platyſma Myoides*; when theſe act all together, the Cheeks and Lips are apply'd ſo cloſely to the Teeth, that no Part of the Aliment, whether ſolid or Fluid, can fall from betwixt the Teeth externally; but when they act ſeparately, the Aliment is apply'd to the Teeth in ſuch a manner as the Circumſtances moſt require. The Tongue, alſo, has a very conſiderable Share in applying the Aliment properly to the Teeth. The Action of Maſtication is of ſo much Importance to Health, that *Hippocrates* long ago remarks, that thoſe whoſe Teeth are good, live to a very old Age. It is therefore a very great Error to ſwallow the Aliment, before it is duly maſticated.

During the Action of Maſtication, the comminuted Aliment is intimately mix'd with the Saliva, diſcharg'd from the Parotid Glands, the internal Maxillary Glands, the ſublingual Glands, from innumerable Emiſſaries in the Tongue, Palate, Gums, and Lips, and from Glands ſituated in the anterior and inferior Parts of the Palate, the Uvula, and from the Tonſils. This Saliva is a thin, pellucid Fluid, which does not concrete by Heat; is almoſt void of Taſte and Smell, and when agitated forms a tenacious Froth; it is ſeparated by the Glands from the pure Arterial Blood, and during Hunger, is more copious, fluid, and acrid; after long-faſting it is very acrid, penetrating, detergent, and reſolvent; it excites and increaſes Fermentation in farinaceous and ſucculent vegetable Subſtances, and Syrups; in both Men, and Brutes in a healthy State, it is ſwallow'd during Sleep; and if wantonly ſpit out, Loſs of Appetite, Indigeſtion, and Atrophies, are hence excited; it conſiſts of a pretty large Proportion of Water and Spirits, and a ſmall Quantity of Oil, and Salt, which are united into a natural Soap, very well ſuited to attenuate the Aliment, and diſpoſe it to a perfect Solution.

Hence the Error is evident which thoſe commit, who laviſh this ſalutary Fluid, and ſollicit the Diſcharge thereof by ſmoaking, or chewing Tobacco, or by any other Means.

The Alimentary Maſs thus maſticated, and moiſten'd, is thruſt towards the *Fauces*, whilſt the Teeth are cloſed, the Aliment confin'd within them by the Contraction of the Muſcles of the Lips and Cheeks, and the Tongue is ſo directed, as to occupy all that Space betwixt the Teeth of the ſuperior Jaw, and the Palate. Mean time the *Genioglosſi*, *Styloglosſi*, and *Ceratoglosſi*, acting ſucceſſively, from a Cavity at the Root of the Tongue, under the pendulous Veil of the Palate, the Uvula, and Tonſils; but above the *Larynx*, and *Pharynx*, and before the Membranes which cover the Bodies of the Vertebræ of the Neck, and poſterior Muſcles of the *Pharynx*, and bring thither all the Aliment to be ſwallowed down. Then the Root of the Tongue is expanded, elevated, and brought forwards by the Action of the *Genioglosſi*, *Myloglosſi*, *Geniohyoidæi*, *Mylohyoidæi*, *Stylocerathyoidæi*, whilſt the *Os Hyoides* is applied to be pendulous Veil of the Palate, and the Foramen leading to the Noſe is cloſed. At the ſame time, the *Os Hyoides* and *Larynx* are elevated by the Contraction of the *Thyrohyoidæus*. Hence the Aliment to be ſwallowed preſſes upon the *Epiglottis*, whilſt the *Uvula* is depreſſed by its proper Muſcles, and the Chink of the *Glottis* cloſed. At the ſame time, the *Genioglosſi*, *Myloglosſi*, *Geniohyoidæi*, and *Mylohyoidæi*, move the Root of the Tongue, *Os Hyoides*, and *Larynx*, forwards; and thus open the *Pharynx*, which is annex'd to the Root of the Tongue, the *Os Hyoides* and *Larynx*. And thus the Fauces are opened, and Room made for the Aliment to be ſwallowed; eſpecially when, at the ſame time, the external Pherygoide Muſcles, and ſome Fibres of the Maſſeter, draw the intire inferior Jaw forwards, thus making more Room, and bringing forwards the *Gloſſopharyngæi*, *Hyopharyngæi*, *Thyropharyngæi*, and *Cricopharyngæi*. Thus the ſuperior Part of the *Pharynx* is dilated, and applied to what is to be ſwallowed, whilſt the ſuperor Orifice of the Pharynx cloſes, the *Stylopharyngæi* being contracted, and *Oeſophagæi* relaxed, for the farther Paſſage of the Aliment. At the ſame time, the internal and external Muſcles of the *Gargareon* act in ſuch a manner, as to elevate and expand the Veil of the Palate, and to prevent any Particles from falling either into the Chink of the *Glottis*, or Paſſage to the Noſe. The very inſtant afterwards, all the contracted Muſcles abovementioned are ſuddenly relax'd, and both the *Sternohyoidæi*, *Sternothyroidæi*, and *Coracoceratohyoidæi*, act; by which Mechaniſm the broad poſterior Surface of the Cricoide Cartilage is preſſed downwards and backwards againſt the *Pharynx*. And at the very ſame Moment, the *Gloſſoſtaphylini*, *Pharyngoſtaphilini*, and *Azygos* Muſcle of *Morgagni*, act with a kind of convulſive Motion, and great Force; ſo that the Veil of the Palate then diſtended, and expanded upwards, is ſuddenly drawn downwards, in ſuch a Manner as to preſs the Aliment into the Orifice of the *Oeſophagus*, now elevated, and dilated by the Contraction of the *Gloſſoſtaphylini*, and *Pharyngoſtaphylini*. With theſe concur the ſame kind of convulſive Motion in the *Gloſſopharyngæi*, *Hyopharyngæi*, and *Thyropharyngæi*; by which the Tongue, *Os Hyoides*, *Larynx*, and poſterior Part of the *Pharynx* are ſo preſſed together, as to aſſiſt, at the ſame time, with conſiderable Force, the Intruſion of the Aliment into the Orifice of the *Oeſophagus*. Thus the *Pharynx* is cloſed, whilſt the *Oeſephagæus* contracts, and the Aliment is retained in the Cavity of the *Oeſophagus*, under the *Pharynx*, and is immediately farther protruded into the Stomach, by the Contraction of the longitudinal and orbicular Fibres of the muſcular Coat of the *Oeſophagus*.

By this exquiſite Mechaniſm is the Aliment conveyed to the Stomach. Hence, however, it is evident, that many Diſorders in theſe Parts may interfere with Deglutition, render it laborious, or utterly ſubvert it; in particular, Tumors in the Parts ſubſervient thereto, and Palſies of the Muſcles. Deglution may, alſo, be prevented, by a continued ſwallowing of dry Subſtances: For by this the Mucus, which lines the Inſide of the *Fauces*, *Pharynx*, and *Oeſophagus*, is abraded, and waſted; and thus the Organs, ſubſervient to Deglution, are rendered too dry to perform their reſpective Offices. When the Uvula is loſt, or the Veil of the Palate ſlit, Deglution is incommoded; in the firſt Caſe, the Perſon thus affected is ſubject to a Cough when he attempts to ſwallow, becauſe a Part of the Aliment is ſubject to fall into the *Larynx*; in the ſecond Caſe, the Aliment to be ſwallowed paſſes into the Noſtrils.

As ſoon as the Aliment has paſſed into the Stomach, the ſuperior Part of the inferior Muſcle of the Diaphragm contracts upon the inferior Part of the *Gula*, which paſſes thro' it, and thus cloſes up the Stomach.

The Food thus moiſtened, and at the ſame time full of Air, depoſited in the cloſe, moiſt, and warm Stomach, would there ſpontaneouſly begin to ferment, or putrify, according to the different Materials of which it conſiſted; and either Way would be greatly changed, either into an Acefcent, Alcalescent, rancid, or glutinous Maſs. But the villous Coat of the Stomach, which immediately embraces the alimentary Maſs, ſupplies it perpetually, by innumerable Emiſſaries, with a thin,

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a thin, pellucid, frothy Humour, abounding with Spirits, and a little Salt, which, in the moſt voraceous Animals, is neither alcaline nor acid, but ſomewhat acrid, after long faſting; and with a more viſcid and mucous Humour, diſcharged into the Cavity of the Stomach, from the Emiſſaries of certain Glands deſtined for the Secretion thereof. See COELIA.

If it be conſidered that the alimentary Maſs is moiſtened by the Saliva brought into the Stomach perpetually, and that in large Quantities, from the Mouth, *Fauces*, and *Oeſophagus*; that the Stomach dilutes it by the Humours abovementioned; that the Relicts of former Aliment is mixed and agitated with it; that the Air contained in the alimentary Maſs rarifying, divides it intimately; and that the Heat of the Part excites and promotes the Action of all theſe, 'tis evident that the Food muſt in the Stomach be macerated, diluted, ſwell'd, attenuated, fermented, and diſſolved, and thus rendered fit to mix with the Animal Juices, and pervade the minute Canals of the Body.

Beſides theſe, the Action of the muſcular or carnous Coat of the Stomach muſt be taken into Conſideration, which cloſely embraces all the Contents of this Organ, mixes them and grinds them together by a Sort of vermicular Motion, expoſes them to the Action of the ſurrounding Parts, retains the more groſs Parts, and expels the more Fluid towards the *Pylorus*, and thence into the *Duodenum*.

Several other Circumſtances muſt be conſidered as promoting the Digeſtion of the Aliment in the Stomach; as, Firſt, the Heat communicated to this Organ by all the ſurrounding Parts. Secondly, the perpetually-repeated Strokes of innumerable Arteries in the Diaphragm, Omentum, Spleen, Liver, Pancreas, Meſentery, and Peritonæum, upon the Stomach. Thirdly, the violent Vibrations of the *Aorta*, ſituated immediately under the Stomach. Fourthly, the Action of the nervous Fluid, with which no Part is more copiouſly ſupplied than the Stomach; a Circumſtance not yet perfectly underſtood. Fifthly, the perpetual Compreſſure of the Stomach, and all the abdominal Viſcera, by the reciprocal Action of the Diaphragm and abdominal Muſcles, during Inſpiration and Expiration.

The Effects of all theſe Cauſes, acting with united Force, muſt be,

Firſt, To levigate, diſſolve, and intimately mix the moſt eaſily mutable Parts of the Aliment, and to preſs them thro' the *Pylorus* into the *Duodenum*.

Secondly, To retain the more tenaceous Parts; and by a Continuation of the ſame Cauſes, to produce the ſame Effects upon them.

Thirdly, To render juiceleſs the Membranes, Tendons, Cartilages, and Bones of Animals; and the Skins, Filaments, and harder Parts of Vegetables; and thus to expel them out of the Stomach, in order to their being diſcharged by Stool.

It is worthy of Remark, that all the Juices employed in bringing about the Digeſtion of the Aliment, are neutral and ſaponaceous, and neither alcaline nor acid. Hence appears the Abſurdity of thoſe idle Dreams of Authors relative to Ferments, and alcaline or acid Menſtruums in the Stomach, than which nothing is more abſurd.

We have thus conducted the Aliment to the Stomach, whence it is expelled into the *Duodenum*, where it undergoes ſome conſiderable Alterations, from the Action of that Inteſtine, and of the Bile and pancreatic Juice thereon. For which ſee the Articles DUODENUM, BILIS, CHYLUS, and PANCREAS.

In the Inteſtines the Chyle is ſeparated from the *Fæces*, which are expelled by the periſtaltic Motion of the Inteſtines thro' the Arms, whilſt the ſame periſtaltic Motion impels the elaborated Chyle into the Orifices of the lacteal Veſſels, which is afterwards convey'd to the Receptacle of the Chyle, and thence through the thoracic Duct to the left ſubclavian Vein, where it mixes with the Maſs of Blood, and by the *Vena Cava Deſcendens* paſſes to the right Auricle of the Heart.

The Vena Cava Aſcendens and Deſcendens unite in one, and open into the right Auricle, where they unite. There is a little Protuberance made by their Coats on the Inſide of the Canal, like an Iſthmus, which directs the Blood both of the one and the other into the Auricle, and ſo hinders them from ruſhing one upon another. The right Auricle, in its Diaſtole, receives the Blood from the Vena Cava, which by its Syſtole is thruſt into the right Ventricle: (For the tendinous Circle, which is at the Mouth of the Cava, contracts and hinders the Blood to return into it) which at the ſame time is in its Diaſtole. In the Syſtole of the right Ventricle, the Blood is thruſt into the Pulmonary Artery: For it cannot return into the Auricle, becauſe of the Valvulæ Tricuſpides, which communicates with the Vena Pulmonalis, which carries back the Blood into the left Auricle, which in its Syſtole thruſts the Blood into the left Ventricle, which is then in its Diaſtole. In the Syſtole of this Ventricle the Blood is thruſt into the Aorta, (for it cannot return into the Auricle, becauſe of the Valvulæ Mitrales) which carries it through all the Body. Now the Aorta, when it comes out of the Heart, aſcends a little upwards, and then turns downwards to form the deſcending Trunk; and from the upper Side of this Turning the cervical and axillary Veſſels ariſe. By this Artifice the Blood collides againſt the Sides of the Aorta; its Force is broken; Part of it is taken in by the Mouths of the aſcending Branches; but its greateſt Part is directed downwards.

The Blood conveyed by the Arteries, is carried to correſponding venous Canals, and ſo again to the right Auricle of the Heart.

Let us now conſider which Way the Blood circulates in the Fœtus; for this you muſt obſerve, that in the right Auricle, on the lower Side of the Protuberance of the Cava, juſt oppoſite to the Mouth of the Cava Aſcendens, there is a Hole called the Foramen Ovale, which opens into the Vena Pulmonalis. This Hole has a Valve, which ſuffers the Blood to enter the Vein, but hinders it to come back again. There is likewiſe a Paſſage, or Canal, which runs from the Trunk of the Pulmonary Artery to the Trunk of the Aorta.

Now the Blood, which comes from the Placenta, by the umbilical Vein, into the Vena Portæ, is ſent into the Cava by a Canal, which goes ſtraight from the Trunk of the Portæ to the Trunk of the Cava in the Liver. This aſcends the Vena Cava, and is directly thrown through the Foramen Ovale into the Pulmonary Vein, which carries it into the left Ventricle, which throws it into the Aorta, to be diſtributed through all the Body. But the Blood, which comes down the Vena Cava Deſcendens, is diverted by the Iſthmus of the Cava, from the Foramen Ovale, and falls into the right Ventricle, which thruſts it into the Pulmonary Artery, from whence Part of it is immediately carried by the communicating Canal into the Aorta. The Reaſon of theſe Paſſages in a Fætus was, becauſe the Blood could not all paſs thro' the pulmonary Blood-Veſſels, they being too much compreſſed by the Subſtance of the Lungs; but as ſoon as the Child is born, and the Preſſure is taken off from the Blood-Veſſels by the Diſtenſion of the Lungs with Air, the Blood finding a free Paſſage thro' the Lungs, runs no more by the communicating Canal, whoſe Direction, likewiſe, is not ſo favourable for its Reception as before; becauſe the pulmonary Artery being ſtretch'd out with the Lungs, makes it go off at right Angles, and therefore it dries up. And now the pulmonary Veins being diſtended with the greater Quantity of Blood, which it receives from the Lungs, the Valve of the Foramen Ovale is preſſed cloſe to its Sides, denying a Paſſage to the Blood from the Cava, to be mixed with the reſt of the Blood. By this you ſee, that the Blood, which comes from the Vena Cava Deſcendens, paſſes only through the left Ventricle, whilſt the Blood which comes from the Cava Aſcendens paſſes only through the right Ventricle.

As the Blood is the only Treaſure of Life, ſo long as it is poſſeſſed of a laudable Quality, and in a due Quantity carried through the vaſcular Parts of the Body, ſo 'tis neceſſary the Phyſician ſhould, by all proper Methods, inveſtigate its Nature and various Mixtures in different Conſtitutions and Diſeaſes. But nothing has a more direct and immediate Tendency to render us acquainted with the genuine and real Nature of the Blood than a chymical Analyſis of it.

In order therefore to this, we muſt firſt by ſtatical Experiments diſcover the Proportion between the ſolid and fluid Parts of the Blood, both in a fluid and morbid State. The Eſtimate is to be made in the following Manner: The Blood taken from the Vein is firſt to be weighed, and then put into a Tin Veſſel, in which it is to be dried; then the remaining dry Powder is again to be weigh'd, by which Means the Quantity of the ſolid and fluid Parts of the Blood may be exactly determined. The larger the Quantity, therefore, there is of a ſolid Matter, the more thick and tenacious the Blood is; a Circumſtance which ſurpriſingly favours the Generation of Obſtructions.

We are taught by the Laws of Mechanics, that three of the fluid, and only one of the ſolid Parts of the Aliments, are neceſſary to the Preſervation of Health. Hence we juſtly infer, that there ought to be a due Proportion between the Aliments and Drink, ſince the former by no means contain a due Quantity of Fluid or Moiſture.

In the above-mentioned Experiment, 'tis obſervable that the aqueous Part of the Blood is far ſooner evaporated than the ſame Quantity of any Water placed in a ſimilar Veſſel, and expoſed to the ſame Degree of Heat; a certain Proof that the Water mixed with the Blood and vital Humours, is not groſs and crude, but highly thin and volatile. Notwithſtanding

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ing this Circumſtance, the human Blood is ſpecifically heavier than Water, on Account of the ſolid Principle it contains; for if a Veſſel full of Water weighs nine Ounces and ſix Drams, upon pouring out this Water, and filling it with human Blood, its Weight is obſerved to amount to ten Ounces and two Drams. So that in this Caſe, the ſame Quantity of human Blood ſurpaſſes the like Quantity of Water by more than half an Ounce.

If the Serum floating on human Blood is put into a Silver Spoon, and held upon live Coals, it is like the White of an Egg, formed into a hard and fiſſile Body; a certain Proof that this Serum is turgid with a large Quantity of nutritious Juice. And, like the White of an Egg, is it neither of an alcaline or an acid Nature, becauſe it neither produces an Effervescence with Acids nor Alcalis. 'Tis, therefore, no Wonder that it ſhould be coagulated by a Solution of Alum, Oil of Vitriol, and highly rectified Spirit of Wine. Hence 'tis obvious how prejudicial theſe Liquors muſt be to the vital Texture and Motion of the Blood.

Blood newly taken from the Vein is totally reſolved into Serum, when expoſed to a gentle Heat, which is ſo far from rendering it more ſolid, that it gradually and ſucceſſively reſolves the Coagulum. If this Heat is continued for a conſiderable Time, the Blood is ſtill rendered thinner by its Continuance, and, juſt like the White of an Egg, begins to grow putrid, in which State it not only has a fetid Smell, but alſo produces an Effervescence, when mixed with Acids. Hence 'tis obvious, that an alcaline Salt is produced by putrefaction. From this Experiment we learn, that the Blood and Serum, by the natural Warmth of the Body, in proceſs of Time degenerate into Excrements, ſuch as Sweat and Urine, and that an Acceſſion of new Chyle is always neceſſary; otherwiſe, a long continued Hunger may prove the Cauſe of Death.

When human Blood is ſubjected to Diſtillation from a Glaſs-Veſſel, expoſed to a gentle Heat, a large Quantity of Water is yielded, which has neither the Appearance of an Acid, an Alcali, nor any ſpirituous Principle. Hence 'tis obvious, that the ſpirituous Principle of the Blood is highly moveable, but by no means ſulphureous, phlogiſtic, or of an alcaline and volatile Quality.

If after abſtracting the Phlegm of the Blood from the Cucurbit by a very gentle Heat, the coagulated Maſs left in the Bottom is put into a Glaſs Retort, and expoſed to a briſk Fire, there is firſt obtained a yellowiſh Spirit, and a yellow Oil, after which a volatile white Salt adheres to the Sides of the Veſſel in various Figures. Then, upon increaſing the Fire, a groſs Oil which falls to the Bottom, is obtained, and a large Quantity of volatile Salt aſcends.

From the Caput Mortuum no fixed Salt is obtained, except perhaps common Salt, which generally happens if the Perſon has uſed large Quantities of that Salt. When the Caput Mortuum is committed to an open Fire, a ſmall Quantity of a whitiſh Earth remains.

If an equal Quantity of Quick Lime is added to human Blood before Diſtillation, then, a more pure volatile Salt is obtained, or 'tis rather better to rectify all the Subſtances obtained from Blood, with Quick Lime.

But we are principally to advert to that Experiment, in which, without the Aſſiſtance of Fire, which deſtroys the primitive, and induces a new Texture, by an Affuſion only of warm Water, the Blood is reſolved into its Elements; for if the Blood is dried, reduced to a Powder, and put into warm Water, this Water becomes reddiſh, and there remains a viſcid Matter, of a browniſh Colour, which cannot be diſſolved by Water. And this Matter, indiſſolvable on account of its glutinous Subſtance, is twice as large in Quantity as the Matter capable of Reſolution. If it is dried, there remains a Powder of a dark Colour, which eaſily takes Flame, a certain Proof that it conſiſts of ſubtile ſulphureous Parts, whereas the Remainder conſiſts of more fixed and terreſtrial ſulphureous Parts.

Theſe two Subſtances in the Blood may be diſcovered by the Eye, if Blood flowing from a Vein is received into tepid Water, which is ſoon tinged with a reddiſh Colour, whilſt in the Bottom of the Veſſel there remain white Flakes, compoſed as it were of Spiders Webs, and incapable of being reſolved by Water. Nor is it to be doubted that a Blood thus abounding with ſuch a groſs Subſtance, is very ſubject to generate polypoſe Concretions, and produce Obſtructions of the Veſſels. *Hoffman. Obſ. Phyſ. Chym. Lib.* 2. *Obſ.* 21.

For an Illuſtration of the Texture and Conſiſtence of the Blood, Dr. *Langriſh* took the Pains to examine it in a ſtatical Way, in every Stage of an acute continual Fever, where Blood could be drawn with Safety; in order to diſcover the different Proportions of Serum and Gore, and the different Powers of Coheſion between the red Globules which conſtitute the Craſſamentum.

But before we proceed, continues the Doctor, to the Experiments themſelves, it may be proper to adverti ſe the Reader of the Manner in which they were made. Firſt, I always took Care to bleed into a Porringer as near the ſame Shape and Size as poſſible; becauſe a larger Surface of Blood ſhould not be expoſed to the Influence of the Air in one Trial than in another. Secondly, all the Blood was received in one Porringer, becauſe I have found by Experience, that a Pound of Blood does not ſeparate ſo much Serum when divided into ſeveral Parcels, as when contained in one Veſſel. Thirdly, I always ſet the Blood in a cool Place, and after it had ſtood twenty four Hours, I very carefully weighed the Serum and Cruor ſeparately, in order to find their different Proportions. Fourthly, I took a very thin Glaſs Tube, twelve Inches long, and one Third of an Inch in Diameter, and having hermetically ſealed up one End of it, I blowed it out to an obtuſe Point, about the Bigneſs of a middling Pea. Now this Point being ſet upon the Craſſamentum, the Weight of the Tube was not of itſelf ſufficient to preſs through; and but very ſeldom when filled with Water; ſo that my Way of trying the Coheſion of the Gore, was to pour Mercury into the Tube, till it was juſt heavy enough to cut its Way through; and as the Tube was exactly graduated, I could by theſe Means very nicely determine the Power of Coheſion between the Globules which conſtituted the Craſſamentum.

N. B. Every Degree was one Eighth of an Inch; ſo that when it is ſaid in the following Table, *Degrees of Coheſion*, *N.* 48. we mean that the Cruor was ſo tough as to be equal to the Weight of ſix Inches of Mercury, beſides the Weight of the Tube, which was three Drams, and fifty ſix Grains.

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The Age of the Person.	The Day of the Disease.	The Symptoms.	The Quantity of Blood taken away.	The Quantity of Serum.	The Taste and Colour of the Serum.	The Colour and Consistence of the Crassamentum.	What Days the Crises happened, and by what Outlets.
A Man aged 45.	IId.	Intense Heat, Thirst, Vomitings, Looseness, excruciating Pains in the Head, Back, and Loins, and clear, pale, limpid Urine.	13 Ounces and two Scruples.	3 Ounces, 3 Drams, and 1 Scruple	Something more brackish than healthy Serum, and of a flaming yellow.	Very florid, except here and there a blue Speck. Degrees of Cohesion 34.	On the seventh Day by Sweat and turbid Urine.
A Woman aged 32.	Ist.	A quick full Pulse, extreme Pain in the Head and Loins, and delirious.	14 Ounces and 1 Dram.	3 Ounces, 5 Drams, and 2 Scruples.	Almost insipid and of a wheyish Colour.	Extremely florid. Degrees of Cohesion 26.	On the ninth Day by profuse Sweats and thick Urine.
A Man aged 23.	IVth	A foul, moist Tongue, crude Urine, strong full Pulse, Delirium, excessive Heat, and frequent Vomitings.	15 Ounces 2 Drams, and twenty-five Grains.	3 Ounces, 1 Dram, and 1 Scruple.	Quick, saline Taste, and straw-coloured.	Exceeding florid. Degrees of Cohesion 38.	On the 7th and 8th Days by an Hæmorrhage at the Nose, plentiful Spitting, turbid Urine, and moderate Sweats.
A Man aged 42.	IIId	Great Incalescence, strong full Pulse, a Pain in the Head and Back, giddy and nausea Ventriculi.	14 Ounces, 1 Dram, and 1 Scruple.	5 Ounces, 2 Drams and 16 Grains.	Brackish, and of a Citron Colour.	Of vivid red, with here and there a sizy Speck upon it. Degrees of Cohesion 43.	Died on the 7th Day. by turbid Urine, and profuse Sweats.
A Boy aged 12.	IId.	A Phrenzy with extreme Talkativeness, a wild Stare with his Eyes, a dry brown Tongue, a thick black Film or Skin adhering to the Teeth and Lips, Subsultuses, and a quick labouring Pulse.	6 Ounces 1 Dram.	1 Ounce, 16 Grains.	Very Salt, and of a bright yellow Flame-Colour.	A thin white Coat at Top, and florid underneath. Degrees of Cohesion 48.	Died on the 7th Day.
A Boy aged 10.	IVth	A flushed Countenance, an extreme quick full Pulse, a brown parched Tongue, with a white List round it, a Delirium, high-coloured Urine and costive.	6 Ounces. 2 Drams, 12 Grains.	1 Ounce, 3 Drams, 1 Scruple.	Brackish, clear, and Flame coloured.	Of a vivid Colour. Degrees of Cohesion 23.	On the 8th and 9th Days, by moderate Sweats, and five or six loose Stools.
A Girl aged 11.	IIId	Exceeding delirious, a full quick Pulse, pale limpid Urine, a dry parched Skin, and costive.	7 Ounces, 2 Scruples.	2 Ounces. 14 Grains.	Very pungent, and extremely yellow.	Of a vivid Red. Degrees of Cohesion 26.	On the 10th Day, by spitting, turbid Urine, and swelled Legs.
A Man aged 34.	Vth	A burning Heat, unquenchable Thirst, general Uneasiness, Watchings, full Pulse, and high-coloured Urine.	12 Ounces 1 Dram, 16 Grains.	2 Ounces, 15 Grains.	Quick saline Taste, and of a bilious Colour.	Very florid. Degrees of Cohesion 56.	On the 11th and 12th Days by profuse Sweats, turbid Urine, and Spitting.
A Man aged 26.	Ist.	Giddiness, sick Fits, great Incalescence, a strong full Pulse, Pains in the Head and Back, and clear limpid Urine.	14 Ounces, 2 Drams.	4 Ounces, 36 Grains.	No difference to be perceived from healthy Serum.	Of a good Colour. Degrees of Cohesion 22.	On the 6th Day by eight or nine loose Stools.
A Woman aged 22.	IIId	Excruciating Pains in the Head and Loins, extreme Thirst, inward Burnings, dry parched Skin, and strong full Pulse.	12 Ounces, 1 Dram, 1 Scruple.	3 Ounces, 8 Grains.	Pungent, saline, and straw-colour'd	Exceeding vivid. Degrees of Cohesion 36.	The 8th Day by the menstrual Discharge, and moderate Sweats.
A Man aged 24.	Vth	A very strong, quick, full Pulse, Vertigo, bilious Vomitings, intense Heat, and unquenchable Thirst.	14 Ounces, 26 Grains.	3 Ounces, 5 Drams, 1 Scruple.	Much more brackish than healthy Serum, and deeper coloured.	Very florid. Degrees of Cohesion 28.	The 11th Day by profuse Sweats and thick Sediment in the Urine.
A Man aged 46.	IId	A brown, dry, parch'd Tongue, Pains in the Head and Back, general Uneasiness and full Pulse.	12 Ounces, 6 Drams.	3 Ounces, 1 Dram, 12 Grains.	Quick, pungent, and yellow.	A thin blueish Film at the Top, and florid underneath. Deg. of Cohesion 33.	The 9th Day by Spitting, Sweat, and thick lateritious Sediment in the Urine.
A Man aged 21.	IVth	A quick full Pulse, great Thirst, Pain in the Head, giddy, clear limpid Urine.	10 Ounces, 2 Scruples, 8 Grains.	2 Ounces, 3 Drams, 15 Grains.	Saline and bilious.	Very vivid. Deg. of Cohesion 28.	The 5th Day by an Hemorrhage at the Nose, and moderate Sweats on the 6th.
A Man aged 38.	IId	Great Incalescence, extreme Thirst, bilious Vomitings, a parched Skin, and strong quick Pulse.	15 Ounces, 2 Drams.	3 Ounces, 4 Drams, 6 Grains.	Pungent, and very yellow.	A delicate Red. Degrees of Cohesion 34.	The 7th Day by profuse Sweat.
A Girl aged 15.	XII	A Phrenzy, subsultus Tendinum, a full labouring Pulse, intense Heat, and a parched brown Crust upon the Tongue.	6 Ounces.	1 Ounce, 3 Drams.	Very salt, and of a bright Flame-colour.	Florid and without a Speck upon it. Degrees of Cohesion 28.	The 22d and 23d Days by moderate Sweats, Spitting and very turbid Urine.
A Man aged 36.	XIII	A full heavy Pulse, lixivious Urine, a slight Pain in the Side, a quick and difficult Respiration, a black parch'd Tongue, intense Heat, subsultus Tendinum, and delirious.	8 Ounces, 1 Dram, 16 Grains.	2 Ounces, 22 Grains.	Exceeding pungent, and of a deep bilious Colour.	A thin Buff-coat at Top, and more dusky than ordinary underneath. Degrees of Cohesion 64.	Died on the 19th Day.

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I must beg Leave to take Notice of the Reasons which induced me to draw Blood from one Patient on the twelfth Day, and from another on the thirteenth Day of the Disease; especially considering the great Usefulness of Bleeding in the Beginning of this Distemper, and the Danger of doing it towards the Crisis. 1. I was not consulted for either of them till those Days on which I drew Blood. 2. No Evacuations of either Kind had been made before these Times. 3. As to the Girl it was about the Time of Age that we might expect the menstrual Purgations; Pains in her Back, Giddiness, Retchings to Vomit, and the like Symptoms preceded this Illness; her Pulse was full and weak, and seemed to struggle for want of Room. 4. As to the Man, the Day before I visited him, he had taken an Ounce of the Cortex, his Apothecary mistaking a little Remission, for a true Intermission of the Fever; Subsultuses, intense Heat, a difficult Respiration, and a slight Pain in the Side soon followed the Use of the Cortex; and for these Complaints I found him taking Boluses, of Lapis Contrayervæ, Saffron, Castor, Sal Volatile succinatum, and the like. By this Treatment I presume, he became delirious, his Countenance was flushed, his Tongue black, and dry, his Urine extremely high-coloured, his Pulse full, heavy and something unequal. These were the Symptoms, and these, in my humble Opinion, were sufficient Indications for Phlebotomy, though so late in the Disease. I must add, that I never saw the Blood stream out so violently, and with so large an Arch as it did from the Arm of the Man; and had not my Timidity prevented taking away more Blood, I am persuaded, I had stood a better Chance for the Recovery of my Patient.

From these Experiments it plainly appears, that in ardent Fevers, the red Globules exceed the Proportion which they ought to bear to the serous Part of the Blood: For according to Mr. *Boyle*'s Experiments and Observations of the Weights of the Crassamentum and Serum, after they have separated one from another, it appears that the Quantity of Serum which may be poured off from the Crassamentum, is about one Half of the whole Mass. And indeed, from Experiments which I have purposely made on the Blood of three young Men in perfect Health. I find it to be nearly the same; the Serum in all three Trials, much exceeding one third of the whole Mass, though I cannot say that in any of them, it fully arrived to one Half.

Here we may also observe the different Consistence of the Cruor in a febrile State, from that in Health. The Degrees of Cohesion in the Blood of the three young Men just mentioned, were eight, nine, twelve, or the most viscid of their Blood gave way to the Weight of one and a half Inch of Mercury; whereas we find in the Tables above, that the Cohesion of the Globules which constituted the Crassamentum, was sometimes equal to a Column of Mercury seven or eight Inches in Height.

Since therefore the Blood in acute Fevers is more than ordinary viscid and tenacious, and contains too great a Quantity of red Globules, notwithstanding the usual most fluid Excretions are greatly diminished, even from the very Beginning of the Disease; let us enquire by what Means this Alteration is most likely to be produced.

That accurate Observer of Nature *Lewenhoek* has shewn us, that the largest red Globules are made up of six smaller Spheres clustered together in a very regular manner; and that so nicely, that in a perfect Globule the Composition comes to be perceptible. He likewise assures us, that he saw Globules in the Blood, much less than those which composed the red Globules; whence we may reasonably conclude, there are several Orders of Globules in the Mass of Blood, the smallest of which, if properly united to others, and those again to the largest Order, exhibit red Globules. And on the contrary the largest Globules may be broken down into their compounding smallest Globules, and by that Means come again under the Denomination of Lymph or Serum.

Hence we may conclude, that whatever will dispose the smallest Order of serous Globules to aggregate or unite into larger ones, and those again into such as are still larger, will at last produce red Globules. Now we know of nothing more likely to produce this great Change than strongly attracting, saline and sulphureous Particles, together with Heat, which invigorates their attractive Power, and thereby greatly conduces to the fixing and uniting the smallest Globules to each other.

It is certain that most of the Antecedents of Diseases are disposed to charge or impregnate the Blood with saline and sulphureous Matter; and indeed, I can give no other Reason why one Man shall catch cold, and have a Fever, and another, perhaps, shall have the perspiratory Ducts more fully stopt, and yet have only a serous Defluction, from the Nose, Eyes, or Lungs, but because in one the Blood is more impregnated, by an intemperate Use of the Non-naturals, with saline and sulphureous Particles, than in the other; and for that Reason the Juices are more likely to become hot, acrid, grumous, and fit for the Production of a Fever.

To be a little more explicit: Let us reflect on the different States of the Blood under different Diseases. In the Leucophlegmatia, Anasarca, Ascites, and indeed in all Distempers where the vital Powers are depressed, the Pulse weak, low, and slow, and the Heat of the Body is much below the natural Standard; here, I say, we may observe how very subject the Globules of the highest Order are to lose their Contexture, and to be broken down into the smaller compounding Globules, so as to increase the Quantity of Serum. Whereas in ardent Fevers, where the saline acid sulphureous Particles abound too much, where the vital Heat is augmented above the Healthful Standard, and all the Powers of the Body exert themselves to the greatest Degree; there we may observe the smallest compounding Globules intimately united into larger ones, whereby the red Globules increase, and the whole sanguineous Mass becomes more dense, heavy, viscid and tenacious.

Hence we have good Reason to conclude, that the most necessary Requisites towards forming of red Globules in the Blood, and causing these red Globules to coalesce, are a certain Proportion of saline and sulphureous Particles, and a certain Degree of Motion and Heat; whereby the Constituent Parts of the Blood are made to attract each other more vehemently.

Heat, which coagulates the White of an Egg, has not its Effect merely by evaporating the most fluid Part, and thereby suffering the other Parts to approach nearer and nearer to each other; but it performs this sudden and wonderful Change, by increasing the attracting Power of the saline and sulphureous Particles, whereby the smaller Order of Globules run into each other, and form larger ones; and these again join with others till the whole Mass is consolidated.

Thus it is with the Blood; a proper Quantity of saline and sulphureous Matter, and a moderate Degree of Heat are perfectly necessary towards maintaining a natural and healthy Crasis; but whenever they are encreased above, or decreased below the natural Standard, either in regard to their Quantity, or Motion, the Blood will become too grumous, and florid, or too thin, limpid, and pale.

In regard to the Action of the Vessels; if they have any Share in compressing and uniting the serous pellucid Globules of the Blood, and forming them into red Globules, we may reasonably conclude, that in ardent, continual Fevers, where the Action of the whole vascular System is greatly increased, the Globules will be most of all compacted and joined together.

From the whole it appears highly reasonable to believe, that a mere Plethora of languid, inert, unactive Matter, is not the Foundation of ardent Fevers; but that the Blood at such Times is too plentifully stored with acrid, sharp, irritating, strongly attracting, saline, and sulphureous Particles. However that nothing may be wanting towards investigating the true Causes of this Disease; I have thought it worth while to separate the constituent Parts or Principles of the Blood, and to take a just Estimate of their several Proportions.

By proper Distillations and the Force of Fire, we may compel Nature to an Account; and though the Bulk and Configuration of the saline and sulphureous Parts are undoubtedly much altered and commuted by the Action of Fire; yet the Proportions of the several Principles of the Blood are not increased or diminished thereby; and consequently by carefully separating and weighing them, and seeing the several Proportions they bear to each other, we may arrive at a Knowledge very useful in accounting for some of the Phenomena of Diseases, and directing us to a right Method of Cure. It is satisfying and useful as well as curious, to reduce to Measure and Weight the constituent Parts of the Blood; and I am persuaded no inquisitive Person will judge it a vain Undertaking.

A CHYMICAL ANALYSIS OF THE BLOOD, BOTH IN HEALTH AND IN ARDENT FEVERS.

Experiment I.

Eight Ounces of Blood, taken from a young Man in perfect Health, and distilled, afforded as follows.

	Ounces.	Dr.	Gr.
1. Lymph	6	4	45
2. Volatile Salt			38
3. Oil			52
4. Cap. Mort before Calcination		7	25
5. Cap. Mort. after Calcination		2	10
6. Fixed Salt			5

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The first three or four Ounces of Lymph seemed to contain little volatile Salt or Oil, it not being fetid or disagreeable either in Taste or Smell; neither did it ferment strongly with Acids; but the latter Part was highly impregnated therewith, and fermented violently with Oil of Vitriol, made a white Precipitate with Solution of Sublimate, and turned Syrup of Violets green.

EXPERIMENT II.

From eight Ounces of Blood drawn from a Man of fifty Years of Age, in perfect Health, something corpulent, and one who indulged in good Eating and Drinking, without using much Exercise, I obtained,

	Ounc.	Dr.	Gr.
1. Lymph	6	4	25
2. Volatile Salt			46
3. Oil		1	12
4. Cap. Mort. before Calcination		7	37
5. Cap. Mort. after Calcination		3	15
6. Fixed Salt			8

Two Grains of the fixed Salt being laid upon a Piece of clean Glass, I dropt upon it one Drop of the Oil of Vitriol, whence arose a violent Fermentation, and a white pungent Fume.

Four Grains of the same Salt being dissolved in two Ounces of Rain-Water, I added to it four Drops of a Solution of Silver in *Aqua Fortis*, which caused a manifest Milkiness, and evidently discovered the fixed Matter to be Sea-Salt; for no other Salt produces a white Fume with Oil of Vitriol, or a white Cloudiness with a Solution of Silver.

EXPERIMENT III.

Eight Ounces of Blood extracted from a Man, on the second Day of an intense Burning Fever, afforded,

	Ounc.	Dr.	Gr.
1. Lymph	6	4	6
2. Volatile Salt		1	5
3. Oil		1	32
4. Cap. Mort. before Calcination		7	27
5. Cap. Mort. after Calcination		2	45
6. Fixed Salt			4½

EXPERIMENT IV.

Eight Ounces of Blood drawn from a Man of a robust Constitution, on the fourth Day of a most acute Fever, afforded,

	Ounc.	Dr.	Gr.
1. Lymph	6	3	28
2. Volatile Salt		1	34
3. Oil		1	27
4. Cap. Mort. before Calcination		7	56
5. Cap. Mort. after Calcination		2	54
6. Fixed Salt			6

The fixed Salt in these Experiments, exhibited the same Phænomena with that in the preceding ones.

The Lymph in the two last Processes seemed to be more strongly charged with volatile Salt and Oil, than the others, and fermented more violently with Acids.

These were the Proportions of the several Principles which the sanguineous Mass afforded us by the most careful Distillation. Whence it is evident, that the saline and sulphureous Parts did abound more in those seized with acute Fevers, than in those in Health.

DISEASES ARISING FROM TOO GREAT A VELOCITY OF THE BLOOD.

All the Fluids contained in any Vessels arising from the Aorta, are secreted from the Blood alone, which a little before was so effectually mixed in the Right and Left Ventricles of the Heart, that it apparently resembled one homogeneous Fluid.

In Disorders arising from too brisk a Circulation of the Blood, 'tis necessary jointly to consider both the Solids and Fluids of the human Body, the Nature and Properties of the latter of which we shall now investigate.

The Blood then is that universal Fluid which flows into the Right, and is expelled from the Left Ventricle of the Heart. This Organ receives, by Means of the Veins, the whole Blood from every Part of the Body, and having received it, returns it by Means of the Arteries, to all the Parts of the human Fabric. From this Blood, all the Parts of the Body, and all the Viscera, prepare their respective Humours which are different, according to their various Structures. In the Blood therefore are contained all the Humours of the human Body, not with respect to their particular Nature and Quality, but with respect to their Matter, of which, in all the Parts, according to their peculiar Structure, that is produced which the adorable Architect of the human Body originally and wisely intended. During the Circulation, this Matter changed in all the Parts and Viscera, returns to the Heart, except some Part which is eliminated from the Body. This Fluid is called Blood, both when it is expelled from the Heart, and when it returns to it; and so long as these two Motions are continued, so long Life remains.

Hence we may affirm, that all the Humours are generated of the Blood, and contained in it.

The Blood consisting of so many different, tho' intimately mixed Substances, appears to be an homogeneous Fluid, of a red Colour, but when left to itself in a State of Rest, it is secreted and divided into distinct Parts.

This Blood, when circulating in the Vessels, contains large Globules of a determinate Bulk, a changeable Figure, and a reddish Colour; yellow serous Globules, six times smaller than those of the red Kind; a pellucid Fluid, capable of being concreted by the Fire; and a pellucid, light, and fine Water, consisting of still smaller Globules, which however cannot be discerned on account of their Transparence. The Globules of the first three Species form what we call the Serum, both of which may be discerned by Microscopes.

These Circumstances are supported by the Observations of Mr. *Leeuwenhoeck*; for the human Blood, when viewed through a Microscope is observed to consist of many spherical Parts, collected together, and swimming in a finer pellucid Liquor, whose Parts are not, for that Reason, to be discerned by the Microscope. When with Microscopes, the Motion of the Blood through the Vessels in the pellucid Parts of Animals is observed, it evidently appears that the Molecules of the Blood forced through the narrow Channels of the Vessels, and meeting with other Molecules, have their Figures every Moment changed, and are consequently of a flexile Nature. According to the same *Leeuwenhoeck*, the largest Molecules of the Blood are the red Globules, consisting of six smaller Particles, mutually joined and united; and if these smaller Globules, which by their Union form the red Globule, were not thus united, they would become yellow and be serous Globules. If the same Analogy obtained in all the other Parts of the Blood, then the serous Globules would also consist of six smaller Globules; and the Division would extend to the most subtile Fluids secreted from the Blood: But Experiments are wanting to ascertain the Truth of this; for those Parts of the Blood which are more subtile than the red and serous Globules, are entirely pellucid. But since there are numberless Series of decreasing Vessels between the Aorta, the largest Vessel, and the most minute Nerve, proportionable Humours seem to flow through all these intermediate Series of Vessels. The Congeries of the largest Molecules of the Blood, is called Red Blood, whilst all its more subtile Parts taken conjunctly, constitute what we call Serum; for the human Blood, when taken from the Veins, spontaneously separates into two such distinct Parts.

The red Part of the Blood, when concreted, and separated from the Serum by Rest alone, and in consequence of the Laxity of the Parts, is soon so resolved into Serum as to be almost totally converted into it.

When the Vein of a sound Person is opened, the Blood flowing out in a full Stream, is a few Minutes after concreted into one red Mass, which gradually begins to be lessened, because its thinner Part is expressed, has its Quantity every Moment enlarged, and generally serves for the red Mass to swim in. Some Hours after this Serum of the Blood is poured off, the red Mass appears still less, and there is a fresh Quantity of Serum collected, till at last almost the whole red Part is converted into Serum. Hence it appears, that the red Portion of the Blood is gradually colliquated, and transformed into Serum. According to Mr. *Leeuwenhoeck*, this happens, because the red Globules, consisting of six smaller Molecules, being now freed from the Pressure of the Vessels, gradually recede from each other into those serous Globules, by whose Union they were form'd. Hence appears the Difficulty of determining the Proportion between the red and serous Parts of the Blood, since the former is thus gradually colliquated into the latter.

Serum, long kept in an Air moderately warm and moist, by Rest alone, and the Laxity of its Parts, is resolved into a more thin, pellucid, and light Fluid, which gradually becomes putrid, and is so volatile, as to be almost totally evaporated; and these Circumstances are increased in Proportion to the Time.

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As the red Part of the Blood is gradually resolved into Serum, so the Serum, when left to itself, is gradually attenuated, begins to putrify, and flies off in Vapours, leaving behind it a small Quantity of feculent Matter. But Serum, thus kept in a moderately warm and moist Place, the thinner it grows, the more acrimonious it also becomes, and can no longer be coagulated by the Heat of boiling Water, or by Alcohol. In the White of an Egg all these Circumstances happen in the same manner: For there are hardly any two Fluids more similar to each other in all their Phænomena, than the White of an Egg, and the Serum of Blood.

All Blood newly taken from the Veins, is, by a gentle Heat, but little surpassing the natural Warmth, and with a small Loss of the exhaling Part, coagulated into a solid, sciffile and tenacious Mass, not to be dissolved by Water, Salt, Oil or Spirits. And the like Effect is produced by the Heat of Fluids, which is a particular Sort of Concretion, tho' in its Effects similar to the former.

The Blood, even of the soundest Persons, has a great Propensity to Concretion. When the ruptured minute Arteries of the Nose discharge Blood, it is forthwith concreted into a kind of solid Cake. But this Tendency to Concretion in the Blood is greatly augmented by an Increase of Heat: For as soon as an Heat, surpassing (perhaps) by ten or twelve Degrees the greatest Heat of *Fahrenheit*'s Thermometer, is induc'd on the Blood of a sound Person, it becomes totally concreted. Hence it is, that in acute Disorders so great Danger arises from an increased Heat. But Blood once thus concreted, is not to be resolved without the greatest Difficulty. Many Substances, when mixed with the Blood, may prevent its easy Concretion; but when it is once concreted, it can hardly be resolved again; for in this Case neither Salts, nor Spirits, nor Oils, nor Soaps, are of any great Efficacy. Blood thus inspissated by Heat, is afterwards colliquated in the open Air, but then it putrifies at the same time; nor does the Concretion seem to happen, because by the Heat the most subtile Parts are dissipated: For Blood flowing from the Vein into boiling Water, is forthwith coagulated into a sciffile Mass. The same Property is also found in the White of an Egg, which, when put into boiling Water, even tho' inclosed in the Shell, is forthwith indurated.

The Redness of the Blood, together with the Serum and Lymph, which are thus capable of Concretion, are produced by the Action of the Vessels, and the Efficacy of the Circulation, as the Change induced on the Nature of the Chyle, Milk and Blood, whether circulating, or without the Laws of Circulation, informs us, and is sufficiently discovered by Microscopes.

'Tis much disputed whence arise the surprising Properties of the Blood here enumerated; such as its Redness, the Yellowness and easy Concretion of the Serum. Philosophers and Chymists have advanced the most palpable Absurdities, with respect to this Affair. No Person, however, could ever, from the finest Aliments, prepare one Drop of Blood; for the human Body alone is capable of preparing its own Blood of a Matter which was not Blood before. Nor is it of any Importance whether the human Body is small, and in the Beginning of its Existence, or whether it is in a robust and adult State: For the Presence of Blood is so inseparable from the Nature of the human Body, that it is found in the weakest Infant, as well as in the most robust Man. Besides, in the human Embryo, as soon as it can be observed by the Eyes, there is red Blood even at the time when there is not the smallest Appearance of red Blood either in the Placenta, the Membranes surrounding the Embryo, or the Fluid contained in these Membranes. Hence we see, that it is the human Body itself which generates the Blood, even in that tender and mucous Principle.

When, in the first Rudiments of a human Creature, red Blood begins to be formed, cannot be easily determined by Experiments: But the incomparable *Malpighi* has demonstrated the Thing in an incubated Egg. An impregnated Hen's Egg, cherished by no Incubation, tho' viewed with the best Microscopes, is observed to contain no red Blood, either in its Shell, Membranes, White, Chalazas, Yolk, or the Bag of the Colliquament.

But in an incubated Egg there appeared a Change almost every Hour; and at the Circumference of the Cicatricula about the Yolk appeared some Vessels visible by the Help of Microscopes. A few Hours after these Vessels began to be distinguished by a Liquor contained in them. About the thirtieth Hour of the Incubation, these Vessels were of a somewhat greenish Colour. At the fortieth Hour they were of a ferrugineous Colour, resembling that of wither'd Vine-Leaves in the Autumn, because the Congeries of all these Vessels was collected into one, which reaching to the Cicatricula, terminated in a certain Sinus which then first appeared. This Sinus was the right Auricle of the Heart, as afterwards appeared. And in this Sinus, which hung from the *Carina*, there appeared a manifest Pulsation; and a little after a small red Speck in that beating Body. Then this red Speck appeared diffused through the right and left Ventricles of the Heart; and a little after in the Duct which runs longitudinally along the Carina, or Rudiments of the Spine, and which was the Aorta. Hence we know, that red Blood may be prepared of a Matter which is not red, and that without the Admixture of pre-existent red Blood. This Redness derives its Origin from the beating Point or Speck, for it first appears where the Pulsation is; and there is red Blood present, before any Colour of Blood appears in the Rudiments of the Liver in the Chick. Hence we see, that the Opinion of the Ancients is false, who ascribed the Work of Sanguification to the Liver.

Perhaps, also, the Air (without which neither any Plant can vegetate, nor any Animal live) contributes to the first Formation of red Blood: For after the eighteenth Hour of the Incubation, *Malpighi* (as he informs us in his Treatise *de Ovo incubato*) observed the Cicatricula ascend to the obtuse End of the Egg, where the Air is lodged. In Adults the Chyle to be converted into Blood flows immediately through the Lungs, where, throughout the broadest Part of their Surface, it is in highly tender Vessels almost exposed to the open Air. According to the ancient Alchemists, the latent Food and Support of Life was contained in the Air.

But in adult Persons the Blood is prepared from the Aliments in a similar manner: For the lacteal Vessels receive the Chyle prepared in the Intestines, in the same manner as the Vessels of the Yolk received the White of the Egg attenuated by the Heat of Incubation. As the whole Chyle meets in one thoracic Duct, so in the Chick all these Vessels were united within the Amnion. The Heat of Incubation, the Motion of the Humours through the Vessels, the Force of the Heart, and the Action of the Air concurred within forty-eight Hours to the Production of red Blood in a Chick, which before had none of that kind. But in a sound adult Person the Chyle is converted into Blood in the Space of twenty-four Hours, as is evinced by the Observations of *Lower* and *Walæus*. The Heat of the Body, the Action of the Vessels and Heart, together with the Force of the Air in the Lungs, applied to the Chyle as it passes through them with the Blood, concur to the Transmutation of Chyle into Blood in Adults. But that such a Conversion is sooner performed in adult Persons, than in growing Chicks, seems to be owing to the far greater Action of the Vessels upon their Contents, the Respiration, and the superior Quantity of pre-existing red Blood.

But when these Causes producing red Blood in Adults, are in some measure defective, or act but slowly, red Blood is not produced, but a peccant and degenerating Liquor; as is obvious from what is commonly called the Green Sickness in Virgins, during which Disorder no red Blood is produced; but such a greenish Colour arises all over the Body, as was observed in the Vessels of the Yolk of the Egg, before any red Blood was formed.

Hence the Blood is not, as some imagine, propagated by seminal Force, but produced of a Matter not of the sanguineous Kind in a Body which as yet has no Blood. And as this Circumstance happens in the first Origin and Formation of Man, so it continues to the End of his Life.

When in human Creatures Blood is a forming from the Chyle, various and successive Degrees of Changes are observed: For the Chyle, a few Hours after Meals, is found conveyed to the Blood, tho' not assimilated. Hence, when after a liberal Meal Blood is taken from the Vein, besides the Serum and the red Part, there is a white, sweet, and chylous Part found fluctuating in the Blood.

In a few Hours the Chyle, conveyed with the Blood thro' the Vessels, is separated from the Blood by the Fabric of the Breasts, and affords Milk, which is of a different Nature both from Blood and Chyle; for in Milk there begins to be formed that Tendency to Concretion, which is already present in the Serum of the Blood, for it yields Cheese. But this Tendency to Concretion is never found in the Chyle. Hence we may artificially imitate the Preparation of Chyle in Emulsions, but never the Nature of Milk.

When a sound Woman for twelve Hours totally abstains from Meat and Drink, her Milk begins to be saline and yellowish. If she abstains still longer, nothing is found in the Blood taken from her Veins, but what (like the White of an Egg) is by means of the Fire concreted, which never happens in the Chyle.

Hence

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Hence we may conclude that the Bodies of ſound Perſons are the Formers and Producers of their own Blood, in the ſame manner as any Plant, by its peculiar Fabric, prepares its Sap from the Juices of the fertile Earth and the genial Influences of the circumambient Air.

But in the human Body the Formation of Blood depends principally upon the Efficacy of the Circulation, by which the Veſſels act upon their contain'd Fluids. Hence in the moſt robuſt Perſons the Blood is redeſt, or rather almoſt black in conſequence of its ſaturated red Colour, and is concreted almoſt the very Moment it is left in a State of Reſt. And in acute Diſeaſes, when the Circulation is increaſed, all the Parts are intenſely red, and the Serum of the Blood is converted into a Sciſſile Maſs. But in weak Perſons in whom the Efficacy of the Circulation is far leſs, all the Parts are pale and languid, whilſt the Blood is thin and hardly capable of Concretion. But when, in ſuch Perſons, by due Exerciſe and proper Remedies, the Circulation is augmented, the red Colour and the due Coheſion of the Blood return.

The increaſed Motion of the Blood thro' the Veſſels is produced by more frequent and ſtrong Contractions of the Heart.

After conſidering the Nature of the human Blood, we now come to inveſtigate the Cauſe of its Motion and Circulation. Some celebrated Men have imagined that this Cauſe reſided in the Blood itſelf; for having obſerv'd that, by the mutual Mixture of certain Liquors, violent Commotions were ſuddenly excited, they hence concluded that ſomething ſimilar to this happened in the Blood.

But when in the moſt violent burning Fever, upon the Rupture of a ſmall Artery of the Noſe, the Blood is diſcharged with an uncommon Impetus, and received, whilſt as yet hot in a clean Veſſel, it is forthwith in a State of Reſt, and affords no Signs of an inteſtine Motion. Hence the Cauſe of the Blood's Motion is not lodg'd in itſelf.

But the muſcular Action of the Heart, by a ſtrong Force, expels the Blood contained in its Cavities, thro' the Arteries, which immediately after, when the Action of the Heart ceaſes, by their Elaſticity and muſcular Force, convey the Blood ſtill farther. Theſe are the true and only Cauſes of the Circulation of the Blood. But the Beginning or Principle of this Motion is contained in the Heart; for when the Arteries are ſo contracted that their Diameters are ſmalleſt, they would remain in a State of Reſt and Inaction, unleſs they were again dilated by the Blood expelled from the Heart. The muſcular Action of the Heart is, therefore, the Cauſe of the Circulation of the Blood, and when that ceaſes all the Fluids become ſtagnant.

If therefore the Action or rather Contraction of the Heart (for in the Diaſtole the Heart is not active but paſſive) is rendered more frequent and ſtrong, the Cauſe of the Circulation will be augmented; for it is not ſufficient that the Heart ſhould move frequently and contract itſelf, ſince near the Death of any Patient its Contractions are ſo frequent that they cannot be numbered, whilſt in the mean time the Circulation begins to fail becauſe ſcarcely any Blood is expell'd from the Heart.

But 'tis alſo requiſite, that it ſhould more forcibly contract itſelf that all the Blood contained in its Cavities may be expelled; for a ſtrong Contraction of the Heart is that which expels all its Contents, whilſt the weakeſt is that which expel none at all. The intermediate Degrees are weaker Contractions of the Heart.

The Contractions of the Heart are rendered more frequent and ſtrong, firſt by the Brain and Cerebellum promoting a too copious Expreſſion of the nervous Fluid as is obſervable in Perſons under the Influence of any Paſſion or rack'd with the Agonies of Pain. Secondly, by an Irritation of the Heart, in conſequence of an accelerated Motion of the venous Blood, produced either by Friction or the Action of the Muſcles; or by ſome acrid, aromatic, ſaline, and alcaline, purulent, ichorous, or putrified Subſtance lodged in the Maſs of Blood; and ſometimes by a Species of Contagion, Plague or Poiſon; and when this happens, the Diſorder, cannot from the Diſcoveries hitherto made, be diſtinctly explained.

We now come to conſider thoſe Things which, from Experience, we find capable of exciting and increaſing the Motion of the Heart.

1. The Heart has all the Properties of a true Muſcle, and is furniſhed with thoſe Parts which in other Muſcles are ſubſervient to their Motions. When the Nerve diſtributed to any Muſcle is deſtroy'd, the Action of that Muſcle is of courſe aboliſh'd, when the Brain is compreſſed by the Effuſion of any Humor, the Action of all the Muſcles ſubſervient to voluntary Motion ceaſes. If, by any Cauſe, a too brisk Reflux of the Spirits thro' the Nerves into any Muſcle is produced, the Action of ſuch a Muſcle will be increaſed even to the higheſt Spaſm. But large and numerous Nerves are diſtributed to the Heart, which, however, has not a quick and acute Senſation in conſequence of theſe Nerves. The other Muſcles of the Body, when fatigued by exceſſive Motion, are painful, whereas in acute Fevers, when the Heart has for many Days been agitated by an intenſely brisk Motion, it perceives no Pain. Now all the Cauſes which can produce a quicker Motion of the Spirits thro' the Nerves of the Heart, alſo increaſe and augment its Motion.

Now that the Paſſions of the Mind principally and effectually produce this Effect is univerſally acknowledged, tho' none has explained the manner in which it happens. The beſt-natured Man when affronted has ſuch a Change induc'd on the State of his Mind as produces an Alteration in all the Parts of his Body; for the Contractions of his Heart immediately become quicker and ſtronger, his Pulſe large and vehement, his Heat is encreaſed, his Face becomes tumid, his Eyes ſparkle, and a burning Fever is ſometimes excited, which proves ſo violent as to determine in Death.

Pain may alſo ſo change the whole Brain as to produce a Delirium, after which no farther Pain is felt, or a perfect Syncope, which puts an End to the moſt racking Tortures. Since therefore Pain is thus capable of changing the common Senſory, it may alſo affect the Nerves diſtributed from it. Intenſe Pain rarely continues long without producing a Fever, that is a quicker Contraction of the Heart, even in Diſorders very different from a Fever, ſuch as the Gout for Inſtance. Hence *Galen* in his Treatiſe *De Pulſibus ad Tyrones*, Cap. 12. informs us, that "Pain when ſmall and only beginning renders the Pulſe more large, vehement, quick and frequent; but when it is increaſed and becomes ſo violent as to injure the vital Strength, it renders the Pulſe more ſmall, languid, quick and frequent.

2. *As for the Irritation of the Heart*; Beſides the Cauſes of Motion which the Heart has in common with the other Muſcles of the Body, there is in the Heart a ſingular and peculiar Property, which may be called Irritability, or a Capacity of Irritation; for when the Influx of the Spirits thro' the Nerves into the Fibres of the Heart, and the Motion of the Arterial Blood, ceaſe after Death, the Motion of the Heart may be reſtored by blowing thro' the Veins, or injecting tepid Water into them. The Heart, alſo, when cut from all the Veſſels with which it coheres, retains its Motion for ſome time, and after it has been in a State of Reſt for ſeveral Hours, when it is cheriſhed with Heat and prick'd with a Pin, it again begins to move. Phyſiologiſts have in a ſubtile manner explain'd, why the Heart ſhould become alternately Paralytic, and be again contracted, as it were, by an inſtantaneous and ſudden Spaſm, and how the Cauſe producing the Syſtole of the Heart ſhould every Moment periſh, and be immediately after renew'd; and their Accounts of theſe Phenomena they have deduced from the Structure and Situation of the Parts. But the Heart, when taken out of the Body, and no longer adhering to any Veſſels, continues the ſame Motion, and frequently for a conſiderable time.

As for the Acceleration of the venous Blood; When in conſequence of any violent Paſſion, or the ſeeing of any horrid and frightful Object, by any tender Girl, there is an abſolute Reſt of the Heart, if cold Water is ſprinkled on her naked Body, the Parts being contracted by the Cold, convey the venous Blood to the Heart, by which Means its Motion is reſtor'd. Thus *Homer*, in the Fifth Book of his *Iliad* tells us, that when *Sarpedon* was ſo exceſſively wounded as to fall into a Deliquium, he was reſtor'd by the Blowing of the North-wind on his Body, becauſe the Veins were conſtricted by the Cold. Hence all theſe Things which accelerate the Motion of the venous Blood to the Heart, alſo augment its Motion. Thus an intenſely burning Fever may be excited by exceſſive muſcular Motion, and too ſtrong Frictions. See FIBRA.

As for acrid and other unfriendly Subſtances lodging in the Maſs of Blood; All the Humours of the human Body, when ſound, are mild; ſince the Blood of a ſound Perſon, when put into the Eye, produces no Pain; and when it is in this State, its Circulation is highly equable. But as ſoon as acrid Subſtances are mixed with the Blood, its Motion through the Veſſels is, by the Irritation of the Heart, increaſed, and a Fever produced, which either expels theſe acrid and unfriendly Subſtances from the Body, or ſo ſubdues them, that they no longer

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longer prove injurious. Nor is it of any Importance of what kind this Acrimony is, since they all produce the same Effects, and only differ with respect to the Degrees and Duration of their Actions. In aromatic Substances, the Acrimony contained in a tenacious Oil, is not easily dislodg'd and thrown off. Thus, when large Quantities of Pepper are imprudently taken for the Cure of intermittent Fevers, a mild Tertian is often changed into a burning Fever. The Person who at Dinner uses too large a Quantity of Sea-Salt, will, in the Afternoon, become feverish, and afflicted with Thirst, till by drinking copiously, that Salt is washed off. Vinegar itself, which in putrid Fevers is so efficacious, excites a Fever when too liberally used. When an Imposthumation concealed in the internal Parts collects Pus, this Pus, when reforbed and mixed with the Blood, daily excites a Fever, which gradually preys upon the Body, and is called an hectic Fever. When this Pus, by a long Retention, is changed into a thin Ichor, it becomes more acrid; and when reforb'd, produces more terrible Misfortunes.

Corrupted Bile lodged about the Præcordia, or the putrid Gore of the corrupted Liver, excites violent Fevers, which can never be cured, unless that putrid Fomes could be removed.

But in all these Cases the Acrimony may be discovered by the Senses; tho', at the same time, there are other very surprising stimulating Substances, which can be reduced to no known Species of Acrimony, but yet disturb the Body in all its Functions.

The Contagion of the Small-Pox, by its subtile Miasma, which entirely eludes our Senses, infects the soundest Person, upon which is produced a violent Fever, which in a few Days fills all the external and internal Parts of the Body with a variolous Pus. And in this Pus, by the Disorder formed of the soundest Humours, there is the same Force of propagating the variolous Contagion infinitely, as is obvious from the Method of Inoculation, in which a small Drop of variolous Pus is put into a crude and recent Wound. But none has hitherto been able to explain the Nature of this Stimulus, or demonstrate the Method in which the sound Humours, chang'd by the variolous Contagion, assume a poisonous Nature, and become capable of multiplying the Contagion almost infinitely.

The Kind of Plague peculiar to each Species of Animals, rarely happens to more than one Species at a time. When the Plague raged in *Europe* among Oxen, even those Persons who used the Flesh of the infected Animals, remained free from every Degree of the Contagion. The most skilful Physicians, after a sedulous Investigation of the Nature of this terrible Disorder, ingenuously confessed, that they knew nothing with respect to the Cause, since its Effects were only subjected to the Senses. The pestilential Virus remains inactive upon Linnen, Leathern, or Woollen Cloths; and upon open and porous Woods, till being applied to the human Body, it becomes active, and by multiplying the Contagion, diffuses itself every where. In this Case, how surprizingly all the Parts of the Body are disturb'd, and what violent Fevers are excited, may be seen in *Diemerbroeck* and others, who have wrote concerning the Plague.

The surprising History of Poisons evinces, that in some Liquors of poisonous Animals, there are such Stimuluses as have no Acrimony observable to the Senses; but yet, by an inconceivably quick Action, they injure almost all the Functions, and excite violent Fevers. We shall only instance in the Poison of the Viper. The celebrated *Redi*, relying on the Observations and Candour of *Charas*, tasted the yellow Juice adjacent to the Gums of the Viper, and found its Taste to resemble that of the Oil of Sweet-Almonds. Whereas a small Quantity of the same Juice, adhering to an inconsiderable Wound made by a Bite in a Person of Distinction, who handled a Viper imprudently, a few Minutes after produced the most violent Symptoms; so that the Patient hardly escap'd, after numerous Attempts for his Relief.

An increased Motion of the Blood through the Vessels produces a greater Force of the Blood propelled, upon the receiving Vessels; a greater Resistance in the Vessels to the Blood; a strong Compression of the Blood; a violent mutual Attrition of the Vessels and Blood; a strong mutual Attrition of the Parts of the Blood; a greater Heat in all the Parts of the Body; an Exsiccation of the Blood, in consequence of the Dissipation of its most aqueous Parts; an inflammatory Viscidity of the Blood, by which it is easily disposed to Concretion; a Resolution of the Blood into Salts, and volatile and acrid Oils; an increased Largeness of the Vessels at their Beginnings; an Impulse of the thick Fluids into the minute Vessels, which produces in them Obstructions, Destructions, Inflammations, Suppurations, Gangrenes, a Sphacelus, a Scirrhus, and the infinite Misfortunes which may succeed them.

In this Paragraph are considered those Effects on the Solids and Fluids of the human Body, which depend upon an increased Motion of the Blood.

As for the greater Force of the Blood propelled, upon the receiving Vessels; The Arteries are always full; when, therefore, the contracted Heart expels the Blood contained in its Cavities into the Arteries, these latter must be dilated; or such a Quantity of Blood ought to be expelled through the Extremities of the Arteries, as is forced from the Heart into the Arteries. But all the Arteries, except those known by the Name *Coronary*, are dilated in the very Moment at which the Heart is contracted. Hence almost the whole Action of the Heart is employed in dilating the Arteries; and by this Force the Sides of the Arteries are so pressed, that they recede from their Axis, and have all the Fibres constituting their Sides distracted. But as we have already shewn, that an increased Motion of the Blood is produced by a more strong and frequent Contraction of the Heart, 'tis obvious, that the Force by which the Sides of the Arteries are compelled to recede from their Axis, is then increased in a Proportion compounded of the increased Strength, and Frequency, of the Contractions of the Heart.

As for the greater Resistance of the Vessels to the Blood; The Arteries, when distended, are in a State of Violence. Hence, by the Elasticity and muscular Force of their Fibres, their Sides endeavour to approach nearer their Axis; by which Means they repress the distending Blood: For unless the Arteries contracted by their own Force, expelled the distending Blood, the Heart could not, in the following Systole, expel the whole Blood contained in its Cavities into the Arteries, as yet distended; the Blood would be gradually accumulated in the Cavities of the Heart, and the Circulation suffocated. The stronger, therefore, the Action of the Heart distending the Arteries is, the more strongly will that Force act by which the Arteries endeavour to contract their Cavities; and the oftner, in the same Space of Time, the Heart is contracted, the more frequently will the contracted Arteries re-act on the distending Blood.

As for the strong Compression of the Blood; The Blood contain'd in the Arteries is always, as it were, between two Presses; for when the Arteries are dilated, the Contraction of the Heart forces the Blood from the Base to the Apex of the Artery; whilst, in the mean time, the narrow Extremities of the Arteries make the greatest Resistance. When the Arteries are contracted, the Valves about the Basis of the Arteries in the Heart make a Resistance; and there is the same Resistance at the Extremities of the Arteries; hence in both Cases the Blood contained in the Arteries is compressed. But since the constituent Parts of the Blood are flexible, and capable of Compression, as we have already observed, if the compressing Causes, that is, the Action of the Heart and Arteries, are increased, it necessarily follows, that the Compression of the Blood must become stronger.

As for the strong mutual Attrition of the Vessels and Blood, and of the Parts of the Blood with each other; When the Blood is forced from the Heart, it acts upon the Sides of the incurvated Aorta; and this Direction of the Blood is resisted by the strong Sides of the Aorta, and the Blood contained in its Cavity. Hence no Particle of Blood expelled from the Heart into the Aorta, for two Moments, preserves that Direction of Motion which it had when it was expelled from the Heart. Besides, the Aorta is conical, or wider at the Base, but gradually becomes narrower. But since the Direction of the Blood expelled from the Heart into the Aorta, is in Lines perpendicular to the Basis of the Aorta, it must necessarily happen that the Particles of the Blood will strike against the Sides of this conical Canal; and in their Resilition thence, will meet other Parts moved in a different Direction. Hence there is a perpetual Attrition of the Parts of the Blood with each other, and with the Sides of the Vessels. Hence, also, as the Parts of the Blood are flexible, their most considerable Angles being destroyed by the perpetual Attrition, they acquire a spherical Figure. But by an increased Motion of the Blood through the Vessels, this Attrition is augmented in the same Proportion.

As for the greater Heat of the whole Body; From this mutual Attrition of the Parts, and on the Sides of the Vessels, arises Heat. This is sufficiently certain, because as soon as the Blood is in a State of Rest, all its Heat is lost, and the Body is gradually reduced to the same Degree of Coldness with the common Atmosphere. When the Motion of the Blood is increased by violent Exercise, or a Fever, the

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the Heat is increaſed; but weak Perſons, the Circulation of whoſe Blood is languid, are always cold.

Hence we ſee the Truth of that Aſſertion of *Hippocrates*, who, in the End of his Book *de Corde*, informs us: "That "the Blood is not naturally hot, but becomes ſo."

As for the Exſiccation of the Blood, in conſequence of the Diſſipation of its moſt aqueous Parts; An increaſed Heat always diſſipates the moſt moveable Parts of any Fluid; but, as we have already ſhewn, a greater Heat is produced by an increaſed Motion of the Blood through the Veſſels. The whole internal and external Surfaces of the Body have exhaling Veſſels, which ſecrete from the Blood, and diſſipate an highly ſubtile Liquor. An increaſed Application, therefore, of the Blood to theſe Organs, will produce a proportionably greater Secretion. Hence it is, that in all Diſeaſes accompanied with an increaſed Heat, the Body is dried. Hence *Hippocrates*, in *Lib.* 1. *de Morbis*, informs us, that "They who die of burning Fevers, are taken off by "Dryneſs."

As for the inflammatory Viſcidity of the Blood; There is in the Blood of the ſoundeſt Perſon a natural Propenſity to Coheſion, in conſequence of which it is ſpontaneouſly concreted when taken from the Veins, and left in a State of Reſt. This Coheſion is increaſed by the greater Heat; ſince by that Means the aqueous diluting Part is diſſipated, and the Force compreſſing the Blood ſtrengthened. We have already ſhewn, that by an increaſed Motion, the aqueous Part is diſſipated, and the Heat in like Manner increaſed. But the Action of the Veſſels on the Blood, is a true Compreſſion of the Blood they contain. Hence, ſince, by an accelerated Motion of the Blood, the Action of the Veſſels on the Blood is increaſed, it is obvious, that all thoſe Cauſes concur to produce this increaſed Action of the Veſſels on the Blood, which contribute to its Concretion. Then ariſes the *Phlegma Phlegmonodes*, which is entirely diſtinct from a languid, cold, and mucous Concretion. In this Caſe it is called an inflammatory Spiſſitude, ariſing from a ſtrong Compreſſion of the Principles of the Blood to each other. The Elements, or component Parts of the Blood, are obſerved to be ſpherical, or nearly ſo. Hence they touch one another in few Points. But when, by a too ſtrong Preſſure, their Figure is changed, and the thin aqueous Part, in which they floated, expreſſed, they come into more numerous Points of Contact, and are by that Means concreted. Hence ariſes that coriaceous Toughneſs obſervable in the Blood of pleuritic Patients.

As for the Reſolution of the Blood into Salts, and volatile and acrid Oils; The State and Condition of the Salts and Oils of the human Blood, are beſt known from the Urine; which, as it is the true Lixivium of the Blood, waſhes off the already form'd Salts and Oils, which are of an acrid, and conſequently an hurtful Nature. It evidently appears, that the Urine is the more acrid and fetid, the ſtronger the Circulation of the Blood is. In weak Perſons the Urine is pale, almoſt without any Smell, and not very ſalt. Whereas, in robuſt Perſons, habituated to Exerciſe, the Urine is redder, more fetid, and highly ſalt: An increaſed Motion, therefore, of the Blood through the Veſſels, renders the Salts of the Blood more acrid and volatile; and its Oils more attenuated, but at the ſame time leſs mild. Hence again ariſe new Stimuluſes increaſing the Circulation, by the Increaſe of which they were originally produced; and thus the Effect of the Diſeaſe increaſes the Diſeaſe.

As for an increaſed Largeneſs of the Veſſels at their Beginnings; The Force of the Heart expelling the Blood into the full Arteries, is the only Cauſe which dilates theſe Arteries. When, therefore, this Action of the Heart increaſes, the Dilatation of the Arteries will, in like manner, be augmented. But this Dilatation will be the greater, the nearer the Artery is to the Heart: Therefore the Beginnings of all the Arteries will be more dilated; whereas this dilating Force cannot with ſo great Efficacy be conveyed to their Extremities.

As for the Impulſe of the groſs Fluids in the minute Veſſels; The coarſeſt Part of the Blood is obſerved to be a red Globule, which naturally can be only contained in the largeſt Veſſels. The next largeſt Particle of the Blood may enter a ſmaller Veſſel, which, in conſequence of its Smallneſs, excludes the red Globules, but admits all ſuch as are ſmaller. The ſame holds in the other Series of decreaſing Veſſels; and Health ſeems principally to conſiſt in this, that proportional Fluids remain in their proper and reſpective Veſſels. When, therefore, by an increaſed Motion of the Blood through the Veſſels, the Beginnings of the Arteries of the next ſucceeding Series are too much diſtended, groſſer Parts, which ought not naturally to be contained in theſe Veſſels, may enter them. Thus, for inſtance, when the Beginning of a ſerous Artery, ariſing from an Artery containing red Blood, is dilated too much, the red Blood will enter this ſerous Artery. And that this really happens, is certain from Experience. If a ſound Man runs violently, his whole Face will begin to grow tenſe, and an exceſſive Redneſs will appear in ſuch Parts as were not naturally red. The whole Tunica Adnata of his Eye begins to have its Veſſels filled with red Blood, whereas they never in a natural State contain red Blood. After violent Exerciſe, or Riding in a Chariot in rough and uneven Roads, the Blood paſſes through the dilated renal Veſſels, and a Diſcharge of bloody Urine by that Means is produced, which, however, is eaſily cured by Reſt alone.

As for Obſtructions and Deſtructions of the minute Veſſels; An Artery in its Courſe gradually becomes narrower and narrower, till at laſt it is almoſt only capable of tranſmitting one Molecule of Blood. This evidently appears upon Examining the Circulation of the Blood, in the pellucid Parts of Animals, by the Aſſiſtance of Microſcopes. But in a particularly beautiful manner, when the Lungs of a live Lizard appearing through a Wound made on Purpoſe, are viewed with a Microſcope. For in this Caſe it evidently appears, that about the Extremities, or narroweſt Parts of the Arteries, all the Molecules of the circulating Fluid are changed into an oblong cylindrical Form, and ſo tranſpreſſed through the narrow Channels of the Arteries. When, therefore, for inſtance, a ſerous Artery, dilated at its Beginning, receives any Portion of red Blood, this Blood cannot paſs through its moſt narrow Parts. Hence ſuch an Artery will be obſtructed; and ſince the Fluids propelled by the vital Motion, act upon the obſtructed Part, ſuch a tender Veſſel muſt be eaſily deſtroyed.

As for Inflammations, Suppurations, Gangrenes, a Sphacelus, a Scirrhus, and all their Conſequences; Whilſt the red Blood ſtagnating in the minute Canals is compreſſed, and an Attrition of it produced by the Action of the Blood which ſucceeds, and is generally put into a violent Commotion by the concomitant Fever, the Diſorder is called an Inflammation, which muſt, for this Reaſon, moſt frequently ariſe from groſs Fluids, propelled into Veſſels naturally too ſmall for their Admiſſion. But when an Inflammation is once produced, all its Effects ſucceed: For when the infarcted Veſſels, together with the impacted Humour incapable of Circulation, are acted upon by the vital Force, and being diſſolved, degenerate into a pinguinous, white and equable Humour called Pus, a Suppuration happens. If, in conſequence of a ſudden Rupture of the Veſſels, the Circulation of the vital Humours through the Part affected is totally deſtroyed, a Gangrene, or Mortification of the Part is excited; and when this Diſorder ſeizes he whole Subſtance to the Bone, it is called a Sphacelus. If about glandular Parts, an Inflammation ariſes, a hard Tumor without Pain, but not to be reſolved without the greateſt Difficulty, is produced, and diſtinguiſhed by the Name *Scirrhus*.

From a due Conſideration of theſe Circumſtances, it evidently appears, that an increaſed Circulation of the Blood may produce numberleſs Diſorders. All the Humours of the Body, by an increaſed Motion, and an augmented Heat ariſing from it, may be totally changed into a morbid State, by the ſtronger Preſſure, the Coagulum induced by the greater Heat, and the augmented Acrimony. There is a greater Attrition, and often a Rupture of the ſolid Parts produced. The groſs Humours, which cannot penetrate through the narroweſt Parts of the Veſſels, enter the dilated Veſſels: and if we conſider that all theſe Diſorders may happen in all the Parts of the Body, 'tis obvious that numberleſs Diſeaſes may ariſe from this ſingle Cauſe.

An increaſed Circulation of the Blood may therefore be known from an acquaintance with its Cauſes and Effects already enumerated, but eſpecially from the quickneſs and hardneſs of the Pulſe; the velocity and difficulty of Reſpiration; and the intenſe Heat.

'Tis of great Importance in the Practice of Medicine, to know whether the Velocity of the Circulation is too great or not. If the Cauſes of an increaſed Circulation are preſent, and the Effects of a too violent Motion of the Humors obſervable, the State of the Patient is no longer dubious. There are, however, ſome infallible Signs which demonſtrate the Exceſs of the Circulation, ſuch as

The Velocity and Hardneſs of the Pulſe. The Celerity of the Pulſe is a Sign, that in the ſame Time the Heart is oftener contracted; and the Hardneſs of the Pulſe denotes the plenitude of the Arteries, and is a Proof of a Blood highly compacted, denſe, and in conſequence of its inflammatory Viſcidity, with Difficulty capable of paſſing thro' the Extremities of the Veſſels. The Celerity of the Pulſe alone without Hardneſs, denotes that the Heart is oftener tho' not more

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more ſtrongly contracted; for near the Death of any Patient the Pulſe is very quick, tho', at the ſame time, ſmall. Whereas the Hardneſs of the Pulſe alone without Celerity rather denotes a Suffocation of the Circulation, as is obſervable in highly plethoric Patients.

An Increaſed Circulation is alſo known from a quick and difficult Reſpiration. The whole Blood expell'd from the right Ventricle of the Heart muſt paſs thro' the Lungs before it can come to the left Ventricle. But the right Ventricle of the Heart is not by its muſcular Force alone able to propel the Blood thro' the narroweſt Parts of the Pulmonary Artery, 'tis alſo requiſite there ſhould be a Dilatation of the Lungs by Inſpiration, in order to make a quick Paſſage for the Blood expell'd from the right Ventricle. The more frequently and ſtrongly, therefore, the right Ventricle contracts itſelf in the ſame Time, the more frequent and ſtrong the Reſpiration will be. Hence, as ſoon as by Running or any other Exerciſe, the Motion of the Blood thro' the Veſſels is increaſed, the Reſpiration is proportionably augmented and perform'd with greater Difficulty. Thus the Reſpiration is increaſed only by an augmented Velocity of the Blood paſſing thro' the Lungs. But when by this increaſed Motion an inflammatory Spiſſitude begins to be produced, the Reſpiration will be far more laborious and quick; for the Incapacity of the Blood for circulating, firſt diſcovers itſelf in the Lungs. Hence 'tis that in acute inflammatory Diſorders a quick and difficult Reſpiration is ſo bad a Sign.

An increaſed Circulation is alſo known by the exceſſive Heat of the Body. So long as there is a free Paſſage thro' all the Veſſels, an increaſed Celerity of Motion in the Fluids alſo augments the Heat of the Body, as we have already ſhewn. But when Blood rendered incapable of Circulation cannot reach the Extremities of the Veſſels, a Coldneſs of the Extremities is produced. But at that very Time there is a burning Heat about the vital Viſcera, as happens in the worſt burning Fevers. And this is by *Hippocrates*, in his *Prognoſtics*, and other Parts of his Works, generally reckoned among the Mortal Signs.

The Remedies, therefore, beſt calculated and moſt efficacious for allaying an exceſſive Circulation, are ſuch as diminiſh the Frequency and Force of the Contraction of the Heart.

Theſe ſimple Diſorders are firſt to be conſider'd in an abſtracted Light; for which Reaſon 'tis here ſuppoſed, that nothing is changed in the Body, but only that the Circulation of the Blood is augmented. Every thing, therefore, is a Remedy for this Misfortune, which can remove the proximate Cauſe of the increaſed Motion of the Blood. But this Cauſe is a too quick and ſtrong Contraction of the Heart, ſo that every thing is a Remedy which can produce a ſlower and weaker Motion of that Organ. But ſuch a Remedy muſt act either on the Spirits which move the Heart, upon the venous and arterial Blood convey'd into it, or upon thoſe ſtimulating Subſtances which by their Irritation produce a ſtronger and quicker Contraction of the Heart.

Some of theſe Remedies have an Influence on the Mind, and others on the Body.

We have already obſerved, that only a Change in the Diſpoſition of Mind, may in the ſoundeſt Perſon ſo increaſe the Motion of the Heart, as to produce a violent Fever. And unleſs the Phyſician can then remove that Change of Diſpoſition, other Remedies will be of no Service. But every thing which produces this Effect acts upon the Mind without inducing any change on the Body. Thus when a Man in a violent Paſſion is frighted, his Paſſion is removed without any Change induced on his Body, whilſt only the State and Diſpoſition of his Mind is altered. The other Cauſes removing the material Cauſes of an increaſed Circulation act only on the Body.

The former of theſe Remedies are ſuch as allay violent Paſſions by Reaſoning; excite the contrary Paſſion, or divert the Perſon under its unhappy Influence.

Violent Paſſions are ſometimes removed by Reaſoning. We are conſcious to ourſelves, not only that we think, but alſo that we think on Objects different from the Act of Thinking itſelf. And if theſe Objects are only perceived by an ordinary Perſpicuity of Mind, they affect us but little, and only retain the Soul in a kind of ſimple Contemplation. This is ſufficiently evinced in profound Mathematicians, who ſometimes ſo ſpend their Lives in thinking upon Mathematical Subjects, that they are but little affected with other Objects. We have alſo a particular kind of Perception, which tho' we cannot communicate it to others, yet makes as ſtrong and ardent an Impreſſion upon us as Truth itſelf. Thus upon taſting a delicious and grateful Wine, an Idea is excited in the Mind, which we can no otherwiſe explain, than by ſaying that it is pleaſant. But that this Idea is pleaſant, is ſo evident, and affects the Mind ſo ſtrongly, that no Truth can make a greater Impreſſion upon it. On the contrary, if any Perſon taſtes a rotten Egg, he ſo abhors it that he would almoſt ſubmit to any Thing rather than taſte any more of it. Thus the Affections of the Mind, together with its Perception, almoſt by an abſolute Neceſſity, carry the whole Mind along with them, ſo as to deſire to render the pleaſant Idea permanent, and to remove or deſtroy that of the diſpleaſing Kind.

But this Pleaſure or Diſguſt accompanying any Idea, not only differs from the Idea itſelf, and the Principle of Thought, but alſo diſturbs the whole Train of Ideas, influences the Will, and as it were deſtroys Liberty. Since it neceſſarily determines us to like and diſlike. This ſingular Phenomenon has induced Philoſophers to call the Affections of the Mind Paſſions; and juſtly, becauſe we are not their Maſters, but their obſequious Slaves, ſince we often approve of what is good and laudable, and under an immediate Senſe of its Worth purſue its fatal Oppoſite.

Philoſophers have greatly erred in endeavouring to deſtroy this Pleaſure or Diſguſt which accompanies the Perception of Ideas; for no more is requiſite of Mankind, than that they ſhould govern the Affections of their Minds by Reaſon. But this latter is often ſo weak, that it cannot ſubdue the former. Hence Reſolution and Perſeverance become neceſſary, that Reaſon fortified by an Habit of Oppoſition, may at laſt come off triumphant; for certainly the wiſeſt and beſt of Men can hardly conquer the exorbitant Paſſions of their Minds, by the moſt refin'd and exalted Suggeſtions of Reaſon and Religion.

Violent Paſſions are alſo removed by exciting the oppoſite Affections. The wiſeſt Legiſlators, conſcious that human Society could not be govern'd by Reaſon alone, have propoſed Rewards and Puniſhments. The Dread of Puniſhment is ſufficient to ſtifle the dire Effects of Paſſion, when the moſt beautiful moral Precepts are of no Uſe. 'Tis, therefore, of great Importance to know the oppoſite Affections of the Mind; Anger is ſuppreſſed by violent Dread, whilſt the moſt timorous Man is render'd bold by Anger. If we obſerve the Changes induc'd on the Body under theſe two contrary Paſſions, they will be found intirely oppoſite.

In an angry Perſon there forthwith ariſes a ſtronger and quicker Contraction of the Heart. The Pulſe becomes fuller, ſtronger and quicker, and all the Parts, even in the moſt extenuate Perſons, become tumid and expanded. A greater Heat ariſes in the whole Body. Almoſt all the Muſcles become tenſe, the Eyes are ſtern, prominent, ſparkling, and as it were cover'd with Blood, whilſt Menaces and Reproaches are alternately pour'd forth. *Homer*, who every where paints Nature in her trueſt Light, in *Lib.* I. *Iliad.* compares the Eyes of *Agamemnon* when angry, to ſparkling Fires. In the ſame Book, *Achilles*, when repreſented as enraged at the Loſs of his beloved *Briſeis*, is ſaid to have his Eyes ſparkling in ſuch a manner as to ſtrike Terror in all who beheld them. *Achilles*, in his Anſwer to *Ajax*, perſuading him to take Arms, tells him that his Heart was become tumid with Anger. And *Achilles*, when viewing the Arms, brought by his Mother *Thetis*, is ſaid to have immediately fallen in ſuch a Paſſion, that his Eyes ſtruck Terror, and appeared like Sun-Beams under his Eye-brows.

A Man ſuddenly ſtruck with Terror, becomes pale and cold, whilſt his whole Body is contracted, his Pulſe is quick, but ſmall and unequal; he is ſeized with a Palpitation of the Heart, and a violent Oppreſſion about the Lungs, and a Sighing. The whole Strength of his Limbs is deſtroy'd, his whole Body trembles; and ſometimes Perſons in this Condition become ſtiff like Statues, whilſt the trembling Accents die upon their fault'ring Tongues. Hence *Homer* gives the Epithets *cold* and *pale* to the Paſſion of Fear. And when *Alexander* flies from *Menelaus*, ruſhing in upon him, Trembling ſeized his Limbs and Paleneſs his Cheeks.

Hence it appears that contrary Affections of Mind produce oppoſite Effects in the Body, and conſequently that one Affection of the Soul may be a Cure for another. The ſame might be demonſtrated by comparing other oppoſite Affections.

Violent Paſſions may alſo be remov'd by diverting the Perſon under their Influence. The human Mind has a ſurpriſing Faculty of affixing the Ideas it forms to certain Signs merely arbitrary, whilſt there is no manner of Similitude between theſe Signs and the Ideas, tho' afterwards upon ſeeing ſuch Signs, the Idea before affixed to them is rendered preſent to the Mind. By a few Letters variouſly combin'd, Ideas are excited in our Minds, which we had ſome Years before,

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before, though the Remembrance of these Ideas had been entirely lost, unless these arbitrary Signs had preserved them. The same holds true with respect to the Affections of the Mind. Thus *Eneas*, when beginning to yield to the Intreaties of vanquished *Turnus*, when he views the Belt of *Pallas*, whom that Warrior had killed, is transported with incredible Rage. This Accident is beautifully described by *Virgil*, in the twelfth Book of his *Æneid*.

furiis accensus, & ira
Terribilis: Tune hinc spoliis indute meorum
Eripiere mihi! Pallas te hoc vulnere, Pallas
Immolat, & poenam scelerato ex sanguine sumit.

When, therefore, this Pleasure or Disgust accompanies the Ideas renewed by these Signs, more intense Affections of Mind are excited, and may by this Means be, at last, rendered perpetual. Then the almost infinite Variety of the Thoughts of the Mind is destroyed, and all its Powers employed upon this one Subject. The Will, which before could chuse an infinite Number of Objects, is now intensely fixed upon one. This Species of Disorder is called a Delirium; but if it is very violent, 'tis called Fury. If it is accompanied with a Fever, and an Agitation of the Humours, it is called a Phrenitis. If these Symptoms are absent, it is called a *Mania*; and if the Disorder is attended with a Neglect of every Thing, it is called *Foolishness*.

Hence skilful Physicians, without the Knowledge of the Patient, remove all those corporeal Marks which renew such Ideas, whether by the Intervention of the Senses, or of the Memory. Other Objects presented to them, and capable of exciting other Ideas, which gradually lessen and diminish the too strong Impression made by a particular Object or Train of Ideas, are said to divert the Patient. For this it is sufficient, that the Thoughts be in such a manner chang'd, that the same Idea, by a long Continuance, may not afterwards possess the whole Mind, and become indelible.

But when violent Affections of the Mind disturb the whole Body, and irritate the whole nervous System, which frequently happens in hysteric Disorders, then we have recourse to such Medicines as sooth the Spirits, and, for a time, totally abolish the Action of the Brain. Such a Relief is principally afforded by the Juice of the Poppey, which, when exhibited in a small Quantity, induces the most pleasant Sensation imaginable; and, like the celebrated Nepenthe of *Helen*, creates a perfect Forgetfulness of all Misfortunes. A considerable Dose of it induces Sleep, and an excessive Quantity an Apoplexy. The Use of Wine, in a Person not much accustomed to it, produces the same Effects, excites uncommon Cheerfulness, allays violent Passions, and, at last, induces Sleep, which puts an agreeable temporary Period to all Misfortunes.

The other Medicines proper for allaying an excessive Circulation of the Blood, respect the Body, and act by a Rest of the Muscles, a Relaxation of the Veins, by correcting Acrimony, by diluting, by obtunding, and by removing the Causes of the Pain.

As for a Rest of the Muscles; One of the Causes of the Motion of the Heart, is the Influx of the venous Fluid into the Cavities of the Heart, as we have already observed. But the Motion of the venous Blood to the Heart is accelerated by the Motion of the Muscles; for most of the Veins situated on the Surface of the Body, lie upon the Muscles. Hence they are compressed by the Muscles, when become turgid in acting; by which means the Blood contained in the Veins is conveyed towards the Heart, because the Direction of the Motion of the venous Blood is from the Apex to the Base. Besides, when the Muscles act, they become pale; because all their Blood is expressed, and at that time is quickly conveyed through the Veins to the Heart. Hence the Circulation of the Blood is greatly increased by muscular Motion. Surgeons are sufficiently apprized of this, who, if upon opening a Vein, the Blood is slowly discharged, order the Patient to move his Fingers; upon which it is immediately more quickly and copiously discharged. Hence the ancient Physicians, though unacquainted with the Circulation of the Blood, in all Disorders accompanied with an excessive Motion of the Fluids, ordered the greatest Rest, removed all Objects capable of affecting the Senses strongly, and enjoined that the Patient should be lodged in a dark Room remote from all Noise.

As for a Relaxation of the Veins; In highly acute Disorders, in which there is the greatest Circulation of the Blood, it is always observable, that the greatest Quantity of Blood is lodged in the arterial Vessels, whilst a Depletion of the Veins is, by that Means, produced. On the contrary, in languid, slow Disorders, in which the Circulation is defective, the Veins, and all the Cavities of the Body, are filled, whilst the Arteries are emptied; a Relaxation, therefore, and Impletion of the Veins, accompany a diminished Circulation of the Blood. Besides, the relaxed Veins being more easily distended by the Blood impelled from the Arteries, must also contain more Blood. A smaller Quantity of Blood will, therefore, return to the Heart, and by that means one of the principal Causes of the Motion of the Heart will be diminished. The Impetus of the Blood forced from the Arteries into the Veins, is, also, more retarded, because there is, in the Veins, a larger Quantity of Fluids to be moved; and for both these Reasons the Velocity of the Circulation is diminished.

But since, as is observed under the Article FIBRA, any Part of the Body may be relaxed, this End is best obtained by a Vapour-Bath applied to the Surface of the Body; whilst the same Intention is, also, pursued by proper Clysters, emollient Decoctions, and Aliments of a relaxing Quality. This Method was universally used by *Hippocrates* in acute Diseases.

As for a Correction of Acrimony; The Degrees of Acrimony, when known and reduced to their proper Classes, may be removed by Art, provided the Viscera are as yet sound. Thus an alcaline, acid, or aromatic Acrimony are pretty easily removed. But when such poisonous stimulating Particles, or contagious Miasmata, not to be discovered by the Senses, but only known from their Effects, are the Causes of an increased Circulation, then the healing Art becomes defective. When that highly-poisonous Animal, known by the Name of a Rattle-Snake, bit a sound Girl, as we are informed by *Louis Feuillee, in Journal des Observ. Physiques, Mathemat. et Botan.* soon after Death ensued, and though the Physician was present, he could afford her no Relief; and when, a few Hours only after her Death, they attempted to remove her Body, the putrid and corrupted Flesh was separated from the Bones. When the soundest Man is infected with the variolous Contagion, which is so subtile as to elude the Senses, all the Parts of his Body are disturbed, and a violent Fever is excited, which so surprizingly changes all the Humours of the Body, that within fourteen Days all the Parts of the Body, whether internal or external, are almost dissolved into a gangrenous Gore. If, in the Beginning of the Disorder, this Stimulus could be rendered inactive by a proper Antidote, no bad Symptoms would ensue. This is that τὸ θεῖον, that preternatural and incomprehensible Quality in Diseases, which so frequently baffles the Efforts of Art, and is the Reason why so often Physicians cannot check the excessive Motion of the Fluids. All that Art can do in this Case, is to weaken the Principle of Life, by which alone Poisons are rendered active; since they produce no Effects upon a Carcase. Then the Poison is to be obtunded by the Exhibition of the most emollient Substances; and washed off by diluting Liquors drank in large Quantities.

As for removing the Cause of the Pain; In a Luxation of any Joint, the most violent Pain is produced. And this Pain brings on a Fever, not to be cured till the luxated Bone is reduced, and the Pain by that Means remov'd.

The Anodynes, Narcotics, and Hypnotics, proper for removing Pain in Disorders arising from an excessive Circulation, are specified under the Article VULNUS. *Van-Sweiten. Comment. in Aph. Boerhaave.*

SANGUIS DRACONIS. See CALAMUS and DRACONIS SANGUIS.

SANGUISORBA. A Name for the PIMPINELLA, which see.

SANGUISUGA. See HIRUDO.

SANGUISUGUM. A Disorder of the Heart, proceeding from an Accumulation of Blood, is thus called by some barbarous Authors.

SANICULA.

The Characters are;

The End of the Pedicle becomes a monopetalous, quinquefid Calyx, in which is contained a pentapetalous Flower, consisting of Petals closely contracted, and exactly covering two, three, or five Stamina; this is the Description of the Male Flower. The other Flowers are hermaphrodite, seated in a quinquefid Calyx, and having, also, five Petals, which are in like manner closely contracted, and accurately cover two, three, or five Stamina, placed about the Ovary, which consists of two lappaceous Ova, each furnished with an erect Tube. The Seeds are gibbous and echinated.

Boerhaave mentions but one Sort of *Sanicula*, which is, Sanicula; Officinarum. *C. B. P.* 319. *Boerh. Ind. A.* 73. *Tourn. Inst.* 326. *Sanicula sive Diapensia*, Ger. 801. Emac. 948. Raii Hist. 1. 475. Synop. 3. 221. *Sanicula vulgaris, sive Diapensia*, Park. Theat. 532. *Sanicula mas Fuchsii, sive Diapensia*. J. B. 3. 639. SANICLE.

This Plant has a small, stringy, fibrous Root, from which spring the Leaves on long Foot-Stalks. They are five cornered, resembling somewhat those of the lesser Maple, and are

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are ſerrated about the Edges, of a dark green Colour, ſmooth and ſhining. Its Stalks grow to be about a Foot high, bare of Leaves to the Top, on which grow little Umbels of five-leaved white Flowers, ſmall and full of Stamina; each Flower being ſucceeded by two rough bur-like Seeds. It grows in Woods and Thickets, and flowers in *May*. The Leaves are uſed.

This is one of our prime vulnerary Plants, being frequently put in Wound-Drinks, and traumatic Apozems; and is good for Ruptures, inward Bruiſes, ſpitting of Blood, or any Hæmorrhages, and for Wounds both inward or outward. *Miller's Bot. Off.*

By the Chymical Analyſis, beſide ſeveral acid Liquors, the Sanicle yields an urinous Spirit, and ſome concreted volatile Salt, and a good deal of Oil and Earth. It contains ſome Sal Ammoniac, Sulphur and terreſtrial Parts. It is deterſive, vulnerary, and aperitive. It is uſed with the other Vulneraries in Broths, Ptiſans, and Potions for Loſſes of Blood, and to open and ſtrengthen the Bowels. It is uſed after the manner of Tea. It is an Ingredient in vulnerary and deterſive Lotions, in Plaiſters and Balſams for Wounds. *Martyn's Tournefort.*

It is called *Sanicula, a ſanando*, "from Healing;" becauſe of its ſanative Virtue, which is ſo extraordinary, that the *French* have a Proverb,

Qui ha du Bugle et du Sanicle
Fait aux Chirurgiens la Nicle.

"He who has Bugle and Sanicle never wants a Surgeon." It has an Aſtringency with its Bitterneſs, as appears by its Taſte. It is good, ſays *Lobel*, briefly ſumming up its Virtues and Uſes, for internal and external Wounds, Hæmorrhages, Dyſenteries, Ruptures, and Lacerations, taken inwardly in Decoction, or outwardly applied.

For a Thickneſs and Protuberance of the Navel in Children, apply a Cataplaſm of Sanicle boiled in Wine to the Part, and ſecure it with a pretty tight Bandage; and to the Back, oppoſite to the Region of the Navel, apply the bruiſed Root of Comfrey. This Preſcription has been found ſucceſsful in almoſt innumerable Inſtances. *Raii H. P.*

It is uſeful in conſolidating Ulcers, Fiſtulas, Ruptures and Eroſions. *Schroder.*

Sanicle is mightily commended by the *French* and *Walloons*, who eat it for Inflammations. It is good, alſo, in an Hæmoptoe. *Bauhine* thinks it proper in hot Diſeaſes of the Kidneys, but I ſee no Reaſon for it; but it is a uſeful Plant in a Languor and Decays from a Viſcouſneſs of the Humours. It is of a penetrating, balſamic Virtue; for it has an acrid Sort of a Fragrancy, in which conſiſts its Virtue, and leaves an aſtringent Taſte in the Mouth. The Leaves bruiſed, and applied to Wounds, cure them without Suppuration. They, alſo, remove external Tumors, and deterge Sordes. It is ſerviceable in Hernias and Hæmorrhages, and in diſcuſſing Tumors by Reſolution or Diſſipation, the Leaves being bruiſed and applied with Wine or Vinegar. The Decoction is taken inwardly to diſſolve grumous Blood, and is good in Fractures, where Purgation and Abſterſion are required. *Hiſt. Plant. Aſcript. Boerhaave.*

SANICULA, is alſo a Name for ſeveral Sorts of SAXIFRAGA.

SANICULA ALPINA. A Name for the *Verbaſcum humile; Alpinum; Villoſum, Borraginis folio, & flore.*

SANICULA AMERICANA. A Name for the *Mitella; Americana; florum petalis fimbriatis.*

SANICULA FÆMINA. See ASTRANTIA NIGRA.

SANICULA MONTANA. A Name for the CORTUSA.

SANICULA MONTANA AMERICANA. A Name for the *Mitella; Americana; florum petalis integris.*

SANIES. The ſame as ICHOR.

SANIODES. Σανιώδης, from σανὶς. A Plank. Flat cheſted. *Galen.*

SANITAS. *Health.*

SAN-LUCIANUM LIGNUM. *Santa Lucia Wood.*

This is the Wood of a Tree named *Ceraſus racemoſa ſylveſtris, fructu non eduli*, C. B. P. It is brought from *Lorrain*. It is very tender, and has ſome Smell, but is little uſed in Phyſic. *Geoffroy.*

SAN MARTHANUM LIGNUM. This is a kind of red *Brazil* Wood, uſed in Dying, and which comes from *St. Martha*, near *Carthagena*, in the *Spaniſh Weſt Indies*. *Geoffroy.*

SANTALUM. *Sanders.*

There are three Sorts of Sanders, the white, red, and yellow. It is brought from *Siam*, and from the Iſlands of *Timor* and *Salor*; but Botaniſts are not agreed to what Tree it belongs. According to *Herman* it is called *Sircanda*, and bears Berries. The white Kind comes from the young Trees, the red and yellow from the old ones; the former of theſe two being the outer Part of the Wood, the other that next the Pith. The Labourers who cut this Wood are often ſeized with malignant Fevers, and Deliria of a very ſingular Kind, the affected Perſon generally imitating the Actions of that Trade to which he was brought up; and they have alſo a *fames canina*, of a very terrible Kind. See *Bontius de Medicina Indorum.* The yellow Sanders is moſt proper for phyſical Uſes. It is reſinous, of an agreeable Smell, and excites ſweating. The white has not ſo ſtrong a Smell, and the red none at all; but it may be diſtinguiſhed from *Braſil* Wood by its Roughneſs in the Mouth, when taſted, and accordingly it is a little aſtringent. All the Kinds, eſpecially the yellow, enter into many Compoſitions; ſudorific Decoctions are alſo made of them. *Geoffroy.*

The white and yellow Sanders of the Shops are produced by the ſame Tree, the cortical Part of which, according to many, is called white Sanders, and the medullary Part yellow Sanders: But *Garcias* informs us, that there is ſo great a Reſemblance between the Trees which bear the white and yellow Sanders, that they cannot be diſtinguiſhed except by the Inhabitants who ſell them to the Merchants. *Dale.*

SANTALUM ALBUM. Offic. Ger. 1389. Emac. 1586. Park. Theat. 1605. J. B. 1. 486. C. B. P. 392. Raii Hiſt. 2. 1804. WHITE SANDERS.

The Part in Uſe is the Wood, which is hard, ſolid, ponderous, of a pale Colour, and of a Smell and Taſte like that of the yellow Sanders; both Sorts are imported from the *Eaſt Indies*.

Both the white and yellow Sanders are refrigerating, drying and aperitive, hepatic and cordial. Their principal Uſe is in a Lipothymy, Palpitation of the Heart, and Obſtructions of the Liver, and the like Diſorders. Outwardly they are of Service in Catarrhs, Cephalalgia, Vomiting, and the like. *Schroder.*

SANTALUM CITRINUM. Offic. Park. Theat. 1604. J. B. 1. 486. Raii Hiſt. 2. 1804. *Santalum pallidum*, C. B. P. 392. Ger. 1389. Emac. 1586. YELLOW SANDERS.

The Heart or ſolid Marrow, is of a yellow Colour, a bitteriſh and aromatic Taſte, and of a fragrant and grateful Smell.

Yellow Sanders is the Marrow of a certain Berry-bearing Tree called *Sarcante*, in the Iſland *Timor*, which, when ſeparated from the Integuments, is ſolid, thick, and of a yellow Colour, of a bitteriſh aromatic Taſte and fragrant Smell. This Commodity is brought from *China* and *Siam*, and the Tree itſelf is tall like a Walnut-tree, but bears Fruit reſembling Cherries. The white Sanders is the paler Marrow of the ſame Tree, of a fainter Smell, and leſs aromatic Taſte. When theſe Trees are dried, the Marrow alone is choſen; which, if it is not ſufficiently odorous, is called white Sanders. Yellow Sanders derives its fragrant Smell and aromatic Taſte from the tender Reſin of which it conſiſts, and which is eaſily extracted by infuſing the Shavings of it in a ſufficient Quantity of highly rectified Spirit of Wine. By Digeſtion a very yellow Tincture is extracted from it, which when inſpiſſated over a gentle Fire, after the Spirit is abſtracted, conſtitutes a liquid Balſam of a darkiſh Colour and grateful Taſte, and which in Conſiſtence and Colour almoſt approaches to *Peruvian* Balſam. And if this Balſam is again diſſolved in highly rectify'd Spirit of Wine, it is a balſamic Eſſence of ſingular Virtue.

This Experiment excellently illuſtrates the Nature and Generation of the *Peruvian* Balſam, the Balſam of Capivi, and that of Mecha, which are nothing but liquid Reſins; for if the reſinous Principle of Sanders is diſſolved in highly rectified Spirit of Wine, and the Solution inſpiſſated, it aſſumes the Conſiſtence of a Balſam, and is no more converted into a ſolid Reſin, ſince ſome moiſt Particles have by this means intimately inſinuated themſelves into its Compoſition.

The Eſſence of yellow Sands is of the ſame analeptic and ſedative Virtue with Amber, and is highly beneficial in Diſorders ariſing from a Weakneſs and want of Tone in the nervous and membranous Parts; for which End, it may either be uſed by itſelf, or in Conjunction with the Eſſence of Aloes, Wood or Amber. *Hoffman.*

SANTALUM RUBRUM. Offic. Ger. 1389. Emac. 1586. Park. Theat. 1605. C. B. P. 392. J. B. 1. 489. Raii Hiſt. 2. 1805. RED SANDERS.

This is the Heart or middle Part of a Tree, that grows in the *Eaſt Indies*, upon the Coaſt of *Cormandel*. It is firm, hard, and ponderous, but of very little Smell or Taſte; and is generally believed to belong to a Tree having papilionaceous Flowers.

The red Sanders is likewiſe accounted cooling and drying, and though of leſs Virtue is much more uſed than either of the former, eſpecially to give a red Colour to Infuſions, Tinctures, or Decoctions. It is, alſo, eſteemed to be ſomewhat more reſtringent. *Miller's Bot. Off.* It

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It grows in the *East Indies*, beyond the River *Ganges*. The Part in Uſe is the Wood, or rather the Heart, or Matrix, ſeparated from the outer Integuments, the Bark and Wood, and of a ſolid, denſe, ponderous and red Subſtance.

This Species of Sanders is refrigerating and aſtringent. Whatever Virtues, therefore, are by the *Arabians* aſcribed to the ſeveral Sorts of Sanders, againſt preternatural Heats, and the like kinds of Diſorder, belong in a more eſpecial manner to red Sanders. *Dale.*

From red Sanders, which is the ſolid, ponderous, and red Marrow of a ſiliquous and thorny Tree, which grows in *Malabar* and *Coromandel*, with Spirit of Wine, may be extracted a Tincture of a red Colour, as is ſufficiently known. But 'tis a Circumſtance new and unadverted to, that from this Wood may be prepared a Reſin of a dark reddiſh Colour, a very ſmall Quantity of which tinges a few Ounces of the Spirit of Wine of a beautiful Colour, reſembling that of Blood. This Reſin is prepared in the ſame manner with other Reſins; for highly rectified and not common Spirit of Wine is to be poured upon the Shavings of the Wood. The Eſſence is to be extracted by a gentle Digeſtion; and when we obtain a large Quantity of it, the Spirit is to be extracted, and what remains liquid, is to be inſpiſſated by a gentle Heat. Thus there remains a dark-coloured red Powder, a ſmall Quantity of which diſſolved in Spirit of Wine, tinges a large Quantity of the Spirit, of a beautiful and deep red Colour.

'Tis peculiar to this Reſin, that it is ſo free from all Taſte and Smell, that when it is kindled, there is no manner of Smell perceived; when kindled it burns, but froths greatly, and leaves a large Quantity of Earth. It tinges Spirit of Wine of a beautiful Colour, but produces no ſuch Effect with any Oils, whether expreſſed or diſtilled: Nor is it diſſolved by Oils, which ſufficiently ſhews, that it rather conſiſts of a ſubtile and earthy, than of a pinguious and oleous Subſtance. It may be uſed for tinging Medicines; and as it tinges the Spirit of Wine of a deep red Colour, it may by Anatomiſts be commodiouſly uſed for injecting the arterial Veſſels of the Head.

SANTERNA. See BORAX.

SANTOLINA.

The Characters are;

The Root is fibrous; the Leaves are alternate, denticulated, crenated, and granulated. The Calyx is ſquamous, and as it were hemiſpherical. The Floſcules are multifid, and ſeparated from one another by imbricated Leaves. The Flowers grow ſingle at the End of a Branch, and are larger than thoſe of Abſinthium or Abrotanum.

Boerhaave mentions twelve Sorts of *Santolina*, which are;

1. Santolina; foliis teretibus. See ABROTANUM FÆMINA.

2. Santolina; flore majore; foliis villoſis, et incanis. *T.* 460. *Abrotanum fœmina, flore majore foliis villoſis & incanis.* C. B. P. 137.

3. Santolina; foliis obſcure; virentibus flore aureo. *T.* 461.

4. Santolina; foliis minus incanis. *T.* 461. *Abrotanum, fœmina, foliis minus incanis.* C. B. P. 137.

5. Santolina; incana; Chamæmeli odore ſuaviore. *Abrotanum, fœmina, folio collecto, incano.*

6. Santolina; Hiſpanica; foliis Chamæmeli. *T.* 461.

7. Santolina; Africana; Ericæ foliolis congeſtis; floſculis ſingularibus albis. *Camphorata, Africana, umbellata, frutescens Hermanni.* H. A. 2. 79.

8. Santolina; ſpinoſa; foliis agerati. *Bellis ſpinoſa.* Alpin. Exot. 327.

9. Santolina; Africana; Coronopi folio; cauliculis procumbentibus. *Bellis, Africana, capitulo aphyllo, luteo, Coronopifolio, cauliculis procumbentibus.* H. L. Flor. 54.

10. Santolina; foliis Roriſmarini; major. *T.* 461. *Abrotanum fœmina; foliis Roriſmarini, majus.* C. B. P. 137.

11. Santolina; Hiſpanica; foliis vermiculatis.

12. Santolina; foliis Ericæ, vel Sabinæ. *T.* 460. *Abrotanum fœmina, foliis Ericæ, vel Sabinæ.* C. B. P. 137. *Boerh. Ind. Alt. Plant. Vol.* 1.

The firſt Species is thought by *Fabius Columna* to be the *Pelium* of the Ancients, which is a very celebrated Herb, and he ſeems to be in the right. It is a Diaphoretic and Anticolic, whence it is an Ingredient in all alexipharmic Compoſitions. All the Species are alexipharmic and aromatic, like the Eupatorium and Petaſitis. *Hiſt. Plant. Aſcript. Boerhaave.*

SANTONICUM SEMEN. Worm-Seed, is a Grain uſed to deſtroy Worms generated in the human Body, and to which Children are eſpecially ſubject. It is alſo called *Hagiopermon, Semen Sundum, Semen contra Vermes, Semen contra Semenzina, Santolina*, or *Xantolina*, and *Worm-Powder*. The Plant which produces this Grain, has Leaves ſo ſmall, that they can hardly be diſtinguiſhed from the Grain itſelf. It is pretended to be a Native of *Xaintogne*, [a Province of *France*] whence it takes one of its Names; but what is ſold by the Merchants who deal in Drugs, comes from *Perſia*, and is imported by the *French*, *Engliſh*, and *Hollanders*, from *Aleppo*, *Alexandretta* and *Smyrna*. The Marks of its Goodneſs are, a full Body, a greeniſh Colour, a pretty ſtrong Smell, and a bitter and pretty aromatic Taſte; and we muſt be very careful that it be not coloured with an artificial Green, and that the Seed of *Abrotanum* be not ſubſtituted in its Room.

It contains much Oil, and eſſential or volatile Salt. Taken inwardly it is very good to kill Worms in the Body, and ſuppreſſes Vapours; the Doſe is from half a Scruple to a Dram. *Lemery des Drogues.*

SAPA. See CARÆNUM, and DECOCTIO.

SAPERDA. σαπέρδη. A Fiſh mentioned twice by *Hippocrates*, in his Treatiſe *de internis Affectionibus*. It ſhould ſeem to have been preſerved with Salt, or Pickle, like Anchovies. We learn from *Perſeus*, that it was brought from the *Black Sea*.

SAPHADA. Small reddiſh Scales, which adhere to the Hairs. *Paracelſus.*

SAPHÆNA. A conſiderable Vein on the Inſide of the Ankle is thus called. *Galen, de Curat. per Vænæſectionem*, is of Opinion, that the opening this Vein is of great Service in exciting the *Menſes*; for by means of the Orifice made, the Blood is more copiouſly derived, not only to that Vein on which the Operation is performed, but, alſo, to all the other Veins ariſing from the ſame Trunk, as *Bellini* has at large demonſtrated, becauſe there is leſs Reſiſtance in thoſe Parts where the Vein is opened, than in the other Parts of the Body. If, therefore, Blood is taken from the Ankle, there will, of Courſe, be a more copious Derivation of the Blood to the Uterine Veſſels, which ariſe from the Vena Cava, as well as the Saphena. Conſequently, ſince the Veſſels are greatly diſtended by a large Quantity of Blood flowing into them, a Paſſage will be the more eaſily opened for the menſtrual Blood. Thus *Mayern*, in his Treatiſe *de Morb. Intern. Cap.* 22. informs us, that he had ſeen ſpeedy and ſurpriſing Effects produced by the Application of Leeches to the hemorrhoidal Veins. In like manner, when, without any viſcid Quality, the redundant Blood is, through a Fault of the Veſſels, retained, upon opening the Saphena, the Humours are not only more rarified, but, alſo, more copiouſly conveyed to the Uterus. For both theſe Reaſons, the Momentum of the Blood will be increaſed, to the uterine Veſſels, thro' which the Menſes will of courſe be excited. Hence we may form a Judgment of the Doctrine of *Lindanus*, ſo much extolled by *Ettmuller:* For the former of theſe Authors diſtinguiſhes the Times in which Veneſection is to be uſed, as *Ettmuller* informs us in the following Words. "When the Menſes "are about to make an Eruption, but have not as yet ap- "peared, a Vein is to be opened in the Arm; but after they "have begun to flow, or are ſuddenly obſtructed, the Sa- "phæna is to be opened; but in the Ancle a Vein is never to "be opened, unleſs the Menſes actually flow, or are ſup- "preſſed." *Ettmuller* accounts for this Doctrine in the following Words: "When the Menſes are about to make an "Eruption, and the Blood in a State of Turgeſcence and Rare- "faction, the Effort of Nature is to convey it downwards; for "which Reaſon, if the Veſſels are ſmall, they cannot be forth- "with opened, but being rather diſtended, in ſome meaſure "retard the Diſcharge of the Blood. When, therefore, by "opening the Saphæna, the Impetus of the Blood is con- "veyed to the inferior Parts, the larger Quantity of it is "conveyed to the Uterus, by which means the Diſorder is "increaſed; whereas, by opening a Vein of the Arm, ſome "Quantity of it is ſollicited upwards, the Veſſels are freed "from Oppreſſion, and the Blood circulates more freely. "And an Opening of the Saphena will never provoke the "Menſes, except in Caſes where (when actually flowing) "they have been ſuppreſſed either by Cold or a Fright." In this Reaſoning it is ſuppoſed, that the Blood is ſo turgid and rarified, that it might quickly enough paſs through the Veſſels, unleſs, in conſequence of its being conveyed downwards, Plenitude ſhould obſtruct its Motion. But that the Veſſels ſhould yield the leſs eaſily, the more they are diſtended with Blood, is a Principle ſo far from being compatible wirh ſound Philoſophy, that it is inconſiſtent with common Senſe. For if opening the Saphena promotes the Menſes, when already flowing, and recalls them when ſuppreſſed, why ſhould it not, at other times, recall their Diſcharge? Whence happens it, that in one Caſe it augments the Momentum of the Blood, and in another diminiſhes it; whilſt, at the ſame time, the Blood is equally ſtrongly conveyed to the Uterus? Since, by opening a Vein of the Arm, ſome Quantity of Blood is ſollicited upwards, the Paſſages of the Uterus are freed from Oppreſſion; but the Impetus becoming languid, in conſequence of the Diminution of the Plethora, the Veſ- ſels

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ſels are not ſo eaſily opened, becauſe they are not ſo much diſtended. *Etmuller* affirms, that *Riverius* gives us an Inſtance in Confirmation of this Doctrine of Plenitude, in which he tells us, "That, as often as the Vein in the Ankle was "opened in a certain Woman, her Menſes were ſtopt, "whilſt they flowed copiouſly by opening a Vein of the "Arm." As this Phænomenon ſeems contrary to the common Doctrine of Phyſicians, the Profeſſors at *Montpelier* have explained it in the following Words. "Since this Wo"man was plethoric, and afflicted with a Suppreſſion "of the Menſes, in conſequence of a Redundance of Blood, "ſo diſtending the Veſſels of the Uterus, that they could "not be ſufficiently compreſſed; the Blood being attracted "to thoſe Veſſels, by opening the inferior Veins, the Ob"ſtruction was augmented. But when, by opening the ſu"perior Veins, there was a Revulſion from the Veſſels of "the Uterus; and when their Plenitude and Diſtenſion were "leſſened, they then more eaſily contracted themſelves, in "order to perform the natural and uſual Expulſion made from "the Uterus." There is a Diſtinction to be made between a Plethora when ſingle, and when accompanied with a Lentor of the Blood; for by the former the Menſes cannot be ſuppreſſed, nor conſequently the Opening of the Saphæna, which increaſes the Plethora to the uterine Veſſels, prove hurtful to the Eruption of the Menſes. But in a Plethora, accompanied with a Lentor of the Blood, becauſe there is an Obſtruction in the Uterus, that is, becauſe the viſcid Blood ſtops in the capillary Veſſels, the Humours being more copiouſly conveyed to the Uterus by opening the Saphæna, and the Blood flowing out more impetuouſly, there is a greater Adheſion of the viſcid Parts to the Orifices of the Veſſels. But this Danger in opening the Saphæna is not to be aſcribed to the Plethora, but rather to the Lentor; ſo that the Caution of *Lindanus* only holds good in that Species of Plethora which is accompanied with a Lentor of the Blood. The Woman already mentioned from *Riverius* laboured under a Plethora of this Kind; for which Reaſon her Phyſicians juſtly made it their Intention of Cure to diminiſh the Plethora by liberal Veneſection in the Arm; and afterwards, by opening the inferior Veins, to ſollicit the Blood to them, eſpecially about the uſual Time of Eruption. The Reaſon why it is of more Service to open a Vein in the Arm firſt, and afterwards the *Saphæna*, ſeems to be this. When the Quantity of Blood is diminiſhed by Veneſection in the Arm, the Velocity of the Remainder is increaſed; and when the *Saphæna* is afterwards opened, the Blood is propelled more forcibly to the inferior Parts; and thus the *Plethora* in the uterine Veſſels is perpetually increaſed. Hence the *Plethora* and Velocity being both increaſed, the diſtending Force of the Blood on the uterine Veſſels, is, for a double Reaſon, augmented, and in conſequence of this, a due Evacuation is excited. *Freind's Emmenologia.*

SAPHERA, or ZAPHERA. *Zaffer*, a bluiſh mineral Subſtance, made, according to *Lemery*, from the *Caput Mortuum* of Cobalt, left after the Sublimation of Arſenic, and twice the Quantity of powder'd Flint calcin'd together, ſo as to form a Sort of Stone. It is uſed by the Painters and Enamellers, but is poſſeſs'd of no medicinal Virtues.

SAPINDUS. The ſame as ARBOR SAPONARIA, which ſee.

SAPINUS, according to *Blancard*, is the Fir, or the inferior Part of the Fir without Knots.

SAPO. Soap. See OFFA HELMONTIANA.

SOAP FROM EXPRESSED OILS AND A FIXED ALCALI.

Take a Quantity of expreſſed Oil-Olive in one Glaſs, and an equal Weight of Oil of Tartar in another, pour the Oil gently upon the Lixivium, and it will float thereon, and the two Liquors remain perfectly diſtinct. Shake the Veſſel wherein they are both contained, and the Mixture will immediately appear white, opake, thick, and ſomewhat viſcous; and when ſuffered to ſtand in this State, it will continue for ſome time equally mixed, but at Length the Oil and the Lixivium will ſeparate from each other; whence it appears, that expreſſed Oils, by Means of the Acid always lodged therein, are diſpoſed to mix with Alcalies, even tho' diluted with Water; but that this Union is ſo weak as eaſily to be ſeparated. Again, it ſeems probable, that the Acid is the Means of procuring this Combination; becauſe Oils, deprived of their Acid, more difficultly unite with Alcalies. If this Mixture be gently boiled over a ſlow Fire, till the Water is gradually exhaled, it comes into one conſiſtent white Maſs, of a nauſeous oily Smell, and a ſharp, alcaline, ungrateful, unctuous Taſte, which will eaſily reſolve in the Air; but if in the Boiling, a juſt Proportion of the diſſolved Alcali or Oil be added, or mixed therewith, ſo as that the Compound may perfectly diſſolve in Water, without ſeparating from its Oil, and yet manifeſt nothing alcaline to the Taſte, and remain long in the Air without running, it is then called perfect Soap. It was afterwards found, by a ſucceſſive Repetition of Experiments, that the ſtronger the Alcali, the more perfect the Soap; and as Quick-Lime wonderfully increaſes the Power and fiery Nature of Alcali, an Alcali prepared by means of the ſame, began to be uſed inſtead of the ſimple Kind, for the making of Soap; and becauſe they alſo obſerved, that the Union was made more perfect by long continued Boiling, and that this Boiling required a larger Proportion of Water, they added Water more plentifully, and at length, by repeated Trial, they likewiſe found that a certain Proportion of Oil and Alcali was required; and thus by ſucceſſive Degrees, the certain and determinate Way of making Soap was found.

They take the fixed, alcaline fiery Salt, prepared with Quick Lime; this they diſſolve in ſuch a Proportion of hot Water, that the Lie may ſupport a new-laid Egg; and this the Soap-makers call their capital Lie. They afterwards dilute Part of it with more Water till a freſh Egg will ſink therein; and this they call the weaker Lie. They afterwards mix their Oil-Olive with an equal Weight of this weaker Lie, by ſtirring them well together, till the whole becomes white, then boil the Mixture with a gentle Fire, keeping it continually ſtirring, till the Water being exhaled, the Remainder begins to unite; at which time they throw in thrice the Weight of capital Lie, in Proportion to the Oil, and mix and boil till the Maſs becomes ſo thick, that a little of it laid upon a cold Stone, appears to be of a due ſolid Conſiſtence; and if now a Part of this cold Maſs is diſſolved in Water, it manifeſts no Signs of Oil, this ſhews that the Oil is well united with the Alcali; but if any Oil ſtill appears, the Addition of a little more capital Lie is required, and the Boiling muſt then uniformly be continued, till the Soap will perfectly diſſolve in Water. At this Time the Soap is taſted, and if it proves ſharp and alcaline, it is a Sign that Alcali abounds too much therein. Therefore a little more Oil is added, and the Boiling continued, till at length a Maſs is obtained, ſo hard as to cut in the cold, and that will perfectly diſſolve in Water, and neither taſte alcaline upon the Tongue, nor run ſpontaneouſly in the Air; and thus the Soap is perfected.

Inſtead of Oil-Olive any other fat Subſtance may be uſed, as the Fats of Animals and the Oils of Fiſh; thus black Soap is made from Train-Oil, or the boiled Blubber of Whales; but the purer the Alcali is, and more ſcentleſs, taſteleſs, and leſs ungrateful the Oil, the better the Soap, eſpecially for medicinal Uſe.

REMARKS.

Here we ſee an intimate Combination of native Oil with fixed Alcali, by Means of Water and Fire, into a homogeneous Maſs, which will perfectly diſſolve in Water; whence it appears, that the Oil here loſes its former fat Nature, and acquires another more agreeable to Water; and that this is brought about by the Means of ſharp fixed Alcali. And therefore, where the Humours of the Body abound with Oil, Salts are generally uſeful, and conſequently in this Caſe, a prudent Uſe of fixed alcaline Salt may be allowed. Hence alſo we are ſhewn a Way, whereby the Acrimony of Alcali may be entirely blunted, ſo as to grow ſoft and put off its corroſive Nature, by the means of Oils. Whence again, in ſuch Caſes, where the like ſharp, ſaline Matter predominates, freſh expreſſed Oils, drank in plenty, will blunt it; and this has been often practiſed with good Succeſs in the acuteſt Diſeaſes, and the more pernicious Kind of Scurvy; again, when this Acrimony is ſpontaneouſly generated in a certain Place, as in the Kidneys or Bladder, where the Stone drinking in the Urine, turns it to this Kind of Acrimony: But in the Soap ſo produced, tho' the Tenacity of the Oil is aboliſhed, yet the former Virtue of the lixivial Salt remains, whereby it deterges without Danger of corroding; for when mixed with Water, it makes a ſtrong ſaponaceous Lie, which by Heat, Motion, and Trituration, diſſolves Gums, Oils, Roſins, and groſs Fats, rendering them alſo ſaponaceous, or ſoluble in Water; and thus it has a ſcouring, detergent, opening, cleanſing Property. Hence it renders coagulating Humours fluid, opens old Obſtructions, and thereby reſtores the loſt Uſe of the Parts. It, alſo, has great Effects upon Concretions, conſiſting of groſs Earth and Oil; it prevents Acids from coagulating the Chyle or Milk, and even reſolves them after Coagulation. Whence it appears to be almoſt an univerſal Opener, Diluter, Reſolver, and thinner in the Body, in the abovementioned Caſes; being drank upon an empty Stomach, well

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well diluted and at different Times, in a ſufficiently large Quantity, and aſſiſted by the Motion of the Body. It is likewiſe wonderfully ſerviceable, being externally applied in ſinuous and fiſtulous Ulcers. It may be ting'd and diſguiſed, by giving it a grateful Colour with Saffron, Turmerick, Cochineal, or other Pigments; and if it ſtill proves diſagreeable, on account of the nauſeous Smell acquired by the Oil in boiling, it may be corrected by a little Balſam of *Peru*. But its Uſe is highly pernicious in thoſe Diſtempers, where Life is in Danger from a Putrefaction, that diſſolves and corrupts the Humours, as has frequently appeared in the Plague and other putrid Diſtempers, according to the juſt Obſervation of *Diemerbroeck*. Many other Particulars of chymical and medicinal Uſe may be eaſily deduced, concerning this noble Production, from what is above delivered. Soap effects what neither Water nor Oil could perform, does that with Safety which Alcalies do with Danger, and can perform what other Salts cannot.

SOAP FROM DISTILLED OILS AND FIXED ALCALI.

Chymiſts conſidering the Virtues, which by Experiment they found in diſtilled Oils, were concerned to find that theſe Oils, not mixing with Water, could not enter and act upon the Humours of the Body; and therefore obſerving that expreſſed Oils might be ſucceſsfully united with fixed Alcali, they went upon trying the ſame with diſtilled Oils, but found that theſe loſt their Virtue by boiling, and even could not thus be joined with the Alcali, and hence tried various Experiments to unite theſe different Bodies, till excited by the Directions and Promiſes of *Helmont*, ſome of them ſeemed to have found the Means of effecting the Thing. I myſelf, formerly made many tedious Experiments to this Purpoſe, and at length ſucceeded as I ſhall now relate. The Secret conſiſts in this, that the Alcali ſhould be perfectly ſharp, pure and dry, and come in Contact with an Oil perfectly deprived of Water; all the reſt is ſucceſsfully performed by the Atmoſphere; but if the leaſt Water ſhould enter, the Experiment will be fruſtrated.

Take the pureſt and ſtrongeſt fixed Alcali, and grind it in a clean Iron Mortar, with an Iron Peſtle, to fine Powder, the finer the better, while it remains thoroughly hot from the Fire, and almoſt ignited; then put it into an extremely dry and well heated Urinal, and ſet it in a hot and dry Place, on a clear and dry Day; and at the very Inſtant that the hot Salt is all collected at the Bottom of the Glaſs, let fall therein the true ætherial and pure Oil of Turpentine, ſo that one Drop may immediately follow another, and fall upon the middle of the hot Salt; the Oil itſelf having been firſt well heated; and thus the Oil will immediately, with a great Fume and hiſſing Noiſe, be attracted into the thirſty Salt, and diffuſe itſelf intimately through the whole Maſs. Continue to pour in the Oil quick, till enough is entered into the Salt, and floats above it, ſo as to prevent it from touching the external Air which is always moiſt with Water, or from touching the Surface of the Salt. Set the Glaſs in a Cellar, where being covered with Paper, the Oil will ſoon diſappear, and be united with the Alcaline Salt; then pour ſome more of the warm Oil thereon, and mix it with a Stick into the former Maſs. Set the whole by, as before, and continue thus till near thrice the Quantity of the Oil is united with the Salt; the whole will be now a ſaponaceous and penetrating Maſs, which, the more it is ſtirred, the ſooner and better it is made, whence it may be expeditiouſly obtained, by putting it into a ſtrong Glaſs, and ſuffering it to be carried daily, and ſhook in a Stage Coach, as Doctor *Grew* and *Bohn*, have formerly obſerved. The Experiment has always ſucceeded well, when I have obſerved the foregoing Circumſtances; but never if the leaſt of them were neglected. The Operation is known to be well performed if a little of the Soap will mix with Water without manifeſting any Sign of Oil. If the Soap, thus prepared, be long kept in the Urinal, there uſually riſes, by degrees, along the Sides of the Glaſs, a certain white cryſtalline Salt, of no diſagreeable Odour, and of a penetrating, mild, ſaline, but not alcaline, Taſte; which is wonderfully inſinuating, eaſily ſoluble, and affords an highly uſeful medicated Soap.

This Salt which is but little in Quantity, I ſuſpect gave Origin to the Aſſertion, which perhaps is too free, that fixed Salt of Tartar was here rendered Volatile, by means of Oil added thereto, ſo as to become a Subſtitute for the Alcaheſt; but when I urged this Soap with Fire, after it was well prepared, I did not find the promiſed volatile Salt.

REMARKS.

This Experiment alſo ſhews us the thirſty Nature of pure fixed Alcali, whereby it drinks in and unites theſe Salts with itſelf, and again how a ſharp fiery Alcali may be ſoftened into a mild oily Salt. We have ſufficiently ſpoke to the Virtue it has againſt acid, auſtere and viſcous Coagulations, under the former Proceſs; we muſt however obſerve, that all the Virtues there related, are here found more Noble and Active, and conſtantly ſomewhat heating. Hence we underſtand the Nature of diſtilled Oils, with regard to fixed Alcalies, or of fixed Alcalies with regard to them; and of the new Production by a proper Combination of the two. *George Starkey*, and his Followers, call this Soap Volatile; but I never could find it ſo, as I ſaid above. This is the Soap which *Matthew*, an Empiric of *London*, made under the Title of *Matthew*'s Corrector, wherewith he mixed Opium, and the Roots of Hellebore and Liquorice, and then digeſting them together, he made general Pills thereof, that were diaphoretic, ſcarce emetic, or purgative, but anodyne, though they would often vomit the next Day. *Starkey* publiſhed a more correct Preparation of theſe Pills at the End of his *Pyrotechny*, where he boaſts of their Virtue after the Manner of Chymiſts, unjuſtly pretending that the Virtue of the Hellebore remained entire, though deprived of its vomiting Quality. The excellent *M. Homberg* obſerves that a ſtrong Lixivium made of this Soap, mixed with a ſharp Acid is ſtrangely rendered turbid and changed; while the Alcali being attracted by the Acid, lets go the Oil. Theſe Soaps being well dried and digeſted with pure Alcohol, are in ſome meaſure reſolved into the leſs Elixir of the Philoſophers, where the Sulphur and Spirit are united.

THE SOAP OF BALSAM OF SULPHUR.

1. Take the *Balſam* of Sulphur, as directed to be prepar'd with a Vegetable expreſs'd Oil under the Article BALSAMUM. Dilute it with twice or thrice its Weight of the ſame Oil as was uſed in its Preparation, and herewith make a Soap. This will be the Soap required, which *Starkey* in his *Pyrotechny* ſo highly commends from *Helmont*.

2. Or take *Balſam* of Sulphur, with Turpentine as directed under the ſame Article, and therewith, inſtead of ſimple Oil of Turpentine, make a Soap: This Soap will be the ſulphureous Soap of the Philoſophers.

REMARKS.

Theſe Proceſſes ſhew the Ways whereby natural ſimple Sulphurs, as alſo ſuch as cloſely adhere to Semi-Metals, as the Sulphur of Antimony, *&c.* may be joined to fixed Alcaline Salts, and thus become mixible with nearly all the Animal Juices, and exert their Virtue in all the Veſſels of the Body. The followers of *Helmont* hence promiſed themſelves wonderful medicinal Effects, not eaſily to be obtained by other Means; becauſe in theſe Sulphurs, ſo opened, they find a great ſolutive Power, which is manifeſt by their diſagreeable Odour, their ungrateful, and highly penetrating and heating Taſte; but the ſame Effects may be had in the Soaps deſcribed above, without the diſagreeable Odour and Randidneſs. Theſe Proceſſes, however, have their Chymical Uſe.

THE BALSAM, OR SOAP OF SULPHUR, UNITED WITH ALCOHOL.

1. To the terebinthinated *Balſam* of Sulphur contained in a tall Bolt-Head, add ſix times its Weight of pure Alcohol, and make a Solution; which having ſtood for ſome Time, the Sulphur in part precipitates out of the *Balſam*, into ſulphureous Cryſtals, and in part remains diſſolved, ſo as to afford an alcoholized *Balſam* of Sulphur.

2. Or take the terebinthinated Soap of Sulphur, as deſcrib'd in the preceeding Proceſs. N°. 2. digeſt it with Alcali, and this makes perfectly the ſame Solution, of a very penetrating Taſte and Odour. *Boerhaave's Chymiſtry.*

SAPONARIA. A Name for the *Lychnis, Sylveſtris, quæ Saponaria vulgo.*

SAPONEA. The Name of an Arteriacal, or Pectoral Medicine, made of Oil of ſweet Almonds and Sugar diſſolv'd in Water of Violets. *Caſtellus* from *Claudinus.*

SAPOR. Taſte. See GUSTUS.

SAPOTA. *The Mammæ Sapota.*

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The Characters are;

It hath a Rose shaped Flower, consisting of several Leaves, which are placed in a circular Order; from whose Empalement arises the Pointal, which afterwards becomes a large, oval, short, fleshy Fruit, inclosing an oblong pointed Stone or Fruit, which is finely polished, having a rough Fissure on one of the Edges, of an Ash Colour.

Miller mentions two Sorts of *Sapota*, which are;

1. Sapota fructu turbinato minori. *Plum. Nov. Gen.*

2. Sapota fructu ovato majori. *Plum. Nov. Gen.*

The Name of *Sapota* is what these Fruit are called by the Natives of *America*; to which some add the Appellation of *Mammæ*. But there is no other Name given to these Fruits by the *English*, since they have settled in the *West Indies*, so far as I can learn.

The first of these Trees is common about *Panama*, and some other Places in the *Spanish West Indies*, but is not to be found in any of the *English* Settlements in *America*. The second Sort is very common in *Jamaica*, *Barbadoes*, and most of the Islands in the *West Indies*, where the Trees are planted in Gardens for their Fruit, which is by many Persons greatly esteemed.

These Trees grow in *America*, to the Heighth of thirty-five or forty Foot, having a strait Trunk, covered with an Ash-coloured Bark. The Branches are produced on every Side, so as to form a regular Head. These are beset with Leaves, which are a Foot in Length, and near three Inches broad. The Flowers, which are produced from the Branches, are of a Cream Colour; when these fall away, they are succeeded by large, oval, or top shaped Fruit, which are covered with a brownish Skin, under which is a thick Pulp of a Russet Colour, very luscious, called natural Marmelade, from its Likeness to Marmelade of Quinces. *Miller's Dictionary*, *Vol.* 2.

SAPON. The Name of a Wood used in dying, but of no medicinal Virtues.

SAPPHIRUS. Offic. Aldrov. Mus. Metall. 971. Geoff. Prælect. 80. Kentm. 48. Mont. Exot. 14. Calc. Mus. 223. Boet. 183. Worm. 104. Schrod. 320. Charlt. Foss. 38. De Laet. 30. *Sapphirus mas cærulæus*, Schw. 391. *Lapis Sapphirus*, Matth. 1387. THE SAPPHIRE.

The Sapphire, called by some the Gem of Gems, is a hard Stone of a blue Colour like that of the clear Sky. It comes nearest the Diamond in Splendor, Transparency, and Hardness, and is of two Kinds; one pale, called the Female Sapphire, the other of a deeper blue, called the Male. There is a third Sort, likewise, which has no Colour at all, and is sometimes made to pass for a Diamond, but is neither so hard nor so brilliant.

Sapphires are brought from different Parts of the *East Indies*, and thence called *oriental*. The rest are found in *Silesia* and *Bohemia*, called *occidental*. The Colour of Sapphire may be taken out by Fire, and then it looks like a Diamond; for which Reason I believe this Colour to come from a small Mixture of fine Sulphur of Copper. Many are the inestimable Qualities superstitiously ascribed to this Stone; but, besides these, we are told that it raises and exhilerates the Spirits, resists Poison, and cures Ulcers of the Intestines. *Geoffroy.*

It is of a cold and dry Quality, astringent, consolidating, alexipharmic, cordial, and ophthalmic. *Schroder.*

SAPRIAS. σαπρίας. The same as ANTHESMIAS.

SAPURUS. The same as SAPPHIRUS.

SARAFFI, is explained by *Rulandus. Gypsa.*

SARAPOUS. σαράπους. A Person whose Toes are very distant from each other. *Galen. Exeges.*

SARCA, SAYRSA, or SARRA. Iron. *Rulandus.*

SARCION. σαρκίον. A Caruncle.

SARCOCELE. σαρκοκήλη. From σάρξ, Flesh, and κήλη, a Tumor. A Species of *Hernia*. See HERNIA, and CASTRATIO.

SARCOCOLLA. Offic. C. B. P. 498. Park. Theat. 1544. Raii Hist. 2. 1847. Geoff. Tract. 364. *Sarcocolla Officinarum*, J. B. 1. 308. SARCOCOL.

This is a Gum which comes over in small whitish yellow Grains, with a few of a reddish Colour mixed among them, of a viscid and somewhat bitterish Taste, with a sweetish Relish. There is another Sort, which has been brought over lately in Lumps of a brownish yellow Colour, smelling and tasting somewhat resinous, very friable, and powdering of a whitish yellow Colour. It is said to come from *Persia*, but we have no Knowledge of the Tree which produces it.

It is of a restringent, consolidating, glutinous Nature, good to heal and cicatrise Wounds. It is serviceable against Dysenteries, Spitting of Blood, and Bleeding at the Nose; and is frequently made use of in Distempers of the Eyes. It is put into *Trochisci albi Rhasis* and the *Emplastrum Opodeldoc. Miller's Bot. Off.*

To make it into a Collyrium, nothing is required but to dissolve it in Plantain Water. *Geoffroy.*

Chuse what is recent, of a Colour inclining to Paleness (for the old and stale is reddish) of a bitter Taste, a porous and glutinous Substance.

It is heating, drying, astringent, consolidating, conglutinating, digestive, and maturating. Its principal Uses are in exterging and consolidating Wounds, and inducing a Cicatrix over them, whence it has its Name. It is of excellent Service in Rheums, Albugo, or Films affecting the Eyes; for which Purposes it is macerated five Days in Asses or Women's Milk; and being mixed with Rose-Water, and (if you think fit) with a little Sugar, is applied to the Eye-lids. It is an Ingredient in Anacollemas for Hæmorrhages of the Nose. *Dale.*

SARCOEPIPLOCELE. A Kind of compound Rupture, consisting of a Descent of the *Epiploon*, and a *Sarcocele*. Or a Rupture of the indurated *Epiploon*, either umbilical or scrotal.

SARCOMA.

A Sarcoma is defined a fleshy Tumor, arising in any Part of the Body, from some Effusion of the nutritive Juices out of their Tubuli, as happens in Contusions, and by some other Accidents. This Tumor being certainly made up of the same Materials, and having the like manner of Accretion with that of other Parts, but with this Difference only, that the latter is restrained by the Course of the Vessels, to some certain Figure, and equal or irregular Dimensions, whilst the former is in Form, and under no certain Restriction or Limitation.

For when this precious Liquor, by Reason of some Obstacle, is perverted from its primary Use or Office of nourishing some certain Parts, rather than lie unactive, busy Nature will be still forming something thereof, however rude or unshaped, as well as useless it may prove.

The same *Lusus* or Aberration is daily seen in Plants, with the like Excursions of their Sap, analogous to the Blood of Animals, when by some Accident of Let or Stop in its more regular progressive Motion, it is forced to deviate or turn aside out of its Channels.

The Sarcoma is distinguished from encysted Tumors, in that it has no Cystis or proper containing Capsula like those, nor is it moveable as they are; neither yet does it give way as the rest to any Pressure, having no Cavity, but is firm, compact, and more solid.

As to the Cure, whoever reflects upon the Nature and Matter of this Tumor, will easily apprehend it is to no Purpose to expect it should either be repelled or discussed, and as little to hope for Suppuration; since it is made up of Flesh itself, or the extravasated nutritious Juice here carnified, and turned to a solid Substance; and if the Base or Foundation thereof be not small enough to allow of the Ligature, it can be no otherwise removed than by Knife or Fire, either actual or potential: By the first I mean, the hot Iron; by the latter, the escharotic, or caustic Application.

It may, indeed, so happen as to want all three, not only to stay the Hæmorrhage, or Flux of Blood, but to eradicate and consume the Basis; which being done, and the Wound digested, you are to incarn, if there be Occasion, or otherwise to dry up the Remains into a Cicatrix.

But before you enterprize any of these Operations, you are thoroughly to examine the Nature of the fleshy Body you are about to eradicate, either of these Ways: Thus, when of a mild Appearance, soft and tractable, of the natural Colour or kindly Aspect, attended with little Pain, situated free from the larger, or fed only by some capillary Blood-Vessels, clear also of the Nerves and Tendons, in a good Habit of Body, and a governable Patient, there will be greater Encouragement. On the contrary, when hard, livid, unequal, painful, seated in the Joints, or among the tendinous Parts, nourished by some large Artery, the Body cacochymical, and the Sick unruly, 'tis better not to meddle therewith.

Farthermore, observe in all Operations of this kind, and indeed in many others, though seemingly of less Moment, it will be requisite, that the Patient's Body should be prepared three or four Days before, by Phlebotomy, Clysters, or lenient Purgation, as also an abstemious Diet, which latter ought to be continued through the whole Course of the Cure, to prevent a Fever, with the consequent Symptoms. *Turner's Surgery.*

SARCOMPHALON, from σάρξ, Flesh, and ὀμφαλὸς, the Navel. A fleshy Excrescence at the Navel.

SARCOPHAGOS, σαρκοφάγος, from σάρξ, Flesh, and φάγω, to eat. A Name for the *Assius Lapis*. Catheretics are, also, thus called.

SARCOPHYIA, σαρκοφυία. A fleshy Excrescence, or SARCOMA.

SARCOPYODES, σαρκοπυώδης. An Epithet of Spit resembling purulent Flesh, which is sometimes cough'd up in a Consumption.

SARCOSIS.

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SARCOSIS, σάρκωσις. The same as SARCOMA.

SARCOTHLASIS, σαρκόθλασις, or SARCOTHLASMA, σαρκόθλασμα. From σάρξ, Flesh, and θλάω, to contuse. Contused Flesh, or a Contusion of the Flesh. *Nonus.*

SARCOTICA. Sarcotics. That is, Medicines which generate Flesh in Wounds.

SARDA, or SARDINA. The Pilchard.

This is a small Fish found in the *Mediterranean*, which resembles the Anchovy, but is larger and thicker; and it is less than a young Snad. Sometimes they keep in the Middle of the Sea, and at other Times resort near the Shores.

This Fish is best when young, tender, well fed, fresh, and catch'd in *March* or *April*. It contains much Oil and volatile Salt. When fresh it is delicious Food, nourishing, opens the Body, produces good Juice, and is of a dissolving Nature, and may be advantageously applied, when pounded, to Swellings of the Gums and Legs.

When pickled, it loses some of its excellent Taste, heats much, causes Thirst, makes the Humours sharp and pungent, and produces nearly the same Inconveniencies with the Pickled Herring; but it has a much finer and more agreeable Taste, and may be reckoned among those Foods which are more pleasant than wholesome. When it is fresh, it is good in cold Weather, for any Age and Constitution; but when it is pickled, it ought to be eaten more moderately, especially by those who are young, and of a hot and bilious Constitution.

SARDA, is also a Name for the *Sardius Lapis*, Cornelian.

SARDONIUS RISUS. Sardonian Laughter, a convulsive and involuntary Laughter; it acquires this Name from *the Herba Sardonia*, or *Sardoa*, which is the *Ranunculus*; *palustris*; *apii folio*; *lævis*, and which is said to excite a Kind of Madness and Convulsions, by which the Cheeks are contracted in such a manner, as to resemble those of Persons under a Fit of Laughter. This Disorder, which has passed into a Proverb (in which Acceptation *Sardonius Risus* signifies a forced Laugh) is justly regarded as very dangerous, since it induces sudden and unexpected Death, under the Disguise of a false Laughter.

The Cure for those who are disordered by taking this Herb is first to vomit, and then to take a Draught of Hydromel and Milk, and to use Fomentations, Embrocations, and Inunction of the whole Body with hot Ointments. The Patient is, also, to bathe in Water and hot Oil, and after Bathing to be anointed, and very well rubbed. In general the Cure is to be managed in the same Manner as for Convulsions; Castor, also, may be taken, either alone, or in Passum, with other Medicines of the like Nature. *Actius*, *Tetrab.* 4. *Serm.* 1. *Cap.* 66. copied *verbatim* by *Paulus* and *Actuarius*.

SARDONYX, Offic. Boet. 233. Kentm. 49. Charlt. Foss. 34. De Laet. 70. Worm. 97. Calc. Mus. 241. *Sardonyx Indica*, Geoff. Prælect. 78. THE SARDONYX.

The *Sardonyx*, as the Name imports, is a precious Stone, of an Appearance betwixt the *Sardus* and *Onyx*. *Geoffroy* says, that the *Onyx*, or *Sardonyx* according to some, is different from the true *Sardus*. See ONYX.

The *Sardus*, or the Sardian Stone, is very rare, and not perfectly transparent. We meet with two kinds of it, one called *Oriental*, the other *Occidental* or *European*, the former of which is the hardest. Both these were by the Ancients termed *Sardonyx*. The second Sort is the *Indian* and *Arabian*, of which the former is pellucid, the other opake.

The *Indian Sardonyx* resembled both the *Sardus* and *Onyx*, its Surface being like the *Onyx*, or human Nail; but its Root was white, like the *Sardus*, or of a Flesh Colour; and was mostly transparent, though some of them being opake, were from thence called *Cæcæ*, or blind.

The *Arabic Sardonyx*, called by some *Memphitis*, was distinguished by a black or dark blue Substratum, surrounded by a white Circle, and by its Surface being more or less white. This, by Jewellers, is termed simply *Onyx*.

The Ancients were of Opinion that the *Sardus*, by a certain Irradiation, exhilarated the Mind, banished Fear, inspired with Courage, defended against the Power of Witchcraft and Poison. It is given in Powder to stop all bloody Fluxes; but is very little used at this time. *Geoffroy.*

SARDUS. See CARNEOLUS.

SARE. The same as ESSERE.

SARFAR. Iron. *Rulandus.*

SARGAZO. The *Vitis Marina*. See FUCUS.

This Plant covers a large and spacious Sea of the *Indies*, elevating itself a Hand's Breadth above the Surface. It shoots forth several fine, slender Stalks, interwoven one among another. The Leaves are long, thin, strait, serrated at the Edges, of a reddish Colour, and of a Taste like that of Pepper. The Fruit is a round Berry, as big as a Pepper-Corn, light, and empty. The Plant is very tender when first taken out of the Water, but becomes hard and brittle when it is dry'd. There is no Root to it as yet discovered, but only the Mark where it has been broken off when taken out of the Sea; but it has, very probably, its Root in the Bottom of the Sea. This Herb, by its vast Abundance, renders the Navigation of that Sea very dangerous. It is eaten in Sallads. *Lemery des Drogues.*

Sargazo is very aperient, and good to provoke Urine, and break the Stone in the Kidneys and Bladder, for the nephritic Colic, and the Scurvy, being either eaten, or taken in Decoction.

Sargazo comes from *Sargasso*, which is the Name the *Portugueze* give that Extent of Sea which lies between the Islands of *Cape Verd* and the *Canaries*, and the main Land of *Africa*.

SARGUS, a bulky Fish, fleshy and thick, and found in the *Egyptian* Sea, on the Shores, and in the Sand. It has a large Body, covered with fine Scales, and is of a Colour inclining to a Violet. It has a capacious Belly, sharp Snout, and great Teeth resembling human Teeth. It has a black Spot towards the Tail, and its Body is often beautified with Streaks of the Colour of Gold and Silver. It is a Native of the *Adriatic* Sea, and is said to be so great a Lover of Goats, that if it smells them, or does but see their Shadow, it leaps and throws itself forward in order to get upon them. It commonly feeds on the Mud and Surf, that is found on the Seashore. It is good to eat, but its Flesh is hard.

The *Sargus* is esteemed good for the Dropsy, being taken in Broth. The Teeth worn about the Neck, are supposed to be a Preservative from the Tooth-Ach. *Lemery des Drogues.*

SARMATICA LUES, is the PLICA POLONICA.

SAROPUS. The same as SARAPUS.

SARRACENA. *The Side-Saddle Flower.*

The Characters are;

It hath a Flower consisting of several Leaves, which are placed circularly, and expand in Form of a Rose, and resting in a many-leaved Empalement. From the middle arises the Pointal, which is membranaceous, and shaped like a Hood, and afterwards becomes a roundish Fruit divided into five Cells, which contain oblong Seeds.

Miller mentions but one Species:

Saracena Canadensis foliis cavis et auritis. Inst. R. H.

This strange Plant is a Native of *New-England*, *Virginia*, and several Places in *North America*; where it grows on Bogs, and such Places where the Waters usually stand in Winter. The Leaves of this Plant arise from the Root every Spring, being eight or nine in Number, which are small at the Bottom, but swell larger towards the Top, and are hallow like a Pitcher, having a Sort of an Appendix at the Top, somewhat resembling a Flap, so that in these Leaves there is commonly a large Quantity of Water contained. Between the Leaves arises the Flower-Stem, which hath several rosaceous Flowers growing on the Top, which are succeeded by roundish Fruit.

The Name was given to this Plant by Dr. *Tournefort*, in honour of Dr. *Sarazin*, a curious Botanist, who sent the Plant from *Canady* to Dr. *Tournefort* at *Paris*. *Miller's Dictionary.*

SARRAMPIO. The same as PICOTA.

SARSAPARILLA. Offic. *Smilax aspera Peruviana*, Park. Theat. 173. *Smilax aspera Peruviana sive Salsaparilla*, C. B. P. 296. Raii Hist. 1. 656. *Smilax Peruviana Salsaparilla*, Ger. 709. Emac. 859. *Smilaci affinis Salsaparilla*, J. B. 2. 117. *Ivapecanga Brasilienſibus*, *Sarsaparilla Hiſpanis*, Marcg. 11. *Macapatli ſeu Zarca-parilla*, Hernand. 288. *An Carivillandi?* H. M. Part. 7. p. 59. T. 31. SARSAPARILLA.

This is a very long, slender Root, free from Knots, about as thick as a Goose-Quill, with a brown wrinkled Bark on the Outside, and white and somewhat mealy within, having a small, tough, stringy Pith in the Middle, of little Smell or Taste. A great many of those long Roots descend from one large Knot or Head. It grows in *Peru* and *Brazil*, and is described by *Piso* under the Name of *Ivapecanga*, being a Species of *Smilax aspera*, having slender prickly Stalks, and long oval sharp-pointed Leaves, of a deep Green on the upper Side, and whiter underneath, with three large Veins and two Claspers set on by them. The Flowers grow in Bunches at the Ends of the Stalk, and are succeeded by small black Berries.

Sarsaparilla is heating, drying, attenuating and sudorific; and particularly useful for the French-Pox, for which it has been accounted a Specific, and much used in Diet-Drinks for that Distemper. It is likewise serviceable against the Gout, Rheumatism, Scurvy, and the King's-Evil, being accounted a Sweetner of the Blood. *Miller's Bot. Off.*

It is of fine Parts, and accounted a Specific for the Lues Venerea, Arthritis, Rheumatism, and the like Diseases. Whether Sarsaparilla be specifically different from China Root, I will not, says *Dale*, taking upon me to determine. *Sarsa-*

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Sarſaparilla is a very noted Root, which began to be very much celebrated about the ſame time with the Root of *China*, as appears from the Epiſtle of *Veſalius* [quoted under the Article CHINA.] It is inferior indeed to Guaiacum, but is generally ſuppoſed to be much ſuperior in Virtue to China Root, and even to exceed Guaiacum itſelf, when after a Courſe of mercurial Inunctions, and drinking Decoctions of Guaiacum, the Patient is ſtill moleſted with Ulcers, Rhagades about the Anus, Tophs, Nodes, Ganglia, and Gummata; but eſpecially with Rheumatic Pains, either fixed or wandering, and owing their Original to the venereal Infection, in which latter Caſe it is eſteemed a Specific.

It is imported from ſeveral Countries of *America*, and eſpecially from *Peru*, *Mexico*, and *Brazil*, where it is ſaid to grow ſpontaneouſly, and plentifully, even in the Hedges. It is generally believed to be the Root of a Plant, the ſame with the *Smilex Aſpera*, or very near akin to the *Smilax*. Hence it is called by the *Spaniards Sarſa-parilla*, or *Zarça-parilla* (that is, *a ſmall Vine reſembling the Bramble*) which is the Name they give the *Smilax Aſpera*, as we are told by *Andreas Lacuna*, becauſe the *Smilax* in its Leaves, Branches, and Tendrils reſembles the Vines, but in its Thorns and Prickles the Bramble; for *Zarza* in *Spaniſh* is a Bramble, and *Parilla* a little Vine. This Opinion is, alſo, favoured by Experience; for it is certain, that the Roots of our *Smilax Aſpera* very nearly reſemble in Figure thoſe of *Sarſa-parilla*, and almoſt equal them in Virtue, ſince we are aſſured by *Fallopius*, *de Morbo Gallico*, that he made uſe of the Roots of the *Smilax Aſpera* gathered in *Italy*, with happy Succeſs, and cured Multitudes of the Lues Venerea.

Sarſa-parilla is prepared in Decoction after the ſame manner as *China*, that is, by cutting two Ounces of the Root into ſmall Bits, and macerating them a whole Day in ſix Pints of common Water, after which they boil them over a gentle Fire in a double Veſſel well cloſed with a Lid, till one third, or half, be evaporated. Of this Decoction the Patient is to take a Glaſs, that will hold ten Ounces, very early in Bed; what remains ſerves during the reſt of the Day for ordinary Drink, and this Courſe is continued for twenty or twenty-four Days. As to the reſt, the Patient is allowed a ſomewhat greater Latitude in Diet, than under the Uſe of Guaiacum, and obſerves, in that Reſpect, the ſame Regimen as is preſcribed to thoſe who drink the Decoction of *China*. See CHINA. *Aſtruc de Morb. Ven.*

SARTORIUS.

This is the longeſt Muſcle in the human Body. It is flat, and about two Fingers in Breadth, ſituated obliquely along the Inſide of the Thigh.

It is fixed above by a very ſhort Tendon, in the lower Part of the anterior ſuperior Spine of the Os Ilium, before the *Muſculus Faſciæ latæ*. The Beginning of its Body lies in the Notch between the two anterior Spines of that Bone.

From thence it runs down obliquely over the *Vaſtus Internus*, and other Muſcles that lie near it, all the Way to the Inſide of the Knee, where it terminates in a ſmall Tendon, which grows broader near its Extremity, and is inſerted obliquely and a little tranſverſely, in the fore Part of the Inſide of the Head of the Tibia, near the Spine or Tuberoſity of that Bone, immediately above the Inſertion of the *Gracilis Interior*.

The fleſhy Body of this Muſcle is incloſed in a Vagina formed by an Expanſion of the *Faſcia Lata*. Its Fibres in general are longitudinal, and where its lower Tendon turns obliquely round toward the Head of the Tibia, it ſeems to be braced down and ſecured in its Place, by a tendinous Frænum or Vagina. A little before it is inſerted, it detaches a diſtinct Aponeuroſis or tendinous Branch, which runs obliquely downward on the Inſide of the Tibia.

The *Sartorius* performs the Rotation of the Thigh from before outward, whether extended or bent; being an Antagoniſt to the *Muſculus Faſciæ Latæ*, and a Congener to the *Quadrigemini*.

If during this Rotation the Leg be extended, the Toes are turned outward; but if the Leg be bent, it is turned toward the other Leg, as when we lay it over the other Leg or Knee, in the manner that Taylors ſit at Work, from whence this Muſcle got the Name of *Sartorius*.

It, alſo, bends the Thigh, or raiſes it forward; it moves the Pelvis forward on the Os Femoris; and when the Pelvis reſts on the two Tuberoſities of the Iſchium in ſitting, it keeps it in that Situation. In this Action it is a Congener to the *Rectus Anterior*; but acts with much more Force, as having its Line of Direction further from the Center of Motion.

Laſtly, it bends the Leg, whether it performs the Rotation of the Thigh at the ſame time or not. In this latter Caſe it is directed by the Co-operation of ſome Congener, or counterbalanced by the Action of the *Muſculus Faſciæ Latæ*.

The Length and Obliquity of its fleſhy Portion, the Paſſage of the inferior Tendon through the Apeneurotic Vagina, the particular Inſertion of this Tendon, and the Extent of the Apeneuroſis, which it ſends over the Tibia, contribute very much to theſe different Uſes.

Beſides all theſe Uſes, it may in ſome Caſes aſſiſt the *Popliteus*. *Winſlow's Anatomy.*

SARX. σὰρξ. Fleſh.

SASSAF SYRORUM. A Species of Willow that grows in *Syria* and *Egypt*.

SASSAFRAS, Offic. Ger. 1341. Emac. 1525. Park. Theat. 1606. Raii Hiſt. 2. 1568. *Arbor ſive Lignum Pavanum*, J. B. 1. 483. *Arbor ex Florida Ficulneo folio*, C. B. P. 431. *Comuſmas odorata folio triſido, margine plano, Saſſafras dicta*, Pluk. Almag. 120. *Anhuiba, ſive Saſſafras Braſilienſium*, Piſon. 145. SASSAFRAS.

This is a large Tree, which grows in *Virginia*, and other Parts of the *Weſt Indies*, ariſing to a good Height before it ſpreads into Branches. It has two Sorts of Leaves; thoſe which grow on the lower Parts of the Twigs, are oval but ſharp-pointed; and thoſe which grow on the upper End are divided into three Sections, ſomewhat like the Maple. The Flowers are ſmall and yellow, growing in Cluſters, and are ſucceeded by ſmall Berries. The Root is thick and large, covered with an iron-coloured Bark, under which is a light brown, not very hard Wood. It is of a very pleaſant Smell, eſpecially the Bark.

The Root with the Bark, which are only uſed, are heating and drying, and diaphoretic; helps the Scurvy, Gout and Dropſy, and are an uſual Ingredient in Diet-Drinks for the *Lues Venerea*. A Tea made of the Shavings is mightily commended by ſome againſt catarrhous Defluxions, and for Shortneſs of Breath.

Officinal Preparations are the *Electuarium e Saſſafras*, and the chymical Oil. *Miller's Bot. Off.*

It is principally of Uſe in removing Obſtructions, and ſtrengthening the internal Parts, in cauſing Fertility, and curing the Lues Venerea. It is accounted a Panacea, or ſovereign Remedy for Catarrhs. *Dale.*

Much about the ſame time with the other anti-venereal Woods and Roots, was imported the Wood called *Saſſafras*, from ſeveral Parts of *America*, but principally from *Florida*, where the Natives call it *Pabamwe*, as we are told by *F. Creal, Voy. aux Ind. Occid.* *Saſſafras* is of a reddiſh Colour inclining to white, ligneous, of a light and rare Subſtance, contained under a thin Bark, which is aſh-coloured without, and ſanguineous within, of an acrimonious, ſweetiſh and aromatic Taſte, and of a fragrant Smell, whence it is uſually called *Lignum Fœniculi*, or *Fœniculatum*, Fennel-Wood.

There was prepared and uſed a Decoction of *Saſſafras*, after the ſame manner as the Decoctions of *China* and *Sarſaparilla*; but as *Saſſafras* comes next to *China* in the Virtue of curing the Symptoms of the venereal Diſeaſe, ſo it is very much inferior in that reſpect to *Guaiacum* and *Sarſa-parilla*.

It has been the Cuſtom for a long time paſt to take the two Woods, *Guaiacum* and *Saſſafras*, with the two Roots *China* and *Sarſa-parilla*, which are all of a like Nature and Virtue, and boil them together, generally without any Cathartic, but ſometimes with Leaves of Senna, which was the Faſhion ſince the Year 1550, as we are informed by *Braſſavolus*, *de Radicis Chinæ Uſu*. Of theſe Drugs in Conjunction then were prepared Decoctions and Bocheta, [See BOCHETUM] which were ſometimes only diaphoretic and diuretic, but ſometimes Cathartico-diuretic, and very commonly known by the Names of *Ptiſanæ ſudoriferæ*, or *Ptiſanæ e Lignis ſudorificis*.

The Proportions of the Ingredients were various, according to the different Intentions which were to be anſwered. Generally they take two Ounces of Lignum Guaiacum in Duſt or ſmall Chips, or many Ounces of Wood of Saſſafras, cut likewiſe very ſmall, and the like Weight of the Roots of *China* and *Sarſa-parilla* each, cut into very ſmall Bits, and infuſe them warm in ten or twelve Pints of common Water, for twenty-four Hours. After this they add thereto, if it ſhall be thought requiſite, two Ounces of crude Antimony, groſsly bruiſed, and looſely tied up in a Nodule, and boil the whole over a gentle Fire, in a Veſſel covered with a Lid, to the Conſumption of a third Part; after which they add thereto an Ounce of Scrapings of Liquorice, and, if they would have it purge, half an Ounce of the Leaves of Oriental Senna, which are to boil a Moment. This done, when warm, they ſtrain the Decoction, and ſet it aſide in Glaſs-Bottles well ſtopped for Uſe.

The Cuſtom is to take three Draughts of this Decoction every Day, for twelve or fifteen Days together; the firſt in the Morning faſting, the next four or five Hours after Dinner, and the laſt going to Bed; or at leaſt two Draughts, that

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that is to say, in the Morning and Evening, omitting the Afternoon's Draught, if it shall be thought proper. During the Time of taking it, the Patient is to be kept to a sparing Diet, and to confine himself at Home, if the Season of the Year requires it. *Astruc de Morb. Ven.*

SASSIFICA. A Name for the *Tragopogon*; *purpuro-cœruleum, porri folio, quod Artisi vulgo.*

SATHE. σαθη. The PENIS.

SATURANTIA. Absorbents are sometimes thus call'd, because they saturate the Acid residing in the first Passages.

SATURATIO. Saturation; in Chymistry it is the perfect Impregnation of an Alcali with an Acid; or of an Acid with an *Alcali*, so as to render the Mixture entirely neutral.

SATUREIA.

The Characters are;

The Leaves are oblong and narrow; the Calyces are small, sharp, several on one Pedicle, and a Pedicle on each Side. The Galea is erect, and bifid; the Beard trifid, and the middle segment crenated. The Flowers are dispersed in the Wings of the Leaves, and not collected into Heads, nor disposed in Whorles, nor growing on ramous Pedicles.

Boerhaave mentions nine Sorts of *Satureia*, which are;

1. Satureia; Sativa. *J. B.* 3. 272. *Boerhaave Ind. A.* 161. *Tourn. Inst.* 197. *Satureia*, Offic. *Satureia hortensis*, Park. Theat. 4. Raii Hist. 1. 518. *Satureia Æstiva hortensis*, Ger. 461. Emac. 575. *Satureia hortensis sive Cunila Sativa Plinii*, C. B. P. 218. SUMMER SAVORY.

This Savoury has small stringy Roots, from which spring a great many woody Branches, eight or nine Inches high, a little hairy, and having two long narrow Leaves at a Joint, narrowest next the Stalk; the Flowers grow toward the Tops in small Whorles of a whitish Colour with a blush of Red, galeated and labiated, set in five pointed Calyces containing four small dark brown Seeds; it is sown in Gardens, and Flowers in *June*, the Leaves and Tops are used. *Miller's Bot. Off.*

It is one of those hot and acrimonious Herbs which provoke Urine and the Menses, and, supposed to have much the same Virtues with Thyme and Hyssop. *Dale from Ray.*

2. Satureia; montana; durior; flore in pediculis ramosis exalis foliorum. *Boerh. Ind. A.* 161. *Thymbra*, Offic. *Satureia hortensis*, Ger. 461. Emac. 575. *Satureia vulgaris*, Park. Theat. 4. *Satureia montana*, C. B. P. 218. *Satureia durior*, J. B. 3. 272. Raii Hist. 1. 518. *Calamintha frutescens, Satureiæ folio, facie & odore.* Tourn. Inst. 194. WINTER SAVORY.

This is more woody and shrubby than the former, having the Leaves more like Hyssop, stiffer and harder, and seemingly pierced full of Holes, and ending in Spinulæ: The Flowers are of the Colour of the former, and the Seed much alike. This is likewise cultivated in Gardens, and Flowers at the same Time.

They are both much of a Nature, being heating, drying, and carminitive, expelling Wind from the Stomach and Bowels, and are good for the *Asthma*, and other Affections of the Breast: They open Obstructions of the Womb, and promote the menstrual Evacuations. The Winter-savoury is much used in the Kitchen. *Miller's Bot. Off.*

3. Satureia; Cretica; folio rigido, brevi, crasso. *Boerh. Ind. A.* 161. *Thymbra vera*, Offic. *Thymbra legitima*, Tourn. Cor. 13. *Thymbra Græca* I. B. 3. 373. *Thymbra sive Satureia Cretica legitima*, Park. Theat. 4. *Satureia Cretica*, C. B. P. 218. Ger. Emac. 576. Raii Hist. 1. 519. *Tragoriganum*, Alpin. Exot. 78. *An Hyssopum montanum Cilicium Gabudiam*, J. B. 3. 277? TRUE SAVORY.

There are two Species of *Tragoriganum* growing in *Crete* (or *Candy*) one with larger and thicker Leaves and Branches, and rougher Leaves; the other is less, and more slender: Both of them produce from one Root many hard, woody, somewhat rough and slender Stalks, which shoot forth here and there into several small, strait, round and slender Branches, situated at Intervals on each Side of the Stalk; and thick set with small, blackish Leaves, broader than those of Thyme, and generally dispos'd on each Side by Pairs, one Leaf larger than another. The Branches which bear the Flowers are furnished with Leaves, which stand three or more in opposite Order. The Leaves of the greater Species are larger and rougher, being furnished on every Side with rough and somewhat stiff Hairs. The Flowers are dispos'd round the Extremities of the Stalk, and collected into Tufts, as in the Marrubium: They are small, of a Sky-blue colour, and have a pleasant Smell, and produce a very small Seed. The Root is small, slender, woody, and divided into other smaller Roots. The whole Plant has a sweet Smell, and is considerably heating and acrimonious to the Taste. *Honorius Belli* has believed this Plant to be the *Thymbra*.

It is hot and dry beyond the second Degree. Both the Leaves and Flowers revive the languishing Heat of the Stomach, and corroborate the same, being in some Measure astringent. A Dram of the Flowers or Leaves taken in Wine, or any other Liquor, are an effectual Remedy against cold Diseases. The Plant taken in Wine, or its Decoction drank, effectually promote the Menses, heat a cold Uterus, and digest Flatulences. The Leaves boiled in Vinegar, and taken for several Days together, are very successfully used for an obstructed and indurated Spleen. The Decoction of the tender Buds, besides being useful for the Purpose aforesaid, has also, as *Dioscorides* observes, a cathartic Virtue, by which it purges yellow Bile by Stool. *Prosper Alpinus de Plantis exoticis.*

4. Satureia; Cretica; folio rigido, crassiore majore. *Tragoriganum, Creticum, folio & ramo majori crassiorique, foliis asperioribus.* Alpin. Exot. 79.

5. Satureia; spicata. *Offic. C. B. P.* 218. *Boerh. Ind. A.* 161. *Satureia Sti. Juliani*, Ger. 461. Emac. 576. Raii Hist. 1. 518. *Satureia spicata Sti. Juliani*, Park. Theat. 4. *Satureia foliis tenuibus, sive tenuifolia Sti. Juliani quorundam*, I. B. 3. 273. *Satureia tenuifolia Sti. Juliani quorundam, Thymbra vera, sive genuina aliis*, Chab. 423. *Thymbra Sti. Juliani, sive Satureia vera Lobelio.* Tourn. Inst. 198. ROCK SAVORY.

It grows on Hills and Walls, flowers in Summer, and agrees in Virtues with the rest of the Savories. *C. Bauhine* takes this for the *Saxifraga prima Matthioli*, but *Parkinson* makes it a different Plant.

6. Satureia; Cretica; angusto, oblongo folio, in pediculis ramosis exalis foliorum. *Calamintha, Cretica, angusto, oblongo folio.* T. 194. *Clinopodium Creticum.* Alpin. Exot. 265.

This Plant shoots up with six, or perhaps more or fewer, strait, round, slender Stalks, to the Heighth of a Span, and thick set with Leaves, in Size, Figure, and Odour resembling those of Serpyllum, and disposed in opposite Pairs, at very small Intervals. Between the Leaves and the Stalks are produced the Flower, two or three together, of a vinaceous Colour, from which proceed every minute Seeds. The whole Plant has the Smell of Serpyllum, only sweeter, and has a hot Taste. The Root is long, slender, and woody, and without Smell or Taste. They who sent us the Seeds of this Plant from *Crete*, call'd it by the Name of *Sexifrage*; because it is celebrated for its extraordinary Virtue in breaking the Stone in the Kidneys and Bladder. But it seems to us to agree well enough with the Characters of the *Clinopodium* of the Antients, which is described by *Dioscorides* to be a shrubby Plant, with Leaves like those of *Serpyllum*, ramous, two Spans in Height, and growing in rocky Places. The Flowers, which grow at Intervals like those of Marrubium, by their Disposition resemble in some measure the Feet of a Bed. From the Description, we are persuaded that this Plant of ours is most like *Clinopodium*, especially on Account of the Likeness of its Leaves to those of *Serpyllum*; but if it had Flowers, also, like those of that Plant, and trailed on the Ground, we should have made it a Species of *Serpyllum*.

This Plant, from its Taste and Smell, appears to us to be of a heating and drying Quality, beyond at least the first Degree, which is farther evident from the Fineness of its Parts, with some slight Measure of Astringency. We may therefore rationally suppose it to be of good Service to the Stone and Gravel, and other nephritic Disorders, though as yet we are unacquainted with its true Uses in Medicine. *Prosper Alpinus de Plantis Exoticis.*

7. Satureia; Virginiana; *Par. Bat. Thymus, cephalotes, autumnalis, longiore folio.* T. 196. *Serpentaria Virginiana.* Bocc. Mus. P. 2. 161. Tab. 108. 115.

8. Satureia; major; frutescens; verticillis densissimis. *Tragorigani secundi altera Species.* Clus. H. 355.

9. Satureia; an Cretica; spicata. *Sherard. H. Mauror?* *Boerh. Ind. Alt. Plant. Vol. I.*

Savory is of a very hot, penetrating, and aromatic Taste, whence it is of Service in all Diseases in which Watter and an inert Phlegm are predominant; as also in Expulsion of Humour, and corroborating the Parts. It has a mighty Influence in moving the Nerves, stimulates to Venery, excites Thirst, prevents Sleep, and causes long Watchings. It is of service in Obstructions of the Menses, and an Ischury, or Retention of Urine. It is to be observ'd, however, that the too free Use of it excites bloody Urine, which is succeeded by an Hemoptoe; it is therefore very pernicious in all Hemorrhages, but is excellent Seasoning for farinaceous Foods, as Beans, and the like; and is accounted one of the best Antiscorbutics, and highly commended against pituitous Diseases, and the Dropsy. It is a very serviceable Plant in Affections of the Stomach, or Crudities and loss of Appetite, and sharpens the Sight. Externally, it eases Pains of the Ears, discusses Cold Tumours, and strewed in Beds, is said to kill the Fleas. *Hist. Plant. adscript. Boerhaave.*

SATURNUS

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SATURNUS, Lead. See PLUMBUM.

SATYRIACE, σατυριακὴ. The Name of an Antidote described by *Paulus Ægineta*. L. 7. C. 11.

SATYRIASIS, σατυρίασις, Is a violent Desire of Venery, attended with a Tension and Rigidity of the Pudendum, occasioned by a morbous Disposition of the Body. It takes its Name, as some will have it, from the Relation it bears to *Satyrs*, who, according to the Report of Fable, and the Talk of the common People, are a Kind of Demons extremely addicted to Wine and Venery; or, as others say, from the Herb *Satyrion*, which has an extraordinary Virtue of exciting venereal Desires, accompanied with a Rigidity of the genital Parts.

Antecedent Causes of this Disorder are, Medicines taken as Provocatives to Venery; these are called *Satyrica* [according to the former Etymology] or ἰσχαλικὰ *(entatica.* See ENTASIS.) which are acrimonious, incentive, and prejudicial to the Nerves. Or the Disease may be occasioned by an intemperate and unseasonable Use of Venery.

The *Satyriasis* is an Affection common to both Sexes, and mostly incident to the Young and Middle aged; for the Vigor of Age is continually prompting to venereal Exercises. The Patient under this Disorder is affected with a vehement Tension and Rigidity of the Pudenda, attended with a Pain, a burning Heat, and an immoderate and urgent Itching and Stimulation to Venery; besides a Depravation of Reason, a quick Pulse, very short Breath, Despondency, want of Sleep, Deliriousness, Thirst, loathing of Food, difficult Evacuation of the Urine, so as generally to occasion a Retention of the Fæces, and sometimes a Fever. There is in all universally a Contraction of the Nerves, which the *Greeks* call σπασμὸς, *Spasmus* [Convulsion] and involuntary Ejection of the Semen. At first they fancy themselves in some measure relieved by the Use of Venery, and the Discharge of Semen; but soon after they are afflicted with a more violent Extension of the Parts, for they are much incommoded and injur'd by this short Gratification, tho' they fancy themselves relieved for a short Space of Time, in the same Manner as those who are affected with the Itch or Soreness of the Eyes would frequently be rubbing the Parts, and imagine they find some Ease, though but for a Moment, in what the *Greeks* call χειραπτία (*Chirapsia*, from χεὶρ, the Hand, and ἅπτομαι, to touch) "the Touch of the Hand." In the Decline of the Disorder, all the beforemention'd, by the *Greeks* called συμπτώματα (*Symptomata*) Symptoms, and by us *Accidentia Passionis*, "the Accidents of the Disease," are abated.

All the abovementioned Symptoms are, also, incident to Women labouring under this Disorder; but in them the *Pruritus* is more prevalent by Nature, and to such a Degree, that without any Sense of Shame they apply their Hands to the Parts, and beg of every Man who approaches to gratify their Inclination.

A *Satyriasis* is different from a *Gonorrhœa*, which we call *Seminis Lapsus*, "a Flux of the Semen;" for this latter is an involuntary and continual Efflux of the Semen, without a Tension of the Pudendum. Neither is a *Satyriasis* one of those slow Diseases which the *Greeks* call χρόνια, *chronia*, chronic, nor in any respect like what the *Greeks* call πριαπισμὸς, *Priapismos*, a Disorder mentioned by *Demetrius Attaleus* in his Book of Signs, who relates that he observ'd it in an old Man, who labouring at Mastupration, could perform nothing, and was affected with an excessive and somewhat painful Tension of the Pudendum, so as to pass for a Horn, in which State it continued for many Months, without yielding to Medicines, but was by Length of Time, and slow Degrees, reduced to its primitive and natural State. But a *Satyriasis* is an acute Disease, and continues not long upon the Patient; but consists, as I said, in a Convulsion of the Nerves, and an ardent and stimulating Desire of venereal Pleasure. It is therefore a Disease of Stricture, and of an acute and vehement Nature; for the whole Frame of the Nerves is affected, as we may judge by the disorder'd State of the Mind, and the Convulsions of the Members: But the Parts which seem to be principally affected, are the seminal Passages, or Ducts, called by the *Greeks* πόροι σπερματικοὶ, (*Pori Spermatici*), and those which are more immediately concern'd in the Act of Coition.

In our Method of Cure we order the Patient to live in a warm Place, silent, and free from Noise, with his Buttocks and Pudenda, as far as the *Pubes*, which the *Greeks* call ἦτρον, (*etron*) wrapped in fine Wool, forbidding all Visits, especially of young Women; for the Sight of a fair Visitant proves an Incentive to the Sick, who perhaps could not when in his right State of Health converse with such desireable Objects without unchaste Emotions. At the Approach of the Fit, it will be proper to take some Hold of the Patient by the Joints, and to keep off his Hands from the affected Parts. When the Fit is come to its Height, we apply Wool expressed out of sweet and hot Oil, or a Decoction of Fenugreek, Linseed, or Marshmallows. After the Remission of the Fit, we think it convenient to use Phlebotomy, on account of the Violence of the Symptoms, and that within the *Diatritos*, [see that Word] if there be a Necessity for it, or on the *Diatritos*, if there be no such urgent Occasion. By *Remission* of the Fit we understand, if there be a Fever accompanying the Disorder, the Remission and Abatement of the Fever. For it is necessary, in such a Case, that when the Disease is exasperated, the Fever should be increased; and when that is mitigated, this also should be diminished. But when there is no Fever, we judge of that Remission by the Mitigation of those other Accidents, called by the *Greeks* συμπτώματα, Symptoms, as Redness, Heat, Itching, or venereal Longings, or the rigid Tension of the Pudenda, or the like. After Phlebotomy, we anoint the Body all over; and having washed out the Mouth and Fauces, we give the Patient Halica *(Alica)* in Honey, or Bread sopp'd in Water, and poach'd Eggs. On other Days, to those Parts which we had covered with Wool, we apply a Cataplasm prepar'd of the Seeds of Fenugreek and Linseed, or Flour soak'd in Water, which the *Greeks* call ὠμὴν λύσιν, *(omen lusin*, a crude Solution) or in Water and Honey. At the same Time we apply Cupping-Glasses, in the Time of the Fit, without Scarification; but at Intermissions we scarify the Buttocks, and the Pudenda to the Pubes, shaving off the Hairs. We apply also Leeches, and use Vaporation with Sponges, having first boiled some Laxatives in the Water. We administer also a Clyster of warm Oil, or warm Water and Oil, and then renew the Cataplasm before Meat. Besides these Means we also make Use of an Encathisma, (*Semicupium*) sometimes prepared of Oil, or of warm Water and Oil, and sometimes of lenient and laxative Decoctions. For Women we prescribe a Pessary to be dipped in warm Oil, and to be gradually introduced into the Vagina by the Hands of some experienced Person of the Female Sex, and cover the whole Breadth of the external Parts with Wool, or a Cataplasm, and apply Cupping-Glasses to both Alæ of the Pudendum. In the Decline of the Disease we advise Gestation, and bathing in Oil or warm Water, in a Tub or Vessel for that Purpose, with the frequent Use of the Bagnio, and a proper Diet, consisting of Variety of Foods of good Juices, prohibiting acrimonious Things, strong Broths and Wine for a considerable Time; we also apply Cerates to the Parts affected. For he Female Sex we order more liquid Compositions, and inject them by Way of Clyster, with the Use of Pessaries, composed of Fats, Marrow, Melilot, or the like, of which we shall treat more at large in the Book we design to write on the Diseases of Women.

None of the Physicians, except *Themison*, have treated of this Disease, though it does not only happen very frequently, but has been known to be very common. *Themison* informs us, that in *Crete* many Persons died of the *Satyriasis*, which we may suppose to be occasioned by an Error in Diet, and their too frequent and plentiful eating of the Herb *Satyrion*. He tells us farther, that at *Milan* he saw a young Woman, modest in all other Respects, and Wife to a Person of Quality, destroyed with a *Satyriasis*. And in the second Book of his Epistles to *Asilius*, he proposes a Method of Cure, in which he prescribes Phlebotomy, Fomentations, and refrigerating Cataplasms, in order to extinguish venereal Desires; he advises, also, drinking cold Liquors; all which Directions are incongruous, and inconsistent with one another. For that Relaxation and Remission, which are effected in the Body by Phlebotomy, are contrary to the Constriction and Condensation of the Parts which are procured by the Cataplasms and Fomentations with cold Liquors. Since, therefore, the Desire and Delights of venereal Pleasures are owing to an Inflammation [*Tumor* in the Language of *Cælius* and the *Methodici*] of the Pudenda, as well as the Disorder of Reason to an Inflammation of the Membranes of the Brain, the Inclinations to those Pleasures must be heighten'd, and even doubled, by the Use of Coolers and Constringents. *Cæl. Aurelianus L. 3. C. 18. Acut.*

The same Author, *Chron. L. 5. C. 11.* gives us the following Account of a Priapism.

An Erection of the Penis, without any concomitant Pain, or the Consent of other Parts, is called a Priapism; because the Penis, in this erected State, resembles that of the lewd and infamous God *Priapus*. *Demetrius Apameus* makes mention of this Disorder, in his Book concerning the Signs of Diseases; for he informs us, that a certain old Man used the unnatural Practice of Mastupration, without ever being able to procure an Emission of Semen; whilst, at the same time, the Erection, which was accompanied with a small Pain, and continued for several Months, was so great, that the Penis resembled a Horn. This Man's Misfortune would yield to no Medicines, but ceased slowly, and after a long Circum-

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Circumſtance which ſufficiently diſtinguiſhes a Satyriaſis from a Priapiſm, ſince the former is quickly over, and does not long afflict the Patient, becauſe it is produced by a Diſtenſion of the Nerves, and a violent Deſire or Stimulus to Venery. Whereas a Priapiſm may be conceived to be a Palſy of the ſeminal Veſſels and other Nerves, diſtributed to the Parts about the Penis, by the Diſtenſion of which the Patient is ſubjected to this Misfortune. *Cælius Aurelianus Morb. Chronic. Lib. 5. Cap. 9.*

Doctor *Cheyne*, in his Treatiſe concerning the Nature of a Fibre, deſcribes a certain Species of the Satyriaſis in the following manner.

Among convulſive Diſorders, ſays he, there is one ſo rare and uncommon, that I don't remember to have read any thing remarkable about it; and I never ſaw but three Perſons afflicted with it. Thoſe who are fond of reducing Diſeaſes to certain Claſſes, refer it to a Satyriaſis, a Diſorder treated of by all who have wrote Syſtems of Phyſic. But from the Deſcriptions given by theſe Authors, a Satyriaſis, though not of the venereal Kind, appears to be among the Number of inflammatory Diſorders; and to be incident to young and vigorous Perſons, eſpecially thoſe of a ſalacious Turn, and ſuch as have wantonly indulged themſelves in the Gratification of their Luſt. Whereas the Diſorder of which I treat is incident to the Infirm, to Perſons of weak and lax Fibres, to ſuch as digeſt their Aliments ſlowly and imperfectly, to the Hypocondriac, to ſuch as are diſtended with acrid Flatulences, and thoſe who are ſad and dejected. This Diſorder is rarely troubleſome to the Patient in the Day-time, but principally in the Night, eſpecially after the Perſon becomes firſt warm in Bed, at which time he is ſeized with a violent Inflation and Tenſion of the Penis, as if an Attempt was made to pull it off; though, at the ſame time, he is not ſtimulated to luſt, becauſe the intenſe Pain is more than a Balance for every laſcivious Idea, which is ſo far from being grateful, that it is rather obſerved to be diſagreeable to him. In this Caſe the only Circumſtance which procures an Alleviation of the Pain, is to get out of Bed, and expoſe one's ſelf to the cool Air, by which means the Inflation immediately ſubſides; for which Reaſon the Diſorder to me ſeems to be of the convulſive kind, and not to be different from the Spaſms of other Members, which are pretty frequent and well known. But in ſuch Patients this Member is (perhaps) principally ſeized with Spaſms, either becauſe its Fibres are more eaſily irritated, or through ſome Fault or Piece of Imprudence in the Patients themſelves. Beſides the Pain ariſing from the Convulſions, there is another Circumſtance highly detrimental to the Conſtitution, which is that the Paroxyſm of the Diſorder happens principally at that Time, when the Patient being moderately warm in Bed, begins to be inclined to ſleep, which is interrupted by his being forthwith obliged to get out of Bed; ſo that he is not ſufficiently recruited by Reſt, but his Appetite and Digeſtion becoming languid, and he himſelf being in a few Weeks rendered more like a Spectre than a Man, is ready to do or ſuffer any Thing for the Sake of Sleep, which in this Caſe is not eaſily procured, ſince both Opiates and all hot and cardiac Medicines increaſe the Diſorder. Every Time it has occur'd to me in Practice, I have attempted its Cure in the ſame manner with other convulſive Diſorders, by a Repetition of gentle Emetics according to the State of the Patient; when the Diſeaſe began to return, by perſiſting for ſix Months in the Uſe of Milk of Sulphur, Æthiops Mineral, and Cinnabar of Antimony; by a ſhorter and ſcanty Uſe of volatile Medicines; ſuch as Flowers of Benjamin, and Salt of Harts-Horn; by a ſlender Diet long protracted, three or four Ounces of Fleſh, for inſtance, each Day; a ſmall Quantity of red Wine mixed with Briſtol-Water; and, laſtly, by the Peruvian Bark, and the exterior Part of Orange Peel, and a few Grains of the Vitriol of Mars. By theſe Medicines, and this Regimen, by moderate Exerciſe, and frequent Immerſions in cold Water, in two Years time, I perfectly cured two of the Patients I found afflicted with this Diſeaſe. The third, who, as he was advanced in Years, would not ſubmit to the Labour and Length of a Cure, tho' he generally lives free from the moſt troubleſome Symptom of his Diſorder, is nevertheleſs ſubject to a Relapſe, if he at any time indulges himſelf in high Living. See PENIS.

SATYRION. A Name for ſeveral Species of ORCHIS, which ſee.

SAVICH. An *Arabic* Word, importing a ſubtile Meal, or Powder. *Caſtellus from Valeſcus de Tarenta.*

SAUNIA. The Name of a Compoſition made into a Maſs like a Leaf, of Sweet-Almonds and Sugar, each one Pound; of *Anglum*, half a Pound, and of Oil of Sweet-Almonds, an Ounce and a half; this Maſs was made into ſmall oblong Leaves, of an Ounce Weight each. *Caſtellus from Clementinus Clementius.*

SAVONEA. The Name of an Arteriacal or Bechical Confection in *Foreſtus.*

SAURE, according to *Blancard*, is the NASTURTIUM.

SAURURUS. *Lizard's Tail.*

The Characters are;

The Leaves are like thoſe of the *Arioides*. The Flower is apetalous, furniſhed with two Stamina, and hermaphrodite. The Ovary is of an oval Form, ſoft, monoſpermous, and furniſhed with a trifid Tube. The Flowers and Fruit are diſpoſed in long, ſlender Spikes.

Boerhaave mentions four Sorts of *Saururus*, which are;

1. Saururus; arboreſcens; fructu aduncо. *Plum. Pl. Am.* 58. *Fig.* 77.

2. Saururus; fruteſcens; foliis Plantagineis; fructu breviori. *Plum. Pl. Am. Fig.* 76.

3. *An* Saururus hederaceus; cauliculis maculoſis; major. *Plum. Pl. Am.* 50. *Fig.* 66?

4. *An* Saururus hederaceus; cauliculis maculoſis; minor. *Plum. Pl. Am.* 5. *Fig.* 67? *Boerh. Ind. Alt. Plant. Vol.* 2.

The Name *Saururus* is from σαῦρα, (*Saura*) a Lizard, and Οὐρὰ (*Ura*) a Tail. Its Virtues are the ſame with thoſe of the *Arum* and *Arioides*. *Hiſt. Plant. Aſcript. Boerhaave.*

SAXIFRAGA.

The Characters are;

The End of the Peduncle becomes a tubulated Calyx, which has deep Inciſures in the Saxifrage, but leſs deep in the *Geum*, and is quinquefid. The Flower is roſaceous and pentapetalous, ariſing from the Circumference of the Ovary, and furniſhed with eight or ten Stamina. The Fruit is roundiſh, horned, bicapſular, and full of ſmall Seeds. In the Saxifrage it grows together with the Calyx, but in the *Geum* is ſupported thereby.

Boerhaave mentions thirteen Species of *Saxifraga*, which are, firſt, thoſe with a roundiſh, crenated, and tender Leaf.

1. Saxifraga; rotundifolio alba. *C. B. P.* 309. *Raii Synop.* 3. 354. *Tourn. Inſt.* 252. *Boerh. Ind. A.* 222. *Saxifraga alba*, Offic. Ger. 693. Emac. 841. Raii Hiſt. 1048. *Saxifraga alba vulgaris*, Park. Theat. 424. *Saxifraga alba radice granuloſa*, J. B. 3. 706. *Sedum bicorne, album, rotundifolium, erectum, radice granuloſa*, Hiſt. Oxon. 3. 473. *Sanicula radice granuloſa, flore albo*, Herm. Cat. Hort. Lugd. Bat. 535.

WHITE SAXIFRAGE.

The Roots of White Saxifrage conſiſt of ſeveral ſmall, reddiſh, round Grains, with a few ſmall Fibres mixed among them; from which ſpring thick, hairy, half-round, whitiſh, green Leaves, ſet on very long foot Stalks, and crenated about the Edges. The Stalks grow to be a Foot or more high, ſomewhat hairy, and branched at the Top; on which grow Spikes of white five-leaved Flowers, with ſeveral white Apices. The Seed is very ſmall, included in two-horned and roundiſh Seed-Veſſels. It grows in Meadows, and flowers in *April* and *May*. The Herb and the granulated Root is uſed.

This Plant has its Name from its ſuppoſed Virtues, being diuretic and lithontriptic, good for the Stone and Gravel, and Stoppage of Urine.

The only Officinal Preparation is the ſimple Water. *Miller's Bot. Off.*

This Plant is eſteemed a great Diuretic. Its Roots may be either uſed in White Wine, or a Decoction may be made of them in common Water. *Fuchſius* affirms, that it provokes the Terms, and attenuates the denſe groſs Lymph, which hinders the ordinary Motions of the Lungs. *Martyn's Tournefort.*

It is ſaid to be good in Obſtructions of the Menſes.

2. Saxifraga; rotundifolia; alba; flore pleno.

3. Geum; rotundifolium; majus. *T.* 251. *Sanicula, montana, rotundifolia, major.* C. B. P. 243. *Sedum bicorne, montanum, ſerratum, hederaceo folio, majus, guttato flore*, M. H. 3. 476.

4. Geum; folio circinato; piſtillo floris pallido. *T.* 251. *Sanicula Alpina, Cotyledonis folio rotundo, umbilico pallido*, Flor. 2. 97.

5. Geum; folio ſubrotundo, minori; piſtillo floris rubro. *T.* 251.

6. Geum; folio oblongo, crenato; fructu & cauliculis rubris guttulis adſperſo.

The three following have oblong ſerrated Leaves, reſembling thoſe of the *Aizoides*.

7. Saxifraga; ſedifolio; flore albo; multiflora. *T.* 252. *Sedum, ſerratum, flore albo, multiflorum.* Ac. Reg. 113. *Sanicula, Pyrenaica, longifolia, multiflora, elegantiſſima.*

8. Saxifraga; ſedifolio, angulſiore, ſerrato. *Tourn. Inſt.* 252. *Beerh. Ind. A.* 222. *Umbilicus Veneris alter*, Offic. *Umbilicus Veneris minor*, Ger. Emac. 529. *Cotyledon altera umbilicus Veneris*, Park. Parad. 232. *Cotyledon media foliis oblongis ſerratis, nor*, C. B. P.

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C. B. P. 285. *Sedum ſerratum, I. B.* 3. 689. Raii Hiſt. 2. 1045. SMALL NAVEL-WORT.

This Plant is found in the Mountains of *Germany*, and flowers in Summer: It agrees in Virtues with the *Sedum majus vulgare.*

9. Saxifraga; foliis ſubrotundis, ſerratis. *T.* 252. *Cotyledon, minor, foliis ſubrotundis, ſerratis.* C. B. P. 285. Prodr. 132. I. B. 3. 690.

10. Saxifraga; muſcoſa; trifido folio. *T.* 252. *Sedum, Alpinum, trifido folio. C. B. P.* 284.

11. Saxifraga; alba; petræa; Ponæ. *in Fol.* 337. *T.* 252. *Trydactylites Alpina.* I. B. 3. 762. *Sedum, tridactylites, majus album.* C. B. P. 284. M. H. 3. 479.

12. Saxifraga; tridactylites; Alpina; pallidè lutea. *T.* 252. *Sedum, tridactylites, Alpinum, pallidè luteum.* C. B. P. 284.

13. Saxifraga; verna; annua; humilior. *Tourn. Inſt.* 252. *Raii Synop.* 3. 354. *Boerh. Ind. A.* 223. *Paronychia rutaceo folio.* Offic. Ger. 499. Emac. 624. *Paronychia foliis inciſis*, Park. Theat. 556. *Tridactylites tectorum flore albo.* I. B. 3. 762. *Sedum Tridactylites tectorum*, C. P. B. 285. *Alſine Tridactylites tectorum*, Herm. Hort. Lugd. Bat. 20. *Sanicula aizoides Tridactylites murorum.* Pluk. Almag. 331. RUE WHITLOW GRASS.

This is a ſmall, low Plant, ſeldom above three or four Inches high, uſually of a reddiſh Colour: The Leaves are thick, fat, and ſomewhat clammy, divided into three Parts at the End, whereof the Middlemoſt is largeſt: They are hairy as well as the Stalks, which are a little branched, having on their Tops ſmall, white, five-leaved Flowers. The Seed-Veſſels are round and ſwelling, and contain very minute Seeds. The Root is ſmall and fibrous. It grows on the Tops of Walls, and low Houſes, flowering in *April*, and periſhing by the Summer's Heat, ariſing yearly from the ſcatter'd Seed.

This Plant is accounted a ſpecific againſt the King's-Evil being very much commended by Mr. *Boyle* for that Diſtemper: And Sir *John Colebatch*, in his Eſſay upon Acids and Alcalies makes mention of a poor Girl at *Worceſter* afflicted with ſcrophulous Ulcers, who received great Benefit from it. *Miller's Bot. Off.*

I myſelf, ſays *Boyle*, have often gathered an unpromiſing Plant, called *Rue leaved Whitlow-Graſs*, which ſlightly infuſed in Beer, to my Knowledge, lately, without Pain, and in few Days, cured a Kinſman of Sir *Kenelm Digby* of the King's-Evil: Yet I dont find any Botaniſt recommend it for that Diſtemper.

A Phyſician, ſays *Boyle*, whom I knew, was ſent for to a ſcrophulous Patient, in whoſe Throat he found a Tumour ſo large, and ſo unluckily ſeated, that greatly compreſſing the Œſopagus, it render'd Deglution exceedingly difficult; the Tumour was, alſo, hard and ſtubborn, as not to be diſcuſs'd nor brought to a Suppuration; whence the Patient was put in imminent Danger of being ſtarv'd. In this Strait, the Phyſician remembering the Character I had given of Whitlow-Graſs, ſent about the Country to get all that could be procured, and firſt gave a little of it, in the Form of Infuſion, in ſuch liquid Aliments as the Patient was able, though with great Difficulty, to get down; and having by this Means, after ſome Time, gradually made the Deglution more eaſy, he gave the Remedy in greater Plenty, to impregnate the whole Maſs of Blood and Juices of the Body with the Virtue of the Herb, whereby the Tumour was at length diſſolved, and the Patient cured.

The firſt, ſeventh, and eighth are poſſeſs'd of a nitrous, balſamic, and ſaponaceous Quality. *Hiſt. Plant. Boerh. aſcript.*

SAXIFRAGA, is alſo a Name for ſeveral Sorts of TRAGOSELINUM, which ſee.

SAXIFRAGA MONTANA. A Name for the *Fœniculum*; *tortuoſum*; and for ſeveral Sorts of *Seſeli.*

SAXIFRAGA, ROTUNDIFOLIA, AUREA. A Name for the *Chryſoſplenium*; *foliis amplioribus, auriculatis*; and for the *Chryſoſplenium*; *foliis minoribus, ſubrotundis.*

Beſides the foregoing Sorts of *Saxifraga*, *Dale* mentions the two following.

1. *Saxifraga antiquorum.* Offic. *Saxifraga antiquorum quibuſdam*, I. B. 3. 338. Raii Hiſt. 2. 1033. *Saxifraga antiquorum quibuſdam, Gypſophyton, & Symphytum petræum*, Chab. 443. *Saxifraga magna Matthioli*, Ger. Emac. 605. *Saxifraga major Italorum Matthioli*, Park. Theat. 426. *Caryophyllus Saxifragus*, C. B. P. 211. *Lychnis minor Saxifraga*, Tourn. Inſt. 338. THE GREAT SAXIFRAGE OF MATTHIOLUS.

It grows on the Top of Mount *Lupo*, and flowers in *June*. The whole Plant is admirably endu'd, as *Matthiolus* ſays, with the Virtue of breaking and expelling the Stone. *Dioſcorides* deſcribes his Saxifrage to be a ramous, ſhrubby Plant, growing in rocky and rugged Places, and like Epithymum; which is ſo ſhort a Deſcription as to give Occaſion for much Controverſy among Authors, and for many Plants of quite different Kinds to be taken for it, or to be call'd by its Name. In our *Engliſh* Shops there are two Sorts of Plants known by the Name of *Saxifrage*, and uſed accordingly. Theſe are the *Pimpinella Saxifraga*, or *Burnet Saxifrage*, and the *Saxifraga vulgaris*, or *Meadow Saxifrage*; but neither of them agrees with the Deſcription of *Dioſcorides*, though the ſame Virtues are aſcribed to them by Authors. But we are to enquire what Plant was the true *Saxifrage* of the Antients. *Matthiolus* and *Lugdunenſis* will have it to be a Species of *Savory*, which *C. Bauhine* takes to be the ſame as the *Thymbra S. Juliani Lobeliana.* Our *Parkinſon* proves, that the *Saxifraga vera* of *Matthiolus*, and the *Thymbra S. Juliani* of *Lobel*, are very different; and therefore cenſures *C. Bauhine* as miſtaken in making both of them ſynonymous, or the ſame, with his *Satureia ſpicata*; and aſſures us, that the Plant which he ſaw and taſted (for the *Saxifraga vera Matthioli*) did not at all agree, either in Smell or Taſte, with the *Satureia* or *Thymus*, but came nearer to his (*Bauhine*'s) *Thymum inodorum. Dodonæus* and *Gerard* take the *Serpyllum vulgare* for the *Saxifrage* of *Dioſcorides*; but *Parkinſon* ſuppoſes them all miſtaken, and I ſhould think he was in the right for rejecting the Judgment of the foremention'd Authors, did he not pertinaciouſly adhere to the *Saxifraga vera* of *Matthiolus*, ſince there is another Plant in the ſame Author, which is more likely to be the Saxifrage of *Dioſcorides*, for which Reaſon we have exhibited it above as ſuch. For its admirable Virtue in breaking and expelling the Stone, the Reader may conſult *Matthiolus* himſelf, who was convinced of the ſame not only by his own Experience, but alſo by the Teſtimony of *Calceolarius*, an Apothecary of *Verona*, who firſt communicated it to him. *Dale.*

2. *Saxifraga Dioſcoridis*, Matth. fol. 976. *Saxifraga vera Dioſcoridis*, C. B. Meth. 693. Lugd. 4. *Saxifraga*, Matth. Comp. 642. Cam. Epit. 716. *Saxifraga vera Dioſcoridis Matthioli*, Park. Theat. 426. THE TRUE SAXIFRAGE OF DIOSCORIDES ACCORDING TO MATTHIOLUS.

It grows on Rocks and ſtony Places. The Herb boiled in Wine is good in feveriſh Diſorders; it is, alſo, ſerviceable in the Strangury, cures the Hiccough, breaks the Stone in the Bladder, and provokes Urine.

Theſe are the Virtues which *Dioſcorides* aſcribes to his *Saxifrage*; but in my Opinion they were not intended for this Plant, and therefore we have only followed *Matthiolus* in aſcribing them to this above. What was the true Saxifrage of the Antients I have endeavoured to ſhew under the SAXIFRAGA ANTIQUORUM, and ſuppoſe the Virtues abovementioned to belong to that Plant. Many Botaniſts are not ſatisfy'd as to the Plant we have given above, nor know where to fix the Name, and ſome ſuſpect it. *Dale.*

SAXIFRAGA. Medicines which have the Power of diſſolving, or breaking the Stone. The ſame as Lithontriptics.

SAXONICUS PULVIS. This Powder is prepared in the following Manner. Take of the Roots of recent Garden Angelica four Ounces; of the Roots of wild Angelica, Marſh-mallows, and Polypody of the Oak, each two Ounces; of the Roots of common Nettle and Swallow-wort, each one Ounce; of Valerian Root half an Ounce; and of the Bark of the Root of *German* Mezerion an Ounce and an half.

Theſe when cut down are to be put into a glaz'd Veſſel, and ſuch a Quantity of ſtrong Vinegar is to be poured upon them as to riſe two Inches above them: Then the Veſſel is to be cloſe ſtopp'd, and the whole boil'd over a gentle Fire: Then the Veſſel is to be open'd, the remaining Vinegar thrown away, and the Roots dried till they can be reduced a Powder, to which are to be added twenty-four of the Berries of the Herba Paris, alſo pulveriz'd.

This Medicine is highly eſteem'd againſt Poiſons, the Plague, and other malignant Diſorders. It purges violently on account of the Barkof the Root of the Mezerion. The Doſe is from half a Scruple to two Scruples, or a Drachm.

In this Preparation, it ſeems ſufficient to correct the Bark of the Root of the Mezerion, and in ſome meaſure deprive it of its corroſive Acrimony, by boiling it in Vinegar; but as the other Roots have nothing of a malignant Nature, their moſt volatile and eſſential Parts are carried off by boiling; ſo that by impregnating them with the Acid of the Vinegar, the remaining Part of their volatile Principles is fix'd; for which Reaſon 'tis ſufficient to dry them in the ordinary Manner. The Quantities of Ingredients, and the Manners of preparing this Powder, are different in different Authors. It borrows the Epithet *Saxonicus*, from *Saxony*, where it was firſt invented; but it is only uſed in *Germany*,

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Germany, since it would be too violent for Persons of a less robust and hardy Make. *Lemery. Pharmacop. Universelle.*

SBESTEN. Quick Lime. *Ralandus.*

SCABIES. The Itch. See LEPRA.

SCABIOSA.

The Characters are;

The Calyx is expanded in Manner of a Star, deeply jagged, and consists of a double or tripple Order of Scales lying one upon another. The exterior Order of Flosculs consists of larger Flosculs than the rest, and those generally bilabiated; but those which are contained in the Middle, within the others, are quadrifid or quinquefid. The Top of the Ovary has a hairy, foliaceous, or acculeated Crown, in Manner of a Calyx, surrounding the Flower, which grows in the Apex. The lower Part of the Ovary grows in a globous Placenta.

Boerhaave mentions forty eight Species of *Scabiosa*, which are;

1. Scabiosa; Africana; frutescens. *Par. Bat. Ic.* 219.

2. Scabiosa; Africana; frutescens; maxima, foliis rugosis & crenatis minor. *Par. Bat. Descr.* 220.

3. Scabiosa; Africani; frutescens; maxima; foliis tenuissime incisis.

4. Scabiosa; Alpina; folio Centaurii majoris. *C. B. P.* 270. *Scabiosa, centauroides.* Alpin. Exot. 205.

I received as a Present from *Naples* a Plant, which I took for a Species of the *Centaurium majus*, which it very much resembles in Leaves; for it sends forth from its Root many large and blackish Leaves, so like those of the *Centaurium majus*, that every one took it for that Plant the first Year: But in the second Year it produced several naked, slender, round, rushy, strait Stalks, two Cubits in Height, or more, bearing on the Top round Heads, very like those of Scabious, as are also the Flowers, which are of a yellow Colour; and the Seeds, which are long and black, no less resembling those of that Plant. The Root consists of a Multitude of long, slender Fibres, proceeding from one Origin. From the Heads, Flowers, and Seeds, we thought we had Reason to reckon this Plant a Species of *Scabious*, and accordingly distinguish'd it by the Name of *Scabiosa Centauroides*, on account of the Resemblance of its Leaves to those of the *Centaurium majus*. The Seeds are intensely bitter, from which Quality the Moderns have generally infer'd of the several Species of their *Scabiosa*, that they are of a heating Properties. Hence it appears that this, as well as the other Sorts of Scabious, are heating and drying to a considerable Degree; and cut and deterge gross Humours, by which Means they are very effectual in opening Obstructions of the Viscera. For these Purposes some exhibit a Decoction of the Seeds, or of the Roots, in Water; and also, for the Scabies, or Itch, and for the *French* Pox. Some have bestowed high Commendation on the expressed Juice of the Leaves or Roots, or the Decoction of the Roots, or the Powder of the Seeds with a little old Theriaca, as Sudorifics in pestilential Fevers; of all which Properties and Virtues we suppose our *Centauroides*, since it is endu'd with the same Bitterness, to be possess'd. This Plant endures the Frosts in *Italy*, and is perennial. *Prosper Alpinus de Plantis Exoticis.*

5. Scabiosa; pratensis; hirsuta; quæ Officinarum. *C. B. P.* 269. *Tourn. Inst.* 464. *Boerh. Ind. A.* 129. *Scabiosa*, Offic. *Scabiosa major vulgaris*, Ger. 582. Emac. 719. *Scabiosa vulgaris pratensis*, Park. 484. *Scabiosa major communior hirsuta, folio laciniato.* I. B. 3. 2. Raii Hist. 1. 374. Synop. 3. 191. SCABIOUS.

The lower Leaves of Scabious are rough and hairy, four or five Inches long, an Inch or more in Breadth, sometimes deeply cut in, and often almost whole, and without any Incisions, upon breaking asunder, drawing out into long Threads, the Stalks grow to be two or three Foot high, round and hairy, having two smaller and more finely cut Leaves set at a Joint; and on their Tops round, flattish, blue Flowers, whose middle Part is compos'd of several smaller hollow Flosculi, each set in its particular Calyx, but having an outer Row larger and more showy: Each Flower is made of one Leaf cut into five unequal Parts. When the Flowers are fallen, the Heads grow round by the enlarging of the Calyces into hairy, flattish Seed; the Root runs down deep into the Ground: It grows in Fields and Meadows, and flowers in *June*. The Leaves are used.

They are accounted cordial, alexipharmic, sudorific, and pectoral; and good for all Distempers of the Lungs; as Coughs, Shortness of Breath, and as also for sore Throats and Quinsies. Outwardly, they are serviceable against the Itch, whence it takes its Name of *Scabiosa*; scabby Sores, Tetters, and other cutaneous Distempers; and takes black and blue Marks out of the Skin.

Officinal Preparations from Scabious, are the *Syrupus Scabiosæ Comp.* and the *Valentia Scabiosæ. Miller's Bot. Off.*

Scabious is bitter, and gives a faint Tincture of red to the blue Paper, which gives us Reason to believe, that it contains a Salt resembling the Sal Ammoniac, and joined with a great Quantity of fetid Oil, and Earth; for,

By the chymical Analysis, beside several acid Liquors, a great deal of Sulphur and Earth, and a little urinous Spirit, and volatile concrete Salt are obtained from it. The Scabious is alexipharmic, sudorific, aperitive, detersive, vulnerary, and good to promote Expectoration when the Bronchia and Vesicles of the Lungs are stuffed with a glutinous and condensed Phlegm, the Juice of this Plant, from three to six Ounces, in which one Dram of Treacle and ten Grains of Camphire are dissolved, may be given for a Sudorific: This is a good Remedy in malignant Fevers, Small-pox, Measles, and in the Pleurisy, after the Use of antimonial Medicines. Scabious and Carduus Benedictus Water are mixed in expectorating and diaphoretic Juleps. A Syrup of the Juice of this Plant is very good for cutaneous Diseases; but the outward Parts must be bathed at the same Time with the Decoction of Scabious: Take a Pint of this Decoction, three Spoonfuls of well camphorated Brandy, separate what of the Camphire remains upon the Surface of the Decoction, by passing it through a Linnen Cloth, and give it by Spoonfuls for the Vapours; bathe for the Tetters for about the space of a Month, and continue the Use of the Syrup for the whole Time. The same Decoction may be given to those who make purulent Urine, and those that have Ulcers in their inward Parts. It is used also to wash Wounds. *Tabernæmontanus* says, that the Juice of Scabious mix'd with a little Borax and Camphire takes away the white Spots that are often seen upon the Horn of the Eye. *Martyn's Tournefort.*

It is an Alexipharmic and Pulmonic, and is of principal Use in Imposthumes, a Pleurisy, Quinsey, Cough, Asthma, the Pestilence, and fistulous Ulcers. Outwardly, it is used in the Scabies, Pruritus, Impetigo, and the like cutaneous Distempers. *Dale from Schroder.*

6. Scabiosa; Alpina; vulgari similis; folio viridiori, magis laciniato; flore purpureo.

7. Scabiosa; major; communior; hirsuta; folio non laciniato. *I. B.* 3. 2.

8. Scabiosa; integrifolia; glabra; radice præmorsa. *Boerh. Ind. A.* 129. *Morsus Diaboli, & Succisa*, Offic. *Morsus Diaboli*, Ger. 587. Emac. 726. *Morsus Diaboli vulgaris flore purpureo*, Park. 491. *Succisa glabra*, C. B. P. 269. *Succisa sive Morsus Diaboli*, I. B. 3. 11. Raii. Hist. 1. 380. *Scabiosa radice succisâ flore globosa*, Raii Synop. 3. 191. *Scabiosa folio integro glabro, flore cærulea.* Tourn. Inst. 466. DEVIL'S BIT.

The Root of Devil's Bit is thick and short, at the Head shooting out strings, or large Fibres on every Side, but seeming as it were cut off in the Middle, whence it takes its Name *Succisa*. The Leaves are long, and somewhat broad, and pointed at the Ends, rough and hairy, standing on long foot Stalks, little or nothing serrated about the Edges. The Stalks arise to be a Foot high, or more, and round and hairy, having two smaller Leaves set at a Joint, and on their Tops Flowers, like those of Scabious, but in rounder Heads, and all of a Bigness, each made of a short Tube, cut into five Segments, set in its proper Calyx, and followed by a round striated Seed. It grows in Meadows and Pasture Grounds, but flowers not till the End of Summer: The Leaves are used.

They are accounted alexipharmic, and useful in malignant Fevers and pestilential Distempers, and against the Bites of venomous Creatures. They are good to dissolve congeal'd Blood, and therefore serviceable against the ill Effects of Falls and Contusions; and being applied as a Cataplasm, take away the black and blue Marks in the Skin arising from them. Our Herb-Women generally sell the Leaves of this Plant for those of common Scabious. *Miller's Bot. Off.*

The Leaves of the Succisa, which they call (in *English*) Devil's-bit, are bitter, and stain the blue Paper with a deep red Colour. The Root, which is bitter and styptic, stains it with a deeper. The same Virtues are attributed to this Plant that are to the Scabious. *Martyn's Tournefort.*

9. Scabiosa; folio integro; flore Albo. *T.* 466. *Succisa; glabra, floribus albis.* C. B. P. 269.

10. Scabiosa; folio integro; flore incarnato. *T.* 466. *Succisa, glabra, floribus incarnatis.* C. B. P. 269.

11. Scabiosa; Africana; frutescens; folio rigido, splendente, serrato; flore albicante. *H. A.* 2. 185.

12. Scabiosa; Syriaca; annua; flore cæruleo; Sylvan ex Syria dicta. *H. Maurocen.* 157.

13. Scabiosa; altissima; annua; foliis Agrimoniæ non nihil similibus. *H. L.* 539.

14. Scabiosa; Orientalis; argentea; foliis inferioribus incisis. *T. Cor.* 34.

15. Scabiosa;

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15. Scabiosa; Stellata; folio laciniato; major. *C. B. P.* 271.

16. Scabiosa; Stellata; folio non dissecto. *C. B. P.* 271.

Scabiosa Arborea. Alpin. Exot. 34.

The Plant which I call *Scabiosa Arborescens* has a whitish, thick Trunk, a Span high, springing from a small Root, which runs into many long, slender Fibres, spreading obliquely under Ground. From the Trunk spring many long, slender Stalks, which rise obliquely upwards, and are adorned at just Intervals with five, six, seven, eight, or perhaps nine hoary, whitish Leaves; in Shape and Size resembling those of the Aizoon, or Sempervive. The Flowers are large, of a Carnation Colour, inclining to white, of the Size and Shape of those of the common Scabious, and grow two or three on a Stalk, hanging by long Pedicles, into which the Stalk is divided. These Flowers consist of Floscules closely collected into a round Head, of the Size of a Cherry, from whence are produced small round Seeds. The whole Plant has a white, hoary, and very beautiful Aspect, and grows to the Height of two Cubits, or more. It is destitute, especially the Flowers, of Smell; but has a bitterish and somewhat astringent Taste, whence it appears to be of a detersive and aperient Quality, and somewhat hot and dry, and therefore serviceable in conglutinating and incarning Ulcers. *Prosper Alpinus de Plantis exoticis.*

17. Scabiosa; Stellata; pretescens; Leucoii folio minor, unâ alterave crenâ inciso. *Flor.* 2. 56.

18. Scabiosa; Indica; prolifera. *Hort. Edinb.*

19. Scabiosa; peregrina; rubra; capitulo oblongo. *C. B. P.* 270.

20. Scabiosa; peregrina; capitulo oblongo; flore carneo.

21. Scabiosa; peregrina; capitulo oblongo; flore atropurpureo.

22. Scabiosa; peregrina; capitulo oblongo, variegato.

23. Scabiosa; capitulo globosa; minor. *C. B. P.* 270.

24. Scabiosa; capitulo globosa; major. *C. B. P.* 270.

25. Scabiosa; folio molli, incano; flore incarnato.

26. Scabiosa; tenui folia; flore cœruleo; biennis.

27. Scabiosa; Catalanixestensis; minor; folio palmato seu Cardiacæ; incarnato flore.

28. Scabiosa; capitulo globoso, foliis in tenuissimas lacinias divisis. *C. B. P.* 271.

29. Scabiosa; Alpina; altissima; foliis tenuissimè dissectis; flore cœruleo. *H. Mauroc.* 156. *Coronâ feminis purpureâ.*

30. Scabiosa; Alpina; altissima, foliis tenuissimè dissectis; flore cœruleo. *H. Mauroc.* 156. *Corona feminis albâ.*

31. Scabiosa; ωχρολευκω flore; sive *VII Clus. H. iii.*

32. Scabiosa; ωχρολευκω flore; sive *VII. Clus. H. ii. flore albo.*

33. Scabiosa; Cretica; capitulo pappos mentiente. *T. Cor.* 34.

34. Scabiosa; Virgæ Pastoris folio. *C. B. P.* 270.

35. Scabiosa; Orientalis; hirsuta; tenuissimè laciniata; flore parvo purpureo. *T. C.* 34.

36. Scabiosa; fruticans; angustifolia. *C. B.* 270.

37. Scabiosa; foliis argenteis. *Wheeler.*

38. Scabiosa; Indica. *Bontii.*

39. Scabiosa; argentea; angustifolia. *C. B. P.* 270.

40. Scabiosa; fruticans; angustifolia alba. *C. B. P.* 270.

41. Scabiosa; flore globoso, niveo. *C. B. P.* 270.

42. Scabiosa; maritima; parva. *I. B.* 3. 7.

43. Scabiosa; fruticans; latifolia; alba. *C. B. P.* 296.

44. Scabiosa; altissima; flore cœruleo.

45. Scabiosa; altissima; flore carneo.

46. Scabiosa; frutescens; foliis infrâ integris; flore cœruleo.

47. Scabiosa; perennis; sicula; flore sulphureo.

48. Scabiosa; annua; parva; ramosa; flore parvo, pallidè cœruleo. *Boerh. Ind. Alt. Plant. Vol. I.*

It takes its Name from the *Scabies*, which it is said to cure. These Plants are very serviceable in Diseases of the Breast, whenever a gross tenacious Matter requires to be attenuated and lubricated; and it is of most Virtue when taken in a Decoction with Honey in hot Countries. The Seed is exhibited in all violent Fevers, for it is demulcent and attenuating. For Contusions and Wounds, and especially for the Pestilence and *French* Pox, it is said to be more effectual than Sarsaparilla, or Lignum Guaiacum. The fifth and seventh Species are proper for cutaneous Diseases, and take their Name more particularly from the *Scabies*; and their Infusion, Decoction, or expressed Juice, may very safely be used against the Pleurisy or Peripneumony; for the Juice is somewhat viscous, and the Herb is maturating, and promotes Expectoration in acute Diseases. The same, you will say, has been affirmed of *Savory*; but this is sometimes too stimulating, and provokes to Stool; whereas *Scabious* is a very gentle Plant, and no way heating. The eighth and tenth Species go by the Name of *Devil's-bit*, because their fibrous Roots are cut off in the Middle, and by their Section represent a Crown. The Antients say, that the Devil, in spite to Mankind, bit off a Piece of the Root in Paradise, as knowing how beneficial it would be to the Human Race. The Root perishes yearly, and is renew'd in *Autumn*. The distilled Water of the fifth Species is much commended; but I believe it to be of no more Virtue than Rain water. The ninth is especially recommended for the Pestilence. They are all aperient and sudorific, and therefore of Use in the Small-Pox, Quinsey, Cough, Asthma, and Fistula's, or running Ulcers of the Breasts and Legs. Outwardly, they are effectual in the Pruritus, Tinea of the Head, Impetigo, Pains of the Hæmerrhoids, and Pimples in the Face. *Hist. Plant. ascript. Boerhaave.*

SCABRUS, in *Paracelsus*, is a Disorder of the Ear, consisting in a Pain, or Asperity, of that Organ.

SCACURCULA. The Spirit of the Bone of a Stag's Heart. *Rulandus.*

SCADIDA CALLI. A Name for the *Euphorbium verum antiquorum.*

SCALA. A Ladder, us'd sometimes as a chirurgical Instrument, for reducing a Luxation of the *Humerus.*

SCALENI MUSCULI.

These are compound Muscles, irregularly triangular, and from this Figure the ancient *Greeks* gave them their Name. They reckoned them to be only two in Number, situated laterally on the Vertebræ of the Neck, all the way down to the first and second true Ribs. Afterwards they were divided into six, three lying on each Side; but I have commonly found no more than two on each Side, one lying upon the other; the first of which I name *Scalenus Primus*, or *Primæ Costæ*; the other, *Scalenus Secundus*, or *Secundæ Costæ.*

The *Scalenus Primus* is fixed to the upper Part of the Outside of the first Rib, by two distinct Portions, called commonly Branches, one anterior, the other posterior. The anterior Branch is fixed to the middle Portion of the Rib, about an Inch from the Cartilage. From thence it runs obliquely upwards, and is inserted in the transverse Apophysis of the sixth, fifth, and sometimes third Vertebra of the Neck.

The posterior Branch is fixed more backward in the first Rib, an Interstice of about an Inch; but being left between it and the other Branch, through which the Axillary Artery and Brachial Nerves are transmitted. From thence it runs up obliquely behind the former, and is inserted in all the tranverse Apophyses of the Neck.

The *Scalenus Secundus* is fixed a little more backward in the external Labium of the upper Edge of the second Rib, sometimes by two separate Portions, and sometimes without any Division. The anterior Portion is fixed immediately under the posterior Portion of the first Scalenus, by a short flat Tendon, united a little with the first intercostal Muscle. From thence it runs up over the posterior Portion of the first Scalenus, communicating also with that Muscle, and is fixed by Insertions, partly tendinous and partly fleshy, in the tranverse Apophyses of the four first Vertebræ of the Neck.

The posterior Portion is fixed in the second Rib, more backward than the other. From thence it runs up, being divided into two Portions, whereof one is inserted in the tranverse Apophyses of the three first Vertebræ of the Neck, behind the *Scalenus Primus*. The other Portion runs up behind the former, and is inserted in the tranverse Apophyses of the two first Vertebræ.

The vertebral Insertions of both *Scaleni* vary, they being sometimes confounded with each other, and sometimes with those of the neighbouring Muscles. Behind the *Scalenus Secundus*, there is a small fleshy Plane inserted in the tranverse Apophyses of the last Vertebræ of the Neck, and in the second Rib. This does not belong to the *Scaleni*, but is the first of the *Muscuti Supra Costales*, or *Levatores Costarum*, as they are commonly called.

In dissecting the anterior Portion of the second *Scalenus*, I have observed a small Muscle fixed to the Extremity of the transverse Apophyses of the last Vertebra of the Neck, which having run down from thence to the inner and lower Part of the first true Rib, was slightly inserted there, and seemed to continue its Course to the convex Side of the Pleura. I have also seen all the Scaleni inserted in the first Rib.

The *Scaleni* seem better fitted for the Motions of the Neck, than for those of Respiration; and I frankly acknowledge, says *Winslow*, that in reflecting on this, I began to doubt of this latter Use; especially when I called to Mind what I said about the Uses of the Subclavius, (See SUBCLAVIUS) which

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which is, that I could not believe this Muscle to be employed in Respiration, because of its Insertion in the cartilaginous Portion of the first Rib, which is immoveably fixed to the Sternum, and also much shorter, much broader, and consequently much less flexible than the Cartilages of the other Ribs.

Moreover, the Neck, in many Situations, cannot serve as a fixed Point to the *Scaleni* for the Motion of the Ribs; as for Instance, when it is bent forward over the Sternum, or inclined very much to either Shoulder; and yet we find that none of these Situations do in the least hinder the Motions of Respiration.

From this Time, therefore, I shall rank the *Scaleni* among the Muscles which move the *Vertebræ* of the Neck, because the Articulation of the first Rib on both Sides, with the first Vertebra of the Back, seems to serve only for the Motion of that Vertebra on the Rib, and not of the Rib on the Vertebra. In this manner ought Truth to be embraced wherever it presents itself. *Winslow's Anatomy.*

SCALPRUM. A Lenticular, or Raspatory. *Blancard* explains *Scalprum*, a Chisel for Amputations; or a Launcet.

SCAMMA. σκάμμα, in *Cælius Aurelianus*, *Morb. Chronic. Lib.* 2. *Cap.* 1. was the Limit, or Bound of the Space, or Plot of Ground, alotted for the Use of those who exercised themselves in Leaping, and mark'd by laying along a Rail, or drawing a Trench. The same Author uses the Word to signify the Rails, or Posts, which marked out the Area, or Space of Ground, design'd for Walking. *Scamma* was, also, the Pit in the Stage where the Wrestlers played their Prizes.

SCAMMONIA. σκαμμωνία. Scammony. A Plant, which from one Root shoots up a Multitude of fat, and somewhat hairy Stalks, to the Height of three Cubits, with hairy Leaves, resembling those of the Helxine, or Ivy, but softer and triangular. The Flowers are white, round, concave in manner of Baskets, and of a strong Smell. The Root is very long, as thick as a Man's Arm, white, of a strong Smell, and full of Juice, which is collected in the following manner: They separate the Root from the Head, and with a Knife excavate it in Form of a Cupola; into this Cavity from all Parts runs the Juice, which is taken out in Shells. Others dig a Cavity of the same Form in the Ground, and strewing the same with Walnut-Leaves, let the Juice run into it, and there suffer it to dry before they remove it.

The best Scammony is pellucid, light, rare, of the Colour of Bull's Glue, with small fistulous Perforations, and fungous; such is what is imported from *Mysia* in *Asia*. In trying the Goodness of it, it is not sufficient that it turns white when touched with the Tongue, for so it will do when mixed with the Juice of the *Tithymalus*, but Regard is to be had to the forementioned Characters; and, also, that it is not over-heating or burning upon the Tongue, as it is when mixed with the *Tithymalus*. What is made in *Syria* and *Judea* is the worst, being ponderous, dense, and adulterated with the *Tithymalus* and Flower of Vetches.

A Dram, or four Oboli of the Juice taken in Hydromel, or Water, purges downwards Bile and Phlegm. Two Oboli with Sesamum, or some other Seed, are sufficient for loosening the Belly. But where stronger and more efficacious Purging is required, the Dose may be three Oboli of the Juice, with two Oboli of black Hellebore, and a Dram of Aloes. A purging Salt is, also, prepared by mixing twenty Drams of the Juice of Scammony with six Cyathi of Salts: This is exhibited in Proportion to the Strength, the full Dose being three Cochlearia, the middle two, and the least one. A Dram or two of the Root, mixed with the before-mentioned, serves also for a Purge; and some drink the Decoction of it. The same boiled in Vinegar, and then triturated with Barley-Flower, makes a useful Cataplasm for the Sciatica. The Juice applied in a Pessary with Wool, destroys the Embryo; made in a Litus, with Oil or Honey, discusses a Phyma; boiled in Vinegar, cures the Leprosy, rubbed on the Parts affected; and mixed with Vinegar and Oil of Roses, is good to wash the Head affected with an inveterate Cephalagia. *Dioscorides, Lib.* 4. *Cap.* 171.

SCAMMONITES. σκαμμωνίτης. Scammonites, or Wine of Scammony, is prepared by taking fifteen Drams of the Root of Scammony, digged in the Time of Harvest, and putting them, bruised and tied up in a Linnen-Cloth, into a Congius of Must. It purges the Belly, and evacuates Bile and Phlegm. *Dioscorides, Lib.* 5. *Cap.* 83.

SCAMMONIUM.

We have two Sorts of Scammony in the Shops, that of *Aleppo*, and that of *Smyrna*. The first is the best and most purgative; and is got from a Plant named *Scammonea Syriaca*, C. B. P. which is a Species of *Convolvulus*; it is a very strong Cathartic, but causes great irritation, and even Inflammations in weak Habits. It is given, in Substance, from two to twelve Grains; but ought never to be used when there is the least Suspicion of Inflammations in any part of the Abdomen. It is likewise a very tickliish, uncertain Purge; sometimes it has no Effect at all; sometimes it causes fatal Super-purgations; and, which is most remarkable, it sometimes does not operate at all the first Day, but brings on an insupportable Tenesmus and Hypercatharsis the next. It is very proper to dilute it with some oily, viscid Substance; such as the Yolk of an Egg, or an Emulsion made with Sweet-almonds, and the cold Seeds. Prepared Scammony, or Diagridium, is a very proper Ingredient in the *Pulvis Cornachini*, which purges without any of the bad Effects of Scammony. Madam *Grimaldi's* Powder seems to be nothing but the *Pulvis Cornachini* disguised. Scammony is the Basis of many purgative Compositions, such as the *Diaphœnicum*, the *Diaprunum*, *Confectio Hamech*, and others. *Geoffroy.*

PREPARATIONS OF SCAMMONY.

There are various Ways which Authors have contrived to prepare Scammony, and all with a View to make it a milder and safer Cathartic. Most agree in doing this with Acids; to which purpose some bake or roast it, inclosed in the Fruit of a Quince, and then it is called *Diagrydium*; others wash it with the Juice of Lemons, Citrons, and with distilled Vinegar; but the following Preparation is most prescribed.

SCAMMONIUM CUM SULPHURE PRÆPARATUM.

Scammony prepared with Sulphur.

Lay the Powder of Scammony upon thick, strong Paper; then hold it over Coals, upon which Sulphur is to be burned, until it turns white and melts. Afterwards rub it in a Mortar, a little greased, to a fine Powder for Use.

This is prescribed from three Grains, to eight or ten Grains, and has the Virtues of the Scammony itself, being little altered by this Preparation.

RESINA SCAMMONII.

Resin of Scammony.

Take any Quantity of Scammony, and dissolve it in a sufficient Quantity of Spirit of Wine; decant it, and put to it common Water, which will occasion it to turn milky, and let the Resin fall to the Bottom; or put it into a Retort, and gently draw off the Spirit.

This is somewhat stronger and rougher in Operation than the Resin of Jalap. Its Dose is from two Grains, to six or seven. *Quincy.*

TINCTURE OF SCAMMONY.

The milky, unctuous, thick Juices, which spontaneously distil in plenty from wounded Plants, usually appear Resinous, when inspissated by the Heat of the Air, or Sun; such Juices are particularly those of the Hawk-weeds, Sow-thistles, Goats-beard, Succory, Spurge, Euphorbium, Poppy, or the like; and these Juices, when reduced to a dry Form, and ground to Powder, and boiled once or twice with Spirit of Wine, dissolve in great measure, leaving only a little earthy Fæces behind; and this is particularly the Case of Scammony.

REMARKS.

The Tincture of Scammony, so prepared, purges in a small Dose, or in the Quantity of two Drams, if mixed in three or four times its Weight of the Syrup of Damask Roses. This Process principally shews, the Action of pure Spirit of Wine upon vegetable Compounds, according to this ancient chymical Rule, that Spirit dissolves its like. For Alcohol, when perfectly pure, scarce extracts any thing more from well-dried compounded Vegetables, than the inflammable Parts, Spirit, Balsam, Oil, Colophony, Rosin, and resinous Gum, and what is merely saponaceous; leaving a pure, dry Salt and Earth behind. If, therefore, the Artist knows that all the particular Virtue required resides in these Parts, then the Operation must be perform'd with pure Alcohol alone; but when the Virtue required lies in a mixture of the oily, resinous, saline, and saponaceous Parts together, it is better to use the common rectified Spirit, than Alcohol; because that Spirit acts, by its aqueous Part, upon what is saline and saponaceous; and by its Alcohol, upon what is balsamic, oily and resinous; so that by this Means, the united Virtues may be obtained

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obtained in the Tincture. This is evident in the Roots of Hellebore, Hermodactils, Jalap, Mechoacan, and Turbith; becauſe the Tinctures drawn from them with a Spirit only once rectified, purge much better than thoſe extracted by pure Alcohol. For if a reſinous Tincture be drawn by Alcohol from Jalap, it purges leſs; while the Remainder, being boiled in Water, communicates a purging Virtue thereto. But if the Tincture be extracted with common Spirit, it proves highly purgative; and the Remains contain ſcarce any thing worth the extracting. Hence we learn, that a fixed alcaline Salt is not required in the making of many Tinctures, becauſe it would either deſtroy, or change their particular Virtues; and that they are not always to be made with Alcohol; but we are firſt to conſider what Spirit ſhould be uſed. All the Tinctures prepared with pure Alcohol, will burn entirely away, almoſt like pure Alcohol itſelf; whence it is manifeſt, that this Menſtruum extracts only the inflammable Part from the Compound, and leaves the reſt behind. If, therefore, the Virtue of a Plant entirely reſides in the ſaline, ſaponaceous Part, to boil it with Water is better than Alcohol. The Opium diſſolved in Water is the beſt, the next is that diſſolved in Wine, and the next in Spirit of Wine; but always the worſe, the better the Spirit.

A PURGING POTION.

If two Drams of the Tincture of Scammony, prepared, as above, with rectified Spirit of Wine, be mixed with thrice its Weight of a proper purging Syrup, as that of Rhubarb, and this Doſe be taken upon an empty Stomach, in a Diſtemper, Conſtitution, and Age, that requires ſo ſtrong a Purge, it commonly has the deſired Operation in purging the Bile.

REMARKS.

Many Virtues of Vegetables uſually reſide in their Roſins, which are generally tough and ready, by their Tenacity, to ſtick to one Part of the Body, and thus their Virtues are either retarded or hindered; but when diſſolved in a ſpirituous, vegetable Menſtruum, they operate quicker, and in a much leſs Doſe. Roſins diſſolved in Spirits are ſo ſharp, that they cannot be drank alone; and if diluted with Water to render them potable, they are preſently precipitated into a tenacious Maſs; whence nothing ſeems more proper than to mix them with a thick Syrup, where they cannot be precipitated, but are mitigated by the ſaccharine Part; which, by its extraordinary ſimplicity, does not, at the ſame time, change or impair their Virtue. *Boerhaave's Chymiſtry.*

SCAMNUM HIPPOCRATIS. See BATHRON.

SCAMPIUZA, σκαμπιούζα, A Name for the *Tuſſilago* or Coltsfoot. *Fuchſius in notis ad Nicolaum Myrepſum*, Sect. 1. Cap. 505.

SCANDELLA. The ſame as GYMNOCRITHON.

SCANDIX, called alſo ANTHRISCUS.

The Characters are;

The Root is annual and fibrous, and the Seeds reſemble a long Needle.

Boerhaave mentions three Sorts of *Scandix*, which are;

1. Scandix; ſemine roſtrato; vulgaris. *C. B. P.* 132. *Tourn. Inſtit.* 326. *Boerh. Ind. A.* 70. *Raii Synop.* 3. 207. *Scandix*, Offic. *Scandix vulgaris, ſeu Pecten Veneris*, Park. Theat. 207. *Pecten Veneris*, J. B. 3. 71. Raii Hiſt. 1. 428. *Pecten Veneris, ſive Scandix*, Ger. 884. Emac. 1041. SHEPHERD'S NEEDLE, OR VENUS'S COMB.

It grows frequently among the Corn, and flowers in *May* and *June*.

Scandix is reckoned among wild oleraceous Plants, or Greens, and is friendly to the Belly and Stomach, whether it be eaten raw or boiled. The Decoction drank is good for the Bladder, Kidneys and Liver. *Dioſcorides, Lib.* 2. *Cap.* 168. Some ſay, that the Root hereof bruiſed with Mallows draws out all manner of Splinters, or other Things, infixed in the Body. *Buxb.*

2. Scandix; Cretica; minor. *C. B. P.* 152. *Prodr.* 79. *Pecten Veneris, foliis tenuiſſimè diſſectis, Anthriſcus Cafabonæ.* J. B. 3. 273. *Aniſomarathrum*, Col. 1. 180.

3. Scandix; Orientalis; flore maximo. *T. C. Boer. Ind. Alt. Plant. Vol.* 1.

SCANTON. The fetid Smell of Urine. *Rulandus.*

SCAPELLATUM. Uncovered, it is uſed with reſpect to the Retraction of the Prepuce in a *Paraphimoſis.*

SCAPHA. σκάφη. A Bathing Tub, or Ciſtern. *Scapha*, in Anatomy, is the external Circumference of the Ear, oppoſite to the Helix. *Caſtellus.* It is, alſo, the Name of a Species of Bandage for the Head. *Galen, de Faſciis.*

SCAPHION. σκάφιον. A ſmall Bathing Tub. Or that Part of the Head which is covered with Hairs. Or the *Acetabulum. Scaphia* are the Buttocks.

SCAPHIS. σκαφὶς. A ſmall Bathing-Tub; or a Milking Pail, or a hollow oblong Veſſel, in which Barley was bruiſed. In *Hippocrates* it ſometimes imports the oblong, hollow Shell of the Sea-Muſcle; or a Meaſure, the ſame as *Concha.*

SCAPHOIDES OS. The ſame as *Os Naviculare.* See CRUS.

SCAPULA. The Scapula is the triangular Bone ſituated on the Outſide of the Ribs, and extended commonly from the ſecond to the ſeventh true Rib; its ſuperior poſterior Angle, when it is in the leaſt ſtraining Poſition, being about three Inches from the ſpinal Proceſſes of the Vertebræ, while the long Side between that Angle and the inferior one is ſtretched obliquely forward as it deſcends, having nothing between it and the Ribs, except the thin Extremities of ſome Muſcles; but as the Scapula advances forwards to its Articulation with the Arm Bone, its Diſtance from the Ribs increaſes.

The Sides and Angles of the Scapula are all unequal; for the poſterior Side or Baſe is the longeſt, the inferior Coſta is the ſecond in Length, and the ſuperior Coſta is about as much proportionally ſhorter than the inferior, as this is than the Baſe. The inferior Angle is very acute, the ſuperior is near to a right Angle; and what is called the Anterior, does not deſerve the Name; for the two Sides do not meet to form an Angle. The Body of this Bone is concave towards the Ribs, and convex behind, where it has the Name of *Dorſum.* Three Proceſſes are generally reckoned to proceed from the Scapula. The firſt is the large Spine that riſes from the poſterior convex Surface, and divides it unequally. The ſecond Proceſs ſtands out from the anterior Extremity of the ſuperior Coſta; and from its imaginary Reſemblance to a Crow's Beak, is termed *Coracoides.* The third Proceſs is the whole anterior thick bulbous Part of the Bone.

After thus naming the ſeveral conſtituent Parts of the Scapula, the particular Deſcription will be more eaſily underſtood.

The Baſe, which is tipped with Cartilage in a young Subject, is not all ſtrait: For above the Spine, this Side runs obliquely forwards to the ſuperior Angle; in which oblique Space the *Muſculus patientiæ* is inſerted. At the Root of the Spine, on the Back-part of the Baſe, a triangular plain diſtinct Surface is formed by the lower Fibres of the *Trapezius.* Below this the poſterior Edge of the *Scapula* is ſcabrous and rough for the Inſertion of the *Serratus major anticus* and rhomboid Muſcles. The inferior Angle is made ſmooth on its poſterior Surface, by the *latiſſimus dorſi* paſſing over it. From this forwards the inferior *Coſta*, by the Action of that ſame Muſcle, is for ſome Way brought to a more direct Courſe; and ſo far the poſterior Surface is flatned by the Origin of the *Teres major.* As this inferior *Coſta* runs forwards from this, it is of a conſiderable Thickneſs; and on its poſterior Surface is ſlightly hollowed, and made ſmooth by the *Teres minor*; while it has a *Foſſa* formed into it below by the *Teres major*; and between the two a Ridge with a ſmall Depreſſion appears, where the *longus extenſor Cubiti* has its Origin. The ſuperior *Coſta* is very thin, and near its anterior Extremity has a ſemilunar Cavity formed in it; croſs the Extremities of which a ſtrong Ligament is ſtretched, and ſometimes the Bone is continued, to form a Hole for the Paſſage of Blood-Veſſels and Nerves. Immediately behind this Cavity the *Muſculus coraco-hyoideus* has its Riſe; and from it to the Termination of the *Foſſa* for the *Teres minor*, the *Scapula* is narrower than any where elſe, and ſupports the third Proceſs. This Part has got the Name of *Cervix.*

The whole *Dorſum* is always ſaid to be convex; but by reaſon of the raiſed Edges that ſurround it, it is divided into two Cavities by the Spine, which is ſtretched from behind forwards, much nearer to the ſuperior *Coſta* than to the inferior. The *Cavitas ſupraſpinata* is really concave where the Muſcle of the ſame Name is lodged; while the Surface of this Bone below the Spine is convex, except a *Foſſa* that runs at the Side of the inferior *Coſta*; and on this Surface the *Muſculus infraſpinatus* is placed. The internal or anterior Surface of this Bone is hollow, except in the Part above the Spine which is convex. In the Hollow the *ſubſcapularis* Muſcle is contained. When this Muſcle is removed, ſeveral Ridges and intermediate Depreſſions appear, that at firſt View would ſeem to be adapted to the Ribs; but the *Scapula* is ſituated too obliquely for allowing the Ribs to make theſe Impreſſions in ſuch a Direction; and they point out the Interſtices of the Bundles of Fibres of which the *ſubſcapularis* Muſcle is compoſed, as *Winſlow* juſtly obſerves.

The Spine riſes ſmall at the Baſe of the *Scapula*, and becomes higher and broader as it advances forwards. On the Sides it is unequally hollowed and crooked by the Actions of the adjacent Muſcles. Its Ridge is divided into two rough flat Surfaces: Into the ſuperior the *Trapezius* Muſcle is inſerted; and from the inferior, Part of the *Deltoid* has its Origin. The Extremity of the Spine becomes very broad and flat, and is well known by the Name of the *Acromion*, or Top

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Top of the Shoulder. This in Children is an *Epiphyſis*; and in ſome old Subjects I have ſeen it only joined by a Cartilage to the Spine. The interior Edge of the *Acromion* is flat, ſmooth, and covered with a Cartilage, for its Articulation with the external Extremity of the Clavicle; and its inferior Surface is hallowed, to allow a Paſſage for the *infra* and *ſupra-ſpinati* Muſcles, and free Motion to the *Os humeri*.

The coracoid Proceſs is not ſtrait, but a little crooked, with its Point inclining forwards; ſo that a Hollow is left at its inferior Root, for the Paſſage of the *infra-ſcapularis* Muſcle. The Extremity of this Proceſs is marked with three plain Surfaces: Into the internal, the *Serratus minor anticus* is inſerted: From the external, one Head of the *Biceps flexor cubiti* riſes; and from the inferior, the *Coracobrachialis* has its Origin. At the ſuperior Root of this Proceſs, immediately before the *Cavitas ſemilunaris*, a plain or rather ſomewhat hollowed Surface is made by the Origin of the other Head of the *Biceps flexor cubiti*; and from a rough ſcabrous Surface on the upper Part of the coracoid *Apophyſis*, ſtrong Ligaments go out, to connect it to the Clavicle and *Acromion*.

From the *Cervix ſcapulæ* the third Proceſs is produced. This is ſuperficially hollowed on the anterior Part by a glenoid Cavity, which is ſomewhat elliptical; but has an obtuſe Extremity below, and an acute one above; therefore reſembles much the Shape of the longitudinal Section of an Egg. Between the poſterior Brims of this *Glene*, and the anterior Root of the Spine, a large Sinuoſity is left, for the Tranſmiſſion of the *ſupra* and *infra-ſpinati* Muſcles. The Root of the *Supercilia* is ſurrounded by a rough Circle, for the firmer Adheſion of the circular Ligament of the Articulation, and of the Cartilage which is placed on theſe Brims, where it is very thick, but becomes very thin as it is continued towards the Middle of the Cavity, which it lines all over. The medullary Veſſels enter the *Scapula* near the Baſe of the Spine.

The Subſtance of the *Scapula* is, as in all other broad flat Bones, cellular, but of a very unequal Thickneſs; for the Neck and third Proceſs are very big and ſtrong; the inferior Coſta, Spine and coracoid Proceſs, are of a middle Thickneſs; and the Body is ſo preſſed by the Muſcles, as to become diaphonous.

The *Scapula* and Clavicle are joined by plain Surfaces, tipped with Cartilage, to which Sort of Articulation I applied the technical Name *Arthrodia*, by which neither Bone is allowed any conſiderable Motion, being tightly tied down by the common circular Ligament, and the proper one that proceeds from the coracoid Proceſs; otherwiſe their Surface of Contact is ſo narrow, that they would be frequently diſlocated: A ſmall Flexion however is neceſſary, and therefore they are not united, into one Bone. Sometimes a movable ligamentous Cartilage is found in this Joint, ſometimes ſuch a Cartilage is only interpoſed at the anterior Half of it, and in ſome old Subjects I have found a ſeſamoid Bone here. The *Scapula* is connected by *Syſarcoſis* to the Head, *Os hyoides*, *Vertebræ*, Ribs and Arm-bone; and by Means of the Muſcles, that have one Extremity faſtned to theſe Bones, and the other to the *Scapula*, it is moved upwards, downwards, backwards or forwards, and can turn in its own Plain, carrying always the exterior Extremity of the Clavicle and the Arm along with it, which Motions are at great Length explained by *Winſlow*. The glenoid Cavity of this Bone receives the *Os humeri* by *Enarthroſis*.

The Uſe of the *Scapula* is to ſerve as a *Fulcrum* to the Arm; and, by altering its Poſition on different Occaſions, to allow always the Head of the *Os Humeri* a right-ſituated Socket to move in, and thereby to aſſiſt and enlarge the Motions of the ſuperior Extremity, and to afford the Muſcles which riſe from it more advantageous Actions, by altering their Directions to the Bone they are to move. This Bone, alſo, ſerves to defend the Back-part of the Thorax, and is often employed to ſuſtain Weights, or reſiſt Forces too great for the Arm to bear.

The Baſe, *Acromion*, coracoid Proceſs and Head of the *Scapula*, are all in a cartilaginous State at the Birth; and the three firſt are joined as *Epiphyſes*; while the Head, with the glenoid Cavity, is not formed into a diſtinct ſeparate Bone, but is gradually produced by the Oſſification of the Body of this Bone being continued forwards. *Monro's Oſteology*.

The Scapula in many Subjects has a ſmall cartilaginous Border along its whole Baſis, which in Children is remarkable enough, but in full-grown Perſons it diſappears.

The Glenoid Cavity of this Bone is covered with a Cartilage, which is thicker toward the Circumference than the Middle, and a little raiſed above the Edge of the Bone. This Thickneſs of the cartilaginous Circumference makes the Cavity greater than it appears in the Sceleton; and ſometimes in place thereof there is an additional Border, which is thick at the Circumference of the Cavity, thin towards the Bottom, and very narrow. It is of a pliable ſlippery Subſtance, yet ſomething different from that of a Cartilage, reſembling in ſome meaſure the Border of the Cotyloid Cavity of the Os Innominatum.

The ſmall cartilaginous Surface of the Acromion, is thicker in the natural State, and very little convex.

The ſmall triangular Surface, at the Extremity of the Spine of the Scapula, near the Baſis, is covered with a very thin ſmooth cartilaginous Lamina; but being tranſparent, it does not appear very white. There are no other Cartilages commonly found in the Scapula; though we ſometimes obſerve in dry Bones ſeveral Places which ſeem to have been cartilaginous; but this is owing to the dried Remains of Ligaments and Tendons.

The Neck of the Scapula, at a ſmall Diſtance from the Edge of the Glenoid Cavity, gives Inſertion to the capſular Ligament or mucilaginous Bag, and to the articular Ligaments of the Joint of the Scapula and Os Humeri.

Beſides theſe articular Ligaments of the Scapula, there are three ligamentary Cords fixed to the Tuberoſity of the Coracoid Apophyſis, two of which, by their other Extremities, are inſerted in the oblique Eminence on the lower Side of the Humeral Extremity of the Clavicle, the third under the Acromium. There is alſo a thin flat broad Ligament, which reaches between the Criſta of the Spine of the Scapula and the Edge of the inferior Coſta. *Winſlow's Anatomy*,

See FASCIA, for the Bandages recommended for Diſorders of the Scapula.

SCARABÆUS CORNUTUS. Schrod. 5. 345. *Scarabæus maximus Platyceros, Taurus nonnullis, aliis Cervus volans*, Raii Inſect. 74. *Scarabæus Cervus volans dictus*, Mer. Pin. 201. *Scarabæus major cornutus*, Mouff. Inſect. 148. Jonſ. de Inſect. 67. *Cervus volans*, Aldrov. de Inſect. 451. Charlt. Exer. 46. THE STAG-FLY.

This Inſect is, as I take it, what is uſually called the Cock-Chaffer. It is recommended as an Amulet for an Ague, or Pains and Contractions of the Tendons, if applied to the Part affected. *Schroder* reports, that if tied about the Necks of Children, it enables them to retain their Urine. An Oil prepared by Infuſion of theſe Inſects, is recommended by the ſame Author in Pains of the Ears, if dropped into them.

SCARABÆUS PILULARIS. Schrod. 5. 345. Jonſ. de Inſect. 70. Raii Inſect. 105. Charlt. Exer. 47. Aldrov. de Inſect. 449. Mouff. Inſect. 153. *Scarabæus Pilularis Melanocyanus*, Mer. Pin. 201. THE COMMON BEETLE.

The Powder of this Inſect ſprinkled upon a protuberating Eye, or prolapſed Anus, is ſaid to afford ſingular Relief. In order to reduce them to Powder, they are firſt to be expoſed to the Sun in a Glaſs-Veſſel ſtopt, that they may be dried.

An Oil is directed to be prepared of theſe Inſects, boiled in Oil till they are conſumed, which applied to the blind Hæmorrhoids, by means of a Piece of Cotton, is ſaid to mitigate the Pains thereof. *Schroder*.

Schroder takes notice of another Species of *Scarabæus*, which he calls,

SCARABÆUS UNCTUOSUS. This Inſect is found in *May* and *June* by the Sides of Paths, in Woods; and, when touched, tinges the Hands with a pinguious yellowiſh Liquor. They are ſomewhat of the Nature of *Cantharides*, and are recommended by *Wierus*, in the irregular and wandering Gout, if taken in Powder. The Liquor abovementioned, is ſaid to be a good Topic for Wounds. The Inſect is an Ingredient in ſome Plaiſters for *Bubos*, and Carbuncles; and in ſome Antidotes; and an Oil is prepared from them, by boiling them in Olive-Oil, which is ſaid to be good againſt the Bites of Scorpions.

SCARABELAPHUS. A Name for the SCARABÆUS CORNUTUS.

SCARDULA. A Freſh-Water Fiſh, called, alſo, *Brama*, and *Cyprinus Latus*, the Bream. It is a Fiſh reſembling a Carp in many Reſpects. It lives in the ſame Places, upon the ſame Food, and alſo very long; and its Fleſh produces nearly the ſame Effects: Its Shape too is like the Carp; but it is ſoft, tender, and better taſted than the Carp. Moſt Authors, who have treated of it, ſay that this Fiſh contains groſs and excrementitious Juices, and that its Taſte is more pleaſant than wholeſome. However, we have not found it has produced many ill Effects. *Lemery on Foods*.

SCARIFICATIO. Scarification. See CUCURBITULÆ.

Oribaſius, either from *Apollonius* or himſelf, ſpeaks very fully of the good Effects of Bleeding by way of Scarification, a thing little taken notice of by former Writers; and aſſures us, from his own Experience, how ſucceſsful he had found it in a Suppreſſion of the Menſes, Defluxions of the Eyes, Head-ach, and Straitneſs of Breathing, even when the Perſon was extremely old.

When he himſelf was taken ill of the Plague, the ſecond Day he ſcarified his Thigh, and took away two Pounds of Blood;

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Blood; by which Method he entirely recovered, as did ſeveral others, who uſed it. This Manner of Scarifying was different from that of Cupping. The *Arabians* ſeem to have a Notion of the latter only. But from this Place, as well as from ſome Paſſages in *Galen*, it is plain that the Ancients made deep Inciſions into the Skin by the Knife. The *Ægyptians* practiſe it to this Day, and *Proſper Alpinus* deſcribes at large the Apparatus: They firſt make a ſtrait Ligature under the Ham, then rubb the Leg, and put it into warm Water, and beat it with Reeds to make it ſwell, and ſo ſcarify. In the Cure of Giddineſs, *Oribaſius* himſelf ſpeaks of them as two diſtinct Operations. *Freind's Hiſtory of Phyſic.*

SCARIFICATORIUM, or SCARIFICATOR. A Chirurgical Inſtrument, uſed for making Scarifications. See CUCURBITULÆ.

SCARIOLA. A Name for the *Cichoreum*; *latifolium*; *ſive Endivia vulgaris.*

SCARLATINA FEBRIS.

1. Tho' the Scarlet-Fever may happen at any time, yet it generally comes at the Cloſe of Summer, when it ſeizes whole Families, but eſpecially Children. (1.) A Chilneſs and Shivering come at the Beginning, as in other Fevers, but without great Sickneſs. (2.) Afterwards the whole Skin is covered with ſmall red Spots, which are more numerous, larger and redder, but not ſo uniform as thoſe which conſtitute the Meaſles. (3.) They continue two or three Days, and after they are vaniſhed, and the Skin is ſcaled off, there remains a kind of branny Scales, diſperſed over the Body, which fall off, and come again for twice or thrice ſucceſſively.

2. As this Diſeaſe ſeems to me to be nothing more than a moderate Effervescence of the Blood, occaſioned by the Heat of the preceding Summer, or ſome other way, I do nothing that may prevent the Deſpumation of the Blood, and the Expulſion of the peccant Matter through the Pores, which is quickly enough performed. Accordingly I refrain from Bleeding, and the Uſe of Clyſters, which make a Revulſion, whereby I conceive the noxious Particles are more intimately mixed with the Blood, and the Motion which is more agreeable to Nature is checked. On the other hand, I forbear Cardiacs, by the Heat of which the Blood may perhaps be put into a violent Motion, than ſo gentle and mild a Separation as effects the Cure requires; and beſides, by this means a high Fever may be occaſioned. I judge it ſufficient for the Patient to refrain wholly from Fleſh, and all Kinds of ſpirituous Liquors, and to keep his Room, without lying always in Bed. When the Skin is entirely peeled off, and the Symptoms vaniſhed, it is proper to give a gentle Purge, ſuited to the Age and Strength of the Patient. By this plain and manifeſtly natural Method, this Diſeaſe in Name only (for 'tis little more) is eaſily cured, without Trouble or Danger: Whereas, on the contrary, if we add to the Patient's Evils, either by confining him continually in his Bed, or exhibiting Abundance of Cardiacs and other ſuperfluous Remedies, the Diſeaſe is immediately augmented, and he frequently falls a Victim to the the Over-officiouſneſs of the Phyſician.

3. But it ſhould here be obſerved, that when epileptic Convulſions, or a Coma, ariſe in this Diſeaſe at the Beginning of the Eruption, which ſometimes happen to Children and young Perſons; 'tis highly proper to apply a large and ſtrong Epiſpaſtic to the Neck, and immediately exhibit a Paregoric of Syrup of White Poppies, which is to be repeated every Evening during the Illneſs; and he muſt be directed to make uſe of Milk boiled with thrice its Quantity of Water, for his ordinary Drink, and to refrain from Fleſh. *Sydenham.*

SCARLEA. The ſame as SCLAREA. Clary.

SCAROLACHANUM. A Plant mentioned by *Nicolaus Myrepſus*, Sect. 8. C. 71. which *Fuſchius* takes to be the SCARIOLA.

SCARUS. This is a large Fiſh, which is ſaid to be of the ruminating Kind, and lives upon Herbs and Sea-wreck, without eating any other Fiſhes. It is found among the Rocks in *Sicily*, *Aſia*, and *Greece*. It is eſteemed good Food, becauſe its Fleſh is tender, friable, and of eaſy Digeſtion. Its Liver, when eaten, or when dried, reduced to a Powder, and taken in White Wine, is ſaid to be good againſt the Jaundice, and proper for removing Obſtructions. *Lemery des Drogues.*

SCATEA, in *Paracelſus*, is the ſecond Species of tartareous Urine.

SCAURUS. The ſame as SARAPUS.

SCELEN. A Name for the SALVATELLA.

SCELERATA HERBA. A Name for the *Ranunculus*; *paluſtris*; *Apii folio*; *lævis.*

SCELETON.

All the Bone of an Animal, freed from the Teguments, Muſcles, Veſſels, Glands and Viſcera, and orderly connected, have the general Deſignation *Scelcton*. This Term might indeed be applied to any dry Preparation, but is now, by the common Conſent of Anatomiſts, reſtrained to this Preparation of the Bones.

Of the two Sceletons there are two Sorts; one natural, when the Bones are kept together by their own Ligaments; the other artificial, when they are joined with Wire, or any other Subſtance which is not Part of the Creature to which the Bones belonged. Small Subjects, and ſuch whoſe Bones are not fully oſſified, are commonly prepared the firſt Way; becauſe were all their Parts divided, the niceſt Artiſt could not rejoin them, by reaſon of their Smallneſs, and of the Separation of the unoſſified Parts; whereas the Bones of large adult Animals are ſooneſt and moſt conveniently cleaned when ſingle; and there is no great Difficulty in reſtoring them to, and keeping them firm in their former natural Situation.

Sometimes we prepare the Sceletons of the ſame Animal in both theſe Ways; that is, we leave the ſmaller Bones joined by their natural Ligaments, and ſeparate the larger ones till they are cleaned, when they are again connected by Wires, or ſome ſuch Subſtances.

'Tis worth while to remark, that when the Bones are brought to their natural Situation, ſcarce any one of them is ſo placed as to be in a perpendicular Bearing to another; tho' the Fabric compoſed of them is ſo contrived, that in an erect Poſture, a perpendicular Line, from their common Center of Gravity, falls in the middle of their common Baſe. By this Contrivance we can ſupport ourſelves as firmly, as if the Axis of all the Bones had been a ſtrait Line perpendicular to the Horizon; and we have, at the ſame time, a much greater Facility and Strength in ſeveral of the moſt neceſſary Motions we perform. It is true indeed, that wherever the Bones, on which any Part of our Body is ſuſtained, decline from a ſtrait Line, the Force required in the Muſcles to counter-act the Gravity of that Part, is greater than otherwiſe it needed to have been; but then this is effectually provided for in ſuch Places, by the Number and Strength of the Muſcles. As long therefore, as we remain in the ſame Poſture, a conſiderable Number of Muſcles muſt be in a conſtant State of Contraction; which we know, both from Reaſon and Experience, muſt ſoon create an uneaſy Senſation. This we call being weary of one Poſture: An Inconvenience that we would not have had in ſtanding erect, if the Bearing of all the Bones to each other had been perpendicular; but 'tis ſufficiently compenſated by the Quickneſs, Eaſe and Strength of a great Variety of other Motions, as was above hinted.

The Bones of Women are ſmaller, in Proportion to their Length, than thoſe of Men, becauſe the Force of their Muſcles is not ſo great, nor is ſuch ſtrong external Force applied to them, to prevent their ſtretching out in Length.

The Depreſſions, Ridges, ſcabrous Surfaces, and other Inequalities made by the Muſcles, are not ſo conſpicuous in them, becauſe their Muſcles are neither ſo thick or ſtrong, or ſo much employed, to make ſo ſtrong Prints on their Bones.

Their Os Frontis is more frequently divided by a Continuation of the ſagittal Suture, which depends on the firſt and ſecond general Cauſes aſſigned above for the Specialities in their Bones, as will appear after reflecting on the Account given formerly of the middle, internal Spine of this Bone.

Their Clavicles are leſs crooked, becauſe their Arms have been leſs forcibly pull'd forwards; which in our European Women, eſpecially thoſe of Diſtinction, is more hindred by their Garb.

Their Sternum is more raiſed by long Cartilages below, that the Thorax might be there widned, in ſome Proportion, to what it is ſhortned by the Preſſure upon the Diaphragm when they are with Child.

The Defect of Bone, or the Hole in the Middle of the Sternum, is oftneſt found in them, to allow the Paſſage of the mammary Veſſels, ſay ſome; but, in my Opinion, this is owing to a lax Conſtitution, by which the Oſſification is not ſo ſoon compleated, as where the Action of the Solids is vigorous, and the Circulation of the Fluids is briſk; for a much ſmaller Hole might have ſerved this Purpoſe; and the Branches of the internal mammary Veſſels, which are ſent to the exterior Parts of the Thorax, paſs out between the Cartilages of the Ribs before theſe are joined to the Sternum.

The Cartilago Xiphoides is oftner bifurcated in Women than Men; for the Reaſon aſſigned in the preceding Paragraph, a leſs forcible Power of Oſſification.

The ſuperior Cartilages of the Ribs ſooner oſſify, to ſupport the Weight of the Mamma.

The middle Cartilages are more flat and broad, by the Weight of the Breaſts.

The inferior Cartilages are longer for enlarging the Cheſt.

The Os Sacrum is more turned outwards for enlarging the Pelvis.

Weakly Women, who have born many Children when young, often have the Vertebræ of their Back bended forwards,

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wards, and their Sternum depreſſed; or become, as *Cheſelden* ſtrictly obſerves, round-ſhouldered and flat-breaſted, by the Preſſure and Weight of the impregnated Uterus, and by the ſtrong Action of the abdominal Muſcles.

The Os Coccygis is more moveable and leſs bended forwards, to facilitate the Birth.

The Oſſa Ilium are more hollow and more reflected outwards, and conſequently farther removed from each other, in order to widen the inferior Part of their Abdomen, and to ſupport better the impregnated Uterus.

The Ridge on the upper Part of the Os Pubis is larger in ſuch Women as have born Children, being extended by the ſtrong Action of the Muſculi recti Abdominis.

The Cartilage between the two Oſſa Pubis is thicker, by which the Pelvis is more capacious.

The conjoined Surfaces of the Oſſa Pubis, and of the Oſſa Innominata and Sacrum are leſs, that with the ſtraiter Os Sacrum, a larger Paſſage might be left for the Exculſion of the Child in Birth.

The great Tuberoſity of the Oſſa Iſchium is ſlatter in Women than Men; becauſe it is more preſſed upon in the ſedentary Life which Females enjoy.

In Conſequence of the Pelvis of Women being wider, the Articulation of their Thigh Bones muſt be farther removed from each other; and therefore, as *Albinus* very well remarks, a larger Space is left for the Procreation and Birth of Children; which Diſtance of the Thighs, may be one Reaſon why Women, in running, generally ſhuffle more from one Side to the other than Men, to preſerve the Center of Gravity of their Bodies from falling too far to a Side of the Joint of the Thigh that ſupports them when the other is raiſed, which would endanger their tumbling to the Ground. *Monro's Oſteology.*

SCELETYRBE. See SCELOTYRBE.

SCELOS. σκέλος. The Leg. See CRUS.

SCELOTYRBE. From σκέλος, the Leg, and τύρβη, Tumult. A violent Pain in the Legs, proceeding from the Scurvey.

SCEMPSIS. σκῆμψις. The ſame as APOSCEPSIS, which ſee.

SCENOS. σκήνος, in *Hippocrates*, ſignifies the whole Body.

SCEPARNOS. σκεπάρνος. See ASCIA.

SCEPASTRA. σκεπάστρα. A Species of Bandage for the Head. *Galen, de Faſciis.*

SCEPE. σκέπη. A Covering. In *Hippocrates*, *Epidem. L.* 6. it ſeems to import the ſurrounding Air.

SCHAGRI-COTTAM. A Species of Cornel-Tree, which grows in *Malabar*. The expreſſed Juice of the Fruit mixed with Sugar, and drank, is eſteemed very cooling; a Decoction thereof is recommended as a good Lotion for the *Uvula* when relaxed. The Juice of the Leaves taken with Sugar is good in an hepatic Flux, and Diarrhœa; and, as a Lotion, for Puſtules in the Mouth. Of the ſame Juice, mixed with Vinegar, a Gargariſm is made, which is ſaid to relieve in a Quinſey.

SCHASIS. σχάσις. Scarification.

SCHEHENDINIGI. Hemp, or Hempſeed. *Rulandus.*

SCHEMA. σχῆμα. The Figure of a Part of the Body; or the Form and Type of a Diſeaſe.

SCHEM-PARITI. The Name of an *Indian* Species of *Alcea*, to which I find no medicinal Virtues aſcribed.

SCHERBET, or SERBET. A *Turkiſh* Liquor, prepared of the acid Juices of Fruits and Sugar.

SCHERUNAM COTTAM. H. M. The Name of a bacciferous Shrub, which grows in the *Eaſt Indies*. The Vapour of a Decoction of the Leaves eaſes the Tooth-Ach, and kills Worms bred in the Teeth. *Raii Hiſt. Plant.*

SCHERUS-CHUNDA. A Name for the *Solanum*; *fructiferum*; *Indicum*; *Fructu rubro.*

SCHESIS. σχέσις. From σχέω, to have, hold, retain, ſignifies ſuch a Diſpoſition of the Body as is eaſily induced or removed, and is called διάθεσις (*Diatheſis*,) as ἕξις (*Hexis*) is, on the contrary, a ſettled Diſpoſition, or Habit. Σχέσις is, alſo, the ſame as ἐπίσχεσις, a Retention or Suppreſſion; thus σχέσις τῶν οὐρέων, 6 *Epid. Sect.* 1. *Aph.* 2. are Suppreſſions of Urine.

SCHETÆA. σχιτάια. This Word occurs in *Hippocrates*, *de Morbis Mulierum*, *L.* 2. The Phraſe is σχιτάια δρώσι, which the Interpreters explain, *They do Things which ought to be refrained from*, that is, throw up indecently their Aliment by Vomit.

SCHETICOS. σχιτικός. An Epithet for Diſeaſes, importing their being not ſo fixed and rooted in the Conſtitution, but that they may be readily cured. *Galen.*

SCHETTI. H. M. The Name of a bacciferous Shrub, which grows in *Malabar*. The Root bruiſed and taken in cold Water, is ſaid to be cooling in feveriſh Burnings, and Heats of the Hands, and to be good for ſpitting of Blood. It is, alſo, recommended for eaſing Pains of the Head, if that Part is waſhed therewith. Taken in Milk, it is ſaid to cool the Kidneys, and to be good in a Gonorrhœa.

There is another Plant much like this which is called *Bem Schetti*, the Fruit of which is eatable, and of a ſweetiſh farinaceous Taſte.

SCHIAS. The ſame as ISCHIAS.

SCHIDACEDON. A Bone is ſaid to be broken σχιδακέδον, *Shidacedon*, when it is fractured lengthways. It is derived from σχίζω, to cleave.

SCHINDALMOS. σχινδαλμός. A Fiſſure.

SCHINELÆON. σχινελαίον. Oil of Maſtich. *Dioſcorides*, *L.* 1. *C.* 50.

SCHISMA. σχίσμα. A Fiſſure.

SCHISTUS LAPIS. Offic. Charlt. Foſſ. 24. Matth. 1382. *Schiſtus* Calc. Muſ. 274. Worm. 64. Aldrov. Muſ. Metall. 655. De Laet. 123. *Schiſtus, ſeu Sciſſilis Lapis*, Boet. 392. THE CLEAVING STONE.

It is exported from *Germany*. The beſt is of a metallic Subſtance, and of the Colour of Saffron; the others, which are not ſo good, are blackiſh, and conſiſt of thin, ſhining, and tranſparent Laminæ, which ſtick to one another. The Virtues are the ſame with thoſe of the *Hæmatites*, only weaker in every Reſpect. *Boetius* thinks it a Species of Talc; and *Agricola* perceives no Difference between it and the *Hæmatites* except in the Figure.

Dioſcorides ſays that it fills up a *Cœloma* of the Eyes, [See COELOMA.] being diluted with Woman's Milk; and is, alſo, very effectual for a Rupture, or falling out of the ſame Part, for Thickneſs of the Eyelids, and a Staphyloma. *Dioſcorides*, *Lib.* 5. *Cap.* 145.

SCHŒNANTHUS. *Juncus odoratus*, Offic. *Schœnanthum*, Ger. 39. Emac. 43. *Schœnanthus, ſive Juncus odoratus*, J. B. 2. 515. Raii Hiſt. 2. 1310. *Juncus odoratus ſive aromaticus*, C. B. P. 11. *Juncus rotundus aromaticus*, C. B. Theat. 163. *Juncus odoratus tenuior*, Park. Theat. 144. *Gramen dactylon aromaticum, multiplici paniculâ, ſpicis brevibus, tomento candicantibus ex eodem pediculo binis.* Pluk. Phytog. Tab. 190. Fig. 1. *Gramen ad Junceum accedens aromaticum majus Syriacum*, Hiſt. Oxon. 3. 229. CAMELS HAY.

Though this is commonly called a Ruſh, yet it is not one, but a Species of Graſs, whoſe Leaves grow thick together, incloſing or incompaſſing one another, having a ſmall fibrous Root. They are long and narrow, of a pleaſant ſweet Smell. The Stalks grow to be a Foot or more high, bearing Panicles of ſhort woolly Spikes, ſet oppoſite to one another. It grows in *Arabia*, and other Eaſtern Countries. The Leaves only are uſed.

Camels Hay is heating and drying, opening Obſtructions of the Liver and Spleen, and provoking the Catamenia. It eaſeth the Pain of the Womb after Child-Bearing, provokes Urine, cleanſes the Reins, and helps the Hiccough, occaſioned by Wind in the Stomach. It is an Ingredient in the two great Compoſitions, *Theriaca Andromachi*, and *Mithridate*. *Miller's Bot. Off.*

The Leaves and Stalks are uſed, and are of an acrid, bitteriſh, and pleaſant Taſte, and a very fragrant Smell. It is heating, ſomewhat aſtringent, diſcutient, and of fine Parts. It is principally of Uſe in Obſtructions of the Menſes, Liver and Spleen; in Inflations of the Stomach, Vomiting, and Hiccough; Difficulty of Urine, and Pains of the Kidneys, Bladder and Reins. *Dale from Schroder.*

SCHŒNOBATA. σχοινοβατία, from σχοῖνος, a Rope, and βαίνω, to go. Walking or Dancing on a Rope. It occurs in *Hippocrates*, *de Victus Ratione*, *L.* 3. Some think it ſhould be read κονιβατία, Walking in the Duſt; others read it κωμβατία, Running a Sort of Race.

SCHOENOPRASSUM. See CEPA.

SCHORIGERIAM. A Species of Nettle which grows in *Malabar*, is called *Batti Schorigeriam.*

SCHULLI. There are two prickly Shrubs which grow in *Malabar*, which are thus called; one is the *Paina Schulli*, to which I find no medicinal Virtues aſcribed. The other is the *Nir Schulli*, the Leaves of which powdered, and mixed with the Oil of the *Ficus Infernalis*, [See GLAUCIUM.] is ſaid to diſſipate Tumors on any Part of the Body, but eſpecially of the Male *Pudenda.*

SCHUNDA-PANA. The Name of a Palm-Tree, which grows in *Malabar*. See PALMA.

SCIÆNA. The Grunter, or Shadow-Fiſh. See UMBRA.

SCIAMACHIA, or SCHIOMACHIA. From σκιά, a Shadow, and μάχομαι, to fight. A Sort of Exerciſe among the Ancients, which conſiſted in Agitations of the Arms, as if a Perſon was fighting with his Shadow.

SCIATICA.

The Sciatica or Hip-Gout is a continual, heavy, dull, gnawing Pain, in or about the Hip-Joint and the Parts adjacent.

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cent. This Diſorder may ariſe from the ſame Cauſe with that which produces the Gout; but is moſt generally the Effect of catching Cold, or being expoſed to the open Air. It may alſo be occaſioned by Contuſions and venereal Diſorders.

As for the Diagnoſtics of a Sciatica, it frequently ſeizes thoſe who have had the Thigh-bone diſlocated, eſpecially in a Change of Weather from hot to cold, and ſometimes continues during the whole Winter. Men and Women, young and old Perſons, are equally ſubject to this Diſorder, in which an external Tumor or Inflammation ſeldom appears; neither is the Pain ſo acute as in other Kinds of the Gout; and tho' it has Remiſſions, yet 'tis generally continual, and increaſed by walking, or ſitting long in the ſame Poſture. When the Sciatica is inveterate, and of long Standing, eſpecially in Perſons of tender, lax, or corpulent Habits, there ſometimes happens a Relaxation of the Ligaments, which produces a Lameneſs and a Pain in Motion, and when increaſed, a partial Diſlocation. Sometimes alſo the Sciatica is produced in old Perſons, by any Cauſe which relaxes, contracts, or obſtructs the Nerves of the Thighs, Legs and Feet; and if this Relaxation, Contraction, or Obſtruction are violent or long-continued, they bring on a Palſey, and afterwards an Atrophy of the Parts.

The Sciatica is rarely mortal, and ſeldom dangerous, but often long protracted; and if it proceeds from Blows, Falls, venereal Diſorders, or Old-Age, the Patient often relapſes in cold Weather, and continues ill for the moſt part of the Winter. A Palſey and Atrophy of the Parts are very bad Symptoms.

In Sciaticas proceeding from an internal Cauſe, a proper Regimen muſt be obſerved; and in thoſe ariſing from Old-Age, a nouriſhing and balſamic Diet ſhould be preſcribed. But in other Caſes a moderate Diet is to be uſed. The Patient ſhould, alſo, be kept in a warm Air, and uſe proper Exerciſe.

In the Cure of a Sciatica, Bleeding is beneficial, except in Perſons extremely weak or old; on the Day after Veneſection an Emetic of Ipecacuana is to be given, and afterwards a paregoric Draught, if neceſſary; which may be prepared in the following Manner.

Take of the Pilulæ Matthæi, half a Scruple; of compound Raddiſh-Water, two Drams; of epidemic Water, half an Ounce; of alexiterial Milk-water, and black Cherry-water, each one Ounce; and of the Syrupus de Meconio, half a Dram: Make into a Draught to be taken at Bed-time.

This Draught may be repeated, if the Pain ſhould be very violent, and the Patient reſtleſs; otherwiſe it is better to omit it.

In a Sciatica, Emetics of Turpeth-Mineral are highly commended, and may be commodiouſly exhibited in the following Manner.

Take of Turpeth-Mineral ſix Grains; of the Powder of Ipecacuana, fifteen Grains; and of the Conſerve of Roſemary, a Quantity ſufficient for making a Bolus.

After the Operation exhibit the following Medicine.

Take of the volatile Salt of Amber and Caſtor, each ſix Grains; of London Laudanum, one Grain; of the Conſerve of Wood-Sorrel, half an Ounce; of the Oil of Roſemary, one Drop; and of the Syrup of Clove Gilly-Flowers, a Quantity ſufficient for making a Bolus, to be taken with the following Draught.

Take of alexiterial Milk-water, two Ounces; of Treacle-water, one Ounce; of the Syrup of Saffron, half an Ounce; and of the compound Spirit of Lavander, half an Ounce: Mix for a Draught.

After the Exhibition of an Emetic, Purgatives are generally uſed, and operate beſt, if Calomel is added to them thus.

Take of the Powder of Jalap, two Scruples; of Calomel, half a Scruple; of the Oil of Saſſafras, half a Drop; and of the Syrup of Rhubarb, a Quantity ſufficient for making a Bolus, to be taken in the Morning with a proper Regimen, and repeated twice a Week for ſix Times.

But for ſuch as are old or weak, lenient Purgatives are moſt proper, exhibiting at proper Intervals a Doſe of Calomel, to be purged off and repeated alternately for ſome time. If the Cathartics operate briſkly, and the Pain increaſes upon uſing them, a Paregoric is to be uſed. As the Pilulæ Matthæi are an Opiate both of a diaphoretic and diuretic Nature, ſo they ſeem well-fitted for this purpoſe.

On the intermediate Days of Purging, but eſpecially after the Courſe of it is finiſhed, Preparations of the Woods are of Uſe, thus:

Take of the Bark of Gujacum and Saſſafraſs-Wood, each four Ounces; and of ſton'd Raiſins, four Ounces; boil in Spring-Water in a cloſe Veſſel for ten Hours; ſo that there may be eight Pints of the Liquor; which, when ſtrained, is to be uſed as ordinary Drink.

This Courſe ought to be continued at leaſt for five or ſix Weeks, and the following Bolus exhibited during that time, when the Patient goes to Bed.

Take of the Cinnabar of Antimony, one Scruple; of Gum Guajacum and Camphire, each five Grains; of the volatile Salt of Amber, four Grains; of the Oil of Saſſafras, one Drop; of the Conſerve of Wood-Sorrel, half an Ounce; and of the Balſamic Syrup, a Quantity ſufficient for making a Bolus.

For Patients of thin, hectic and weak Conſtitutions, Balſamics may be mixed with the Medicines already preſcribed, ſuch as Sperma-Ceti, Peruvian Balſam, and Balſam of Tolu. Warm Baths of Milk are beneficial, as cold Baths are ſerviceable for thoſe whoſe Solids are too much relaxed.

Neither are Externals to be neglected when the Part is relaxed. Thus:

Take of Oxycroceum and *Paracelſus*'s Plaiſter for Ruptures, each an Ounce; of Camphire, two Drams; of the Oil of Amber, one Dram and an half: Make into a Plaiſter, to be ſpread upon Leather, and applied to the Part affected.

But when the Part is contracted, the following Topic is to be uſed.

Take of Diachylon, with the Gums, two Parts; and of the Ammoniac and Cumin Plaiſter, each one Part: Mix and apply by way of Plaiſter to the Part.

When the Blood is poor, and its Circulation languid, a Courſe of Chalybeate Waters may be beneficial; but in the oppoſite Extreme, a Milk Regimen, with the teſtaceous Powders, are to be uſed.

Sometimes the Gout ſeizes the Os Iſchium, or the Os Coccendicis, where it produces the ſame Symptoms with thoſe obſerved in the Sciatica, Allowance being made for the Difference of the Parts. Such a Diſorder is generally very painful and hard to be cured. And if, as it ſometimes happens, the Part ſhould come to a Suppuration, it is very dangerous; the Ulcer always diſcharging a ſanious Ichor, which ſhews it to be of a phagedenic Nature. Sometimes, alſo, a ſharp and corroſive Humour occaſions a Luxation of the Bone, which is a Caſe ſtill more dangerous, and requires the Aſſiſtance of a Surgeon. But in other Reſpects the Cure does not materially differ from that of a Sciatica.

Ætherial Oil of Turpentine, taken in the Quantity of eighty or a hundred Drops, in Honey, or any proper Vehicle, at Night, going to Bed, and repeated at due Intervals, is ſaid to be a ſovereign Remedy in this Diſtemper.

SCIDEN. Ceruſe. *Rulandus.*

SCILLA.

The Characters are;

The Root is bulbous, very large, capaceous, or Onion-like, and acrimonious. The Leaves are broad; and the Flowers are like thoſe of the *Ornithogalus*, or *Hyacinthus Stellaris*, and grow in a Spike before the Leaves appear.

Boerhaave mentions three Sorts of *Scilla*, which are; *Raii* 1. Scilla; vulgaris; radice rubra. *C. B. P.* 73. *Scilla Hiſt.* 2. 1164. *Boerh. Ind. A.* 2. 143. *Scilla*, Offic. *Scilla rubra*, *magna*, *vulgaris*, J. B. 2. 615. *Scilla rubra*, *ſive Pancratium verum*, Park. Parad. 133. *Pancratium Cluſii*, Ger. 136. Emac. 172. *Ornithogalum maritimum*, *ſeu Scilla radice rubra*, Tourn. Inſt. 381. *Cepa maris*, *& Squilla*, Offic. Germ. SQUILL, or SEA-ONION.

This differs from the White only in the Colour of the Root, which is red, and having its Leaves growing more erect. They are both much of a Nature; but the White is preferred.

They are of a hot biterish Taſte, opening and attenuating; good to cleanſe the Lungs of tough viſcid Phlegm; and of great Service in Aſthmas and Difficulty of Breathing, and are often uſed as a Vomit, to clear the Stomach, and help the Jaundice and Dropſy. They likewiſe provoke Urine and the Catamenia. Officinal

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Officinal Preparations are the *Acetum*, the *Vinum*, the *Oxymel Scilliticum*, and the *Trochiſci de Scilla*. *Miller's Bot. Off.*

It flowers in *September*, and the Root, which is the Part uſed, is imported to us from *Spain*. It is of an acrid and bitter Taſte, attenuant, aperient, diſcutient, and diuretic; and is principally uſed in Obſtructions of the Liver, Spleen, Biliary Duct, Menſes, and Urine; in mucous Diſorders of the Lungs, Coughs, and other like Diſorders. *Dale from Schroder.*

OXYMEL SCILLITICUM. See ACETUM.

TROCHISCI DE SCILLA AD THERIACAM.

Troches of Squills for the Theriaca.

Take Squills gathered about the Beginning of *June*, after the Stalk and Leaves are grown dry, of a middle Size, plump, white, with the exterior Part peeled off, and the harder Part, whereunto the Roots grow, cut away, and cover it with a Paſte of Wheat-Flower, to be baked in an Oven, until the Cruſt is well dried; then make an Hole into it with a wooden Scure, to try whether the Squill is thoroughly tender. When it is ſo, beat it well in a Mortar, and mix with it the Flowers of white Orobus, or red Cicers ſifted fine, eight Ounces of every one Pound of Squills; then form them into Troches of about two Drams each, with Hands rubbed over with Oil of Roſes, and dry them in the Shade.

This Proceſs is the ſame very nearly as directed in the *Auguſtan* and firſt *London* Diſpenſatory: Its firſt Contrivance is aſcribed to *Galen*, who deſcribes it *de Antidotis*, and in the *Theriaca ad Piſonem*; for it was originally deſigned; but *Zwelfer* finds great fault with it on many Accounts, with relation to the Virtues of Squills; but let that be as it will, he ſays in the Troches there is ſo little as to avail hardly any thing, reckoning that not above nine Ounces at moſt of the Troches can be made out of this Quantity; whereas it is certain that eight Ounces is owing to the Cicer-Flowers.

VINUM SCILLITICUM.

Wine of Squills.

Take Squills dried, one Pound; infuſe them in eight Pints of White Wine fourteen Days; and then ſtrain out the Squills, and keep the Wine for Uſe.

This is as gentle an Emetic as the Vinegar of Squills; but it is more agreeable to cold weak Stomachs. After ſome time uſing this Medicine, it will not vomit, but irritates juſt enough to ſqueeze out ſome ſlimy Water from the Glands, and thereby greatly contributes to render them ready in the Diſcharge of their proper Offices; inſomuch that there is hardly any one Medicine that better guards againſt thoſe Inundations of Rheums, which drown Old-Age, or are the Conſequences of Decays from frequent Debauches, than this does; although, indeed it is not very pleaſant. From one to four Spoonfuls may be taken every Morning.

2. Scilla; radice alba. *C. B. P.* 73. *Raii Hiſt.* 2. 1164. *Boerh. Ind. A.* 2. 143. *Scilla alba*, Park. Parad. 133. *Scilla Hiſpanica vulgaris*, Ger. Emac. 171. *Scilla magna alba*, J. B. 2. 618. *Ornithogalum maritimum, ſeu Scilla radice alba*, Tourn. Inſt. 381. THE WHITE SQUILL.

The white Squill, has a large, round, ſomewhat Pear-faſhioned Root, compos'd of a great Number of Coats, incloſing one another with ſeveral Fibres at the Bottom, from the Middle of which riſe a few large, ſhining, green Leaves, rather bigger than thoſe of the Lilly, with a remarkable Rib in the Middle; theſe continue all Winter, and withering away, there ariſes in the Spring a thick, round Stalk, a Foot and a Half high, having a long, and large Spike of ſix-leaved white Flowers, ſucceeded by large Seed-Veſſels. It grows by the Sea Side in all the warmer Countries. The Roots are uſed. *Miller's Bot. Off.*

3. Scilla; Africana; flore parvo, viridi; bulbo ampliſſimo, lanuginoſo. *H. A.* 2. 187. *Boer. Ind. Alt. Plant.*

The Squill, beſides its Acrimony, which it holds in common with *Arum*, has an ungrateful and ſomewhat nauſeous Taſte; hence, beſides the Virtues it has in common with *Arum*, it excites Vomiting, and provokes to Stool, and is no leſs effectual than *Arum* in pituitous Affections. While crude it is very acrimonious, and burns the Fauces. For this Reaſon they do it in Ovens, or the Sun, and prepare it as Arum. It is never given in Subſtance, but affords Matter for the celebrated Preparation of the *Oxymel Scilliticum*, ſo juſtly commended for diſſolving of Phlegm. *Hiſt. Plant. a-ſcript. Boerhaave.*

SCILLITICUM ACETUM. Vinegar of Squills. See ACETUM.

SCINCUS. Offic. Schrod. 5. 346. Jons. de Quad. 138. Aldrov. de Quad. Ovip. 658. Bellon. de Aquat. 47. Rondel. de Piſc. 2. 231. *Scincus ſeu Crocodilus terreſtris* Raii Synop. A. 271. *Scincus, quem & Crocodilum terreſtrem vocant.* Geſn. de Quad. Ovip. 24. *Scincus marinus*, Mont. Exot. 6. *Scincus Lacerti Species*, Ind. Med. 107. THE SCINK.

It is an aquatic Animal, cover'd with aſh-colour'd Scales, and mark'd with a ſky-colour'd Liſt, which reaches from the Head to the Tail. It is an Alexipharmic, and Provocative to Venery. *Schroder.* For the firſt of theſe Qualities, ſays the famous *Amman*, it is received as an Ingredient in *Mithridate*; and for the other, into the *Electuarium Diaſatyrion*, tho' indeed in different Parts; for in the *Diaſatyrion*, the Belly and Loins only are uſed, perhaps for the Sake of an Hypotheſis relating to the Situation of the Reins and ſpermatic Veſſels: But *Mithridate* receives only the Belly of the Animal; whence you may infer, ſays *Hoffman*, that different Parts work different Effects. But ſince *Dioſcorides* commends the Fleſh about the Kidneys, *Galen*, *lib.* 1. *Simpl.* the Kidneys themſelves, and *Pliny*, *lib.* 28. *cap.* 28. the Snout and Feet, as Incentives to Venery; theſe and other Hypotheſes relating to the *Scincus* are by *Hoffman* juſtly rejected. *Dale.*

SCINTILLA VENERIS, in *Paracelſus*, is a Reſolution of the Limbs, or Deprivation of Motion from a venereal Cauſe.

SCIRONA. Autumnal Dew. *Rulandus.*

SCIRPUS. A Name for the *Juncus*; *aquaticus*; *maximus.*

SCIRRHONES. Small ſubcutaneous Lice.

SCIRRHOSIS. A Diſorder of the Eye, ariſing from the Violence of a long continued Inflammation, when the Fleſh increaſes in Bulk, and aſſumes a ſomewhat livid Colour.

SCIRRHUS.

A Scirrhus may be produced by whatever is capable of coagulating, inſpiſſating, or drying the Liquids in the Glands; the Seat therefore of a Scirrhus may be any of the Glands, but eſpecially ſuch as contain an eaſily inſpiſſated Liquor, or from their Situation diſpoſe their Contents to a Stagnation. Hence a Scyrrhus frequently happens in the Eyes, the Noſtrils, the Mouth, the Breaſts, the Axillæ, the Groin, the Pancreas, the Meſentery, and the Uterus.

A Scirrhus is one of the general Methods in which an Inflammation terminates; when, for Inſtance, the Inflammation is neither reſolv'd, nor yet that Part ſeparated from the ſound adjacent Parts, which had been rendered unfit for carrying on the vital Circulation of the Humours according to the Laws of Health, both in the fluid and ſolid Parts: But as in the Article *Gangrena* that Species of Gangrene is not only conſidered which ariſes after violent Inflammations, but alſo all Gangrenes proceeding from whatever Cauſe, ſo in this Article the general Hiſtory and Cure of a Scirrhus is deſcrib'd.

Galen, when treating of the Difference of Tumors, in *Comment* in *Aphor.* 34. *Sect* 4. informs us, that hard Tumors without Pain are called *Scirrhuſſes*. This Definition of a Scirrhus he alſo gives in various other Places, and this ſeems to have been the general Notion of this Species of Tumor. In ſome Paſſages, however, he gives a ſomewhat different Deſcription of a Scirrhus; for in his *Method Medend. ad Glaucon*, *lib.* 3. *cap.* 6. he ſpeaks in the following Manner: "A legitimate Scirrhus is a preternatural Tumour, hard, "and without Senſation; but a ſpurious Scirrhus is not to- "tally depriv'd of Senſation, though it with ſome Difficulty "perceives the Action of Objects upon it; that Species "therefore, which is deprived of Senſation, is incurable; "whereas that which retains a languid Senſation is not "abſolutely incurable, though, at the ſame time, it is not "to be removed without great Difficulty". But that *Galen* did not in this Paſſage uſe the Word διαθήκης in the ſame Senſe in which the Word διαθήκης is generally taken, is obvious from a Paſſage of his *Method. Medend. lib.* 14. *cap.* 6. where he ſpeaks thus: "We call a Scirrhus a hard "Tumor without Pain, though not abſolutely without Sen- "ſation; for this latter Species of Tumor is not curable." From all which 'tis obvious, that in all Scirrhuſſes there is Hardneſs without Pain, and, according to *Galen*, total Inſenſibility in thoſe of the worſt and incurable Kind.

But *Galen* has deſcribed Scirrhuſſes not only in the glandular, but alſo in the other Parts of the Body: For when treating of the Cure of a Scirrhus, in the fifth Chap. of the laſt-quoted Book, he recommends the Virtues of Vinegar as effectual and ſafe when the fleſhy Parts of the Muſcles are become ſcirrhous; but he orders it to be uſed with greater Caution, if the Ligaments or Tendons are affected with the like Misfortune. And in his *Method. Medend. ad Glaucon*, *lib.* 2. *cap.* 6. he informs us, that in a Boy labouring

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labouring under an Eryſipelas, when his Skin was conſtricted by Refrigeration, there was a ſcirrhous Tumor left in his whole Thigh: For it is not to be denied, that preternatural hard Tumors, without Pain, are alſo found in other Parts of the Body beſides the Glands; which, therefore, according to the general Definition of *Galen*, ought to be call'd Scirrhuſes. But ſince theſe Tumors often terminate in a different Method from a Scirrhus, and do not ſo readily degenerate into a Cancer, I think it would be expedient for the Sake of Diſtinction to call them ſcirrhous Tumors.

The Seat of a Scirrhus, properly ſo call'd, ſeems to be a a Gland, or hollow Follicule, whoſe Sides conſiſt of all Kinds of ſmall Veſſels, and into whoſe Cavity the opening Mouths of the ſmall Arteries diſcharge a peculiar Liquor, by the Fabric of the Arteries ſecreted from the Blood convey'd to the Gland; then the Liquid collected in the Cavity of the Gland is conveyed through its Emunctory, and for various Purpoſes diſtributed to different Parts of the Body. There are many ſimple Glands of this Kind which diſcharge the Liquid contained in their Cavities either on the Surfaces of the Membranes, or towards the Skin, or the Cavities of the Noſtrils, Mouth, Fauces, Aſpera Arteria, and Oeſophagus. If many of theſe ſimple Follicules are conceiv'd united, and their Emunctories terminating in one large common Canal, which conveys the Liquid thus collected for its peculiar Uſes, then the Congeries of theſe Glands contain'd in one common Membrane, and terminating in one common Emunctory, is, by Anatomiſts, call'd a Compound, or conglomerate Gland. The parotid and other Glands, for Inſtance, which ſecrete the Saliva from the Blood, and convey it through one Emunctory into the Cavity of the Mouth, are call'd conglomerate Glands.

Every thing, therefore, which by Coagulation, Inſpiſſation, or Exſiccation, can render the Juice ſecreted by the Fabric of the Glands, and collected in their Cavities, incapable of paſſing through their Emunctories, will lay a Foundation for a Scirrhus. The ſame Effect will, alſo, be produced by every Cauſe which by external Compreſſion ſo ſtraitens the Emunctories of the Glands, that the Diſcharge of the Liquid ſecreted into their Cavities is hindered; then the Follicule, or Gland, will be diſtended by the retain'd Liquid, and only the thinneſt Parts will be reſorb'd by the Mouths of the Veins which open unto the Glands, or be diſcharg'd through the ſtraiten'd Emunctories; whilſt the groſſer Part being retain'd and accumulated, will diſtend the Follicule of the Gland, and compreſs the Veſſel's running thro' its Membrane; hence will ariſe a Tumour and Hardneſs, from an Infarction of the Veſſels by Means of the coagulated, inſpiſſated, or dried Fluids. An Abſence of Pain will, alſo, ariſe from a Compreſſion of the Nerves diſtributed through the Fabric of the Glands. And in an incurable Scirrhus, as *Galen* calls it, a perfect Inſenſibility will be produc'd by the ſame Cauſe. In other Parts of the Body, alſo, in which by the arterial Fabric, without the Interpoſition of ſuch Follicules, the ſecreted Humours is collected in a certain common Receptacle, the like Misfortunes may happen: Thus, for Inſtance, in the Teſtes, the Artery conveying the Blood communicates red Blood to its correſponding Vein, then being divided into numberleſs Ramifications, which conſtitutes almoſt the whole Subſtance of the Teſtes, it from its ſmall Mouths diſcharges into a common Receptacle a peculiar Liquor, by this ſurprizing Fabric ſecreted from the Blood. Now, if by any Cauſe the free Diſcharge of this Liquid collected in the common Receptacle, is hinder'd, all the ſame Misfortunes will happen with thoſe already mentioned as incident to the Glands, and the Teſtis will be diſtended into a hard Tumor without Pain, that is, will become a Scirrhus. This is evinced by frequent Inſtances which occur in Practice, and from which 'tis certain, that in this Place, as well as in other Scirrhuſes, the Cure is very difficult, and that ſuch Indurations of the Teſtes are, alſo, converted into Cancers. The ſame may alſo happen in ſome of the Viſcera; for in the Liver the hepatic Bile is ſecreted from the Blood of the Vena Portæ, and this Bile being receiv'd into the minute Ramifications diſtributed through the whole Subſtance of the Liver, is at laſt poured into one common large Duct, call'd the hepatic Duct, through which it is convey'd to the Inteſtines. Now if the hepatic Duct is obſtructed, or the ſmall Ramifications conveying the Bile, ſecreted by the Fabric of the Liver into it, by any Cauſe block'd up, ſuch as a Stagnation, Coagulation, Inſpiſſation, or Exſiccation of the Humours, the whole Liver, or ſome Part of it, may be diſtended into a ſcirrhous Tumor. The Production of this Misfortune is greatly favoured by the ſlow Motion of the Blood of the Vena Portæ, ſince being now become venous, it ought again to be forced through the narrow Channels of the converging Canals, and by the eaſy Degeneration of the Humour into a State of Toughneſs, which renders it incapable of circulating. Hence, though according to the Opinion of ſome Anatomiſts, there were not in the conglomerate Glands, ſuch as thoſe called the Parotid, and others of a ſimilar Nature, ſuch Follicules collecting the Liquid ſecreted by the Arteries, and conveying it through their ſmall Emunctories into the common excretory Duct; and though the ſecretory Ramifications derived from the Arteries, without the Interpoſition of any Follicules, ſhould convey the ſecreted Liquid directly into the excretory Duct; yet a Scirrhus would be produced by the ſame Cauſes. Thus, for inſtance, if the Juice thus ſecreted from the arterial Blood, being coagulated, inſpiſſated, or dried, ſhould obſtruct the common excretory Duct, or the ſmall ſecretory Ramifications which convey this Liquid into this common Receptacle, a Scirrhus will be produced: For the great Difficulty of curing a Scirrhus ſeated in the Glands, properly ſo called, principally conſiſts in this, that the Matter being collected in theſe Follicules, and placed, as it were, without the Bounds and Influence of the Circulation, the Impetus of the arterial Blood, propelled by the Force of the Heart and Veſſels, cannot act directly on theſe Parts. But if the parotid Gland conſiſts of minute Arteries, wrapt up in a Clew, and by their ſmall Emunctories conveying the ſecreted Liquor into the common excretory Duct, the Impetus of the arterial Fluid will reach the ſmall Mouths of theſe Arteries, infarcted with an inſpiſſated Fluid, with a Force too ſmall to remove that Obſtruction, or by a benign Suppuration to ſeparate theſe minute Veſſels, with their obſtructing Humour, from the other Veſſels to which they adhere. The Perſon who duly conſiders theſe Circumſtances, muſt be convinced, that ſcirrhous Tumors are not to be cured without the greateſt Difficulty; and the Truth of this is ſufficiently evinced from the long-continued Indurations of the Teſtes, in which, however, the Secretion ſeems to be made without the Interpoſition of Follicules.

'Tis therefore probable, that the Cure of a Scirrhus is the more difficult, the more compound the Glands it affects, are; for when theſe ſimple Follicules, which in the Surface of the Body collect a pinguous kind of Liquid and evacuate it by their Emunctions, are obſtructed, the ſecreted Humour is accumulated, the Follicule diſtended, and a Tumor produced; which, according to the various Conſiſtence of the Matter it contains, receives different Denominations, ſuch as *Melicaris*, *Atheroma*, and *Steatoma*, which ſee under their reſpective Articles; for ſuch Tumors ſeems juſtly to be referr'd to this Claſs, eſpecially if they contain an hard Matter, as happens in Steatoma's, for then they are contained in the general Definition of a Scirrhus. But Surgeons boldly make Inciſions in ſuch prominent, inflated Tumors, expreſs their contained Matter, and often happily conſume the Cavity of the Follicule by ſtrong Suppuratives, or, ſometimes, by Corroſives; for ſuch Tumors rarely degenerate to the Malignity of a Cancer, tho', in external Appearance, they reſemble a malignant Scirrhus. Of this I had an Opportunity of ſeeing a memorable Inſtance. A Man of ſixty Years of Age had, for ſeveral Years, been afflicted with an hard Tumor, which was gradually augmented, till it, at laſt, equal'd the Bulk of an ordinary Fiſt. It was ſituated in the inferior left Part of the Face, near the Angle of the inferior Jaw-Bone. Its Baſis was broad, but being moveable it could be elevated with the Skin, nor did it adhere to the ſubjacent Muſcles. This Tumor began to be gradually more raiſed to a Point: The Skin appeared red, or rather almoſt livid, in the Apex of the Tumor. There firſt aroſe an Itching, and then a Pain in the diſtended Skin; and when his Friends dreaded the worſt, becauſe he would apply nothing to it, the Apex or Top broke, ſpontaneouſly, and a hard, granulated Matter was diſcharged. Upon this, the Tumor ſubſided ſo far as hardly to leave any Marks of it, and the Patient, for ſome Years after, enjoyed as good Health as his Age would permit. But in conglomerate Glands, when become ſcirrhous, this inſpiſſated Liquor is not lodg'd in one Cavity, but is diſperſed through ſeveral Bags or Veſſels. Hence 'tis obvious that the Cure muſt be far more difficult.

Beſides, when a conglomerate Gland becomes ſcirrhous, the Difference of the Veſſels, in which the Obſtruction of ſuch a Gland happens, is a Circumſtance of great Importance; for in every conglomerate Gland there are Veſſels which convey to it the arterial Blood, from which, by the Fabric of the Gland, a peculiar Liquid is ſecreted. In ſuch Glands there are, alſo, Veſſels which ſecrete this Liquid from the Blood, Veſſels which contain it when ſecreted, and other Veſſels which eliminate and carry it off. If the Veſſels which convey the Blood to ſuch a Gland are obſtructed, the Impetus of the vital Humours ſeems capable of acting upon theſe Parts with ſuch a Force, as, by means of a Suppuration, is ſufficient to produce a Separation of the obſtructed from the other

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other Parts; perhaps this happens when, in ſome Diſeaſes, the paroted Glands ſo often becoming tumid, fall into a benign Suppuration. But when an Obſtruction happens in the ſecreting Veſſels, 'tis ſufficiently obvious, that the vital Humours muſt act upon theſe Parts with a ſmaller Impetus; but when this Liquid is concreted and becomes ſtagnant in the Veſſels, containing and collecting the ſecreted Humour, this Humour, placed without the Limits and Influence of the Circulation, will not yield to the Efficacy of the beſt Medicines. An Obſtruction of the excretory Ducts produces the ſame Misfortune; unleſs when their Situation is ſuch, that ſuch Remedies as reſolve and attenuate the concreted Humour, may with Succeſs be applied to them; or when there is ſome Cauſe lodged about the extreme Orifice of the excretory Duct, which by obſtructing or compreſſing it, hinders the Diſcharge of the Liquid to be excreted. Thus if the excretory Duct of the paroted Gland is infarcted with any Humour, the whole Fabric of this Gland may be converted into a Scirrhus: But the Situation of this Duct lays a Foundation for hoping, that by Fomentations and Frictions, the beginning Diſorder may as yet be ſurmounted; eſpecially if the obſtructing Cauſe is lodged about the Aperture of this Duct, by which it diſcharges the ſecreted Humour into the Mouth, or if any Tumor ariſing contiguous to this Aperture compreſſes it. This Doctrine is confirmed by what happens in Diſeaſes of the Genitals; for if by a Gonorrhæa, or any other Cauſe, a Tumor is produced about that Part of the Urethra where the common Emunctories of the Veſiculæ Seminales, and the Vaſa Deferentia open, the Excretion of the Liquid ſecreted, ſometimes in both, but oftener in one of the Teſtes, is hindered; in which Caſe, a little after the Vas Deferens and Epididymis, and laſt of all, the Subſtance of the Teſtis, properly ſo called, begin to ſwell, I have, in this Caſe, always obſerved, that the Epididymis ſwells firſt, and often becomes pretty hard, and that the Teſtis is afterwards diſtended to a larger Bulk, but remains ſofter to the Touch than the diſtended Epididymus. And in this Caſe the Diſorder is generally happily cured, becauſe the Cauſe is not lodg'd in the Subſtance of the Teſtis, but about the End of the excretory Duct: For as ſoon as the Tumor in the Urethra is diminiſhed, the Epididymus gradually decreaſes, and by gentle Frictions, is reſtored to its former Bulk and Softneſs, whilſt the Tumor of the Teſtis totally diſappears. But when the Subſtance of the Teſtis is raiſed into a hard Tumor, without any previous Diſorder obſervable in the Epididymus, the Diſeaſe is far more obſtinate, ſince ſuch a Scirrhus is rarely or ever reſolved; for in this Caſe the Diſorder is ſeated in the minute ſecreting Veſſels, or ſuch as contain the ſecreted Liquid, which are here, with ſurpriſing Order, diſpoſed in ſo many Circumvolutions, that the Impetus of the vital Fluid conveyed through ſo ſmall a ſpermatic Artery, muſt be ſcarcely any, or at moſt very ſmall on the obſtructed Parts. Scarcely any thing can, in this Caſe, be expected from external Medicines, ſince the intricate Subſtance of the Teſtis is defended by ſo many Coverings.

Since, therefore, a Scirrhus ariſes from a Coagulation, Inſpiſſation, or Exſiccation of the glandular Juice, it is obvious, that this Misfortune muſt happen moſt frequently in thoſe Parts where, by the Fabric of the Glands, a viſcid Humour is ſecreted, or ſuch a Liquid as though not tough when ſecreted, yet acquires ſuch a Quality immediately after. The whole internal Part of the Mouth, eſpecially the Fauces, the Oeſophagus, the Aſpera Arteria, and the Bronchia of the Lungs, have ſuch ſmall mucous Repoſitories, in which a tough Mucus, for lubricating and defending theſe Parts, is depoſited. 'Tis not, therefore, to be wondered at, if Scirrhuſes ſhould be frequently produced in theſe Parts.

As for the Eyes; 'Tis ſufficiently certain from Experience, that the ſebacious Glands, ſituated in the Edges of the Eyelids, and which prepare the unctuous Matter which anoints the Eyelids, and defends them from mutual Attrition, may, when their Emunctories are obſtructed, become tumid, and ſubject to ſcirrhous Tumors. The Glandula Innominata is, alſo, ſituated here, and obnoxious to the ſame Misfortune. The Caruncle, alſo, ſituated in the larger Angle of the Eye, ſometimes becomes ſcirrhous, and is raiſed to a great Bulk. *Hildanus*, in *Obſervat. Chirurg. Cent.* 1. *Obſerv.* 2. informs us, that he happily removed ſuch a ſcirrhous Tumor, as large as a Cheſtnut, formed in the larger Canthus of the left Eye; and in three Weeks Time made ſo complete a Cure, that the Patient's Sight was not injured. The ſame Author, in *Obſ.* 1. gives us an Account of a more terrible Caſe, in which a hard livid Scirrhus, as large as a Gooſe's Egg, and beginning to grow cancerous, hung out without the Eyelids, and afterwards became terrible by an exceſſive Hemorrhage. But *Hildanus* dexterouſly extirpated this whole Tumor, together with the Eye from its Orbit, and by that means preſerved the Patient.

As for the Noſtrils; *Ruyſch*, in *Epiſt.* 9. *Tab.* 9. *Fig.* 7. has demonſtrated, and ſhewn by a Figure, that the mucous Membrane lining the Cavities of the Noſtrils, abounds with ſmall glandular Bodies. But ſince the Liquor ſecreted in theſe Glands is eaſily inſpiſſated, hence Scirrhuſes are often formed in theſe Parts. *Hippocrates*, in his Treatiſe *de Morbis*, *Lib.* 2. *Cap.* 11. ſeems to have deſcribed Scirrhuſes formed in theſe Parts, when treating of Polypuſes; of which he enumerates five Species; concerning the ſecond of which he ſpeaks thus: "The Noſe is filled with Fleſh, which appears hard to "the Touch." This Fleſh he orders to be burned by the actual Cautery. The fourth Species of Polypus he thus deſcribes: "Within the Noſe, about the Cartilage, ſomething hard is "produced by ſome particular Cauſe, and ſeems to be Fleſh; "but when it is touched, it appears like a Stone." After dividing the Noſe with a Knife, he, alſo, orders this Species of Tumor to be cauterized in the ſame manner with the former. And in deſcribing the fifth Species of Polypus, he affirms, "That in the ſuperior Part of the Cartilage of the Noſe, "ſmall Cancers ariſe in a kind of oblique manner." Theſe he alſo orders to be cauterized.

As for the Mouth; 'Tis at preſent ſufficiently known, that almoſt all the internal Parts of the Mouth are furniſhed with mucous Repoſitories or Receptacles. The callous Membrane covering the Palate is furniſhed with them. The Uvula, the pendulous Veil of the Palate, and the Tonſils, which conſiſt of a mucous Membrane, folded up into ſinous Wreaths, have an inconceivable Number of ſuch mucous Follicules, which, from their open Mouths, diſcharge a large Quantity of frothy Mucus. The remoteſt Part of the Fauces is furniſhed with a large Number of ſuch mucous Follicules, which reſemble ſmall Ulcers ſo much, that they are often, by the Ignorant, taken for ſuch. 'Tis not, therefore, to be wondered at, that ſcirrhous Tumours ſhould ſo often be obſerved in theſe Parts. After an ill-cured Inflammation of the Fauces, I have often ſeen them become ſcirrhous. *Hildanus*, *in Obſerv. Chirurg. Cent.* 1. *Obſ.* 19. obſerved the Uvula ſcirrhous, hard, livid, unequal, and ſo large as almoſt to fill the whole Cavity of the Mouth, and reach to the Fore-Teeth. The ſame Author, in *Cent.* 1. *Obſ.* 20. about the Root of the Uvula, ſaw an hard unequal Tumor as large as an Hen's Egg; by which means the Patient's Reſpiration was hinder'd, and the Deglutition of Aliments, eſpecially of Drink, render'd highly difficult.

As for the Breaſts; Though *Ruyſch*, in *Epiſt Problem* 15. and ſome other Places, denies that the Breaſts are glandular; yet ſuch is their Fabric, and ſuch the Nature of the Milk ſecreted from the Blood, that ſcirrhous Tumors are often formed in them, as we are aſſured from daily Experience: For without the Interpoſition of any Follicules, the lactiferous Tubes ariſing from the Arteries, unite with their adjacent Veſſels into large Ramifications, and, at laſt, form the larger Milk-Veſſels, which are again contracted, and in ſmall Ducts terminate in the Nipple. But as the Milk collected in the Breaſts, and diſtending the lactiferous Veſſels, may again return into the Veſſels whence it comes, and as without the Diſcharge of a ſingle Drop from the Nipple, the moſt turgid Breaſt ſometimes ſuddenly becomes empty and ſubſides, it is obvious, that the lacteal Tubes are a Continuation of the Arteries, without the Intervention of any Follicules. But the Milk naturally diſpoſed to Coagulation, becoming ſtagnant in the diſtended lactiferous Veſſels, is divided into a Coagulum and Serum. The latter being thin, may eaſily paſs through the Apertures of the Nipple, or return into the Maſs of Blood: Whereas, the former deprived of its Serum, remains immoveable in the lactiferous Veſſels, where being more dried, it often degenerates into a Scirrhus not to be reſolved. And as a Scirrhus formed in the Glands, properly ſo called, is often obſtinate againſt the beſt Medicines, becauſe the Impetus and Efficacy of the vital Humours could produce ſcarcely any Effect upon the coagulated Juice contained in the Cavity of the Gland, ſo the ſame will happen in the Breaſts; for the larger lactiferous Tubes correſpond to the Cavities of the Glands collecting the ſecreted Liquor. Their narrow Extremities opening into the Nipple, are of a ſimilar Uſe with the Emunctories of the Glands, which carry off the Humour collected in their Cavities. Hence the Reaſon is obvious, why Scirrhuſes are often formed in the Breaſts, tho' they are not, properly ſpeaking, glandular.

As for the Arm-pits and Groin; The Glands ſituated in theſe Parts are very fit for receiving what is ſecreted from the whole Maſs of Humours. For which Reaſon, both in Diſeaſes and ſometimes in Health, by a ſalutary Effort of Nature, ſome Humours are depoſited here, which would have been more hurtful elſewhere. Hence ſudden Tumors are often produced in theſe Glands, and frequently prove very obſtinate, whether on account of the virulent Nature of the Matter impacted, or on account of the intricate vaſcular Compages of theſe Glands; by

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by which it happens that the Impetus of the arterial Blood can act with little Efficacy on the obstructed Parts. When an inveterate Scirrhus seizes the Breasts, the subaxillary Glands generally become tumid and indurated. And every one knows, that by means of a venereal Contagion, the Glands of the Groin are often changed into Scirrhuses, not to be cured without the greatest Difficulty.

Nor only in the external Parts of the Body are Scirrhuses found, but also in the internal Parts, where they prove the Causes of the most obstinate chronical Disorders.

As for the Pancreas and Mesentery; 'Tis certain, from many practical Observations, that these Parts have been found scirrhous. Thus, in *Miscel. Curios. Dec.* 2. *An.* 6. A Country Woman of fifty-one Years of Age, the Mother of a numerous Family, and one who had generally preserved her Health pretty well, yet became sick for about five Years, being afflicted with a Suppression of the Menses, and a frequent Vomiting, whilst in the mean time a Tumor of the Abdomen was formed, which gradually increasing, filled the whole Right Hypocondrium, might be felt with the Hands, and moved towards the Left-Part of the Body. But after a great deal of Torment she died; and upon laying open her Body, besides other Disorders, all the Glands of her Mesentery were found scirrhous; and the Tumor, which might be felt externally with the Hand, was found to be the Pancreas become tumid and scirrhous. The Mouth of the Pylorus was, also, found scirrhous, and the interior Part of the Stomach was every where full of indurated whitish Glands. *Paré*, in *Lib.* 7. *Cap.* 21. informs us, that in a Woman of sixty Years of Age, he saw the whole Pancreas and Mesentery scirrhous, and preternaturally large. And in the same Part he affirms, that in scrophulous Patients, after their Death, he had found the Glands of the Mesentery tumid, of various Bulks, whilst some of them were as large as an ordinary Fist. In some, also, there was a whitish, and in others a purulent Matter. *Lamotte*, in his *Traité Complet de Chirurgie*, informs us, that in the Carcass of a dropsical Woman there were many scirrhous Glands found, ten or twelve of which were as large as an ordinary Fist, and as hard as Wood.

As for the Uterus; *Hippocrates*, in his Treatise *de Mulierum Morbis*, *Lib.* 2. *Cap.* 38. informs us, that the Uterus is subject to scirrhous Tumors. And in this Place alone, so far as I remember, he uses the Word σκιῤῥωθῆναι. "For, says he, "if the Uteri are affected with a Scirrhus (ἢν ἅμπτεραι σκιῤῥώθωσι) the Menses are obstructed, and the Mouth of the "Uterus collapses, and renders them incapable of Conception, "and is, as it were, quite different from what it was in a na"tural State: And if touched, it appears like a Stone." In *Paulus Ægineta*, *Lib.* 3. *Cap.* 68. a Scirrhus of the Uterus is described. And *Hippocrates*, in his Treatise *de Natura Mul. Cap.* 28. informs us, that a Cancer is to be dreaded from a Scirrhus of the Uterus. "For, says he, when the "Uterus of a Woman becomes hard, it falls down to the "Pudenda. If the Groins become hard, and there is a pre"ternatural Heat in the Pudenda, a Cancer is beginning to "be formed." 'Tis also certain, from the Observations of the Moderns, that a Scirrhus is frequently found in the Uterus. *Paré*, in *Lib.* 24. *C.* 41. in the Carcass of a Woman, who had long been afflicted with an hard and distended Abdomen, found the Uterus as large as the Head of a full-grown Person. And when in the Presence of several Physicians and Surgeons, he took it out and attempted to cut it, he found the whole Substance of it so hard and scirrhous, that it was hardly to be divided by a sharp Knife. The Sides of the Uterus, when cut, exceeded three Fingers-Breadth in Thickness. And in its Cavity was found a thick scirrhous Body, as large as two ordinary Fists, and only in some Parts adhering to the Sides of the Uterus. In this Substance were found Atheromas, Cartilages, and even Bones. In the Middle of the Neck of the Uterus, there was found a similar Scirrhus, larger than an Hen's Egg. This Uterus, with its Contents, exceeded nine Pounds in Weight. *Hildanus*, also, *in Observat. Chirurg. Cent.* 1. *Cap.* 65, 66, & 67. furnishes us with Instances which sufficiently evince this.

But tho' Scirrhuses are most frequently found in the Parts of the Body here enumerated, yet they have, also, been found incident to other Viscera. Thus we every where read in practical Authors, that the Liver has been found scirrhous either in whole or in part. *Aretæus de Caus. & Sign. Morb. diuturn. Lib.* 1. *Cap.* 14. informs us, that a Scirrhus is a Disorder which is not only familiar to, but also lasts a long time in the Spleen. 'Tis also certain from Experience, that schirrous Tumors have been found in the Stomach and Intestines. In the Abridgment of the *Philosophical Transactions*, *Vol.* 3. we have an Account of a scirrhous urinary Bladder, whose Membranes were a Quarter of an Inch thick.

Hence a Scirrhus may be produced by an Inflammation; by stagnant, caseous, indurated or coagulated Milk; by a Contusion; by strong Attrition; by Carbuncles; by Bubos; by Ulcers too speedily closed; by the atrabilarious Matter of the Blood or Bile, especially when the Menses or Hæmorrhoids are obstructed; by a lapidescent, gross, austere, and gyseous Matter; by a melancholy Life; by Hard-living; and by an hereditary Disposition.

As for an Inflammation; 'Tis observed under the Article INFLAMMATIO, that an Inflammation sometimes terminates in a Scirrhus; in which Case the Extremities of the obstructed Vessels, together with the stagnant Fluid with which they are infarcted, are not separated from the adjacent sound Parts; but the morbid Part still remains, and often acquires such a virulent Nature, that it can never after be resolved, but either continues during the whole Life, or must be removed either by the Knife or the Cautery. The ancient Physicians took notice of this Origin of a Scirrhus from an Inflammation. Thus *Aretæus*, in his Treatise *de Caus. & Sign. Morbor. diuturn. Lib.* 1. *Cap.* 13. informs us, "That if the "Liver is not suppurated by an Inflammation, it generally "happens, that in Progress of Time the hard Tumor is "changed into a Scirrhus." And *Paulus Ægineta*, *Lib.* 3. *Cap.* 68. when treating of a Scirrhus of the Uterus, speaks in the following manner: "Sometimes the Uterus becomes "suddenly scirrhous, without any evident Cause; tho' this Mis"fortune generally arises from a preceding Phlegmon, which "is neither resolved nor converted into an Abscess." Such scirrhous Remains of an ill-cured Inflammation are found not only in the glandular, but also in other Parts of the Body. This was observed by *Galen*, when treating of the Cure of an Erysipelas, in his *Meth. Med. Lib.* 14. *Cap.* 3. For after he had said that an Erysipelas required greater Refrigeration than a Phlegmon, he informs us, "That by the incautious Use of refrigerating "Medicines, the Skin becomes livid, or even black, espe"cially in old Persons; so that some of the Parts thus refri"gerated, cannot be perfectly cured by Discutients, but "leave a certain scirrhous Tumor behind." In inflammatory Disorders a Scirrhus is, perhaps, frequently produced in such Parts as are not glandular, whilst by too frequent Venesections the Strength is so weakned, that the Impetus of the vital Fluid is not able to resolve the obstructing Molecules impacted in the narrowest Parts of the Vessels, nor to separate them by a gentle Suppuration. Hence, perhaps, it is, that after a Pleurisy not only the Pleura, but also that Part of the Lungs adhering to it, are indurated into a Scirrhus; for after the preposterous Cure of violent Inflammations, surprizing Degeneracies have been observed in the membranous Parts. Thus sometimes, and even oftener than is generally believed, the Pericardium is inflamed. And in Subjects who have died of long-protracted Disorders of the Breast, this thin membranous Bag of the Heart has not only been found surprisingly inspissated, but also indurated. Thus in the *Acta Physico-Medica*, *Vol.* 2. *Obs.* 20. in the Carcase of a Sailor, who had laboured under a violent Asthma and a Cough, and at last died of a dropsical Tumor of the Abdomen, Scrotum, and Legs, the Pericardium, among other Disorders, was found an Inch thick, firmly adhering to the Heart, and of a cartilaginous Hardness; so that it would hardly yield to the Knife. For tho' *Malpighi*, *in Epist. ad Societat. Londin. de Structura Glandul. Conglobat.* and *Santorini*, *in Observat. Anatom.* found the Fabric of the Pericardium, when changed by Diseases, glandular; yet in this Case its membraneous Substance seems to have degenerated, since no dilated and indurated Follicules were found; but the Pericardium was become cartilaginous.

A Scirrhus may be produced by stagnant Milk. A Scirrhus frequently arises from this Cause in the Breasts of Nurses; who, dreading a Suppuration, expose their inflamed Breasts to the Heat of the Fire, or foment them with Spirit of Wine: By this Means the Tumor is often lessened, since the thinnest Part of the Milk, stagnant in the lactiferous Ducts, is either dissipated, or discharged from the Nipples; but the remainder is, by that means, rendered thicker, and often forms a Scirrhus not to be resolved by any Art.

A Scirrhus may, also, be produced by a Contusion: As 'tis certain, from Anatomy, that the Glands consist of numberless Arteries, by the various Disposition of which a thin Liquid is separated from the arterial Blood, which, when collected, is discharged from their Emunctories, 'tis obvious, that when these Parts are injured by a Contusion, these Vessels may, by that means, be destroyed, or the Emunctories of the Glands so compress'd or obstructed, that a free Discharge of the Liquid, secreted by the arterial Fabric of the Glands, is hindred. Hence by Stagnation, and an Exhalation or Resorption

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ſorption of the more liquid Parts into the minute Veins, there ariſes an Inſpiſſation of the ſecreted Liquid, and a Tumor is form'd which is hard, ſcarcely capable of a Reſolution, without Pain, and known by the Name of Scirrhus. But if an inveterate, hard, and rough Tumor of this Kind is accompanied with Pain, it is called a Cancer.

A Scirrhus may, alſo, be produced by violent Attrition. By this Means an Inflammation, and all its Conſequences, may be produced. Thus in common Proſtitutes, ſcirrhous Condylomas are frequently produced in the Vagina, by too frequent and violent Attrition. Thoſe addicted to unnatural Luſt, are, alſo, afflicted with ſcirrhous Tumors; whilſt, as *Juvenal* happily expreſſes it:

— — — *Podice lævi*
Cæduntur tumidæ, medico ridente, Mariſcæ.

A Scirrhus may alſo be produced by a Carbuncle. This happens when, by a ſudden and violent Inflammation, the Skin together with the ſubjacent Parts of the Tunica Adipoſa, is converted into a dry and hard Eſchar; the Cure of which conſiſts in having its whole Circumference, by means of a Suppuration, ſo ſeparated from the live Parts, that it may fall off. But if this cannot be obtained, after allaying the Inflammation of the adjacent Parts, ſuch a ſcirrhous Tumor will remain, eſpecially if it is lodged in the glandular Parts.

A Scirrhus may, alſo, be produced by a Bubo. Tho' Tumors of the Glands, in various Parts of the Body, are ſometimes called Bubos, yet this Name is in a peculiar manner appropriated to Swellings of the inguinal Glands: Such Tumors are moſt frequently produced by a venereal Contagion, remain long, and prove obſtinate againſt the beſt Remedies.

A Scirrhus may, alſo, be produced, by cloſing an Ulcer too ſoon. 'Tis frequently obſerved, that when a Phlegmon is converted into an Abſceſs, the middle Part is entirely ſoft and maturated, though the whole Circumference of the Tumor is as yet hard, as is obſerved under the Article SUPPURATIO. Hence ſuch an Abſceſs is not to be ſoon opened; but it ſometimes happens that in the Top of the Abſceſs, the Integuments being rendered tenſe, and macerated by Cataplaſms, are ſpontaneouſly ruptured, and afford a Diſcharge for the contained Pus, whilſt the reſt of the Matter remains crude and hard; unleſs ſuch an Ulcer remains open, and is treated with ſuch Medicines as excite a Suppuration, there often remains a ſcirrhus Hardneſs for a conſiderable Time; which, however, is generally gradually diſſipated in ſuch Parts as are not glandular. But when, after an ill-cured Suppuration, ſuch a Hardneſs remains in the Breaſt, it often leaves a Scirrhus which cannot be reſolved. But never is a Scirrhus more frequently produced by this Cauſe, than in venereal Buboes; when, for Inſtance, being ſuppurated, they are opened before a perfect Maturation; or when, after they are opened, the Surgeon, weary of the long-protracted Cure, attempts their Conſolidation by deſiccative Medicines; for in this Caſe ſomething of a ſcirrhous Nature is always left.

A Scirrhus may alſo beproduced by the atrabiliarious Matter of the Blood, or of the Bile. When the Blood is deprived of its moſt fluid Part, whether by violent Motion of the Body, or protracted Exerciſe of the Mind, then the remaining Part is blacker than uſual, becomes incapable of Circulation, in Conſequence of its Pitch-like Tenacity ariſing from an Union of the thick Oil of the Blood with its terreſtrial Parts, and with greater Difficulty paſſes through the narroweſt Parts of the Veſſels. Hence this Matter, which is called Black Bile, is very fit for producing Obſtructions; but when the Bile properly ſo called becomes ſtagnant in the Gall-Bladder, it may acquire a ſurpriſing Tenacity, and often degenerates into calculous Concretions. Such a ſordid and tenaceous Matter, produced by a Stagnation and Inſpiſſation of the Bile, is, alſo, called black Bile; but it is far more acrid, and more eaſily becomes putrid, than the former Species produced from the Craſſamentum of the Blood. This latter Species may diſturb the whole Laboratory of the Bile, obſtruct the Parts in which it is contained, and afterwards becoming putrid, produce the moſt terrible Diſorders: But the former Species ſeems principally calculated for producing ſcirrhous Tumors; ſince the Blood, contaminated by ſuch a Lentor, eaſily becomes ſtagnant in the intricate Structure of the Glands. Practical Obſervations evince, that ſcirrhous Tumors are moſt frequently found in ſuch Perſons as, in Conſequence of a peculiar Idioſyncraſy, incline to an atrabiliarious Temperament, the Signs of which are enumerated under the Article TEMPERAMENTUM. The ancient Phyſicians almoſt always accuſed the black Bile, as the Cauſe of a Scirrhus and Cancer; and Galen, *in Method. Medend. ad Glaucon. Lib. 2. Cap.* 12. affirms, that the only Cauſe of a Cancer is when the black Bile collected in the Body is neither evacuated by the Hemorrhoids nor Varices, nor propelled to the Skin, but conveyed to other Parts of the Body. In this Opinion he was confirmed by obſerving, that in the Parts thus affected, the Veins appeared full of a thick and black Blood: Why this ſhould happen, is ſhewn under the Article CARCINOMA. The great Similitude between a Scirrhus and black Bile ſufficiently evinces, that the former often ariſes from the latter; for the tenacious and pitch-like Humour, called Black-Bile, generally fills and obſtructs the Veſſels of the abdominal Viſcera, and produces Diſeaſes principally of a chronical Nature. When this ſtagnant black Bile, by any Cauſe, began to be collequated and corrupted, it was, by the antient Phyſicians, called the turgeſcent, or moved black Bile; and when it acquires ſuch a State, it rages with incredible Fury, and excites, in the coldeſt Conſtitutions, the moſt acute Fevers, which ſoon prove Mortal. It, alſo, brings on the worſt of Dyſenteries, Corroſions of the Viſcera, Deliquiums, and, frequently, ſudden Death. A Scirrhus may be long lodged in ſome Parts of the Body, without proving uneaſy to the Patient, unleſs it happen ſtrongly to compreſs the adjacent Veſſels: But if the Matter of an inveterate Scirrhus begins to be moved, either ſpontaneouſly, or by imprudent Treatment, it ſoon degenerates into a terrible Cancer.

Scirrhous Tumors are moſt generally formed in Women, when their Menſes ceaſe. The moſt conſiderable Changes happen in the Bodies of Women, when their Menſes firſt begin to appear, and when they ceaſe in Women after the Seaſon of Conception. The Obſervations of almoſt all Phyſicians evince, that about thoſe Times, ſcirrhous Tumors are produced in the Uterus and Ovaria, by an Infarction of the Veſſels; but there is ſo great a Conſent between the Breaſts and Uterus, that as ſoon as the Excretion of the uterine Blood is obſtructed, the Breaſts begin to ſwell, as appears in pregnant Women, as alſo in Child-bed Women, when, after the Ceſſation, or conſiderable Diminution of the Lochia, the Breaſts become turgid with Milk: 'Tis, therefore, not to be wondered at, if, upon the Ceſſation of the Menſes, the Breaſts ſhould be affected, their Veſſels diſtended, and ſcirrhous Tumors formed. 'Tis, alſo, frequently obſervable, that ſcirrhous Tumors, produced by other Cauſes, are about this Time increaſed in Bulk, and often changed into Cancers. *Hippocrates*, in his Treatiſe *de Morb. Mulier. Lib. 2. Cap.* 20. informs us that "the Menſes retained in the Uterus, regurgi-"tate to the Breaſts;" and after enumerating many Symptoms, by which Women were deceived into a Belief of their Pregnancy, he ſubjoins, "in their Breaſts ariſe hard Tuber-"cles, ſome of which are large, and ſome ſmall. Theſe ne-"ver come to a Suppuration, but become gradually harder, "till at laſt they terminate in occult Cancers." *Dionis*, in his *Cours d'Operations de Chirurgie demonſtr.* 9. concludes, from his own Obſervation, that among twenty Women afflicted with Cancers, fifteen are ſeized with this Misfortune between the forty-fifth and fiftieth Years of their Age; and he adds, that in a Journey through the Provinces of *France*, he ſaw many in the Hoſpitals, of almoſt every Town, afflicted with Cancers, but that the Patients were generally about the Age now mentioned; or if the Diſorder happened to ſuch as were younger, the menſtrual Diſcharge was defective in them. *Hollerius*, in *Comment. 2. in Lib. 3. Coac. Hippocrat. No.* 40. informs us, that by the Retention, or ſcanty Diſcharge of the Menſes, glandulous Tumors are, alſo, formed in other Parts of the Body; for, in one Year, he ſaw more than two hundred Girls, who, about the middle of the Spring, had Tumors formed on the Groin, in Conſequence of a too ſcanty menſtrual Diſcharge. And in the Caſe mentioned above, a Woman about the forty-ſixth Year of her Age, before ſound, having her Menſes ſuddenly ſuppreſſed, began to be ſick; and when ſhe died, upon opening her Body, the Meſentery, Pancreas, Stomach and Pylorus were found ſcirrhous; from all which it is ſufficiently obvious, how much a Ceſſation of the Menſes contributes to the Production of a Scirrhus, or to the Increaſe of it after it is already formed.

Scirrhous Tumors are, alſo, very readily formed, upon a Suppreſſion of the hemorrhoidal Diſcharge. As the black Bile is frequently conveyed to the abdominal Viſcera, and there produces many ſurprizing Misfortunes, nothing ſeems more commodious than that the tenacious, and often pitch-like Blood ſhould be evacuated by the hemorrhoidal Veins; and this is frequently obſerved in Perſons of a melancholic Habit. Hence *Hippocrates*, in *Aphor.* 12. of *Sect.* 6. commends the Hemorrhoids as beneficial to melancholic Patients. When, therefore, the atrabiliarious Matter is retained, in Conſequence of the Suppreſſion of an uſual hemorrhoidal Diſcharge, it may lay a Foundation for the moſt obſtinate Obſtructions in the glandular Parts, as we have already obſerved.

A Scirrhus may, alſo, be produced by a lapideſcent, groſs, auſtere or gypſeous Matter. Unleſs it were certain, from numberleſs Experiments, it could hardly be believed that there is, even in the moſt fine and limpid Humours of the human Body, a certain Matter of which a pretty hard Stone may be formed.

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form'd. Thus, limpid Urine ſeparated from the Blood through the minute renal Ducts, often lays a Foundation for calculous Concretions, not only when it becomes ſtagnant in the Pelvis, Ureters and Bladder, but alſo in the Kidneys themſelves, which have ſometimes beeen found entirely calculous. I have ſeen, ſays *Vanſweiten*, many renal Stones diſcharg'd, which had Stalks, by which they ſeem to have been inſerted in the renal Ducts, whilſt the reſt of their Surface was globular. I alſo ſaw, ſays the ſame celebrated Author, a ſmall Stone extracted from the ſublingual Gland. In the Cavity of the Abdomen, which is only moiſt with a fine exhaling Dew, ſmall Stones have, alſo, been found. Calculous Concretions of this Kind have, in like Manner, been found in the Subſtance of the Brain, and almoſt in all the Parts of the Body. If, therefore, ſimular Concretions are form'd about glandular Parts, highly obſtinate ſcirrhous Tumors will be produced. The Stones formed in the human Body are of various Degrees of Hardneſs; for ſometimes they are exceſſively hard, as is principally obſervable in the Stones of the Bladder; at other Times they are far more ſoft and friable, as is principally obſervable in thoſe form'd in the Gall-Bladder: And, ſays Doctor *Vanſweiten*, I have ſeen white friable Stones, almoſt reſembling Plaiſter, thrown up from the Lungs in Coughing. And we are by *Paré* informed, that the Glands of the Meſentery were found ſcirrhous and turgid with a gypſeous Matter.

A Scirrhus may alſo be produced by a ſorrowful Life: In melancholic Diſorders, this ſurprizing Circumſtance is obſerv'd, that black Bile predominating in the Blood, and eſpecially lodging about the Abdominal Viſcera, produces ſuch a ſtrange Uneaſineſs, and ſo inſupportable a Sadneſs, that the miſerable Patients are often prompted to lay violent Hands upon themſelves. It is, alſo, obſervable, that violent Paſſions produce a ſimilar Matter in the Blood, and fix it in the Veſſels of the Abdominal Viſcera. Since, therefore, Sadneſs may produce atrabiliarious Matter, it is obvious, that it may, by that Means, lay a Foundation for a Scirrhus.

A Scirrhus may, alſo, be produced by coarſe Diet: Among other Cauſes, Melancholy may be produced by auſtere, hard, terreſtrial and dry Aliments, long uſed, eſpecially if the Patient enjoys too much Reſt and Eaſe. Hence ſtudious Men are ſo often afflicted with Obſtructions of the Abdominal Viſcera, becauſe they frequently uſe Fleſh and Fiſh indurated by Salt, or in the Smoke or Air, Peaſe and Beans; whilſt, in the mean Time, they employ their Minds intenſely, without giving any Manner of Exerciſe to the Body; ſuch Perſons generally find to their great Injury, that theſe coarſe and heavy Aliments are to be forſaken by them, and that the ſofteſt Pot-Herbs, ſuch as Lettice, Endive, and Succory, together with the tender Fleſhes of young Animals, agree far better with the Health of the Learned. When the Children of poor Perſons eat farinaceous Subſtances, crude and unfermented, their Abdomens are rais'd into a Tumor, becauſe their tender Viſcera are infarcted with an inſuperable Lentor. The like Misfortunes are produced in the Children of Country People, by greedily devouring auſtere and unripe Fruits.

A Scirrhus may, alſo, be produced by an hereditary Taint: That a Phthiſis, Epilepſy, and Gout are transferr'd from Parents to Children, is certain from daily, but fatal Experience. The ſame, perhaps, holds true with reſpect to ſeveral other Diſorders: And ſuch hereditary Diſeaſes, if not incurable, are yet by all Phyſicians reckoned very hard to be cured. The celebrated *Boerhaave* us'd on this Occaſion to tell his Audience, that he knew a certain Family, all the Children of which, at a certain Period, became icteric, and at laſt died dropſical, ſince their Diſorder would yield to no Medicines; that the Cauſe of ſuch a Misfortune might be diſcovered, and afterwards prevented, their Carcaſſes were cheerfully ſubmitted to the Examination of Phyſicians, who, upon opening them, found the Liver ſcirrhous.

The Effects of a Scirrhus form'd are, by its increas'd Bulk to affect the adjacent Parts, to preſs upon them and compreſs them, to injure the peculiar Functions of the ſcirrhous and adjacent Parts, and by theſe Means to produce Inflammations, Suppurations, Gangrenes, Palſeys, Atrophies, a Sphacelus, Sterility, difficult Labours, the Iliac Paſſion, and many other Diſorders of the like Nature, which may be eaſily deduced from the Nature and Office of the injur'd and compreſſing Part.

The ſcirrhous Part is increas'd in Bulk, by which Means it muſt neceſſarily happen, that the Veſſels of the adjacent Parts muſt be rendered narrower, and ſometimes totally compreſſed. For this Reaſon, under the Article OBSTRUCTIO, ſcirrhous Tumors are enumerated among the Cauſes which by an external Compreſſion of the Veſſels leſſen their Diameters. The Effects, therefore, of a Scirrhus may be numberleſs, and quite different, according to the Variety of the Parts affected, and the Functions of the Parts compreſſed by the increaſing Scirrhus. Thus a Scirrhus form'd in the Breaſt of a ſound Woman by an external Cauſe, often continues till the Patient is far advanced in Years, without creating her any Pain. But when a Scirrhus ſeizes the Oeſophagus, or the adjacent Parts, which by becoming tumid can leſſen and compreſs its Cavity, Deglutition is entirely obſtructed, and after the Patient is tantalized, often for ſeveral Months, inevitable Death enſues. 'Tis, therefore, here ſufficient to ſpecify the general Sources from which the Effects of a Scirrhus may be deduced. But the Knowledge of the particular Diſorders produced by a Scirrhus depends upon the Functions of the Parts affected; the moſt conſiderable, however, of theſe Diſorders are here enumerated; ſuch as

Inflammations, Suppurations, Gangrenes, and a Sphacelus: Under the Article INFLAMMATIO, where the Cauſes of an Inflammation are conſider'd, 'tis obſerv'd, that all the Cauſes of Obſtructions may produce an Inflammation: But, as has been juſt now obſerved, a Scirrhus is one of theſe Cauſes of Obſtruction, which, by an external Compreſſion, leſſens the Cavities of the Veſſels: But an Inflammation form'd may be ſucceeded by all its Effects, and conſequently by a Suppuration, Gangrene, and a Sphacelus. 'Tis, however, to be obſerv'd, that a Suppuration never happens in a legitimate and confirm'd Scirrhus, but only in the adjacent Parts compreſſed by the tumid Scirrhus. Beſides, under the Article GANGRÆNA, when the Cauſes of an Inflammation are conſider'd, 'tis obvious, from the Obſervations of *Hildanus*, that a Gangrene was form'd in both Legs, in conſequence of a ſcirrhous Tumor compreſſing the *Vena Cava* in that Part where it is divided into the two Iliacs; and this Gangrene was ſucceeded by a Sphacelus, which aſcended to the Knees, and prov'd mortal to the Patient.

A Scirrhus may alſo produce Palſies: In order to the voluntary Motion of the Muſcles, 'tis requiſite there ſhould be a free Communication through the Nerves, between the Brain and the Muſcles. If, therefore, a Scirrhus ſhould all along compreſs a Nerve diſtributed from the Brain to any Muſcle, ſuch a Muſcle will be paralytic. Now, if a large, nervous Trunk, diſtributed to any Member of the Body, ſhould be compreſſed by ſuch a Cauſe, a perfect Palſey of that Member will be produced. When the ſubaxillary Glands becoming ſcirrhous and tumid, ſtrongly compreſs the adjacent nervous Trunks, 'tis ſufficiently obvious that a Palſey may be produced by this Means. Thus, ſays Doctor *Vanſweiten*, in a Woman of ſixty Years of Age, I ſaw the whole right Breaſt ſcirrhous; after which the Glands under the right Arm-pit became tumid and hard, and this Circumſtance was ſucceeded, firſt, by an intenſe Pain, and then by a Stupor and beginning Palſey in the whole Arm. The Glands, in the mean time, in the right Side of the Neck, were highly tumid and hard; whilſt the Patient was ſubject to frequent Diliquiums, perhaps from a Compreſſion of the Par Vagum, and the intercoſtal Pair of Nerves.

A Scirrhus may, alſo, produce an Atrophy: 'Tis obſerv'd under the Article *Vulnus*, that if a large Artery is ſo divided, that no more Blood can be convey'd to the Parts farther from the Heart than that Diviſion, then all ſuch Parts as received the vital Blood from this large Trunk become mortified, becauſe they are entirely deprived of the Influx of the vital Fluid. 'Tis under the ſame Article, alſo, obſerv'd, that this may happen in two Manners; for the Fluids no longer propell'd by the Motion of the arterial Blood, either become ſtagnant and corrupted, by which Means a ſlow and putrid Gangrene is produc'd: Or, the Humours left in the Parts farther from the Heart than ſuch a Diviſion, by the proper Contraction of the Veſſels, paſs into the Veins, which by the Aſſiſtance of the adjacent turgid Muſcles return the Humours they receive to the Heart: Thus the Veſſels totally deprived of their Fluids will collapſe, their collaps'd Sides will grow together, and the Bulk of the Part will be daily leſſen'd, till at laſt becoming dry, it almoſt reſembles Mummy, as is ſhewn by a ſurprizing Inſtance under the Article *Vulnus*. 'Tis ſufficiently obvious, that the ſame Misfortunes muſt be produced, if a Scirrhus ſo compreſſes the Artery diſtributed to any Part of the Body, as totally to obſtruct the Circulation of the Blood in it.

A Scirrhus may, alſo, produce Sterility: 'Tis not to be doubted but Sterility may be produced, in either Sex, if the Organs of Generation are ſo indurated into a ſcirrhous Tumor, as either to aboliſh or leſſen their peculiar Functions. Thus, 'tis certain, from many Obſervations, that the Teſtes in Men may become ſcirrhous. But ſince in Women there are ſtill more Conditions abſolutely neceſſary, not

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not only for the Reception of the Rudiments of the Fœtus, but also for its Retention, Support, and Nourishment, to perfect Maturity in the Uterus, 'tis sufficiently obvious, that the Causes of Sterility are far more frequent in Women than in Men. 'Tis certain from Experience, that scirrhous Tumors, either in the genital Parts or those adjacent, and by their Bulk compressing all the contiguous Vessels, frequently prove the Causes of Sterility. *Hippocrates*, in his Treatise *de Natura Muliebri*, cap. 19. observes, that in fat Women the thick Omentum so compresses the Uterus, that they are incapable of Conception. In the same Part he informs us, that if the Mouth or Neck of the Womb is scirrhous, which may be discovered by introducing the Fingers, the Woman will be barren, unless that Disorder is cured. By laying open Carcasses, it has often appeared, that scirrhous Tumors of the Uterus have been the Causes of Sterility. *Hildanus* in *Observat. Chirurg. Centur.* 1. *Obs.* 65. informs us, that upon the Death of a Woman of sixty Years of Age, who had been twice married, but remained barren, he laid open her Body, in order to discover the Cause of her Sterility, upon which he saw a Scirrhus, which like a Ring encompass'd the Neck of the Matrix, and so clos'd up its Aperture, that the Point of a Probe could hardly be introduc'd into it. In the same *Century*, *Obs.* 66. he informs us, that in another Woman, who in her first Labour being seized with an Inflammation of the Uterus, afterwards remained barren, he, after her Death, found a Scirrhus as large as a Goose's Egg, so situated before the Mouth of the Uterus, as intirely to block up the Passage to it; and so strongly adhering, that it was impossible to separate it. I saw, says *Vansweiten*, the whole Vagina scirrhous, and so tumid, that it would hardly admit a Probe. 'Tis, also, observable, that in such Women as have lived barren, a cancerous Disposition of the Uterus is produced, about the Time that the Menses generally cease; and this Disorder sufficiently manifests its Malignity by the excessive Pains, the acrid Sauces discharg'd, and the profuse Hemorrhage subsequent to the varicose State of the Vessels, which are at last corroded; from all which it is obvious, that a Scirrhus is justly reckon'd among the Causes of Sterility.

A Scirrhus may also produce difficult Labours: That the Fœtus, when arriv'd at a State of Maturity, may be discharg'd from the Uterus, 'tis requisite that its Orifice and Vagina should be capable of a free Expansion: If, therefore, these Parts are indurated by a scirrhous Tumor, or if such Tumors in the adjacent Parts should compress these Parts, 'tis sufficiently obvious, that the Birth must, by this Means, be render'd difficult, and sometimes absolutely impossible. 'Tis true, that a Scirrhus is rarely so soon enlarged to so great a Bulk, as, if it did not exist before the Conception but is form'd during Pregnancy, to do a great deal of Injury when the Fœtus is to be excluded. But a Scirrhus form'd in the Uterus or Vagina, must, in all Probability, lay a Foundation for Sterility; for which Reason it is enumerated among the Causes of that Misfortune. 'Tis, however, certain, that some Women have become pregnant, tho' the Aperture by which the Semen was convey'd into the Uterus was very small. Hence absolute Sterility is not always produc'd, tho' there is a large Scirrhus in these Parts, tho' in such Cases the Labour will always be difficult. In practical Authors there are many Observations which confirm this Doctrine. Thus, says *Vansweiten*, I knew a Woman of thirty-eight Years of Age, who died during Labour of her first Child, neither could the Fœtus be brought into the World. In the *Hist. de l' Acad. des Sciences*, for the Year 1705, the celebrated Mr. *Littre* informs us, that in the Carcass of a certain Woman he found the Neck of the Uterus clos'd up by a glandular Substance, which adher'd to the Uterus, and was here and there perforated with small Holes. In the *Medical Essays*, *Tom.* 3. we have an Account of a Woman of forty Years of Age, who in her first Labour could only have the Fœtus extracted dead, on account of the excessive Narrowness of the Pelvis: Three Months after Marriage becoming pregnant, she was about the Time of the Delivery, for two Days, rack'd with intense Pains, without any Dilatation of the Mouth of the Uterus. As the Surgeon had not a Speculum Uteri at hand, he separated the Sides of the Vagina with a coarse Instrument, upon which the Cicatrice of the Orifice of the Uterus, which was grown together, appeared; and when with a Knife the Surgeon was laying open the Mouth of the Uterus, he found a cartilaginous Hardness all round it, and was forced to make many small Incisions in it, before he could procure a sufficient Dilatation: A dead Fœtus was extracted by the Surgeon's Hand, upon which the Patient was immediately seiz'd with an acute Fever, a pleuritic Pain, and an obstructed Respiration, which in twenty-four Hours proved mortal. *Hildanus* in *Observat. Chirurg. Cent.* 1. *Obs.* 67. informs us, that in the Carcass of a Woman who died, after suffering her Pains of Labour six Days in vain, he found the Uterus torn, and the Head of the Infant sticking in the Cavity of the Abdomen. The Cause of this Misfortune was a Scirrhus, almost as large as the Head of the Fœtus, and which by its Bulk hinder'd the Exclusion of the Infant.

A Scirrhus may, also, produce the Iliac Passion: Whatever Cause is capable of so contracting any Part of the intestinal Canal, that its Contents, which by the peristaltic Motion ought to be propell'd to the Anus, cannot pass, may produce this terrible Disorder. Hence, the peristaltic Motion being inverted, the Contents of the Intestines return to the Stomach, and after great Uneasiness, are vomited up in a most unseemly Manner. When an Inflammation accompanies this Disorder, it often proves mortal: But when it has no concomitant Inflammation, the Patient may, for a long Time, be afflicted with it. It has been frequently observ'd, that scirrhous Tumors compressing or totally obstructing the Intestines, have laid a Foundation for the Iliac Passion. *Hildanus*, in *Observat. Chirurg. Cent.* 1. *Obs.* 69, informs us, that in the Carcass of a Man who for some Years labour'd under a fixed and continual Pain, under the Region of his Liver, and at last died of a violent Iliac Passion, he found an exulcerated Scirrhus in the Bottom of the Intestinum Cæcum. The celebrated *Boerhaave* saw a remarkable Case which confirms this Doctrine. A lively Boy, the Son of a Family of Distinction, happening to over-heat himself by skating, went into the Sledge in which his Father was, where he remained for about an Hour, exposed to a pretty intense Cold: Soon after he perceived a Pain in his Abdomen, and was continually in a languishing Condition. A few Weeks after this he began to be costive, till at last the Discharge of his Fœces was almost entirely suppress'd: His Appetite remained pretty good, though every three Days, after great Uneasiness, he vomited up all the Aliments he had used during that Time. After using various Medicines to no Purpose, the Boy died, and the Body was inspected by the Physicians employed whilst he was alive, and who were of different Opinions with respect to the Disease. *Boerhaave* prognosticated that his Misfortune proceeded from a latent Scirrhus, and for that Reason only prescribed gently resolvent Medicines, and such Aliments as could generate but a small Quantity of Fœces. Other Physicians concluded, that the pituitous Sordes lodged in the Intestines, and obstructing them, was to be eliminated by Vomit; and persuaded the Boys Parents to have him treated in this Manner. But all the Symptoms were increas'd by these Means. Upon opening the Carcass, there was found a Scirrhus compressing the Intestinum Ileum, in that Part where its Extremity is inserted in the Intestinum Colon. Before the obstructed Part, the small Intestines appeared enormously dilated; but behind it, so contracted, that they hardly surpassed the Bulk of the Vermiform Process.

Besides the Disorders now enumerated, many more may arise from Scirrhusses form'd in other Parts of the Body. Thus we read in practical Authors, that fix'd chronical Pains are produced by scirrhous Tumors of the Stomach and Pancreas, tending to the Malignity of a Cancer. A Scirrhus of the Liver often produces an incurable Jaundice, and afterwards a mortal Dropsy. From what has been said, 'tis sufficiently obvious, that many obstinate chronical Disorders arise from scirrhous Tumors form'd in the internal Parts of the Body. We now come to consider the diagnostic and prognostic Signs of a Scirrhus.

A Scirrhus is known to be present from a Knowledge of its Causes, Effects, and Symptoms, together with an Acquaintance with the Part affected, and the Temperament of the Patient.

A Scirrhus formed in the external Parts of the Body is easily discover'd, but with more difficulty known when concealed in the internal Parts. But obscure Cases of this Nature are illustrated by a Consideration of the following Circumstances.

As for the Cause of a Scirrhus: If the Cause predisposing to the Generation of a Scirrhus is an atrabiliarious Spissitude of the Humours, arising from a long protracted Use of austere, terrestrial and coarse Aliments, without violent Exercise; or from a long-continued Influence of Passions, especially Grief; and if, at the same Time, the efficient Cause is a Contusion; if an Inflammation is neither resolv'd nor changed into a Suppuration; if the usual Discharge of the Menses or Hemorrhoids is suppress'd; or if the Taint is hereditary, we may from such preceding Causes justly dread a Scirrhus.

As for the Effects of a Scirrhus: A Scirrhus always injures not only the Functions of the Part affected, but frequently

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frequently the Action of the adjacent Parts, which it compresses by its Bulk. Hence, if the Causes fit for producing a Scirrhus have preceded, if the Signs of the injured Functions evince that the Uses of certain Parts, which they enjoy'd in a sound State, are disturb'd, or totally abolish'd, and if the Disorder long continues in the same State without any considerable Increase, the diagnostic Signs of a present Scirrhus are by these Means strengthened. Thus, for Instance, if after an acute Disorder of the Breast, which is neither cured by a gentle Resolution, nor a benign Suppuration, a Difficulty of Breathing and a dry Cough remain; and if these Symptoms are increased after the least Exercise, or a liberal Use of Aliments, we may justly conclude that a Scirrhus is form'd in the Lungs; which by its Bulk straitening the Air Vessels of the Lungs, renders Respiration difficult; and by compressing the Blood-Vessels, hinders the Blood expell'd from the right Ventricle of the Heart from being freely convey'd through all the narrow Parts of the pulmonary Artery. Hence the Motion of the Blood being increas'd by Exercise, or a large Quantity of crude Chyle being mixed with the venous Blood in the right Ventricle of the Heart, the Lungs begin to be compress'd, and the Resistance made to the Action of the right Ventricle of the Heart is increas'd, and this increas'd Resistance cannot be surmounted by all the Efforts made by such a Patient for augmenting his Respiration. A latent Vomica of the Lungs compressing the adjacent Parts, will produce the same Symptoms; but the Uneasiness will be augmented in Proportion to the Increase of the Pus, till the Patient is either suffocated, or freed from his Disorder by a Rupture of the Abscess. A gentle hectic Fever, the almost perpetual Concomitant of a Scirrhus of the Lungs, will sufficiently discover such a latent Disorder. In a Scirrhus, also, of the Lungs, all Circumstances for a long Time remain in the same Condition; and the Symptoms often continue for several Years, without any Increase.

As for the Symptoms of a Scirrhus: When this Disorder affects the external Parts, it is known by a Tumor, Hardness, and Absence of Pain: But when it seizes the internal Parts, these Phænomena cannot be discovered by the Senses; in which Case the Effects of a Scirrhus are only capable of guiding the Physician's Judgment, and directing his Practice.

As for the Part affected: 'Tis already observ'd, that scirrhous Tumors are principally form'd about glandular Parts, especially if the Fluid secreted by the Fabric of the Glands is naturally easily inspissated, such as the Milk in the Breasts, for Instance. Hence scirrhous Tumors are by slight Causes produced in these Parts.

As for the Constitution of the Patient: An atribiliarious Habit, as is already observ'd, most powerfully contributes to the Production of a Scirrhus; and the Signs of such an Habit are enumerated under the Article TEMPERAMENTUM.

From the Circumstances enumerated above, the Termination of a Scirrhus may be prognosticated, considering at the same Time the Duration and Effects of the Disorder: And a Scirrhus, which is of its own Nature benign, by an increas'd Circulation of the Humours acquires a malignant Quality.

In prognosticating, we not only determine the easy or difficult Cure of a Scirrhus known from its diagnostic Signs, but also foresee the Misfortunes which will be produced by the Injury done to the Functions of the scirrhous Parts, or of the adjacent Parts compress'd by the Bulk of the Scirrhus. The Prognostic, therefore, of a Scirrhus, is to be deduced from the same Circumstances on which its diagnostic Signs are founded. Thus, for Instance, a Scirrhus arising from an atrabiliarious Spissitude of the Humours, is with far greater Difficulty cured, than a Misfortune of the like Kind remaining after an Inflammation. For greater Misfortunes are to be dreaded, when a Scirrhus adjacent to large Vessels compresses them, than when a Scirrhus seizes the Breast, in which Case it hardly creates any Uneasiness to the Patient, unless it degenerates into a Cancer. But in forming the Prognostic of a Scirrhus, the Physician is principally to attend to the Duration and various Effects of the Disorder; for, as we shall afterwards shew, there are generally great Hopes, that a recent Scirrhus may be cur'd; whereas, when it is of several Years standing, it is incurable, except there is a Possibility of extirpating it. The Effects of a Scirrhus are various, according to the Diversity either of the Parts immediately affected, or of those compressed by its Bulk.

As a scirrhous Tumor is without Pain, it is not naturally productive of great Misfortunes, except when situated in those Places where, by compressing the adjacent Parts, it disturbs some considerable Functions of the Body. Thus, says Doctor *Vansweiten*, I have known a scirrhous Tumor lodg'd for twenty Years and more in the Breast, without producing any Inconvenience. And 'tis certain, from the Observations of practical Authors, that Tumors of this Kind have been conceal'd in the internal Parts of the Body, without any great Detriment to Health. Thus, in the *Hist de l'Academ. des Sciences* for the Year 1700, Mr. *Littre* informs us, that in a Man of sixty Years of Age, killed by a Fall from an Height, he found the whole Spleen putrified, though the Man had never complained of any Disorder, but always lived in an apparently sound and healthy State. But the Bulk of this Spleen must have been very small, since it only weighed an Ounce and an Half, and consequently could not by its large Size greatly press upon the adjacent Parts. *Hippocrates*, in his Treatise *de Affectionibus*, *cap.* 5. when treating of splenetic Persons, speaks in the following Manner: "In process of Time, a splenetic Disorder degenerates "in some Patients into a Dropsy, and they waste away. In "some others, the Spleen comes to a Suppuration, and the "Patients, when cauteriz'd, are cur'd; whilst in others "the Spleen becomes hard, and large, in which Case the "Misfortune lasts till the Patient becomes old: But Disor-"ders of this Kind are produced, when in consequence of "Fevers, or the preposterous Cure of any other Disease, "Bile, or Phlegm, or both, are deposited on the Spleen; "and though Misfortunes of this Kind are long protracted, "yet they are not mortal". If, however, the Nature of a Scirrhus is consider'd, it will be sufficiently obvious, that numberless Disorders may arise from it, provided, by any Cause whatever, the Motion of the Humours through the Vessels is augmented: For in the Scirrhus there remains a Liquid, coagulated or inspissated, either collected in the Follicules, or dispersed through the highly intricate Fabric of the vascular Parts. This Liquid may, therefore, be conceived as a dead and unactive Body lodged in these Parts: But the Vessels fill'd with this stagnant Liquid, or the Follicules, distended by its Means, in their Membranes, contain Vital Vessels, which being straiten'd by the Compression of the scirrhous Concretion, the Circulation of the Humours becomes more difficult, tho' it may as yet be carried on where the Motion of the vital Fluids is moderate. But if by a Fever, for Instance, the Velocity of the Circulation is increas'd, these vital Vessels, every where compress'd by the scirrhous Concretion, cannot be so dilated, that in the same Time a larger Quantity of Fluids will be convey'd through them: Hence an Obstruction will be form'd in them, and by a quicker Circulation of the Humours, an Inflammation. But since, in consequence of this strong Attrition in these contracted Vessels, a pretty strong Heat must be produced, as is observ'd under the Article INFLAMMATIO, a Putrefaction of that scirrhous Concretion will soon after ensue, and all the Misfortunes enumerated under the Article CANCER be produced. The Reason is therefore obvious, why a Scirrhus, which is of its own Nature benign, may, by an increas'd Velocity of the Circulation, be render'd malignant.

As this accelerated Motion of the Fluids often cannot be avoided, a Scirrhus lays a Foundation for constant Dread and Terror.

No Physician is possess'd of so uncommon Skill, as at all Times to prevent an accelerated Circulation of the Fluids in his own Body; for the Passions of the Mind, which can neither be avoided by any, nor duly check'd by the wisest, often greatly augment the Impetus and Velocity of the Circulation, as is observ'd under the Article SANGUIS. Slight Errors with respect to Diet, may, also, sometimes produce the same Effect; and an increas'd muscular Motion will prove hurtful in the same Manner. But Patients can never be prevail'd upon to avoid these Things with due Caution, since a Scirrhus, in consequence of its Freedom from Pain, is almost always neglected. But though the Patient was, with the greatest Caution, to follow these Dictates, yet he cannot possibly guard against the Irritation of a mild Scirrhus, either by the Shocks of epidemical Disorders, external Injuries, a Contusion, for Instance, or other Misfortunes of a like Nature. Besides, the Changes naturally incident to the human Body are capable of converting a Scirrhus into a Cancer: Such as the Cessation of the Menses, for Instance, in Women past the Date of Conception, as is shewn under the Article CARCIOMA. 'Tis, therefore, obvious, that a Scirrhus in any Part of the Body lays a Foundation for the constant Dread of a more terrible Misfortune, since no Art nor Care are sufficient to prevent all the Causes capable of changing a benign Scirrhus into the most malignant Cancer.

Hence

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Hence the Physician is to observe,

1mo, That the Cure of a Scirrhus, which is recent, benign, situated in a proper Place, not perfectly hard, and afflicting a Person whose Juices are laudable, is to be attempted by emollient and resolvent Medicines; the most considerable of which are acid Fumes, and Mercury duly used.

In the Cure of a Scirrhus great Prudence is requisite, and nothing is to be attempted rashly, since Errors committed cannot afterwards be rectified, but bring on a Train of terrible Misfortunes. Physicians and Surgeons ought, therefore, always to remember the salutary Advice of *Hippocrates*, who, in *Aphor.* 38. *Sect.* 6. informs us, "That it is expedient not "to attempt to cure Patients afflicted with occult Cancers, "since by these means they soon die; whereas those whose "Cures are not attempted, live for a great while." By occult Cancers, *Hippocrates* seems to have meant malignant and inveterate Scirrhuses, which are so easily irritated by the Application of Medicines, and degenerate into exulcerated Cancers. Before, therefore, any Remedies are applied to a Scirrhus, the Physician ought carefully to examine whether it is capable of being resolved. But this is known from its having the following Qualifications.

If it is recent; For in this Case, the concreted Humour has not, in Consequence of the Dissipation of its most liquid Parts, degenerated into an irresoluble Moss; and in a recent Scirrhus the whole Substance of the Gland is rarely affected. Hence there is a better Opportunity of conveying to the affected Part, through the as yet pervious Vessels, resolvent Medicines, whose Efficacy will be still the greater upon the scirrhous Concretion, because it has not as yet acquired a calculous Hardness. If, therefore, a Scirrhus has for several Months affected any Part of the Body, only small Hopes of its Resolution remain. Hence *Aretæus*, in his Treatise *de Curat. Morb. diuturn. Lib.* 1. *Cap.* 14. when treating of a Scirrhus of the Spleen, justly advises "to prevent approach-"ing, and resolve beginning Scirrhuses." But in the same Passage he informs us, that the Resolution of a Scirrhus is not very easy.

If the Scirrhus is benign; So long as the Scirrhus is without Pain, not too large nor hard, the Colour of the Integuments unchanged, and no Itching and preternatural Heat perceived in the affected and adjacent Parts, the Scirrhus is said to be benign: But if it is attended with the opposite Symptoms, it is said to be of the malignant Kind; the Signs of which are hereafter enumerated.

If the Scirrhus is situated in a commodious Place. If, for instance, Medicines can be commodiously applied to it, and an Access is given to the Surgeon's Hand, that if, contrary to Expectation, a Scirrhus before benign, being irritated by the Application of Medicines, may be extirpated by means of the Knife.

If the Scirrhus is not perfectly hard. For a stone-like Hardness, and a rough uneven Surface, indicate a confirmed Scirrhus, which will soon degenerate into a higher State of Malignity, by the Application of the most mild and resolvent Medicines. The Scirrhus, therefore, ought to yield to any Pressure; otherwise 'tis to be dreaded that the Vessels and Liquids coagulated in them, are almost concreted into an irresoluble Mass.

If a Scirrhus seizes any Part of a Body whose Juices are found. For since, as we have already observed, an atrabilarious Cacochymy greatly favours the Production of a Scirrhus, it will be of no Service, by many Efforts, to resolve the Matter impacted in the Vessels; if, after its Resolution, a similar Obstruction is soon produced by the same Cause. Thus, for Instance, if the Mass of Blood is affected with an acrid and putrid Scurvy, a Putrefaction, in this Case so hurtful, is to be dreaded, whilst the Resolution of the Scirrhus is attempted by emollient and resolvent Medicines.

So many Precautions are requisite, in order to cure a Scirrhus in a safe and proper manner: But fraudulent Quacks, doating Old-Women, and too often imprudent Chymists, presumptuously confiding in their Arcanums, despise the Dangers of which they are ignorant; and by their pompous, but delusive Promises, precipitate Persons into the greatest Miseries.

But when, after a mature Consideration of all Circumstances, it is probable that a Scirrhus is capable of Resolution, Emollients which relax the Vessels, and Resolvents which, without exciting a great Commotion, fuse the concreted Humours, are the only Medicines to be used. *Aretæus*, in his Treatise *de Curat. Morb. diuturn. Lib.* 1. *Cap.* 14. affirms, that in order to remove a scirrhous Hardness of the Spleen, we are to use Medicines as hot as Fire; but immediately after he orders the Parts to be sprinkled with Oil, Vinegar, and Honey; as also with the Powder of the Glans Unguentaria. For the same purpose he also recommends soft and emollient Cataplasms. *Galen*, in his Treatise *de Method. Medend. Lib.* 14. *Cap.* 4. when treating of the Cure of a Scirrhus, lays it down as a practical Rule, "That if any one attempt an Evacuation with violently attractive and discutient Medicines, "without softening the Tumor, and colliquating the concreted "Juices by moistening and heating Substances, the Cure will "for a few Days at the Beginning seem to proceed excellently. But the Remainder of a Disorder, thus treated, will "be incurable, for by this means, also, the most subtile "Parts being discussed, what remains will be similar to "a stony Concretion." The Truth of this Doctrine is sufficiently evinced in Nurses, who, in order to avoid a Suppuration, expose Tumors formed in their Breasts to the Live-Coals, and rub them; for by this means the Tumor is soon lessened, and a Suppuration prevented; but an incurable Scirrhus remains all the Patient's Life after. In such Cases nothing is more proper than twice a Day to expose the Part affected to the Steam of tepid Water; then to rub it softly, and apply some aromatic Plaister, especially with an Addition of the ferulacious Gums, such as Gum-Ammoniac, Sagopenum, Galbanum, and others of a like Nature. Fomentations and Cataplasms, prepared of similar Substances, may also answer the same Intentions. Thus:

Take of the Flowers of Marsh-mallows, Chamomile, Melilot, and Elder, each one Handful; of the Lesser Centaury, half an Handful; of the Leaves of Worm-wood, White Hore-hound, Rue and Savin, each one Handful; of White Briony-Root, four Ounces; and of Garden-Angelica, one Ounce: Boil in Water in a close Vessel, and, straining the Liquor through a Cloth, with every four Pints of it mix four Ounces of the Spiritus Vini Theriacalis. Apply to the naked Skin with woollen Cloths, laying over them a Swine's Bladder anointed with a little Oil.

Of the above-mentioned Ingredients boil a proper Quantity in as much Water as is sufficient for making a Cataplasm; adding towards the End, of Gum Galbanum dissolved with the Yolk of an Egg, three Ounces; of Linseed-Meal, two Ounces; and of Linseed-Oil three Ounces.

A Plaister for a Scirrhus is prepared in the following manner.

Take of Gum-Ammoniac, Galbanum, Sagapenum and Opoponax, each two Ounces: Melt all together in an earthen Vessel over a gentle Fire, and depurate; then mix intimately with the whole four well-beaten Eggs; of yellow Wax, two Ounces; of the Meal of White Briony-Root, three Ounces; and of the Oil of Rue, by Infusion, a sufficient Quantity.

By this Method, says *Vanswieten*, continued for some Months, I have frequently cured recent scirrhous Tumours of the Breast. I have, also, seen happy Effects produced by so thick a Solution of Venice-Soap in Milk, as to resemble a thin Poultice, received into a Spunge, and applied to the scirrhous Part, with a Swine's Bladder anointed with Oil, over it.

Acid Fumes, especially those arising from vegetable Juices, prepared by Fermentation, such as Vinegar for instance, are of great service in resolving scirrhous Tumors. This Method is, by *Galen, in Method. Medend. Lib.* 14. *Cap.* 5. greatly recommended; for he would have the Application of Emollients to be interposed with the Use of such Medicines as attenuate and incide the Matter of the Scirrhus; and he extolls Vinegar as the best of the inciding Liquors. For the Cure of scirrhous Indurations of the Tendons and Ligaments, he extinguishes the ignited Fire-Stone, or a Piece of a Millstone, in the strongest Vinegar, and orders the scirrhous Tendons and Ligaments to be moved up and down over the ascending Steam; after which he again applies the emollient Remedies. He was, however, afraid lest the Steam of the Vinegar too long or often applied, should injure the Substance of the Tendons and Ligaments; but affirmed that its Use was safe in a Scirrhus of the Spleen, or any fleshy Parts. He also informs us, that he invented some compound Medicines prepared of Vinegar, and procured a perfect Cure of a scirrhous Spleen, by the Application of Gum-Ammoniac dissolved in Vinegar to the Consistence of Clay, without any other Remedy. But in his *Method. Medend. ad Glaucon. Lib.* 2. *Cap.* 6. he excellently observes, that by the Use of laxative Medicines, the Scirrhus was mollified, but not diminished; whereas its Bulk was considerably lessened by the Application of Medicines prepared of Vinegar; for which reason, he recommends the alternate Use of these Remedies. *Galen*, also, in the same Book, *Cap.* 7. recommends the internal Use of Vinegar for curing a Scirrhus of the Viscera, and informs us, that in

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in a Scirrhus of the Spleen external Applications alone are not ſufficient; ſince, in order to the Cure, the Patient muſt drink ſtrong Potions prepared of the Barks of Caper-Roots and Spleen-Wort, together with the Roots and ſmall Branches of the Tamariſk boiled in Vinegar or Oxymel. The Obſervations of the Moderns ſufficiently evince the ſalutary Uſe of Vinegar, in reſolving ſcirrhous Tumors, whether its Steam acts upon the Part affected; whether it is uſed by way of Fomentation; or whether, being mixed with the ſerulacious Gums, it is applied to the Part affected. 'Tis cuſtomary almoſt in all Shops to diſſolve Gum-Ammoniac, Galbanum, Opoponax and Sagapenum in Vinegar; and then to depurate them by ſtraining them. After which they are again dried by means of a gentle Fire. But this Method of Preparation ſeems not only to have been deſigned for the Depuration of theſe Gums, but alſo that the moſt acrid Parts of the Vinegar, whoſe thin and aqueous Parts are diſſipated, might be united with the Gums, and their Efficacy, in dividing and attenuating Concretions, by that means increaſed. Thus *Hildanus*, *in Obſervat. Chirurg. Cent.* 1. informs us, that a robuſt young Woman, when ſuckling a Child, had her Left-Breaſt inflamed; but when the Inflammation was removed, there remained an hard Tumor, which the Women and and Quacks in vain endeavoured to remove by many Medicines. But when *Hildanus* was called, he ordered the Infant to be weaned, and the Breaſt to be daily anointed with a Liniment, which, among other Ingredients, contained a large Quantity of Gum-Ammoniac diſſolved in Vinegar of Squills. He, alſo, twice a Day applied an emollient Cataplaſm; and by this Method, exhibiting at proper Intervals a gentle Purgative, the hard Tumor was entirely reſolved. The ſame Author affirms, that the like Meaſures proved ſucceſsful with him in a ſimilar Caſe.

There is, perhaps, no internal Medicine more efficacious than Vinegar ſaturated with an highly pure alcaline Salt; or if to a Pint of *Rheniſh* Wine, we add half an Ounce of the Salt of Carduus Benedictus, of the Stalks of Beans, or ſome ſuch Subſtance, of which Mixture the Patient is to take half an Ounce three or four Times a Day. The Ancients greatly extolled the Uſe of ſuch Medicines. Thus *Pliny*, in *Hiſtor. Natur. Lib.* 23. informs us, "That the Aſhes of the Twigs "of Vines and vinaceous Trees, when mixed with Vinegar, "cure Condylomata, and other Diſorders of the Anus; that "they cure Tumors of the Spleen, when mixed with Oil "of Roſes, Rue and Vinegar; and that the Aſhes of Twigs "ſprinkled with Vinegar, cure Diſorders of the Spleen." The Steam of kindled Sulphur directed to the ſcirrhous Part, is, alſo, greatly commended; but as it is offenſive to the Lungs, it cannot, for that Reaſon, be properly uſed. The known Virtue of Vinegar, in diſſolving the Blood, alſo, affords greater Hopes of a Cure in ſuch Caſes; whereas the Acid of Sulphur, eſpecially when ſtrong, induces a Coagulum of the Blood.

The Efficacy of Quickſilver in removing Obſtructions, is univerſally acknowledg'd; and both the external and internal Uſe of it has often greatly contributed to the Cure of a benign and beginning Scirrhus: For when it has acquired a ſtony Hardneſs, and begins to be malignant, no Relief can be expected from the ſtrongeſt mercurial Preparations, nor from a Salivation excited by Quickſilver, but all the Symptoms are rather increaſed by theſe Means; and, in conſequence of the increaſed Motion of the Humours, the Scirrhus is ſooner changed into a Cancer. To a reſoluble Scirrhus the Emplaſtrum de Ranis with Mercury is generally applied with Succeſs, only we muſt take care, leſt, by an imprudent Application of it, a dangerous Salivation ſhould be excited, which frequently happens. Hence, as ſoon as the Patient begins to perceive any Pain or Tenſion about his Gums, the Plaiſter is to be taken off, and the Part to which it adhered carefully waſhed with a Lixivium of Soap. This Plaiſter generally produces happy Effects in the Reſolution of ſcirrhous venereal Buboes. The Steam of kindled Cinnabar proves beneficial, ſince the Virtues of the Sulphur and Quickſilver are united, but it often excites a ſudden Salivation.

2*do*, If the Scirrhus does not yield to theſe Medicines; if its Place, Situation, adjacent Parts, Mobility, the State of the Diſorder, and the Strength and Condition of the Patient permit, it is with all Expedition to be totally extirpated with the Knife.

If, after the Uſe of theſe Meaſures for ſeveral Weeks or Months, the Tumor is not diminiſhed, nothing remains but to extirpate it, leſt being left, it ſhould lay a Foundation for the perpetual Dread of a Cancer. 'Tis, alſo, expedient to take this Step as ſoon as poſſible, becauſe ſuch a Scirrhus, when long left, is generally increaſed in Bulk, and often adheres to the adjacent Parts, in conſequence of which the Extirpation is afterwards far more difficult, and often impoſſible. Beſides, it often happens, that the Diſorder is propagated to the neighbouring Glands, in which Caſe ſeveral Scirrhuſſes muſt be extirpated before a perfect Cure can be obtained: For it rarely happens, that large and irreſoluble Scirrhuſſes are lodged long in the Breaſts, before the ſubaxillary Glands are affected with the like Diſorder. Thus, ſays Doctor *Vanſweiten*, in a Woman who, by means of an external Contuſion, had a Scirrhus formed in her Breaſt, which by the frequent Application of almoſt boiling Spirits of Wine, had aſſumed a ſtony Hardneſs, not only the ſubaxillary Glands, but alſo the whole Breaſt, Neck and Shoulder of the ſame Side become hard. But it can never be too warmly inculcated to Surgeons never to think of the Extirpation of ſcirrhous Tumors, unleſs they are abſolutely certain that they can be totally removed: For if the ſmalleſt Part ſhould remain after Extirpation, it will ſoon degenerate into a Cancer, as is certain from fatal Experience. Before, therefore, the Extirpation of a Scirrhus is reſolved upon, the following Circumſtances are to be duly conſidered.

As for the Place of the Scirrhus; This ought to be ſuch as to afford an eaſy Acceſs to the Hands and Inſtruments of the Surgeon: For none was ever ſo far deſerted by his Reaſon, as to think of the Extirpation of internal ſcirrhous Tumors. Tho' *Tulpius*, in *Obſervat. Med. Lib.* 3. *Cap.* 34. informs us, that in a Widow of fifty Years of Age, he ſaw a Scirrhus, formed in the Vagina, as large as an ordinary Fiſt, covered with a thick coarſe Membrane, within white and reſembling the Subſtance of a Man's Teſticles, happily extirpated by a ſkilful Surgeon, without any Injury done to the adjacent Parts, by which means the Patient was freed from a woeful Train of Misfortunes; ſince the Tumor, when cut out, afforded pretty ſatisfactory Proofs, that the Scirrhus was degenerating into a Cancer.

As for the Situation of a Scirrhus, and the Parts adjacent to it; Theſe are principally conſidered with reſpect to the large Veſſels adjacent, and from an Injury done to which, great Danger ariſes; if, for inſtance, there was a Neceſſity for extirpating the ſubaxillary or parotid Glands: Nor even in theſe difficult Caſes is the ſkilful Surgeon abſolutely to deſpair of Succeſs; ſince 'tis certain from Experience, that expert Surgeons have extirpated Scirrhuſſes even in theſe Parts. Thus *Hildanus*, in *Obſerv. Chirurg. Cent.* 2. *Obſ.* 79. informs us, that he extirpated from a Woman's Breaſt a Scirrhus already become cancerous; and that he happily extirpated three other Scirrhuſes under the Axilla of the ſame Side, one of which was as large as an Egg; to the Veſſels diſtributed to it he applied a Ligature, for fear of the Hemorrhage juſtly to be dreaded on ſuch an Occaſion. *Abraham Kaau*, in his *Diſſertatio de Scirrho*, informs us, that he ſaw the parotid and ſubaxillary Gland, when become ſcirrhous, happily extirpated by a ſkilful Surgeon at the *Hague*; that after the Extirpation of the parotid Gland, there was no Occaſion for tying the Arteries, ſince the Hemorrhage was eaſily ſtopt by putting in a Piece of Spunge dipt in ſome aſtringent Liquor, which ſpontaneouſly fell out on the eighth Day, whilſt a Diſcharge of Pus appeared underneath. From theſe Circumſtances we may learn what happy Effects may be produced by a ſkilful Hand, even in the moſt dangerous Caſes.

As for the Mobility of the Scirrhus; Before the Extirpation of a Scirrhus is agreed upon, it ought to be evident, that it is moveable in all Directions, and not adhering to any Part; for unleſs it is totally removed, the ſmalleſt Portion left will moſt infallibly degenerate into a Cancer, as all practical Authors affirm. But every Gland is lodged in a cellular Coat, and is with it naturally moveable every Way; a Scirrhus ought, therefore, to be laid hold on with the Fingers, and moved upwards and downwards, and to the Sides in all Directions; and when it moves with equal Eaſe in all Directions, it is ſaid to be moveable, and neither adheres to the ſubjacent nor circumambient Parts. The cellular Coat, indeed, every where adheres to the Gland, but the one may be ſeparated from the other, without any Loſs, or even without any conſiderable Pain, as we ſhall afterwards ſhew. It ſometimes happens, that a Scirrhus can be eaſily enough moved downwards and to the Sides, whilſt the Skin adheres to its ſuperior Part; but this is eaſily known, becauſe in that Part the Skin cannot be elevated. But a Scirrhus of this Kind may be, alſo, extirpated by cutting out, at the ſame time, that Part of the Skin to which it adheres. But in ſuch a Caſe the Wound ought to be very large, and the Cicatrix will be unſeemly on account of the loſt Skin.

As for the State and Condition of the Scirrhus; Whether, for inſtance, the Scirrhus is ſingle, or whether other ſcirrhous Tumors, if preſent, can be reſolved, or, if Neceſſity calls for it, extirpated with the Knife. Thus, for inſtance, it would ſignify nothing to remove a Scirrhus from the Breaſt, when it is evident, from certain Signs, that the Uterus is alſo

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alſo ſcirrhous, or that there is a Scirrhus in the other Breaſt, which, for Reaſons to be after mentioned, cannot be extirpated.

As for the Strength and Condition of the Patient; 'Tis certain, that all the Efforts of the Phyſician ought to aim at the Recovery of the Patient. Hence, if the Strength is ſo far deſtroyed, as that the Death of the Patient might be dreaded from the Pain, the Hemorrhage, or the violent Suppurations which often enſue upon the Extirpation of large Tumors, the Cure is, in ſuch a Caſe, attempted in vain. The ſame Caution is to be obſerved in Caſes where an exceſſive Cacochymy has infected the whole Maſs of Blood; for in this Caſe Wounds can hardly ever be brought to a good Cicatrix, unleſs the State of the Blood could be rendered better. 'Tis certain, that if there is a Suſpicion that a Scirrhus will ſoon degenerate into a Cancer, this dubious Remedy is to be preferr'd to ſo certain and ſo terrible a Misfortune; and in this Caſe the prudent Phyſician ought to adviſe the Extirpation of the Scirrhus, though the Operation could not be performed without Danger.

When, after a mature Conſideration of all Circumſtances, the Extirpation of a Scirrhus is agreed upon, great Caution is neceſſary with reſpect to the Method in which it is to be done; for actual Cauteries and corroſive Applications are not to be uſed, unleſs the Scirrhus is ſo ſmall, that it may, by theſe means, be deſtroyed all at once; and even, in this Caſe, it is more ſafely extirpated by the Knife, ſince, if the ſmalleſt Portion is left, a Cancer is to be dreaded. If a ſcirrhous Tumor, which rarely happens, ſhould be totally prominent beyond the Surface of the adjacent Parts, to which it is only fixed by a Kind of Foot-ſtalk, ſome have adviſed the tight Application of a Ligature about this Stalk, ſo that all Nouriſhment being by this means intercepted, the Scirrhus may die away and fall off. But this Method is not to be uſed, unleſs the Surgeon is certain, that nothing of the Scirrhus is thus divided by the Ligature; for the Part left, though the far greater Part were already fallen off, would degenerate into a Cancer. The celebrated *Boerhaave* had an Opportunity of obſerving a memorable and fatal Inſtance of this, whilſt ſome Perſons thus attempted the Cure of a large ſcirrhous Tumor, with a ſmall Neck ſituated on the Back, though they were ſufficiently adviſed, that their Meaſures might be productive of the worſt of Conſequences: For by means of two Braſs Laminæ, prepared on purpoſe in ſuch a manner as to become gradually tighter by Screws, they endeavoured to compreſs the Root of this Tumor, but the Event was fatal; for not only the Scirrhus, but alſo the adjacent Parts, were ſeized with an exceſſive Putrefaction, and diffuſed ſo fetid and diſagreeable a Smell, that the Patient being deſerted by every Body, and by his Surgeons, fell a miſerable Victim to the prepoſterous Meaſures which had been taken with him.

It, therefore, ſeems moſt proper to remove a Scirrhus by the Knife, with all Expedition, when there is no hope of a Reſolution; for a Scirrhus when left long, is ready to increaſe in Bulk, adhere to the adjacent Parts, or propagate itſelf to the neighbouring Glands. A Scirrhus may be extirpated in two manners; for after making an Inciſion in the Integuments, the entire Scirrhus may be taken out; or the Scirrhus together with the Integuments may be cut out at one and the ſame Time. The former Method is ſafer, though more ſlowly performed, and is to be uſed in removing ſmall ſcirrhous Tumors, no where adhering to the Skin, but remaining every where free in the *Membrana Celluloſa*. But when the Scirrhus is large, and adhering to the Skin, the latter Method is to be uſed; when, for inſtance, the whole of the Breaſt being ſcirrhous, is to be extirpated. In order to take out a Scirrhous in the former manner, the Surgeon ſtretching the Integuments, is to make an Inciſion through the Skin and Membrana adipoſa, to the Scirrhus, without wounding it. This Inciſion muſt be varied according to the Bulk of the Scirrhus: Thus, if the Tumor is but ſmall, a ſtrait Inciſion is ſufficient; but if it is large, a crucial Inciſion is requiſite. Then by ſmall Hooks elevating the Corners of the divided Integuments, they are, by a Knife, to be ſeparated from the Scirrhus, till the whole anterior Part of it is expoſed to View; then thruſting the Forceps of *Helvetius* into the Body of the Scirrhus, it is to be gently drawn upwards, that it may be the more commodiouſly ſeparated by the Knife, and taken out. When a ſcirrhous Gland is lodged in the Membrana Adipoſa, this Separation may be made without any great Pain, except in that Part where the Veſſels enter the Scirrhus. Having removed the Scirrhus, and ſtopt the Hemorrhage, we are to examine whether any Thing of a ſcirrhous Nature is left behind; then we are to proceed in the Cure, in the ſame manner as in the Cure of other Wounds, accompanied with Loſs of Subſtance. See the Article VULNUS. The Extirpation of ſuch a Scirrhus, together wth all the Cautions neceſſary to be obſerved on ſuch an Occaſion, are exactly deſcribed in the before-cited Diſſertation wrote by *Abraham Kaau*, who ſaw the Operation happily performed by a ſkilful Surgeon. In that Diſſertation, the Author juſtly adviſes, that the Scirrhus ſhould not be imprudently drawn in the Separation: For when the Nerves diſtributed to the Scirrhus are ſtretched, and rendered tenſe, a violent Pain is not only excited, but, alſo, mortal Convulſions have followed, ſometimes long after the Operation. We are, alſo, to take care not to irritate the Surface of the Wound by acrid Styptics; nor are we to uſe ſuch Things as violently coagulate the Blood: For the concreted Clots of Blood lodg'd in the divided Veins, may, through Ramifications which continually become larger, be conveyed to the Heart and Lungs, and lay a Foundation for Polypuſes. Lint applied by a proper Bandage, is generally ſufficient; Puff-Ball is, alſo, of ſingular Uſe in ſtopping the Hemorrhage.

But when the Scirrhus is taken away, together with the incumbent Integuments, as in the Extirpation of a Breaſt, it is requiſite there ſhould be an Inciſion made under the Scirrhus, through the Tunica adipoſa, without hurting the ſubjacent Parts: In order to this, the Scirrhus is to be elevated from the ſubjacent Parts, either with the Hands of the Surgeon only, or by paſſing proper Needles through it, or by thruſting the Forceps of *Helvetius* into the Subſtance of the Scirrhus; or paſſing a kind of Fork through the Membrana celluloſa between the Scirrhus and ſubjacent Parts, the Extirpation is to be performed by a Kniſe, which paſſing along cloſe under the Fork, divides all the Parts, and goes through the Membrana adipoſa. During the Operation, the Scirrhus is to be elevated by raiſing the Fork, by which means the Kniſe is hindered from injuring the ſubjacent Parts. But diſferent Methods of Extirpation are choſen by Surgeons, according to the Bulk of the Scirrhus, and the Nature of the Part in which it is lodged. But the Extirpation of ſuch a Scirrhus cannot be made without leaving a large Wound. Hence there is always Danger, leſt the Patient ſhould either be exhauſted by too copious a Suppuration, or that the Pus collected in ſo large a Wound, being reſorb'd by the bibulous Veins, ſhould contaminate the Maſs of Blood with a purulent Cacochymy. Hence the former Method of extirpating a Scirrhus is ſafer, ſince it is never ſucceeded by ſo violent a Suppuration, and the Wound is much ſooner cured. The Surgeon ought, alſo, to have intrepid and ſkilful Aſſiſtants, in order to compreſs the divided Arteries, leſt the Blood diſcharged ſhould incommode the Operator.

If a Scirrhus is old, or known to be malignant from its Colour, Hardneſs, Roughneſs, Itching, and beginning Pain; if a bad Event is to be dreaded from the Part affected, or thoſe adjacent; if the Scirrhus adheres to any Parts; if it happens in a cacochymical Perſon, or cannot poſſibly be extirpated. Then all thoſe Things are to be avoided which increaſe the Motion of the Fluids, leſt the Scirrhus ſhould become a Cancer. Hence Medicines of an emollient, ſuppurant, corroſive, cauſtic and diſſipating Nature are bad.

Having already conſidered the Meaſures to be taken for the Reſolution and the Extirpation of a Scirrhus, we now come to enquire what ought to be done when there are no Hopes of a Reſolution, and no Poſſibility of an Extirpation. The Impoſſibility of a Reſolution is known from the long-ſtanding of the Scirrhus; from a Change of the natural Colour of the Integuments to a red, purple, or livid Colour; from a ſtony Hardneſs, accompanied with a rough and uneven Surface of the Tumor. But if to all theſe an Itching is added, it is greatly to be dreaded, that the Scirrhus will ſoon degenerate into a Cancer; for then the Scirrhus begins to be put into a kind of Commotion, and the Nerves diſtributed through it are gently diſtended. Hence ariſe ſo keen a Titillation and Itching, that the Patients, tho' told that a Cancer will be formed, if they ſcratch it, cannot yet abſtain from doing ſo. And if a Pain ſoon ſucceeds the Itching, the Diſorder is ſtill more terrible. The Extirpation of a Scirrhus is known to be impoſſible, if it has ſo grown to the adjacent Parts, that it cannot be totally extirpated; when it is ſituated in a Place to which the Hands of the Surgeon cannot have Acceſs; or when the Largeneſs of the adjacent Blood-Veſſels render the Operation too dangerous. But in this laſt Caſe, a great deal is to be expected from the Skill and Dexterity of the Surgeon. But if a malignant Cacochymy has ſo infected the Maſs of Blood, that the Conſolidation of the Wound made in the Extirpation of the Scirrhus, can hardly be expected; or if ſeveral ſcirrhous Tumours appear in other Parts of the Body, 'tis ſufficiently obvious, that, in ſuch Caſes, the Operation muſt be vain and to no purpoſe. Since therefore, in ſuch a Caſe, the Diſorder can neither be corrected nor removed, the whole that Art can do, is to retain it in the ſame State, and prevent its degenerating

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ing into a more terrible Misfortune. This is that Case concerning which *Hippocrates* affirmed, that it was most expedient not to attempt to cure those labouring under occult Cancers; because those who are thus treated die soon after: Whereas those whose Cures are not attempted, live longer; for a Scirrhus, accompanied with the Symptoms just now enumerated, may be justly called an occult Cancer. It is to be observed, that an irresoluble Scirrhus very soon degenerates into a Cancer, if the Motion of the Humors is increased either in the whole Body, or in the Part affected, as we have already observed: All such Remedies, therefore, as increase the Motion of the Humors, are hurtful, under whatever specious Names they may be recommended; for in this Case a Suppuration can never happen, by means of which the irresoluble scirrhous Concretion may be separated from the sound Parts; but a malignant and unsurmountable Putrefaction, which preys upon all the adjacent Parts, will ensue, as is observed under the Article CARCINOMA. So long as a Scirrhus, degenerating into a Cancer, is contained within its own Integuments, it is tolerable; but when, after a Rupture of the Integuments, an exulcerated Cancer is produced, it rages with unsurmountable Fury; all emollient and suppurating Medicines, therefore, by lessening the Cohesion of the Integuments, accelerate and hasten this Misfortune. But corrosive and caustic Medicines prove injurious, far sooner and in a far more terrible Manner. *Hildanus, in Observ. Chirurg. Cent.* 1. *Observ.* 89. has, by his Observations, demonstrated, how pernicious emollient Substances are, when applied to inveterate scirrhous Tumors. And, says Dr. *Vanswieten*, I myself have often seen foolish Women, when endeavouring to bring scirrhous Tumors in their Breasts to a Suppuration, have soon converted them into exulcerated Cancers, by the Application of such Medicines. *Ettmuller, in Oper. Med. Tom.* 2. *Part* 2. orders an incurable Scirrhus to be left entirely untouched, or to be converted into a stony Hardness, by the Application of Nitre dissolved in Vinegar. But this seems to be a dangerous Piece of Practice, since the increased Bulk of the Tumor denotes its greater Malignity; for it would be irritated by these acrid Substances, and especially if the Scirrhus is already troublesome by the Punctures with which it is accompanied; if it is painful when touched, or of a livid Colour; to a Scirrhus of which Kind, he orders the Application of this Remedy. It is, therefore, better to hinder the Scirrhus from degenerating into a worse State, by such Things as prevent an Inflammation, or allay it when formed; since the Obstinacy of this Disorder surpasses the Power of any Art hitherto known.

But the most proper Medicines under this Disorder, are Anodynes; such Substances as allay the Motion of the Humours; Preparations of Lead, and mild Preparations of Mercury.

The Food ought to consist of recent Milk, Butter-Milk and Whey; Broths prepared of the fresh Fleshes of Quadrupeds and Fowls; Preparations of frumentaceous Substances, such as Oats, Barley, Millet, Canary-Grass, Rye, Wheat, the Pot-Herbs enumerated under the Article FIBRA, mild mature Summer-Fruits, which are partly acid and partly sweet; especially boiled. The Drink ought to be Decoctions of the Roots of China, Sarsaparilla, and the three Species of Sanders. All violent Passions of the Mind ought, also, to be carefully avoided, or, when excited, prudently soothed and removed. All acrid heating Substances, or such as throw the Humours into a Commotion, are in this Case highly injurious. If lancinating Pains, and an uneasy Itching, are perceived in the scirrhous Part, these Symptoms are to be allayed by Anodynes, both internally used and externally applied. Thus:

Take of White Poppy-Seeds bruised, two Ounces; of the Roots of Fennel, four Ounces; of Wild Poppy-Flowers, six Drams; and of the Flowers of Mallows, one Handful. Boil in Water in a close Vessel for a Quarter of an Hour; and with each two Pints mix two Ounces and an half of the Syrup of White Poppys. Of this Preparation let the Patient now and then drink three or four Ounces.

Take of Sperma-Ceti, prepared Red Coral, and unwash'd diaphoretic Antimony, each one Dram; and of pure Laudanum, two Grains; Reduce to a fine Powder, to be divided into four equal Doses; of which the Patient is to take one every Morning and Evening.

External Medicines are also of Use, and an excellent Fomentation may be prepared in the following manner.

Take of the Flowers of Henbane, Melilot, Red Poppy and Elder, each one Pugil. Boil with Water in a close Vessel; and with each Pint and an half of the Liquor, mix Vinegar of Elder and Roses, each two Ounces; and of the rectified Spirit of Wine, four Drams.

Take of the Vinegar of Litharge, one Ounce; of the expressed Oil of Henbane Seeds, of the expressed Oil of White Poppy, and of the Oil of Roses by Infusion, each two Drams: Make into an Ointment, adding towards the End six Grains of pure Opium.

For Plaisters we may use the Red-Lead Plaister, and the Unguentum Diapompholygos: Or,

Take of the expressed and recent Juice of the Leaves of Henbane, Garden-Poppy, and Phellandrium, each four Ounces: Boil over a gentle Fire, inspissate; and towards the End, mix eight Ounces of White-Wax, and one Ounce of the Oil of Roses by Infusion: Mix into a Plaister. Or,

Take of the Sugar of Lead, Cerus, an Amalgama of Mercury and Lead, each two Drams; of White-Wax, four Ounces; and of the Oil of Roses, by Infusion, three Drams: Make into a Plaister.

But if the Integuments of the Scirrhus begin to be inflamed, we are, by prudently applying Preparations of Lead, to endeavour to check that Inflammation. The most considerable Medicines of this Kind are Vinegar of Litharge, diluted in a large Quantity of Water; the Unguentum Nutritum, prepared of this Vinegar, and the Oil of Night-shade intimately mixed, and the Emplastrum Diapompholygos. These Medicines, also, allay the Itching. The scirrhous Part is to be carefully covered with a Piece of soft Leather, in order to prevent all Attrition of the Cloaths, by which the Integuments might be easily excoriated. Hence Women who have scirrhous Breasts, should never wear Whale-bone Stays, nor use hard Exercise; since, in that Case, the Scirrhus would be agitated by the subjacent pectoral Muscle. Mild mercurial Preparations are in this Case of great Use. An Amalgama of Quicksilver and Lead, mixed with the Emplastrum Diapompholygos, has sometimes proved highly beneficial in Cases where the Integuments of the Scirrhus have already been beginning to be inflamed. Others recommend a thin Plate of Lead, besmeared with Quicksilver, and adapted to the Figure of the Scirrhus. But when Mercurials are applied to a Scirrhus, we ought to be very cautious, least, by an unskilful Use of them, a Salivation should be excited, which, in this Case, will always prove hurtful, since it cannot resolve the scirrhous Concretion; whilst at the same time it increases the Motion and Acrimony of the Humors, and consequently promotes the Degeneration of the Scirrhus into a Cancer.

If at the same time the Temperament of the Patient is peccant, that is above all other Things to be corrected.

Since the whole Intention of this palliative Cure is to prevent the greater Bulk of the Scirrhus, and hinder it from degenerating into a Cancer, it is sufficiently obvious that the morbid Temperament of the Patient, if he has such, ought to be corrected. We have already observed, that an atrabiliarious Habit, of all others, lays the greatest Foundation for scirrhous Tumors: If, therefore, such a Temperament is present, it will increase a present Scirrhus; for which reason the Diet and Aliments ought to be such as are proper for correcting this Temperament. For this purpose, the Patient is to use such Things, as, by mild and saponaceous Quality, fuse the atrabiliarious Juice. On the contrary, all Substances possessed of any considerable Acrimony are to be carefully abstained from. Honey, Venice-Soap, the mild but strongly resolvent Juices of Herbs, are of singular Service; as also proper Decoctions, such as those prepared of Succory, Goats Rue, Endive, Fumitory, and some others. If, in like manner, the Patient was afflicted with a violent Scurvy, that Disorder is, in like manner, to be removed, or at least mitigated by proper Medicines; because acrid Juices, mixed with the Scirrhus, increase its Malignity, and soon change it into a Cancer. *Van Swieten.*

When a Scirrhus appears to be inveterate, and the Patient is of an infirm Constitution, no Digestion must be attempted; for this Treatment, especially if the Disorder is seated in the Breasts of Women, may easily make the Scirrhus degenerate into a Cancer. But where the Scirrhus is recent, soft, and attended with little Pain, and the Constitution of the Patient is sound, it may not be improper to undertake

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dertake its Diſcuſſion by the Uſe of Digeſtives both internally and externally. The moſt efficacious internal Medicines are the Decoctions of the Woods, the digeſtive Eſſences and Tinctures, with the milder Mercurials, interpoſing Laxatives for reſolving the thick inſpiſſated Humours. As the Uſe of external Medicines alone are generally more pernicious than beneficial, a ſkilful Phyſician ought always to be conſulted, not only to preſcribe proper internal Medicines, but likewiſe a neceſſary Regimen with regard to Diet.

The principal external Reſolvents are Plaiſters of the Gummi Ammoniacum, Galbanum, Opopanax, Sagapenum, Bdellium, and the like, either ſeparately or mixed; or the Powder of the Roots of Briony and Birth-wort, may be added to them. Of the ſame Intention are the Emplaſtra de Cicuta, de Ranis Vigonis, and of Diachylon, with Mercury. Or the following:

Take of the Gums Galbanum and Opopanax, each an Ounce; Ammoniacum and Bdellium, each two Ounces; Olive-Oil, two Pounds; yellow Wax, half a Pound; Powders of the Root of long and round Birth-wort, Lapis Calaminaris, Myrrh, and Frankincenſe, each an Ounce; Venice Turpentine, four Ounces: Mix them for a Plaiſter.

Cataplaſms may be reckoned the next efficacious Remedies to Plaiſters. Thus:

Take of the Roots of white Briony, four Ounces; Roots of round Birth-wort, and Angelica, one Ounce; of the Herbs, Savine, Rue, Scordium, and of Camomile-Flowers, each a Handful; of the Flowers of Melilot, Elder, Mallows, and Leſſer Centaury, each a Handful: Boil them in clean Water, and a cloſe Veſſel, to the Conſiſtence of a Cataplaſm; adding at the End, of Galbanum diſſolved in the Yolk of an Egg, three Ounces; Linſeed Meal, two Ounces; Linſeed Oil, enough to make the whole into a Cataplaſm.

This Cataplaſm, or a Fomentation made of the ſame Herbs, boiled in Vinegar, may be applied warm, not forgetting the Uſe of internal Medicines.

Some greatly recommend Fumigations of Acids, as Digeſtives in this Caſe, uſing boiling Vinegar, either common or that made of Lavender, Elder, Rue, or Treacle, for ſeveral Days. Some ſprinkle the Vinegar on an ignited Stone, and receive the Steam through a Funnel. Others expoſe the Part affected to the Vapour of burning Sulphur; but the ſtrongeſt Remedy uſed of this Kind, is the Fume ariſing from ten to twenty Grains of Cinnabar thrown upon live Coals, or an ignited Stone. But particular Care muſt be taken, that theſe Fumigations be not too ſtrong, nor too frequently uſed; for by being drawn into the Lungs, they may produce dangerous Effects; and as the Cinnabar contains Mercury, it may raiſe a Salivation.

Mercurial Remedies are excellent in this Caſe, either when applied immediately, or after other Medicines have proved unſucceſsful. Beſides the internal Uſe of Mercury, an excellent Ointment may be prepared, by mixing it with Hog's Lard, and a ſufficient Quantity of Turpentine, in a Glaſs or Marble Mortar. With this anoint the Scirrhus twice or thrice a Day, and apply the *Emplaſtrum Vigonis* with Mercury, or the like. But in order to prevent a Salivation from being raiſed by this Method, 'twill be neceſſary to exhibit every fourth or fifth Day a gentle Purge, as the Powder of Jalap, or the laxative Pills, for carrying off the Mercury. Mean while the Fauces ſhould be carefully inſpected, which, when they ſwell or are painful, threaten a Salivation. But in order to prevent it, more frequent Purging is neceſſary; and the mercurial Remedies muſt be omitted till the Symptoms of a Salivation vaniſh. By obſerving theſe Cautions, you need not doubt the Patient's Recovery, unleſs the Caſe be already deſperate.

If all theſe Remedies prove ineffectual to diſcuſs the Scirrhus; and if it is ſafely ſituated and moveable, and the Strength of the Patient will permit the Operation, it will be proper to extirpate the Scirrhus, leſt, as often happens, it ſhould degenerate into a Cancer. The Wound may be healed with *Arcæus's*, or any other vulnerary Balſam, as in other Wounds.

But when the Scirrhus is immoveable, unequal and deeply ſeated; when the Conſtitution of the Patient is infirm; when the Diſorder proceeds from an hereditary Infection, and ſeveral are generated in the ſame Perſon; when it is ſeated in ſome noble Part, and from its Vicinity to the larger Blood-Veſſels, an Hemorrhage may prove fatal, then the Uſe of the Digeſtives, of the Knife, or of Corroſives is evidently improper. This Sort of Scirrhus almoſt always degenerates into a Cancer, or is, at leaſt, attended with very acute Pains. Here, therefore, the Pains are to be removed, and the Cancer, at leaſt, prevented.

In this Caſe the Blood muſt not only be corrected by ſuitable external and internal Medicines, but a proper Regimen of Diet muſt be obſerved. Let the Patient, therefore, be nouriſhed with various kinds of Broth, made of the Fleſh of young and tender Animals, with ſome mild Pot-Herbs, ſuch as Barley, Oats, Rice, Millet, Manna, the ſoſter Pulſes, Spinache, Aſparagus, Viper's Graſs, Goat's Beard, Succory, Parſneps, and freſh Hops. The moſt wholeſome common Drink is either fair Water, or a Ptiſan made of the China Root, Sarſaparilla, Graſs, Polypody, Veronica, Hart's Tongue, Agrimony, Saracen's Conſound, Pellitory of the Wall, Maiden Hair, and the like. If the Scirrhus be attended with Pain, add to the Patient's Drink a little of the Seed of white Poppy, which may be ſweetned to the Patient's Taſte. In order to correct the Acrimony of the Blood, exhibit the Powder of Crabs-Eyes, prepared Shells, Salt of Wormwood, native Cinnabar, crude Antimony, and diaphoretic Antimony, mixing with every Doſe, to alleviate the Pain, half a Grain of Laudanum Opiatum, once, twice, or thrice a Day, according to the Circumſtances of the Patient. What, alſo, excellently anſwer this Intention, are, the recent Powder or Juice of Millepedes, a Dram of Sperma Ceti, given with the other Powders; mercurial Purges, either in Pills or Powders; and, laſtly, frequent Bleeding and Purging in Spring and Autumn.

Outwardly apply, conſtantly, a thin leaden Plate well impregnated with Quickſilver; which will not only mitigate the Heat and Pain, but may avert the Danger of a Cancer. If this leaden Plate is not effectual for this Purpoſe, apply Plaiſters and Ointments, compoſed of Ingredients proper for aſſuaging Pain; ſuch as the following.

Take of Unguentum Diapompholygos, two Ounces; Opium, ten Grains; mix them together, and therewith frequently anoint the Part affected; and, alſo, apply it with a Linnen Cloth. Or,

Take of amalgamated Mercury and Lead, one Ounce; Ointment of Roſes, a ſufficient Quantity; make them into an Ointment, which apply to the Part with a Linnen Cloth, like a Plaiſter. Or,

Take of the Vinegar of Litharge, one Ounce; the expreſſed Oils of Henbane, and white Poppiees, each two Ounces; the infuſed Oil of Roſes, two Ounces; mix and make them into an Ointment, to which, at the End, add from ſix to ten Grains of Opium, which ſpread upon a Linnen Cloth, and apply to the Scirrhus ſeveral Times a Day.

If the Patient diſlikes theſe Ointments, refrigerant Plaiſters may be applied; ſuch as the leaden Plaiſter of *Mynſicht*, the Plaiſter of red Lead, and of Diapompholygos; or the following Compoſition, which is excellent for alleviating Pain.

Take of the recent, expreſſed and purified Juice of Henbane Leaves, Garden Poppy, and Water Hemlock, each four Ounces; inſpiſſate them by boiling over a ſlow Fire; and at the End add, of white Wax, eight Ounces; of the infuſed Oil of Roſes, one Ounce; make them into a Plaiſter. Or,

Take of Sugar of Lead, Cerus, amalgamated Mercury and Lead, expreſſed Oil of Henbane, and infuſed Oil of Roſes, each two Ounces; White Wax, four Ounces; mix and make them into a Plaiſter.

If the Pains are very violent, add to theſe a little Opium.

Some eminent Phyſicians, in the Cure of a Scirrhus, bring it to Suppuration, or uſe corroſive Medicines, or the actual Cautery. But as Suppuration and Corroſives endanger a Cancer, and as People have a natural Abhorrence to the actual Cautery, beſides many other Inconveniencies which attend theſe Methods, they ought to be laid aſide as ſlow, hazardous and cruel. The eaſieſt and readieſt Method, therefore, of curing a large and painful Scirrhus, whether it be in the Lips, Salival Glands, or Breaſts, or Teſticles, is to remove it entirely by Inciſion, unleſs much Danger may be feared from the Hæmorrhage. But if any of the corrupted Part ſhould be left behind, it will be liable to generate a Cancer of a moſt malignant Nature; and although the Scirrhus ſhould be entirely extirpated, a new one will frequently ariſe, without any Fault of the Surgeon. Some Phyſicians, after the Inciſion, apply the actualy Cautery, in order to ſtop the Hæ-

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Hemorrhage, to entirely extirpate the Scirrhus, and prevent its Return. But this Application appears to me unneceſſary, as it contributes little to prevent a new Scirrhus, and as there are many milder and more proper Remedies for ſtopping the Effuſion of Blood.

SCIURUS. The Squirrel. The Fat of this Animal is ſaid to be emollient, and to mitigate Pains of the Ears, if put therein.

SCLAREA.

The Characters are;

The ſmall Leaves under the Whorls are of a different Shape from the reſt; the under Leaves are wrinkled, and of a rarer Texture. The Calyx is tubulous, quinquefid, and as it were bilabiated. The Galea is falcated, long, crooked; the Beard tripartite, the middle Segment bifid and hollow. The Flowers ſurround the Joints of the Stalks in circular Order, and are generally ſix in number, and diſpoſed, as it were, in form of a Spike. The Seeds are roundiſh.

Boerhaave mentions twenty-nine Sorts of *Sclarea*, which are;

1. Sclarea, *Tourn. Inſt.* 179. *Boerh. Ind. A.* 163. *Horminum, Sclarea*, Offic. *Horminum ſativum vulgare, ſive Sclarea*, Park. Theat. 55. *Horminum Sclarea dictum*, C. B. P. 234. Raii Hiſt. 1. 543. *Gallitrichum*, Ger. 668. *Gallitrichum ſativum*, J. B. 3. 309. *Gallitrichum ſive Horminum*, Ger. Emac. 768. CLARY.

The lower Leaves of Clary are large, rough, rugged, and wrinkled, broad at Bottom, and ending in a blunt Point: The Stalks are about two Foot high, very hairy and clammy, of a ſtrong Scent as well as the Leaves, growing thick together, and cloathed with ſmaller Leaves: The Flowers ſtand in large Spikes, of a pale blue Colour, pretty big and large, bending hollow Galea's: They are ſet on *Verticillatum*, or Whorle faſhioned, having two round, hollow, thin, whitiſh Leaves, with a green Border under each Whorle. The Calyx of the Flower, which is very clammy, is divided into two Parts, the upper ending in three, and the lower in two Spinulæ, containing four round blackiſh Seed. The Root is woody, and not much branched, and periſhes after it has born Seed. It grows in Gardens, and flowers in *June* and *July*. The Leaves are uſed.

Clary is accounted to be of a warming and drying Nature. Infuſed in Wine, it comforts a cold, windy Stomach: It is particularly commended to ſtrengthen the Kidneys, to help a Fluor Albus, and invigorate a cold relaxed Womb. *Miller's Bot. Off.*

2. Sclarea; flore albo.

3. Sclarea; Syriaca; flore albo. *T.* 179. *Horminum Syriacum*, C. B. P. 238. Prodr. 114.

4. Sclarea; Orientalis; folio rotundo; flore magno; partim albo, partim purpuraſcente. *T. Cor.* 10.

5. Sclarea; Luſitanica; glutinoſa; ampliſſimo folio. *T.* 179.

6. Sclarea; vulgaris; lanuginoſa; ampliſſimo folio. See ÆTHIOPIS.

7. Sclarea; laciniatis; foliis. *T.* 179. *Æthiopis, laciniatis foliis.* Barrel. Ic. 188.

8. Sclarea; ſicula; folio argenteo, ſubrotundo. *Æthiopis, tota, argentea; perennis lanuginoſa.* Cupani.

9. Sclarea; Æthiopica; folio ſubrotundo; perennis. *Ind.* 63. *Marum Ægyptiorum.* Alpin. Exot. 252.

There grows in the dry and rugged Parts of *Egypt*, a Kind of ſweet-ſcented Plant, which runs up in one whitiſh jointed Stalk, to the Height of a Cubit, or more: On each Side of the Joints ſtands a long thick Leaf, very like that of the *Horminum Sylveſtre*, both in Size and Shape, without Smell, and almoſt without Taſte, but drying, with ſomewhat of Aſtringency. Theſe Leaves are covered with a white Down, and proceed from the Joints in oppoſite Order in the lower Part of the Stalk. In the upper Part, or above the Middle of the Stalk, there proceed from the Joints, together with the Leaves, ſhort, ſlender, ſquare, Branches; from theſe Joints on each Side are produced white Flowers, very much reſembling thoſe of the *Sclarea*, or *Herba Sancti Johannis*; and having, as well as their ſmall Leaves, a very ſtrong, though not unpleaſant Smell: Theſe are ſucceeded by ſmall Seed-Veſſels, containing round, minute Seeds, like Cabbage-Seeds; and of a penetrating Smell. All the young Shoots of the Stalk, with the Leaves, Flower, and tender Branches, are very fragrant; and being dry'd in the Shade, ſerve to put among Clothes to defend them from Moths, and communicate to them its Fragrancy; for the tender Branches being dry'd, change their ſtrong Smell into one more pleaſant.

The Flowers and Seeds are heating, digeſtive and reſolvent. A Decoction of the Leaves, and eſpecially the tender Shoots, in Wine, is good for cold and flatulent Pains, and being apply'd to the griev'd Part, are ſurprizingly effectual. The Juice of the Leaves, with Vinegar and Honey, are good to remove Pains from the Face. *Proſper Alpinus de Plantis exoticis.*

10. Sclarea; Indica; floribus variegatis. *T.* 179. *Horminum hirſutum, flore violaceo, punctis aureis notato.* M. H. 3. Sect. 11. Tab. 13. Fig. 16.

11. Sclarea; folio triangulari, dentato. *T.* 180. *Horminum, Lapathi unctuoſi folio, ſeu majus, haſtato folio.* M. H. Blæſ.

12. Sclarea; folio triangulari; caule tomentoſo. *T.* 180. *Horminum Canarienſe, tomentoſum, hamato folio.* M. H. 3. 394.

13. Sclarea; rugoſo; verrucoſo; laciniato, folio. *T.* 180. *Horminum, ceratophyllum; rugoſum, flore ſulphureo.* M. H. 3. 393.

14. Sclarea; Pyrenaïca; glutinoſa; foliis ſinuatis. *T.* 176. *Horminum anguriæ folio.* Par. Bat.

15. Sclarea; glutinoſa; floris lutei, variegati, Barbâ amplâ cavâ. *Horminum luteum; glutinoſum.* C. B. P. 238. *Orvala tertiâ.* Dod. p. 292. *Colus Jovis.* H. Eyſt. Æſt. o. 8. F. 4. Fig. 1. *Galeopſis Species, lutea, viſcida odorata, nemorenſis.* J. B. 3. 314. *Salvia, montana, maxima, foliis Hormini, flore flaveſcente.* T. 180.

16. Sclarea; Aſphodeli radice. *T.* 179. *Horminum, ſanguineum, Aſphodeli radice.* Triumf. 69. M. H. 3. 394.

17. Sclarea; folio ampliſſimo, ſanguineo, Bardanæ. *Horminum, folio Bardanæ, ſanguineo, ampliſſimo.* Triumf.

18. Sclarea; major; foliis in profundas lacinias inciſis. *T.* 179. *Horminum, ſylveſtre, majus, foliis profundè inciſis.* C. B. P. 239. *Gallitrichum, ſylveſtre, flore majore, albo,* I. B. 3. 312.

19. Sclarea; pratenſis; foliis ſerratis; flore albo. *T.* 179. *Gallitrichum, ſylveſtre, flore majore, albo.* I. B. 3. 312. *Salvia, agreſtis, flore albo.* H. Eyſt. Vern. o. 9. F. 2. Fig. 3. *Herminum, pratenſe, niveum, foliis incanis.* C. B. P. 238. M. H. 3. 393.

20. Sclarea; pratenſis; foliis ſerratis; flore cæruleo. *T.* 179. *Horminum, pratenſe, foliis ſerratis.* C. B. P. 238. M. H. 3. 393. *Gallitrichum ſylveſtris vulgò, ſive ſylveſtris Sclarea, flore cæruleo, magno.* J. B. 3. 311. *Orvalæ Sylveſtris Species quarta.* Dod. p. 293.

Cæſalpinus had not well obſerved the Smell of this Plant, for inſtead of none at all, as he affirms, it has a bad one. It ſeems to contain a volatile oily Salt, wherein the urinous Spirit predominates, ſo that it gives no Tincture of red to the blue Paper. *Martyn's Tournefort.*

21. Sclarea; pratenſis; foliis ſerratis; flore ſuaverubente. *Tourn. Inſt.* 179. *Boerh. Ind. A.* 165. *Sclarea pratenſis,* Offic. *Horminum pratenſe foliis ſerratis, flore ſuaverubente.* Hort. Reg. Par. *Gallitrichum ſylveſtre vulgò, ſive ſylveſtris Sclarea flore purpureo magno.* J. B. 3. 311. MEADOW CLARY.

It grows in the Meadows, and is no more than a Variety of the *Herminum pratenſe foliis ſerratis*, according to *C. B. P.* 11. 244. *Buxb.* 161.

22. Sclarea; Africana; ampliſſimo folio; annua. *Ind.* 64.

23. Sclarea; folio Salviæ; major; vel maculata. *T.* 180. *Horminum ſylveſtre, ſalvifolium, majus, vel maculatum, C. B. P.* 239.

24. Sclarea; folio Salviæ; minor; ſive glabro. *T.* 180. *Horminum ſylveſtre ſive ſalvifolium minus.* C. B. P. 239. *Gallitrichum glabrum, folio Salviæ, flore purpureo.* J. B. 3. 312.

25. Sclarea; folio Salviæ; flore purpureo. *T.* 180. *Horminum, ſalviæ folio.*

26. Sclarea; Orientalis; folio Betonicæ acutiſſimo; comâ purpuraſcente. *T. Cor.* 10.

27. Sclarea; Cretica; latifolio; flore vario.

28. Sclarea; quod Horminum; ſylveſtre; flore rubicundiſſimo, interdum flammeo. *Bocc.*

29. Sclarea; Orientalis; foliis rotundioribus, candidiſſimis. *T.* 6. 10. *Boerh. Ind. Alt. Plant. Vol.* 1.

The Juice of the firſt, ſecond, third, and fourth, and of the twenty-ſecond, called *Africana*, being drank will cauſe Ebriety; it alſo reſiſts Acidity, and is for that Reaſon mixed in Beer, to which, beſides, it communicates a vinous Quality, for which it is eſteem'd by the *Dutch* Peaſants, who love Beer that will make them ſoon drunk. It is, alſo, of Uſe in Surgery, for it is diſcutient, and removes Tumors, reſtores Heat, and reſiſts Putrefaction. But it is to be uſed with Caution, if fermented, in which Circumſtance is ſudorific. The Leaves of this Plant, eſpecially of the firſt and ſecond Species, and in ſome meaſure of the third and fourth, being ſmelled to for a conſiderable Time, will procure Ebriety; and the Leaves boiled in Beer, qualify it for rendering Perſons ſoon drunk; but, uſed with Moderation, they comfort the Spirits and Nerves. The Plant is aperient, antihyſteric, and proper in difficult Labours, and Obſtructions of

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of the Menſes, and is very good alſo for the Fluor Albus, and a great Provocative to Venery. The Leaves bruiſed emit ſo ſtrong and vinous a Smell, that it is commonly us'd inſtead of burnt Wine in Liquor intended for Fomentations; for it communicates a heating Quality, and produces Spirits. The Plant is well known to the Cooks. The Leaves bruiſed, reſolve cold Tumors, and expel Sweats. *Hiſt. Plant. aſcript. Boerhaave.*

SCLERIA, σκληρία, from σκληρὸς, hard, Hardneſs, in a general Senſe, comprehends all Kinds of Hardneſſes, in the ſame Extent as σκλήρωσις *Sclerоſis*; but is uſed by *Galen*, or whoever was the Author of the *Medicus*, to ſignify a Hardneſs of the interior Parts of the Eyelids. *Caſtellus.*

SCLERIASIS, σκληρίασις. The ſame with the preceding Word.

SCLEROCOITIA, σκληροκοιτία, from σκληρὸς, hard, and κοίτη, a Bed. Lying on a hard Bed, hard Lodging. Thus *Hippocrates*, *Lib. de Salubr. Diæta*, adviſes thoſe who are of a fat and groſs Habit of Body, and are deſirous to become lean, among other Parts of Regimen, σκληροκοιτεῖν, "to lodge hard;" and thoſe who practiſe it, are called, *Lib. 3. de Diæta*, σκληροκοῖται, *Sclerocoitiæ.*

SCLEROMA, σκλήρωμα, from σκληρόω, of σκληρὸς, hard, in the *Definitiones Medicæ*, is a ſomewhat hard Tumor ariſing in ſome Part of the Uterus. In a more general Senſe, it is the ſame as σκλήρυσμα, *Scleryſma*, a hard Tumor. *Fœſius Caſtellus.*

A *Sclerоma* of the Uterus is a Species of *Scirrhus*, ſeated principally in the Neck of the Uterus, and reſembling a Tumor, but leſs renitent, and attended with a moderate Pain. *P. Ægineta*, *lib.* 3. *cap.* 68. The Cure is the ſame as that of a *Scirrhus* of the ſame Part. See UTERUS and SCIRRHUS.

SCLEROPHTHALMIA, σκληροφθαλμία, from σκληρὸς, hard, and ὀφθαλμὸς, an Eye. A Sclerophthalmia, or hard Lippitude, is a Diſeaſe of the Eye, attended not only with a Hardneſs and Slowneſs of Motion, but with a Pain and Redneſs. The Eyelids, in this Affection, are hard and dry, never effuſing any Moiſture, with ſmall, writhed, dryiſh, mucous Concretions in their Corners, and a Difficulty of opening or Inverſion, after Sleep, on account of their Dryneſs. This Diſeaſe ſeems to be a Kind of Inflammation, whoſe general Characters are a Pain and Redneſs, but it differs from an Inflammation in a Property peculiar to itſelf, which is Dryneſs. It differs alſo from a *Xerothalmia*, or dry Lippitude, in that this latter, though neceſſarily hard on account of its Dryneſs, is, however, much leſs hard than a *Sclerophthalmia*, and not ſo painful.

SCLEROSARCOMA, σκληροσάρκωμα, from σκληρὸς, hard, and σάρκωμα, a *Sarcoma*, a hard, carnous Abſceſs, affecting the Gums, and reſembling ſometimes a Cock's Comb, ſometimes the Fleſh of a teſtaceous Animal. *Caſtellus.*

SCLEROSIS, σκλήρωσις, is the ſame as SCLERIA, which ſee.

SCLEROTICA *Tunica*, one of the Coats of the Eye, which ſee deſcribed under OCULUS.

SCLIROSIS, SCLIROMA, SCLIRUS, or SCLERUS, all import the ſame as SCIRRHUS.

SCLOPETUM. A Gun. For the Preparation of the *Aqua Sclopetaria*, ſee AQUA. For Gun-ſhot Wounds, ſee VULNUS.

SCOBS. The raſped Powder of Hartſhorn, or Ivory. It alſo imports the ſame as *Cineres Clavellati*; or the Scoriæ of Metals. *Caſtellus.*

SCODEGHINO. The Name of a particular Sort of Inciſion-knife, deſcribed by *Scultetus*, and us'd by *Rouſſet* in performing the Cæſarean Operation.

SCODINEMA, σκοδίνημα. This Word is explained by *Erotian*, a Heavineſs of the Head.

SCOLECIA ÆRUGO. See ÆRUGO.

SCOLECIUM. A Species of venemous Spider. See PHALANGIUM.

SCOLECOIDES, σκωληκοειδὴς. The ſame as VERMIFORMIS, an Epithet for a Worm-like Proceſs of the CEREBELLUM.

SCOLEX, σκώληξ. A Worm.

SCOLIOSIS, σκολίωσις, from σκολιὸς, oblique, Obliquation, Perverſion, a turning aſide, is particularly apply'd by *Hippocrates* to a Diſtortion, or Perverſion of the Spine ſideways.

SCOLIOTES, σκολιότης, from σκολιὸς, oblique, Obliquity, in *Hippocr. de R. V. J. A.* is ſpoken of the Hypochondria, and explain'd by *Galen* in his Comment on the Place, by ἀνωμαλία, Inequality.

SCOLOPAX. See GALLINAGO.

SCOLOPENDRA, Offic. Charlt. Exer. 57. Mouff. Inſect. 199. Mer. Pin. 205. *Scolopendra terreſtris*, Aldrov. de Inſect. 635. Jons. de Inſect. 127. THE MANY FEET.

The *Scolopendra* is a flat, ſlender Worm, three Digits in Length, of a yelloviſh, or reddiſh Colour, furniſh'd on both Sides with a Multitude of Feet, two pretty long Antennæ, and a bifid Tail. Being boiled in Wine, it is eſteemed by ſome a Depilatory, or Medicine to take off Hair.

The Bite of the Scolopendra is ſaid to be poiſonous, *Oribaſius de Morb. Cruat. l.* 3. *c.* 69. adviſes to waſh the injur'd Part with Brine; or to lay upon it Aſhes with Vinegar.

The *Scolopendra* is a venemous Inſect with eight Feet, and a forked Tail. The Bite of this Animal cauſes a Lividneſs and Tumor in the Parts about the Wound; ſometimes there appears a Feculency, and, though but ſeldom, a Redneſs. The Part affected immediately begins to ulcerate, and the Ulceration is both painful, and difficult to be cured; to which we may add, that there is a pruriginous Senſation over all the Body.

For the Cure, pounded Salt is to be apply'd to the Place, or Rue bruiſed, or Aſhes work'd with Vinegar. The Wound is alſo to be waſhed with ſtrong Brine, or, as *Archigenes* directs, with plenty of hot Oil, before the Things firſt order'd are to be applied. Inwardly are to be exhibited, Ariſtolochia in Wine, or Serpyllum, or Calamint, or Wild Rue, or Treſoil, or half a Hemina of the Juice of the Root of Aſphodel mixed with Wine. *P. Æginet. lib.* 5. *cap.* 9.

This Author makes two Sorts of *Scolopendra*, the terreſtrial and marine; and ſays, that the Bite of the latter is ſucceeded ſometimes by an aqueous and pellucid Tumor; but that of the other, by a Redneſs of the tumify'd Part: But *Oribaſius*, *Aetius*, and *Actuarius*, make no ſuch Diſtinction of a *Scolopendra*.

Aetius adviſes the ſame Remedies as are preſcrib'd for the Bite of the *Mus Araneus*, with the Application of Salts mixed with Tar, or Cedria with Honey, or Garlick with Fig-leaves, and Cumin and Ervum in Wine. For Potions, the ſame Things are proper which are recommended againſt the *Mus Araneus*, and beſides theſe, Wormwood and Mint in Wine.

SCOLOPENDRA MARINA, Offic. Charlt. Exer. 62. Raii Inſect. 44. Mouff. Inſect. 322. *Scolopendra marina primo*, Rondel. de Aquat. 2. 108. Aldrov. de Inſect. 635. Jons. de Inſect. 143. *Scolopendra marina rubicundior*, Mouff. Inſect. 322. Mer. Pin. 205. THE SEA MANY FEET.

It is found in the Bottom of the Sea, according to *Geſner*; or in Oiſter-Beds, as *Mouffet* ſays.

Boiled in Oil, and the Parts anointed therewith, it taketh off the Hair; but the Touch thereof excites Itching. *Dioſcorides*, *lib.* 2. *cap.* 16.

SCOLOPENDRIA. See ASPLENIUM.

SCOLOPOMACHÆRION, from σκολόπαξ, a Woodcock, and μαχαίριον, a Kniſe. An Inciſion-kniſe ſhaped like a Woodcock's Bill.

SCOLYMOCEPHALUS. A Name in *Boerhaave* for ſeveral Sorts of *Conocarpodendron*, *Hypophyllocarpodendron*, and *Lepidocarpodendron*.

SCOLYMUS. The Artichoke. See CINARA.

The Characters are;

The Calyx is ſquamous; the *Ova* are ſeparated from one another by a ſmall, thin Leaf which grows to them. The Seed, when ripe, ſtill adheres to the Leaf: It has the Appearance of a Thiſtle.

Boerhaave mentions two Sorts of *Scolymus*, which are:

1. Scolymus; Chryſanthemus. *C. B.* 388. *Tourn. Inſt.* 480. *Boerh. And. A.* 91. *Scolymus*, Offic. *Scolymus Theophraſti ſive Eryngium luteum Monſpelienſium*, Park. 972. *Carduus Chryſanthemus Narbonenſis*, Ger. Emac. 1155. Raii Hiſt. 1. 258. *Spina lutea*, J. B. 3. 84. *Cichorium luteum Scolymoides Spinis horridum*, *Narbonenſe*, Hiſt. Oxon. 3. 55. GOLDEN THISTLE.

It grows in *Italy*; and the Root, which is the Part uſed in Medicine, is ſuppoſed to agree in Virtues with that of Eryngo. See ALÆ.

2. Scolymus; Chryſanthemus; annuus. *A. R. Par.* 3. *Bot. Monſp. Cichorium luteum*, *Scolymoides*, *ſpinis horridum*, *Hiſpanicum annuum*. M. H. 3. 55. *Boerh. Ind. Alt. Plant. Vol.* 1.

The Root of the *Scolymus* boiled in Broth, in the Spring Time, is reckon'd a wholſome Aliment: The ſame decorticated, and taken with Vinegar and Oil, is a Carthartic. *Hiſt. Plant. aſcript. Boerhaave.*

SODYMUS SYLVESTRIS. See CINARA.

SCOMBER. Offic. Aldrov. de Piſc. 270. Schonef. Ichth. 66. Raii Ichth. 181. Euſd. Synop. Piſc. 58. *Scomber ſive Scombrus*, Geſn. de Aquat. 841. Jons. de Piſc. 63. *Scombrus* Bellon de Aquat. 200. Rondel. de Piſc. 1. 234. Salv. de Aquat. 241. THE MACKREL OR MACAREL.

Is

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It lives in the Sea, and is commended for the Jaundice, and Obſtructions of the Liver.

This Fiſh is well known, and always found in the Sea, but never in freſh Water. It is fiſhed for when about the Size we uſually ſee it; for it afterwards increaſes in Bulk, and is not looked upon as the ſame. This Fiſh is much uſed in *England*, but only for a certain Seaſon of the Year, after which it diſappears; but in ſome Countries they have it at all Seaſons. Thoſe are beſt which are freſh, thick, tender, juicy, and agreeable to the Taſte. When it is ſalted, it becomes not ſo well taſted.

It is nouriſhing Food, and reckoned to be of a diſſolving Nature; but is heating and not reckoned wholeſome, producing viſcous and groſs Juices, and is not eaſy of Digeſtion. It contains much Oil, volatile Salt, and Phlegm. *Bellonius* blames thoſe who boil Macarel, and ſays it ſhould be roaſted, and ſeaſoned with ſuch Things as promote Digeſtion. Undoubtedly the Roaſting diveſts it more of its viſcous and groſs Juices. It agrees, in the Spring and Summer, with young People of a healthy Conſtitution, who have a good Stomach. *Lemery on Foods.*

SCOMBRUS. The ſame as SCOMBER.

SCOPARIA. See CHENOPODIUM.

SCOPS. σκὼψ. The Name of a Bird, a Sort of Owl, of no Uſe in Medicine.

SCOPTULA. The ſame SCAPULA.

SCOPULA. A Bruſh.

The Fleſh-Bruſh is an Exerciſe moſt uſeful for promoting a full and free Perſpiration and Circulation. Almoſt every Body knows what well Currying will do to Horſes, in making them ſleek and gay, lively and active, even ſo much as to be worth half the Feeding. This it can no otherwiſe effectuate, than by aſſiſting Nature to throw off, by Perſpiration, the Recrements of the Juices, which ſtop the full and free Circulation; and by conſtant Friction, Irritation, and Stimulation, to allicite Blood and Spirits to the Parts moſt diſtant from the Seat of Heat and Motion, and ſo to plump up the ſuperficial Muſcles. The ſame Effect it would produce in other Animals, even human Creatures themſelves, if they were managed in the ſame manner, with the ſame Care and Regularity. I ſhould think it, therefore, well worth the Pains of Perſons of weak Nerves and ſedentary Lives, eſpecially thoſe threatned with paralytic Diſorder, to ſupply the want of Exerciſe of other kinds, with ſpending half an Hour Morning and Night, in currying and rubbing their whole Body, more eſpecially their Limbs, with a Fleſh-Bruſh. And 'tis a wonder to me, that Luxury has not brought Cold-Bathing and Currying in Uſe, upon the Animals (eſpecially thoſe of them upon whom they can be ſo readily made uſe of, ſuch as Oxen, Pigs, Veal, Lamb, and all Poultry, which naturally delight in Cold-Bathing) which are brought to the Table. For certain it is, that Cleanneſs and due Exerciſe (of which Currying is one Part) would much contribute to make all Animals whatſoever, without Exception, healthier in themſelves, fuller of Juice and Spirits, and conſequently better Food for human Creatures. *Cheyne of Health and long Life.*

SCORAX. The Gum of the Olive-Tree. *Rulandus.*

SCORBUTICA. Remedies for the Scurvy.

SCORBUTUS. The Scurvy.

The Scurvy, a Diſorder very frequent in maritime and northerly Countries, is the Cauſe of many other Diſeaſes; and though it has not been entirely overlooked and neglected either by the Ancients or Moderns, yet it has not hitherto been accurately deſcribed, for want of long Voyages and Travels into the cold Countries, where it principally rages.

As this Diſorder often impoſes on the Phyſician, by its ſurpriſing Variety of Symptoms, it cannot be better known than by forming a Judgment of its Nature, after premiſing a complete Hiſtory of it.

It is found among the *Britons*, *Dutch*, *Swedes*, *Danes*, *Norwegians*, and Inhabitants of the inferior or northern *Germany*; ſo that it principally affects the northern Nations, and the People living in cold Climates; among theſe it is in a particular manner injurious to thoſe adjacent to the Sea, to Places overflowed by Sea-Water, to Lakes and Marſhes, to fat ſpongious Soils, to Valleys ſurrounded by high Hills, and to the Brinks of Rivers or Lakes. It is principally incident to thoſe who lead an idle and ſedentary Life; to thoſe who in the Winter-time live cold in Places paved and built with Stone; to Sailors, who uſe ſalt Aliments, ſmoked Fleſhes, Biſcuits, putrid and verminous Water either by Sea, or on Land; to thoſe who are Lovers of Water-Fowls, ſalt Fiſhes, Beef or Pork ſalted and inaurated by the Air or by Smoke; to thoſe who uſe farinaceous unfermented Subſtances, Peaſe, Beans, and ſalt, acrid, or old Cheeſe; to thoſe who are ſubject to Melancholy, Madneſs, hypocondriac or hyſteric Paſſions, ſlow Diſorders, and more eſpecially to thoſe who have uſed large Quantities of Peruvian Bark.

When it attacks ſuch Perſons, it ſeizes, is increaſed, and maturated with the following Phænomena.

Firſt, There is a preternatural Lazineſs, Torpor, and Love of ſitting and lying in Bed, a ſpontaneous Laſſitude and Weight of the whole Body, a Pain of all the Muſcles, as if were ariſing from exceſſive Fatigue, eſpecially in the Legs and Loins; a Difficulty of Walking, eſpecially up a riſing or down a declining Ground; and in the Morning after Sleep, a Senſation of all the Limbs and Muſcles, as if they were fatigued and contuſed.

2do. The Reſpiration is difficult, laborious, and almoſt defective upon the ſmalleſt Motion; there is an appearing and diſappearing Tumor of the Legs, which become ſo heavy as to be immoveable. On the Legs there appear red, brown, yellow and violet-coloured Spots. The Colour of the Face is of a paliſh brown. There is a beginning Fætor of the Mouth, the Gums becoming tumid, painful, hot and itching, and upon the leaſt Preſſure diſcharge Blood. The Teeth, in conſequence of the Retraction of the Gums, are denudated and looſe. Various wandering Pains through all the external and internal Parts of the Body, producing ſurpriſing pleuretic, ſtomachic, iliac, colical, nephritic, cyſtic, hepatic and ſplenetic Diſorders. There are, alſo, various but ſlight Hemorrhages.

3tio. The Putrefaction of the Gums ſmells like a Carcaſs; they are, alſo, inflamed, diſcharge Blood, and are at laſt ſeized with a Gangrene. The Teeth become looſe, yellow, black, and at laſt carious; the Annuli, adjacent to the Venæ Raninæ, become varicoſe. There are Hemorrhages, which often prove mortal, from the external Skin, without any Appearance of a Wound, from the Lips, the Gums, the Mouth, the Noſtrils, the Lungs, the Stomach, the Liver, the Spleen, the Pancreas, the Inteſtines, the Uterus, and the Kidneys. There are formed every where, eſpecially in the Legs. Ulcers, ſo obſtinate as to yield to no Applications, and which, for a long Time, continue fetid, and inclin'd to a Gangrene. The Patient is afflicted with an Itch, cruſtaceous Eruptions, a dry and gentle Elephantiaſis. The fibrous Part of the Blood taken from the Veins, is black, grumous, thick, though not compact; whilſt its ſerous Part is ſaline, acrid, and its Surface abounding with a yelloviſh green Mucus. The Patient is, alſo, afflicted with corroding lancinating Pains, which ſoon terminate, and are increaſed in the Night-time, through all the Limbs, Joints, Bones, and Viſcera. Livid Spots, alſo, appear on the Skin.

4to. There are form'd various burning, malignant, intermittent, wandering, periodical, and continual Fevers, which bring on an Atrophy. The Patient is ſubject to Vomitings, Diarrhæas, Dyſenteries, ſevere Stranguries, Deliquiums, Anxieties, which frequently prove mortal; the Dropſy, a Conſumption, Convulſions, a Tremor, a Paſſy, Contractions of the Parts, black Spots, a Vomiting and Purging of Blood; a Putrefaction and Conſumption of the Liver, Spleen, Pancreas, and Meſentery; and in this State of the Diſorder the Contagion is very quick.

Hence 'tis obvious, that the Nature and Effects of a Scurvy are eaſily underſtood by thoſe who duly conſider what has been ſaid.

Hence 'tis, alſo, obvious, that the proximate Cauſe of a Scurvy is ſuch a State of the Blood, in conſequence of which it is in one Part peccant, with reſpect to Thickneſs, and in the other with reſpect to its acrid, ſaline, alcaline or acid Thinneſs; which Circumſtances are above all Things to be accurately inveſtigated and diſtinguiſhed.

From theſe Circumſtances, known from the Nature of the Diſeaſe, all its Phænomena, however ſurpriſing, may be deduced.

This is evinced more fully by the Rules which the proſperous or unlucky Cure of this Diſorder has eſtabliſhed, the principal of which are theſe following.

In a Scurvy, that which is thick is to be rendered thin; that which is ſtagnant, moveable; and that which is coagulated, fluid.

That, in like manner, which is too thin, is to be inſpiſſated; and that which is acrid, corrected, and mitigated, not only in a general, but, alſo, in particular.

And in the Concretion of the one, we are always to have a due Regard to the Nature of the other. Hence great Skill and Judgment are neceſſary to the ſucceſsful Cure of a Scurvy.

Acrid evacuating Medicines always exaſperate this Diſorder, and ſometimes render it incurable.

1mo. Hence the Cure is to be begun with mild, attenuating, deobſtruent, and purgative Medicines, exhibited in ſmall but reiterated Doſes. Thus,

Take of the Vitriol of Tartar, which is not acid, of the Cryſtals of Tartar, each half
and of Sal Polychreſtum,
a Dram; reduce to a Powder, to be taken in the Morn-
ing

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ing in Whey, drinking twelve Ounces of Whey after it. Or,

Take of Sal Polychreſtum, two Drams; of the greater Pilulæ Cochiæ, one Scruple; of the ſolutive Syrup of Roſes, with Senna, ſix Drams; and of diſtilled Succory-Water, two Ounces; mix up for a Draught. Or,

Take of the Elixir Proprietatis, prepared with Salt of Tartar, two Drams; of the ſolutive Syrup of Roſes, with Senna, ſeven Drams; and of diſtilled Fumitory Water, two Ounces; mix up for a Draught. Or,

Take of the greater Pilulæ Cochiæ, one Dram; make into twenty-one Pills, of which let the Patient take two at Night, before going to Bed, and five in the Morning, before Breakfaſt.

2do. We are to proceed in the Uſe of attenuating and digeſting Medicines, ſuch as *Helmont*'s Tincture of the Salt of Tartar, one Dram of which may be taken in two Ounces of Wine; *Harvey*'s Tincture of the Salt of Tartar, four Drams of which may be taken in three Ounces of Wine; *Ludovicus*'s Tincture of Mars, one Dram of which may be taken in one Ounce of Wine; vitriolated Tartar, Cryſtals, and Cream of Tartar, and Vitriol of Mars, half a Dram of any of which may be taken in three Ounces of Wine; Sal Polychreſtum, and *Tachenius*'s Salts, prepared from Vegetables, one Dram of any of which may be taken in three Ounces of Wine; the Elixir Proprietatis, prepared with Spirit of Vinegar, two Drams of which may be taken; the Elixir Proprietatis, prepared with Salt of Tartar, two Drams of which are ſufficient for a Doſe; the Elixir Proprietatis, prepared with aromatic Waters, three Drams of which may be taken for a Doſe; the volatile, oleous, aromatic Salts, one Dram of which may be taken; Venice Soap, four Drams of which may be taken; *Starkey*'s Soap, half a Scruple of which may be taken; ſimple Oxymel, four Ounces for a Doſe; ſimple Oxymel of Quills, three Ounces for a Doſe; compound Oxymel of Quills, two Ounces for a Doſe. To this Claſs, alſo, the Conſerves of Sorrel and Wood-Sorrel; as, alſo, Oranges, China Oranges, Citrons, Lemons, and Pomgranets.

3tio. After this we are, for a long time, to perſiſt in the Uſe of mild Specifics, exhibited in any Form; ſuch as Male and Female Southern-Wood, broad and ſmall-leaved Wormwood, all the Species of Sorrel and Wood-Sorrel, Maudlin, Agrimony, the Male and Female Pimpernel, Mugwort, Coſtmary, Burdock, Beccabunga, Oak of Jeruſalem, red Cabbage and Colly-Flower; wild Parſley, Box, Chervil, Ground Pine, Germander, Succory, wild Cabbage, Cumenoides, Endive, Hemp-Agrimony, Fennel, Fumitory, both Species of Galangals, Ground-Ivy, Docks, Lovage, Marjoram, Baum, Mint, Water and Garden Creſſes, Moneywort, Rhubarb, Sage, Scabious, Scordium, Flixweed, Paul's Betony, Nettles, Oranges, Citrons, Lemons and Pomegranats; Barberries, ripe Cherries of all Kinds, Strawberries, Gooſberries, Mulberries, ſweet and ſomewhat acid Apples, Apricots, and all ripe Plums. The Fruit of the red and grey Bramble, Raſpberries, Elder-Berries, Tamarinds, and Spaniſh Whortles.

4to. In the mean time, the ſix Non-naturals are to be duly regulated, ſo as to be contrary to the Cauſes of the Diſorder before ſpecified.

In the ſecond Stage of the Diſorder, deſcribed in N°. 2. the Subſtances laſt-mentioned are proper. Then we are, for ſome time, to uſe ſomewhat more acrid Antiſcorbutics, in the Form of expreſſed Juices, Conſerves, Spirits, volatile Salts, medicated Wines, and Ales. The Subſtances proper for this Purpoſe, are the Acriviola, Garlicks, Jack-by-the-Hedge, Cuckow-Pint, wild Raddiſh, Wormwood, Onions, the greater Celandine, Scurvy-Graſs, Elicampane, Hedge-Muſtard, Rocket, Gentian, Hedge-Hyſſop, Woad, Dittander, Leeks, the Ptarmica Draco, Garden and wild Raddiſh, Rue, Savin, Worm-Seeds, Soapwort, the leſſer Houſleek, Muſtard, and Water Trefoil. An expreſſed Juice may be prepared thus:

Take of the Shavings of wild Raddiſh, four Ounces; and of the recent Leaves of Scurvy-Graſs, Money-wort, and Nettles, each four Handfuls: Expreſs the Juice, and mix with Sugar, and let the Patient take two Drams four or ſix times a Day.

A Spirit may be prepared thus:

Take of the Seeds of Muſtard, Garden Raddiſh, Rocket, Hedge-Muſtard, and Garden Creſſes, each one Ounce; of the Leaves of Scurvy-Graſs, Dittander, and wild Raddiſh, each two Handfuls. To theſe, when cut and bruiſed, add of Sea-Salt two Ounces; of Yeſt, one Ounce; and of Spirit of Wine, a Quantity ſufficient to riſe two Finger-Breadths above the Ingredients; diſtil and cohobate three Times.

A volatile Salt may be thus prepared:

With the preceding Ingredients for the Spirit, inſtead of Sea-Salt and Yeſt, mix of Sal Ammoniac bruiſed, three Ounces; and of Pot-Aſh, ſeven Ounces. Diſtil as before.

A medicated Ale may be prepared thus:

Take of the recent Leaves of Scurvy-Graſs, Rocket, Hedge-Muſtard, and Water-Treſoil, each one Handful; of the recent bruiſed Seeds of Garden-Creſſes, and Garden-Raddiſh, each two Ounces; of the Flowers of Leſſer-Centaury, one Ounce; and of the Roots of Wild Raddiſh, five Ounces. Put all into half a Firkin of recent fermenting Ale, which is to be uſed for ordinary Drink.

A medicated Wine may be prepared thus:

Take of the Bulb of Arum, newly dug out of the Ground, half an Ounce; of wild Raddiſh, one Ounce; of the Leaves of Scurvy-Graſs and Trefoil, each one Handful; of Muſtard-Seeds, two Ounces; and of Rheniſh Wine, ſix Pints: Make into a medicated Wine.

Externally Baths for the Body and Feet are to be uſed, prepared with antiſcorbutic Ingredients. Hot dry Frictions, together with ſpecific Liquids, are, alſo, to be uſed. Beſides, Veneſection will often contribute to diminiſh the acrid Fluids, leſſen the Corroſion of the too much diſtended Veſſels, procure a Revulſion, and pave a Way for the Operation of other Medicines to be uſed.

But according as the acrid Tenuity of the Fluids, the Heat and the Dread of an Hæmorrhage are greater; or according as the Thickneſs, and languid State of the Fluids, and Coldneſs and Paleneſs of the Veſſels are greater, we are to uſe Specifics moderately aſtringent, ſomewhat cooling; or hot and acrid. The moderately aſtringent Antiſcorbutics are Capers, Flowers of Broom, the common Aſh-tree, Dock, and all the Species of it, Hops, Polypody of the Oak, Rhubarb, and Tamariſks. The ſomewhat cooling Antiſcorbotics are Oranges, Citrons, Lemons, China-Oranges and Pomegranates; ſomewhat acid and ſweet Summer-Fruits, Sorrel, Wood-Sorrel, Succory, Endive, Lettice, Dandelion, Milk and Water in the Summer, Whey and Butter-milk; Tartar, and all acid tartarized Subſtances. The hot and acrid antiſcorbutic Medicines are already enumerated.

For removing the Diſorders of the Mouth in this Species of Scurvy, we muſt uſe antiphlogiſtic, antiſcorbutic Medicines, appropriated to the various Species of Scurvies. In hot Scurvies of the Gums, the following Gargariſms may be uſed.

Take of Lemon-Juice and Honey of Roſes, each two Ounces; of the dulcify'd Spirit of Salt, half a Dram; and of diſtilled Rue-Water, two Ounces: Mix all for a Gargariſm. Or,

Take of the Spirit of Sea-Salt, two Drams; and of diſtilled Sage-Water, eight Ounces: Mix for a Gargariſm. Or,

Take of recent Lemon-Juice, one Ounce; of Sal Ammoniac, one Dram; and of diſtilled Rue-Water, ſix Ounces: Mix for a Gargariſm.

In cold Scurvies of the Gums, the following Gargariſm may be uſed.

Take of the Spiritus Theriacalis, and of the Spirit of Scurvy-Graſs, each one Ounce; and of the Honey of Roſemary, two Ounces: Mix for a Gargariſm. Or,

Take of camphorated Spirit of Wine, half an Ounce; of the Tincture of Myrrh, one Ounce; of the Rob of Juniper Berries, half an Ounce; of the diſtilled Water of Wormwood, four Ounces; and of Sal Gemmæ, one Dram: Mix for a Gargariſm.

For the Cure of the third Species of Scurvy, deſcribed No. 3. all the already preſcribed Meaſures are to be uſed; only the Patient is to uſe large Quantities of lenitive, diuretic, antiſeptic,

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septic, and antiscorbutic Medicines; whilst a gentle Discharge by Sweat, Urine and Stool, is to be long continued. Thus:

Take of Fumitory, Sorrel, Brook-Lime, and Water Trefoil, each one Handful; of Whey and Butter-milk, each two Pints: Make into a Decoction. Or,

Take of Wood-Sorrel, one Handful and an half; of Betony and Chervil, each half an Handful; and of Tamarinds, one Ounce and an half: Cut all down, and in three Pints of the Whey of Summer-milk, infuse for an Hour in an almost boiling Heat, tho' without Boiling: Then with the Liquor, when expressed through a Linen-Cloth, mix of the Syrups of Citron-Juice, Rasp-berries and Violets, each one Ounce: Of both these Preparations let the Patient drink one Ounce every Half-Hour during the Day.

The fourth Species of Scurvy is rarely to be cured; but the Method of Cure is to be varied according to the Variety of the Symptoms. Sometimes Mercurials prove beneficial, as also the Medicines last recommended.

If what has been said is duly considered and compared with the Phænomena of the Disorder, and the Dissections of those who have died of it, it will be obvious, that, in order to a successful Cure of this Disease, the Physician must carefully investigate the Nature of the peccant Humor, and the peculiar predominating Acrimony. And as this Acrimony may be either saline and munatic, acid and austere, alcaline and fetid, or rancid and oleous; so a Knowledge of these particular Circumstances will render the Cure of the Disease more easy than it would otherwise be. Hence, also, the Reason is obvious, why Whey, Butter-milk, and medicinal Waters, have so often removed the most terrible Symptoms of this Disorder, and what these Symptoms are? Why the acid Juices of ripe Summer-Fruits, such as Oranges, Citrons, Lemons, Pomegranates, Sorrel, Wood-Sorrel, Vinegar, Rhenish and Mosselle Wine, are so often Specifics for this Disorder, and in what Cases they prove such? Why astringent and austere Substances, such as Rhubarb, Docks, Tamarisks, Capers, austere Wine either of the black or red Kind, and Preparations of Steel, so often prove beneficial, and in what Cases they are so? Why the most acrid aromatic Substances, such as Scurvy-Grass, Dittander, Ginger, the lesser acrid House-Leek, alcaline Salts of the volatile, fixed, oleous, aromatic, and saponaceous Kinds, so often prove beneficial without the Help of any other Medicines? Why what is serviceable to one scorbutic Patient, is prejudicial to another? And lastly, why, instead of perplexing ourselves about the various Names of this Disorder, we ought rather to investigate the peculiar Genius of each Species of Scurvy, as if it was a distinct Disease? *Boerhaave Aphor. & Mat. Med.*

The Name *Scurvy* is at present so extensive and common, that almost any chronical Disorder, if accompanied with any Degree of Impurity, comes under that Denomination. Thus nothing is more usual, than to class a Cachexy, a Gout, a Dyspnæa, a Palsey, an Erysipelas, a Colic, an Atrophy, a Rheumatism, the Purples, and several others, among the scorbutic Disorders. 'Tis, also, customary for ignorant Physicians, when, from certain Signs, they can neither know the Disease nor its Cause, to affirm that it is a Scurvy, assigning for its Cause a scorbutic Acrimony. In Practice there, also, frequently occurs a singular Disease, accompanied with surprising spasmodic and convulsive Symptoms; in which Case the Ignorant either refer the Disorder to Fascination, or falsely call it by the Name of the Scurvy. This Opinion is opposed by some celebrated modern Physicians, who either absolutely deny that there is any such Disorder as the Scurvy, or pretend that it is only an Excerbation of the hypocondriac and hysteric Disorders. But in this they are mistaken, as will afterwards appear.

A Scurvy, properly so called, is a violent Injury of the Functions of the whole Body, arising from a preternatural Dyscrasy and Corruption of the Blood and vital Juices, produced by the Fault of the Diet and Air, familiar not only to the Inhabitants of maritime and northerly Parts, but also to Soldiers residing in Camps; and not to be cured without great Difficulty.

This Disorder, which is accompanied with various and terrible Symptoms, principally discovers its Nature in the external Parts; for if it is approaching, a spontaneous Lassitude seizes the whole Body, which is succeeded by a Heaviness of the Legs and Feet, accompanied with an Inability of Motion: Then the Colour of the Face recedes from its natural Redness, an Ichor mixed with Blood is discharged from the Gums, whose Flesh is relaxed and consumed to the very Roots of the Teeth, which by that means are rendered loose. In the Legs there appear Spots of various Figures, Bulk and Colours, and which frequently terminate in malignant Ulcers. As the Disorder increases, the Limbs are generally seized with lancinating Pains, either of the wandering or fixed Kind, accompanied with a certain Inability of Motion or convulsive Strictures.

That a Scurvy was not altogether unknown to the Ancients, is pretty certain from *Hippocrates*, who, in his Treatise *de Internis Affectibus*, describes the Scurvy under the Name of the *Disease of the Spleen*, in the following manner: "The Person, says he, who is seized with this Disorder has his Abdomen inflated, then his Spleen becomes "tumid, hard, and afflicted with acute Pains. The Colour of "the Face becomes black, or pale, resembling the Rind of a "Pomegranate. The Gums have a fetid Smell, and are separated from the Teeth. Ulcers resembling nocturnal Pustules, appear on the Legs; the Limbs are extenuated, and "the Patient is costive." *Pliny*, also, *in Histor. Natural. Lib.* 25. *Cap.* 3. beautifully confirms this, in the following manner: "When *Cæsar*'s Army was on the other "Side of the *Rhine* in *Germany*, by their drinking insalutary "Waters, supposed to be contaminated by some Spells, there "appeared among them two new Disorders; one of which "being a putrid and fetid Disorder of the Mouth, they called "σαπρακὴν; by means of which, in two Years Time, all the "Teeth dropt out. Whilst the other so injured the Nerves "of the Legs, as to loosen the Joints of the Knees, and vel-"licate the Legs; from which it got the Name of σκιδοτέρβη."

But in order to render the Nature and Genius of a Scurvy more conspicuous, we shall trace the History of this Disorder with all its terrible Symptoms, through the several Parts it generally affects, beginning with the Abdomen. Patients of this kind do not very often complain of a Weight and Pain of the Stomach, tho' they are sometimes affected with a Nausea, Cardialgia and Vomiting. The Appetite is, in some, pretty much impaired, and in others preternaturally increased. But it is quite otherwise with respect to Thirst; for there is scarcely any Desire for Drink. Acid, bitter, nidorous, and fetid Eructations are frequently discharged with Violence. Rumblings and a Noise are frequently perceived in the Stomach and Intestines. Some have their Bodies very soluble, whilst others are so costive, that the indurated Fæces can hardly be discharged. In some the *Anus* is, as it were, drawn inwards; so that nothing can be commodiously introduced into it without the greatest Uneasiness. In the Abdomen are violent Colic-Pains, far different from those of the common Kind; for they are lancinating, acute, and so intolerable, that the Patient is ready to lay violent Hands on himself. Nor in this, as in other Colics, is the Abdomen distended with Flatulences. Since the Navel is drawn inwards, so far that an ordinary Fist may be put into the Cavity. This Disorder is long protracted, nor does it easily yield to Medicines and Fomentations, but has this peculiar to it, that it frequently terminates in a Palsey.

We now come to consider what Symptoms occur in the Breast under a Scurvy. Patients of this Kind are afflicted with a Difficulty of Breathing, which frequently arises, or is exasperated, by excessive Motion. This is often accompanied with an Uneasiness which the Patients perceive under the Diaphragm, in the Middle between the Hypocondria, where the *Cartilago Ensiformis* is situated, and which does not suffer them to breathe freely, except in an erect Posture. There is an easy Transition from this Disorder to a Dropsy, which first discovers itself by a Swelling of the Legs, and then of the Abdomen, especially if drastic Purgatives have been used. Besides the Difficulty of Breathing in the Thorax, a Pain is perceived sometimes in the Left, and sometimes in the Right-Side; sometimes towards the Back, and sometimes towards the Sternum, and at other times in the Sternum. But this Pain ought not to be confounded with a true Pleurisy, in which the Pain is continual, pungent, and accompanied with a Fever, a continual Cough, and an Expectoration of coloured Matter. But this is not observed in a scorbutic Pleurisy, where the Pain is most acute, but not continual; since it recurs by Intervals; nor is it accompanied with Thirst and a Fever; nor is the Breathing difficult, except under the Pain. Besides, in a scorbutic Pleurisy, the small and unequal Pulse is quite different to that which happens in a true Pleurisy. Sometimes there is no Cough, or one which is not very troublesome; and when such a Symptom is present, it proceeds not so much from any Disorder of the Thorax, as from a Matter falling down on the Glands of the Fauces. This Disorder may, therefore, be justly called a spurious scorbutic Pleurisy, and may be easily distinguished from a true Pleurisy, because the former continues longer than the latter. A Palpitation of the Heart is, also, frequently incident to scorbutic Patients, who are, likewise, subject to Coarctations of the Breast, and Deliquiums, into which they fall when they endeavour to get out of Bed, without any external Cause. But these Deliquiums differ

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differ from others in this, that during the former, the Pulse is large and ſtrong; whereas, in other Deliquiums, it is ſmall and intercepted. Beſides, in the Thorax, becauſe in it the Oeſophagus is ſituated, there happens another Symptom; for ſcorbutic Patients frequently complain, that their whole Gullet is obſtructed, and that ſomething like a Stake is contained in it, which would ſo hinder the Deglutition of the Aliments and Drink, that if any Attempt was made that way, they would run a Riſk of being ſuffocated.

Having thus conſidered the Thorax, we now proceed to the Neck, Fauces and Head, where various Symptoms occur; ſuch as a preternatural Diſcharge of the Saliva, a Symptom very frequent to ſcorbutic Patients. The Gums, alſo, are in this Diſorder greatly affected, ſince in the Beginning they become tumid, and, when gently handled, diſcharge a ſerous Blood. A luxuriant Fleſh is, alſo, often copiouſly formed on them, which is at laſt accompanied with a highly fetid Smell. When the Gums are thus indiſpoſed, the Teeth begin to be looſe in their Sockets; ſo that they may ſometimes be taken out. There is, alſo, frequently a Tooth-ach, without any manifeſt Cauſe; but this Tooth-ach differs from others in this, that it ſuddenly diſappears, and eaſily recurs. The Patient is often afflicted with violent and generally wandering Head-achs, which principally have their Periods towards the Evening, but terminate in the Night-time upon the Eruption of a Sweat. Vertigos, alſo, and Dimneſs of Sight, frequently happen, and, at certain Intervals, a Drowſineſs; and, on the contrary, other Patients are for many Weeks tormented with Watchings, without being weakned, as it happens to feveriſh Patients. Sometimes, alſo, an exceſſive Dejectedneſs, or an abſolute Delirium, happens. But this Species of Delirium differs from others in this, that it ſeizes the Patient in an anomalous manner, and ſeemingly without adequate productive Cauſes.

If we conſider the external Parts, we find the Scurvy productive of Convulſions, Pains, and Spaſms in them. Thus Convulſions frequently happen in the Hams of the Legs, and the Ancles are ſometimes contracted. Here and there, alſo, violent Contractions happen, which frequently remain in the Joints. This Diſorder is excellently deſcribed by *Georgius Horſtius*. Palſies, alſo, frequently happen, eſpecially in the Legs, after violent Spaſms of the Inteſtines: In which caſe, a preceding Stupor is the Fore-runner of the approaching Misfortune. But theſe Palſies differ from an ordinary Palſy, which is gradually formed, continues long, and deſtroys all Motion; whereas a ſcorbutic Palſy ſeizes quickly, diſappears ſuddenly, and in ſome meaſure leaves the Motion of the Part, eſpecially if the Patient keeps his Bed. Beſides, an exceſſive Wearineſs ſeizes all the Limbs, without any manifeſt Cauſe. Some ſcorbutic Patients, alſo, complain of a vermicular Pain, and ſometimes an obtuſe tenſive Pain ſeizes the Marrow of the Bones. Others are racked with the moſt intenſe, pungent and lancinating Pains, juſt as if the Parts were torn aſunder. Theſe Pains are generally wandering, and transfer themſelves from one Part to another, which they, alſo, ſoon leave. Hence they are called the Wandering-Gout. But ſometimes they ſeem to keep a fixed Seat in the Breaſt; in which Caſe a Pleuriſy is to be dreaded.

Pains ariſe principally in the Legs, as alſo about the Ancles and Soles of the Feet; ſometimes in the Extremities of the Fingers, the Hip, the Knee, the Back, the Loins, and the Nape of the Neck; and theſe Pains differ from a true Arthritis, becauſe they wander up and down, not only about the Joints, but alſo in the Fleſh, about the Membranes. In this Diſorder the Patient is alſo afflicted with profuſe, troubleſome and waſting Sweats, eſpecially in the Night-time. Hæmorrhages, alſo, ſometimes happen from the Noſe, and are not to be ſtopped without great Difficulty. Beſides, on the Skin appear Spots, which are ſometimes larger, and ſometimes ſmaller, reſembling the Bites of Gnats, and which are generally at firſt red, then purple, and ſomewhat livid, and laſt of all black. The larger Spots ſometimes occupy the whole Legs, and diffuſing themſelves far, appear ſometimes on the Thighs, Neck and Breaſt, and again appear at Intervals. Sometimes, alſo, Tumors and Tubercles appear in different Parts of the Body. Oedematous Tumors are formed in the Feet, and Exulcerations happen in the following manner: Firſt, the Part is very painful; then the Cuticula is ſeparated from the ſubjacent Skin, juſt as if boiling Water had been poured upon it, the Serum is diſcharged, and then the Part is intenſely painful; but a true Pus is hardly ever obſerved in ſuch Parts. Some Patients are, alſo, afflicted with dry and deep Ulcers, which diſcharge neither Pus nor Sanies, but eaſily degenerate into a Gangrene. Gangrenes are, alſo, frequently incident to ſcorbutic Patients, eſpecially in their Toes; but ſuch Gangrenes differ from others in this, that they ſeize without a manifeſt Cauſe and Inflammation, ſpread ſlowly, and are long before they deſtroy the Patient. Theſe are the principal Signs and Symptoms of a Scurvy, which are not all equally obſerved in all Patients, ſince ſome are afflicted with more, and others with fewer of them; in ſome they are more violent, and in others more mild; in ſome continue a longer, and in others a ſhorter time.

Having given a compleat Hiſtory of the Scurvy, together with the ſeveral Symptoms with which it is generally complicated, we now come to conſider the proximate and remote Cauſes, from which this, and its ſeveral Effects, proceed; becauſe both the Prevention and Cure of this Diſorder, in a great meaſure, depend upon an accurate Knowledge of its true Cauſes. We have already, in the Definition of a Scurvy, placed its continent and proximate Cauſe in an exceſſive Impurity and Corruption of the vital Juices, which is highly unfriendly to Life and Health. But ſince it is not as yet agreed upon, wherein this Taint principally conſiſts, or how it ariſes and exerts its unlucky Influence, we ſhall inquire with more Accuracy into theſe Circumſtances.

'Tis, therefore, certain from Phyſiology, that a good State of Health, or the Soundneſs of the natural, vital, and animal Functions, depends upon a laudable Temperament, Mixture and Craſis of the vital Humors, the Blood, the lymphatic and nutritive Juices, and the nervous Fluid, and their due Influx and Circulation, through all the Parts of the Body. But ſince a due Temperature and Purity of the Juices principally conſiſts in this, that the more ſubtile, moveable, aqueous, ætherial, elaſtic, and gently ſulphureous Parts, be in a due Proportion mixed and united with the gelatinous and fine mucous Parts; and that the groſs, glutinous, terreſtrial, and various kinds of ſaline Parts, as, alſo, the tartareous, alcaline, ſulphureous, or bilious, and ſuperfluous, aqueous, and pinguinous Parts be duly eliminated through proper Strainers and Emunctories; ſuch as the Skin, through which Perſpiration is made, the Liver, the Kidneys, the Inteſtines, and the glandular Coats of the Fauces, Noſe and Bronchia, it is ſufficiently obvious, that an Impurity of the Juices, or a Cacochymy, muſt be produced, when the terreſtrial, tenaceous, ſulphureous, and ſaline Parts, retained in the Body, ſurpaſs thoſe of the mild and temperate kind. But 'tis to be obſerved, that the impure Dyſcraſy of the Blood, in this Diſorder, is not always of the ſame kind, but differs according to the Nature of the excrementitious Particles, and induces different Symptoms; for in ſome Patients the peccant Matter is highly viſcid, fixed, terreſtrial, ſaline and acid; whereas, in others, it is bilious, ſaline, alcaline, and ſulphureous. Hence Authors have aſcribed a Scurvy either to a cold or an hot Cauſe. To theſe I add a third Species of Scurvy, which ariſes from a vapid Diſpoſition of the Juices, tending to a putrid Corruption; and this is found to be a Scurvy of the worſt and moſt malignant kind.

The putrid Corruption and vapid State of the Juices is ſufficiently evinced from this, that the Scurvy is often propagated by Contagion, and all contagious Diſorders have for their Foundation and Cauſe putrid Exhalations, which penetrating deep into the Body, like a Fomes or Leaven, contaminate, and convert into their own Natures, the prediſpoſed Humours, eſpecially thoſe of the pinguinous Kind. Hence *Sennertus*, in his Treatiſe *de Scorbuto*, *Cap.* 1. & 4. obſerves, that a Scurvy has been produced only by the Stench of Patients who have died of this Diſorder; and *Caſpar Hoffman*, in his Treatiſe *de Febribus*, *Cap.* 57. has excellently deſcribed the noxious Nature of ſcorbutic Exhalations in the following manner. "Immediately, ſays he, after the Patient's Death, "there is no Danger; but after the Carcaſs begins to grow "putrid, all Perſons ought to keep at a Diſtance from it, "unleſs they chuſe to be infected with the ſame Diſorder." Beſides, the exceſſive Corruption of the Blood and nutritious Juice is ſufficiently evinced, from the ſpontaneous Laſſitude; the Languor and Weakneſs of the Limbs; the Loſs of Strength, ſo far as to produce a Deliquium; the weak and languid Pulſe; the exceſſive Stench of the Sweat and Urine; and the quick and eaſy Sphacelation of the external Parts, without any previous external Cauſe.

But in order to generate the Symptoms which afflict ſcorbutic Patients, the depraved and corrupted State of the Humours alone is not ſufficient; but 'tis, alſo, requiſite the Union of the fluid and ſolid Parts of the Blood ſhould be deſtroyed, which may be pretty diſtinctly collected from various Phænomena accompanying the Scurvy. But this Separation of the Fluid, from the more ſolid and heavy Parts of the Blood, is by no Circumſtances better known than by the Diſcharges of aqueous Blood, which generally happen from the Noſe, Gums, and Anus; as, alſo, from this, that in the external Parts, ſuch as the Face, Lips, and Legs, the Mouths of the Veſſels ſometimes ſpontaneouſly open and diſcharge Blood. Scorbutic Patients are, alſo, frequently ſubject to copious Diſcharges of the Saliva, Urine, and Sweat, which, alſo, indicate an exceſſive Separation of the Serum from the thick Blood. Whereas, on the contrary, the in-

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conſtant Pains wandering from one Part to another, ſufficiently evince the Thinneſs and ſubtile Acrimony of the impure Serum; for a thin and acrid Humour extravaſated, is eaſily and quickly convey'd from one Part to another, which principally happens in a wandering ſcorbutic Gout. To this Cauſe we may, alſo, juſtly refer the Uneaſineſs of the Præcordia, the ſpaſmodic Conſtriction of the Orifices of the Stomach and Diaphragm, and the lancinating Pains of the Inteſtines and Breaſt, commonly called a ſpurious Pleuriſy; together with the Itching and Exulceration of the external Parts. The Lentor and Thickneſs of the ſcorbutic Humor may be known from the Tumors, the fixed Pains, the Wearineſs of the Limbs, the Horror and Stupor. Hence, alſo, we are to account for the Palpitations of the Heart, the Syncope, the Carus, the Lethargy, the ſmall and weak Pulſes, the Sadneſs, the Melancholy, the polypous Concretions in the large Veſſels of the Heart, the paralytic Diſorders, the ſudden Swelling and Increaſe of the Body, the Largeneſs of the Liver and Spleen, and the Tubercles in various Parts of the Body.

Beſides, that the Union between the ſolid and fluid Parts of the Blood, which is highly neceſſary to its Circulation through the minute Veſſels and Viſcera, is deſtroy'd, may be known from Blood taken from the Veins of ſcorbutic Patients, which is generally grumous, black, heavy and thick, with a large Quantity of fetid and ill-taſted Water. I have frequently ſeen the Blood diſcharg'd from the Feet of ſcorbutic Perſons in Water, ſoon compacted into fibrous Concretions; whilſt in others, I have ſeen the Blood received in a Veſſel, ſoon after covered with a very tenacious, glutinous Pellicle. But in others, inſtead of a duly conſiſtent Blood, I have, with Admiration, ſeen, a thin, florid, and acrid Serum diſcharged, which left no thick, black Subſtance in the Bottom of the Veſſel.

Having thus inveſtigated the Cauſes of a Scurvy, we now come to examine, which of the Viſcera are principally affected by it, and what is moſt properly to be eſteemed its Seat. But as Authors differ with reſpect to this, we ſhall enquire which of their Opinions approaches neareſt to Truth. The Antients, and among the reſt *Hyppocrates*, affirm'd, that the Spleen, which they thought the Seat of the melancholic and atrabiliarious Humours, was moſt affected. But from the acurate anatomical Diſquiſitions of the Moderns, 'tis certain, that the Seat of this Diſorder is rather to be placed in the Liver. Thus *Sennertus*, in *Med. Pract. Lib.* 3. *Sect.* 2. *Cap.* 2. informs us, that upon opening the Body of a Perſon who died of the Scurvy, he found almoſt the whole Omentum putrid and corrupted, but no apparent Diſorder in the Spleen. *Foreſtus*, in *Lib.* 20. *Obſerv. Schol.* 2. informs us, that upon opening the Body of a certain Man of Diſtinction, who died of this Diſorder, he rather found the Liver affected than the Spleen. *Reuſnerus*, in *Exercitat.* 4. *de Scorbuto*, informs us, that he ſaw the Liver of a ſcorbutic Man, corrupted, callous, and unfit for the Depuration of the Blood, whilſt the Spleen had the Bulk and Colour of a ſound Liver. *Horſtius*, alſo, in his Treatiſe *de Scorbuto*, *Sect.* 2. *p.* 8. tells us, that he ſaw the Liver of a ſcorbutic Man totally ſcirrhous, both internally and externally, without any Veſſels or Blood contained in it; whilſt the Spleen was three Times larger than in a natural State it generally is, appeared very ſound, and by its pretty red Colour, and fleſhy Subſtance, reſembled the Parenchyma of the Lungs. And Dr. *Willis* often, diſſecting the Bodies of many ſcorbutic Patients, obſerv'd, that the Parts moſt frequently affected, were the Liver or the Gall-Bladder; for in ſome he found the Liver abſolutely without Blood, and like a Cow's Udder after the Milk is drawn from it. In ſome he found the Gall-Bladder entirely empty, in others obſtructed with Stones, and in others full of highly bitter Sordes; whilſt the Spleen was ſound and free from any apparent Diſorder.

But I ſhall not heſitate to affirm, that in this Diſorder all the Viſcera and Emunctories ſubſervient to the Depurations of the Fluids are affected and diſorder'd, ſince, in conſequence of the ſlow Circulation of the Blood, their minute Veſſels and Ducts are eaſily infarcted, obſtructed by a viſcid Sordes, and at laſt abſolutely indurated: But in particular, that univerſal Emunctory of the whole Body, the Skin, through which the thin excrementitious Juices are exhaled, ſeems to be moſt conſiderably affected: Nor are the ſanguineous Viſcera in the Abdomen, to which the Vena Portæ is diſtributed, ſuch as the Liver, Spleen, Meſentery, and Omentum, entirely unaffected by this Diſorder; becauſe the Liver is deſtin'd for the Secretion of the impure, ſaline, ſulphureous Parts, and ſuch as have a Tendency to an alcaline Nature. The Spleen, alſo, principally contributes to the intimate Mixture of the fluid and ſolid Parts of the Blood, for which Reaſon the Injuries done to theſe Parts in a Scurvy, are to be particularly regarded. But I would have it obſerv'd, that in this Diſorder we are not abſolutely to confide in anatomico-practical Obſervations; becauſe, we rarely find an Opportunity of diſſecting ſcorbutic Perſons who have died before they fell into a Dropſy, an Atrophy, an Hectic, the Morbus Niger, or an internal Sphacelus.

That a Scurvy is ſo long protracted and ſo obſtinate, as with Difficulty to yield to the moſt proper and efficacious Medicines, is, in my Opinion, owing to this, that the Laboratory of Digeſtion and Chylification, by which I mean the Stomach and Inteſtines, is diſorder'd, and conſiderably injur'd: For as the intimate Diſſolution of the Aliments, and the Preparation and Extraction of a laudable, ſweet and chylous Juice, depend intirely on the Temperature, gently ſpirituous Quality, and ſufficient Influx of the Salival, gaſtric and pancreatic Menſtruums; ſo when by the Impurity of the Blood, theſe menſtrual Liquors plainly loſe their temperate Nature, they only produce a crude, viſcid, and acid Chyle; which being convey'd to the Blood, by its peccant Fomes, not only ſuſtains, but alſo augments the Intemperature and Impurity of the Juices.

Having traced the continent and proximate Cauſes and true Seat of a Scurvy, and its ſeveral Symptoms, and conſider'd in what Manner it diffuſes itſelf to all the Parts of the Body, we now come to inveſtigate whence theſe internal Cauſes of the Diſorder derive their Origins; and this, in my Opinion, is beſt done by carefully adverting to what the Phyſicians commonly call the external non-natural Cauſes, which are daily neceſſary to the Preſervation of Health. Thus, 'tis certain from Experience, that the Scurvy is endemial and familiar to ſome Countries, eſpecially to northern and maritime Climates, ſuch as thoſe of the *Danes*, *Norwegians*, *Zealanders*, the *Freezlanders*, the *Ditmarſians*, the *Dutch* and the *Swiſs*; the Cauſe of which is to be ſought for in the Atmoſphere, which being impregnated with impure, putrid, ſaline, and too aqueous Exhalations, is by that Means in a great Meaſure depriv'd of its elaſtic and expanſive Force, on which the Tone and Strength of the Solids, and their moving and ſyſtaltic Force depend. Hence, in ſoutherly Climates, marſhy, dank, and low ſituated Places, where Inundations, Stagnations of Water, and cloudy Weather frequently happen, are very fit for generating the Scurvy, certainly, for no other Reaſon, than that the Air impregnated with many moiſt Exhalations and Vapours, by greatly relaxing the moving Fibres, retards and diminiſhes the Circulation of the Humours, and conſequently the natural Secretions and Excretions.

But ſince, according to *Hippocrates*, in *Lib. de Flatibus*, Diſeaſes proceed not only from the Air, but, alſo, from the Aliments: So we find from Experience, that hard, high-ſalted Beef and Pork, the compact Fleſhes of old Animals, when much ſalted and indurated in Smoke, as alſo Fiſh, eſpecially of the Sea Kind, when ſalted and hardened, greatly contribute to render the Scurvy familiar to ſome northern and maritime Countries. Pulſes of a groſs Texture, eſpecially thoſe produced in dank and marſhy Places, and coarſe, hard Bread, prepar'd of Rye reaped in rainy Weather, or which has contracted a Mouldineſs, have, alſo, a Tendency to produce the Scurvy; which Diſorder is, alſo, generated by crude, hard, ſaline and ſtagnant Waters, daily us'd; and by Ales prepar'd of ſuch Waters, when not duly impregnated with Hops, or when they become acid or feculent. And all theſe Cauſes are far more injurious, if at the ſame Time the Life of the Patient is inactive, and free from Labour and Exerciſe; for by this Means the vital Circulation of the Fluids, and the Secretions and Excretions depending upon it, are greatly retarded, and a Thickneſs of the Blood and Humours induc'd.

'Tis, alſo, obſervable, that Perſons of a ſpongious and looſe Habit, thoſe of a ſanguineo-phlegmatic Temperament, thoſe who are corpulent, and whoſe Veſſels are very ſmall and numerous, are more ſubject to a Scurvy than thoſe of dry, ſlender and firm Habits, who have larger Veſſels: Becauſe, in the former the Circulation being ſlower, and the Secretions more languid, the pinguious watery Juices, upon the Approach of any Miaſma, quickly degenerate into a putredinous Corruption. It is, alſo, obſerved, that Women are more ſubject to the Scurvy than Men; Perſons who reſide in Towns more than the Country People; and ſtudious Perſons more than the common People, who by Exerciſe and Labour expel by Perſpiration the peccant Humours accumulated in their Bodies.

But nothing has a greater Tendency to corrupt the Maſs of Blood, pervert the Laws of the Animal Œconomy, and ſuppreſs the ſeveral Evacuations by Stool, Sweat, and Urine, than a Suppreſſion of the Menſes in Women, and of the Hemorrhoids in Men: So nothing can have a more immediate Influence in producing the Scurvy. Barren Women are,

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are, alſo, ſubject to this Diſorder; and thoſe whoſe Menſes have ceas'd on account of their Age; and in general all who totally omit uſual Evacuations of Blood, whether by Scarification or Veneſection; for by this Means the Humours being copiouſly accumulated in the Body, cannot paſs freely through all the Veſſels, but becoming ſtagnant here and there, contract an Impurity which is the Origin of the Scurvy. According to *Solomon Albertus*, *Eugalenus*, and *Willis*, exceſſive Hemorrhages from the Noſe, the Uterus, the hemorrhoidal Veins, and in child-bed Women by the Lochia, have no leſs a Tendency to generate the Scurvy, than a Suppreſſion of the uſual Evacuations of Blood: For too great a Loſs, as well as a Redundance of Blood, lays a Foundation for a Stagnation and Corruption of the Humours.

Old Perſons are moſt ſubject to this Diſorder; for the Diſeaſes moſt familiar to them have a great Affinity with the Scurvy, becauſe they derive their Origin from an impure, ſaline, and viſcid State of the Blood and Humours. Nor is this difficult to be comprehended; for in the Decline of Life, the minute Veſſels by which the Excretion of the Sordes is principally made, the Parts are nouriſh'd, and the Lymph is intimately mix'd with the Blood, begin to be dried, contracted, and render'd narrow; hence they cannot duly perform their Functions, by which Means the whole Maſs of Blood is, in proceſs of Time, rendered impure.

Among the remote Cauſes of a Scurvy, we may, alſo, juſtly reckon whatever weakens the Strength, and diminiſhes the vital Motions, together with the Secretions and Excretions. Nothing has a greater Tendency to produce theſe Effects, than violent Perturbations of Mind, induc'd by anxious Care, Sadneſs and Grief. Thus *Eugalenus in Tr. de Scorbuto, Obſ.* 15. poſitively affirms, that all thoſe who live on coarſe Aliments, and labour under long Grief, are greatly diſpos'd to the Scurvy. This Doctrine is confirm'd by *Willis*, who obſerves, that ſome have been rendered ſcorbutic by a ſudden Fright; for the Paſſions of the Mind are of ſingular Efficacy in infringing the Strength of the Solids, and the Circulation of the Blood, which depends upon it: Hence the Humours circulating ſlowly, become thick, unfit for paſſing through the minute Veſſels, and at laſt impure. Hence there is an eaſy Tranſition to the Scurvy.

As Eaſe and want of Exerciſe diſpoſe to the Scurvy, ſo exceſſive Motion and Labour too long continued, have generally a Tendency to induce this Diſorder; for by this Means, the moſt pure and ſubtile Parts of the Blood, nutritious Juice, and nervous Fluid, are diſſipated and exhauſted: So that the remaining Humours are afterwards eaſily ſuſceptible of a foreign and corrupted Quality, eſpecially upon the Acceſs of a Contagion. But above all, we condemn unſeaſonable and intenſe Exerciſe, by which the Chyle, as yet not ſufficiently digeſted, is too quickly convey'd to the Blood; and hence ariſe all the Diſorders we have already obſerv'd to proceed from a bad Digeſtion and a crude Chyle. Thus *Galen*, in *Lib.* 2. *de Sanitate tuenda*, *Cap.* 2. informs us, "That "when Exerciſe is perform'd, a large Quantity of crude "and inconcocted Aliments and Juices ought not to be "in the Stomach or Veſſels, leſt theſe ſhould be convey'd "to all the Parts of the Body before they are duly pre-"pared by a mature Concoction."

Nothing, alſo, more eaſily and readily diſpoſes to the Scurvy, than when any previous Diſorder has left a kind of Taint in the Blood, the alimentary Juice, or any of the principal Viſcera. Hence nothing is more frequently obſerved in Practice, than that a Scurvy ſucceeds continual and intermittent Fevers, when prepoſterouſly ſuppreſſed; or when the Patients, as yet weak, eat liberally. The Reaſon of this is obvious; for the vital Juices being, by the febrile Heat, deprived of their due ſpirituous Quality, and their moſt ſubtile and ſulphureous Parts, circulate with Difficulty. Hence the Miaſma, left by the preceding Diſeaſe, eaſily contracts a foreign Quality. But not to mention the many Obſervations which evince the Power of all Diſorders to produce the Scurvy, we ſhall only ſpecify the Affinity between the hypochondriac Diſorder and the Scurvy; for the latter very often either accompanies or ſucceeds the former, ſo that ſome Phyſicians have falſely aſſerted, that there was no Difference between thoſe Diſeaſes.

The Patient's Method of Life, alſo, ſometimes proves the antecedent Cauſe of a Scurvy. Thus Mariners, who undertake long Voyages, are ſurrounded with a moiſt Air, and eat large Quantities of groſs and high-ſalted Aliments, are in a principal Manner ſubject to it. The Scurvy is, alſo, very frequent in a Camp; becauſe the Soldiers, obſerving no Regimen, drink ſtagnant Waters, and often corrupted Liquors, eat crude, and ſometimes half putrid Aliments, mouldy Bread, and rancid Bacon; expoſe their Bodies to an impure, moiſt and cold Air, eſpecially in the Night; and waſte their Strength by Watchings and Hunger. *Olaus Magnus*, in *Lib.* 16. *de Regionibus Septentrionalibus*, *Cap.* 51. tells us, "That by high-ſalted and ſmoak'd Fiſh and Fleſh, by "cold and crude Aliments, and by ill-bak'd Bread, the "Scurvy is produced, in which the Fauces and Gums be-"come putrid, the Stomach is tormented, and the Teeth "are ſeiz'd with a Stupor and become looſe." *Hoechſteterus*, alſo, in *Obſ. Med. Decad.* 7. *Caſ.* 10. has a long Obſervation concerning the Scurvy, as a Camp Diſeaſe, formerly raging in the Middle of *Germany*, the moſt conſiderable Circumſtances of which Obſervation are theſe following: After the King of *Sweden*, in the Year 1634, ſubdued *Ausburg*, the Soldiers billeted in the Houſes of the Citizens brought into the Town a burning malignant Fever, accompanied with a Delirium and Petechiæ, under which the Emperor's Soldiers, alſo, laboured, ſo that great Numbers were cut off by it. But this Diſorder remitting in the Beginning of the Winter, many of the Citizens complain'd of a Wearineſs, Senſe of Weight, and Inability to walk, nor could they ſtand upright on account of the Rigidity, Pain, and Hardneſs of their Legs, which in ſome were ſwell'd, and in others extenuated. Thoſe who were of dry Conſtitutions, had the Tendons, Nerves, and Muſcles of their Legs drawn upwards, ſo that they could not extend them; and ſometimes this Diſorder of their Legs was accompanied with an acute Pain, and ſometimes not; ſome were able to tumble up and down in their Beds, but not to extend their Legs; and many of theſe Patients died about the End of the cold Winter, in the Year 1634. The Legs of ſome were ſo weak, that they could not ſtand upon them, though they were capable of moving themſelves in Bed. Spots of the Skin were common to all theſe Patients, and appeared firſt red, like Lentils, then blewiſh, and then livid, ſometimes covering the whole Legs. The Gums of the younger Patients were ſeized with a lax and flaccid Tumor, which when roughly handled, or rub'd, a black and fetid Blood was diſcharg'd; the Breath was, alſo, diſagreeable, and the Maſtication defective: A Leucophlegmatia, an Aſcites, a Tympanites, an Atrophy, a Diarrhæa, or a Jaundice ſucceeding, prov'd mortal to the Patient. Under this Diſorder the Sick could not well bear a dry Air, on account of the Ebullition of their Blood. Hence, alſo, exceſſive Motion was prejudicial to them.

Having given the Hiſtory, enumerated the Signs, and ſpecified the Cauſes of a Scurvy, it will be eaſy to diſtinguiſh it from other Diſorders, with which, in regard to its Symptoms, and the impure Dyſoraſy of the Blood, it ſeems to have a great Affinity. I know that many, both of the antient and modern Phyſicians, affirm, that a Scurvy is the ſame Diſeaſe with that deſcribed by *Hippocrates* in *Lib. de Intern. Affect.* under the Name of *Ileum Cruentum*; for in this Diſorder, as well as in the Scurvy, the Breath is highly fetid, the Gums recede from the Teeth, Hemorrhages of the Noſe happen, and ſometimes Ulcers of the Legs appear, ſome of which are cur'd, whilſt others become worſe. But ſince the Spots of the Skin, by which the Scurvy is at preſent diſcovered, are not ſo much as mentioned by *Hippocrates*; and ſince thoſe labouring under the Ileum Cruentum, are ſaid to be ſufficiently capable of walking, or labouring, whereas thoſe afflicted with the Scurvy have a Languor, Weight, Coldneſs of the Legs, and an Inability to walk, I can hardly induce myſelf to embrace the Opinion of theſe Phyſicians. Some, alſo, refer the Scurvy to the Black Jaundice, in which, alſo, the Breath is fetid, and the Gums, being corroded, diſcharge a black Blood, and have Ulcers form'd in them, which are with Difficulty brought to a Cicatrix. The Patients are, alſo, afflicted with Lazineſs and Languor, and the Diſorder is not cur'd without great Difficulty. But though theſe two Diſorders, on account of the violent Corruption of the Humours, have a great Affinity; yet they differ in this, that in the Black Jaundice the Colour of the Face and whole Body is black, the Fœces are porracious, a bitter Taſte is perceiv'd in the Mouth, neither is there any Fever, or Force of Contagion. Beſides, in a Black Jaundice, the Liver is principally affected; whereas, in a Scurvy, all the Viſcera are diſorder'd, and the nervous Syſtem afflicted with lancinating Pains and Spaſms; which, however, does not happen in the Black Jaundice.

A Scurvy is, alſo, eaſily diſtinguiſhed from hypocondriac and melancholic Diſorders, with which, however, it is frequently accompanied; for that in hypocondriac and melancholic Diſorders, on account of the deſtroy'd Tone of the Viſcera, and the ſlow Circulation of the inſpiſſated Blood, there is a certain Impurity and Corruption of the Humours, as alſo Spaſms and Pains, from a Stagnation of the Juices, yet the Maſs of Blood is not ſo putrid and corrupted, nor impregnated with ſo many and ſo acrid Salts, as in the

Scurvy.

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Scurvy. Hence, not only the contagious Force, but, alſo, the Spots, the putrid Ulcers, the relaxed and bloody Gums, the Wearineſs of the Body and Limbs, and the Loſs of Strength, ſometimes productive of Deliquiums, all which are the Symptoms of a Scurvy, are wanting. Beſides, the Scurvy, on account of that Corruption which preys both on the ſolid and fluid Parts, on account of the Spots, Pains and Ulcers, and even on account of its contagious Nature, has a great Affinity with the Lues Venerea. 'Tis, however, of great Importance, to make a due Diſtinction between theſe two Diſorders, otherwiſe many Errors will be committed in Practice: We are, therefore, to remember, that the Lues Venerea only ariſes from Contagion; whereas the Scurvy is produced by a Fault of the Air, Aliments, Water, or an Abuſe of the Non-naturals; for which reaſon, it is peculiar to certain Regions and Climates. Beſides, the Scurvy principally affects the Gums, and renders the Teeth carious; whereas the Lues Venerea rather exulcerates and corrodes the Tonſils, Uvula, Noſtrils, and Bones of the Palate. The Urine, alſo, of ſcorbutic Patients is thick, highly coloured, and richly impregnated with lixivial Salts; whereas, in a Lues Venerea, the Urine is paler coloured, and turbid, with a ſlymy Sediment. And, laſtly, in a Scurvy, the Spaſms and Pains are wandering; whereas, in a Lues Venerea, they are more fixed, ſituated in the Bones, and exaſperated in the Night in Bed.

But a Scurvy has a greater Affinity with no Diſorder, than with the red chronical Purples, which is generally free from a Fever, and ſo common, that, by way of Diſtinction, it is called the ſcorbutic Purples; becauſe this, as well as a Scurvy, is produced by a great Impurity of the Humors; but it differs in this from a Scurvy, that, in the former, numerous Puſtules, as large as Millet-Seeds, here and there appear with Corrugation, Aſperity, and Dryneſs of the Skin, and being accompanied with a profuſe Sweat, diffuſe a Stench, eſpecially about the Beginning of the Diſeaſe, when the Patient is afflicted with Horripulations, Itchings, Heats, and a certain Oppreſſion of the Breaſt; but none of theſe Symptoms happen in a Scurvy. Beſides, no other exanthomatous Diſorder is ſo inſtable, eſpecially in Perſons of delicate Conſtitutions, as the Purples, ſince it ſuddenly appears and diſappears, often leaving no bad Conſequences behind it, but a certain Oppreſſion of the Breaſt, and an Hoarſeneſs; which Symptoms are, however, eaſily removed by a proper Regimen.

Among the Diſorders which bear a great Affinity to the Scurvy, we may alſo juſtly reckon that Species of Cachexy, which, by the modern Phyſicians, is generally called ſcorbutic. But that we may know how far theſe Diſorders differ, 'tis to be obſerved, that a Cachexy is neither contagious nor epidemic, nor highly offenſive to the Gums, nor accompanied with Spots; all which Symptoms, however, generally accompany a true Scurvy. Beſides, the material Cauſe of a Scurvy differs from that of a Cachexy, which proceeds rather from a Redundance of a thin, than of a glutinous and acrid Serum. Hence the external Parts of cachectic Patients Bodies are obſerved highly relaxed, flaccid and tumid.

Having thus ſpecified the Difference between a Scurvy and other Diſeaſes, which have an Affinity with it, we now come to conſider how we may form a prudent Judgment with reſpect to its Cure and Event. Firſt, then, 'tis to be obſerved, that the Scurvy is one of thoſe Diſorders which neither ſuddenly ſeize, nor ſuddenly forſake the Patient; but proceeding ſlowly, require a long Time and an exact Regimen, both for their Mitigation and total Cure. Hence it happens, that a Scurvy, upon the ſlighteſt Error in Regimen, eaſily recurs, eſpecially where there is an hereditary Diſpoſition to it, in which Caſe it is rarely totally removed. The ſame alſo happens, when the Diſorder is inveterate, the Patient old, or the Body weakned and exhauſted by previous Diſeaſes; for, in theſe Caſes, it gradually paves the way to a Dropſy, an Atrophy, a Palſy, Convulſions, a Carus, a Lethargy, an Apoplexy, Sphacelations of the Extremities, and other mortal Diſorders. But 'tis otherwiſe when the Diſeaſe is beginning, the Patient young, the Habit firm, and its Origin owing to Contagion; for then 'tis eaſily cured, eſpecially if its Fomes is carried off by the menſtrual or hæmorrhoidal Diſcharge. It is, alſo, more eaſily cured by removing the Patient from inſalubrious, maritime and northerly Climates, to more healthy and ſoutherly Countries. When hypocondriac and cachectic Patients, or thoſe labouring under a violent Gonorrhæa, are ſeized with ſcorbutic Symptoms, the Cure is highly difficult, tho' not abſolutely to be deſpaired of. It is obſervable, that tho' the Inhabitants of northerly Climates are very robuſt, yet they are more difficultly cured of a Scurvy than thoſe of ſoutherly Countries. The Reaſon of which ſeems to be aſſigned by *Hippocrates*, *in Aph.* 30. where we are told, "That thoſe who perſpire little, are robuſt, and not "ſubject to Diſorders; but if they become ſick, they are not "without great Difficulty reſtored to Health;" for in the Inhabitants of Northern Countries, whoſe Skin is thick, denſe and conſtricted by the intenſe Cold, the ſubtle and ſpirituous Part of the Blood is copiouſly retained and not exhaled. Hence theſe People are robuſt and vigorous: But when they are afflicted with Diſorders, which ought to be cured by Perſpiration, they are with Difficulty reſtored to Health, on account of the Thickneſs and Conſtriction of their Skins.

A ſudden Eruption, and a ſudden Diſappearance of ſcorbutic Tumors, frequently indicate a Palſy; Gripings of the Abdomen, and continual Contorſions about the Navel, in old Perſons bring on a Sphacelation of the Inteſtines, and ſudden Death, or a Tympanitis; the blacker the Spots are, the more malignant is their Nature; and if they degenerate into Ulcers, they are not to be cured without great Difficulty, and often terminate in a ſphacelous Corruption. It is, alſo, a bad Sign, when the Gums and adjacent Parts are exulcerated, and an Abſceſs is form'd in the Jaw.

Diſeaſes ariſing from a ſcorbutic Dyſcraſy of the Humours, ſuch as Palſies, chronical Purples, and Cachexies, eaſily recur, ſometimes every Year, and at other times, at longer Intervals, according to the Patient's Method of Living, Regimen, and other Circumſtances; and if any Taint is conveyed to the Viſcera and nervous Parts, it is not eaſily removed; for the ſcorbutic Humour partaking of the Nature of Leaven, and being deeply rooted in the Blood and nutritious Juice, is, with great Difficulty, expelled.

It is, farther, to be obſerved, that generally hypocondriac and ſcorbutic Patients, are rarely reſtored to their former and natural State of Health, becauſe they rarely ſubmit to dietetic Rules and the Directions of their Phyſicians, but are fond of a ſudden Cure by means of Medicines. Hence it is, that running from one Phyſician to another, and changing one Medicine for another, they render their Diſorders worſe; eſpecially if Nature being habituated to Medicines, eludes the Force of the moſt powerful and efficacious. Beſides, few Phyſicians know the Art of treating theſe rebellious Diſorders with proper Remedies, exhibited in a proper Order, Method and Doſe; for in theſe Caſes they exhibit powerful and draſtic Medicines; whereas it ought to be laid down as a general Rule, that the Scurvy, the moſt violent of all chronical Diſorders, is not to be treated with draſtic, but with the moſt mild and ſimple Medicines.

Having already conſider'd the Origin, Nature and Termination of a Scurvy, we now come to enquire into the Meaſures moſt proper to be taken for the Prevention and Cure of this Diſorder. But, as in any Diſorder, theſe two Intentions cannot be obtained without removing both its remote and proximate Cauſes; ſo there is no more proper Method, both for preventing and curing the Scurvy, than a Removal of its Cauſes: And as theſe Cauſes are to be ſought for in the prepoſterous Uſe of the Non-naturals, and eſpecially in the Air; ſince no one, unleſs infected by another, ever laboured under the Scurvy, provided he has not committed terrible Errors in Diet and Regimen, it is ſufficiently obvious, that if we intend to remove the Cauſe of a Scurvy, we muſt, above all Things, have a particular Regard to the Patient's Regimen; for which Reaſon we ſhall preſcribe ſome dietetic Rules to be obſerved.

Thoſe, then, who are diſpoſed to the Scurvy, or already affected with it, ought to change the Air in which the Diſeaſe was formed, and remove from unhealthy Places where the Air is impure, vapid, deprived of its due Elaſticity, cloudy, or impregnated with noxious Exhalations, to Places that are more ſalutary, and bleſſed with a purer Air. This ſeems to be confirmed by *Hippocrates*, *in Lib.* 4. *Epidem.* where a Change of Climates is pronounced highly beneficial in all chronical Diſorders. This is, alſo, evinced from Experience; ſince we know that thoſe who are born and educated in Places fit for generating the Scurvy, enjoy a far better State of Health, when they remove to Places bleſſed with a more pure, ſubtile and temperate Air. Nor in this Reſpect are any Set of People more curious and obſervant than the *Italians*, who, for the Preſervation of Health, have one Place of Reſidence for the Summer, another for the Autumn, and another for the Winter. But the *Germans*, even thoſe of Note and Diſtinction, little ſolicitous about the Purity of the Air, remove from healthy to unhealthy Places, where remaining for a long time, they contract a morbid Habit of Body. Every ſcorbutic Patient ought, therefore, if poſſible, to change his Habitation and Air, and to travel from northerly to more ſoutherly Climates, eſpecially to *Italy* and *France*. But if the Patient's Circumſtances does not permit him to travel from unwholeſome to more ſalutary Places, the Air is to be artificially corrected by burning Juniper-Wood in the Chimney, or by Amber thrown upon Live-Coals.

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As for Aliments, those of difficult Digestion are to be avoided; such as the Flesh of old Animals, or Flesh smoak'd, high-salted, or become rancid; dry'd Sea-Fishes, and Aliments of an austere and astringent Quality. Scorbutic Patients ought, also, to abstain from pinguious Fleshes, and such as incline to Putrefaction; as also from sweet Substances, which, according to the Diversity of the Juices lodged in the Primæ Viæ, either become acescent, or contract a Lentor, and by that Means induce an Infarction of the Viscera. But it is otherwise with Currants, which, by Means of their mild Sweetness, join'd with a subtile Acid, are laxative, emollient, and correct the Acrimony of the Humours. But nothing is to be more carefully inculcated than a proper Abstinence, or great Moderation in eating and drinking; especially in Patients who are voracious, corpulent, or of sanguineo-phlegmatic Constitutions; because excessive eating generally produces a Redundance of impure and peccant Juices.

Among Liquors, none more powerfully contribute to the Generation of the Scurvy, than Waters that are heavy, stagnant, turbid, and dispos'd to Putrefaction; for which Reason the Patient ought to drink only such Waters as are light, pure, impregnated neither with Salt, nor a calcarious, terrestrial Principle, and in which Meat is easily boiled; and the Aks prepared of such Waters; for it is hardly credible what Mischief is done in northerly Countries by drinking Ales prepared of unwholsome Waters, and not sufficiently hopp'd; which, as they easily become acid and feculent, not only with Difficulty pass through the minute Vessels of the Viscera and Excretories, but also generate large Quantities of Flatulences. Austere Wines, which contain a great deal of Acid, are, also, to be carefully avoided; whereas fragrant sweet Wines, possess'd of a subtile Spirit, moderately taken, prove very beneficial. But the best Wines for scorbutic Patients, are genuine *Hungarian* Wine, as, also, good Rhenish Wine, which is still better if impregnated with the Essences or Extracts of Wormwood, Scurvy-Grass, or Elicampane.

As 'tis certain from Experience, that an indolent Life and excessive Sleep greatly contribute to the Generation of the Scurvy, so there is not a more infallible and efficacious Method, either of preventing or removing it, than due and proper Exercise: For, since the continual Systole of the Heart, and reciprocal Action of the Diaphragm and Thorax, by Means of which the Circulation of the Blood thro' the abdominal Viscera is excellently promoted, alone support and govern the vital Motion of the Solids and Fluids; and since this Motion is greatly assisted by Exercise, during which the muscular Motion is increas'd, and the Fluids contained in the Vessels propell'd, we may, without any Impropriety, call Exercise that Universal Remedy which preserves the natural Mixture of the Fluids, and Structure of the Solids, promotes the Circulation of the Blood and Humours, separates the pure from the impure Juices, and consequently prevents and removes Diseases of all Kinds, the Scurvy itself not excepted. Thus *Hippocrates*, in *Lib.* 2. *de Diæta*, informs us, "That Idleness moistens and "weakens the Body, whereas Exercise dries and corro-"borates it." The Reason of this Doctrine is obvious, and greatly confirms my Opinion with respect to the Use of Exercise in the Scurvy; for by a sedentary Life, the Circulation of the Blood is render'd slower: Hence, the superfluous Moisture not being sufficiently eliminated through the Excretories, relaxes the fibrous and nervous Parts; whereas, by due Labour, the redundant Moisture is dissipated, by which Means the Tension of the Solids is increas'd, and the Body strengthened. Every thing, also, which diminishes the Circulation of the Blood, such as excessive Watchings, profound Meditations, obstinate Study, immoderate Venery, frequent Drunkenness, and especially exorbitant Passions, such as long protracted Grief and Fear, is to be avoided with the utmost Diligence.

These are the principal Directions to be observ'd, with respect to Diet and Regimen, to which I shall subjoin those Remedies which from Experience I have hitherto found best adapted to remove both the proximate and remote Causes of a Scurvy. Now we have already shewn, that the violent Symptoms accompanying a Scurvy are produced by the excessive Dyscrasy of the Blood, and the Accumulation of the recrementitious Sordes in the Blood, and other vital Juices, and that this Dyscrasy and Accumulation depend upon the slow Circulation of the Blood, and an Infarction or Obstruction of the capillary Vessels in the Viscera and Emunctories. Hence the Medicines adopted to the Removal of this Disorder, ought to dilute and correct the impure, acrid, saline and sulphureous Humours, dissolve those that are tenacious and viscid, open the obstructed Passages of the Viscera and Emunctories, and corroborate the weaken'd nervous and muscular Systems; for by these Means a free and brisk Circulation of the Fluids through the minutest Canals, and what depends upon it, an intimate Mixture of the Fluids with the Solids, and a mild Temperature of the vital Juices, is excellently obtained.

The Physicians who have wrote expresly concerning the Scurvy, have asserted, that the Dyscrasy of the Humours is of two Kinds; but all of them agree, that, according to the Diversity of the morbid, saline Principle, different, alterative, and correcting Medicines are requir'd, which partly by changing the Acid, and partly by correcting the volatile sulphureous Salt, and allaying the caustic Acrimony, remove the Disorder. Though I grant the Difference of the Salts now mentioned, yet the different and far-fetch'd Correction of them seems to me ridiculous, since, I shall demonstrate, that the only and safest Method of correcting and subduing all morbid Salts, is by proper Fluids.

This Intention, then, is answered by pure and light simple Water, the genuine Menstruum and Dissolvent of all Salts, into which, when taken with a proper Regimen and in a due Quantity, the saline Particles of every Kind lodged in the Blood and Humors, easily immerse themselves, and are by that Means excellently diluted, mitigated and corrected. But besides the correcting Quality of Water, it, also, produces another happy Effect in the Scurvy, whilst it dissolves the tenacious, viscid and coagulated Humours, and frees the infarcted and obstructed capillary Vessels and Emunctories from the impacted, viscid Matter. But this laudable Quality and Virtue is still found more powerful, when Water that is pure, light and subtile, is possess'd with an additional mineral Principle, and impregnated with a sufficient Portion of a neutral, or volatile, or fix'd alcaline Salt; such as the various cold and hot Springs, especially the coroline and selteran Springs, together with those of *Ægra*, *Wildungen*, and *Empsen*; for these being far more active than common Water, pass sooner through the capillary Vessels, enter the Emunctories more expeditiously, and are, for that Reason, highly efficacious in removing Obstructions, and eliminating excrementitious Sordes. Hence 'tis not to be doubted, but the universal Remedy of a Scurvy consists in mineral Waters; especially since for more than thirty Years I have, with great Success, prescrib'd both hot and cold mineral Waters for the Cure, not only of the most obstinate chronical Disorders, especially those of the hypocondriac and hysteric Kind, accompanied with a certain scorbutic Impurity, but also of a confirm'd Scurvy. But the Use of these Waters is succeeded by a far more certain and happy Effect, if an accurate Regimen is, at the same Time, observ'd, and their Efficacy assisted by the repeated Exhibition of proper antiscorbutic and balsamic Medicines.

When these mineral Waters cannot be had, the Cure may be happily obtained by pure and light Fountain-Water; for in obstinate chronical Diseases, pure subtile Waters, impregnated with a chalybeate Principle, are of great Efficacy, as is obvious from the many Cures, not only of a Scurvy, but, also, of other obstinate Disorders, yearly performed by the Waters of *Lauchstadt*, about two Miles from *Hall* in *Germany*; for these Waters contain a subtile Crocus Martis, by which the relaxed Tone of the moving Fibres is excellently corroborated, by which Means the Circulation of the Blood through the whole Body, and the salutary Excretions are greatly promoted, especially if these Waters are us'd both externally and internally. Hence we learn, that the antient Physicians, especially *Celsus*, in *Lib.* 2. *Cap.* 9. and *Scribonius Largus*, in *Cap.* 32. for what they call the *Lien Magnus*, and the Disoders arising from it, so justly recommended the drinking of Water, in which ignited Iron has been extinguish'd.

But besides mineral Waters, nothing is more effectual in correcting a scorbutic Acrimony than the Milk of Animals, and especially that of Asses, which *Hippocrates*, *Galen*, *Aretæus*, and *Celsus* so highly extol in subduing various chronical Disorders, and especially those arising from Acrimony. Some of the most skilful of the Moderns, also, confirm this Doctrine; and as a Specific for the Scurvy, prescribe Milk, especially that of Asses, or the Whey of Cows, or Goats Milk; concerning which the curious Reader may consult *Drawitzius*, *Baltha.*, *Brunnerus*, *Eugalenus*, *Wierus*, *Solom. Alberti*, and *Matt. Martini*, who have wrote judiciously concerning the Scurvy; and unanimously confess, that they have cur'd more scorbutic Patients only by a Milk Diet, or Whey impregnated with the Juices of antiscorbutic Herbs, and long us'd, than by all other Remedies whatever; and that those who were wasting away with a Scurvy have received more Strength from this Remedy, than from the best Corroboratives. Nor is the Reason of this Effect difficult to be conceived; for as the violent Symptoms of scorbutic Patients, such as lancinating

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ing and ſpaſmodic Pains of the Limbs, Corroſions and Exulcerations of the external Parts, derive their Origin from the exceſſive Dyſcraſy of the Humours, a Diminution of the Excretions by Stool, Perſpiration and Urine, and an Obſtruction of the Veſſels; ſo 'tis certain, that in order to open the obſtructed Paſſages, diſſolve the tenacious Humours, and correct ſuch as are acrid and ſaline, no Medicines are more proper than thoſe of a diluent and dimulcent Kind, and ſuch as render the Humours fit for Tranſpiration, among which the moſt powerful are Aſſes Milk, which is ſweeter than that of other Animals, or the Whey of Cows or Goats Milk, eſpecially when infus'd or gently boiled with antiſcorbutic Herbs, ſuch as Scurvy-Graſs and Water-Creſſes, which, beſides a volatile Salt, contain a bitter Principle.

But when a Scurvy is accompanied with an Infarction of the Viſcera, and a Cachexy, or, which frequently happens, with the Hypochondriac Diſorder, and the Purples, the Cure ſucceeds beſt if the Milk is mixed, not only with the milder Acidulæ, ſuch as the *Selteran* Waters, and thoſe of *Wildungen*, and *Toenſtein*, but alſo with the ſtronger cold Springs, ſuch as thoſe of *Pyrmont* and *Egra*, and thus drank under a proper Regimen. See *Frid. Hoffman. Diſſert. de Connubio aquarum Mineralium cum Lacte.*

Beſides theſe Remedies, we muſt alſo mention ſome of the pharmaceutical Kind, and eſpecially thoſe called the antiſcorbutic Specifics; among which we may juſtly reckon Scurvy-Graſs, and all the Species of Garden and Water-Creſſes, Brooklime, Horſe-Radiſh, the Roots of wild Radiſh, and Muſtard; which, by their ſubtile and ſalino-ſulphureous Principles, penetrate into the moſt recluſe Parts of the Body, and induce a ſurpriſing Change both on the diſorder'd Fluids and Solids; for they diſſolve viſcid and tenacious Humours, exalt and ſubtilize ſuch as are fixed and acid, and, by reſtoring the Tone, Vigour and Motion of the relaxed Solids, prevent a rapid Corruption of the Body. Various Preparations of theſe Simples are us'd; for ſome diſtil Waters, whilſt others obtain Spirits from them by Fermentation or Abſtraction; others from theſe Subſtances, when recent and cut down, expreſs the Juice, which they take by Spoonfuls, either alone or with ſome proper Vehicle, ſuch as Milk: Others mix them with their Aliments, boil them in Broths, add them to Ale during Fermentation, or prepare Conſerves of them with Sugar, as the different Circumſtances of the Patient require, which are to be judg'd of by the Phyſician.

There are, alſo, various other antiſcorbutic Remedies, ſuch as, among Bitters, the Roots of Gentian and Succory, and the Herbs Scordium, Carduus Benedictus, Wormwood, the leſſer Centaury, and Water Trefoil: Among Balſamics and Corroboratives, Juniper Berries, the Tops of the Fir and Pine Trees, Winter's Bark, Caſcarilla, Peruvian Bark, Coper Bark, the Herbs Spleen-wort, Paul's Betany, White Horehound, Dodder of Thyme, and the Roots of Elicampane, Zedoary, and Arum: Among Gums, Gum Ammoniac, Sagapenum and Galbanum; and among Wood, Saſſafras, Guajacum, and Aloes; which, if us'd either in Subſtance or in Decoctions, or Infuſions, or reduced to Extracts, or Elixirs, and exhibited at proper Times, in a due Order and in juſt Doſes, are highly efficacious in mitigating the Symptoms and removing the Diſorder; for by their active, gently ſulphureous and balſamic Principle, they rouſe and invigorate the languid Circulation of the Blood, and correct the acid and viſcid Intemperature of the Humours.

There are, alſo, other Remedies no leſs efficacious in the Cure of a Scurvy; and theſe, partly by their gently ſulphureous and vaporous Principle, and partly by their emollient and correcting Quality, are excellently adapted to allay and ſooth the Pains and Spaſms: Of theſe, the moſt conſiderable are the recent Fats of Animals, eſpecially human and Dogs Fat, the Cream of Milk, Oil of ſweet Almonds obtained without Fire, Sperma Ceti, Caſtor, Aſa-fœtida, the Extracts of Yarrow and common Chamomile, the Theriaca Cœleſtis, Diaſcordium, Saffron, Earth-Worms, the Shavings of the Tooth of the Sea-Horſe, and the Elk's Hoofs, of which various Medicines may be prepar'd in a liquid Form, and ſucceſsfully exhibited according to the different Circumſtances of the Patient, and Stages of the Diſeaſe.

Having already conſidered the Cure of a Scurvy, ſo far as it is obtain'd by thoſe Medicines which attenuate and incide the groſs Humours, correct thoſe that are acrid and ſaline, open the obſtructed Veſſels, and corroborate the relax'd Parts, we now come to treat of Evacuants, becauſe we derive the Origin of a Scurvy from a Diminution or total Suppreſſion of the natural Excretions by Stool, Urine, and Perſpiration; as, alſo, by the menſtrual and hemorrhoidal Diſcharges. As for Veneſection then, whether in the Arm or the Foot, whether by the Lancet, Scarification, or the Application of Leeches, we affirm, that it is not to be uſed in the Scurvy without the greateſt Caution, and a mature Conſideration of all Circumſtances. Thus, if the Patient is plethoric and young, if the Diſorder is recent, and ariſes from the Ceſſation or total Suppreſſion of the Menſes in Women, or the Hemorrhoids in Men, Veneſection may be properly and ſafely us'd, in whatever Part the Phyſician thinks moſt proper. But if, as it often happens in the Progreſs of the Diſeaſe, a Redundance of impure and corrupted Serum is generated, then Veneſection, eſpecially when copious, by impairing the Strength, would infallibly do more Harm than Good. But when a Diminution of the Quantity of Blood is indicated, and eſpecially when the Pains, Tumors, and various Defedations of the Parts, render ſuch a Depletion neceſſary, it is moſt ſafely obtained by frequent, though not copious, Detractions of Blood, and, perhaps, ſtill more properly by Scarification; which Method, as it is ſafeſt, ſo I always greatly approved of it in the Cure of violent Diſorders.

As for other Methods of Evacuations, and the Uſe of Purgatives, I am of Opinion, with other ſkilful Phyſicians, that, excluding all draſtic Subſtances, we ought only to uſe thoſe of the mildeſt Kind, ſuch as the Roots of Polypody, Sena Leaves, Agaric, Rhubarb and Manna, which when duly mixed with the abovementioned antiſcorbutic Ingredients, and us'd by Way of Infuſion or Decoction, are highly beneficial, by gently eliminating the peccant Humours lodg'd in the Primæ Viæ. This Intention is anſwered by the Pilulæ Polychreſtæ Balſamicæ, prepared after *Becher*'s Manner, of well depurated Aloes, Extract of Rhubarb, bitter Herbs, and temperate balſamic Ingredients, exhibited at proper Seaſons, interpoſing or not, as the Phyſician thinks proper, the abſorbent Powders and digeſtive Salts. The ſame Caution is to be obſerv'd with reſpect to Diuretics, the more draſtic of which, becauſe they too copiouſly evacuate the Serum, are to be rejected, and thoſe us'd which gently evacuate the viſcid and tartareous Humours, ſuch as Decoctions of the five aperient Roots, eſpecially of Parſly, Salery, Fennel and Aſparagus, which were, alſo, us'd by *Hippocrates* and *Aretæus*. The ſame, alſo, holds true with reſpect to Diaphoretics, the beſt of which are thoſe which open the Pores, render them pliant, and convey the Blood and Humors to the Surface of the Body. But we are to reject thoſe which, by throwing the Humours into too violent Commotions and Exagitations, diminiſh the Serum and Strength, by exceſſive Sweat. The ſafeſt Diaphoretics are, therefore, theſe which gently promote Perſpiration, ſuch as the bezoardic Liquor of *Buſſius*, the Spiritus Nitri dulcis, the Spirit of Tartar, the Mixtura Simplex, the ſuccinated Spirit of Hartſhorn mixed with three Parts of the Anodyne Mineral Liquor and Spirit of Scurvy-Graſs, Flowers of Sulphur, Æthiops Mineral, Infuſions of Tea, Paul's Betany, Carduus Benedictus, Scordium, and Elder Flowers, diaphoretic Antimony, Ceruſs of Antimony, calcin'd and uncalcin'd Hartſhorn, Amber, Bezoardic Mineral, Medicinal Regulus of Antimony, Native Cinnabar, and Cinnabar of Antimony, compound Powders of Crabs Claws, *Ludovicus*'s and my Bezoardic Salt; to which, according to the Circumſtances of the Patient, may be added, a Quarter of a Grain of Camphire.

Having thus conſidered the general Method of Cure, we now come to ſubjoin ſome Cautions with reſpect to particular Caſes and Circumſtances. In a hot Scurvy, therefore, which ſeizes young Perſons of choleric Habits and accuſtomed to drink Wine, and ariſes from a Redundancy of ſulphureous and bilious Particles in the Maſs of Blood, ſpecific Antiſcorbutics, turgid with a ſulphureous volatile Salt, ſuch as Scurvy-Graſs and its Spirit, ought to be very cautiouſly exhibited; for, by ſharpening the Spicula of the Salts in the impure Blood, and agitating them with a briſker Motion, they exaſperate the Symptoms, produce Pains of the Head and Limbs, Anxieties and Inflations of the Spleen, by which Means they do more Harm than Good. But they may be more ſafely exhibited when corrected with Acids, ſuch as Wood-Sorrel, and the Juices of Citrons, Oranges, Barberries and Pomegranates. Thus, the Conſerve of Scurvy-Graſs, mixed with an equal Quantity of the Conſerve of Sorrel, taken twice or thrice a Day, drinking after it ſome Antiſcorbutic Water, produces very happy Effects, eſpecially if in hot and bilious Patients, it is accompanied with a moiſtening Diet, conſiſting of Milk Meats, Emulſions of Sweet Almonds, Decoctions of Barley and Oats, Broths prepared of Fowls, with Lettice, Endive, Sorrel and Creſſes, interpoſing at proper Intervals, gentle Laxatives and Diuretics. But it is to be obſerved in general, that the Uſe of antiſcorbutic Herbs, and their Juices, whether by themſelves or with a Vehicle, ought to be very long perſiſted in. When

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When a Scurvy proceeds from muriatic Salts, which happens in those who eat liberally of smok'd and high-salted Aliments, and have corroding Ulcers, a stinking Breath, putrid Gums, a thick and saltish Urine, as is generally observed in old Sailors, then happy Effects are produced by Whey, long and copiously drank; by Citrons, China Oranges, and ripe Fruits; whereas spirituous and volatile antiscorbutics are generally detrimental.

Scorbutic Patients are frequently afflicted with lancinating Pains of the Abdomen, and oppressive Pains of the Breast, which ought by no means to be treated with Carminatives or hot Medicines. But it is expedient at proper Intervals, and in due Doses to exhibit my anodyne Liquor, or an antispasmodic Elixir, prepared of the anodyne Liquor, and the Essences of Castor and Saffron. Besides, excellent Effects are produced by Broths of Fowls, prepared with a proper Quantity of Oil of Sweet-Almonds and Sperma Ceti; Whey, boiled with the Roots of Marsh-mallows, red Poppy Flowers, and Earth-Worms; Water-Gruel; and emollient Clysters prepared of Milk, with the Addition of a little Castor and Saffron. No less Caution is requisite, if, as it frequently happens, there are spontaneous Evacuations, Diarrhæas, for instance: For these, if gently treated, generally afford great Relief; but when too soon stopt, leave behind them Cardialgias, Inflations of the Hypochondria, and Infarctions of the Viscera.

In order to alleviate the intense Pain, and procure Rest, small Doses of Opiates, corrected with Purgatives, or Alexipharmics, are only to be exhibited twice or thrice, in order to preserve the Strength; which, when the Pains cease, is better restored, and renders the Patients fitter for surmounting the Disease. Topics are more frequently hurtful than beneficial in scorbutic Pains, Exulcerations, and Spots, as is principally observable in the wandering Gout, in which Topics, indiscriminately applied, by repelling the peccant Matter to the internal, and especially to the nervous Parts, often excite violent Symptoms, such as Vertigos, Dulness of hearing, Difficulty of breathing, Cardialgias, violent Gripes of the Intestines, and sometimes terrible Convulsions of the Limbs. 'Tis, therefore, better, in this Case, totally to abstain from Topics, and keep the Parts affected in an equal Perspiration, by wrapping them up in warm Linnen Cloths. But if crusty black Ulcers require external Remedies, we are to imitate *Eugalenus*, who prudently advised, that rejecting all acrid Substances, we should only use those of a mild Nature, such as Preparations of the Yolk of an Egg, Myrrh, Olibanum, Saffron, Oil of Roses, and Peruvian Balsam. When there is an excessive Impurity of the Humours, tending to Corruption, we are to be very cautious in ordering Scarifications, for fear of a Gangrene, which may be excellently prevented by Quick-Lime Water, exalted by camphorated Spirit of Wine, and Sal Ammoniac.

Where the Corruption of the Humours is very great, the Tumors and Inflammations easily degenerate into obstinate Ulcers, which create a great deal of Trouble both to the Physician and the Patient. When the Patient is of a dry and delicate Constitution, the Pains and Spasms easily produce Fevers, which greatly waste the Body, and impair the Strength. When the Body is spongious, phlegmatic, and corpulent, the Humours degenerate into a putrid Corruption, which spreads like a Sphacelus, and, in process of Time, produces a great and even a fatal Loss of Strength. For this Reason the prudent Physician ought to attack the Disorder, not only by Topics, but, also, principally by such internal Remedies as cleanse the Blood, and resist Putrefaction. But both Physician and Surgeon ought to take care not to open inflammatory Tumors, before they are come to a sufficient Suppuration: For when this Error is committed, a putrid Corruption is soon formed in corpulent and moist Habits.

In order not only to cleanse and consolidate the putrid and bloody Gums, but, also, to fix the loose Teeth, I have found nothing afford a more instantaneous and efficacious Relief than one Part of my Balsam of Life, mixed with three Parts of the Syrup of Oranges, and applied to the Gums by way of Ointment. If this Medicine cannot be had, we may commodiously substitue in its Room, the Essences of Amber or Myrrh, camphorated Spirit of Wine, and the dulcified Spirit of Salt, mixed with a proper Quantity of Honey. In such Cases, a gentle Scarification is, also, beneficial, in order to procure a Discharge of the ichorous Matter. In bloody Tumors of the Gums, great Benefit is, also, obtained by the external Application of the Unguentum Ægyptiacum, mixed with Honey of Roses and Spirit of Scurvy-Grass, or by applying Gum Lac and Spirit of Scurvy-Grass. Internally a Decoction of Horse-Raddish with Milk, or Ale boiled with the Tops of the Pine, produce very happy Effects.

When the Symptoms are mitigated, and the Disease begins to remit, *Matthæus Martini*, in *Tractat. de Morbis Mesenterii*, thinks Baths of sweet Rain-Water highly beneficial; and from the Advice of *Fernelius*, in *Observat.* 44. orders their Use to be persisted in for more than ten Years. Nor is this Advice to be rejected, since *Volcammer*, in *M. N. C. Decur.* 2. *an.* 6. informs us, that an hypocondriac and scorbutic Patient was, in three Days time, perfectly cured, and recovered his Strength, by using every Morning and Evening a Bath of sweet Waters, prepared with emollient Herbs. In the Waters of the Bath, which were highly fetid, there floated a thick, black, acrid Sordes, which daily became larger. In order to soften and discuss hard and painful Tumors of the Feet and Legs, I have found nothing more beneficial than Baths prepared of the antiscorbutic Herbs, Brooklime, Water-Cresses, and Scurvy-Grass, left after the Expression of the Juice; as, also, Baths prepared of the Tops of Fir and Pine-Trees, frequently used.

I have only one Thing to advise, with respect to the Use of Baths, whether natural or artificial; and that is, that they ought never to be used after a putrid Corruption is discovered in the external Parts; and that they ought not to be too warm, and dispose the Body to profuse Sweats; for hence follow an excessive Weariness of the Limbs, an insatiable Thirst, Palpitations of the Heart and Cardialgias; which, if any one endeavours to remove, by drinking cold Liquors, or other refrigerating Substances, the Tone of the Stomach and Intestines will, in all probability, be greatly destroyed by that means.

Many scorbutic Patients, according to *Martini*, in the Part already quoted, perceive little Advantage during the Cure, but are cured when they dismiss their Physicians, and forbear the Use of Medicines: For Nature being weakened by the Medicines, upon desisting from them, recovers Strength sufficient to subdue the Disorder. This Circumstance was not only adverted to by the ancient Physicians, but, also, recommended for removing various Disorders. Thus, *Aetius*, in *Lib.* 2. *Serm.* 2. *Cap.* 3. and *Rhases*, order Medicines to be sometimes abstained from for three Weeks; and *Aretæus* asserts, that many Diseases are spontaneously cured by discarding the Physician. This Observation I have often found to hold in the Cure of many chronical Disorders, especially those of the hypocondriac and scorbutic Kinds; for that Maxim of *Celsus* is founded upon Truth, "That sometimes the best "Medicine is to use no Medicine at all." *Frederic Hoffman.*

SCORDIUM.

The Characters are;

The Flower is like that of the *Chamædrys*, one or two preceding from the Ala of each Leaf. The Calyx is tubulated. The Smell resembles that of Garlic.

1. Scordium; *Offic. Ger.* 534. *Emac.* 661. *Raii Hist.* 1. 576. *Synop.* 3. 246. *Boerh. Ind. A.* 183. *C. B. P.* 247. *J. B.* 3. 242. *Scordium legitimum*, Park. Theat. 111. *Camædrys palustris, Allium redolens*, Hist. Oxon. 3. 423. *Chamædrys palustris canescens, seu Scordium Officinarum*, Tourn. Inst. 205. 172. WATER-GERMANDER.

Scordium has a small, stringy, creeping Root, from which spring a great many square hairy Stalks, about a Foot high, beset with two oblong, round-pointed, somewhat wrinkled and hairy Leaves at a Joint, without Foot-Stalks, having roundish Indentures about the Edges. The Flowers come forth among the Leaves in thin Whorles, of a reddish Colour, having no Galea, but only a Labella. They are set in hairy five-pointed Calyces, at the Bottom of which grow four small Seeds. The whole Plant has a strong aromatic Scent; but with somewhat of the Garlick. It grows in marshy, fenny Places, as in the Isle of *Ely*, in great Plenty, and flowers in *July*. The Leaves are used.

Scordium is sudorific and alexipharmic, of Use both as a Preservative, and a Remedy against all malignant and pestilential Diseases, and putrid Fevers; it resists Putrefaction, and destroys Worms, and is good against the Bites of all venemous Animals; it is an Ingredient in *Venice* Treacle and Mithridate; and Diascordium takes its Name from it. *Miller's Bot. Off.*

The *Scordium* is bitter, aromatic, and gives a faint red Colour to the blue Paper: It contains an oily, volatile Salt, the Sal Ammoniac of which is not entirely disengaged, but wrapped up in a great deal of Sulphur. The *Scordium* is a good Dissolver; it is aperitive, diuretic, sudorific; the Infusion of it should be drank in malignant Fevers, the Small Pox, Measles, and Diseases of the Skin. It is used after the Manner of Tea, or a Pugil of it may be boiled in lean Broth, to restore the Appetite, kill Worms, and purify the Blood by insensible Transpiration. Half an Ounce of the Extract of this Plant in a Bolus, or an Ounce of the Conserve of its Leaves and Flowers, usually prove sudorific. This Conserve is of Use for purulent Spitting. This Plant is also detersive and vulnerary: It is used in Lotions, with Wormwood and the lesser Centory. Fomentations are made of these Herbs, and they are applied as

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as a Cataplasm on Parts which are threatned with a Gangrene. To cure a Gangrene, the spacelated Flesh must first be eaten off with the Water of corrosive Sublimate, and Arsenic, or the Butter of Antimony; for without this Assistance, the vulnerary Plant would be of no Use. The *Scordium* is used in the *Theriaca*, the Mithridate, the Orvietan of *Hoffman*'s Composition, *Matthiolus*'s Antidote, and most alexipharmic Compositions. It has given Name to the *Diascordium* of *Fracastorius*, and to that of *Sylvius*. *Martyn*'s *Tournefort*.

2. Scordium; alterum; sive Salvia agrestis. *C. B. P.* 247. *Boerh. Ind. A.* 183. *Scorodonia, Salvia sylvestris*, Offic. *Scorodonia, sive Salvia agrestis*, Ger. 536. Emac. 662. Raii Hist. 1. 576. Synop. 3. 247. *Scorodonia sive Scordium alterum quibusdam, & Salvia agrestis*, Park. 111. *Scordotis sive Scordium foliis Salviæ*, J. B. 3. 293. *Chamædrys fructicosa sylvestris melissæ folio*, Tourn. Inst. 205. WOOD SAGE.

The wild Sage has several square, woody and hairy Branches, on which are set, by Pairs, rough, wrinkled, Sage-like Leaves, but which are greener and broader than Garden Sage; of a pleasant Smell, but with a Touch of the Garlick. The Flowers grow on the Tops of the Branches in long Spikes, with a small Leaf set on by each Flower; they are yellow, of the verticiliate Kind, having no Galea, but in its Place a few purple Stamina; their Calyces are hairy, containing four brown Seeds. The Root is slender and creeping. It grows in Hedges and bushy Places, and flowers in *July*. The Leaves are used.

Wood Sage is accounted very good for the Gout, Rheumatism, Scurvy and Dropsy; it provokes Urine and the Menses, and is an excellent vulnerary Plant, and prevents Mortifications and Gangrenes. *Miller*'s *Bot. Off.*

Its Leaves are very bitter and aromatic; they have a little Taste of Garlic, and give hardly any Tincture of red to the blue Paper; which gives us Reason to believe they contain a Salt like that of the *Germander*, but loaded with more essential Oil, and in which the Sal Ammoniac discovers itself but little. This Plant is very aperitive, diaphoretic, vulnerary and resolvent: *Dodonæus* prescribes the Decoction of it in the venereal Disease. *Tragus* commends its Juice and Infusion in Wine, as a Medicine very aperitive and sudorific, good to strengthen the Stomach and kill Worms, to provoke Urine, and to carry off the Jaundice and the Tertian Ague; they use it very successfully at *Paris* for the Dropsy, by giving to drink every four Hours a Glass of the Infusion of this Plant in white Wine. *Martyn*'s *Tournefort*.

3. Scordium; frutescens; folio angusto Salviæ; flore luteolo. *Boerh. Ind Alt. Plant. Vol.* 1.

The first Species is found to be an excellent and safe Remedy against the Pestilence. *Rudbeckius* found by Experiment, that this Plant intruded into the Mouth, Intestines and Nose of a dead Body, preserved it from Putrefaction. *Scordium*, among the Antients, was an Ingredient in all Medicines against the Poisons of mad Animals. It expels all foreign Matter, especially what inclines to Putrefaction, by Sweat; it has an intolerable and nauseous Bitterness, but not such as creates a Nausea, by which it seems qualified for killing all Manner of Insects and Worms. But I shall not take Occasion from hence to determine, whether or not the Eggs of Insects, as *Kircher* and others think, are drawn in by Inspiration with the Air, in pestilential Times, and thus cause the Infection, which this Herb, by killing those Worms as soon as generated, seems adapted to remove. It cures a Gangrene, resolves Tumors, and is proper in intermittent Fevers; externally applied, it cleanses Wounds and Ulcers, and mitigates the Pain of the Gout; the expressed Juice, with Sugar, is exhibited in pulmonic Disorders. *Fracastatus* has written largely of the Virtues of this Plant, and *Sylvius* in his *Praxis*, with a great deal of Labour, extracts from it a very penetrating Tincture, which is not to be had so good at the Druggists or Apothecaries, who will not take the necessary Pains for obtaining it. If therefore we would with any Measure of Certainty rely on its Effects, we ought ourselves to take Care of the Preparation. The Extract is called *Diascordium Sylvii*, and supply the Place of the *Mithridatium*, as a Sovereign Remedy. The Conserve is sudorific, and good for the Asthma and Shortness of Breath, and for Virgins labouring under a Chlorosis, and Obstruction of the Menses; the Leaves infused in Wine, are serviceable in Dropsies. The second Species is adapted to chirurgical Uses; for the bruised Leaves, with Vinegar, Litharge, and Salt, cure a Gangrene and Cancer. *Hist. Plant. adscript. Boerhaave.*

Scordium, with other proper Things, is prescribed by *Heister* in Fomentations and Cataplasms, for a Gangrene and Sphacelus, and in a sudorific Potion for a Chilblain.

SCORDOLASER. *Assa Fœtida*. See SILPHIUM.

SCORPOLNA or SCORPIS.

This is a Sea-Fish, by some thought to be the Female of the Sea-Scorpion, because 'tis pretty much of the same Shape; but it is really another Species of Scorpion, far less, and of a ciniritious or browniish Colour. Its Principle of Life is so strong, that it moves for some Time after its Heart and Entrails are taken out. Its Bite is not venomous, and it feeds upon Sea-Wreck, and is good Food. Its fixed Salt is possessed of the same Virtues with that of the Sea-Scorpion. *Lemery des Drogues.*

SCORIA. The Dross or Recrement of a Metal.

SCORITH. Sulphur. *Rulandus.*

SCORODON. Garlick. *Rulandus.*

SCORODONIA. A Name for the *Scordium alterum, sive Salvia agrestis.*

SCORODOPRASSUM. See ALLIUM.

SCORODOTHLASPI, *Ulyssis Aldrovandi*, J. B. This is a Species of Thlaspi, or small Plant, which from its Root sends Leaves, resembling those of the Daisy. Some of these Leaves are jagged, others surrounded with small Teeth, and others without Teeth or Jaggs, but nervous and green. From amidst these Leaves arise some small Stalks, which also bear Leaves, and at their Tops Flowers, composed of four small white Leaves and a Pistil, which afterwards becomes a flat Fruit, like an oval Purse, which contains Seeds almost round and flat. The Root is simple, white, and furnished with some Fibres. The whole Plant smells like Garlick, and is of an agreeable Taste, having a small Degree of Sharpness in the Mouth. It is cultivated in Gardens, and is of an highly aperient Quality, and proper to resist Putrefaction. *Lemery des Drogues.*

SCORODOTIS. A Name for the *Scordium*; *alterum, sive Salvia agrestis.*

SCORPIACA. The Name of an Antidote in *Galen de Antidot. L.* 2. *C.* 12. which is recommended against the Sting of the Scorpion.

SCORPIO. Offic. Schrod. 5. 346. Ind. Med. 107. Ims. de Insect. 95. Charlt. Exer. 54. *Scorpius*, Raii Hist. Insect. 9. Aldrov. de Inxit. 577. Mouff. Insect. 204. THE SCORPION.

It is an Animal with eight Feet, resembling a Crab, only less, and of a blackish, or sooty Sort of Colour. Burnt alive, and the Ashes exhibited, they provoke Urine, when obstructed by the Stone in the Kidneys or Bladder; bruised and applied to the Place, they cure the Poison of their own Stings.

The Scorpion is an excellent Remedy of itself for its own Poison. Some bruise it and apply it to the Wound; others take it bruised in Wine; and others instil Oil of Scorpion into the Wound, *Heister Chirurg.* The Oil of Scorpions is by some recommended as effectual in a Suppression of Urine, the Bladder being anointed with it hot, or before a Fire, *Idem.*

The Sting of the Scorpion is succeeded by a most violent Pain of the injured Part, with a Coldness, Tension and Numbness; a cold Sweat about the Wound, and over all the Body. They who are stung in the lower Parts, are affected with a Swelling of the Groins; if the Wound be in the upper Parts, and but slight, there is a Tumor under the Armpits; but if the Hurt be considerable, a burning Heat affects the Place, as in Ambustions; and there is an Eruption of Warts, resembling Ants, about the Lips and the whole Body; so that the Patient fancies himself struck with Hail-stones. The Face is distorted; a glutinous Sordes gathers about the Eyes; the Tears are viscous; there is a Hardness of the Joints, and a falling down of the Anus, with a Desire to go to Stool; a Froth about the Mouth, much Vomiting, Hickups, and Convulsions like those in an Opisthotos.

The Cure is performed by taking inwardly Serpyllum, the Root of Althæa, and Elaphoboscus, which last is an excellent Remedy, whether eaten green, or drank in Powder. The Seeds of wild Parsnep, and Hasle-Nuts, are, also, good Medicines; and the latter worn about the Body, are a Preservative against the Sting of the Scorpion. Or take a Housesnail and apply it, together with the Shell, upon the Place, and the Pain will immediately cease. Earth-Worms are said to have the same Effect. Or take a River-Crab, and bruise it with Wine and Laser, and exhibit it in a Potion. Another excellent Antidote against the Poison of the Scorpion, and with which I cured myself when affected, is thus prepared: Take of Castor, Succus Cyrenaicus, Pepper, each four Drams; Costus, Spikenard, Saffron, Juice of Centaury, each two Drams; Honey clarified, a sufficient Quantity; the Dose in the Quantity of a Hasle-Nut, for the Sting of a Scorpion in diluted Wine; but for the Bite of an Asp, in Vinegar. It is of an attractive Quality, so as to attract the poisonous Juice, tho' digested, and settled in the Joints. Garlic, also, bruised either by itself, or with Salt; or Wild Rue, or the Herb Scorpiurus, are proper to be applied. I used to bruise a Dram of wild Rue in Vinegar, and with an Ounce of Wax, and a Quarter

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Quarter of an Ounce of the Resin of the Pine-Tree, and a little Oil, make into a Cataplasm, and apply it to the Place, and it proves an admirable Remedy. Sheeps Dung, also, boiled in Wine, and applied immediately, removes the Pain. *Actius, Tetrab.* 4. *Serm.* 1. *Cap.* 10.

Oil of Scorpions is prepared, by putting thirty-five Scorpions into two Pounds of Oil of Sweet Almonds, and after exposing them to the Sun for forty Days, straining off the Oil.

SCORPIODECTOS, σκορπιόδηκτος, A Person wounded by a Scorpion. *Dioscorides.*

SCORPIOIDES.

The Characters are;

It has a Part full of Joints, and convoluted like a Snail or a Caterpillar, having in each Joint a Seed of an oval Figure.

Boerhaave mentions four Sorts of *Scorpioides*, which are,

1. Scorpioides; folio Bupleuri. *C. B.* 287. *Clymenos, Dioscordis.* Col. 1. 155, 156.

2. Scorpioides; Bupleuri folio; siliquis lenibus. *Park. Theat. Bot.* 1117.

3. Scorpioides; siliquâ crassa Boelii. *Ger. Emac. App.* 1627.

4. Scorpioides; Bupleuri folio, corniculis asperis; magis in se contortis & convolutis. *M. H.* 2. 127. *Boerh. Ind. Alt. Plant. Vol. II.*

This Plant, by its Signature, promises some Virtue against the Bite of Serpents; but it is not safe to rely upon it in such Cases.

SCORPIODES LEGUMINOSA. A Name for the *Ornithopodium*; *Scorpioides*; *siliquâ compressâ.*

SCORPIOIDES MAJOR. A Name for the *Heliotropium*; *minus*; *angustifolium*; *palustre*; *seu glabrum.*

SCORPIOIDES MATTHIOLI. A Name for the *Ornithopodium*; *Portulacæ folio.*

SCORPIOPLECTOS. The same as SCORPIODECTOS.

SCORPIURUS ANNUUS. A Name for the *Heliotropium*; *minus*; *angustifolium*; *arvense*; *seu hirsutum.*

SCORPIURUS PALUSTRIS. A Name for the *Heliotropium*; *minus*; *angustifolium*; *palustre*; *seu glabrum.*

SCORPIUS. A Name for the *Genista-Spartium*; *majus*; *longioribus aculeis.*

SCORPIUS MARINUS. Offic. Bellon. de Aquat. 248. Schonef. Ichth. 67. Salv. de Aquat. 199. *Scorpius*, Aldrov. de Pisc. 195. Jons. de Pisc. 41. Gesn. de Aquat. 845. Rondel. de Pisc. 1. 201. *Scorpius major Rondeletii*, Raii Ichth. 331. Ejusd. Synop. Pisc. 142. *Scorpio*, Charlt. Pisc. 23. THE SCORPION FISH.

It is taken in the *Mediterranean* Sea; the Gall of it is good for Cataracts, an Albugo, or other Infirmities of the Eyes which darken the Sight. *Dioscorides.*

SCORTUM. The SCROTUM.

SCORZONERA.

The Characters are;

The Root is carnous, and full of a lacteous Juice: The Leaves are alternate; the Calyx is oblong, squamous, and shorter than the Petals of the Flower. The Seed is oblong, and generally contain'd in a Husk.

Boerhaave mentions six Species of *Scorzonera*, which are;

1. Scorzonera; latifolia; sinuata. *C. B. P.* 275. *Tourn. Inst.* 476. *Boerh. Ind. A.* 89. *Scorzonera nostra & Hispanica viperaria*, Offic. *Scorzonera Hispanica major*, Park. Parad. 301. Raii Hist. 1. 248. *Viperaria Hispanica*, Ger. 598. *Viperaria sive Scorzonera Hispanica*, Ger. Emac. 736. *Tragopogon Hispanicus sive Escorzonera, aut Scorzonera.* I. B. 2. 1060. VIPERS-GRASS.

The Root of this Plant is about a Finger thick, but little branched, of a reddish brown on the Outside, and white within, full of a white milky Juice: The lower Leaves are broad, long, sharp pointed, and waved about the Edges, of a pretty firm Texture. The Stalk arises to be two or three Foot high, smooth and round, beset with Leaves, without Footstalks, broad at the Bottom, and growing narrower and grassy at the Ends. The Flowers grow on the Tops of the Stalks in scaly Calyces, compos'd of several Rows of narrow Petals, somewhat like Dandelion, which afterward turn into Down, having long, slender, whitish Seed. It grows in hot Parts of *Spain*, but is planted here in Gardens, and flowers in *July*. The Root is used.

It is accounted cordial, sudorific, and alexipharmic, useful in all Kinds of Fevers and malignant Distempers, and is accounted good against the Stings or Bites of venemous Creatures. *Miller's Bot. Off.*

The Root of Scorzonera is of a sweetish and not unpleasant Taste, and as good to eat as a Parsnep, whether raw, boiled or pickled; it is even serv'd up at the Tables of Persons of Quality, and prefer'd before a Parsnep, or Skirret.

It is not only good for the Bite of the Serpent *Escurzo*, but for the Bites of all other Serpents. The Virtues hereof are extended, also, to pestilential Fevers, all Manner of Disorders of the Heart, Melancholy, Palpitations, Syncope, Epilepsy, Vertigo, Obstructions of the Viscera, and Affections of the Uterus. *Monardus* has written a Book on this Plant, in which he relates surprizing and even incredible Things of its Virtues against the Serpent *Escurzo*. The *Scorzonera* of the Island *Amagria* is bitterer than the *Spanish*, or what is cultivated in our Gardens, and is very serviceable in the Beginning of a Dropsy, or in a stubborn Jaundice. If you want an hepatic Medicine for gross and adust Bile, this bitterest Sort of *Scorzonera* is most effectual. The mountainous *Scorzonera* is celebrated as an Alexipharmic in *Ephem. Germ. Au.* 11. *Obs.* 81. *Raii H. P.* 248.

2. Scorzonera; latifolia; altera. *C. B. P.* 275.

3. Scorzonera; laciniatis foliis. *T.* 477. *Tragopogon, laciniatum, luteum*, C. B. P. 274.

4. Scorzonera; sicula; altissima; folio plantaginis hirsuto.

5. Scorzonera; foliis gramineis. *Sher.*

6. Scorzonera; foliis laciniatis; supina. *Boec. Boerh. Ind. Alt. Plant. Vol. I.*

Scorzonera takes its Name from *Escorso*, a *Catalonian* Word signifying a Viper, because it is said to be very effectual against the Bites of that Animal. The *Scorzonera* imported from *Spain* is far superior in Virtue to ours, which wants the aromatic Quality of the *Spanish*. Perhaps it had its Name from its Effects on the Viper, which if but touched with the Juice of this Plant, immediately droops and sickens; and it is said, that a Person may take a Viper in his bare Hand without receiving any Harm, if he first rubs his Hand with this Herb; for the Viper will not be able to bite, but faints and sickens. And I know an Apothecary, who commanded his Servant to take in his Hand a living Viper, such as they put into *Venice* Treacle: The Servant was immediately bit by the Viper, and sunk to the Ground, when his Master immediately apply'd this Herb bruised to the Wound, and to the Viper, which still hung to it. The Effect was, that the Viper immediately fell off, and the Servant was cured. The Juice is very serviceable in Inflammatory Diseases; three Ounces thereof being taken in the Morning fasting, are recommended against all volatile Poisons; and the Herb apply'd, cures envenom'd Wounds. The Root, which is perrennial, is proper to be taken out of the Earth before it produces Leaves, and to be hung up or dry'd, or preserved in Sand. It is a proper Herb in all Diseases proceeding from too great a Mobility of the Humours, and which require Agglutinants and Demulcents; also, in all Disorders arising from a putrid Blood, such as the Small-Pox, Measles, Pestilence, burning Fevers, Peripneumony and Pleurisy. The Root is an excellent Cleanser and corrective, for which Reasons it is of extraordinary Use in hypochondriac Disorders, being boiled in Barley-Water. The Root bruised in a Marble Mortar, and the Juice expressed through a Linnen Cloth, makes an excellent Medicine; but all its resolvent and nutritive Virtue is lost in Decoction. It is of good Service in Melancholy, and Pains of the Gout, and some use it with Success in an immoderate Flux of the Menses. There is no Herb more commended than the first, second and third Species in the Phthisis, Extenuations, and the Jaundice. *Hist. Plant. ascript. Boerhaave.*

Besides the foregoing Sorts of *Scorzonera*, *Dale* mentions the following.

SCORZONERA SUBCŒRULEA, Offic. *Scorzonera angustifolia subcærulea*, C. B. P. 275. Raii Hist. 1. 249. Tourn. Inst. 476. *Scorzonera elatior angustifolia Pannonica*, Park. Theat. 410. *Viperina* 6ª, Ger. 598. *Viperina angustifolia elatior*, Ger. Emac. 737. *Tragopogonis Species sive Scorzonera major angustifolia subcærulea flore*, I. B. 2. 1062. HUNGARIAN VIPERS GRASS.

It grows in hilly Places, and the Root, which is the Part used in Medicine, perfectly agrees in Virtues with that of the common *Scorzonera*, and may supply its Room.

SCOTODINOS, σκοτοδινος, or SCOTODINE. σκοτοδινη, or σκοτοδινη. A Vertigo attended with a Dimness of Sight; from σκοτος, Darkness, and δινος, a Vortex.

SCOTOMIA, or SCOTOMA. From σκοτος, Darkness. The same as SCOTODINOS.

SCOTOS. Darkness, or Dimness of Sight.

SCREATIO. The Action of Hawking, in order to bring up Matter lodg'd in the *Fauces*; or the Matter thus brought up.

SCRIBLITA. A Wafer. *Castellus.*

SCRIBONIUS LARGUS. The Name of a *Roman* Medicinal Author, who lived under the Emperors *Tiberius* and *Claudius*, and wrote many Things in Medicine, of which his Treatise *Of the Composition of Medicines*, is still extant,

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extant, and often quoted by *Galen*: It was dedicated to *C. Julius Calliſtus*, the favourite Freedman of *Claudius*; and it is only by this Dedication that we are able to judge of the Time in which *Scribonius* lived, for he ſpeaks in one Place of *Meſſalina* and *Claudius* after a Manner which leaves no room to doubt that he lived under their Reign: "*Meſſalina*, ſays he, the Conſort of our God *Cæſar*."

Some learned Men have thought that *Scribonius* wrote this Book in *Greek*, and what we now have in *Latin* is nothing but a *Latin* Tranſlation, made a long Time afterwards. What gave Occaſion for them to think thus, was, that the *Latin* of *Scribonius* did not ſeem to them to come up to the Purity of that Language, which was ſtill preſerved in the Reign of *Claudius*. But *Rhodius* has prov'd, that theſe learned Men are miſtaken, and that our *Scribonius* has all the Air of an Original, though the Language be not quite ſo pure as that of *Celſus*, who preceded him not long before; which only proves, according to *Rhodius*, that Men who live in the ſame Age ſpeak not always with equal Purity of Stile; and indeed, the whole Book ſhews that he wrote it in *Latin*; and in the Preface he makes his Acknowledgments to *Calliſtus* for preſenting his *Latin* Medicinal Treatiſe to the Emperor. As to his Perſon, his Name ſhews that he was a *Roman*, and of the *Scribonian* Family, except it be ſuppos'd that he borrowed that Name from the ſame Family, in Imitation of other Strangers; but if this were the Caſe, he would have join'd his own proper Name to it. *Le Clerc*, *Hiſtoire de la Medicine*. *Fabricii Biblioth. Græc.*

SCRIPTULUS. A Scruple; the ſame as SCRUPULUS.

SCROBICULUS CORDIS. The Pit of the Stomach.

SCROFFA. The ſame as SCROPHULA.

SCROLLUS. A River Fiſh, found in the *Danube*, ſomewhat ſmaller than the Perch. It is red on the Back, greeniſh on the Sides, with a Mixture of red Spots, and white on the Belly. It is eſteem'd excellent Food, but is not uſed in Medicine. *Lemery* des Drogues.

SCROPHULA. The King's-Evil; from *Scropha*, a Swine; becauſe this Animal is ſaid to be much ſubject to ſuch a Diſorder.

Quincy remarks, that the Gout and the King's-Evil agree, in being frequent amongſt Perſons ſtrong both in Body and Mind, who are hearty Feeders, and on other Accounts well and healthful; in this reſpect, however, conſiderably differing, that the Evil generally appears at three, four, or five Years of Age; and dries away by that State of Manhood that the Gout gives its firſt Warnings of approach; though neither of theſe are without ſome Latitude of Exception. And as the Gout is owing to ſharp ſaline Humours, that are contracted by a particular Way of living, and favoured in their Accumulation by a peculiar Make of the Parts where they ſettle, upon the Declenſion of the natural Strength, ſo this Diſeaſe ſeems owing to a hot, ſharp Humour, propagated *a Semine* from the Parent, in the firſt Formation diſcovering itſelf at an Age, when certain Glands are fitted for its Reception, and diſappearing when the digeſtive Powers have arrived to their greateſt Strength.

That Perſons ſubject to the Evil do early ſhew an uncommon Vivacity of Mind, and Forwardneſs of Underſtanding, is a Fact that all have experienced who have been accuſtomed to ſuch Opportunities of Obſervation; as, alſo, that if the Diſtemper goes on without much Interruption from its natural Courſe, and dries away about the Age of Manhood, as it commonly does, ſuch Perſons are generally ſtrong, and free from Diſtempers afterwards.

That ſuch a Humour can be derived from the Parent, is granted, perhaps, in more Inſtances than where it is really ſo, and is likely to be yielded by many, more on the ſcore of a vulgar Opinion, than for any true Notions of the Manner how ſuch a Thing is poſſible: It may be, therefore, neceſſary to form ſome rational Conceptions hereof, in order to judge what Diſorders ſpring from ſuch an Origin, and which not; becauſe, without ſome Rules to determine by, Caſes may be confounded and miſtaken, from ſome Reſemblance in their Appearance, which flow from very different Cauſes.

To this Purpoſe, then, I cannot ſee what we have to do with the Philoſophy of the Microſcope, ſo far as it aſſerts the Semen to be animated before Generation, becauſe it ſeems not in any Manner to affect the Matter under Inquiry; but ſo far as we get any Knowledge of the ſenſible and manifeſt Properties of that ſmall Portion of Matter, from whence we boaſt the Production of the fineſt Machines in the Creation, it appears to conſiſt of a very ſubtle, active Salt, floating in a ſoft, balſamic Vehicle; whereas, therefore, we can conceive what Conſequences to the Œconomy already formed, may flow from an Exceſs or Defect in the more active Principle of ſuch a Compoſition; ſo may we, by a Parity of Reaſon, conjecture, what muſt be the Reſult of every Deviation from the natural Standard in the ſame Principle before its Animation in the Matrix. Where, then, this Principle abounds with Heat and Pungency in the maſculine Semen, it will not only irritate more frequently and more ſtrongly to venereal Embraces, but carry with it the ſame Qualities into the impregnated Ovum; and, without ſome uncommon Interruption, or Contemperature from oppoſite Qualities, will encreaſe in the growing Fœtus, in Proportion to its Enlargement, and make a Part of that Conſtitution to which it gave Being, with the ſame Affections and Properties as it ſtood poſſeſſed of in the generating Semen.

Hence, it will be no difficult Thing to imagine what a Condition the Off-ſpring of ſuch a Parent muſt be in; and how, ſooner or later, in one or another Part, this primitive Matter may ſhew itſelf in a very troubleſome, if not a very miſchievous Manner, as the Circumſtances of Life, and Strength of the Conſtitution encourage or obſtruct its Exertion, and the peculiar Configuration of the Glands favour or reſiſt its Accumulation and Lodgment: And though in the Caſe immediately under Enquiry, it principally ſhews itſelf from a little Time after Birth to a State of Manhood, is probable from this Reaſon, that ſooner, it is not in Quantity enough to be diſcernable, or is hindered from Exertion by the Laxity of the Parts, and Viſcidity of Humours, which is always more or leſs the Caſe of very young Children; but that when the Parts have got ſome Degree of Firmneſs, and have digeſted away the tough Humours, this hot, ſharp Matter becomes ſenſible to the fine Strainers and Membranes as it paſſes in the Courſe of Circulation, and at laſt fixes upon them ſo as to occaſion Pain, Inflammation, Swelling, and running Sores: But when, again, the Conſtitution takes another Turn, and arrives to its utmoſt Vigour, the digeſtive Powers become able either to deſtroy its Pungency by Attrition and Comminution, to detach it off by ſome natural Outlet, moſt commonly the Glands of the Skin, or to leſſen it, ſo much at leaſt, in Quantity, that it flows with the ordinary Current without ſenſible Effect, and never afterwards appears, but in giving to the generating Principle the ſame bad Taint from whence it derived its Exiſtence: And that even frequent Coition and Propagation ſhall vent and draw off a great deal of this Matter, to the Benefit of the Parent, and Detriment of Poſterity, is not only probable, but almoſt demonſtrable; becauſe, during that Time of Life, and in Proportion to ſuch Indulgence, the Parent is always the moſt free from it, and that during the Travail of a Woman with Child, before ſubject to ſuch Humours, or any of the like Kind, ſhe ſhall be entirely free from it then, though, if the Iſſue ſurvives the common Fate of Convulſions, a little more Age ſeldom fails to diſcover when ſuch a Mother had her temporary Relief.

That the Diſtemper then under Conſideratian may be thus propagated, is not only out of Queſtion from common Experience, but the Manner of it may in ſome meaſure be conceived from theſe Hints, and the Nature of the generating Matter. The ſame Way of Thinking, alſo, will ſuggeſt in what Circumſtances a Perſon may fall into this Diſtemper without having it to charge upon Parents, or the Milk of a tainted Nurſe, which, alſo, may poſſibly happen, tho', it is believed, very rarely; and that is from a Way of feeding, or any other Condition of living, that gives to the Maſs of Humors an uncommon Heat and Sharpneſs, which in Time ſhall fix upon the ſame Parts, inflame and ulcerate them in the ſame Manner as that derived from a diſtemper'd Semen. And this will not appear at all ſtrange to thoſe who conſider how many cutaneous Foulneſſes, that are generally propagated by Infection, do ſometimes derive their Origin from a Conſtitution thus diſpoſed to generate the ſame Humour within itſelf, without any Infection; as what is ordinarily called the Itch, which is commonly got by Infection, does yet in ſome ſcorbutic Habits ariſe to the Height of that Diſtemper, ſo as to be in a Condition of infecting others, though it was generated *de novo* of itſelf.

The various Shapes and Appearances of this Diſtemper, as it is differently circumſtanced in Proportion to the Quantities, Aſperities, and other Aggravations of the Peccant Humours, with the Parts it ſettles upon, muſt be left to the Deſcriptions of Authors who have profeſſedly wrote about it, it being ſufficient to our Deſign here, to take Notice, that it is from a hot, ſharp Humour, fitted to be depoſited upon certain Glands, and affect them in the Manner as it is notoriouſly known to do.

But ſo far as from the principal Circumſtances of this Diſtemper are ſuggeſted to us any Means of Cure, it is moſt obvious, that as the greateſt Difficulty in getting rid of the morbid Humour which cauſes the Gout, is in its lying ſo far diſtant

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diſtant in the Habit from the common Reach of Medicine, ſo this ſeems not quite ſo remote, but to flow moſtly in the common Stream of the Blood, and to be immediately depoſited by that upon the Parts affected, and moſt ſuited for its Reception. Beſides, therefore, promoting Digeſtion, Comminution and Tranſpiration, as, alſo, ſoftening and ſmoothing the Aſperities of burning corroſive Humours, a conſtant well-choſen Courſe of Diuretics muſt neceſſarily be of great Service. And too many Inſtances we have, by Experience, of Caſes that have been ſufficiently laboured with Mercurials, and the ordinary officinal Alterants, without Succeſs, that have afterwards been conquered by means ſeemingly much ſlighter, ſuch as the Millepedes, and the common antiſcorbutic Drinks, made principally with cooling and diuretic Herbs and Roots; no general Form of which can be contrived to ſuit every Patient and Circumſtance, and muſt, therefore, be left to the Contrivance of a Phyſician, according to the particular Exigences of different Conſtitutions. As to that ſingular Way of Cure, whence this Diſtemper comes by the Name of the King's Evil, there is ſomething in it ſo remote from all good Senſe, ſince it can take place only on a deluded Imagination, that I think it juſtly baniſhed with the Superſtition and Bigotry that introduced it. *Quincy's Medicina Statica.*

The *Scrophula* or *Struma* is a hard glandulous Tumor, uſually of the ſame Colour with the Skin, ſeated principally on the Sides of the Neck, about the Muſculi Maſtoidei, behind the Ears, and under the Chin; either more or leſs moveable, ſingle of the conglobate Kind, or in Cluſters of the conglomerate Kind; many Patients having been obſerved to have them contiguous from the Ear down to the Clavicle.

Though the principal Seat of this Diſeaſe is in the Sides of the Neck, ſcarcely any Part of the Body is exempted from it; and it affects either Glands, Muſcles, Membranes, Tendons, Bones, or the Viſcera.

The Glands are the moſt remarkable Seat of this Diſtemper, and whenever the outward Glands appear ſwelled, thoſe of the Meſentery may be concluded to be ſo too, the Meſentery being uſually the Part firſt attacked by this Malady.

In the Eyes it ſhews itſelf in a troubleſome Ophthalmia, producing both the Anchylops and Ægylops; and in the Lids, the Epiphora and Lippitudo; ſometimes the whole Ball of the Eye is thruſt out by theſe glandulous Tumors. This Diſtemper appears in the Noſe, by the Ozena; in the Lips, by the Labriſulcium, or thick pouting Tumor, eſpecially of the upper Lip, with a Fiſſure in the middle; in the Throat, by the tumefied Tonſils; under the Tongue, by the Ranula; on the Wind-Pipe, by the Bronchocele; under the Chin, and on the Sides of the Neck, by the Struma, properly ſo called. It breaks out in the Groin and Arm-pits, and the Breaſts too are ſubject to it. The Teſticles and Proſtates may be liable; but in theſe Caſes another Diſtemper is generally ſuſpected. The Strumous Matter is ſometimes collected, like a gummy Subſtance, about the Muſcles and Tendons, eſpecially in the Fingers, Hands, Feet, and Toes; and the Elbows, Knees, and Ankles are often attacked in this manner. The fixed, immoveable, white Swellings on the Joints, are the undoubted Offspring of this Diſtemper.

The Bones are often affected with this Diſtemper, not the Skull itſelf excepted; though the Bone ſwells, it appears externally hard and ſound, but the Heart and Marrow may be entirely rotten; and this is called the Spina Ventoſa. When a ſtrumous Tumor touches a Bone, it becomes carious. The Viſcera too are often ſubject to theſe Tumors, which is not ſurpriſing, if we conſider that moſt of the Viſcera are ſuppoſed to be made up of Glands.

The ſtrumous Tumors of a round Figure are reckoned the mildeſt, which, as well as others, ariſe without Inflammation or Pain, and with moderate Hardneſs, but by Increaſe of Heat inflame and ſuppurate. Some of the mildeſt and biggeſt ſuppurate, without changing the Colour of the Skin, but in a few Days they renew their Hardneſs. When they ſuppurate with Inflammation, the Matter is mixed with Blood, and they are named Phlegmonoides; others are indurated and become ſcirrhous, yet ſometimes fret, and grow painful and ſoft in their upper Part, which by ſome has been miſtaken for a Suppuration, but at their Opening they only gleet, and often degenerate into a Cancer. Sometimes theſe Tumors are primigenial, as when the Diſeaſe is Original; and ſecundary when they ſucceed ſome other Diſtemper, as particularly a Fever, which often terminates in a Congeſtion of Matter. It, alſo, ſometimes happens after Catarrhs, and other Diſtempers; and ſome proceed from ſudden Flaxion, and others from long Congeſtion. The *Steatoma*, *Atheroma*, and *Meliceris*, as they are frequently Companions of, ſo they are often not eaſily diſtinguiſhable from, theſe Tumors.

When the Tumor affects a conglobate Gland, it is uſually round, moderately hard, and moveable without Pain. Thoſe of an oval Figure, which are hard, and accompanied with Pain without Inflammation, are malignant; and if they grow unequal, threaten a Cancer. When the Tumor ſeizes a conglomerate Gland, the Shape of the Gland is uſually preſerved, eſpecially when it is wholly affected; but ſometimes they are oval, round or flat. In a Muſcle the Shape of the Tumor is uncertain, and always diſtinct from the Muſcle.

The Particulars to be conſidered in the Prognoſtic are, whether the Tumors be many or few; in Cluſters, or more diſtinct; great, or ſmall; deep, or ſuperficial; moveable, or immoveable; benign, or malignant; ſoft, or hard; the Situation, whether near great Veſſels, Joints, Nerves, Tendons, or Bones; alſo, the Habit of the Body, and Age of the Patient.

If the Habit of Body be tolerable, the Patient young, the Strumæ recent, and but moderately hard, the Reſolution and Suppuration may be eaſily effected; but if they have been of long Continuance, are hard and lie deep among the Veſſels, the Work becomes difficult; yet the Cure of both is often promoted by accidental Ferments, which often either reſolve or ſuppurate them. If the Strumæ be moveable and free from remarkable Veſſels, the Extirpation is not difficult; but if the Habit of Body be bad, and the Struma immoveable, they are not to be meddled with; if they be moveable, and yet lie deep among the great Veſſels, the Extirpation is dangerous: Beſides, in the beſt Habits of Body, new Strumæ are ready to riſe while the old ones are extirpating.

If the Strumæ have been long ulcerated, and are become ſinuous and virulent; and if they lie near one another, they often find a Communication to one another, though they appear diſtinct: In this Caſe the Lips grow callous, and the Ulcers corroſive, frequently ſordid, and the Cure is not to be hoped as long as any one Cyſtis remains, or the Veſſels that feed them; but if the Ulcerations be ſimple, the Cure is accordingly eaſy. Thoſe who are ſeized with Strumæ in the Neck, after forty Years of Age, ſeldom recover, as they generally labour under great Obſtructions, whence ſpring ſcorbutical Affections, Jaundice, Fainting, Vomiting, Loſs of Appetite, ſometimes a Dropſy; and ſometimes a Cough, in which Caſe they die tabid.

If ſtrumous Tumors ariſe from Caries in the Bones of the Fingers or Hands, their Cure will require great Care; if in the Foot or Toes, it will be more difficult; if in the Os Calcis, Joint of the Ancle, or Aſtragalus, or in the Knee-Bones, and Iſchia, or the like, where you can't lay open, or judge of the Caries, the Caſe is deplorable, the Work is long, and the very Diſcharge of Matter exhauſts the Spirits of the Patients; ſo that they generally die of a Maraſmus. But if, by Strength of Body and Help of Medicines, the Ulcer digeſts, ſometimes the rotten Bones moulder and exfoliate, and by a *Callus* within, the Member is ſupplied.

If ſtrumous Tumors outwardly foul the Bones; if the Habit of Body be tolerably good, and the Ulcers well handled, they may recover: But if the Habit of Body be bad, new Ulcers ariſe; ſo that the Work is long and difficult.

THE METHOD OF CURE.

In the Cure, three Things are required.

1. A Regimen of Diet, and the other Non-naturals.
2. Pharmacy, or internal Preſcriptions.
3. The Application of Externals, either to diſcuſs, ſuppurate, or extirpate the Glands.

With reſpect to a Regimen of Diet, Regard ought to be had to the Conſtitution of the Patient, whether it be hot or cold, dry or moiſt, old or young, robuſt or delicate. If the Body be cold or moiſt, we generally ſuppoſe a Surfeit preceded, and Crudity to abound; in which Caſe, Abſtinence from Meat and Drink, or at leaſt great Moderation, is requiſite. Their Diet ought to be moderately heating and drying, as Mutton, Kid, Rabbet, Pullet, Chicken, Partridge, Pheaſant, Poltry, and the like, and theſe roaſted; avoiding all Aliments which yield a groſs phlegmatic Nouriſhment, ſuch as Water-Fowl, Fiſh, eſpecially thoſe of Standing-Waters, Herbage, Cheeſe, all ſmoak'd, ſeaſoned or dried Meats. Their Bread ought to be of Wheat, well-baked, and their Drink medicated Ale or Beer; Wine alſo is allowed, and Water utterly forbidden.

In hot and dry Conſtitutions tending to a Hectic, we allow a Diet of a more humid Nature, their Meat being boiled with Lettice, Spinnage, Purſlane, Wood-Sorrel, and the like; to ſome of theſe we dare ſcarce permit the eating of any Fleſh, but rather a Milk-Diet, or Aſſes Milk; though Milk will not be always found agreeable; in which Caſe we preſcribe medicated Broths. Pork is, by ſome, forbidden ſtrumous People.

Air is a great Help to the Cure, which ought to be mild and gentle, in cold Weather heating and attenuating, and in the hot cooling. Exerciſe of Body ought to be enjoined, it being

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being neceſſary to waſte Superfluities. Sleeping in the Day is forbidden, unleſs where the Caſe is painful, to which it is an Anodyne. The Paſſions of the Mind ought to be moderated.

The internal Preſcriptions muſt be qualified according to the Habit of the Body. If it be cold and phlegmatic, abounding with groſs viſcous Humors, the Preſcriptions ought to be heating and attenuating. In plethoric Conſtitutions, the ſtronger Cathartics ought to be exhibited, or the milder often repeated. The Purgatives are, the Species Hieræ with Agaric, Diaturbeth, Pulvis *Cornachini*, Pilulæ Cochiæ, è duobus, *Rudii*, de Hermodactylis, Alocphanginæ, Imperiales, è Succino, Trochiſci, Alhandal, Diagrydium, Reſina Jalapii, and Mercurius Dulcis, and all thoſe Medicines preſcribed in the Lues Venerea.

Alteratives are alſo uſefully taken on thoſe Days in which the Patient does not purge. Among theſe, a Decoction of the Woods claims a Pre-eminence; to which are added one or other of the Specifics, ſo called, ſuch as the Roots of Figwort, Drop-wort, Devil's-bit, Soap-wort, Bur-dock; the Bark of the Walnut-tree; the Herbs, Rag-wort, Crane's-bill, Herb-Robert, the greater Celandine, Hound's-tongue, white Hore-hound, Fox-glove, and the like.

In theſe Decoctions, it is very common to put alſo a Lump of crude Antimony, of four Ounces or half a Pound Weight, groſsly powdered and tied up in a Rag; a Specimen of which you have in Dr. *Fuller*'s *Decoctio Liberans*, and his *Decoctum Edulcorans*; of a Diet, in his *Cereviſia ad Scrophulas*, and his *Decoctum ad Scrophulas*.

For ſuch as are not able to be at the Expence of theſe, or unwilling to be at the Trouble of preparing them, which muſt be continued for a long time, I have frequently ordered a Solution of Quick-Lime, one Pound, to a Gallon of Spring-Water; which being decanted, two or three Ounces of the Shavings of Saſſafras Wood, with half an Ounce, or an Ounce of Liquorice Root ſliced, may be ſteeped therein; theſe not only taking off the brackiſh Taſte, and changing it for one more pleaſant, but giving, likewiſe, a very agreeable Smell and Colour to the Solution.

As to the cold Infuſion of ſeveral Drugs, preſcribed by ſome Phyſicians, the Coſt ſeems to be ill beſtowed; the Water being before ſaturated with the Salts of the Lime, and the Woods too compact to yield any Virtue this Way, which require a Decoction of many Hours, with as many taken up in a preceding hot Infuſion preparatory thereto: For which Cauſe, when I would have the Water more thoroughly medicated therewith, I either order them to be boiled in Lime-Water, ſomewhat weaker, prepared for the purpoſe; or having made the Decoction in Spring-Water, to each Quart thereof, half a Pint of the common Lime-Water may be added. And thus the Salts of the Lime have been found, perhaps, more beneficial than more pompous Forms of Remedies.

Beſides theſe Liquors to be taken as a Diet, there are other Medicines, ſuch as the diaphoretic Antimony, Bezoar Mineral, Æthiops Mineral, and Gum Guaiacum.

The Lapis Spongiæ, or Sponge-Stone, with Sponge itſelf calcined, Dr. *Turner* ſays, he has often experienced ſucceſsfully, and relates the following Caſe.

A Countryman, about thirty Years of Age, preſented himſelf to me for Advice, with both Sides of his Neck (where the Strumæ were placed *racematim*, as I may ſay) like a Bunch of Grapes, but more fitly compared to that of Turneps, with which extending forwards, the Larynx was ſo compreſſed as to endanger Suffocation. He had the like Glands upon the pectoral Muſcles, about the Axillæ, with other ganglionide Tumors on his Arms and Wriſts. Of a Caſe ſo pertinacious and inveterate I had little Hope; I preſcribed him a Diet of the Woods, with ſome Antiſtrumatics; Purgation with Extract of *Rudius*, and *Mercurius Dulcis* between whiles; alſo an alterative Electuary of Gum Guaiacum, Æthiops Mineral, Powder of Millepedes, made with the Conſerve of Hips; together with a Roll of the Plaiſter of Frogs, with double the Quantity of Mercury, to be applied externally upon the Glands plaiſterwiſe, and renewed as there was Occaſion; returning him back into the Country, where he had before undergone a copious Salivation for thirty Days; notwithſtanding which the Diſtemper increaſed.

But growing weary of Method, he quickly after threw all aſide; till meeting with one who had laboured under the like Malady, and had got his Cure by a Remedy, which required no Regimen, this Acquaintance procured from his Correſpondent in Town ſome of the ſame for our Patient, being a large Gally-Pot full of a dark or blackiſh Powder, out of which he took a Spoonful, Night and Morning, in a Draught of Beer; and finding his Kernels waſte, he was encouraged to go on, eſpecially conſidering how eaſy it was purchaſed; his Friend making no Secret of the Matter, but frankly telling him what it was. Upon which, that he might not be further troubleſome, he deſired a Relation he had here, according to the Direction given him, to buy a large Quantity of the moſt gritty and fabulous Spunges he could pick out, which drying in an Oven he reduced to Powder; and having continued taking the ſame for about three Months, the Glands were all diſperſed, and his Diſtemper vanquiſhed; ſo that being in Town about ſome Buſineſs at the Year's End, I ſaw him with a ſmooth Neck, ſcarce a Veſtige of the Diſorder remaining, having, as he expreſſed himſelf, *Piſs'd away the King's Evil*.

Somewhat related to this, adds *Turner*, is the *Pulvis ad Strumas* of Dr. *Bates*, prepared of Lapis Spongia, three Parts; Sal Gem, two Parts; and vitriolated Tartar, one Part; which I have ſeen beneficial, alſo, in ſome Caſes. But whoever thinks that by this he has got an infallible Medicine, will find himſelf miſtaken. *Grulingius* preſcribes it thus:

Take of Sponge, Sponge-ſtone, and Pumice-ſtone, each equal Parts; let them be calcined, and take a Dram for a Doſe, twice a Day, with a Diet-Drink.

In another Part of his Writings I find it thus:

Take of Sal Pumicis, half a Scruple; Sal Gem, two Scruples; Salt of Tartar, one Scruple; mix and make them into a Powder. Let it be given in Wine, or Aqua Scrophulariæ, beginning when the Moon decreaſes, and continuing to the Change.

For the ſame Purpoſe in another, I find this:

Take of the Powder of the Root of the Gladiolus, half a Dram; let it be taken in a Spoonful of the Syrup of Violets, every Morning, for a Month.

If the Patient be of a hot and dry Conſtitution, the Caſe is more difficult, becauſe the Medicines eminent in the Cure of this Diſeaſe, are generally ſuch as are like to injure the Body in one of theſe Qualities, being moſt of them ſuch as either heat, or at leaſt dry it; many of them do both, as *Sarſa*, and the Woods; as, alſo, the Cineres Spongiæ, Sal Gem, and all the Species. In this Caſe the Waters will have their Place, though *Wiſeman* does not ſo particularly approve them as others do. Aſſes Milk is of great Efficacy in this Caſe; and where Aſſes Milk does not agree, diſtilled Milk may be preſcribed: Alſo, Decoctions of Sarſa, China, Maſtich Wood, white Sanders, and Shavings of Harts-Horn and Ivory, with the more temperate Pectorals and opening Roots. Purging, in this Caſe, if the Body requires it, ought to be with Lenitives; and to Children, the Infuſion of Rhubarb is ſufficient. Emulſions, Pearl Julaps, and Opiates, are, alſo, beneficial. *Wiſeman*, alſo, directs the teſtaceous Powders; but *Turner* ſays, that by Reaſon of their Grit, or exceeding Hardneſs, unleſs very finely levigated, I ſhould ſuſpect their Paſſage through the Lacteals; or paſſing, their being concervated in the meſenteric Glands; as I remember once to have found them in a ſtrumous, tabid Patient upon Diſſection, who had taken great Quantities of them.

I have, therefore, a better Opinion of the Millepedes, which are uſefully preſcribed, not only in theſe Infarctions, but for attenuating, abſterging, or cleanſing all mucilaginous and tartarous Concretions upon the Viſcera, which they precipitate by Urine.

The Method of preſcribing them, is after they are waſhed and dried, to bake them in an Oven, and reduce them into Powder, which is given from a Scruple to half a Dram, in any convenient Vehicle, ſuch as white Wine; but their Infuſion alive in white Wine, and taking the Expreſſion is much preferable. Thus two, or two and a half Ounces of the live Millepedes, may be ſteeped in a Pint of good white Wine, and two or three Spoonfuls of the Expreſſion given for a Doſe twice a Day. Or twenty may be ſwallowed at a Time, an eaſy Taſk to many, whereby their volatile Parts are preſerved; which may be impaired, if not deſtroyed, by the Heat of the Oven.

The third Intention is performed by the Application of Externals, 1. To the Tumors which we endeavour to reſolve, or ſuppurate, or to extirpate. 2. To the Ulcers which are the Effect either of Suppuration or Extirpation. In Tumors we ſhall begin with Emollients and Diſcutients, though it is no eaſy Work to reſolve theſe Glands, if we conſider the Stubborneſs of the Matter, and its being contained within a Cyſtis; yet in ſome ſoft delicate Bodies the milder Sort of Glands, which are not too much indurated, frequently reſolve. The *Emplaſtrum de Ranis cum Mercurio* is frequently applied for this End, as alſo that of the Gums, *Ammoniacum*, *Galbanum*, *Bdellium*, to which crude Mercury may be added, as it is in the New Diſpenſatory. Some treat

Forms

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Forms of which are to be met with in Dr. *Fuller's Emplaſtrum Antimoniale*, and the *Linimentum de Bryonia*, preſcribed for the ſame Purpoſe; as alſo in *Bates's Emplaſtrum ad Strumas*, and *Diagalbanum*, with his *Unguentum Digitalis*.

Zacutus de Prax. Admirabile, Vol. II. Lib. 1. Obſ. 101. ſays he never uſed the following Ointment without Succeſs.

Take of the Root of Great Bryony, plump and round, half a Pound; cut it into ſmall Pieces, and fry it with three Pounds of recent Olive Oil, till they become dry and waſted; ſtrain it, and add of Turpentine of Fir, half a Pound; Yellow Wax, five Ounces; remove it from the Fire, and make it into a viſcid Ointment.

The Herb Gooſe-graſs or Clivers, beat up with Lard, and the Strumæ therewith anointed, diſcuſſes the ſame, while the diſtilled Water of the whole Plant lends farther Aſſiſtance. The Root of Smallage is recommended by Mr. *Ray* for the like Uſe. *Crollius* as highly extols the Leſſer Celandine or Pilewort, whoſe Roots, he ſays, are a Kind of Specific in this Diſorder. An Ointment prepar'd of theſe Roots is directed thus.

Take of the Root of the Leſſer Celandine, cleaned and bruiſed, and Hogs Lard, each a Quantity at Diſcretion; let them be pounded and boiled together, till the Roots become dry; repeat this Operation twice, till the Lard is well impregnated with the Roots; and thus you have an excellent Ointment.

Etmuller and Mr. *Ray* recommend the *Pulvis Cyani*, or Tincture of its Flowers; others, the Radix Cynogloſſi, or Root of Hound's-Tongue, drinking the Decoction of it, and applying it outwardly in Cataplaſms. But the Folium Digitalis, or Leaf of Fox-Glove, pounded and applied to the Strumæ, or the Ointment of its Juice, is highly eſteemed by the Botaniſts. Dr. *Bates*'s Preparation of this Ointment ſtands thus.

Take of *May* Butter, three Pounds; freſh Leaves of Fox-glove, bruiſed, as much as you can mix with the Butter; expoſe them to the Sun thirty Days; then boil them till the Leaves become curled, and let a ſtrong Expreſſion be made.

This ſeems to be the ſame uſed by Mr. *Wiſeman*, which he calls the *Valentia Digitalis*, having undergone a repeated Infuſion of freſh Leaves, by which the ſame is farther impregnated with the Virtues of the Plant. *Helmont* praiſes the ſpongy or hairy Excreſcence, growing out of the Canker-Roſe, the Powder being taken to half a Dram mixed with Sugar.

The *Radix Ruſci*, or Root of Butcher's Broom, in fine Powder, given to a Dram every Morning in White-wine, eſpecially if an equal Proportion of thoſe of Flipendula or Scrophularia be added, and adminiſtred in the like Doſe, is praiſed by *Etmuller*, as is the Rue leaved Whitlow-Graſs by Mr. *Boyle*. *Arnoldus Villanovanus* ſays, that the freſh Root of Scrophularia, eaten for ten Mornings faſting, certainly cures the King's-Evil.

When the Glands diſcuſs not, but begin to enflame, a Suppuration will be the Conſequence; to promote which, let the ſtronger emollient Suppuratives be applied, as the Roots of white Lillies, Bryony, Marſhmallows, Sow-bread, wild Cucumbers, to which may be added, fat Figs, and Pigeons Dung; and if the Progreſs be very ſlow, for ſtirring up the ſluggiſh Humour, and rouſing its Heat, the Root of Pellitory of *Spain*, and the Seeds of Staves-acre and Muſtard. To promote the Suppuration, it is, alſo, common to pinch them hard; and ſome People in the Country thruſt a Thorn into them, which excites Inflammation, and diſpoſes them to ſuppurate. Care muſt be taken to endeavour a perfect Concoction; for if they are opened while any Part of the Gland is hard, it will encreaſe, and occaſion a Neceſſity of eradicating it, or of leaving the Cure imperfect.

With regard to the Manner of opening them when ſuppurated, that by Inciſion makes the leaſt Scar; but if the Struma be large, the Cauſtic may give a larger Opening with leſs Pain: The Matter being diſcharg'd, you may deterge with *Paracelſus*'s mundificative, precipitate, and the Vitriol Stone; and afterwards incarn and cicatriſe.

But in old and hard Strumæ, we ſeldom obtain a compleat Suppuration: Sometimes, during the Application of the moſt ſubtile Diſcutients, we raiſe a Heat in the Skin, which affecting the Cyſtis, and Part of the Gland next under it, cauſes an imperfect Suppuration; by the continued Uſe of the Diſcutients it at length frets its Way in ſmall Apertures, which, if the Applications are continued, grow bigger, and become ſo many painful Ulcers, ſpreading one into another, the Body of the Gland remaining hard, without Hopes of Suppuration. But if you dreſs them one, two, or three Days with a Pledgit of Unguentum Baſilicon, you may qualify the Heat, and moderate the Ulceration; and ſo by interchangeably applying the Diſcutient or Lenient, you may happily waſte the whole Gland, if the Patient be treated with proper Internals. Sometimes the Strumæ protrude in a Fungus, and may be thruſt quite out by paſſing a Spatula under them, and the Ulcer may be healed in a few Days: Where they are incapable of being ſo thrown out, the protuberant Part may be cut off, and the remaining Baſis conſumed with Echarotics.

If the Struma be movable, and free from remarkable Veſſels, the ſpeedieſt Way of Cure is by cutting the Skin, and taking them out whole with their Cyſtis: Thoſe which have Stalks, and are pendent, or grow ſmall near the Baſis, may be tied and cut off. In thoſe which are ſo thick in the Baſis, that you cannot make Deligation on them, you may paſs a proportionable big Needle under the Roots of them, and cut them off under the Needle.

The common Way of taking out all the Species of Strumæ, Atheromata and Meliceris, by Inciſion, is in cutting the Skin the Length of the Tumor; and the Inciſion ſhould be made warily, leſt the Cyſtis ſhould be divided, and the Matter flow forth. After they are ſeparated round to the Baſis, it may be ſometimes neceſſary to make a Ligature upon the Veſſels, before they are cut off. Thoſe which are very large, with a proportional Baſis, as Steatomata, generally called Wens, are ſometimes taken out by making a crucial Inciſion, and ſometimes by an oval one, taking off ſo much of the Skin as may be judged ſuperfluous; then ſeparate it with great Caution, becauſe the Skin commonly adheres ſo cloſe to the Cyſtis, that they cannot be divided without the Help of the Knife: Having ſeparated it, turn it out, and make a Ligature underneath upon the Veſſels, and cut it off; then bring the Lips of the Wound together, with two or three Stitches, and dreſs it up in a proper Manner. Some Empiricks cut them off without more ado, ſcarce making a Ligature on them: But this Way being always attended with a Flux of Blood, others chuſe rather to paſs a Seton-Needle with a ſtrong Ligature cloſe under the Baſis, or as near as it may be, and that way make a Ligature ſtrictly about it. Sometimes we make the like Ligature without Inciſion, and are content to eat off the Tumor by ſtraitening it; thus it falls off without Effuſion of Blood; but there is great Danger of mortifying the ſound Parts underneath, or of cauſing ſuch a Diſturbance as prolongs the Cure. Therefore, it may be more proper in great Steatomas's and complicated Tumors, which are incloſed in Cyſtiſes, rather to cut the Cyſtis, and with the Hands pull out the preternatural Body, leaving the Cyſtis behind. The Cyſtis will, by Digeſtion, ſeparate and caſt off, and the Wound will, alſo, heal by Agglutination, if the ſuperfluous Skin be cut off, and the remaining Lips brought together.

After the ſame Manner may all thoſe Tubercles in the Eyebrows and Face be treated, where the Cyſtis ſeparates difficultly from the circumjacent Parts, or where a great Scar may be unſeemly.

Where the Strumæ are large or lie deep near conſiderable Veſſels, there, if Extirpation be ſafe, the beſt Way will be by Cauſtics and Eſcharotics. To prepare the Patient for this Operation, the Body ought to be purged frequently, and, if the Conſtitution be plethoric, Bleeding may be neceſſary; alſo, during the Extirpation they ought to be under an antiſtrumatical Courſe of Phyſic, with Alteratives; otherwiſe new Glands will ariſe while you are eradicating the old; upon which Conſideration, you are to furniſh yourſelf with ſuch Eſcharotics as may penetrate deep into the Gland, and do their Work with leaſt Pain.

In eradicating the Strumæ, we are ſometimes neceſſitated, upon the accidental Eroſion of an Artery, to apply the ſtrongeſt Eſcharotics; but generally we qualify them according to the Habit of Body, Age and Strength of the Patient, and Condition of the Glands, as they are hard or ſoft, have more or leſs Senſe, or are ſeated in or near an Emunctory. Thoſe Compoſitions which have Sublimate in them, are exceedingly painful, ſcarce to be endured in the ſtrongeſt Bodies; and though they be taken off in five or ſix Hours Time, yet the Salts having once penetrated the Glands, the Pain will continue vehement many Hours after, and affect the neighbouring Parts with great Inflammation and Tumor, frequently raiſing new Glands. When theſe Compoſitions are applied to the ſofter Sex, or tender Bodies, it affects the Head with violent Pain, benumbing that Side and

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and the circumjacent Parts, and depriving them of their Senſes. Fainting, and Palpitation of the Heart, are frequent Effects of ſuch Eſcharotics.

The Method I uſually begin this Work with, is by the Application of ſuch a Cauſtic as will leaſt ſpread, making it proportionably long, reaching from the loweſt Part of the Gland upward; for in conſuming, the Strumæ will ſink downwards. The Sides muſt be defended with Plaiſters, to prevent it from ſpreading; for the Lips being once divided, they will give way, and accordingly as your Eſcharotics penetrate into the Body of the Gland, the Sides of it will fall in, and be eradicated out of the narroweſt Opening you can make; and the narrower it is, the leſs Blemiſh will ariſe from the Cicatrix, and the ſooner it will be cured. The Eſchar being made, you may divide it the whole Length, and with a cauſtic Stone rub into it till it hath penetrated into the Body of the Gland, which it will the ſooner do, if interchangeably you preſs into the ſame Place with a Stick dipped in Oil of Vitriol. Having thus done, dreſs it up with Unguentum Baſilicon, with Lint-ſeed Oil hot, embrocating the Parts with Oil of Roſes, and with Vinegar, and apply a Plaiſter of Bole over all. This Way of dreſſing is not without Pain, but it ſeldom laſts above half an Hour. The third Day after you may dreſs again, and if you find the Eſchar in the Middle dried hard, dreſs it with Lenients; but if it feel ſoft, rub it again interchangeably with the cauſtic Stone and Oil of Vitriol, thruſting them every Way into the Body of the Glands, taking Care that the Lips of the Ulcers be not enlarged thereby. By this Way of proceeding, a great Part of the Struma will be eradicated, before the firſt Eſchar in the Circumference caſt off from the Skin. Having thus near eradicated the Struma, you may conſume the Remainder with precipitate Mercury, and keep it open with Doſſils of Lint, permitting the Ulcer to contract narrower the while, that it may heal with a Cicatrix. This I conclude the eaſieſt and ſpeedieſt Way to eradicate the largeſt Struma; but in theſe complicated Strumæ, and others which will not admit of ſuch Proceeding, I apply an Eſcharotic, or the ſtrongeſt catheretic Powders, as I ſee Cauſe. The Steatoma being Suet, yields not to Eſcharotics.

Hitherto we have treated only of the King's-Evil as it is contained in a Cyſtis, being the *Struma* of the Antients; but as in the Hiſtory of the Diſeaſe, we enlarged its Bounds further, we ſhall proceed to the other Species there mentioned, which cannot be reduced to the Method here propoſed. As to the *Strumæ*, and other preternatural Tumors included in a Cyſtis, affecting the Muſcles, Tendons, Ligaments, and other Parts of the Body, they differ not in the Way of Cure from what has been already delivered, except that they require more Caution in the Extirpation of them, as they affect the Joints, or ſenſible Parts.

The Gumminеſs upon the Muſcles and Tendons, require emollient and diſcutient Dreſſings.

The Swellings affecting the Joints in this Diſeaſe are of two Sorts, both made by Congeſtion, and increaſe gradually; yet differ, in that the one ariſes externally upon the Tendons, and between them and the Skin, or between them and the Bone; the other internally, within the Bone itſelf.

That which ariſes externally affects the Ligaments and Tendons firſt, and ſometimes relaxes them to ſuch a Degree, that the Heads of the Joints frequently ſeparate from one another, and the Member emaciates and grows uſeleſs. But for the moſt Part, the Humours over-moiſtening the Ligaments and Tendons, produces a Weakneſs and Uneaſineſs in the Joint, raiſing a Tumor externally, and, in its progreſs, the Membranes and Bones are corroded by the Humour.

Particular Care muſt be taken, not to be deceived in taking the Caſe either for a Diſlocation or ſome common Abſceſs, for fear of undoing the Patient with rough Uſage, under Pretence of ſetting a Bone that was never out; or, by treating it with Maturatives, of making Work for a fiſtulous Ulcer with foul Bones, which will never after be in your Power to heal up again. As a farther Guide in the Way of Diagnoſtic, if the Tumor be of the ſtrumous Kind, ariſing more eſpecially from an internal Cauſe, there are uſually ſome of the other Symptoms attending, as ſore Eyes, ſwelled Lips, Glands about the Neck, or under the Chin, or the Parents have been ſubject to the ſame Diſtemper, and entail'd it thus upon their Iſſue. But if its Riſe were firſt of all from ſome Strain or Bruiſe, the greater Caution is requir'd in forming a right Judgment.

In order to the Cure, apply, in the Beginning of the Fluxion, aſtringent and drying Plaiſters, as of red Lead, and Bole, with moderate Bandage, and place the Member in ſuch a Poſition as may prevent the Deſcent of Humours. If Blood abound, a Vein may be opened; but this Humour requires purging with Calomel, *&c.* and Alteration by ſpecific Decoctions, diaphoretic Antimony, Bezoar mineral and the like. In the Decline of the Fluxion, ſtrengthen the Joints with Fomentations, and Plaiſters of a diſcutient and aſtringent Quality, Tops of St. *John*'s Wort, Centaury, Wormwood, Marjoram, and Betony, Flowers of Sage, Roſemary, Red-roſes, Balauſtines, Cypreſs Nuts, Myrtle and Juniper Berries, *&c.* in Wine, with the Addition of Brandy and the Emplaſtrum de Sandice. But if, through want of ſuch Treatment, they grow exceſſively ſwelled, and the Humour incapable of being preſſed back or diſcuſſed, you may ſuſpect the Bones to be corroded; for that Swelling is moſtly raiſed by a Hyperſarcoſis within, and ought not be opened without a Prediction of a Caries; for, however it may, by a ſeeming Fluctuation, be thought to have Matter, yet, upon opening, it will only diſcharge a Gleet, and the Hyperſarcoſis will thruſt out in a Fungus. If in ſome particular Part a Suppuration viſibly appears, and upon Aperture an albugineous Matter is diſcharged, you may conclude the Bone under it is rotten, eſpecially if it be in the Hand or Foot; and the longer you delay the Opening, the more rotten the Bones will be.

Therefore, in ſuch Caſes, having foretold the Patient or his Friends of the Danger, give vent to the Matter proportionably large (according to the Rectitude of the Veſſels) to the Bone, and proceed to the Cure as in Ulcers with Caries, being careful to keep the Member in a right Poſition, that the Joint above it do not contract, as it frequently happens in the Elbow, Knees and Hip. It ſometimes happens, that theſe Diſeaſed Creatures fall into the Hands of Pretenders to Surgery, who, by improper Applications, raiſe great Tumors; and not knowing how to dreſs them, ſuffer the Aperture to be filled up, and overgrown with luxurious Fleſh till the Bone rot underneath. Others, when conſulted in ſuch Caſes, although they know the Bones to be carious underneath that Hyperſarcoſis, adviſe the leaving them to Nature, perſuading their Patients, that it is the Work of Time, and that the Aſſiſtance of Surgery will but increaſe the Malady. But as one rotten Bone cannot caſt off another, they may well rot in Pieces; and till the Hyperſarcoſis be removed, and the Bones laid bare, nothing can be expected but Apoſtumations one after another, and the Patient will at length die hectic. It is proper, therefore, to conſume the Hyperſarcoſis by ſuch Applications as the Strength of the Patient can bear, making way for the Bone or Bones; pull out ſuch as are looſe, and diſpoſe the others to exfoliate; then by Compreſs and Bandage preſs out the Matter, and endeavour to reſtore the Part to its natural Smallneſs; and for this Purpoſe, the Ulcer muſt be well deterged, and the native Heat cheriſhed by diſcutient and drying Fomentations. The Compreſſes under the Bandage ought, alſo, to be preſſed out of a Solution of Salt of Nitre, *&c.* in Vinegar. By this Method you may happily cure them, if Internals be preſcribed, with Regulation of Diet.

The other Sort of Abſceſſes, which take their Beginning from an Ulcer in the Bone, have been already mentioned under the Name of *Spina Ventoſa*. This Diſorder ariſes from a morbid State in the medullary Juice, which corroding the Fibres, makes a Solution of Continuity there, corrupts the interior Part of the Bone, and at laſt (if not prevented) corrodes the Shell, and paſſes its ſubtile Humour through ſome Peroſity it had made.

This Diſeaſe of the interior Part, by Degrees, uſually ſo affects the external Shell of the Bone, as to raiſe it to a preternatural Tumor, which at the ſame Time over-ſtretching the Perioſtum, cauſes an Uneaſineſs; and this Pain, if it grow ſo acute as to produce Inflammation, an Abſceſs conſequently follows.

If the Bone be ſpungy, and is ſoft, it is wonderful to ſee how quickly the Fibres of it will be mollified, and prepared for a ſudden Diſtention, as if the Part were rather muſcular than oſſeous. So in Childrens Fingers I have ſeen a Bone ſwelled in a Night; and the like Tumor raiſed in the ſpongy Bones of Adults, in a few Days, and without much Difficulty yield again to exſiccant Remedies.

It ſometimes happens, that the interior Part of the Bone is totally corrupted, without any external Tumefaction or Pains, till the acid Humour makes its Way through the Cortex, and corroding the Perioſteum, cauſes a Solution of Continuity there; which, by Acceſs of Pain, ſwells and inflames the external Parts, and produces Maturation in a few Days. Thoſe the protuberating Bones, alſo, frequently raiſe Abſceſſes after the ſame Manner, and ſometimes when the exterior Parts ſuffer under another Ulcer, different from this.

In ſome Species of this Diſeaſe, there is a ſudden Tumor raiſed in a Night; in others it ſwells gradually, and never corrupts externally. In others, the Humour pierces through the

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the Cortex, and raiſes ſuddenly an Abſceſs. And theſe Differences may be ſaid to ariſe, ſomewhat, from the Place or Bone they affect; for, accordingly as the interior Part of it is ſofter or harder, or the external Cortex is ſolid or porous, ſo it ſuffers Solution ſooner or later. Thoſe of the Cranium, for the moſt Part, paſs their Way through the interior Lamina, and affect the *Dura Mater*, &c. producing great Pains, Convulſions, Spaſms, Epilepſies, and they die before the Diſeaſe is diſcovered. In the great Bones of the Knees, Ancles, Elbows, *&c.* they paſs their Matter ſlowly, and are more generally diſeaſed with Apoſtemations, externally ariſing from the Protuberance of them. In the *Os Tali*, or Heel-bone, which is ſpungy within, and full of external Pores, they make their Way through, more ſuddenly, and ſo they do in the Jaws, Fingers and Toes.

The moſt viſible Signs of the *Spina Ventoſa*, are a Protuberance of the Bones, without diſcolouring the Skin, and often without Tumor or Pain.

The Apoſtemations proceeding from the Spina Ventoſa, moſt certainly ſhew them, riſing always between the Membranes and Tendons; and ſomewhat a Fluctuation may be felt there before the external Skin be conſiderably inflamed; alſo, if upon opening it ſearch be made with a Probe, it will penetrate deep into the Bone, yet is the Cortex of it white; whereas the other Abſceſſes always begin externally; and if the Bone be bare, yet is it only ſuperficially carious, or ſtained by the Matter.

The Cure of the Spina Ventoſa, in the leſſer Bones, is poſſible; but thoſe in the bigger Bones are for the moſt part deplorable. Infants and Children are generally the Subjects of this Diſeaſe.

In the Cure of theſe, the ſame Method is required which has been above propoſed in thoſe Abſceſſes, and Ulcers with Caries; as, alſo, the ſame Regulation in Diet, and other Non-naturals.

The Topics ought in the Beginning to be ſuch as are aſtringent and drying, as the Plaiſter e Bolo, Cæſaris, of ſimple Red-lead, *&c.* with Soap de Sandice, and of Frogs, with double Mercury, with g od Bandage.

If afterwards they preſs their Matter externally, they muſt be laid open by Inciſion, according to the Length of the Protuberance. Thoſe of the Cranium are not much protuberant, from the Reaſons given; yet you ought to make Inſpection, and proceed accordingly, by Rugine, or Trepan, as the Symptoms indicate. Thoſe of the Jaws are viſible, and require Vent by the Extraction of the Teeth, after which the Caries muſt be conſumed by Medicines of a drying Quality, of which the Actual Cautery is the moſt ſpeedy and effectual. Thoſe of the Fingers and Toes are to be laid open by Inciſion, in caſe of Apoſtemation, the Length of the Protuberance, and the Bone cut into, and the Caries dried up. The Ulcers in the greater Bones ought, alſo, to be opened, that the Matter may be diſcharged, and the Bone laid bare in order to Exfoliation, if it be poſſible. But if the interior Part be much corrupted, your beſt Way will be to keep that Part of the Ulcer dilated, which lies over the Aperture in the Bone, by ſome Doſſil dipped in Spirit of Wine, or the like, healing the reſt of the Ulcer, and preſcribing ſuch Internals as may diſpoſe the Body to a better Habit; for theſe only are the carious Bones which we may leave to Time, it being in vain to attempt the Exfoliation of great Bones, where the Rottenneſs, as in a Pear, beginning at the Core, hath conſumed the Subſtance of them. See Os.

OF THE STRUMOUS OPHTHALMIA.

This Species of ſore Eye takes its Beginning from vicious Humours inflaming the Tunica Adnata, which increaſing, ſometimes affects the other Tunicles with great Pain, Tenſion, and Pulſation, whence Puſtules ariſe and ſuppurate, terminating for the moſt Part in Ulcers, which leave hard Cicatrices, and, by reaſon of the ſharp Deſluction falling upon the Edges of the Eye-lids, make a Bleareduess; and therefore theſe Inflammations are in *Latin* called *Lippitudo*.

The Cauſes are the ſame with thoſe of the *King's-Evil*; yet it may be more particularly imputed to Abundance of Humidity repleting the Head, and deſcending to the weak Eyes.

An Ophthalmia is ſuppoſed to be ſtrumous, when it has been of long Continuance, ariſing without manifeſt Cauſe, and yielding not to the common Remedies of Bleeding, Bliſtering, Purging, with the Anodyne Collyria, vulgarly preſcribed. It is known to be ſo, when it is periodical, and accompanied with ſtrumous Swellings in the Neck, a thick chopt upper Lip, an Ozæna, a cruſty, ſcabby Noſtril, and the like.

If the Ophthalmia be from Plenitude, the Face is high-coloured, the Eye-lids ſomewhat ſwelled and inflamed, the capillary Veins large and full; yet the Humours are not ſo liable to fret as in other Caſes, nor is the Pain extremely vehement. If the Diſeaſe be from Choler, the Viſage is not red, but the Pain is ſharper, and with Excoriation of the Eye-lids. If it proceed from pituitous Humours, all the before-mentioned Symptoms of Inflammation, Pain, *&c.* are more remiſs, and the lacrymal Humours are not corroding, unleſs there be a Mixture of ſaline Humour joined with it. Whether an Ophthalmia can ariſe from Melancholy, may be doubted; but if it do, there is a ſmall Fluction or Pain. That proceeding from the King's-Evil is of an acid Quality, with ſharp Fluction and Pain; the Eyes are, alſo, more ſubject to be gummed together with a viſcous Humour, than they are in thoſe from the aforeſaid Cauſes. Whether the Humours affecting the Eyes, flow from the external or internal Veſſels, may be diſcerned from their Complaint: For, if they flow from the Pericranium, *&c.* the Pain, Pulſation, with Heat in their Forehead and Temples, will demonſtrate it; but if the contrary, the Pain will be more intenſe, and deeper within amongſt the Membranes; there will be, alſo, an Itching in the Palate and Noſtrils, with frequent ſneezing.

The Time of the Inflammation ought alſo, to be conſidered, in order to the Cure, and is thus diſcerned: In the Beginning, the Eyes look red, and the Humours diſtilling upon them are thin: In the Increaſe, the Heat and Pain are augmented; in this State, the Inflammation and Pain are great, and the Humours thicken, and gum the Lids together, eſpecially in the Night: In the Declination, the Fluxion, Pain, *&c.* viſibly diminiſh.

The ſtrumous Ophthalmia is of moſt difficult Cure, and in Children very vexatious, by reaſon of the Humidity they abound with; alſo, becauſe of their Frowardneſs, and Incapacity of taking proper Remedies, or admitting external Applications; and, in conſideration of the Laxity of their Eyes, they are ſubject to relapſe upon every little Diſorder. Thoſe ariſing by Conſent from the internal Parts, the *Dura Mater*, &c. are ſubject to more grievous Symptoms than thoſe which proceed from the Pericranium, and other external Parts.

If in an Ophthalmia the Pain, *&c.* perſevere any long Time, there is Danger that the Tunicles of the Eye may be corroded; and if the Cornea happen to have been long ulcerated, a Blindneſs follows, or at leaſt a Dimneſs of Sight, by reaſon of a Condenſation of a groſs Matter about the Pupil.

In order to the Cure, the Diet ought to be of Meat of eaſy Digeſtion, with great Moderation, avoiding all ſharp, ſalt, hot, or ſpicy Meats, and ſuch as may beget Crudities. In the Beginning of the Diſeaſe, Wine is forbidden: Hydromel is allowed; but in hot, bilious Deſluctions, a Decoction of Barley, with a ſmall Quantity of Cinamon-Water, is only permitted. The Air ought to be pure and temperate; that which is windy, duſty or ſmoaky, being offenſive to the Eyes: So is Sun-ſhine; therefore, a Piece of Silk, or Linnen, ſhould be put before the Eyes, commonly a Piece of green Sarſenet. Exerciſe of every Kind is forbidden, and Quiet enjoined. Sleep in theſe Diſeaſes is neceſſary, when it can be obtained, the Eyes enjoying Quiet the while, which mightily conduces to their Recovery.

The ſame Antiſtrumatics are to be directed as were mentioned before, for the Diſeaſe in general; unleſs, that in Place of the hotter Cathartics, the more lenient and gentle Purgation is by ſome preferred, giving Calomel over Night, and purging it off therewith next Day, or the Day after; repeating the ſame once, if not twice a Week; remembering that on the purging Days, eſpecially if the ſtronger have been adminiſtred, ſome gentle Anodyne be given at Night, as half an Ounce, or ſix Drams of *Syrupus e Meconio*, in one or two Ounces of the Water of Cowſlip Flowers, or the Water of white Poppies. On the intermediate Days, the Expreſſion of Millepides may be given, as above directed.

Revulſion and Derivation is neceſſary, by cupping on the Neck and Shoulders, bleeding with the Lancet in the Arm and Jugulars, or with Leeches at the Temples, or behind the Ears. Shaving the Head, Bliſtering, Iſſues and Setons, are of frequent Uſe; but Iſſues in the Neck often cauſe Strumæ to ariſe thereabouts, and therefore ſome preſcribe them behind the Ears. In the declining of the Ophthalmia, and after general Evacuation and Diverſion of the Humours, bathing the Body in luke-warm Water will be found of great Advantage in contemperating hot, ſharp Humours, if the Seaſon of the Year, and the Age of the Patient will permit.

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In the Application of external Remedies to the Eyes, we ought not to be too hasty; for the mildest Medicines dropped into them, prove generally offensive in the Beginning of Inflammation. Authors do not agree on the set Time when we should begin our Applications to the Eyes; but all of them concur in proceeding first with general Evacuation and Diversion of the Humour, and afterwards, suppose about the third Day, to use Collyria. The Ingredients mixed with Collyria, ought to be well washed, that they may be without Acrimony, and so finely powdered that they be not the least gritty. The Decoctions also ought to be cleanly made; and in dressing the Eyes, special Care ought to be taken in cleansing them and their Lids of viscous Matter, to which Purpose an Eye-cup is most necessary.

In the Use of external Remedies, it must be considered, whether the Disease be in its Beginning, State, or Declination. For let the Empyrics boast of this or that universal Collyrium, they cannot cure these Ophthalmias with any one particular Medicine; for, in the Beginning of the Inflammation, they require Repellents; in the Increase, somewhat of Resolvents ought to be mixed with them; in the State, they ought to be treated with Resolvents of a digestive Quality; and in the Declination with Resolvents and Detersives of an exsiccant Quality.

Thus, in the Beginning, all Epithems or Collyria are to be moderately repercutient, as the Waters of Roses, Plantane, Frogs-Spawn, with the Water beat up with the White of Eggs. To these are added the Lapis Tutiæ and Calaminaris, or the Sief Album Rhasis.

In the Increase, Resolvents should be mixed with the former; among these are reckoned the Waters of Eye-bright, Celandine, Fennel, with the Mucilages of Linseed, and the Seeds of Fenugrec and Marsh-Mallows. To which, in the State, are added the Gum Sarcocolla, moistened with Breast-milk, as more powerfully digesting than some others. Again, in the Declension, Resolvents with Restringents.

When great Pain attends the Fluxion, some mild and anodyne Collyria are most convenient; such are the Mucilages of the Seeds of Mallows, Flea-wort, and Quinces, extracted in Poppy-Water, also Womens Milk dropped from the Breast into the Eyes, and Pidgeons Blood instilled into the Eyes. Likewise, the Mucilages of the Seeds of Poppy and Henbane, extracted in Rose-Water, to any of which may be added, in extreme Pain, a few Grains of Opium. When there is great Heat, Itching, and Redness, add half a Scruple of Sugar of Lead, to two or three Ounces of the Collyria, with one, two, or three Grains of white Vitriol.

During the Use of these Remedies, Intercipients may be applied to the Temples, as Gum Mastich, or Tacamahacca, with a few Grains of Opium and Camphire, melted and spread upon a circular Piece of thin Leather.

Epithems, or frontal Defensitives may, also, be laid to the Forehead, of true Bole, Dragons-Block, Frankincense, with Whites of Eggs, Vinegar of Roses, and Farina Volatilis, [or the fine Flower that flies off in dressing Corn]; or the Whites of Eggs beat up with Rock-Allum. Which last Sort are to be frequently renewed, as they grow stiff and dry.

Instead of these, more especially over the Eye-lids, may be applied Cataplasms of the Pulp of sour Apples, roasted under the Ashes, mixed with any of the above Mucilages; or a Decoction of the Leaves of red Roses, and Flowers of Elder, with the Addition of Crums of White Bread, the Yolk of an Egg, and a little Saffron.

A Fomentation of the same Decoction may be farther serviceable to resolve the Tumor, and give a Breathing to the impacted Humor, if judiciously prescribed. Where the Cilia, or Eye-lashes, are subject to be glued together, as commonly happens after Sleep, let them be lightly smeared with a Feather, dipped in the Unguentum Tutiæ, upon going to Rest.

While these Topics are applied, some other Internals are to be prescribed, which from their supposed Faculty of strengthening the Sight, are named Oxydorcica; some Forms of which you may meet with in the Cerevisia Oxydorcica, Pulvis Cibarius, Pulvis Ophthalmicus, and the Electuarium Oxydorcicum of Dr. *Bate*. What specific Virtue is in the Euphragia, the Basis of these Compositions is uncertain; but the Millepedes ought to be mixed with them, or added to the other Ingredients. And indeed, if the Ophthalmia be strumous, the other Alteratives before recited seem preferable.

If there should happen any Danger to the Sight, by a Speck or Suffusion on the Pupil, some gentle Detersive may be dropped in, as a Collyrium prepared of white Sugar-candy, with some Grains of Sal-Ammoniac, or white Vitriol, dissolved in the Water of Fennel, Oats, Eye-bright, or Celandine. The Juice, also, of those Plants are often mixed with Honey, and made into a Liniment, or with the fine Powders of Myrrh and Aloes, also the Water distilled from Honey is recommended for these Uses.

The subtile Powder of Crocus Metallorum, infused for some Days in one of the abovenamed Waters, half a Dram or a Dram to two Ounces of the Water, which must be poured off clear at the Time of Use, has excellent Effects in this Case. But there are many Compositions for this End; some proper Forms you will meet with in the Collyrium Ammoniacum, Collyrium de Succis, and the Collyricum Vitriolicum of Dr. *Fuller*, and a very celebrated one in the Aqua Ophthalmica Sappharina of Dr. *Bate*. For the EPIPHORA see CATARRHUS.

OF THE STRUMOUS ÆGILOPS.

Ægilops is a Tubercle in the inner Canthus of the Eye, either scrophulous, atheromatous, or of the Nature of a Meliceris, or sometimes with Inflammation. The *Greeks* call it Ancylops when not ulcerated; and Ægilops when it is. In which latter Case it is liable to grow sinuous, and being so, is called Fistula Lachrymalis, sometimes passing through the Bone of the Nose itself.

The Causes of the Ægilops are the same that produce the like Tumors in other Places. But in some Cases it is made by Fluxion, and appears first as a small Phlegmon. This Disease frequently occurs in the *Lues Venerea*; but these here treated of are strumous.

If it proceeds from the Struma, it is then made by Congestion, and the Tubercle is round, without discolouring the Skin. If it be made by Fluxion, Pain and Redness appear, with Inflammation over all the Eye. Sometimes it begins only with a Weeping of that Corner, and is not discovered till it affects the Eye with Redness; and then by Pressure with the Finger upon that Canthus, a mixed Matter may be discharged, Part of which is not unlike the White of an Egg. Sometimes this Matter eats quite through the Bone, and discharges itself downwards through the Nose, with a fetid Smell.

Fistulæ Lachrymales are difficult of Cure, from what Cause soever they arise, the Part being loose and spongy, and the Eye very sensible, and the Laxity of the Part makes Humours subject to soak into it, and to penetrate even to the Bone itself. The Sensibility of the Eye renders it subject to Pain and Fluxion, and, also, unfit to be dressed with sharp Medicines, such as these Diseases require. That Fistula which is recent, with sufficient Opening, is the easiest of Cure. Those of a long Continuance are for the most part accompanied with Ulcerations of that Gland, and Caries in the Bone, which makes them subject to a Weeping after they are cured. If the Ulcer be accompanied with Erosion, it will be subject to terminate in a Cancer.

The Indication of Cure is taken from the Condition of the Ægilops, whether it be in its Beginning with Inflammation, or by Congestion, passing its Matter forth under the Cilium in the Eye; into which Case it is fistulated.

In the Beginning of the Ægilops Bleeding by Lancet is necessary, and so is purging; also, such Alteratives as have been prescribed in the general Cure of Strumæ, with Regulation of Diet accordingly.

You may attempt to resolve the Humour by some gentle Anodyne, and discutient Cataplasm; but if it inflame and suppurate, you must hasten the Maturation, as well as the Discharge, because of the Part it lies upon, and the Danger thence arising from delaying the Evacuation. Having dilated the Sinuosity, and digested the little Abscess, you may try a Sarcotic of Myrrh, Aloes, and Sarcocolla, made up with Honey of Roses, or a Tincture of the said Gums in Wine, mixed with equal Parts of the Honey. But when, notwithstanding your Endeavours to incarne and agglutinate, the Matter still continues to discharge, not only by the outward Orifice, but, also, under the Cilium into the Corner of the Eye, you may try some more powerful Deficcative; such is the Solution of the *Lapis medicamentosus Crollii*, in Plantane Water, or a strong Lime-Water, assisted by a suitable Compression on the Cavity; for which a late-invented Instrument, by the Screw, has been admirably well contrived and adapted.

These Remedies failing, let it be considered, whether you have a good Foundation to heal upon; and having made Trial with your Probe, if you discover any Roughness on the subjacent Bone, or if the same be made bare by the Acrimony of the Humour, it will be to little Purpose to proceed farther in the above Method, till by a fine-pointed actual Cautery you have dried it, and fitted it for Desquamation, or perforated quite through, thereby deriving the Matter by the Nostril, and disposing the Caries to throw off that Way; when your outward Ulcer, which before had baffled your Endeavours, will heal up with the milder Epulotics, or perhaps with a little dry Lint, without any farther Disturbance.

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In the Uſe of Medicines to this Part, you muſt not only have Regard to the Eye itſelf, but to the Gland and its Caruncle; for if they happen to be too diterſive, corroſive, or ſharp, there may be Danger of a Rhyas, or Conſumption of the Part; as by the Digeſtive and Sarotic too long continued, an Encanthis, or too great Prominence may enſue; for which, as Incarnatives will be wanted for the former, ſo Catheretics will be required for the latter.

OF THE SCROPHULOUS TONSILS.

The Tonſils, or Almonds of the Ears, are, alſo, frequently ſwelled in the King's-Evil. Theſe Swellings are raiſed by Congeſtion, gradually, without Pain, and, therefore, are ſeldom taken Notice of, till by their Growth they bring Inconveniencies with them; as a Catarrh, Cough, or Difficulty of Deglutition, inſomuch, that the Drink often runs out at the Noſe.

Theſe differ from the common Swellings of the *Amygdalæ*, as Tumors by Congeſtion do from thoſe made by Fluxion; which latter are of ſudden Growth, and terminate as ſoon; whereas the other may have been many Years growing, increaſing and decreaſing with the Moon, as generally all Tumors by Congeſtion in the Glands do. The Cauſes of Tumefaction of theſe Glands are the ſame with thoſe of the Strumæ.

They are ſoft, fleſhy Tumors, of a round or oval Figure, retaining the natural Colour of the Skin, and have little Senſation; ſo that you may pierce the Body of them with a Knife or Probe, without cauſing Pain or drawing Blood; yet are they ſubject to Inflammation, and the like Accidents that other Swellings of the Glands are.

If the Tumefaction be ſmall, the Diſturbance is little; many having had them from their Infancy without great Inconvenience. If the Swellings be big, there may be Danger of Suffocation: But in that Caſe they may be extirpated without running great Hazard.

In order to the Cure, Phyſicians generally preſcribe Veneſection, and Evacuation by Clyſters and lenient Purges: They, alſo, endeavour Derivation by bliſtering, cupping, Fontanels, and the like, which is neceſſary, in which aſtringent Lotions may be, alſo, proper. But in thoſe made by Congeſtion, the ſpeedieſt Way of Cure is by Extirpation; and that either by Abſciſſion, at once cutting them off, or by actual or potential Cautery. Modern Writers have ſaid little of theſe Extirpations. *Fabricius, ad Aquapendente*, makes the Abſciſſion of them both difficult and dangerous.

The Extirpation of them may be attempted by the Actual Cautery, paſſing it through a Cannula, and twice or thrice perforating the Body of the Tonſil; but ſome Remains of the Excreſſence will be left. The Way of Potential Cautery, is by working with a cauſtic Stone, and other Eſcharotics, fixed in ſuch an Inſtrument as may ſerve to eat into them, without offending the neighbouring ſound Parts. To this Purpoſe, make way into the Body of the Gland, conſuming it within; and at laſt the Shell, or exterior Part, falls in Pieces, and is ſo eradicated. The Way by Exciſion is, by making a Ligature about the Baſis of them, and ſnipping them cloſe off with a Pair of crooked probe Sciſſars. In this Work you ought to conſider well, how they are eradicated; for ſometimes they are rooted like a Criſta, deeper in the Throat; in which, if in cutting them you only cut that Part you tied, and cut the Ligature at the ſame Time, it will ſlip down into the Throat, and hazard their choaking. Therefore, while you hold the Ligature with one Hand, you muſt paſs the Sciſſars down as cloſe by the Baſis of it as you can, ſo as by one Strip you may cut it clear off. But leſt you ſhould fail, it will be neceſſary to have another Ligature fitted in an Inſtrument for your Purpoſe, and the Patient's Head to be held ſteady, that in caſe you fail in the firſt Attempt, and it fall into the Throat, you may readily return it, and tie it at the ſame Time; which is no difficult thing to do. The Exciſion made, the Bleeding will be ſoon ſtopped by Gargling with Oxycrate; and you may cicatrize it in, few Days, by touching it with the Vitriol and Alum Stones.

OF THE STRUMOUS RANULA.

The Ranula is a ſoft Swelling, poſſeſſing the ſalival Glands under the Tongue, ſometimes on one Side, at others on both Sides of the Frenum. It is made by Congeſtion, and in its Progreſs fills up the Space between the Jaws, and makes a Tumor externally under the Chin. It is a ſoft Tumor, without Pain or Alteration of Colour in the Skin, yielding to the Impreſſion of the Fingers, but riſing on taking them off. It contains a Matter not unlike the White of an Egg, or ſuch as we meet with in an Atheroma. By raiſing the Tongue, it obſtructs the Freedom of its Motion, and occaſions a thick Speech, which ſome have fancifully compar'd to the Croaking of Frogs; others, from a ſuppoſed Reſemblance that this Tumor has to that Creature, will have it thence denominated *Ranula*. It is not dangerous as to Life, but difficult of Cure.

As for Topics, they ſeldom have much Effect, eſpecially when it has been of long ſtanding. However, ſome of the volatile, or of the fixed Salts, with certain Aromatics and ſtiptic Powders, may be held under the Tongue, to attenuate and diſcuſs the viſcous Humours; ſuch as Sal-Ammoniac, Sal-Gem, the Powder of the Root of Ginger, Cloves, Pomegranate Peel, dried Hyſſop, Powder of Galls, and the like. Theſe, with others of the like Nature, having been ineffectually tried, the Tumor muſt be opened, and the Contents diſcharged, either by a pointed actual Cautery, which is commonly uſed, or by Inciſion.

That Stones are formed about this Part, the Tonſils, and others adjoining, ſome of them gypſeous, or brittle, like the Gout-Stones, others more ſolid, like theſe found in the Bladder, we have many Examples; and that Struma's are liable to ſuch Concretions, is leſs ſurprizing, if we conſider the Proneneſs of their Juices to Coagulation.

OF THE STRUMOUS OZÆNA.

The Ozæna is an Ulcer of the Noſtrils, ſo named from its fetid or ſtrong Scent, which, if ſtrumous, has uſually the ſame Attendants for its diagnoſtic Signs, with the Ophthalmia. It admits of a doubtful Prognoſtic, being a ſtubborn Malady, hard to cleanſe, ſo as to get a firm Foundation for healing upon; and, when of long ſtanding, a Work difficultly accompliſhed.

In the Cure, the uſual Evacuations by bleeding and purging may be neceſſary to carry off the Humour other Ways, while the ſame antiſtrumatic Alteratives are preſcribed, as for the other Species. Having looſened the cruſty Matter uſually ſtopping up the Paſſage, by putting up a little Oil, a Bit of freſh Butter, or throwing up ſome emollient Injection, ſuch as the Decoction of Mallows in Barley Water, you are, after thus digeſting, to mundify, or deterge, by another Decoction of the Leaves of Agrimony, Plantain, Leſſer Centaury, and St. *John's* Wort, adding to the ſtrained Liquor a little of the Honey of Roſes, from an Ounce to half a Pound; or if the Ulcer be putrid, half an Ounce of the Tincture of Myrrh and Aloes, more or leſs, according to the Degree of Putrefaction, and the Senſe of the Part, may be added; as, alſo, of the Unguentum Ægyptiacum, an Ounce or more, eſpecially the *Mel* thereof fluctuating on the Top, which may be farther increaſed, and is a moſt ſuitable Medicine, not only for the ſordid Ulcers of this Part, but of the Throat alſo.

The Ulcer being deterged, we may attempt to heal it with the Ointment of Tutty, thruſt up with a Tent, or ſome other Epulotic, which availing not, a ſtronger Deſiccative muſt be uſed, as a Solution of the Lapis Medicamentoſus, or the Lime-Water, with a little Honey of Roſes; likewiſe a ſtrong Tincture of Roſe-Leaves, Pomegranate Peel, and Flowers of Balauſtines, drawn in the Forge-Water, or a rough ſtiptic Wine: This Tincture may be thrown up with a Syringe, made with a Snout for that Purpoſe.

But when theſe, and other Errhines of the like drying Nature, ſucceed not, we have recourſe to the cinnabarine Fumigation. Some have recommended the Fume of a Wax-Candle burnt under the Noſtril, for the ſame Intention.

But obſerve, that in ſetting about the Cure of this Diſeaſe, as well as the Ophthalmia, with others of the ſame Kind, you muſt be careful to diſtinguiſh the venereal from the ſtrumous; for as in the firſt, we can do nothing without Mercurials, ſo in the laſt, together with them, we are to direct ſome antiſtrumatic Remedies between whiles.

For the Labriſulcium, or chopped Lip, ſee LABRISULCIUM. *Wiſeman* and *Turner*.

Theſe Tumors are called ſtrumous or ſcrophulous, which appear externally, on the anterior and lateral Parts of the Neck. Of theſe Tumors there are different Species; ſome are ſmall, ſome of a moderate Size, and ſome ſurpriſingly large; ſome are ſoft, others hard; ſome are moveable, others immoveable; ſome are favourable, others malignant. Scrophulous Tumors ariſe in indurated Glands of the Neck; ſometimes in the ſmall moveable Glands; ſometimes in the ſuperior and inferior ſalival Glands, and ſometimes in the Thyroide Glands, which laſt are by ſome particularly called *Scrophulæ*,

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læ, or the King's-Evil; and by the *French*, *Ecrouelles*. Some are of the ſame Nature with encyſted Tumors, containing a Subſtance ſometimes harder, and ſometimes ſofter, like Cheeſe, Suet, or Lard. But when a Tumor ariſes in the anterior Part of the Neck between the Skin and the Aſpera Arteria, and is diſtended with Air, Humors, or a thick Matter, having been occaſioned by a Strain, in lifting a Weight or the like, it is named a Bronchocele. It is proper to obſerve, that ſome Nations are almoſt free from this Diſtemper, whilſt others are ſeverely afflicted with it. Among the latter may be reckoned the *Spaniards*, and among the *Germans*, the Inhabitants of *Styria*, *Swabia*, *Bavaria*, and *Switzerland*; but above all, thoſe of *Tyrol*, among whom the ſtrumous Swellings increaſe to ſuch a prodigious Size, as to hang down to the Belly or Navel, and ſometimes to the Knees. This Species is always flaccid. The Cauſe of this Diſorder raging in particular Places, is aſcribed to the Nature of the Air, and of the Water. But the Manner in which theſe operate, has not yet been ſufficiently explained by Medicinal Writers, although many ſpecious Opinions have been offered. In ſome Women theſe Tumors appear in different Parts of the Neck after a difficult Labour. Beſides the Differences already mentioned, ſome are mild and almoſt without any Pain or Inconvenience; ſome are attended with Inflammation and Pain; ſome become indurated, like a Scirrhus, and obſtruct Reſpiration and Deglutition, or being entirely malignant, gradually degenerate into a Cancer. But to whatever Species they belong, when they become inveterate, they ſeldom or never are cured; but when they are recent, they may be diſcuſſed, eſpecially when the Tumor proceeds from an Induration of the Glands.

In order to the Cure of a recent Struma, it is not only neceſſary to preſcribe an exact Regimen of Diet and Way of Living; but alſo to remove the internal Cauſe by digeſtive, ſudorific and purgative Medicines, agreeable to the Age and Conſtitution of the Patient. Such internal Medicines ſhould, alſo, be aſſiſted with the following Ointment externally applied.

Take of crude Mercury, one Ounce; Venice Turpentine, two Drams; Hogs-Lard, a ſufficient Quantity to reduce them into an Ointment, in a Glaſs Mortar.

Let the Tumor be anointed with this Ointment ſeveral times a day, and apply the *Emplaſtrum de Ranis cum Mercurio*, mixed with a little Roman Vitriol, or the Plaiſter of Galbanum, of Sperma Ceti, of Henbane, or of Soap. It will, alſo, be neceſſary to exhibit a proper Cathartic once or twice a Week, leſt the Mercury, mixed with the Ointment, ſhould occaſion a Salivation. *Scultetus* and *Fabricius ab Aquapendente*, prefer the following Ointment in this Caſe.

Take of the Oil of Bays, one Ounce; Rock-Allum, half an Ounce; common Salt, two Drams; make them into an Ointment.

Others, not improperly, apply *Oleum Philoſophorum*, or *Petroleum Album*, either alone or mixed with the Oil of Soap. Some adviſe to apply to a recent ſtrumous Tumor or Bronchocele, a leaden Collar or Plate of Lead anointed with a mercurial Ointment, and ſecured by a proper Bandage; by which, if the Tumor is not entirely diſcuſſed, its Increaſe is at leaſt prevented. Some ſuperſtitious Remedies are adviſed in this Caſe, which are ſuppoſed to act by Sympathy, ſuch as drawing the Hand or Bone of a dead Perſon gently over the Tumor, with others of the ſame kind not worth mentioning.

If the ſtrumous or ſcrophulous Tumor has been of long Continuance, but moveable, the Knife becomes preferable to Medicine, becauſe it may then be entirely rooted out by Inciſion. But if it be entirely fixed and deeply ſeated in the Neck, a Cure can ſcarcely be expected unleſs they be ſoft; for in this Caſe the large Blood-Veſſels and Nerves are expoſed to the utmoſt Danger of being divided, or at leaſt wounded, if Inciſion be attempted; the Conſequence of which would be ſome violent Diſorders, or even Death itſelf. *Garengeot* and *Petit* affirm, that no indurated or ſcirrhous Glands, not even thoſe which are immoveable, are connected with, or rooted in the ſound Parts; and therefore Extirpation may be ſafely uſed in fixed ſtrumous Tumors. But as they have given us no Inſtances of their Succeſs from this Opinion, it muſt, at leaſt, be looked upon as doubtful and uncertain. When the Tumor hangs by a ſlender Part, like a Stalk or Root, (which is not a frequent Caſe) it may be extirpated with a Ligature. But if it be connected with a broad Root, a longitudinal or crucial Inciſion, if the Swelling be very large, muſt be made through the Integuments, to the Bag of the Tumor, from which the Lips of the Wound muſt be ſeparated with the Knife. It may then be extracted, like other encyſted Tumors, with the Hand, or a Hook, or a threaded Needle, or with a proper Forceps. (See *Tab.* 44. *Fig.* 1.) Mean while Aſſiſtants ſhould be ready with Linen-Cloaths, or a Spunge, for wiping the Blood from the Wound, which might otherwiſe obſtruct the Surgeon in the Operation. If a large Blood-Veſſel ſhould happen to be divided with the Root of the Tumor, it muſt be cloſed by applying rectified Spirit of Wine, or ſome other ſtyptic Liquor; and if theſe fail, by a Ligature or the actual Cautery. As the divided Skin is now more than ſufficient to cover the Wound, the ſuperfluous Part muſt be cut off, and enough left to induce a Cicatrix; then the Lips may be brought into Contact, and the Wound may be healed by a ſticking Plaiſter, as in other Wounds. Soft Tumors of the ſtrumous and ſcrophulous Kind, I have opened with the Knife or Cautery, extracted the contained Matter, deterged the Wound, and healed it, as before. As theſe Tumors are often attended with little or no Pain, it is not ſurpriſing that they ſhould be often neglected, eſpecially by the poorer Sort of People, who diſregard the Deformity produced by them, and are apprehenſive of the Torment they muſt undergo in the Cure. Such a Neglect is ſtill leſs ſurpriſing, if theſe very Tumors ſhould be eſteemed a conſiderable Ornament, as they are by the *Tyroleze*. If the Patient be afraid of the Knife, Tumors of this Kind, which are mild, ſoft, not connected with large Veins, nor deeply ſeated, may be removed by Cauſtics. *Heiſter's Surgery.*

SCROPHULARIA.

The Characters are;

The Calyx is monophyllous, conſiſting of five long, ſlender, obtuſe, or acute Segments. The Flower is monopetalous, anomalous, open on both Sides, generally globular, bilabiated, pitcher-ſhaped; the upper Lip truſſed up with two ſmall Leaves, in Form of Ears, and the Beard bent downwards, with wide Fauces; from the Inſide of the Bottom of the Flower ariſe four Stamina. The Fruit is round, acuminated, cleaving into two Parts, and divided by an intermediate Partition.

Boerhaave mentions fifteen Sorts of *Scrophularia*, which are;

1. Scrophularia; annua; folio Urticæ. *M. H.* 2. 481.
2. Scrophularia; annua; folio Lamii; flore luteo, *M. H.* 2. 482.
3. Scrophularia; nodoſa; fætida. *C. B. P.* 235. *Bauh. Ind. A.* 234. *Tourn. Inſt.* 166. *Scrophularia*, Offic. *Scrophularia major*, Ger. 579. Emac. 716. Raii Hiſt. 1. 764. Synop. 3. 283. *Scrophularia major vulgaris*, Park. Theat. 610. *Scrophularia vulgaris & major*, J. B. 3. 421. FIGWORT.

Figwort has tall ſquare Stalks a Yard or more high, with two Leaves ſet oppoſite at a Joint, which are at ſome Diſtance; they are each Pair ſet on a contrary Poſition, on ſhort foot Stalks from a broad Baſe, ending gradually in a ſharp Point; they are ſerrated about the Edges, and frequently of a brown Colour, with a Smell like Elder. The Flowers grow on the Tops of the Branches in ſmall Cluſters, of a purpliſh dark Colour, being monopetalous, and, as it were, labiated with a gaping Mouth. The lower Part is round and hollow; the upper flat, and cut into two Parts. The Seed-Veſſels are roundiſh pointed, cut into two Parts, full of ſmall brown Seed. The Root is long and ſpreading, full of white Knobs. It grows in the Hedges and Thickets, and flowers in *June*.

This Plant, from the Signature of the Root, is accounted good for ſcrophulous Tumors, or the King's Evil in any Part of the Body; as alſo for the Pain and Swelling of the Hæmorrhoids, or Piles either uſed inwardly or outwardly; as alſo for cancerous ſtubborn Ulcers. *Miller's Bot. Off.*

Its Leaves are very bitter and ſtinking, even more than thoſe of Elder, and give but a very faint Tincture of red to the blue Paper; the Root gives it a deeper, which makes us conjecture that the Sal Ammoniac, which is naturally in the Salt of the Earth, predominates in this Plant, where it is united with a great deal of fetid Oil.

By the chymical Analyſis, we obtain from this Plant a great deal of volatile concrete Salt and Oil. Thus it is no Wonder, that it ſhould be ſo reſolvent, emollient, and ſweetning. These Qualities are eſſential to Medicines which are to diſſolve the moſt obſtinate Tumors, accompanied with Inflammations, and thoſe, alſo, which are called cold. The fetid Oil ſoftens the Fibres, diminiſhes their Tenſion, and leniſies; whilſt the Sal Ammoniac attenuates, divides and evaporates the Matter that is lodged in the Pores of the Fleſh. The greateſt Part of Plants that ſmell like Elder, or the *Stramonium*, have almoſt the ſame Virtues, with reference to Inflammations and Tumors, and none are more proper for Wounds in the tendinous Parts. The Juice of this Plant is uſed to cleanſe the moſt putrid Ulcers, and even thoſe that

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are carcinomatous. The Ointment made with the Roots of this Plant, is used to resolve scrophulous Tumors, and assuage the Inflammation of the Piles. The Parts, also, must be a little strewed with the Powder of the same Roots.

Figwort Ointment, according to *Tragus*'s Method, is made thus: Draw the Juice of the whole Plant in *May*, and keep it a whole Year in a Bottle well stopped; then mix it with an equal Quantity of Oil and new Wax. The same Author affirms, that he has seen it cure all Sorts of Scabs and itching Humours, even such as are but a little different from the Leprosy. He recommends the distilled Water of it very much for Pimples and Redness of the Face. The Author of the *Hist. Lugd.* advises to make the Ointment of Figwort after this manner: Take up the Roots in Autumn, bruise them with fresh Butter, and put them a Fortnight in a Vault, in a Stone-Pot well stopped; then dissolve them over the Fire, and keep this Ointment, after having strained it through a Cloth. If you follow *Tragus*'s Method, you must put some Oil upon the Figwort Juice, to keep it from growing mouldy, or else mix it with a sixth Part of Spirits of Wine. If you keep this Ointment according to the *Hist. Lugd.* instead of bruising the Roots with fresh Butter, and putting them in a Vault, they must be put in Digestion in *Balneo Mariae* for three Days in a Glass Cucurbit, with its Chapiter. These Ointments are excellent for the Gout, Piles and Tetters; but at the same time that they are used, a Dram of the Powder Root of Figwort, mixed with some convenient Conserve, should be taken in the Morning; or else the Patient should drink a Glass of Wine, in which the Root has been infused a whole Night. *Martyn's Tournefort.*

The *Scrophularia* has its Name from its nodous Root, whose white Knobs resembling the Tumors of the *Scrophula*, which this Plant is said to cure, gave Occasion for the Appellation. The Root cures strumous Swellings, and the Hemorrhoids, and is of Use in cancerous and inveterate creeping Ulcers, and a malignant Itch. If any Person, also, be afflicted with the tormenting Pain of the blind Hemorrhoids, let him take but a very small Quantity of the Root or Leaves of *Scrophularia* in his Meat or Drink, and he will immediately receive Ease; or let him take the Plant in Substance either dry or green, or its Decoction. This is an Observation of *Hen. ab. Heers*, who says he has had repeated Experience of the Truth of it. The Powder of the dried Root applied cures the Hemorrhoids; a Dram of the same taken inwardly, expels Worms from the Belly; the distilled Water of the Root, takes off the Redness of the Face.

The following Plaister for the Scrophula, or King's Evil, is the Prescription of Dr. *Sibbald*, in his *Prodronius Histor. Natural. Scotiæ.*

Take Fat of Swine, one Pound, and dissolve it over a gentle Fire; then take Leaves of Scrophularia, Hounds Tongue, Flowers of the white Lamium, of each an equal Quantity; cut them very small, and boil them in the Fat over a gentle Fire, repeating the Boiling three or four Times, till you have an Ointment of a deep green Colour. Then weighing the Ointment, take half its Weight in Wax, as much Rosin, two Ounces of Turpentine, and an Ounce of Verdigrease. Dissolve them all together, then strain it through a Linnen Cloth, and make thereof a Mass, of which spread a sufficient Quantity upon Leather, and apply to the Place. *Raii H. P.*

4. Scrophularia; radice fibrosa. *Boerh. Ind. A.* 234. *Betonica aquatica*, Offic. Ger. 579. Emac. 715. *Betonica aquatica major*, Park. Theat. 613. *Scrophularia aquatica major*, C. B. P. 235. Raii Hist. 1. 764. Synop. 3. 283. Tourn. Inst. 166. *Scrophularia maxima radice fibrosa*, J. B. 3. 421. *Yquetaya Brasilienses*, N. MSS. D. Tanc. Robinson. M. D. WATER BETONY.

This has larger and taller Stalks than the former, less-branched, having larger Leaves, round-pointed, and in Shape like Betony, growing on longer Foot-stalks. The Flowers are in Shape like the former, but little larger, and of a redder Colour. The Seed-Vessels and Seed much alike; but the Root has none of the Knots, or Tubercles, and it grows by watry Places and Ditch-Sides, and flowers in *June*. The Root is used.

It is much of the Nature of the former, and where that is not to be had, it may supply its Place. It is, likewise, detersive and vulnerary, and is commended by some as good against the Itch. *Miller's Bot. Off.*

This Plant stinks, is bitter, detersive, and gives hardly any Tincture of red to the blue Paper; so that it is probable it may contain some Sal Ammoniac, mixed with fetid Oil and Earth. Thus it is no Wonder that it should be detersive and vulnerary. It has the same Virtues with the *Scrophularia major*. *Martyn's Tournefort.*

5. Scrophularia; nemorensis; folio Urticæ rugoso; flore atropunicante.

6. Scrophularia; Melissæ folio. *T.* 166.

7. Scrophularia; Hispanica; Sambuci folio glabro. *T.* 166.

8. Scrophularia; maxima; Lusitanica; Sambuci folio lanuginoso. *T.* 167.

9. Scrophularia; Ruta caninadicta; vulgaris. *C. B. P.* 236. *Ruta canina.* Clus. H. 209.

10. Scrophularia; Lusitanica; frutescens; Verbenacæ foliis. *T.* 167.

11. Scrophularia; Orientalis; foliis Cannabinis. *T. Cor.* 9.

12. Scrophularia; Nebrodensis; folio Urticæ; altissima; flore Phæniceo. *H. Cath. H. Maurocen.* 158.

13. Scrophularia; peregrina; frutescens; foliis Teucrii crassiusculus. *Breyn. Prodr. T.* 166.

14. Scrophularia; subrotundo, crasso, & nigricante folio; flore luteo-pallido; capsula turgidâ. *Bocc. Mus.* 2. 65. *T.* 60.

15. Scrophularia; Hispanica; foliis tenuissimis. *Salvad. Boerh. Ind. Alt. Plant. Vol.* 1.

This Plant takes its Name *Scrophularia* from *Scrophulæ*, because by its Inequality it resembles the *Scrophulæ*, and not because it cures scrophulous Tumors about the Neck, as the common Opinion is. The third Species is the *Scrophularia major* of the Shops; but the *Scrophularia minor* is the same as the *Chelidonium minus.*

The *Scrophularia* is of an acrid and aperient Quality, accompanied with a copious Mucus; whence it is an effectual Lenitive in all Pains proceeding from a peccant Acrimony, mitigating the same, as well as dissipating any gross Matter. A Cataplasm thereof is of universal Esteem for discussing, resolving and maturating, though the Humour be of considerable Hardness. The Leaves, dried in the Shade, retain their corroborating Virtue. The Powder sprinkled on watry Ulcers, closes and conglutinates them, and is proper in a Dilatation of the Hemorrhoids. The third is commended for curing all Strumæ, and resolving hemorrhoidal Tumors. The fourth takes off the nauseous Taste of *Senna*; and because no Cathartic is in better Esteem than *Senna*, a certain Surgeon made a profitable Secret of it, but was discovered by a Botanist, who, by putting the Leaves in Water, found it to be this Plant, and by the same means discovered whence *Senna* had such an Effect. In order, therefore, to take off the nauseous Taste of *Senna*, as well as perfectly to remove its Acrimony, by which it is offensive to the Brain and Nerves, to two Drams of *Senna* add half a Dram of this Plant. The Leaves fresh bruised and applied, cure the Hæmorrhoids and Corns in the Feet. *Hist. Plant. Ascript. Boerhaave.*

SCROTOCELE. A *Hernia* of the *Scrotum.*

SCROTUM.

The Scrotum is the cutaneous Covering of the Testes outwardly. It is a Bag common to both, formed by a Continuation of the Skin of the neighbouring Parts, and commonly very uneven, having a great Number of Rugæ on its outward Surface. Interiorly it is fleshy, and forms a Muscular Capsula for each Testicle, termed Dartos.

The exterior or cutaneous Portion of the Scrotum is nearly of the same Structure with the Skin in general, of which it is a Continuation, only it is something finer; and it is likewise plentifully stored with sebaceous Glands and Bulbs, or Roots of Hairs.

Though it is a common Covering for both Testicles, it is nevertheless distinguished into two lateral Parts by a superficial and uneven prominent Line, which appears like a kind of Suture, and from thence has been termed Raphe.

This Line is a Continuation of that which divides, in the same manner, the cutaneous Covering of the Penis; and it is continued through the Perinæum, which it divides, likewise, all the way to the Anus. It is only superficial, and does not appear on the Inside of the Skin.

The inner Surface of this cutaneous Bag is lined by a very thin cellular Membrane, through which the Bulbs and Glands appear very distinctly, when we view its Inside. The Rugæ of the Scrotum are in the natural State commonly a Mark of Health, and then its Size is not very large. It increases in Size, principally according to its Length, and then the Rugæ disappear, more or less, according to the Degrees of the preternatural State or Indisposition. *Winslow's Anatomy.* See DARTOS.

For the Dropsy, and *Paracentesis*, of the *Scrotum*, see HERNIA. And for proper Bandages for the *Scrotum*, see FASCIÆ.

SCRUPULUS. A Scruple; a Weight equal to twenty Grains. It is the third Part of a Dram, and the twenty fourth of an Ounce.

SCUMA. The same as *Squama*. A Scale. *Rulandus.*

SCUTA TABESI. A Tortoise. *Rulandus.*

SCUTALIS CARTILAGO. The Scutiform Cartilage, at the inferior Part of the *Sternum*. From *Scutum*, a Shield.

SCUTELLARIA. See CASSIDA.

SCU-

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SCUTIFORME OS. The *Patella*.

SCUTIFORMIS CARTILAGO. The ſame as *Scutalis Cartilago*.

SCUTUM. A Shield. The *Patella*, is, alſo, ſometimes thus called.

In Pharmacy, a *Scutum*, or Shield, is a pretty ſolid ſtomachic Topic, made in the Form of a Shield, and may be either prepared by Way of Bag or Plaiſter. The former is to conſiſt of hot ſtomachic Powders, of a corroborating Quality, and the latter, of a due Mixture of Maſtich, ſome ſtomachic Powder, and the odorous Gums, with a proper Quantity of Turpentine. The Topics of this Kind are uſed after purging, in order to corroborate the Stomach, correct a cold Intemperature, reſtore Digeſtion, and prevent vomiting, *Morelli, Form. Remed.*

SCYBALA. σκύβαλα. Excrement indurated in Lumps.

SCYBELITES. σκυβελίτης. A Sort of Muſt, which diſtils ſpontaneouſly from Grapes, without preſſing.

SCYLACION. σκυλάκιον. The Fleſh of Puppies. *Hippocrates.*

SCYROS. σκῦρος. A Scirrhus. *Hippocrates.*

SCYTALA. A Sort of Serpent, reſembling the AMPHISBOENA, which ſee.

SCYTALIDES. σκυταλίδες. The *Phalanges* of the Fingers.

SCYTALION. A Name for the *Cotyledon*, or *Umbilicus Veneris. Oribaſius, Medicin. Collect. L.* 11.

SCYTHICA RADIX. Liquorice. *Blancard.*

SEB. Gold; or *Alum.* Rulandus.

SEBEL. The *Arabic* Name for the Diſorder of the Eye called a *Pannus.*

SEBESTEN. See MYXA.

SEBUM. Suet. Suets are eſteemed emollient, diſcutient, and ſomewhat aſtringent. That of the Stag, Fallow Deer, Goat, Kid, Sheep, and Cow, are uſed in Medicine.

SECACUL. A Name for the *Tordylium*; *Orientale*; *Secacul Arabum dictum Rauwolfio.*

SECALE. The Characters are;

It has all the Characters of Wheat, only it has a flatter Spike, which is always bearded with a thinner and more naked Grain.

Boerhaave mentions ten Sorts of *Secale*, which are;

1. Secale; hybernum; vel majus. *C. B. P.* 23. *Theat.* 425. *Tourn. Inſt.* 513. *Boerh. Ind. A.* 2. 156. *Secale*, Offic. Ger. 61. Emac, 68. J. B. 2. 416. Raii Hiſt. 2. 1241. Synop. 3. 388. *Secale vulgatius*, Park. Theat. 1128. RIE.

Rie grows taller than any other *Engliſh* Corn, with a bearded Ear, ſlenderer than Wheat, and having a ſmaller darker Grain. It is a Winter Corn, and ears a Month earlier than Wheat, it being a common Saying, That *April* never goes out without an Ear of Rie, nor *May* without an Ear of Wheat.

Rie is more uſed for Bread than for Medicine, tho' it is leſs nouriſhing than Wheat, and ſubject to cauſe Gripings in thoſe not uſed to it.

The Farina is ſometimes preſcribed outwardly in Cataplaſms againſt Tumors and Inflammations. *Miller's Bot. Off.*

Secale is ſo called *a ſecundo*, "from cutting;" for there being two Sorts of Fruits of the Earth, the *frumentaceous* and *leguminous*, the latter are gathered, *(leguntur)* or pulled by the Hand, but the frumentaceous, ſuch as *Rie*, and other like Grain, are cut *(ſecantur)* or reaped.

There are two Species of Rie obſerved by *C. Bauhine* and *Miller*; one the common, or Winter Rie; the other the leſſer, or Spring Rie. The firſt is ſown in Autumn, as Wheat; the other may be ſown in the Spring, in the Seaſon for Barley; but thoſe ſeem to differ only in the Time of Sowing, and the Accidents thence produced.

Rie holds the next Place to Wheat among frumentaceous Grain; the Bread made of it is black and heavy, and has ſomething of an obſtruent Quality, is difficult of Concoction, and heavy upon the Stomach, eſpecially if it be not cleanſed from the Bran, and generally provokes to Stool, not without Gripings, to ſuch as are not uſed to it. The Country People are perſuaded that the Uſe of Bread made with Rie ſtrengthens the Body. And *Bruyerinus* aſſures us, that in the County of *Lyons*, and the neighbouring Parts, the Women who feed on Rie-Bread, are ſtrong, jolly, and handſome, tho' at the ſame Time he ſuppoſes, that this affords but a very mean Aliment to the Body. Some prefer Bread made of Rie to what is made of Wheat or Spelt, on account of its Moiſtneſs, and becauſe it is not ſo ſoon dried with the Air.

The People of our Country, ſays *Bauhine*, uſe to mix with this Rie an equal Quantity of Meal of Wheat or Spelt, that the Bread may the longer retain its Softneſs, and be the lighter and more grateful to the Taſte; and the Bread ſo prepared is, by Advice of the Phyſicians, much uſed by Perſons of Quality, eſpecially in Summer.

Here in *England*, and, as *Ruellius* ſays, in *France*, we ſow not only Rie by itſelf, but mixed with Wheat, almoſt in equal Quantities; and this Mixture we call by a Latin Name, *Miſcellane*, and in ſome Places MUNG-CORN.

The Meal of Rie, not cleanſed from the Bran, bound about the Head in a Linnen-Cloth, is a very certain and approved Remedy in an inveterate Pain of the Head, and is obſerved, alſo, to be of Service in a Delirium, eſpecially if mixed with ſome Tops of Wormwood. *S. Paulli.* It is uſual among the common Sort, to put ſome dry Meal of Rie in a Linen-Cloth, and apply it to the Place affected with an Eryſipelas, and by that means to diſcuſs it.

By immoderate Rains, the lower Corn of the Ears of Rie, when ripe, grow out into a black purple Grain; or as *C. Bauhine* expreſſes it, ſome Seeds are protruded a conſiderable way out of their Huſks, and grow to a conſiderable Bulk; and ſome of them are bent in the Figure of a Horn; all which contract a black Colour on the Outſide, but contain within a white farinaceous Subſtance, of a pretty cloſe Contexture, of the Taſte of Malt, called in ſome Parts of *Germany* MUTTERKORN, that is, the *Mother of Rie*, and eſteemed a ſovereign Remedy in an immoderate Flux of the Lochia. This degenerate *Secale* is, by *C. Bauhine*, called *Secale Luxurians*; and by *Lonicerus*, *Clavi Siliginis*. It is proper to enquire whether the Excreſcences be occaſioned by the Puncture of an Inſect. *Raii Hiſt. p.* 1741.

2. Secale; vernum; vel minus. *C. B. P.* 23. *M. H.* 3. 179.

1. Gramen; ſpicatum; ſecalinum; latifolium; maritimum; ſpicâ breviore. *T.* 518. *Spartium maritimum*; *ſive oceanum*, *latifolium.* J. B. 2. 512.

2. Gramen; ſpicatum; ſecalinum; maritimum; maximum; ſpicâ longiore. *T.* 518. *Spartium*, *ſpicatum*, *pungens*, *oceanum.* J. B. 2. 511.

3. Gramen; ſpicatum; ſecalinum; maritimum; maximum; ſpicâ laxiore. *T.* 518. *Spartium*, *Hollandicum*, *maximum*, *maritimum*, *ſpicâ ſecalinâ.* Raii Hiſt. 1260. Meth. 172.

4. Gramen; Spartium; Juncifolium. *C. B. P. Theat.* 69. *Spartium*; *parvum Lobelii.* J. B. 2. 513.

5. Gramen; Spartium; Hollandicum; folio capillaceo; minus. *C. B. P.* 5. Prodr. 11. No. 30.

6. Gramen; Spartium; Hollandicum; variegatum. *C. B. P.* 5. *Theat.* 72.

7. Gramen; ſpicatum; ariſtis longiſſimis; ſetas equinas referentibus.

8. Gramen; Spartium; pennatum. *C. B. P.* 5. *Spartium*, *Auſtriacum*, *pennatum.* Cluſ. H. 221. *Boerh. Ind. Alt. Plant. Vol.* 2.

The Seeds of Rie yield a Meal, with a proper Bran belonging to it, of which Bread is made, which is of excellent Service in ſuch Cataplaſms as are emollient and reſolvent. The Cruſt of it toaſted, cleanſes the Teeth. The Bread is leſs nouriſhing, and not ſo ſoon digeſted as that of Wheat, but is very looſening, and good for thoſe who are coſtive. The Bran is deterſive and emollient, and of Service in a Diarrhæa and an inveterate Cough. *Hiſt. Plant. aſcript. Boerh.*

SECAMONE. The Name of a Species of *Ægyptian* Apocynum, called by *C. Bauhine*, *Apocynum anguſto ſalicis ſolio.* It grows in *Ægypt*, and is remarkable for a yellow hot Juice which flows from it, and which, when dried, is ſaid to purge off powerfully thin Humours. *Raii Hiſt. Plant.*

SECANIABIN. Oxymel. The Word is Arabic.

SECESSUS, imports either an Abſceſs, or a Separation of Parts in a mixed Body; or a Stool.

SECHA. Wormſeed. *Caſtellus* from *Ardoinus.*

SECLA. The ſame as SECALE. Rye.

SECRETIO. Secretion. See GLANDULA.

SECTA. A Sect. For an Account of the various Sects of Phyſicians, ſee THE PREFACE.

SECTACROA. The Flower of Nutmeg. *Donæus.*

SECUNDINÆ. The Secundines, or After-birth. See CHORION, AMNIOS, ALLANTOIS, and GENERATIO.

The Human Secundine is ſaid to be of ſome Uſe in Medicine. Thus it is by ſome ordered to be applied, warm as it comes from the Uterus, to the Face, in order to remove Freckles. A Water is alſo diſtilled from it in Balneo Mariæ, for deſtroying Spots or Blemiſhes of the Face. When dried and reduced to a Powder, it is uſed internally againſt Epilepſies, for accelerating the Delivery of the Fœtus, and allaying the Pain of Wounds. The Doſe of this Powder is from half a Scruple to two Scruples. *Lemery des Drogues.*

SECUNDIFORMIS. The ſame as CHOROIDES.

SECUR. Gold. *Rulandus.*

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SECURIDACA.

The Characters are;

The Flowers are disposed in Form of Rays, and the Pod is strait, flat, annulated, full of Joints, and containing in each Joint a rhomboidal Seed, emarginated inwardly.

Boerhaave mentions but one Sort of *Securidaca*, which is,

Securidaca lutea major. *C. B. P.* 348. *Raii Hist.* 1. 921. *Tourn. Inst.* 399. *Boerh. Ind. A.* 2. 52. *Securidaca*, Offic. *Securidaca flore luteo, siliquâ latâ, oblongâ*; I. B. 2. 345. *Securidaca, Hedysarum, Pelecinum*, Chab. 155. *Hedysarum majus sive Securidaca major vera*, Park. Theat. 1087. *Hedysarum majus*, Ger. 1056. Emac. 1233. HATCHET VETCH.

It grows among the Corn in hot Countries, but is cultivated with us in Gardens, and flowers in *June*.

Securidaca, or *Hedysarum*, is described by *Dioscorides* as a shrubby Plant, with Leaves like the *Cicer*, and Pods resembling a Horn, and containing a yellowish Seed, of the Figure of a two-edged Hatchet, whence it took it Name *Pelecinum*, [πέλεκυς, *Pelecys* signifying a Hatchet, or Ax] and of a bitter Taste. It grows among Wheat and Barley.

Clusius says, that the Seed of no Plant better resembles the Hatchet of the Antients than this; and I, says *Dale*, am of this Opinion.

Securidaca taken inwardly, is good for the Stomach, and is an Ingredient in Antidotes. Used in a Pessary with Honey before Coition, it is supposed to prevent Conception. *Dioscorides, Lib.* 3. 146.

The *Historium Plantarum* ascribed to *Boerhaave*, says its Virtues are unknown.

Securidaca Ægyptia. A Name for the *Senna*; *Orientalis*; *fruticosa*; *Sophera dicta*.

Securidaca dumetorum. A Name for the *Coronilla*; *herbacea*; *flore vario*.

Securidaca peregrina. A Name for the *Pelecinus*; *vulgaris*.

SEDAFF. *Rulandus* explains this *Concha marina*.

SEDALIA VASA. The hæmorrhoidal Vessels. *Willis*.

SEDANTIA. Sedative Medicines.

Sedative Medicines are such as are possessed of a Power not only of composing, checking, and allaying the exorbitant and irregular Motions of the Solids and Fluids, but, also, of alleviating and resolving the painful, spasmodic Structures of the Parts. As the Effects of these Medicines are very extensive, we may justly include in their Number, Paregorics, which not only gently relax and sooth the rigid Fibres, but, also, obtund the Acrimony of the Juices; Anodynes, which alleviate the Violence of racking Pains; Antispasmodics, which mitigate and remove the spasmodic Structures of the Parts; Antiepileptics, which check convulsive Motions; Hypnotics, which procure Sleep; and Narcotics, which induce a considerable Stupor of the Senses, and Torpor of all the Motions of the Body.

This sedative Quality is eminently possessed by the Roots of Piony, Valerian, and Mug-wort; the Herbs Clary, Basilicon, Night-shade, and Herb Paris; the Flowers of Sage, Bastard Dittany, the *Egyptian* Thorn, Meadow-sweet, Elder, the Lime-Tree, Piony, red Poppy, common Chamomile, Yarrow, Roses, Mallows, Lily of the Valley, Primroses, and white Lillies; all the Parts of the Poppy, such as its Seeds, Bark, Flowers, Juice, Opium and the Seeds of white Henbane, Dill, and Piony; the Barks of Elder, and the Lime-Tree: Among aromatic Substances, Saffron, Nutmegs and Mace; among Fruits, the Kernels of Cherries, Peaches, Bitter Almonds, and the Nux Vomica. To this Class, also, belong Assa-fœtida, Camphire, depurated and artificial Nitre, Preparations of Cinnabar, and Substances obtained from Animals, such as Castor, Musk, Civet, human Fat, that of Dogs, Badgers and Foxes, Milk, Cream, the Yolks of Eggs, Earth-worms, and the Shavings of Bones, such as those of Hartshorn, of the Tooth of the Sea-Horse, of the Elk's Hoof, of the Animal Unicorn, of Ivory, of the Stone found in the Head of the Sea-Cow, and of the Human Skin: Among chymical and prepar'd Substances, my anodyne mineral Liquor, the Spiritus Nitri Dulcis, volatile Tincture of Sulphur, Laudanum Opiatum, the Laudanum of Sydenham, Laudanum impregnated with the Juice of Quinces, Hysteric Laudanum, Theriaca, Diascordium, the Theriaca Cœlestis, the Pilulæ de Cynoglosso, the Pilulæ de Styrace, the Pilulæ Wildeganfii, and the Pilulæ Starkei; the Syrups of red Poppies, Chamomile and Yarrow, the Oils of Henbane and Earth-Worms, the anti-epileptic Powder of *Dresden*, (the Basis of which consists of the Ashes of the Lime-Tree and Mug-Wort;) the cephalic Specific of *Michaeli*, the Pulvis Marchionis, the anti-epileptic Water of Langius, Waters distill'd from the above-mentioned Flowers, and the Ointment of Poplar.

These Sedatives, in various Manners, exert their Efficacy both on the Solids and Fluids of the human Body. Thus Paregorics, by their mild, mucous, sulphureous and subtle Parts, by an immediate Contact, not only relax the indurated and spasmodically constricted Fibres, but, also, sheath up and obtund the vellicating Spicula, and consequently in Pains, painful Tumors, and acrid Desluxions, great Service is done by Cataplasms, Plaisters or Ointments, prepared with Saffron, the Flowers of common Chamomile, Melilot, white Lillies, Elder, Mallows and Poppies, the Leaves of Henbane, Milk, Cream, the Yolks of Eggs, and the Poplar Ointment for Burns, which is most commodiously prepared of Mallows, the Barks of the Lime and Elder Trees, Linseed Oil, and Wax.

As many Disorders and Symptoms arise, as from their proximate Cause, from spasmodic Strictures and Crispatures of the Vessels and nervous Parts, so Antispasmodics are of very extensive Use in Medicine, though they do not produce their Effects in one and the same Manner; for, by an immediate Contact, they either mollify and relax the tense, indurated, and constricted Fibres, as Milk, especially that of Asses, Oil of Sweet Almonds, Emulsions of Almonds, and of the four cold Seeds, the Fats of Animals, and the Cream of Milk; or by their mild, volatile Sulphur, they allay the tumultuous Commotions of the nervous Fluid: Of this Kind the most considerable are, Waters distill'd with Rain-Water, or *May*-Dew, from the Flowers of Sage, Bastard Dittony, the *Ægyptian* Thorn, the Lime and Elder Trees, Meadow-Sweet, Peaches, white Lillies, common Chamomile, Cowslips and Yarrow; the Kernels of Peaches, Cherries, and Apricots; which Waters, on Account of their antispasmodic Virtue, are with great Benefit exhibited in convulsive and epileptic Fits; or some Antispasmodics produce their Effects by a certain subtile, volatile Sulphur, obtained from the animal Kingdom, and consequently more friendly to Nature, such as Earth-Worms, Castor, the Powders of the human Secundines, of the Intestines of Wolves, Vipers, the Shavings of the human Skin and Cranum, of the Elk's Hoof, of the Tooth of the Sea-horse, and of the Stone found in the Head of the Sea Cow; as, also, Musk and Civet, which in epileptic and convulsive Motions, as, also, in chronical Epilepsies, are used with great Success.

Of an anodyne Quality, proper for alleviating Pain, and inducing Sleep, are Preparations of Poppies, Opium, Saffron, and Hounds Tongue, which, by their volatile sulphureous Exhalations pervading the small Tubes of the Membranes, check the tumultuous Commotions of the nervous Fluid, and thus not only allay the preternatural Motion in the Part affected, but, also, in the whole Body, since by this Means the Motions of the Heart and Arteries are render'd more moderate; for, as during an excessive Motion and Agitation of the Membranes of the Brain and nervous Parts, the Patient is afflicted with watching; so when these are in a quiet and moderate State and Condition, a kindly Sleep approaches.

But Narcotics, which induce a Torpor and Stupor of the Senses, together with profound Sleep, by a sulphureous, ungrateful, and unfriendly Vapour, by which the Motion of the nervous Fluids is almost extinguish'd, operate in so dangerous a Manner as to prove mortal to weak Habits, and in others to produce Madness. The pernicious Medicines of this Kind are, all Preparations of white and black Henbane, of the Thorn-Apple, and a particular Species of it, the Dutroy, as, also, of Night-shade, and its Apples.

Some Sedatives, also, allay Spasms, mitigate Pains, and procure Sleep, by removing the Causes which hinder these salutary Effects: Of this Kind the most efficacious are Nitre purified, or artificial; as, also, Preparations of Cinnabar and Camphire; for nitrous Preparations not only check the Heat and brisk intestine Motions of the sulphureous Parts of the Blood, but also moisten the solid Parts, and render their exorbitant Motions more moderate, so that they possess an excellent refrigerating, moistening, anodyne, and antispasmodic Virtue. Preparations of Cinnabar, skilfully us'd, are of singular Service in mitigating those epileptic and convulsive Motions, which arise from vitiated Lymph, stagnating in the Brain, and in the Membranes thereof; and the spinal Marrow; because, when their Use is long persisted in, they powerfully colliquate such a vitiated Lymph. Camphire, especially when mixed with Nitre, excellently diffuses Inflammations, which are always accompanied with Watchings, Pains, and sometimes a Delirium; and thus it exerts an antispasmodic and sedative Virtue. Assa-fœtida and Sagapenum, two fetid Gums, exert their Efficacy in two Manners in allaying those Spasms of the Intestines, which, in hysteric Disorders, greatly afflict Women, partly because they sooth the

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the Spasms and Pains; and partly because by their saponacious, gummous and acrid Salt, they resolve the tenacious Juices, and remove Obstructions of the Glands and minute Ducts.

Sedatives are therefore of singular Efficacy, since, in Consequence of their active Principle, and subtile volatile Exhalations, when exhibited in very small Doses, they not only suddenly, but intimately pervade the interior Pores and Ducts of the solid Parts, but also remarkably change and allay the exorbitant Motions of that highly subtile and moveable Lymph, which communicates Sensation and Motion to the Parts. But as in all Medicines, the more mild, gentle, safe, and friendly to Nature, are to be preferred to those of a more drastic and active Kind, so the same Caution is carefully to be observed, and diligently inculcated in the Use of antispasmodic, anodyne and sedative Medicines. Nor are we ever to use those of the more drastic Kinds, such as Opiates, when the Intention can be answered by those of a milder Nature, such as hypnotic Waters, prepared from fragrant Flowers, Emulsions of Poppy-Seeds, or Preparations of Nitre, Cinnabar and Castor.

And tho' Opiates, corrected by the Addition of Purgatives and Balsamics, as in the Pilulæ Starkei, and the Pilulæ Wildeganfii, or by the Addition of Alexipharmics, as in the Theriaca Cœlestis, and the Diascordium, or by the Addition of Analeptics, as in the Laudanum of *Sydenham*, are of singular Use and Efficacy, if prudently exhibited; yet if other safer Medicines, capable of producing the same Effects, can be found, 'tis better totally to abstain from the former, especially in weak Habits, old Persons, Children, and Patients whose Strength is impaired by whatever Cause. But we are still more carefully to abstain from those Medicines which have a Mixture of narcotic Substances in their Composition, such as the Pilulæ de Cynoglosso, which besides Opium, contain the Seeds of Henbane; and tho' these Pills are at present frequently used by some who are Enemies to all other Opiates, yet I have sometimes observed terrible Effects produced by the Use of them.

Tho' I formerly made frequent Use of corrected Opiates, yet since I happily found the Method of preparing from the sulphureous Portion of Vitriol, which was by the ancient Chymists accounted anodyne, that penetrating Liquor, which is of a fragrant Smell and aromatic Taste, I have safely rejected the Use of all other Opiates: For this Spirit, which I call my anodyne mineral Liquor, is totally sulphureous, burns suddenly and violently till it is consumed, suddenly takes Fire by the Flame of a Candle, tho' at three Inches Distance from it; and in a warm Room is quickly dissipated in the Air. It is, however, cold as Ice to the Touch, and when well distilled and rectified, like Oil it swims upon Water. The Use of this Medicine is very extensive, and its Virtues very various; for it excellently alleviates Pains, and procures Sleep; hence it is with great Success used in violent Pains of the Cholic, Stone, Cardialgia and Gout, as also in Head-achs and Tooth-achs. It also promotes Sweat; and tho' it is of an intensely hot Nature, yet it produces no Commotions in the Blood. Besides, it leaves no Torpor nor Weakness in the Head; for which Reason it is with great Success exhibited to all weak Constitutions, when the Strength is greatly impaired, as in an hectic Fever, for Instance; and which is still more surprising, it even increases the Strength. And as its principal and primary Action is on the Stomach, so it is of singular Use in all Disorders incident to that Part, such as Nauseas, hypocondriac, asthmatic and cardialgiac Inflations, by procuring a Discharge for the Flatulences. *Frederic Hoffman.* See LIQUOR MINERALIS.

SEDENTARIUM OS, in *Deventer*, is the Protuberance of the *Os Coxendicis*, upon which we sit.

SEDES. The ANUS. It, also, imports a Species of Fracture. See FRACTURA and HEDRA.

SEDHE. Cinnabar. *Rulandus.*

SEDIGITUS. A Person who has six Fingers.

SEDIMENTUM. Sediment.

SEDINA, or SEDEN. Dragons Blood. *Rulandus.*

SEDMA. The Lapis *Hæmatitis*. *Rulandus.*

SEDUM.

The Characters are;

The Leaves are alternate, not ordinate. The Calyx is monophyllous, multifid, and deeply cut into as many Segments as the Flower has Petals, which are five, at least. The Flower is pentapetalous, or polypetalous, rosaceous, and generally furnished with as many Stamina as Petals. The Ovary is seated in the Bottom of the Calyx, and consists of a Multitude of little Husks, equal in Number to the Petals of the Flower, each furnished with one Tube, nearly resembling Sheaths, with a corniculated Apex, collected into a round Head, somewhat distant from one another, and containing great Numbers of small Seeds.

Boerhaave mentions twenty eight Sorts of *Sedum*; which are;

1. Sedum; majus; arborescens. *J. B.* 3. 686. *M. H.* 3. 470. *Sempervivum, sive Sedum, arborescens, majus.* Dod. p. 127.

2. Sedum; majus; arborescens; *J. B. Foliis elegantissime variegatis, tricoloribus.*

3. Sedum; Canarinum; foliis omnium maximis. *H. A.* 2. 189.

4. Sedum; Africanum; frutescens; folio longo, serrato, confertim nato. *Ind.* 121.

5. Sedum; Africanum; frutescens; caule pellucido; folio subrotundo. *Ind.* 121.

6. Sedum; Afrum; montanum; foliis subrotundis, dentibus albis serratis, confertim natis.

7. Sedum; vulgare; maximum. *M. H.* 3. 474.

8. Sedum; majus; vulgare, *C. B. P.* 289. *Raii Hist.* 1. 687. *J. B.* 3. 687. *Tourn. Inst.* 262. *Boerh. Ind. A.* 286. *Sempervivum majus, Sedum majus*, Offic. *Sempervivum majus, Ger.* 411. *Emac.* 510. *Raii Synop.* 3. 269. HOUSE LEEK.

House Leek has a great many thick succulent Leaves, set together in a round Form, convex on the Outside, and flattish within, sharp pointed, and with somewhat hairy Edges. The Stalk grows to be about a Foot high, reddish, and having a succulent Bark, covering a tough, white String or Pith; the Leaves which grow on it are thinner and longer than those below; on the Top of the Stalks grow reflected Spikes of starry Flowers, made up of several narrow, sharp pointed reddish *Petala*, set about a greenish hollow Crown, which is afterward enlarged into several small, hollow, horned Pods, or Seed Vessels, which inclose very small Seed. The Root is long, woody, and full of Fibres; it grows frequently on the Tops of Houses all over *England*; tho' Mr. *Ray* seems to doubt, whether it be a Native or no.

House Leek is cooling and restringent, and tho' not often given inwardly, is commended by some as good to quench Thirst in Fevers, mixed with Posset-drink, as also for Heat and Sharpness of Urine. *Prevotius*, in his *Medicina Pauperum*, commends an equal Quantity, that is, three Ounces of the Juice of this, and *Persicaria maculata*, boiled to the Consumption of a third Part, and given in Drink as a certain Medicine to stop a Looseness and Bloody Flux. Outwardly it is useful against Burns and Scalds, St. *Anthony*'s Fire, and the Shingles. *Miller*'s *Bot. Off.*

This Plant being analysed, yields a good deal of Acid and Earth, and a very little concrete volatile Salt. It probably contains a Salt resembling Alum, mixed with a little Sal-Ammoniac; for the Juice of this Plant evaporated to one Half, emits an urinous Smell. The House Leek is detersive and astringent; it is used sometimes to resolve, but it is repellent. For the Quinsey, gargarize the Patient with the distilled Water, and apply some Cray Fish to the Throat, bruised with its Leaves. The Juice also of Cray Fish and House Leek, is used with Success as a Gargarism. These Juices are used also in Injections in the *Procidentia Uteri*, and sinuous Ulcers. The Leaves are applied to Corns, and the Knots of the Gout. For foundered Horses, nothing is better than to make them drink a Pint of the Juice of this Plant. *Martyn*'s *Tournefort.*

It is customary, with us, among the common Sort, says *Schroder*, to give the expressed Juice of House Leek and Sugar in Fevers and hot Diseases. The Botanists in our Country prescribe the Juice infused in Posset, and Dr *Tancred Robinson* says, he has known it exhibited with good Success in Fevers, and especially in those of the erysipetalous and hectic Kinds; for this Plant abounds with a medicinal alcaline Salt.

Tragus writes, That Linnen Cloths moistened with the Juice or distilled Water, and applied to Inflammations in any Part of the Body, and especially in Phrensies, are of extraordinary Service, as they are, also, in Inflammations and Redness of the Eyes, as well as of the Liver and Kidneys; they give Relief, also, under the Gout, and cure Ambustions. The Juice mixed with the Juice of *Solanum*, and boiled in Swines Fat with Poplar Buds, then strained and made into an Ointment, is of admirable Efficacy, and, in the Opinion of *Tragus*, to be preferred before all Preparations of Unguentum Populeum whatever. *Galen* and *Dioscorides* direct the Application of the Juice with Vinegar, instead of an Epithem, to an Erysipelas, which no Physician, says *Caspar Hoffman*, in our Times, would venture to prescribe. The Juice rubbed on Warts and Corns, so as that they may be well moistened therewith, and the Cuticle or thin Membrane of the Leaves afterwards laid upon the same, effectually cures and extirpates them. For Corns, or horny Excrescences of the Feet take of Leaves of the greater House Leek, a sufficient Quantity, bruise them, and apply them for six Days together. *Chesneau.*

For

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For Ulcers of the Matrix and Urethra, take Juice of the greater House-Leek, four Ounces; Litharge, one Ounce; with two Yolks of Eggs; beat them all together in a leaden Mortar, and so use them. It is the Prescription of a Surgeon of *Paris*.

The Leaves of the great House-leek stripped of their outer Membrane, and put into pure Water, or Rose-Water, and every now and then applied to the Tongue, when dry or chapt, in Fevers, and renewed frequently, are remarkably lenient and serviceable in such a Case. *Raii Hist. Plant.*

9. Sedum; vulgari magno simile. *J. B.* 3. 688.

10. Sedum; montanum; tomentosum. *C. B. P.* 284. *M. H.* 3. 474. *Sempervivum, montanum, rubrum, gnaphaloides*, Col. 1. 291.

11. Sedum; Alpinum; roseum; minus; viride; & subhirsutum.

12. Sedum; echinatum; vel stellatum, flore albo. *J. B.* 3. 680. *M. H.* 3. 473. *Cotyledon stellata.* C. B. P. 285.

13. Sedum; minus; teretifolium; album. *C. B. P.* 283. *Raii Hist.* 2. 1040. *Synop.* 3. 271. *Tourn. Inst.* 262. *Boerh. Ind. A.* 286. *Sedum minus*, Offic. *Sedum minus Officinarum*, Ger. 413. Emac. 512. *Sedum minus folio longiusculo, tereti, flore albo*, J. B. 3. 690. *Vermicularis flore albo*, Park. Theat. 733. SMALL HOUSE-LEEK.

The Stalks of this Sedum, before they flower, are of a blueish green Colour, beset, especially towards the Tops, with fat, thick, succulent, blunt-pointed, round Leaves. When they arise to flower, they have a few of the like Leaves growing alternately on them. They have on their Tops small Umbels, of white five-leaved Flowers, which are succeeded by as many little horned Seed-Vessels, full of very small Seed. The Root is fibrous. It grows upon old Stone-Walls and Buildings, and flowers in Summer.

The Leaves and Stalks are used, being much of the Nature of the great *Sedum*, and, like that, cooling and good for all Kinds of Inflammations. This is the *Sedum minus* that ought to be put in the *Unguentum Populeon*; but if not to be procured, the Prickmadam may supply its Place. *Miller's Bot. Off.*

14. Sedum; minus; lato & crasso caule, Portlandicum Belgarum; *M. H.* 3. 471.

15. Sedum; minus; luteum; folio acuto. *C. B. P.* 283. *M. H.* 3. 471. *Sedum; minus; flore luteo*, J. B. 3. 692. PRICKMADAM.

This Sedum, in manner of growing, is much like the small Housleek. The principal Difference is, that the Leaves are slenderer, sharp-pointed, flattish in the Inside, and seeming only stuck on the Stalks; the lower Parts of them turning up a little. The Flowers grow in Umbels, being yellow, of six sharp-pointed Leaves, with as many Stamina and Apices in the Middle. The Seed grows in horned Pods as the other, and the Roots much alike. It grows upon old Walls, and on the Tops of Houses; and is much more frequent than the last, flowering at the same time, and may very well supply its Place, being as cooling, and in all Respects as serviceable. *Miller's Bot. Off.*

This Plant has an herby, styptic, saltish Taste, and gives a pretty deep Tincture of Red to the Blue Paper, which seems to shew that its Salt resembles Alum; but is mixed with a little Sal Ammoniac, a pretty deal of Sulphur, and a great deal of Phlegm. Thus it is astringent. *Martyn's Tournefort.*

16. Sedum; minus; à Rupe Sancti Vincentii. *Raii Synop.* 152.

17. Sedum; minus; teretifolium; alterum. *C. B. P.* 283. *J. B.* 3. 691.

18. Sedum; parvum; acre; apicibus albis.

19. Sedum; parvum; acre; flore luteo. *J. B.* 3. 695. *Raii Hist.* 2. 1041. *Synop.* 3. 270. *Tourn. Inst.* 263. *Boer. Ind. A.* 286. *Illecebra*, Offic. *Illecebra minor, seu Sedum tertium Dioscoridis*, Park. Theat. 733. *Vermicularis, seu Illecebra minor acris*, Ger. Emac. 517. *Sempervivum minus vermiculatum acre*, C. B. P. 283. WALL-PEPPER.

Wall-Pepper, or small Stone-Crop, has its Stalks four or five Inches long, wholly covered with thick, fat, triangular, blunt Leaves, and on their Tops a few star-like, five-leaved, yellow Flowers, with several Stamina in the Middle. The Root is small and fibrous; it grows upon Walls, and the Tops of low Houses, and flowers in *May* and *June*. It has a very hot biting Taste, and therefore is called Wall-Pepper.

This is too frequently used in the Shops for the *Sedum minus*, and is sold for it by the Herb-Folks; but it having Qualities directly opposite to the other Sedums, and more apt to raise than to cure Inflammations, it ought not to be put into the *Unguentum Populeon*, nor into any other Medicine for it. This Stone-Crop has been found by Experience to be good for the Scurvy, both taken inwardly in Decoctions, and the Limbs bathed with it in Fomentations; and it is likewise commended against the King's-Evil. *Miller's Bot. Off.*

The acid Part of the natural Salt of the Earth seems to have let a corrosive Salt resembling the Spirit of Nitre, involved and softned by some Sulphur, escape into the Texture of this Plant. *Martyn's Tournefort.*

There is a third Kind of Sempervium, which some call wild Purslane, or *Telephium*, and the *Romans Illecebra*. It has small, pretty thick and dense Leaves, like Purslane. It grows on Rocks, and is of a heating, acrimonious, and exulcerating Quality; a Cataplasm thereof, with Swine's Fat, discusses strumous Swellings. *Dioscorides, Lib.* 4. *Cap.* 91.

The Juice extracted by means of some Liquor, and given inwardly, excites Vomiting, and potently discharges gross, pituitous and bilious Humors; whence it is of surprising Efficacy in Quartans.

20. Sedum; minimum; luteum; non acre. *J. B.* 3. 695. *M. H.* 3. 471. *Sempervivum, minus, vermiculatum, insipidum.* C. B. P. 284.

21. Sedum; minus; circinato folio. *C. B. P.* 283. *Aizoon da Syphyllon.* Lugd. 1153.

22. Sedum; Cepæa dictum. *Tourn. Inst.* 263. *Boerh. Ind. A.* 287. *Cepæa*, Offic. Ger. Emac. 621. C. B. P. 288. J. B. 3. 679. Raii Hist. 1. 690. *Cepæa Matthioli*, Park. Theat. 727. BASE ORPINE.

It is cultivated in Gardens, flowers in Summer, and the Herb is in Use.

Cepæa is like Purslane, but has blacker Leaves, and a slender Root. The Leaves exhibited in Wine cure the Strangury, and the Scabies of the Bladder, but more effectually, if taken in a Decoction of the Roots of the *Asparagus*, called *Myacanthus. Dioscorides, Lib.* 3. *Cap.* 168.

23. Sedum; vulgari magno simile; minimum; foliolis acutissimis, confertissimè natis.

24. Sedum; Afrum; saxatile; foliolis Sedi vulgaris, in Rosam verè compositis.

25. Sedum; Alpinum; album; foliolis compactis. *C. B. P.* 284.

26. Sedum; pyramidale; elegantissimum.

27. Sedum; Alpinum; Coridis folio. *T.* 263.

28. Sedum; Hispanum; folio glauco acuto; flore albido. *Boerh. Ind. Alt. Plant. Vol.* 1.

This Plant acquires the Name of *Sedum, à sedendo*, "from sitting," because of its sessile Posture on Walls where it grows; or *à sedando*, "from allaying," because it allays or mitigates the Pains of Inflammations; *Sempervivum*, because it is always green Winter and Summer; *Vermicularis*, because its Leaves resemble Worms; and *Jovis Barba*, "*Jupiter's* Beard;" but for this last Appellation I can give no Reason.

This Plant abounds with a Juice of extraordinary Efficacy in all manner of cold Diseases. All the Species, except the first, agree in their Properties, being of an aqueous, nitrous, emollient and laxative Quality, mixed with something of Acidity, Austerity, and a slight Measure of Astringency. On this Account the Leaves stripped of their outer Membrane, and macerated in Water, are commended in burning Fevers, Inflammations, Gangrenes, and Suppurations of the Stomach and Intestines, for Aphthæ, and the Quinsey. The *Africans* give ten Ounces of the new-expressed Juice in a Dysentery, and with the same cure not only this Disease, but all pestilential and spotted Fevers. It is, also, a very good Plant for correcting the Malignity of the worst Kind of Ulcers. The bruised Leaves cure the Erysipelas, Corns in the Feet, and the Nodes of the Gout. Of the same is prepared an excellent Ointment for the Hæmorrhoids. The nineteenth Species is as hot and acrimonious as the others are mild and gentle. There was in this Country a certain Empiric, who, with two Ounces of this Plant, infused in Milk or Beer, cured Quartans, Dropsies, and other chronical Diseases, by causing the Patients to vomit in a violent manner; under which, if the Disease proceeded from cold obstructing the first Passages, they recovered; but if there was an immoderate Heat in the Case, the Remedy proved mortal. It causes an Alteration in all the Humors, and is of very good Service in a slow Dropsy. It is highly commended in Pains of the Gout and Sciatica; tho' I should not venture to give it inwardly, because of its Acrimony. The former Species are of Service in Combustions and Cancers. *Hist. Plant. ascript. Boerhaave.*

SEDUM is also a Name for several Sorts of SAXIFRAGA and COTYLEDON; which see.

SEDUM AQUATILE. A Name in *Boerhaave*, for the ALOIDES.

SEDUM MINUS FRUTICOSUM. A Name for the *Chenopodium; sedifolio minimo; frutescens; perenne.*

SEDUM PETRÆUM. A Name for the *Alyssum; Alpinum; hirsutum; luteum.*

SE-

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SEGAX. Dragon's Blood. *Rulandus.*

SEGITH. Vitriol. *Rulandus.*

SEL SERAPIONIS, & AVICENNÆ. The Name of a Fruit, of a bitter and acrimonious Taste. It is said to be produced near *Jerusalem.*

SELAA. A Node, or encysted Abscess. *Castellus* from *Forestus.*

SELACHOS, σιλαχος. A cartilaginous Fish, or Fish whose Skin is cartilaginous. Of this Kind is the Skate, Ray, and many others.

SELAGINOIDES. A Species of Moss. See the Explication of Terms under the Article BOTANY.

SELAGO. A Species of Moss. See the Explication of Terms under BOTANY.

SELATUS. Quicksilver. *Rulandus.*

SELDONIUM ALCALI. *Paracelsus* describes this as something very readily dissoluble, and emitting a Tincture; but his Meaning is not understood.

SELENIACON. A Name for the Species of *Cyphi*, sacred to the Moon, and consisting of twenty-eight Ingredients. It is described by *Paulus Ægineta*, L. 7. C. 22. It was, also, a Name of a Sort of Amulet against the Epilepsy, worn by Children. It is derived from σιλην, the Moon.

SELENITES. Offic. Charlt. Foss. 23. Kentm. 32. Worm. 56. Aldrov. Mus. Metal. 678. Boet. 396. Gesn. de Lap. 45. *Lapis specularis argenteus*, Cup. Hort. Cath. Supp. 252. *Crystallus Calcaria*, Mont. Exot. 14. THE SELENITE.

This is a rhomboidal, pellucid Fossil, divisible into thin *Laminæ*. It is found in many Places, particularly near *Epsom Wells* in *Surrey*. It is said to agree in Virtues with the *Testacea*, to be a Sweetner of the Blood, and to restrain Hæmorrhages. Externally it is used as a Cosmetic. In the Catalogue of Simples in the College-Dispensatory, it is confounded with the *Lapis Specularis*.

SELERI. See CELERI, and APIUM.

SELIBRA. Half a Pound.

SELINITES. An Epithet for Wine, impregnated with the Seeds of *Apium*. *Dioscorides*, L. 5. C. 74.

SELINUM MONTANUM. See APIUM.

SELINUM SEGITALE. A Name for the *Sium*; *arvense*; *sive Segetum.*

SELINUSIA TERRA. A Species of Medicinal Earth, mentioned by *Dioscorides*, L. 5. C. 174. This, he says, agrees with the *Chian* Earth in Virtues. That is best, which is shining, white and friable, and which readily dissolves when mixed with any Fluid.

SELLA TURCICA. A Sort of Cavity in the Basis of the Skull, formed by four Processes of the *Os Sphenoides*. See CAPUT.

SEMASIA, σημασια. The Access of a Distemper.

SAMBELLA. Half a Pound.

SEMEIOTICE. That Part of Medicine which treats of the Signs of Health and Diseases.

SEMEN. A Seed. The four greater hot Seeds are those of Anise, Caraway, Cumin, and Fenil. *Fr. Hoffman* says Dill, instead of Caraway.

The four smaller hot Seeds are those of Bishops Weed, Ammomum, Apium, and Dancus.

The four greater cold Seeds are those of the Citrul, Cucumber, Gourd, and Melon.

The four lesser cold Seeds are those of Succory, Endive, Lettice, and Purslane.

That the five greater hot Seeds are of singular Use in preparing domestic Medicines, is sufficiently certain from Experience. We shall not here consider them apart, but only observe, that whether reduced to the Form of a Powder, boiled with Ale, or infused in warm Water, by reason of the Sulphur and Oil they contain, which are mild, friendly to Nature, and volatile, they are highly efficacious in correcting the Acrimony, and resolving the Viscidity of the Humours; as, also, in soothing all the Parts of the Body, however agitated or rack'd. Hence they are highly expedient in all spasmodic and convulsive Disorders; for they excellently alleviate Spasms, discuss Flatulences, and, at the same time, correct the Humours. For which Reason we recommend them in Colics, Coughs, Diarrhæas, and Gripes, especially those to which sucking Infants are subject, on account of the caustic Acrimony of the Milk, which discovers itself by the greenish Colour of the Excrements. *Hippocrates* frequently used Anise Seeds, and they are certainly a valuable Medicine, on account of their friendly Quality to the Stomach and Intestines; for this Reason *Helmont* justly called them the great Reliever of the Intestines. A Decoction of these five Seeds with Chamomile Flowers, Oil of Sweet-Almonds, and a little Venice Soap, injected by way of Clyster, is of excellent Service in the most violent Disorders of Children, and excellently dispels their Flatulences, and relieves their Gripes. These five Seeds, also, whether used in a dry or liquid Form, provoke the Menses and Sweat; cure the Hiccup, prevent Abortion, strengthen the Stomach in Vomitings and Hiccups; discuss Flatulences; expel Urine and the Stone; remove Hoarseness, and facilitate Labour, especially if the Steam of them is admitted to the Uterus. The Steam of a Decoction of Fennel surprisingly cleanses the Eyes, and strengthens the Sight. It is, also, beneficial in Deafness, as we are informed by *Gabelchoverus Centur.* 1. *Curat.* 6. *in Annotat.* A Decoction of Fennel is, also, good for increasing the Milk, as we are told by *Amatus Lusitanus*, in *Centur.* 6. *Curat.* 86. Nothing is more efficacious than the Seeds of Cumin for strengthening the relaxed Tone of the Intestines, and discussing Flatulences. And *Reinerus Solmander*, in *Lib.* 35. informs us from *Serapion*, that it is excellent for strengthning the Uterus, removing its Flatulences, and checking the Menses and Fluor Albus. *Hoffman de Præst. Remed. Domest.*

SEMICONGIUS. Half a Gallon.

SEMICUPIUM. A Half Bath; or a Bath in which the Parts above the Navel only are immersed.

SEMIDALIS. σιμιδαλις. Fine Wheat Flour.

SEMIFIBULEUS MUSCULUS. A Name for a Muscle of the TARSUS; called, also, PERONÆUS MEDIUS. See PERONÆUS.

SEMIMEMBRANOSUS MUSCULUS.

This is a long thin Muscle, partly tendinous, from whence it has its Name, and situated on the Backside of the Thigh, a little towards the Inside.

It is fixed by a broad Tendon, or long Apeneurosis in the irregular, obtuse, prominent Line, which goes from the Acetabulum to the Tuberosity of the Ischium, a little above the Insertion of the Semi Nervosus, and between those of the Gemellus Inferior and Quadratus, mixing some Fibres with the Triceps Tertius.

From thence it runs down fleshy, in an oblique Direction, behind the inner Condyle of the Os Femoris, below which it terminates in a thick Tendon, which is inserted in the posterior and interior Side of the inner Condyle of the Tibia, by three short Branches, the first or uppermost of which goes a little toward the Inside; the second more backward; and the third lower down. Before it is inserted, it sends off sometimes an Aponeurosis like that of the Biceps.

The *Semimembranosus* has the same Uses with the *Seminervosus*. It bends the Leg on the Thigh, and the Thigh on the Leg; it extends the Thigh on the Pelvis, and the Pelvis on the Thigh, and sustains the Pelvis when it is inclined forward. It differs in this one Thing from the *Sartorius*, *Gracilis Internus* and *Seminervosus*, that its Insertion is not on one Side, but behind the Joint; and for that Reason it is better disposed both to begin and continue the Flexion of the Leg, than they are. *Winslow's Anatomy.*

SEMIMETALLA. Semimetals, or Marcasites.

SEMINALIS. A Name for the *Polygonum*, or *Centinodium.*

SEMINERVOSUS MUSCULUS.

This is a long Muscle, half fleshy and half tendinous; or like a Nerve, from whence it has its Name. It is situated a little obliquely on the posterior and inner Part of the Thigh.

It is fixed above to the posterior Part of the Tuberosity of the Ischium, immediately before, and a little more inward, than the *Biceps*. It is afterwards fixed by fleshy Fibres to the Tendon of the Biceps, for about the Breadth of three Fingers, much in the same manner as the *Coraco-Brachialis* is fixed to the *Biceps* of the Arm.

From thence it runs down fleshy towards the lower Part of the Inside of the Thigh, having a Sort of tendinous Intersection in the inner Part of its fleshy Portion. Having reached below the middle of the Thigh, it terminates in a small, long round Tendon, which runs down to the Inside of the Knee, behind that of the Gracilis, where it expands in Breadth.

It is inserted in the Inside of the upper Part of the Tibia, about two or three Fingers Breadth below the Tuberosity or Spine, immediately under the Tendon of the *Gracilis Internus*, with which it communicates. It has the same oblique Turn with the *Gracilis* and *Sartorius*, and sends off a like kind of Aponeurosis.

The *Seminervosus* bends the Leg, and may, also, bend the Thigh on the Leg. By its Insertion in the Tuberosity of the Ischium, it, also, extends the Thigh on the Pelvis, and carries it backward; and may, also, extend the Pelvis on the Thigh, when it has been inclined forward with the rest of the Trunk; and consequently prevent its being carried too far along with the Trunk, when we stoop forward, either standing or sitting. *Winslow's Anatomy.*

SEMIRHOMBUS. See HEMITONON.

SEMIS. The Half of any Integer.

SEMISEXTUM. The same as HEMISECTON.

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SEMISICILICUS. A Dram.

SEMISIDERATUS. Hemiplectic; that is, ſeized with an Hemiplegy.

SEMISPECULUM. An Inſtrument for dilating a Wound in the Bladder, in the Operation of Lithotomy, deſcribed by *Hildanus*, in his Treatiſe *de Lithotomia*. C. 15.

SEMISPINALIS COLLI, *ſive Tranſverſo-ſpinalis Colli*. This Name is given to all that fleſhy Maſs which lies between the tranſverſe and ſpinal Apophyſes, from the ſecond Vertebra of the Neck to the Middle of the Back; the *Splenius* and *Complexus major*, which cover it, having been raiſed.

It is compoſed of ſeveral oblique converging Muſcles, which may be divided into external and internal, and of theſe the external are the longeſt.

The external are fixed below, to the tranſverſe Apophyſes of the ſix, ſeven, eight or nine upper Vertebræ of the Back, by tendinous Extremities, which, as they aſcend, become fleſhy, and mix with each other. Their ſuperior Inſertions in the Neck are ſix in Number; whereof the firſt, which is tendinous, is in the ſeventh ſpinal Apophyſis; the reſt, which are fleſhy, are in the five next ſpinal Apophyſes.

The loweſt of theſe external Muſcles mix more or leſs by ſome communicating fleſhy Fibres, with the *Spinalis*, *Longiſſimus*, and *ſemi-ſpinalis Dorſi*.

The internal are ſhorter and more oblique than the external, and partly covered by them. They are fixed, by their lower Extremities, to the tranſverſe Apophyſes of the three or four upper Vertebræ of the Back, and to the oblique Apophyſes of the four or five lower Vertebræ of the Neck; and by their other Extremities they are inſerted in the ſix ſpinal Apophyſes of the Neck.

Some of theſe internal Muſcles are very ſhort, lying wholly between the ſpinal Apophyſes, and the oblique or tranſverſe Apophyſes next them.

The *Semi-ſpinales* or *Tranſverſo-ſpinales* of both Sides acting together, extend the Neck upon the Trunk, to keep it from inclining forward in ſtanding or ſitting, and bend it backward. The *Semi-ſpinales* of one Side acting alone, produce the ſame Motions in an oblique Direction, and in that Caſe they are aſſiſted by the inferior or vertebral Portion of the neighbouring *Splenius* under which they croſs.

The *Semi-ſpinales* of both Sides may, alſo, ſerve for the Rotation of the Neck, but then the inferior *Splenius* of the oppoſite Side muſt aſſiſt them. This Motion is made in the ordinary Situation of the Neck, principally on the fourth and fifth Vertebra. They may, alſo, perform the lateral Inflexions of the Neck, by aſſiſting the *Longus Colli* and anterior vertebral Muſcles of the ſame Side. *Winſlow's Anatomy*.

SEMI-SPINALIS DORSI, *ſive Tranſverſo-ſpinalis Dorſi*. This is a fleſhy Maſs, which from all the ſpinal and tranſverſe Apophyſes of the Back and Loins, is extended in diſtinct Faſciculi over the Vertebræ themſelves.

It is made up like that of the Neck, of ſeveral oblique converging vertebral Muſcles, the uppermoſt of which is fixed below, to the third tranſverſe Apophyſis of the Back, and above to the firſt ſpinal Apophyſis. The loweſt is fix'd below to the third tranſverſe Apophyſis of the Loins, and above to the laſt ſpinal Apophyſis of the Back.

They may be divided into external, which are firſt diſcovered, and Internal, which lie immediately on the Vertebræ. The external from the firſt Vertebra to the ſeventh incluſively, appear to be longer than the internal, which are covered by them. They may, alſo, be diſtinguiſhed into thoſe which go from one Tranſverſe to ſeveral ſpinal Apophyſes, and thoſe which go from ſeveral Tranſverſe to one ſpinal Apophyſis.

The *Semi-ſpinales* or *Tranſverſo-ſpinales* being oblique, converging, vertebral Muſcles, are Aſſiſtants to the *Sacro-Lumbaris* and *Longiſſimus Dorſi*, which they croſs on each Side. By this Decuſſation joined to the Multiplicity, and graduated Diſtribution of their Inſertions, they increaſe the Strength of the other Muſcles conſiderably, whether they act equally and uniformly with them, or alternately. The Lumbar *Semi-ſpinales*, called by the Ancients, *Muſculus Sacer*, (See SACER.) becauſe of their Inſertions in the *Os Sacrum*, are more expoſed to Motions and Strains than thoſe of the Back, and are, alſo, larger and thicker. They are much better fitted than the *Sacro-Lumbares* for ſupporting the Pelvis on both Sides in walking, and on one Side, when we raiſe the Foot on that Side, and ſupport ourſelves on the other. *Winſlow's Anatomy*.

SEMISSIS. The ſame as SEMIS.

SEMITERTIANA. A Kind of complex Fever, which we call a *Semitertian*, and the *Greeks* ἡμιτριταῖος, *Hemitritæus*, and it deſerves our careful Obſervation. It begins with a Horror, and goes off with a Sweat, yet not ſo as to leave the Patient entirely free from a Fever. But ſince it is complicated of an intermittent Tertian, and a continual Quotidian, on one Day it is more exaſperated, and moleſts the Patient with a Horror, and frequently with ſomething of a Rigor, attended with bilious Vomitings or Stools, a burning Heat, and Exhalations of humid Vapours. On the other Day the Patient is rather ſenſible of a Cold than a Horror, and is not much afflicted with Heat or Thirſt; the Pulſe is more moderate, and the Fever more gentle on all Accounts; beſides, on one Day may be obſerved two kinds of Fevers, on the other but one. A ſemitertian Fever is indeed but rare, but where it is once ſettled, very dangerous. An exquiſite *Semitertian* is, when the Supplies of peccant Matter for the intermittent Tertian and continual Quotidian are nearly equal; otherwiſe there cannot be a pure *Semitertian*, and conſequently the Diſeaſe, as it is thought, will the more eaſily give way to Remedies. *Lommii*, *Med. Obſ.*

Among the epidemic Fevers of the intermittent and malignant Kind, we (in Practice) frequently meet with that Species which conſiſts of an intermittent Tertian, and a Quotidian of the continual kind, for which Reaſon it is by the *Greeks* called ἡμιτριταῖος; and by the *Latins*, *Semitertiana*.

This Species of Fever generally ſeizes the Patient, in the Forenoon, with a violent Cold and Horror, and a contracted Pulſe. This State is afterwards ſucceeded by an Heat, which laſts for ſome Hours, is accompanied with a frequent Pulſe, and remits without being totally removed upon the Eruption of the Sweat. Towards the Evening the Heat is rather increaſed, after a gentle Refrigeration; and next Day the Diſorder is milder, and accompanied with Thirſt, till about the Evening, after a ſlight Horripulation, it again becomes more violent. But on the third Day, the Horror again ſeizes the Patient, and is ſucceeded by a more intenſe Heat, whilſt the State of the Diſorder is the ſame it was on the firſt Day. So that there is always preſent a kind of growing Fever, the Exacerbation of which happens towards the Evening; and on the third Day, in the Morning, this Exacerbation is moſt conſpicuous, and accompanied with a Rigor. Beſides, the Strength is impaired, the Appetite rendered languid, the Sleep defective, and the Urine thin and crude; whereas, after the Paroxyſm of a Tertian, it is thick and high-coloured. In Coughing a ſmall Quantity of crude Matter is ſpit up. This Species of Fever is, alſo, frequently accompanied with a Pain of the Back and Abdomen, which latter is, alſo, tumid. Some, upon the Approach of the Tertian Paroxyſm, are afflicted with a Nauſea and Cardialgia; others vomit; others fall into Deliquiums; and others become abſolutely delirious.

This Fever is almoſt unknown in ſome Parts of *Europe*, the Inhabitants of which generally take it for a malignant intermittent Fever; but the former greatly differs from the latter, ſince it is neither contagious, accompanied with exanthematous Efflorescences, nor attended with ſo conſiderable a Loſs of Strength. Beſides, it has every third Day a conſpicuous Exacerbation accompanied with Horror.

Others, in like manner, unjuſtly confound a Semitertian with a continual Tertian; for the latter, otherwiſe than in the former, has its Exacerbation only on the third Day, but not in the Evening; nor is it wholly continual; but tho' it at firſt ſeizes with a continual Heat, yet, on the third Day, it generally loſes its Violence, and paſſes into an intermittent Tertian.

Nor is a Semitertian to be confounded with a double Tertian; for tho' the latter ſeizes every Day, yet the Paroxyſms correſpond to each other, and the Fever itſelf perfectly intermits; whereas, in a Semitertian, there is abſolutely no Intermits; whereas, in a Semitertian, there is abſolutely no Intermiſſion, but a Remiſſion. The Paroxyſm, alſo, happens about the Evening, and is always double on the third Day.

A Semitertian is, therefore, compoſed of two Fevers, and muſt, therefore, have a double Fomes, and a double Cauſe; that is, the Source of the continual Fever in the Meſentery, in conſequence of the intercepted Circulation of the Blood thro' its Structure, and its conſequent inflammatory Stagnation in the contiguous nervous Coats. But the violent Paroxyſm happening on the alternate Days, has, as well as a Tertian, its Seat and Cauſe in the Inteſtines, and eſpecially in the Duodenum; for to the winding Cavity of this Inteſtine, the lymphatic, bilious, and corrupted Humors, in conſequence of the Diſorder of the Meſentery, are conveyed from the Glands, the Liver and Pancreas; as alſo crude Juices from the Stomach, which conſtitute a morbid Fomes; which, mixing with the Blood, and being conveyed to the nervous Membranes of the Spine, induces a preternatural febrile Motion.

Among the Things which have a Tendency to generate a Semitertian, we may reckon all thoſe Subſtances and Circumſtances which render the Juices thick and impure, and eſpecially fill the Primæ Viæ and Veſſels of the Meſentery with Sordes. Hence Semitertians are moſt generally incident to thoſe, who, neglecting a ſalutary Regimen, eat liberally of ſweet

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ſweet, acid, fermentable Aliments, and farinaceous Subſtances fried with Butter, Sugar, and Eggs; and to thoſe who lead an idle and too ſedentary Life; who drink too little; who are too great Lovers of ſweet Wines; or who indulge the Paſſions of the Mind, eſpecially Sorrow. Semitertians are, alſo, readily incident to Perſons after a Recovery from acute Diſorders; to thoſe who are coſtive; to thoſe who frequently uſe draſtic Purgatives; and to ſuch as have the menſtrual or hæmorrhoidal Diſcharge ſuppreſſed. Theſe Fevers are, alſo, leſs frequent at other Seaſons than in the Autumn, the fruitful Source of terrible Fevers, on account of the Variety and Inequality of the Weather, which is highly unfriendly to ſalutary Perſpiration. Semitertian Fevers, alſo, frequently happen to thoſe, who, when overheated, greedily drink cold Liquors, or who, when ſweating, ſit down in moiſt Places.

Semitertians are obſerved to be more frequent in ſome Countries than in others. Thus *Galen*, *Spigelius*, and *Baglivi*, inform us, that they rage more in *Italy* than in other Climates. And certainly, in that Part of the World, the Heat, during the Day, generates many acrid recrementitious Sordes, whilſt the cold Air of the Night hinders the Excluſion of theſe; and the cold Drink, of which they are ſo very fond as to prepare it by putting Ice into it, occaſions, that the Juices in the Meſentery, where the Reſiſtance is ſmall, and the Circulation languid, as it were, ſtand ſtill, and conceive an inflammatory Stagnation. And thus a continual Fever is generated, which is changed into a Tertian, by the corrupted Juices falling from the Meſentery to the Inteſtines. The like happens in *Hungary*, where a ſimilar State of the Air, and a liberal Uſe of ſweet and ſpirituous Wines, frequently excite Semitertians.

Since, therefore, a Semitertian, beſides the common Cauſe of Intermittents in the Primæ Viæ, has, for a Foundation, an Inflammation, and a continual Diſpoſition never to admit of a great Remiſſion of the Symptoms, nor of a due Time for recovering the Strength, it is of a very dubious Nature, and far more dangerous than a ſimple Intermittent.

For this Reaſon, its Progreſs is quick, ſince, for the moſt part, it terminates on the ninth or thirteenth Day, either in Health, ſome other Diſeaſe, or Death.

When it is long protracted, the Inflammation either comes to a Suppuration, and the Diſorder is changed generally into an hectic or ſlow Fever; or when there is a violent Obſtruction of the Meſentery, it terminates in a Dropſy; or, which happens more rarely, when the Primæ Viæ are filled with Sordes, it ends ſometimes in a ſimple, and ſometimes in a double Intermittent.

But when the Sweat not only breaks out in the Decline of the Paroxyſm, but alſo on the ſeventh Day, which is critical; or if, after this Day, the Inteſtines are put into a Commotion, and a bilious, pituitous, or even a bloody Flux, is produced, it is a good Sign, and prognoſticates the Solution of the Diſeaſe; or if there happen violent Pains of the Abdomen, which are increaſed at certain ſtated Hours, the Diſorder is reſolved by them, or afterwards terminated by a ſubſequent ſanious and purulent Diarrhœa, or an Evacuation of a large Quantity of black Blood by Stool.

On the contrary, when none of theſe Circumſtances happen, but rather a Heat about the Præcordia, a Tenſion and Pain in the whole Region of the Stomach, a Vomiting, a Hiccup, a Reſtleſſneſs, a Toſſing, and a Trembling of the Hands, are perceived, they are bad Prognoſtics, and indicate that the Inflammation has ſpread itſelf farther even to the Stomach.

Thoſe who die of a Semitertian are taken off under the Acceſs of a violent Paroxyſm, which keeps the Type of a Tertian, the Inflammation, in the mean time, being far diffuſed and converted into Putrefaction. Thus *Spigelius*, in his *Lib. de Semitertiana, Cap.* 14. informs us, that he always found this to be the Cauſe of the Death of ſuch Patients, in the following manner: "When, ſays he, I reflect upon what "I have obſerved, in diſſecting thoſe who have died of Se"mitertians, I can aſcribe their Death to nothing elſe but "putrid Stagnations in the Veſſels; for in the Carcaſſes of "ſuch Perſons, I found Inflammations formed of bilious and "pituitous Blood, about the concave Part of the Liver, in "the Stomach, in the great and ſmall Inteſtines, in the Me"ſentery, Omentum and Spleen, and often in one or more "of theſe Parts, and ſometimes in them all; and a ſupervening "Gangrene or Sphacelus, tho' perhaps ſmall, was found to be "the Cauſe of their ſpeedy Death."

THE CURE.

The two principal Intentions to be purſued in the Cure of a Semitertian, are,

1ſt. With all Expedition either to diſcuſs or hinder the farther ſpreading of the inflammatory Stagnation lodged in the Coats of the Meſentery and Inteſtines, and expoſing the Patient to imminent Danger.

2do. To correct and gently evacuate the febrile Matter during the Intermiſſion, having a due Regard, at the ſame Time, to the critical Efforts of Nature.

The former of theſe Intentions is excellently well anſwer'd, by diaphoretic and gently nitrous Powders exhibited frequently in ſmall Doſes. Thus;

Take of the Ceruſs of Antimony, of prepar'd Mother of Pearl and Crabs Eyes, each one Dram; of the Solution of Crabs Eyes, and depurated Nitre, each half a Dram; reduce them to a Powder, of which, every three Hours, fifteen Grains may be exhibited in a Decoction prepared of two Ounces of the Roots of Vipers-Graſs, one Ounce of the Shavings of Hartſhorn, one Ounce of Currans, and half an Ounce of the Roots of Succory, boil'd for half an Hour in four Quarts of Water.

The ſame Intention is anſwered, by exhibiting every three Hours a Spoonful or two of the reſolvent and diaphoretic Mixtures, prepared of the pectoral and analeptic Waters of Lily of the Valley, Galangals, Carduus Benedictus, Vipers-Graſs, and black Cherries, with the diſtill'd Vinegar of Crabs Eyes, diaphoretic Antimony, the Mixtura Simplex, and the Syrup of Carduus Benedictus.

By Means of theſe, the Sordes of the Primæ Viæ, which produce the Diſorder, being corrected and diluted, are beſt evacuated by Solutions of Manna, with a due Portion of Cream of Tartar, Rhubarb, Raiſins, and Sal Polychreſtum; for theſe, without any Commotion of the Blood, Irritation of the nervous Parts, or Loſs of Strength, cleanſe the Inteſtines, and greatly contribute to remove the Infarctions of the Meſentery. This Intention is, alſo, anſwered by balſamic Pills, prepared of bitter Extracts, reſinous and balſamic Gums, and depurated Aloes, together with the precipitating nitrous Powder, moderately but frequently uſed. If the more ſubtile Parts of the Sordes, are, by an increas'd Perſpiration, to be eliminated through the cutanous Pores, the Eſſence of Scordium mixed with an equal Quantity of the anodyne mineral Liquor, is of all other Medicines the moſt ſafe and efficacious.

All Cures are to be ſo managed, as never to diſturb or interfere with the critical Efforts of Nature, but rather to aſſiſt them when defective, and moderate them when exceſſive.

Hence, 'tis highly prejudicial to exhibit Purgatives, eſpecially in the Beginning of a Semitertian, ſince, by that Means, the unprepared Matter is agitated, the Inflammation increas'd, and the Diſeaſe diſpos'd to a ſpeedy, tho' a fatal Event.

Saline Deterſives exhibited by themſelves, are not to be us'd in a Semitertian, eſpecially in large Doſes, except antimoniated Nitre, to which, and the Sal Polychreſtum, *Baglivi* juſtly aſcrib'd ſo much; for theſe are poſſeſs'd of an aperient, diuretic, and gently laxative Quality, and may ſometimes be commodiouſly exhibited to the Doſe of fifteen Grains, in a ſufficient Quantity of ſome proper Decoction.

But if a Semitertian ſeizes a Perſon who is coſtive, or if he is long coſtive during it, his Body is only to be render'd ſoluble, by Clyſters prepared of Paregoric and emollient Subſtances, the carminative Seeds, and *Venice* Soap, that thus the Primæ Viæ may be freed from the excrementitious Sordes; for if this is neglected, Nature ſeeks a Way upwards, and excites a Vomiting, eſpecially when the biliary Ducts in the Liver are turgid with an acrid Bile.

In the Decline of the Fever, the Phyſician is to follow the Tendency of Nature, which often terminates the Diſorder by a Flux, ſo that on this Occaſion the above-mentioned Laxatives and balſamic Pills are commonly uſed.

In a Semitertian, the Phyſician is to be very cautious in exhibiting Emetics, leſt he ſhould create a Vomiting, or Hiccup, or diſpoſe the Stomach to an Inflammation: But if the peccant Matter is to be evacuated by Vomit, in conſequence of the Tendency of Nature that Way, the Intention is ſufficiently anſwered by drinking tepid Water with Sale, or a very gentle antimonial Stimulus.

In a Semitertian, Veneſection is not proper, except there is a violent Plethora, and an intenſe Heat in Perſons as yet vigorous, and labouring under a Suppreſſion of critical Hemorrages; for in this Caſe, Veneſection is abſolutely neceſſary, in order to prevent a mortal Inflammation of the Inteſtines; but it is to be us'd in the very Beginning, ſince the ſooner a proper Quantity of Blood is taken away, the ſooner the Cure is accompliſh'd.

The Patient is, alſo, carefully to avoid all hot Subſtances, alexipharmic Eſſences, bezoardic Tinctures, a hot Regimen, and

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and large Quantities of hot Liquors; for by Means of these, the Heat is increas'd, the critical Discharge of the Fomes of the Disease through the Intestines is disturb'd, and the Strength impaired by profuse Sweats.

Astringent, too fix'd, earthy, testacious Powders, and *Peruvian* Bark, are not to be us'd in a Semitertian; for *Baglivi* observes, that by Means of these, either mortal Inflammations, or slow and hectic Fevers have been brought on.

Though the Patient should be afflicted with an exquisite Pain of the Abdomen, and frequent Stools, he is nevertheless to abstain from Sedatives, and is only to be reliev'd by anointing his Abdomen with spirituous and corroborative Liniments, whilst the Tumult and Commotion is to be check'd by an internal Exhibition of Diaphoretics.

For ordinary Drink, the most proper is the Decoction before mentioned; as, also, a Decoction of Oats prepared in the following Manner:

Take of clean wash'd Oats, one Pound; of the Roots of Succory, Sarsaparilla, and Vipers-Grass, each one Ounce; of the Flowers of red Poppy, six Pugils; of antimoniated Nitre, half an Ounce; Leaves of Scabious, half an Handful; and of pure Nitre two Drams; boil them in five Quarts of common Water, to a Consumption of a third Part, and edulcorate with Syrup of Carduus Benedictus, wild Poppy, or Citron Juice.

In Semitertians, I have, also, found happy Effects produced by Decoctions of Chamomile Flowers, and the Tops of Yarrow, or by Extracts prepared from these; for such Decoctions and Extracts safely alleviate the Pains, especially of the hysteric and complicated Kind, and, at the same Time, by their Bitterness, prove excellent antiscorbutic Medicines, and restore the due Tone of the Parts.

As no Fever more readily recurs than a Semitertian, so the Patient is, after it, carefully to avoid the Things already enumerated, as the procolartic Causes of the Disorder. All Things are to be us'd temperately; the Body is to be kept soluble by mild Laxatives; the Increase of Crudities is to be prevented by Stomachics; and, which is of all other Circumstances the most important, the Perspiration is carefully to be kept free and unobstructed; for as in all Fevers, so, also, in those of the semitertian Kind, the Relapses are far worse and more obstinate than the original Disorder.

These are the general Precepts, founded on Reason, and supported by the Indications of Nature, by the Observation of which the Cure may be judiciously attempted, and successfully perform'd. But the particular Method is to be suggested by the Sagacity of the Physician, which is to direct him to the Order, Dose, Time, and Use of proper Medicines, which being the same with those employ'd in the Cure of continual quotidian, tertian and quartan Intermittents, may be seen under these Articles. *Frederic Hoffman.*

SEMIVERBERATORIUS IGNIS. A Sort of reverberatory Fire, which only surrounds the Bottom of the Vessel.

SEMOTIM. Achors, or Tineæ. *Castellus* from *Valescus de Taranta.*

SEMPERVIVUM. See SEDUM.

SEMUNCIA, or SEMIUNCIA. Half an Ounce.

SENA. The same as SENNA.

SENDANEGUM. The *Lapis Hæmatitis*, Blood-Stone. *Rulandus.*

SENECIO.

The Characters are;

The Calyx is monophyllous, cylindrical, multifid, very slightly squamous in the lower Part, of a conic Figure when the Flower is fallen off, and when it is ripe, generally bending downwards.

Boerhaave mentions ten Species of *Senecio*, which are;

1. Senecio; minor; vulgaris. *C. B. P.* 131. *Tourn. Inst.* 456. *Boerh. Ind. A.* 117. *Erigerum, Senecio*, Offic. *Senecio vulgaris*, Park. 671. Raii Hist. 1. 291. Synop. 83. *Senecio vulgaris sive Erigeron.* I. B. 2. 1041. *Erigeron*, Ger. 217. Emac. 278. GROUNDSEL OR SIMSON.

Groundsel has a small, stringy Root, full of Fibres, from which springs round, succulent, striated Stalks, which are shorter or taller, according to the Soil it grows in, and frequently of a reddish Colour. The lower Leaves are about two Inches long, and half an Inch broad, cut usually into five Jags or Sections, whereof the last is usually tripartite. The Leaves which grow on the Stalks are set on with a broad Base almost encompassing them: The Flowers grow on the Tops of the Branches, without any *Petala*, or Border, consisting only of tubular, yellow Flowers, growing in a green striated *Calyx*, which after turns into a Down. It grows on Banks, and Walls, and amongst Rubbish, flowering the greatest Part of the Year.

The Juice of this Herb taken in Ale, is accounted by some a gentle Vomit, and of Use to help Pains in the Stomach, and evacuate Choler, and to help the Jaundice: It likewise destroys Worms. Outwardly apply'd, it is useful in scrophulous Tumors, and Inflammations of the Breast, and helps scald Heads. *Miller's Bot. Off.*

It has an herby Taste, a little inclining to acid; it gives a pretty deep red Colour to the blue Paper.

By the chymical Analysis, it yields, besides several acid Liquors, a great deal of Oil and Earth, no volatile concrete Salt, but a little urinous Spirit; so that it is probable its Salt may resemble that of Coral, being involved with a great deal of Sulphur, and mixed with a little Sal-ammoniac.

Groundsel is emollient, lenifying and resolving; two Ounces of its Juice kills Worms, and eases the Cholic; the whole Plant is used in the ordinary Decoction of Clysters, and in the Cataplasms for assisting Suppurations. A Cataplasm of it boiled in Milk, or fried with fresh Butter, is good for the Gout, Piles, and dissipates curdled Milk in the Breast. *Martyn's Tournefort.*

The Juice taken in Beer, or the Decoction thereof with Currans or Honey, is a gentle Vomit, as we are taught by daily Experience. *Tragus* says it is rarely taken inwardly; others write that it is good in many Cases thus administred, for Instance, in the Cholera Morbus, Jaundice, a hot Distemperature of the Liver, Worms, Vomiting, and Spitting of Blood, Sciatic Pains, and the Fluor Uterinus. Outwardly, it is of Use in Inflammations of the Breast, Scald Heads, Strumæ, Pain of the Stomach, Stoppage of Urine, Gout and Wounds.

It is very likely to be good for the Worms, because our Farriers give the expressed Juice thereof to Horses, for the Worms of the Stomach and Intestines, commonly called *Bottes*, whose Effects are suddenly fatal. *Raii H. P.*

2. Senecio; Ægyptius; folio Matricariæ. *Ind.* 40. *Jacobæa Ægyptia folio senecionis, multiflora.* Vail.

3. Senecio; Jacobææ folio. *M. H. B.* 309. *Jacobæa vulgaris, laciniata.* C. B. P. M. H. 3. 108. *Erigerum majus.* Dod. p. 641.

4. Senecio; Africanus; altissimus; Blattariæ vel Hieracii folio. *Schol. Bot. Par. Bat.* 226.

5. Senecio; Africanus; folio retuso. *H. C. Conyza Africana, Senecionis flore, retusis foliis*, H. L. App. 661. *Pseudo-Helichrysum frutescens, Africanum, retusis foliis viridibus, flore luteo, nudo*, M. H. 3. 90.

6. Senecio; Africanus; arborescens; folio serrato. *Conyza Africana, humilis, foliis angustioribus, nervosis, floribus umbellatis.* T. 455. *Eupatorium Indicum, flore albo.* Barth. Ac. Hafn. T. 11. 57.

7. Senecio; Virginianus; arborescens; Atriplicis folio. *Par. Bat.* 225. *Elichryso affinis, Virginiana, frutescens, foliis Chenopodii glaucis.* Plukn. 27. *Conyza Virginiana, Halimi folio.* T. 455. *Pseudo-Helichrysum Virginianum, frutescens, Halimi latioris foliis glaucis.* M. H. 3. 90.

8. Senecio; Africanus; arborescens; folio Ficoidis. *Commel. Rar.* 40.

9. Senecio; Asiaticus; Jacobææ folio; radice lignosa; China Officinarum dicta nobis. *Commel. Plant. usu*, (ed. 1724.) 94. *Ind. Med.* 35. *Boerh. Ind. A.* 117. *Pseudo-China, China suppositia.* Offic. *Senecio Madraspatanus Rapi folio, floribus maximis, cujus Radix a nonnullis China dicitur*; Pet. Mus. 680. Hort. Elth. 345. *Hieracio similis Indiæ Orientalis umbellatis floribus, radice crassa & carnosa*, Pluk. Mant. 102. Raii Hist. 3. 140. *Parin Chakka*, Act. Philosoph. Lond. N°. 274. p. 943. BASTARD CHINA.

It grows in the Kingdom of *Malabar.*

This is the Plant which some Years ago was sent to the *English East India* Company at *London*, under the Name of *Parin-Chakka Malabarica*, by *Samuel Brown.* The Description of it by Dr. *Dillenius*, in his *Hortus Elthamensis*, is as follows: "This Plant is here [*in Madraspatam*] called *China Root*; "but it is very different from that which you call *Spinosa* "[that is, *Petiver.*] Mr. *Ingram* of *Newcastle* was cured "by it of a Hectic Fever, under which he had laboured ma- "ny Years. It is two Feet in Height, and has a Root like "that of *China*: If Experience shall supply me with any "further Observations, I will take Care to inform you." Some Specimens of this Plant were presented by the Company to the Royal Society at *London*, and published in the Philosophical Transactions for the Year 1702, N°. 274. with Observations. A few Years after the famous *G. Commelin*, M. D. was presented with the same Plant, and published a Description of it in *Hort. Medic. Amstelod.* under the Name of *Senecio Asiaticus, Jacobææ folio, Radice lignosa, China Offic. dicta*; "the *Senecio* of *Asia*, with a Leaf like that of the "*Jacobæa*, and a woody Root, called the *China* of the Shops."

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"Shops," with the following Note; "I had the Know-"ledge of this Plant from that skilful Surgeon *Andreas Ham-*"*mel*, who brought it with him from the *East Indies* into his "own Country." This gave Occasion to the Authors of the *Catalogus Simplicium*, in the *Pharmacop. Londin.* and the *Indices Medicamentorum* in the *Pharmacop. Paris.* to commit a Mistake, in improperly setting down this *China of the Shops* for the *Root of the Plant.*

The famous Botanist *Switsen* sent me a Figure with a Description of the *Japonese China*; but this is quite another Plant from what we are speaking of. Its Root indeed is very thick, as in the other; but then it is also tuberous, which is otherwise in the *Senecio*, and is a scandent Plant, like the *Clematites* of *Canada*, or Ivy, or Briony, which last it most resembles. I imagine that our *Senecio* is not so penetrating as to cure the Leprosy; for it is better qualified for an Emollient than an Expeller. But the *Japonese* is far more acrimonious, so as perhaps to be sufficient for the Cure of the Lues Venerea, as it is said of the Root of *China*, tho' I never, as yet, saw any such Effect performed by it. This Root is very dear, and for that Reason very often adulterated; for when it is corroded, and exhausted with Age, they fill up the Perforations, and sell it for good and sound; and therefore I never prescribe it before Examination, for there is no trusting to it unseen. *Hist. Plant. ascript. Boerhaave.*

10. Senecio; montanus; altissimus; Limonii folio. *Vaill. Conyza, montana, foliis longioribus serratis, flore è sulphureo albicante.* Comment. Ac. Reg. Soc. *Boerh. Ind. Alt. Plant. Vol.* 1.

This Plant is commended for its singular Efficacy in Inflammations of the Fauces, the Juice being used with Oxycras in a Gargarism; it isrecommended, also, for scirrhous Tumors. A certain Botanist, *Peter van Hoy*, by Name, told me that all the *China Root* brought from the *Indies* was the Root of this Plant, and that its thick Root is used by the *Chinese* in Decoction, as a general Purger of the Blood, and they say that it cures the Leprosy; and it must be granted, that these Virtues do in some Measure belong to this Plant. *Hist. Plant. ascript. Boerhaave.*

SENECTA ANGUIUM. The *Exuviæ*, or Sloughs of Serpents. A Decoction or Infusion of these is recommended against Pains of the Ears, Teeth, and Eyes. Some superstitious Women tye them about their Wastes, in order to prevent a Miscarriage, and about their Thighs, to accelerate Delivery.

SENELLA. The Hawthorn.

SENEMBI. An *American* Lizard, about four Foot long, and half a Foot in Thickness. Certain Stones found in the Head of this Animal, are esteemed, by the Inhabitants, good for the Stone in the Kidneys and Bladder, taken in the Quantity of a Dram.

SENICA. A Sort of Gum. See ACACIA SILIQUIS COMPRESSIS.

SENNA.

The Characters are;

It has a rosaceous, pentapetalous Flower; the Pod is flat, incurvated and bivalve, and the Seeds are like Grape-Stones, and separated from one another by small Partitions.

Boerhaave mentions seven Sorts of *Senna*, which are;

1. Senna; Italica; foliis obtusis. *C. B. P.* 397. *Tourn. Inst.* 618. *Boerh. Ind. A.* 2. 57. *Sena Italica*, Park. Theat. 225. Raii Hist. 2. 1792. Ger. 1114. *Sena foliis obtusis*, Ger. Emac. 1297. *Sena Florentina*, J. B. 1. 377. ITALIAN SENA.

This is distinguished from the true Senna, by the Largeness and Roundness of its Leaves. This Leaf is, also, much thinner, and more brittle than the other. It is a very weak Cathartic, but gripes violently, and therefore is seldom used. *Geoffroy.*

2. Senna; Alexandrina; sive foliis acutis. *C. B. P.* 397. *Raii Hist.* 2. 1742. *Tourn. Inst.* 618. *Boerh. Ind. A.* 2. 57. *Senna Alexandrina*, Offic. *Sena Orientalis*, Ger. 1114. Emac. 1247. J. B. 1. 377. *Sena Alexandrina*, Park. Theat. 225. ALEXANDRIAN SENA.

Senna is a shrubby Plant, having many woody Stalks arising to be two or three Foot high, full of winged Leaves, composed of three Pair of Pinnæ, with an odd one at the End, which are oval and sharp-pointed; the Flowers are yellow, five leaved, full of purplish Veins, with several crooked Stamina in the Middle. The Seed, which is of a yellowish, green Colour, flat, and in Shape like a Grape-Stone, is inclosed in a broad flat membranous Bladder, sticking so close together, that they are with Difficulty parted. Senna grows in *Egypt*, *Arabia*, and other Parts of *Turkey*; the best comes from *Alexandria*, and ought to be of a pale, yellowish, green Colour, not broken, but free from Stalks, and of a pleasant fresh Scent.

Senna is a Purging Medicine, of frequent Use, being one of the milder Sort of Cathartics, yet working pretty briskly, and carrying off choleric and phlegmatic Humours out of the Stomach and Bowels; but being somewhat griping, and of a nauseous Taste, it ought to be corrected with Spices or other Carminatives.

Officinal Preparations of *Senna* are, the *Decoctum Sennæ*, the *Syrupus Rosarum cum Senna*, the *Pulvis Senna Compos. major, et minor. Miller's Bot. Off.*

Geoffroy remarks, that this is the true Oriental Senna, smoother to the Touch, and not so green as that of *Tripoli*, and its Infusion is of a pale Colour. The Leaf is of a pretty strong Consistence, and shaped like the Point of a Spear. This is the best Sort of Senna. It purges Phlegm in a particular manner; but as it is subject to gripe, it ought to be given with Caution to those who have weak Viscera, or are of an inflammatory Habit of Body. It is usually mixed with Carminatives, such as Coriander Seed, Cinnamon, &c. or more effectually with alcaline Salts. It ought to be well cleansed from its Stalks, and then the Dose in Substance is from a Scruple to a Dram; and in Infusion, from two Drams to half an Ounce. Some have endeavoured to correct *Senna* with the *Scrophularia magna aquatica*; but that is now left off, common Tea having the same Effect. Some Physicians order Senna by the Name of *Folia Orientalia.*

The Follicules or Fruit of the Senna Tree purge in a less Degree than the Leaves. The common Dose is from three to six Drams in Infusion or Decoction. *Geoffroy.*

Senna is a very usual Purgative, proper for eliminating hot and serous Humours; and, consequently, yellow Bile and Phlegm from the Head, Liver and Spleen. Because it is of a hot and drying Quality, it is to be corrected by the Flowers of Violets and Borrage, and by Prunes; and because it is flatulent, and might prove hurtful to the Stomach, it is to be corrected with Cinnamon, Galangals and Ginger. *Dale from Schroder.*

DECOCTUM SENÆ.

Take of the Leaves of Alexandrian Senna, one Ounce and a half; of the Seeds of the lesser Cardamons, two Drams; and of Salt of Tartar, three Drams: Infuse the whole in one Pint of boiling Spring Water, and strain it off for Use.

PULVIS DIASENÆ.

Compound Powder of Senna.

Take of Sena Leaves, and Cream of Tartar, of each two Ounces; of Cloves, Cinnamon, Galangal, and Seeds of Bishop's Weed, of each two Drams; of Diagrydium, half an Ounce. Make them into a Powder.

This is the *Pulvis Sanctus* of *Brasavolus*, and is preferable to either the *Pulvis Senæ Compositus major*, or the *Pulvis Senæ minor Compositus*, as the Quantity necessary for a Dose is much less, and therefore easier to be taken in a Bole or Mixture. Its Dose is from one Scruple to one Dram.

PULVIS SENÆ COMPOSITUS MAJOR. See PULVIS.

PULVIS SENÆ MINOR COMPOSITUS. See PULVIS.

SYRUPUS ROSACEUS SOLUTIVUS CUM SENA.

Solutive Syrup of Roses with Senna.

Take of Senna Leaves, picked clean, six Ounces; of Caraway and sweet Fennel Seeds, of each three Drams. After these are first sprinkled over with white Wine, let them be steeped in three Pints of an Infusion of Damask Roses for the space of two Days; then strain the Liquor, and boil it up into the Consistence of a Syrup, with two Pounds of white Sugar.

This is in the new Dispensatory of the College exactly as in the *Syrupus è Succo Rosarum*; but therein are also many other solutive Syrups of Roses, with Agaric, Hellebore, &c. which are very justly expunged here.

3. Senna; orientalis; fruticosa; Sophera dicta. *Sophera Indiæ Orientalis*, Brayn. Prodr. 1. 51. *Galegæ affinis, Sophera dicta*, C. B. P. 352. *Securidaca Ægyptia*, Park. M. H. 2. 78. *Ponnam Tangera.* H. Mal. 2. 101. *Escapatli, alcana.* Hernand. 376.

4. Senna;

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4. Senna; Occidentalis; odore Opii viroſo; Orobi Pannonici foliis mucronatis glabra. *H. L. Caſſia Americana, fœtida, foliis oblongis glabris.* T. 619. *Pajornirioba*, Piſonis. 185.

5. Senna; Occidentalis; odore Opii viroſiſſimo; foliis Ebuli hirſutis.

6. Senna; Occidentalis; foliis Ebuli acutis, glabris; odore minus viroſo.

7. Senna; Occidentalis, odore Opii minus viroſo; foliis glabris obtuſis majoribus. *Boerh. Ind. Alt. Plant. Vol.* II.

One Dram, or half an Ounce of the firſt and ſecond Species, made into an Infuſion, is an excellent Purge; but now diſuſed, on account of the nauſeous Taſte, and the Gripes, they produce. The Gripes are removed by an Addition of Fennel-ſeeds, and the nauſeous Taſte by Figwort. The *Indians* put the bruiſed Leaves of the fourth and fifth Species into the Waters, and by that means catch the Fiſhes, as it were, ſleeping near the Surface of the Water. Theſe Leaves are alſo ſaid to alleviate Pain. *Hiſt. Plant. aſcript. Boerhaave.*

Beſides the foregoing Species of *Senna*, *Geoffroy* mentions the two following.

1. SENNA TRIPOLITANA. This Sort is greener, larger, rougher, and of a more diſagreeable Smell than the common Senna. It does not yield ſo much by Infuſion; that is, a greater Quantity is required to make the Infuſion of equal Strength; but it is of a greener Colour.

2. SENNA DE MOCHA. The Leaves of this Kind are longer and narrower than thoſe of the common Sort; its Smell ſtronger, and it gripes more violently. It is not uſed in this Country.

SENSIBILIS, αἰσθητὸς, ſenſible; is applied to whatever is capable of making an Impreſſion on the Senſes. *Galen, de Diſſ. Pulſ. Lib.* 3. *Cap.* 1.

SENSIFICUS, αἰσθητικὸς, ſenſific; according to the beſt Philoſophy, is the proper Epithet of the Nerves of the external Senſes, which convey the animal Spirits, as the efficient inſtrumental Cauſe, to the ſenſory Organs. *Galen, de Hip. & Plat. Decr. Lib.* 7. *Cap.* 5.

SENSIO, SENSATIO, αἴσθησις, is properly ſpoken of actual Senſation, which conſiſts in the Perception of any ſenſible Thing, affecting and cauſing ſome Alteration in the Organ of Senſe.

SENSITORIUM. The ſame as SENSORIUM.

SENSORIUM, αἰσθητήριον, according to the ancient Hypotheſis, the Inſtrument of any Senſe. *Galen, de Odor. Inſtr. Cap.* 5. Agreeably to the ſame Doctrine, *Senſorium commune*, κοινὸν αἰσθητήριον, the common Senſory, is what receives the Impreſſions of all ſenſible Objects, conveyed to it by the Nerves of each particular Organ of Senſe, and conſequently is the immediate Cauſe of Perception. This Office is, by Dr. *Willis*, aſſigned to the ſtriated Parts of the Brain, and by *Des Cartes*, to the *Glandula Pinealis.*

SENSUS EXTERNI. The *External Senſes*, are the Means, or Inſtruments, of external Senſation, and are commonly reckoned five in Number, which may be found under their proper Articles. The Exertion of the *External Senſes*, that is, external Senſation, conſiſts only in a Change made in the Superficies of a Nerve by the Contact of an external and ſenſible Object, and propagated by a free Communication of that Nerve to a certain Place in the medullary Subſtance of the Brain, or what the Schools call the *Commune Senſorium*, on which Occaſion there is excited in the Mind ſome Idea of the ſenſible Object.

SENSUS INTERNI. The *Internal Senſes*, are thoſe Actions of the Mind or Intellect, to which it is excited from its Perception of Ideas, and are generally reduced under four Heads, *Memory*, *Imagination*, the *Paſſions*, and *Attention*; ſome add *Hunger* and *Thirſt*. A more particular Account of theſe, more than what may be found under *Imaginatio*, and occaſionally under other Articles, we think unneceſſary.

SENTIS. A Name for the RUBUS. *Blancard.*

SEPARATIO, διάκρισις, διαχώρησις. The ſame as SECRETIO, or SEGREGATIO. See SECRETIO.

SEPARATORIUM. A Separatory. A chymical Veſſel contrived for ſeparating Liquors. It is of an oblong, and, in ſome meaſure, uniform Figure, with an Orifice as big as one's little Finger for pouring in Liquors, and a ſmall Hole in the Bottom, about the Bigneſs of a Needle for diſcharging them; in the Middle it is bellied for the greater Capacity. It is alſo called HYPOCLEPTICUM. *Separatorium* is alſo a Surgeon's Inſtrument for ſeparating the Pericranium. *Rulandus. Conſectur.*

SEPEDON, σηπεδὼν. See PUTREDO.

SEPHIROS. A kind of hard and dry Impoſthume, a ſpurious Scirrhus. *Paracelſus de Ulc. & Apoſt.*

SEPIA. Offic. Schrod. 5. 332. Ind. Med. 109. Salv. de Aquat. 165. Mont. Exot. 6. Aldrov. Exang. 44. Charlt. Exer. 51. Jonſ. Exang. 7. Bellon. de Aquat. 336. Rondel. 1. 498. Geſn. Aquat. 851. *Loligo, Sepia.* Mer. Pin. 191. THE CUTTLE-FISH.

This Fiſh is a kind of Polypus; it has a Bag in its Neck, containing a black Liquor, like Ink, which it emits to trouble the Water, when purſued by other Fiſhes. The Bone recommended in Phyſick as a good Diuretic, is found about its Middle. Others make a Powder of it for cleaning the Teeth. *Geoffroy.*

The Parts in Uſe are the Bone, or Shell, the black Liquor or Humor, and the Eggs. The firſt is a teſtaceous Subſtance, white and ſmooth, and tumid on each ſide; on the upper Part it is ſomewhat hard, ſmooth and glabrous; on the lower, fungous, ſoftiſh, ſomewhat rough and friable. It grows on the Back of the Fiſh, and taſtes a little acrimonious.

This Subſtance dries and abſterges; cures Spots, Freckles, and the humid Itch; is good for the Eyes; removes Swellings in the Gums; gives Relief in the Aſthma; ſtops a Gonorrhœa; expels the Stone, and provokes Urine. The black Humor found in the Bladder within the Body, is ſaid to looſen the Belly; and the Eggs abſterge the Kidneys and Ureters, and provoke Urine and the Menſes. *Dale* from *Schroder.*

SEPIUM. The Bone or Shell of the *Sepium* before deſcribed.

SEPLASIARIUS. Properly a Seller of Perfumes, ſweet Balls, and Ointments; from *Seplaſia*, the Market-place of *Capua*, famous for thoſe Commodities; but it is, alſo, frequently uſed to ſignify one who deals in the *Materia Medica*; the ſame as MATERIALISTA, a Druggiſt or Apothecary.

SEPS. Offic. Jonſ. de Serp. 14. Charlt. Exer. 32. Geſn. de Serp. 118. Aldrov. Hiſt. Serp. 186. *Seps ſive Lacerta Chalcidica Columna.* Raii Synop. A. 272. Aldrov. de Quad. Ovip. 638. THE SERPENT SEPS.

This is a very poiſonous Serpent, about three Foot long, and proportionably thick, ſaid to be found in *Syria*, *Croatia*, and many other Countries. *Dioſcorides* informs us, that taken in Wine, it cures its own Bite. The Poiſon of its Bite acts like that of the Viper, and is cured by the ſame means.

SEPTA, according to *Blancard*, are Septic Medicines.

SEPTANA. A ſeptinary Fever; that is, one which performs its Period in ſeven Days.

SEPTENTRIO. The North. *Aquafortis* is, alſo, called by this Name. *Rulandus.*

SEPTICA. Putrefactive, or corroſive Medicines.

SEPTINERVIA. A Name for the *Plantago*; *latifolia*; *ſinuata.*

SEPTUM CORDIS. The Partition betwixt the two Ventricles of the Heart.

SEPTUM LUCIDUM. The thin Partition which divides the two lateral Ventricles of the Brain. See CEREBRUM.

SEPTUM NARIUM. The Partition betwixt the Noſtrils.

SEPTUM TRANSVERSUM. The Diaphragm.

SEQUESTRATIO, in Chymiſtry, is Separation.

SERANGODES, σηραγγώδης. Cavernous; having many Pores or Interſtices; ſpongy.

SERAPIAS. Salep. See ORCHIS.

SERAPINUS. Gum Arabic. *Rulandus.*

SERAPIUM. A Syrup.

SERBET. The ſame as SCHERBET.

SEREX. *Rulandus* explains this *Lac Acetoſum.*

SERGETICUM, σιργητικὸν. An Epithet in *Galen*, for the *Unguentum Irinum.*

SERJANIA.

This Name was given to this Genus of Plants by Father *Plumier*, who diſcovered them in *America*, in Honour to the Reverend Father *Philip Sergeant*, who was of the Order of the *Minims*, and a Perſon well verſed in the Knowledge of Botany and Phyſick.

The Characters are;

It hath a roſe-ſhaped Flower, conſiſting of four or more Leaves, which are placed in a circular Order; from whoſe Flower-cup ariſes the Pointal, which afterwards becomes a Fruit compoſed of three Cells, having three Wings, and each Cell containing one round Seed.

The Species are;

Serjania Scandens; Polyphylla et racemoſa. *Plum. Nov. Gen.*

Serjania Scandens; Enneaphylla et racemoſa. *Plum. Nov. Gen.*

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Serjania Scandens; Triphylla et racemosa. *Plum. Nov. Gen.*

These Plants were found by the late Dr. *William Houstoun*, at *La Vera Cruz* and *Campechy*; where they grow to a great Height, whenever they grow near large Trees to support them; for they have Tendrils by which they fasten themselves to whatever Trees grow near them. *Miller's Dict.*

SERICIACUM. Arsenic. *Rulandus.*

SERICUM. Silk. See BOMBYX. The red Jejube is, also, called *Sericum.* See ZIZIPHUS.

SERINUS. The Canary Bird; more remarkable for its Song, than any medicinal Virtues; though it is said to be good for the Epilepsy, if eaten.

SERIOLA. A Name for the *Cichoreum*; *latifolium*; *sive Endivia vulgaris.*

SERIPHIUM. A Name for the *Sisymbrium*; *annuum*; *folio Absinthii minoris.* A Species of Wormwood is distinguished by this Epithet.

SERIS. A Name for the *Cichoreum Sativum. Serides*, σερίδες, are esculent Pot-Herbs.

SEROSUS. Serous, aqueous, abounding with *Serum.*

SERPENS. See ANGUIS.

SERPENS INDICUS. See COBRA DE CAPELLO.

SERPENS MARINUS. Offic. Aldrov. de Pisc. 346. Gesn. de Aquat. 864. Rondel. de Pisc. 409. Bellon. de Aquat. 157. Sale de Aquat. 58. Jonst. de Pisc. 9. Charlt. de Pisc. 6. Raii Ichth. 107. Ejusd. Synop. Pisc. 36. *Serpens marinus quindecim Pedes longus*, Johns. Iter. Cant. 4to. 1632. p. 17. THE SEA SERPENT.

It is found in the *Mediterranean* Sea. The Flesh is said to cure Incontinence of Urine, if taken with Lily Root. *Dale.*

SERPENTARIA NIGRA. See ASARUM VIRGINIANUM.

SERPENTARIA VIRGINIANA. Offic. *Serpentaria Virginiana*, *Contrayerva Virginiana*, *Viperina.* Mont. Exot. Med. 7. *Tres Radices sub hoc nomine in Officinis nostris venerunt, ut nos monuit eruditissimus ille Botanicus*, Leonard. Plukenetius. *M. D. in Literis ad me datis, viz.* (I.) *Aristolochia polyrrhizos, auriculatis foliis Virginiana*, Pluk. Phytog. Tab. 78. Almag. 50. Tourn. Inst. 162. Raii Hist. 3. 393. (II.) *Aristolochia Violæ fruticosæ foliis Virginiana, cujus Radix Serpentaria dicitur*, Pluk. Phytog. T. 15. Almag. 50. Raii Hist. 3. 394. (III.) *Aristolochia, Pistolochia, seu Serpentaria Virginiana, caulenodoso.* D. Banister. Cat. MS. Raii Hist. 3. 394. Tourn. Inst. 162. *Aristolochia polyrrhizos Virginiana, fructu parvo pentangulari*, Hist. Oxon. 3. 310. *Pistolochia Virginiana*, Ger. Emac. 848. *(ubi confundit cum Pistolochia Cretica Clusii) Aristolochia polyrrhizos Virginiana*, Park. Theat. 420. *Radix Snagrolnothæ Creticus* (SNAKE ROOT *Novæ Angliæ*) Corn. 214. VIRGINIAN SNAKEWEED.

We have two or three Sorts of Roots, which are sold under this Name in the Shops; the first is the *Pistolochia, Virginiana Ger. Emac.* and the *Pistolochia Polyrrhizos, Virginiana, Park.* The second is figured by *Plukenett*, in his *Phytographia, Tab.* 15. And a third, whose Description was sent by Mr. *Banister* from *Virginia* to Mr. *Ray*, and is in the *Philosophical Transactions*, N°. 247. for *December* 1698; being to this Purpose.

The *Pistolochia*, or *Serpentaria Virginiana*, hath a bushy Root, consisting of a Number of small Strings of a yellowish Colour, and a hot aromatic Scent and Taste; thence grow one or two smooth or very little hairy Stalks, round and not square, upright and not trailing. The Leaves grow alternately on the Sides, and that one at a Joint. They are thin, long, and pointed, coming in like a Heart at the Foot-stalk; a little hairy above, and rough, with many protuberant Veins underneath, and in handling stick a little to the Fingers. Near the Ground grow one or two hollow Flowers, each upon its own Foot-stalk, terminating in a Heel, which supports a broad, round, galericulated Lip, the Center of which opens into the Hollow of the Flower. The Lip is of a light russet Colour. The Seed-Vessel is hexagonal, shap'd like a Pear, about half an Inch Diameter, when ripe. It grows in *May*, and the Seed is ripe in *August*. The Leaves and Stalks die in Winter.

Snake-Root is a Cordial, alexipharmic, and sudorific; good in all kinds of Fevers, particularly malignant and contagious Ones, and the Plague itself. It is carminative, expelling Wind, strengthning the Stomach, and helping the Colic. It cures the Bite of a mad Dog, and other venemous Bites, particularly that of the Rattle-Snake. *Miller's Bot. Off.*

It is given as a Diaphoretic in the Small-Pox, Measles, and to kill Worms. It is, also, Emmenagogue and Diuretic. The Dose is from ten Grains to a Dram. *Geoffroy.*

There is another Species of Snake Root, called the *Senekka Rattle-Snake-Root*, which is said to cure effectually the Bite of a Rattle-Snake, if taken immediately after it. The Bite of this Snake is sudden Death, for the most Part; that is, Death follows often in fifteen Minutes, sometimes sooner; and at other times the Patient may live some Days. The Reasons of these Differences, in the Time of Death, are various, such as the Season of the Year, Constitution of the Patient, and Part bit. Those that travel or hunt in the Woods, carry this Root powdered in their Shot-Bags, to chew and swallow as soon as they are bit by the Snake, the Stagnation of the Blood being prevented by its peculiar Activity.

A Nation of Northern *Indians*, called the *Senekkas*, were the Discoverers of the Efficacy of the Root of this Plant; they observing that the Root and Flowers resembled the Rattle of the Snake, concluded that Providence had impressed that Characteristic to point out its Use. From that *Indian* Nation this Root is named *Senekka Rattle-Snake-Root*, to distinguish it from the other Plants called Rattle-Snake-Root, which are much inferior in Efficacy. These *Indians* returning from a War with a southern Nation called *Catawbaes*, in the Year 1712, communicated the Efficacy of this Root to *William Caniko*, a Planter in the Frontiers of *Virginia*, which he imparted to the Country about him, and so it was soon known throughout *America.*

The Root of this *Senekka Rattle-Snake-Weed*, has since been used, as is said, with Success, in the epidemical Fevers of *Virginia*; in Pleurisies, Peripneumonies, Gout, and Rheumatisms, either in Decoction, Infusion, or Substance; and in these it should seem to be a good Medicine, if the Accounts we have of it could be depended on.

SERPENTARIUM *Lignum.* See COLUBRINUM LIGNUM.

SERPENTINA, a Species of STELLARIA. *Blancard.*

SERPHETA. The Name of a Medicine in *Paracelsus, Lib.* 2. *de Tart.* that will liquify the Stone.

SERPIGO. The same as HERPES or IMPETIGO, for both which Affections this Word is sometimes used.

SERPILLUM.

The Characters are;

The Leaves are broader than those of Thyme. The Stalks are procumbent, less woody and hard. Its other Characters very much resemble those of Thyme.

Boerhaave mentions six Sorts of *Serpillum*, which are;

1. Serpillum; vulgare; majus. *C. B. P.* 220. *Raii Synop.* 3. 231. *Boerh. Ind. A.* 133. *Tourn. Inst.* 197. *Serpyllum verum*, Offic. *Serpyllum majus*, Park. Theat. 8. Raii Hist. 1. 522. *Serpyllum majus flore purpureo & albo*, Ger. 456. Emac. 570. GREAT MOTHER OF THYME.

It is cultivated in Gardens, and flowers in Summer. The Herb, which is the Part used, provokes Urine and the Menses, and is good for the Gripes, Ruptures, Lacerations, and Inflammations of the Liver, eases Pains of the Head, and is particularly serviceable in Phrensies and Lethargies; stops Vomitings of Blood, and is good for the Bites of Serpents. *Dale from Dioscorides.*

2. Serpillum; vulgare; minus. *C. B. P.* 220. *Park. Theat.* 8. *Tourn. Inst.* 197. *Boerh. Ind. A.* 155. *Serpyllum* Offic. *Serpyllum vulgare*, Ger. 455. Emac. 570. Raii Hist. 1. 521. Synop. 3. 230. J. B. 3. 269. MOTHER OF THYME.

Mother of Thyme has a small, stringy, creeping Root, from whence spring a great Number of very slender, leaning woody Stalks, having two small, roundish green Leaves, set at a Joint on short Foot-stalks. The Flowers grow on the Tops of the Stalks among the Leaves, in small loose Spikes, whorle-fashion, labiated, but with a very small Galea, of a reddish Purple Colour, set in small hairy Calyces. The Leaves and Flowers have a strong pleasant Smell; it grows frequently upon Heaths and Commons, and flowers in *June* and *July*. The whole Herb is used.

Mother of Thyme is cephalic, stomachic, and uterine; good for the Palsy, Epilepsy, and green Sickness, promoting the Catamenia. It is good against catarrhous Defluxions, and old Coughs, and helps spitting of Blood. The distilled Oil is good for the Tooth-Ach. *Miller's Bot. Off.*

Mother of Thyme is a little bitter, acrid, stiptic, odoriferous, and stains the blue Paper with a pretty deep red. It is likely that it abounds with an aromatic and oily volatile Salt, but this Salt retains still a Part of the Acid of the Sal Ammoniac of the Earth; whereas, in the aromatic, oily, artificial, volatile Salt, the acid Part of the Sal Ammoniac has been stopt by the Salt of Tartar, or by the Ashes. Thus the Mother of Thyme is cephalic, stomachic, and good for the Vapours. It destroys the explosive Matter which causes convulsive Motions; it restores the spirituous Parts of the Blood, and re-establishes the Functions of the Primæ Viæ. Infuse all Night a Handful of Mother of Thyme in red Wine, strain the Infusion through a Cloth, and give it to drink fasting to those that have the Green-Sickness for seven or eight Days

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Days together, adding to each Doſe four or five Drops of eſſential Oil of Saſſafras: The Spirit of the Mother of Thyme, and its diſtilled Water, are very good for ſoporific Diſorders, and the Vapours. The eſſential Oil is commended for the Epilepſy, or the Water drawn from its Flowers, macerated in Aqua Vitæ, and diſtilled afterwards, for a Rheum or an old Cough; throw two great Handfuls of Mother of Thyme into one Quart of Water; let it give but one Boil; then take the Pot off the Fire, cover it, and add two Spoonfuls of white Honey to the Infuſion, or elſe pour a Quarter of a Pint of the ſame Infuſion boiling, into two equal Quantities of Cows Milk, and make the Patient drink it hot at nine o' Clock at Night. A Dram of the Powder of the Mother of Thyme is diuretic. The Conſerve of the Flowers and Leaves of this Plant relieves thoſe that are troubled with the Falling-Sickneſs. *Martyn's Tournefort.*

3. Serpillum; vulgare; minus; folio ex albo & viridi vario.

4. Serpillum; anguſtifolium; hirſutum. *C. B. P.* 220.

5. Serpillum; Africanum; hirſutiſſimum. *Vaill.*

6. Serpillum; foliis Citriodore. *C. B. P.* 220. *Tourn. Inſt.* 197. *Boerh. Ind. A.* 155. *Serpyllum citratum*, Offic. Ger. 458. Emac. 573. Park. Theat. 6. Raii Hiſt. 1. 522. Synop. 3. 231. *Serpyllum Citriodore.* J. B. 3. 270. LEMON THYME.

It grows in hilly Places, and flowers in *Auguſt*, and agrees in Virtues with the other Species of *Serpillum.*

SERRA, a Saw, a chirurgical Inſtrument uſed in Amputations; there are two Sorts, the greater Saw, which is uſed in cutting off a Limb, as an Arm, or a Leg; and the leſſer, which is employed in taking off a Finger or Toe.

SERRATA. A Name in *Blancard* for the CHAMÆDRYS.

SERRATULA.

The Characters are;

The Margins of the Leaves are much, and minutely ſerrated; the Heads are ſmaller than thoſe of the greater Centaury.

Boerhaave mentions five Sorts of *Serratula*, which are;

1. Serratula. *Offic. C. B. P.* 235. *J. B.* 3. 23. *Raii Hiſt.* 1. 331. *Synop.* 88. *Boerh. Ind. A.* 144. *Serratula purpurea*, Gen. 576. Emac. 713. *Serratula vulgaris flore purpureo*, Park. 474. *Jacea nemorenſis, quæ Serratula vulgo* Tourn. Inſt. 444. SAW-WORT.

It grows in Woods and Meadows, and flowers in *July.* It is eſteemed vulnerary, and is ſaid to mundify Ulcers, and promote the Generation of Fleſh therein; to mitigate the Pains of the Hæmorrhoides, and to cure an Inteſtinal Rupture. The Herb and Root are recommended in Caſe of Bruiſes in Falls from Eminences.

2. Serratula; flore candido, *C. B. P.* 235. *Jacea nemorenſis, quæ Serratula vulgo, flore albo.* T. 444.

3. Serratula; Virginiana; foliis rigidis. *Par. Bat.* 227. *Ic. & Deſcr. M. H.* 3. 133.

4. Serratula; Noveboracencis; altiſſima; foliis Doriæ mollibus, ſubincanis. *Par. Bat. Prodr. M. H.* 3. 133.

The following Species is elegantly crowned with a hairy Crown.

5. Serratula; annua; ſemineciliari elegantiſſimo. *Jacea, annua, foliis laciniatis, ſerratis, purpuraſcente flore.* T. 444. *Cyanus, pulchro ſemine Centaurii majoris*, J. B. 3. 24. *Centaurium capitatum, ciliare, annuum, foliis laciniatis, ſerratis*, M. H. Blæf. 362. Chandrilla, *foliis laciniatis ſerratis, purpuraſcente flore.* C. B. P. 130. *Senecio-Carduus, Apulus.* Col. 1. 34. *Boerh. Ind. alt. Plant. Vol.*

SERRATUS MAJOR.

This is a broad, fleſhy, and pretty thick Muſcle, lying on the lateral Part of the Thorax, between the Ribs and the Scapula, by which it is covered. Its Figure is that of an irregular Square, its greateſt Breadth being in the Back-Part, where it terminates by Digitations of unequal Lengths, in a radicated Diſpoſition, their Extremities deſcribing an Arch or Curve; and from theſe Digitations its Name is taken.

It is inſerted backward in the internal Labium of all the Baſis of the Scapula, from the ſuperior to the inferior Angle. From thence running forward wholly fleſhy, it increaſes gradually in Breadth, is inſerted in all the true Ribs, and often in one or two of the falſe Ribs, by the ſame Number of Digitations.

The Inſertion in the firſt true Rib is about five Fingers Breadth from the Cartilage; in the ſecond, ſomething leſs; in the third, about four Fingers Breadth; the fourth, three; in the fifth, two; in the ſixth, one; in the ſeventh, one half; and in the firſt falſe Rib, two Fingers Breadth; but in all theſe Meaſures, ſome Latitude is to be allowed. The Breadth of each Inſertion in the Ribs, is at leaſt an Inch.

Tho' the Digitations of this Muſcle give it a radiated Appearance from the Scapula to the Ribs, yet theſe Radii do not at all lie in that Diſpoſition which at firſt Sight we would be ſubject to imagine. The Muſcle is made up of two Planes, the one great, the other ſmall.

The ſmall Plane looks like a diſtinct, narrow Muſcle, cloſely adhering to the ſuperior Edge of the great Plane. It is fixed by one Extremity under the ſuperior Angle of the Scapula, and by the other to the firſt Rib, by a ſmall Inſertion, and to the ſecond Rib, by a broad Inſertion. This Plane is eaſily ſeen by turning the Scapula forward, having firſt ſeparated the *Rhomboides*; but when that is turned back, the *Pectoralis minor* being firſt cut off, this Plane does not appear, being covered and hid by the broad one.

The broad Plane may be divided into two Portions, one ſuperior and one inferior, adhering to each other by their Edges.

The ſuperior Portion is thin, and takes up about three Quarters of the Baſis of the Scapula, reckoning from the ſuperior Angle. From thence it contracts, by ſmall Degrees, and forms two Digitations, very like thoſe of the ſmall Plane, which they cover by their Inſertions in the two firſt true Ribs, or in the ſecond and third, and ſometimes in all the three.

The inferior Portion is fixed in the lower Quarter of the Baſis Scapulæ, from whence it expands itſelf by ſix or ſeven very long fleſhy Digitations, which decreaſe in Breadth as they deſcend and are inſerted in the Manner already ſaid, in the ſix or ſeven Ribs which follow the two firſt. It muſt be obſerved, that the three firſt Digitations take up almoſt all this Quarter of the Baſis Scapulæ, the three laſt being fixed preciſely in the inferior Angle. The Extremities of the three or four loweſt Digitations mix Fibres with thoſe of the *Obliquus externus* of the Abdomen.

The Direction of the Fibres and Digitations of the *Serratus major*, will be eaſily comprehended, by recollecting, that the Ribs are inclined downward in different Degrees from behind forward; for which Reaſon the Fibres of the ſuperior Portion of the broad Plane, croſs over the Ribs at leſs acute Angles than thoſe below them, ſo that in the natural Situation of the Scapula, the loweſt of theſe Fibres which run up very obliquely croſs over the third, fourth and fifth true Ribs.

The upper Fibres of the inferior Portion of the broad Plane, run up proportionably more obliquely, and therefore croſs over more Ribs, and at more acute Angles than the others, which are leſs oblique; and tho' ſome of theſe run tranſverſely, yet the Ribs being oblique, they muſt croſs over ſome of them, tho' in a leſſer Degree. The loweſt of theſe Fibres or Digitations run a little downward, and conſequently fall in more with the Direction of the Ribs, but not ſo much as may be imagined. Theſe Digitations are very ſmall and weak.

The *Serratus major* raiſes the Shoulder or Top of the Scapula, brings it forward, and hinders it from ſinking. In all theſe, it is the principal Actor; and it is impoſſible to conceive how Labourers raiſe and ſupport, by the Shoulder alone, the heavy Burdens with which they are loaded, without the Aſſiſtance of this Muſcle.

The Thickneſs, Length, and particular Diſpoſition of its Fibres, but above all, the Inſertion of the greateſt Portion of them, near the Angle of the Baſis Scapulæ, prove ſufficiently what I advance; and the general Action of the radiated Portions is to draw the inferior Angle from the Spina Dorſi, toward the lateral Parts of the Thorax.

The uppermoſt and ſtrongeſt Portions pull this Angle upwards at the ſame time, and conſequently raiſe the Acromium, which cannot be puſhed forward, by reaſon of its Connexion with the Clavicula.

Theſe ſuperior Portions croſs over the greateſt Part of the true Ribs; and accordingly, in raiſing great Burdens, we find ourſelves obliged to hold in our Breath, that is, to leſſen Expiration as much as we can, in order to fix the Ribs, and to hinder them from ſinking, that they may ſerve for a ſolid Fulcrum to this Muſcle, in Proportion to the Force with which it acts.

The next Portions run according to the Length of the Ribs, and conſequently do not much conſtrain them in their reciprocal Motions, not being in a Condition either to raiſe or depreſs them; and the moſt inferior and weakeſt Portions are only Aſſiſtants to the reſt, in bringing the lower Angle of the Scapula forward, toward the lateral Part of the Thorax.

The ſmall diſtinct Plane (above deſcribed) is not an Aſſiſtant to the radiated Portions or inferior Part of the great Plane. It ſeems deſigned to regulate the Motion of the ſuperior Angle backward and downward, while the inferior is carried forward and upward by the radiated Portions; and when their Action ceaſes, to bring the Scapula back to its natural Place.

The ſuperior Portion of the great Plane is an Aſſiſtant partly to the radiated Portion, and partly to the ſmall Plane, according

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according to the different Places of its Inſertions in the Baſis of the Scapula.

From all this we ſee, that the principal Uſe of the *Serratus major* is to raiſe the Shoulder, and not for Reſpiration. When both Planes act together, this Muſcle may in ſome Caſes bring the Shoulder directly forward, or rather hinder it from going back; as when we puſh any Thing with great Force directly forward, with the Hand, eſpecially when the Arm is extended. *Winſlow's Anatomy.*

SERRATUS MINOR ANTICUS. *Douglas* deſcribes this Muſcle in the following Manner:

It ariſes tendinous from the *Proceſſus Corocoides Scapulæ*, but ſoon grows fleſhy and broad, and is inſerted tendineo-carnous into the lower Edge of the bonny Part of the third, fourth and fifth Rib.

Its Uſe is either to aſſiſt the *Serratus major*, or to draw the Scapula forwards.

SERRATUS POSTICUS SUPERIOR.

This is a flat thin Muſcle, ſituated on the upper Part of the Back. It is fixed on one Side by a broad Aponeuroſis to the lower Part of the poſterior cervical Ligament, and to the ſpinal Apophyſes of the two laſt Vertebræ of the Neck, and two firſt of the Back.

From thence it runs down a little obliquely forward, and is inſerted by broad fleſhy Digitations, in the poſterior Part of the ſecond, third, fourth, and ſometimes the fifth, true Ribs, near their Angles; but ſometimes it has no Inſertion in the ſecond Rib. It is covered by, and cloſely united with the Rhomboides.

The Serratus Poſticus ſuperior, is diſpoſed to move upwards the three or four upper Ribs next the firſt: And if any Portion of this Muſcle ſhould be obſerved to be inſerted in the firſt Rib, that could only ſerve for the Motion of the Vertebræ, with which that Rib is articulated, and not for the Motion of the Rib itſelf, becauſe of the Stiffneſs and Immobility of its cartilaginous Portion.

SERRATUS POSTICUS INFERIOR.

This is a flat, thin Muſcle, lying on the lower Part of the Back. It is fix'd in the laſt ſpinal Apophyſis of the Back, and in the three firſt of the Loins by a broad Aponeuroſis; from thence it runs up a little obliquely, and is fix'd by fleſhy broad Digitations in the laſt four falſe Ribs: Its Inſertion in the loweſt Rib is near the Cartilage, and in the other three near their Angles. It is covered by the Latiſſimus Dorſi, to which it adheres very cloſely, and it covers the Sacro-Lumbaris and Longiſſimus Dorſi.

The Serratus Poſticus inferior, is better diſpoſed for depreſſing and keeping down the laſt three or four falſe Ribs than the Serratus Poſticus ſuperior.

The Uſe which has been aſſigned to theſe two Muſcles, of being Vaginæ, or moveable Fræna, to the Longiſſimus Dorſi and Sacro-Lumbaris, is without Foundation; for the Portions of theſe Muſcles covered by the Serrati, have no more Need of ſuch a Contrivance, than thoſe which are not covered by them. *Winſlow's Anatomy.*

SERRIOLA. A Name in *Blancard* for the CICHOREUM.

SERTOLARA. A Name in *Boerhaave* for the *Opuntioïdes marina*; *quæ Corallina latifolia, & Opuntia marina.*

SERTULA, *Campana.* The ſame as MELILOTUS.

SERVITUS, δουλεία, Subſerviency, is ſpoken of the Functions and Uſes of the Parts which are ſubſervient to others. Theſe ſubſervient Parts are diſtinguiſhed into *Preparatory* and *Deferent*; the *Preparatory*, for Inſtance, with reſpect to the Teſticles, are the *Vaſa Spermatica Præparantia*: The *Deferent* are the *Penis* and *Vaſa Deferentia.*

SERUM. Whey. The thin Part of the Blood is, alſo, called its *Serum.* See ALBUMEN, LAC, and ALIMENTA.

SESAMION, σησάμιον, or, σησαμὶς, a Sort of Cake prepared of Seſamum, Honey, and Oil. *Foeſius.*

SESAMOIDEA OSSA. The Seſamoide Bones.

The ſeſamoide Bones, in general, are very ſmall, being denominated from a Seed to which they are ſuppoſed to bear a Reſemblance. Several ſuch Bones are found in the Joints both of the Toes and Fingers.

Two of them, however, are big enough to be preſerv'd in Sceletons. They reſemble a large, flat, oval Pearl, hollow'd on one Side.

They are about the third Part of an Inch in Length, and half as broad as long; and they are connected near each other, by a ſmall, ſhort Ligament, to the Baſis of the firſt Phalanx of the great Toe, ſo as to ſlide on each Side of the middle Eminence of the double Pulley in the firſt metatarſal Bone, like two ſmall Patellæ.

Though they are generally faſten'd in Sceletons, to the firſt Bone of the Metatarſus, they nevertheleſs belong only to the firſt Phalanx of the great Toe, as the Patella belongs not to the Os Femoris, but to the Tibia. *Winſlow's Anatomy.*

SESAMOIDES.

The Characters are;

The Leaves are oblong and intire, and the Flower is like that of the *Reſeda.* The Fruit conſiſts of a Congeries of little Pods, Horns, or Rays, full of a Kidney-ſhap'd Seed.

Boerhaave mentions but one Sort of *Seſamoides*, which is, the Seſamoides; ſalmanticum; parvum. 1. *Cluſ. H.* 296. *Boerh. Ind. Alt. Plant. Vol. I.* See CATANANCE.

Botaniſts have not determin'd what the *Seſamoides* is, which is frequently order'd by *Hippocrates* to be us'd with black Hellebore. *Dioſcorides* deſcribes it in the following Manner.

The *Great Seſamoides* in *Anticyra* goes by the Name of *Hellebore*, becauſe it is mixed with white Hellebore in Purges. It is an Herb like Senecio, or Rue, with long Leaves, a white Flower, a ſlender and inefficacious Root, a Seed like that of Seſarnum, and of a bitter Taſte.

A Pugil of the powder'd Seed, with a Scruple and an half of white Hellebore, taken in Hydromel, purges Bile and Phlegm by Vomit. *Dioſcorides, Lib.* 4. *Cap.* 152.

SESAMUM.

The Characters are;

The Root is annual; the Calyx proceeds from the Wings of the Leaves, almoſt without a Pedicle, and is ſmall, and conſiſting of five long, ſlender Segments; the Flower is monopetalous, and much reſembles that of *Digitalis.* The Ovary is ſiliquous, tetragonal, oblong, divided into four Cells, which are full of many eatable Seeds.

Boerhaave mentions three Sorts of *Seſamum*, which are; 1. Seſamum, *Offic. I. B.* 2. 896. *C. B. P.* 27. *Raii Hiſt.* 2. 1327. *Park. Theat.* 254. *Seſamum vel Siſamum*, Ger. 1054. Emac. 1232. *Seſamum ſeu Semp. ſen* Alpin. Ægypt. Vol. II. p. 47. *Digitalis Orientalis Seſanum dicta*, Tourn. Inſt. 164. *Seſamum congentibus Gangya, Luſitanis Girgilium*, Mareg. 21. *Gangila ſive Seſamum Africanum*, Piſon. 111. *Schit-Elu*, Hort. Mal. 9. 105. Tab. 54. *Tela* Herm. Muſ. Seyl. 58. OILY PURGING GRAIN.

It is heating, moderately moiſtening, emollient, and paregoric; and is of a viſcous, pinguious, and conſequently of an emplaſtic Quality. It diſcuſſes a Hardneſs of the Nerves, being rubbed therewith, and cures the Pain of the Cholic. *Dale* from *Schroder.*

Seſamum is very much uſed by the *Egyptians*, both in Food and Medicine, becauſe it is of quick Growth, as are other Fruits after the Inundation of the *Nile*, and very well rewards the Planter for his Pains by the Fullneſs of its Pods, which never fail. *Parkinſon*, I know not from what Author, ſays, that Seſamum grows ſpontaneouſly in the *Eaſt-Indies*, but that it is cultivated in *Egypt*, *Syria*, *Greece*, *Crete* and *Sicily.* The *Arabians* call the expreſſed Oil of the Seeds *Zeid taib*, that is, *good Oil*, by way of Eminence; becauſe it is of very frequent Uſe in Meats; and in *Egypt* it is ſold dearer than Oil of Olives.

Margrave deſcribes this Plant with a tender ſtrait Root, furniſhed with numerous Filaments, reddiſh on the Outſide, and white within, if he does not miſtake the Plant.

I am of Opinion, ſays *Ray*, with *J. Bauhine* and *Stapel*, that this Plant is not the true *Seſamum* of the *Antients*; and, therefore, it is to be doubted, whether the Virtues aſcribed to the *Seſamum* by *Dioſcorides*, really belong to it; we ſhall, therefore, omit them, and only inſert thoſe which *Proſper Alpinus*, in his Book of *Egyptian* Plants, aſcribes to the *Seſamum.*

The Decoction of this Plant is uſed, he ſays, in Fomentations for Ophthalmies, Coughs, Difficulty of Breathing, Pleuriſy, Peripneumony, and hard ſcirrhous Tumors. It is of Service, particularly to the Women, for Inſeſſions, in Hardneſs of the Uterus: It is of Uſe, alſo, in ſcald Heads, and Sugillations. The Plant and its Seeds boiled with Honey, are of Service in Dryneſs of the Nerves, Combuſtions, and hot Inflammations. The Decoction is of Uſe in Clyſters for the Cholic, to render the Belly ſoluble, and to promote the menſtrual Diſcharges. The Women very commonly drink the Oil and its Lees, in their Baths, in order to grow fat. The Oil ſerves the *Egyptians* for many other Purpoſes, as for Puſtules, Aſperities, and all other cutaneous Deſedations from a melancholy Humour, being either drank, frequently taken with Food, or apply'd externally to the Parts affected. Four Ounces thereof taken in the Morning, for many Days together, is an Arcanum with ſome for Itchings of the Skin, Difficulty of Breathing, deſperate Pleuriſies, Peripneumony, for provoking the Menſes, and as a Demulcent both

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both inwardly and outwardly, for violent Pains of the Stomach, Inteſtines and Uterus. *Raii Hiſt. Plant.* 1327.

2. Seſamum; alterum; foliis trifidis; Orientale; ſemine obſcuro. *Plukn. Phyt.* 169. 4. *Digitalis, Orientalis, altera, ſemime obſcuro.* T. 165.

3. Seſamum; Orientale; trifidum; flore niveo. *Hort. Compt. T.* 165. *Digitalis, Orientalis, trifida, flore niveo.* T. 165. *Boerh. Ind. Alt. Plant.*

This Plant is very ſerviceable, being uſed by Way of Fomentation, in the Pleuriſy, Ophthalmy, and ſcirrhous Tumors; and adminiſter'd in Clyſters, is good for the Cholic. The *Indians* extol it above all Plants, becauſe it procures, as they ſay, Beauty and Graceſulneſs to the Body; for their Women anoint themſelves with Oil of Seſamum, which clears the Face of all Spots contracted by Sun-burning, or otherwiſe. The Fruit is very nutritive and eatable, and with an Addition of Poppy-Seeds, is made into Cakes. The Oil is the ſofteſt of all Oils, and is, therefore, proper in all hot Diſeaſes. *Hiſt. Plant. aſcript. Boerhaave.*

SESBAN.

The *Seſban* is a Shrub of the Bigneſs of the Myrtle, with the Leaves of the *Securidaca*, only longer and narrower, with nearly an equal Number of tender herbaceous Branches on each Side, if the Plant be pretty well grown. Theſe Branches are of a watery green, ſomewhat inclining to red, and have ſomething of a Roughneſs to the Touch. The Flowers are of a Saffron-Colour, very like thoſe of the Anagyris, and hang in Bunches from a ſmaller Branch or Spray. From theſe Flowers are produced long Pods, nearly reſembling thoſe of Fenugreek, and containing Seeds not much unlike the Seeds of that Plant. The Pods, as *Veſlingius* obſerves, are divided into diſtinct Cells, according to the Number of Seeds they contain; and the ſame Author obſerves, that the Trunk of this Shrub is armed with rare and ſhort Spines, for which Reaſon the *Egyptians* plant the *Seſban* in Hedges, which ſerve to ſeparate their Fields.

The Seeds are ſaid to corroborate and dry a too humid Stomach, and to reſtrain all manner of Fluxes of the Belly, and to be no leſs ſerviceable in repreſſing an immoderate Flux of the Menſes, whether they be taken in Decoction or Powder. *Proſper Alpinus. Veſlingus.*

Moriſon, in his *Hiſtor. Oxon.* blames *C. Bauhine* and *Parkinſon*, for deſcribing this Plant with articulated Pods, when they did not clearly underſtand what an articulated Pod, properly ſpeaking, was; for an articulated Pod, he ſays, is divided tranſverſely into many Joints, diſtinguiſhed by their Interſtices; each Interſtice, when the Pod is dried and broken, containing a ſingle Seed.

As for our part, ſays *Ray*, we never yet ſaw this Plant; nor did *Moriſon* himſelf ever ſee it, as he owns; and therefore we cannot tell whether its Pods are really articulated, or only nodous or protuberant, where the Seeds are, and depreſſed or narrowed in the Interſtices. *Raii Hiſt. Plant.*

SESCUNCIA, or SESQUIUNCIA. Half an Ounce.

SESELI.

The Characters are;

The Root is perennial, in the laſt biennial; and the Leaves are wider and ſhorter, and the Seeds longer than thoſe of Fennel.

Boerhaave mentions four Sorts of *Seſeli*, which are,

1. Seſeli; perenne; folio glauco breviori. *Boerh. Ind. A.* 50. *Fœniculum ſylveſtre*, Offic. *Fœniculum ſylveſtre perenne. Ferulæ folio breviori*, Tourn. Inſt. 311. *Meum latifolium adulterinum*, C. B. P. 148. *Meum alterum Italicum quibuſdam*, J. B. 3. 15. Raii Hiſt. 1. 433. *Meum ſpurium*, Ger. 895. *Meum alterum Italicum*, Ger. Emac. 1152. *Meum ſpurium Italicum*, Park. Theat. 889. *Saxifraga montana minor Italica, foliis in breviores partes diviſis*, Hiſt. Oxon. 3. 272. BASTARD SPIGNEL.

It grows on dry Hills, and flowers in *June*. The Root, which is in Uſe, is of a very dry and burning Quality, and offenſive to the Stomach. Outwardly it is an Eſcharotic.

2. Seſeli; perenne; folio glauco longiori. *Vaill. Fœniculum ſylveſtre, elatius, Ferulæ folio longiori.* T. 311. *Saxifraga Matthioli, tenuifolia, & umbellifera*, J. B. 3. 2. 18.

3. Seſeli; quæ Ferulæ facie, Thapſia, ſive Turbith Gallorum. *J. B.* 3. 2. 45. *Boerh. Ind. A.* 50. *Turbith cinericium, Pſeudo-Turbith*, Offic. *Thapſia ferulæ facie, ſive Turbith Gallorum*, Raii Hiſt. 1. 420. *Thapſia fœniculi facie*, C. B. P. 148. Park. Theat. 877. FRENCH TURBITH.

It is found in the Mountains of *Aquitain*, and the Root, which is the Part uſed, agrees in Virtues with the *Thapſia*.

4. Seſeli; quæ Saxifraga Pannonica, Cluſii, *H.* 196. *Saxifraga montana, minor, multifido folio, Pannonica*, M. H. 3. 273. *Daucus montanus, multifido brevique folio*, C. B. P. 150. *Boerh. Ind. Alt. Plant.*

The Name *Seſeli* is ancient, but given to ſo many Plants, that there is no End of them. *Lobel* firſt called it *Meum Adulterinum*, by which Name it has been called almoſt by every one ſince; and *Moriſon* reckons it among the *Saxifrages*. There is nothing of it uſed in Medicine but the Root, which purges in a very violent manner both upwards and downwards. Outwardly it is uſed in Ointments in all cutaneous Diſeaſes. *Seſeli* is not ſo ſweet ſcented as Fennel. *Hiſt. Plant. aſcript. Boerh.*

SESELI is alſo a Name for ſeveral Sorts of SILAUM.

SESELI ÆTHIOPICUM. Offic. *Seſeli Æthiopicum frutex*, Ger. 1233. Emac. 1241. Raii Hiſt. 1. 476. Park. Theat. 907. *Seſeli Æthiopicum ſalicis folio*, C. B. P. 161. *Seſeli Æthiopicum fruticoſum, Periclymeni folio*, J. B. 3. 197. *Bupleurum arboreſcens, Salicis folio*, Tourn. Inſt. 310. Boerh. Ind. A. 71. SHRUB HARTWORT.

It is ſometimes to be met with in the Gardens of the Curious, and flowers in *Auguſt*.

The Seed is much more acrimonious and ſcented than that of the *Seſeli Maſſilienſis*; whence it is ſuppoſed to have ſome extraordinary Virtues.

SESELI ÆTHIOPICUM is, alſo, a Name for the *Laſerpitium*; *foliis latioribus*; *lobatis*.

SESELI CRETICUM. A Name for the *Tordylium*; *Narbonenſe*; *minus*; and for the *Tordylium*; *Apulum*; *minimum*.

SESELI MARITIMUM. A Name for the *Liguſticum*; *Scoticum*; *Apii folio*.

SESELI MASSILIENSE. Offic. Raii Hiſt. 1. 414. *Seſeli Maſſilienſe alterum*, Ger. 894. Emac. 1051. Park. Theat. *Seſeli Maſſilienſe, Ferulæ folio*, C. B. P. 161. *Seſeli Maſſilienſe nuperorum, folio aliquatenus ſimili Viſnagæ*, J. B. 3. 33. *Libanotis Maſſilienſis, Ferulæ folio*, Hiſt. Oxon. 3. 310. ITALIAN HARTWORT.

The Part uſed is the Seed, which is of principal Service in Diſeaſes of the Head, the Epilepſy, Weakneſs of Sight, Convulſions, and the like, and in Affections of the Breaſt and Lungs, Coughs, Catarrhs; alſo, in Obſtructions of the Liver, Dropſy, Crudities of the Stomach, in the Stone of the Kidneys and Bladder, and in a Stoppage of the Menſes. It is a ſpecific Remedy againſt the *Cicuta*. *Dale*, from *Schroder*.

SESELI MASSILIENSE is, alſo, a Name for the *Fœniculum*; *tortuoſum*.

SESELI MONTANUM. A Name for the *Oreoſelinum*; *Apii folio majus*.

SESELI PALUSTRE. A Name for the *Thyſſelinum*; *paluſtre*.

SESELI PELOPONENSE. A Name for the *Cicutaria*; *latifolia*; *fœtida*.

SESELI PYRENAICUM. A Name for the *Apium*; *Pyrenaicum*; *Thapſiæ facie*.

SESELI VULGARIS. A Name for the *Siler*; *montanum*; *majus*.

SESQUI. This Word, joined with any Number, Weight or Meaſure, ſignifies one Integer and an half.

SESQUIALTERUM. The ſame as HEMIOLIUM. *Seſquialtera*, in *Helmont*, is a ſort of irregular or compound Fever.

SESQUIHEMINA. An *Hemina*, and an half.

SESQUILIBRA. A Pound and an half.

SESQUIOBOLUS. An *Obolus* and an half.

SESQUIPLUM. The ſame as HEMIOLIUM.

SESQUISEXTARIUM. A Sextary and an half.

SESQUIUNCIA. An Ounce and an half.

SESSILIS. An Epithet for that Species of Wart called MYRMECIA.

SETACEUM. A Seton.

Mr. *Bernard* obſerves, that a Seton was deſcribed by *Lanfranc* four hundred Years ago. Dr. *Freind* adds, that *Roland*, who lived earlier in the Thirteenth Century, not only mentions the Thing, but uſes the very Word, and gives a Deſcription how the Needle with the Thread ſhould be paſſed.

Camanuſali, a Phyſician of *Baldach*, or *Bagdet*, who, at the lateſt, lived before that City was taken by the *Tartars* in one thouſand two hundred and fifty eight, mentions a Seton twice in the Cure of a Cataract, and what he calls the Lunella, an Impoſtume between the Cornea and the Uvea.

Dr. *Freind* thinks, that *Albucaſis* deſcribes the Operation plainly, where he treats of cauterizing the Arm-pit, for a Diſlocation of the Shoulders, when it ariſes from too great a Flux of Humors, and makes uſe of a Cautery, which has two or three Spits or Branches very ſmall and ſharp, and runs into the Skin till it comes out on the other ſide.

The ſame Method he uſes in Tumors of the Spleen, and adviſes that the Ulcers ſhould be kept running for a long time.

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Franciſcus Pedemontanus, who was Phyſician to *Robert* King of *Sicily*, about one thouſand three hundred and ten, tranſcribes the Words of *Albucaſis*, in ſpeaking of a Diſlocation in the ſame Place. The Diſcourſe of *Rhazes* concerning Cauteries, makes it clear, that it was a familar Practice in his Age. He deſcribes the ſeveral Places it ſhould be made in; as in the Neck, between the Ribs, in the Belly, *&c.* and for what Diſtempers, *&c.* The Tranſlator calls it *Sectorium*; and theſe Ulcers, he ſays, muſt be kept open *cum tentis & petiis*; which is as plain a Deſcription of a Rowel, or a Seton, as Words can expreſs. For Pains in the Ears, Eyes or Teeth, he particularly adviſes one to be made either in the Middle or Pulp of the Ear, and the Running to be continued as long as it can.

Dr. *Freind* is of Opinion, that the Hint of a Seton was firſt taken from the Cattle-Doctors, and quotes a Deſcription of it from *Columella*, who wrote in *Claudius*'s Time, aud ſays this Method is ſtill in Vogue amongſt the Herdſmen. What is propoſed by *Columella*, is, with regard to the Plague, or ſome epidemical Infection amongſt Cows; and we find Iſſues were afterwards applied to the humane Body in the ſame Diſtemper; firſt by *J. Arculanus*, who flouriſhed in the 15th Century; and after his Example, many Phyſicians in the ſucceeding Age recommended them as the moſt effectual Preſervatives in that terrible Diſeaſe.

In the Time of *Albucaſis*, and for ſome hundred Years after, the way of making a Seton was always by a Cautery. *Hollerius* was one of the firſt who made it with a Needle unheated; which makes it ſurpriſing, that *Hildanus* ſhould ſo long after deſcribe it as an Invention of his own. However, there ſeems to be ſome Ground for the Criticiſm of *Severinus*, that by the Word *Sectorium*, uſed in the Tranſlation of *Rhazes*, it is implied that it was not done by Uſtion; and indeed it is plain, that *Rhazes* diſtinguiſhes the two ways of performing this Operation, either by Burning or Cutting, and ſometimes by both jointly; and in the Article where he orders a Seton to be cut between the Navel and the Clavicle, for an Aſthma, Phthiſis, Pleuriſy, *&c.* he adds, that a Cautery likewiſe may be applied in the ſame Place, for the ſame Complaints. *Freind Hiſt. Phyſ.*

When a few Horſe-Hairs, a Thread, or Linnen Cord, are drawn through the Skin, particularly in the Neck, with a kind of large Needle, it is called a Seton. There are three Methods of performing this Operation. Firſt the Surgeon takes up the Skin at the lower Part of the Neck, and an Aſſiſtant lays hold of it about an Inch higher, both keeping it tight; then the Surgeon paſſes a large broad crooked Needle (See Tab. 39. Fig. 12. or Tab. 43. Fig. 9.) armed with a Cord of Linneh, Silk or Cotton, or with a long narrow Piece of Linnen, or with twenty or thirty Linnen or Cotton Threads, gently twiſted together, (Tab. 42. Fig. 17.) thro' the Skin, and removing the Needle, leaves the Thread behind. Then the Wound muſt be dreſſed with ſome digeſtive Ointment, and over each Orifice, by which the Thread is tranſmitted, apply a Plaiſter; and thus the Seton is compleated, which derives its Name from *Setæ Equinæ*, or Horſe-Hairs, that were uſed by the Ancients for this purpoſe; in the Room of which the Moderns ſubſtituted Linnen or Cotton Threads, as occaſioning leſs Pain to the Patient. The Cord muſt be twice a Day, in the Morning and Evening, drawn firſt a little on one Side, and then on the other; and the Matter which is by theſe means diſcharged, as in an Iſſue, muſt be wiped off. Thus will it become an Ulcer wirh a double Orifice, daily emitting a large Quantity of purulent Mattee; and this ought to be continued ſo long as the Diſorder of the Patient requires. When the Cord becomes foul, a new one may be faſtened to the End of it, and by drawing the old one out, the new one be gently introduced in its ſtead.

The ſecond Method differs little from the firſt, except that in Place of a Needle, the Wound is made with a double-edged Kniſe; (See Tab. 22. Fig. I. or B.) and the Cord is introduced by a Probe. Thus the Kniſe making a larger Wound than the Needle, a groater Quantity of Matter may be diſcharged. For the more convenient Peformance of this Operation, uſe an Inſtrument fitted with a Handle, like that in Tab. 44. Fig. 5. for when it has pierced the Skin to the Part B. the Cord or Thread may be drawn out at the Aperture A. and by drawing the Inſtrument back out of the Wound, it may be left behind.

The third Method of performing this Operation, is with a peculiar Inſtrument, as exhibited by *Bartiſch*, *Andreas a Cruce*, *Hildanus*, *Fabricius ab Aquapendente*, and *Glandorp*; while the Skin is held tight by it, a Perforation is made with a ſharp-pointed red hot Iron, and then the Cord is introduced: As this Method of Operation occaſions violent Pain, and great Suppuration, it has been preferred as the moſt effectual, by eminent Phyſicians, for cauſing a copious Revulſion of ſuper-abundant, peccant Humours from the Eyes, and other principal Parts of the Head.

Some think a Seton made longitudinally in the Neck is preferable to the tranſverſe. But though I have purpoſely tried this Method, I never could diſcover its Advantage over the other; but always found the Operation more difficult, as the Skin cannot be ſo eaſily raiſed tranſverſely as longitudinally, nor the Needle or Kniſe be ſo conveniently introduced. In executing this Method, the Head is to be inclined backwards, and the Skin being taken up, muſt be perforated with a very crooked Needle, (See Tab. 43. Fig. 9.) But the Operation may be the more conveniently performed, by laying hold of the Skin with a Forceps, than with the Fingers, ſuch as is made for the Polypus of the Noſe, having two oblong Perforations towards the Extremities, (ſee Tab. 40. Fig. 10.) through which the Perforation of the Skin may be made.

Dionis, *Garangeot*, and others, think a Seton of little or no Benefit in the Cure of Diſeaſes. On the other hand, many ſkilful Phyſicians have regarded it as a moſt excellent Remedy againſt obſtinate Diſeaſes, particularly of the Head, as Drowſineſs, Head-Achs, Epilepſies, and Diſorders of the Eyes. And as a plentiful Revulſion is, by this Operation, made of the ſuperfluous corrupted Humours, from the Head to the Neck, it is not ſurpriſing that ſome Phyſicians have reckoned one Seton a more efficacious Remedy than two Iſſues. A Seton has by Experience been proved beneficial in Diſtempers of the Head, as the Hydrocephalus, Catarrhs, intenſe Pains, with the Loſs of Memory, Epilepſies, Drowſineſs, and even the Apoplexy: And, alſo, in Diſorders of the Eyes, as in violent Inflammations, Gutta Serena, and a Cataract or incipient Suffuſion. But the Pain and Trouble produced by a Seton, prevent many from experiencing the good Effects of ſo excellent a Remedy. *Heiſt. Inſt. Chir.*

SETANIOS. σητάνιος. An Epithet for a Sort of Wheat, ſown in the Spring, and reaped in the Summer, ſo as to be but about three Months in the Ground; whence it is called *Trimeſtre*, *Hornus*, or *Hornotinus*. *Setanios*, according to *Heſychius*, ſometimes imports pure or fine.

SEVATIO. A *Steatoma*. *Caſtellus* from *Ingraſſias*.

SEVERI COLLYRIUM. See ALBUM SEVERI COLLYRIUM.

SEULO. Lead. *Rulandus*.

SEUTLOMALACHE. The Beet, according to ſome; but others call the Spinage thus. *Blancard*.

SEVUM. The ſame as SEBUM.

SEXTANS. The ſixth Part of a Pound, or two Ounces, or ſixteen Drams. *Galen. de C. M. P. G. et de C. M. S. L.* It is, alſo, uſed for the ſixth Part of any other ſtanding Weight or Meaſure.

SEXTARIUS. ξέστης. A Meaſure as well for Liquid as dry Things. See MENSURA. We ſhall only add here, that the Parts of the *Sextarius* were like thoſe of the *As*, *Uncia*, *Sextans*, *Quadrans*, *Triens*, *Quincunx*, *Semis*, *Septunx*, *Bes*, *Dodrans*, *Dextans*, *Deunx*; by which Words a certain Number of *Cyathi* is meant, a *Cyathus* being one twelfth of a *Sextarius*.

SEXTULA. The ſixth Part of an Ounce, or four Scruples.

SEXUNX. The Weight of ſix Ounces, or Half a Pound.

SFERRO CAVALLO. The *Italian* Name for the *Ferrum Equinum*, Horſhoe Vetch.

SHERARDIA.

This Name was given to this Genus of Plants by Mr. *Vaillant*, who was Profeſſor of Botany at *Paris*, in honour to Dr. *William Sherard*, who was the moſt famous Botaniſt of the Age.

The Characters are;

It hath a labiated Flower, conſiſting of one Leaf, which is divided into five Parts at the Brim; the upper Lip being divided into two, and the under Lip into three Parts. The Ovary, which is at the Bottom of the Flower-Cup, afterward becomes a dry Capſule, containing two oblong Seeds. To theſe Notes may be added, that the Leaves grow oppoſite by Pairs.

Miller mentions thirteen Sorts of this Plant; which are;

1. Sherardia; repens; nodiflora. *Vail. Nov. Gen.*
2. Sherardia; repens; folio ſubrotundo; craſſo; nodiflora. *Vail. Nov. Gen.*
3. Sherardia; incana; nodiflora. *Vail. Nov. Gen.*
4. Sherardia; nodiflora; Stoechadis ferrati folii, folio. *Vail. Nov. Gen.*
5. Sherardia; ocymi folio lanuginoſo; flore Purpureo. *Vail. Nov. Gen.*
6. Sherardia; teucrii folio; flore Purpureo. *Vail. Nov. Gen.*

7. She-

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7. Sherardia; fruteſcens, teucrii folio; flore cæruleo; Purpura ſcente ampliſſimo. *Vail. Nov. Gen.*
8. Sherardia; teucrii folio; flore coccineo. *Vail. Nov. Gen.*
9. Sherardia; ſpicata; folio anguſto; ſerrato; flore cæruleo. *Houſt.*
10. Sherardia; ſpicata; flore purpureo; ſeminibus majoribus, longioribus, & laxius digeſtis. *Houſt.*
11. Sherardia; verbenæ folio; ſubrotundo; craſſo; floribus cæruleis; ſpica longiſſimâ & craſſiſſimâ. *Houſt.*
12. Sherardia; foliis oblongis; ſerratis; flore cæruleo; ſpica longiſſima. *Houſt.*
13. Sherardia; aboreſcens; nodiflora; foliis rugoſis & ſerratis; flore purpureo. *Houſt.*

The firſt of theſe Plants is a Native of *Europe*, ſo will thrive in the open Air in this Country.

All the other Sorts are Natives of the warm Parts of *America*, ſo are too tender to thrive in the open Air of *England*.

The ſecond Sort was found by Dr. *William Houſton*, growing plentifully in *Jamaica*. This Plant trails its Branches on the Ground, emits Roots from the Joints as the former Sort, ſo doth not produce many Flowers.

The fourth Sort was found in great Plenty, at *La Vera Cruz*, by Dr. *Houſtoun*; as were the ninth, tenth, eleventh, twelfth and thirteenth Sorts, at *Campechy*, by the ſame Gentleman.

The third, fifth and ſixth Sorts, grow plentifully in *Jamaica*, and ſeveral other Places in the *Weſt Indies*, from whence I have received their Seeds.

The ſeventh Sort is a very ſpecious Plant, which merits a Place in every good Collection of Plants. This produces long Spikes of large blue Flowers, which continue a long Time, and make a fine Appearance. The Seeds of this Sort were ſent to *England* by Mr. *Robert Millar*, Surgeon, who gathered them near *Panama*.

The thirteenth Sort riſes to be nine or ten Feet high, and hath a wooden Stem. *Miller's Dictionary.*

SIAGONAGRA. From σιαγὼν, a Jaw, and ἄγρα, a Prey. The Gout in the Jaws.

SIALOGOGA.

In the Claſs of *Evacuants* are to be reckoned *Sialagogues*, or *Salivants*, which potently excite a lymphatic and ſalival Flux, that diſcharges itſelf by the Mouth. And tho' there be ſeveral Things in the Kingdom of Vegetables, which, received by the Mouth as Emetics, or chewed with the Teeth, provoke the ſalival Humor from the Glands and Fauces, yet there is ſcarce any thing in Nature which puts the whole Maſs of Lymph in ſo ſtrong a Motion, and ſo forcibly acts upon the ſalival Glands and Ducts, as to cauſe a continual and copious Flow of Spittle, not only for Weeks but Months together, as ſome Subſtances with which we are ſupplied from the Mineral Kingdom, and eſpecially thoſe which belong to the Mercurial or Antimonial Tribe, prepared by the Art of Chymiſtry. As for Mercury, it is of that peculiar Force and Virtue, that whether uſed outwardly by Inunction, or taken inwardly in a ſmall Quantity, it excites a moſt copious Salivation, by the Benefit whereof, if rightly managed, ſome very ſtubborn and otherwiſe incurable Diſeaſes, which proceed from an impure Lymph and Serum, ſuch as the Lues Venerea, Herpes, malignant Scabies, and malignant and ſpreading Ulcers, may be perfectly cured and quite extirpated. And this ſingular, and, in a manner, peculiar Virtue, belongs not only to Quickſilver well pounded with Sugar, and taken inwardly with Conſerve, but to all artificial Preparations thereof, as Mercurius Dulcis, red Precipitate, white Precipitate with Spirit of Sal Ammoniac. Precipitate from a Solution of Mercury in Aquafortis, Turpeth Mineral, Arcanum Corallinum, Mercurius Diaphoreticus Jovialis, Solaris, Æthiops Mineral, and Cinnabar itſelf, as well native as antimonial, or common, prepared of Sulphur with Mercury, and the *Antiquartium* of *Riverius*. Preparations from the reguline Subſtance of Antimony, which deſerve to be mentioned, are the Crocus Metallorum, *Monk's* Powder, Sulphur Auratum ſo called, and prepared either the common Way, by Precipitation with Vinegar, or a Solution of Steel, or even of Gold, or precipitated after a ſingular manner, as the Panacea Glauberiana; which, in the *Brunſwick* Diſpenſatories, is called *Panacea Concordingiana.*

Theſe *Sialagogues*, or ſalivatory Remedies, before mentioned, may very well be divided into two Claſſes, the mild and the ſtrong. Of the firſt Kind, which are, alſo, mercurial, are, alſo, Æthiops Mineral and Cinnabar, when exhibited in large and repeated Doſes; in which Caſe they provoke a Flux of Spittle, and put the lymphatic Humors in Motion; and are beneficially adminiſtred in Diſeaſes proceeding from Obſtructions of the Glands, or Coagulations of the Serum, or Extravaſations of the ſame in the Head, by reſolving and laſing the coagulated Juices. To this laſt, alſo, belong Antimonials, becauſe the Sulphur being in a manner incorporated with the reguline Subſtance which is in them, they act but gently, nor excite ſuch Perturbations and ſevere Symptoms, as are the Effects of moſt chymical Preparations of Mercury. Among the gentler Sorts of *Sialagogues*, may alſo be reckoned Mercurius Dulcis, well waſhed and prepared, and Quickſilver itſelf, duly depurated, and reduced by Art into a ſolid Form and Powder, excepting Quickſilver externally applied; for when it is reduced with unctuous Subſtances into an Ointment, and rubbed on the inferior nervous Parts of the Feet, of the Hams and Knees, and much more on the Spine of the Back, it frequently, and often ſuddenly, raiſes ſo ſtrong and plentiful a Salivation, as is hardly to be reſtrained.

The Manner of Operation ſeems poſſible to be conceived and accounted for as follows: Firſt, Quickſilver is to be conſidered as the heavieſt of all Fluids, the leaſt of whoſe Particles, in Solution and Diviſion, always preſerve their ſpecific Gravity ſuperior to that of all Fluids. Secondly, the Quickſilver itſelf may, by all the ſalival Menſtrua, be reſolved into infinitely ſmall and ſubtile Molecules, which, by their corroding Force, together with their ſpecific Gravity, may be enabled to penetrate into the innermoſt Parts of the Veſſels and Pores in the human Body. That the Parts and Pores of Quickſilver may be diffuſed in a ſurpriſing manner, is evident to Sight; in that only one Grain of ſublimate Mercury, diſſolved in two Ounces of Water, will not only communicate to it a very ſenſible acrimonious metallic Taſte, but, alſo, endue it with ſo efficacious a Virtue, that this Mercurial Water, uſed internally or externally, ſhall potently excite Excretions by Salivation, Sweat, Stool, or even Vomiting, according to the Diſpoſition of the Subject and Humors; applied outwardly, it ſhall, on a ſudden, dry up and repreſs the ſtch and all cutaneous Deſedations. Whenever, therefore, Mercurials either externally applied in Suffumigations, Plaiſters or Ointments, or taken inwardly, are, by the bilious-alcaline Humors of our Body, diſſolved, or reduced into very minute Parts, they ſpeedily and effectually exert their Force upon the Nerves, and eſpecially upon the nervous Fibres of the conglobate and conglomerate Glands, and even upon the very Membranes of the Lacteals and Lymphatics; and, by increaſing their Syſtole and Contraction, accelerate the Motion of the Lymph; by which means the Obſtruction in the Glands and capillary Veſſels of the Humors are opened, and the Stagnation and Stoppages of the coagulated Lymph, are at length effectually opened and reſolved.

By ſuch Ways and Means, then, are the Lues Venerea, and other Diſeaſes of a like Nature, extirpated; but it does not follow, that there is always a Neceſſity for Salivation in the Cure of theſe Diſtempers; for a ſkilful Perſon, who is acquainted with the Secret, knows how, by the dextrous Uſe and Application of well-prepared Mercurials and Antimonials, to cure theſe ſtubborn Diſeaſes without Salivation. For, as all ſkilful and experienced Phyſicians will readily acknowledge, the Flux of the Saliva is not the Cauſe of the Cure of the Lues Venerea, but the Removal of the Obſtructions of the Glands and capillary Veſſels, and the Colliquation of the viſcid Humors ſettled therein; the accidental Conſequence of which is a copious Profuſion of the ſalival Humor.

Under a Salivation excited by Mercury, the exterior, eſpecially the lower Parts, particularly the Feet, are generally cold and contracted; there is a Stoppage, alſo, of the ordinary Evacuation by Stool and Urine; the free Circulation, then, of the Lymph and Serum, as well as the Blood, being, by this Stricture of the lower Parts, interrupted in the capillary Veſſels, the ſerous and lymphatic Humors are diverted upon the ſuperior Parts, and moſt of all upon the Glands of the Fauces, which are appointed for their ordinary Receptacle; from which they take their Courſe where they can firſt find a Vent, and run off in one continued Current by the Mouth, preventing both Sleep and Eating. I have obſerved in ſome who lay under an immoderate Salivation for three Months together, or longer, and were, at laſt, carried off by a Lipothymy, or ſuffocated by a Catarrh, a Coldneſs of the external Parts to ſuch a Degree, that it was impoſſible by any Medicine, Baths, or Frictions, to recal the Heat into them. And that an Interruption of the free and equable Motion of the Blood and Lymph through all the Parts of the Body, will raiſe a Salivation, appears from that continual Spitting ſo incident to melancholy and hypochondriacal Perſons, in which, for the ſame reaſon, that is, a Contriction of the inferior Parts, the Lymph and Saliva are thrown off in greater Meaſure upon the glandulous Structure of the Mouth and Fauces.

The Reaſon of that fetid and putrid Smell, which proceeds from the flowing Humour under Salivation, eſpecially from Perſons ſalivated for the venereal Infection, ſeems to be, that the very fine Parts of the Mercury exceeding all the other Humours in Gravity, and being intimately united with them, do, by their circumvolutory Motion, commence a Diſſolution of the

Mix-

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Mixture, Crasis, and Contexture of the Blood, in the same manner as it happens in a Putrefaction, which is the Cause that there exhales a sulphureous Fœtor with something of a Volatility, so as to blacken the very Teeth.

All the Panaceas, so highly celebrated by the Chymists, and especially the solar Kind, which owe the greatest Part of their Virtues to metallic and mercurial Elements, if they are rightly prepared, and skilfully used, are not to be defrauded of their just Commendations in the Cure of stubborn and desperate Diseases, which will not yield to ordinary Means. Such Medicines are endued with the highest Activity of Parts, and, though exhibited in a small Dose, have a potent Influence upon the nervous System, and produce very considerable Effects. And I know how to prepare several Medicines of that kind, and especially Antimonials, which, with due Respect to the Dose and Regimen, and a proper Regard to the Subject, shall in a very small Quantity purge, vomit, and even raise a Salivation; but very few Physicians know how to administer them skilfully, and in a right manner. *F. Hoffman.*

SIALISMUS. The same as PTYALISMUS.

SIALOCHOOS. σιαλόχους, from σίαλον, Saliva, and χέω, to pour out. In *Hippocrates* it imports a Person in a Quinsey, who discharges a large Quantity of *Saliva*. *Sialochoi*, σιάλοχοι, is expounded, by *Erotian*, Persons whose Mouths abound with a bitter *Saliva*; and by *Hesychius*, such People as spit in a Persons Face whilst speaking to him; an Inconvenience often attending, when the Tongue is too large.

SIBAR. Quicksilver.

SIBARE, in *Avicenna*, is a violent Sort of *Phrenitis*; or, according to others, an erysipelatous, or gangrenous Inflammation of the Brain, and its Membranes.

SIBEDATA. In *Paracelsus*, is Swallow-Wort. *Rulandus*. It, also, imports a Stone, on which Colours are ground.

SIBETINA. In *Paracelsus*, is an Epithet for the Cholic.

SIBILUS. A hissing Noise; such as is heard during the Respiration of asthmatic Patients; or as sometimes is perceived in the Ears. The *Uvula*, is, also, called *Sibilus*, by *Vesalius*.

SICCANTIA. Drying Medicines.

SICCHASIA. σικχασία. In *Maschion*'s Treatise *de Morbis Mulierum*, C. 18. is that Loathing of Food, and Uneasiness at the Stomach, which Women perceive during Pregnancy.

SICCUS. Dry. A dry Belly imports Costiveness: A dry Constitution is one which does not abound with Moisture: A dry Dropsy is a Tympanites; and a dry Ophthalmy, is an Inflammation of the Eye, not attended with a Discharge of Humours.

SICELICA, or SICULA. An Epithet for a Medicine recommended against the Cholic by *Galen*, de C. M. S. Loc. L. 9. C. 5.

SICILIANE. See ANDROSÆNUM.

SICILICUM, or SICLIUM. A Weight, equal to four Drams, according to *Galen*. *Rhodius*, in his Notes to *Scribonius Largus*, makes it only two Drams.

SICUA. A Cupping-Glass.

SICYEDON. σικυηδὸν. The Name of a Species of Fracture; the same as CAULEDON. See FRACTURA.

SICYOIDES. Single-seeded Cucumber.

The Characters are;

It hath an expanded Bell-shaped Flower, consisting of one Leaf, which is cut into several Segments at the Brim. Of these Flowers, some are Male, which adhere to no Embryo; and others are Female, which rest on the young Fruit, which is afterwards enlarged to the Size of an Almond-Kernel, and is flat and prickly, containing one Seed of the same Shape.

Boerhaave mentions but one Sort of this Plant, which is, the Sicyoides Americana; fructu echinato; foliis angulatis, *T.* 103. *Cucumis Canadensis, monospermos, fructu echinato.* Par. Bat. 133. *Colocynthus monoecicos. Vulgo Bryonia Canadensis, semine Anguriæ.* Volkham. *Boerh. Ind. Alt. Plant.*

Boerhaave conjectures this Plant to be poisonous.

Miller takes Notice of another Species of this Vegetable, by the Name of *Sicyoides*; *Americana*; *Fructu echinato*; *foliis laciniatis*

SICYONE. σικυών. This signifies, in *Hippocrates*, Colocynth; a Species of Goufd in the Shape of a Pear; a common Cupping-Glass; and a conical Cupping-Glass, open at the small End. *Galen. Exeges. Erotian* explains it, a Wild Fig.

SICYONIUM OLEUM. *Paulus Ægineta*, L. 7. C. 20. gives the Preparation of three Sorts of Oil under this Title. The first is the

SICYONIUM SIMPLEX, which is thus prepared: Take of the Root of the Wild Cucumber, two Ounces, and put them into an *Italian* Sextary, or Pint of Oil, and boil the same in a double Vessel.

The second Sort of *Sicyonium Compositum*, is prepared in the following Manner:

Take of Oil, ten Sextaries; Root of Wild Cucumber scraped, one Pound; Serpyllum, Melilot, each six Ounces; of pinguious Torches of the Pine, [See DAIS.] Marsh-mallows, each five Ounces; of Scolopendrium, six Ounces; of Fænugreek, two Sextaries: Macerate the Fænugreek a Day in Water, then strain it, and put therein the other Ingredients, together with the Oil, and two Sextaries of Wine. Boil them all together, and then add thereto of Stags Marrow, beaten with a moderate Quantity of Oil, four Ounces, and a like Quantity of Fat of Hens. This done, strain off the Oil into proper Vessels: Some, after Boiling, expose it forty Days in the Sun.

Another Preparation of *Sicyonum Compositum*, of greater Virtues, is as follows:

Take Juice of Elaterium, three Sextaries; round and long Birthwort, Styrax, Elecampane, Hyssop, Iris, Colocynthis, Penyroyal, Origanum, Cyperus, Wood of Libanus, Centaury, Bay-leaves, each two Ounces; Oil, five Sextaries. Mix them together, and boil them till but little of the Liquor remains. *P. Ægineta, Lib.* 7. *Cap.* 20.

SICYS. A Cucumber.

SIDA. σίδη. The Pomegranate. *Sidia*, is the *Putamen*, or Rind of the Pomegranate. *Hippocrates. Blancard* says, that *Sida* signifies the *Althæa*, Marsh-mallows, but I don't know his Authority.

SIDA-POU. The Name of a Tree which grows in *Malabar*. It is only remarkable for bearing no Fruit; at least till it is very old. *Raii Hist. Plant.*

SIDERATIO. An Apoplexy; or a Sphacelus; or a Species of *Erysipelas*, which the Country People call a Blast.

SIDERITIS.

The Characters are;

The *Galea* is erect, the Beard tripartite, long, and pendulous; the Flowers grow in Whorles at the Wings of the Leaves, which are cut like a Crest, and differ from the other Leaves of the Plant.

Boerhaave mentions thirteen Sorts of *Sideritis*, which are;

1. Sideritis; Alpina; Hyssopifolia. *C. B. P.* 233.

2. Sideritis; vulgaris; hirsuta; erecta. *C. B.* 233. *Boerh. Ind. A.* 171. *Sideritis*, Offic. *Sideritis vulgaris*, Ger. Emac. 697. Raii Hist. 1. 563. *Sideritis, vulgaris hirsuta*, J. B. 3. 425. *Sideritis vulgaris Clusii*. Park. Theat. 585. COMMON IRON-WORT.

It grows common in *Germany*, *Italy*, and *France*, and flowers in *June*. The Herb is used, which is said to be good for Wounds, and Ruptures, and to be so drying as to cure a *Fluor albus*.

Dale takes Notice of a Species of *Sideritis*, of which this is esteemed only a Variety, tho' he makes them different. It is thus distinguished.

SIDERITIS. Offic. *Sideritis hirsuta procumbens*, C. B. P. 233. Raii Hist. 1. 564. Tourn. Inst. 191. *Sideritis Clusa Hispanica, hirsuta*, J. B. 3. 426. *Sideritis prima herba Judaica*, Park. Theat. 584. *Sideritis herba Judaica*, Ger. 559. *Sideritis Judaica Lobelii*, Ger. Emac. 690. IRON-WORT.

An Application of the Leaves cures Wounds, without any Danger of Inflammation.

Botanists have not determined what the three Species of *Sideritis* mentioned by *Dioscorides* are. *Dale* thinks this Plant the first; the *Pimpinella Sanguisorba*, the second; and the *Geranium Robertianum*, the third.

3. Sideritis; hirsuta; vulgaris; humilior. *C. B. P.* 233.

4. Sideritis; arvensis; latifolia; glabra. *C. B. P.* 233. *Raii Hist.* 1. 566. *Park. Theat.* 587. *Ger. Emac.* 699. *Boerh. Ind. A.* 171. *Sideritis glabra arvensis*, J. B. 3. 427. Tourn. Inst. *Betonica arvensis annua flore ex albo flavescente.* 203. IRON-WORT WITH SMOOTH LEAVES.

This grows amongst Corn, and agrees in Virtues with the other. *Dillenius* thinks this the right *Sideritis* of the Shops.

5. Sideritis; Persica; odorata; latissimo folio, hirsuto; flore ex luteo albicante. *Ex Tourn.*

6. Sideritis; Hispanica; frutescens; foliis rigidis profunde dentatis. *Jussieu.*

7. Sideritis; frutescens; folio incano Oleæ.

8. *An* Sideritis; Stæchados folio? *Lippii.*

9. Sideritis; minima; Ægyptia; ramosa.

10. Sideritis; Lusitanica; minor, floseulis luteis.

11. Si-

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11. Sideritis; Hiſpanica; procumbens; flore albo major. *T.* 192.
12. Sideritis; Hiſpanica; fruteſcens; ſive lignoſior. *T.* 192.
13. Sideritis; Orientalis; folio Phlomidis. *T. C.* 12. *Boerh. Ind. Alt. Plant.*

It has its Name *Sideritis* from σίδηρος (*Sideros*) Iron, ſo *Dioſcorides* calls thoſe Herbs which are adapted to the Cure of Wounds inflicted by Iron. It is alſo called *Ferruminatrix* for the ſame Reaſon, and *Herba Judaica*, becauſe the *Jews* formerly uſed it in Medicine. Theſe Plants are very ſcarce, becauſe the Seeds are ſometimes three or four Years in the Ground before they appear, whence the Time of their Shooting is very uncertain. They are never uſed in Medicine, except ſometimes by Way of Cataplaſm in Hernias. *Hiſt. Plant. aſcript. Boerhaave.*

Dale mentions another Species of *Sideritis*, which is the *Sideritis foliis hirſutis profunde crenatis*, C. B. P. 233. *Tourn. Inſt.* 191. *Sideritis Monſpeſulana*, J. B. 3. 426. *Sideritis Monſpelienſis Lobellii*, Park. Theat. 585. GERMAN IRON-WORT.

It grows in Meadows, and flowers in *June* and *July*. It is much uſed in the Shops of *Germany*, and is ſaid to be poſſeſſed of the ſame Virtues as the other Species of *Sideritis*.

SIDERITIS, is alſo a Name for the *Sanicula*, *Officinarum*; for the *Stachys*, *major*, *Germanica*; and for ſeveral Sorts of *Marrubiaſtrum*.

SIDERITIS ARVENSIS. A Name for the *Galeopſis*; *patula ſegetum*; *flore purpuraſcente*.

SIDERITIS SPINOSA. A Name for the *Stachys*; *ſpinoſa*; *Cretica*.

SIDERITIS VISCOSA. A Name for the *Galeopſis*; *anguſtifolia*; *Cretica viſcoſa*.

SIDEROS. σίδηρος. Iron. See MARS.

SIDIA. See SIDA. *Rulandus* explains *Sidia*, a File.

SIDOIDES. σιδοειδὴς, from σίδη, a Pomegranate. A yelloviſh Colour, like that of a Pomegranate.

SIEF. A dry Collyrium. The Word is *Arabic*.

SIEF DE PLUMBO.

Take of Lead burnt and waſh'd, Copper burnt, Antimony, Tutty waſh'd, Gum Arabic, Gum Tragacanth, each one Ounce; Opium, half a Dram; Roſe-water, a ſufficient Quantity; make them into Troches according to Art.

SIEF DE THURE.

Take of Frankincenſe, Lapis Calaminaris, Pompholyx, each ten Drams; Ceruſs, five Ounces; Gum Arabic, Opium, each ſix Drams; fair Water, a ſufficient Quantity; make them into Troches. *Pharmac. Londinenſ.*

SIELISMUS. σιελισμὸς. Salivation.

SIELOCINETICA, from σιαλον, *Saliva*, and κινέω, *to move*. The ſame as SIALAGOGA.

SIGIA. Liquid Storax.

SIGILLATA TERRA. Seal'd Earth. See TERRA.

SIGILLUM SOLOMONIS. Solomon's Seal, a Name for the *Polygonatum*; *latifolium*; *vulgare*.

SIGILLUM HERMETICUM. An Hermetic Seal. A Glaſs Veſſel is ſaid to be Hermetically ſeald, when the Glaſs is melted, and the Veſſel by this Means cloſed.

SIGMOIDES. Sigmoidal, or in the Shape of a Sigma; three Valves of the Heart have this Epithet applied to them. See COR. The Corocoide Proceſs of the *Scapula* is called the Sigmoidal Proceſs. The Semicircular Cavity of the Cubit, at the Articulation of the Fore-arm, with the *Humerus*, is ſometimes called the Sigmoidal Cavity: And the Cartilages of the *Aſpera Arteria*, have the Epithet *Sigmoidal* applied to them by ſome Authors.

SILACH, or SILAC. A Diſorder of the Eye-lid, conſiſting in a preternatural Thickneſ thereof.

SILAUM.

The Characters are;

The Leaves are pretty thin and ſhort, and much like thoſe of Fennel, only wider. The Seeds are long, ſulcated, and furniſhed with a Sort of foliaceous Margin.

Boerhaave mentions five Sorts of *Silaum*, which are;

1. Silaum quibuſdam; flore luteolo. *J. B.* 3. 2. 171. *Boerh. Ind. A.* 51. *Saxifraga vulgaris*, Offic. Mill. Bot. 399. *Saxifraga Anglica facie Seſeli pratenſis*, Ger. 890. Emac. 1047. Raii Hiſt. 1. 453. *Seſeli pratenſe noſtras*, Park. Theat. 995. Raii Synop. 3. 216. *Seſeli pratenſe Silaus ſorte Plinio*, C. B. P. 162. *Anglica pratenſis Apii folio*, Tourn. Inſt. 313. MEADOW SAXIFRAGE.

This Saxifrage has a Root about a Finger thick, ſtriking deep in the Ground, of a browniſh Colour on the Outſide, and whitiſh within, of a hot aromatick Taſte and Smell, from which ſpring ſeveral winged Leaves, not very large, cut into long narrow Segments. The Stalks are channell'd, ariſing to be two Foot or more in Height, beſet with ſmaller Leaves, and having on their Tops Umbels of pale, yellow, ſmall, five-leaved Flowers, and after them come ſhort ſtriated reddiſh brown Seeds: It grows common in Meadows and Paſture Grounds, and flowers in *Auguſt*.

The Root, Herb, and Seed are uſed, being all accounted excellent in provoking Urine, and of great Service in the Gravel, Stone, and other Diſtempers of the Kidneys, as alſo in expelling Wind. *Miller's Bot. Off.*

The Herb and Seed are ſubſtituted in our Shops for thoſe of the white Saxifrage.

The Juice, Decoction, diſtilled Water, or Seed pulveriſed, are found by common Experience to be effectual in provoking Urine, in diminiſhing and expelling the Stone, diſcuſſing Flatulences, and eaſing the Pain of the Cholic. *Raii Hiſt. Plant.*

2. Silaum; quod Liguſticum; Ferulæ folio. *T.* 324.
3. Silaum; quod Liguſticum; Creticum; folio Fæniculi; caule nodoſo, *T. C.* 23.
4. Silaum; quæ Angelica; pratenſis; altera; Apii folio. *T.* 313.
5. Silaum; quod Liguſticum; Cicutæ folio, glabrum. *T.* 323. *Seſeli montanum, Cicutæ folio, glabrum.* C. B. P. 161. *Boerh. Ind. Alt. Plant.*

SILER.

The Characters are;

The Leaves are lobated, and of a pretty large Size, with long, intire, blunt Segments, divided at the End into Parts: The Seeds are oblong, large and ſtriated.

Boerhaave mentions three Sorts of *Siler*, which are;

1. Siler; foliis Aquilegiæ. *M. U.* 7. 8. *Liguſticum Rauwolfii foliis Aquilegiæ*, J. B. 3. 2. 148. *Libanotis latifolia, Aquilegiæ foliis*, C. B. P. 157. *Angelina montana, perennis, Aquilegio folio.* T. 313.

2. Siler; montanum; majus. *Boerh. Ind. A.* 52. *Seſali vulgaris & Siler montanum*, Offic. *Seſeli ſive Siler montanum vulgare*, J. B. 3. 168. *Siler montanum Officinarum*, Ger. 892. Emac. 1048. Raii Hiſt. 1. 439. *Siler montanum vulgo Seſelios*, Park. Theat. 909. *Liguſticum, quod Seſeli Officinarum*, C. B. P. 162. Tourn. Inſt. 323. COMMON HARTWORT.

Hartwort has a large, thick Root, that ſtrikes deep into the Ground, with a great many ſtringy Fibres at the Bottom. The Stalk ariſes to be as high as an ordinary Man, full of Branches, having many large winged Leaves as it were encompaſſing the Stalks with a thin Sheath, cut into ſeveral Segments, each of which is uſually divided into five, and at the End three oval ſmaller Leaves, ſmooth and pointed at the End. It has large Umbels of ſmall five-leaved white Flowers, each of which is ſucceeded by two large, long Seeds, ſtriated on the Back, and having a leafy Border on each Side, of a brown Colour, a pretty ſtrong Smell, and a hot, bitteriſh Taſte. It grows upon the *Alps*, and the Mountains of *Italy*, and flowers in *June*. The Herb and Seed is uſed.

They are both heating and drying, provoke Urine and the Menſes, expel the Birth and After-birth, and are good in Diſorders of the Head and Womb. The Seeds are put both ino the Theriaca and Mithridate. *Miller's Bot. Off.*

3. Siler; montanum; minus. *M. U.* 7. *Liguſticum, ſive Siler montanum, anguſtifolium.* C. B. P. 162. *Boerh. Ind. Alt. Plant.*

SILESIACA TERRA. See TERRA SILESIACA.

SILEX. Offic. Boet. 515. Mer. Pin. 213. Worm. 39. Charlt. Foſſ. 16. Aldrov. Muſ. Metall. 724. Kentm. 44. *Lapis Silex dictus niger*, Cup. Hort. Cath. Supp. 2. 53. *Silex niger*, Imp. THE FLINT.

Flints, according to *Schroder*, may be us'd internally for inciding tartareous Mucilage, reſolving the Stone, and opening Obſtructions. They are, alſo, us'd as Dentifrices.

Flints, like all other Stones, are form'd of Salts, or acid Liquors, which penetrate and intermingle with the Earth, that is an Alcali, in ſuch a Manner, that from this Mixture reſults a *Coagulum*, which is inſenſibly harden'd by the ſubterraneous Heat, or petrified by the Cold. And here it is to be obſerved, that, according to the Quantity of Earth which unites with an acid Liquor, we find produced the various Sorts of Stones; and that precious Stones and Cryſtals owe their Denſeneſs and Tranſparency to ſuch a Proportion as was neceſſary to make an exact Penetration, and cloſe Union of the Acid with the Earth.

It is very probable, that Stones are hardeſt when but Earth mixes in the Solution, for then the acid Water acting upon all Parts of that Earth, diſſolves it intirely, after which, the Coagulation being a long Time in forming, the Parts intermix and unite incomparably better than when there is much Earth. And it is very eaſy to conceive, how a large Body may be compoſed of very ſmall Corpuſcles; for if they had been large, they would have left great Spaces, or Pores, in their Conjunction; and great Pores are contrary to hard and compact.

When much Earth mixes with the acid Liquor, the Solution is perform'd but by Halves, and the Coagulation being too

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too quick in forming, there reſults nothing but an opake Stone, with no conſiderable Degree of Hardneſs.

Flints are formed of a Combination of a good Quantity of acid or ſaline Water, with a ſmall Portion of Earth; but they are opake, becauſe the Earth of which they are compoſed is ſulphureous, and ſometimes metallic.

Cryſtals are compos'd of a perfect Solution of Earth, or Stone, in acid or ſaline Waters; this Solution muſt be clear, or limpid like Water, either becauſe it is filrated in paſſing through ſome Earth, or happens in a clean Place. When it ſettles, it becomes fixed, in the ſame Manner as when Saltpetre is cryſtalliſed in Water, the Cryſtals retain the Purity of the Solution, and are tranſparent.

Precious Stones are form'd by a Solution, at leaſt, as perfect and clear as that which forms Cryſtal; but then in the Solution there is an Intermixture of metallic Particles, which gives them Variety of Colours, and a Degree of Hardneſs much above Cryſtal.

Grains of Sand are ſmall Cryſtals, which appear to us but like Powder of Cryſtals, but diſcover their Figure in the Microſcope.

We meet with Waters in many Countries, which falling upon Rocks, at the ſame Inſtant petrify, as it happens in the Grotto of *Arſi* in *Burgundy*. The Reaſon that may be given for their Petrification, is, that theſe Waters contain an Acid, which in paſſing over the Earths, diſſolve ſome Portion of them, which might be capable of inducing a Petrification; but the great Agitation they ſuffer in this rapid Deſcent from the Mountains, hinder their Coagulation, which cannot be effected before theſe Waters are fallen into ſome proper Place where they may reſt.

In other Places we meet with Waters at Reſt, which petrify Woods, Plants, Fruits, and Parts of Animal, caſt into it. Theſe Waters are of the ſame Nature with thoſe juſt mentioned, only they have more of Phlegm, for which Reaſon they cannot coagulate themſelves, but when you immerge a ſolid Body in them, they ſo penetrate it, and unite and fix themſelves to it in ſuch a Manner, as to fill all its Pores, ſo that the Body ſeems to have chang'd its Nature, and to be turned into Stone.

CALCINATION OF FLINTS.

This Operation teaches the Manner of opening *Flints* and Cryſtal in ſuch a Manner, that they may be eaſily reduced to Powder.

Heat *Flints* in the Fire red-hot, and quench them in common cold Water; repeat this Heating and Quenching three or four Times, until they become friable, and may be reduced to an impalpable Powder, after they have been dry'd.

Cryſtal is calcin'd after the ſame Manner, but it is ſooner render'd friable than *Flints*. A Liquor and Tincture may, alſo, be extracted from it, as well as from *Flints*, and of like Virtue.

OBSERVATIONS.

River-Flints, which are mark'd with Veins of different Colours, are eſteemed the beſt, becauſe they are ſuppoſed to yield the moſt Tincture.

The beſt Way to calcine them well, is to put them in an earthen Pot, cover it well, and then put it in a Furnace in the Middle of a great Fire; the *Flints*, when heated, will ſparkle and look red; continue a violent Fire till they no longer ſparkle, then uncover the Pot, and caſt them, red hot as they are, into common cold Water, where let them be quenched, and remain about an Hour, after which, ſeparate the Liquor, by ſtooping the Veſſel, and letting it run off into an earthen Pan. If the *Flints* are not yet friable enough, they muſt be heated red-hot again, and thrown into the ſame Water.

This Water receives from the *Flints*, a Salt, or Kind of Saltpetre, which, in Conjunction with the Impreſſions of the Iron, communicated to it from the Pot, render it aperitive, and proper for the Gravel, and Chloroſis. The Doſe is a Glaſs at a Time.

Flints and Cryſtal are too hard to be reduced to a Powder in the ordinary Way, and, therefore, Methods muſt be taken to ſoften them, in order to render them capable of being pounded with Eaſe. Cold Water renders them friable, when thrown quite red-hot into it; becauſe, Calcination having opened their Pores, the Coolneſs of the Water ſtops them all on a ſudden, by which Means the ſmall Particles of Fire, which are thus impriſoned within, make impetuous Efforts to free themſelves, and breaking their little Priſons, render the Matter porous and brittle. This Heating and Quenching are repeated three or four Times, that the Subſtances may be penetrated and ſoften'd in all their Parts. Some uſe Vinegar inſtead of Water, for extinguiſhing *Flints* or Cryſtal.

TINCTURE OF FLINTS.

This Operation is no other than an Exaltation of ſome Parts of the Flints, and of Salt of Tartar in Spirit of Wine.

Mix four Ounces of Flints calcin'd and reduc'd to an impalpable Powder, very exactly, with four-and-twenty Ounces of Potaſh; put this Mixture in a large Crucible, which cover, and ſet in a Wind Furnace; make a Fire about it by Degrees, in order to give it a gentle Heat, which, afterwards, increaſe to the higheſt Degree, and continue it in that State during five Hours, ſo as that the Matter be always in Fuſion; thruſt a Spatula into it, and when you have taken it out again, you will ſee whether your Matter begins to grow tranſparent like Glaſs; if it does, pour it into an Iron Mortar heated, and it will immediately congeal into a hard Maſs, which muſt be reduced to a Powder while it is hot, one Half of which is to be put into a very dry and well-heated Matraſs; pour thereon highly rectify'd Spirit of Wine, till it riſes above the Matter four Digits; ſtop well your Matraſs with another whoſe Neck enters into that which contains the Matter, lute exactly the Junctures with a wet Bladder, and place it in the Sand; make a Fire under it, ſtrong enough to cauſe a Simmering in the Spirit of Wine, for two Hours, and it will aſſume a red Colour; unlute your Matraſſes, and having ſeparated them, pour off by Inclination the Tincture into a Bottle; pour ſome more Spirit of Wine on what Remains, and make a Digeſtion as before; ſeparate the Liquors, which will ſtill be a little red, and having mixed it with the other, put the whole into a Glaſs Cucurbit, which cover with its Head, and having adapted to it a Receiver, and exactly luted the Junctures, diſtill off two Thirds of the Spirit of Wine in a Vapour-Bath; take your Veſſel off the Fire, and keep what remains in the Bottom of the Cucurbit in a Vial well ſtopt.

This Tincture is ſaid to be a good Medicine to remove Obſtructions; it is of Uſe in the Scurvy, and hypochondriac Diſorder: The Doſe is from ten to thirty Drops in ſome proper Liquor.

OBSERVATIONS.

The Lime of the *Flints* unites ſo cloſely with the Salt of Tartar, by Calcination, that you might ſay the whole Mixture is converted into Salt, and this is what we ſhall ſhew in the following Operation.

The Spirit of Wine you uſe muſt be perfectly alcaliſed, or rectify'd, otherwiſe you will obtain no Tincture: You muſt, alſo, take Care to put the pulverized Matter, as hot as poſſible, in Infuſion. We diſtil two Thirds of the Spirit of Wine, that the Remainder may be redder and ſtronger.

Almoſt all Chymiſts will have it, that this red Tincture comes from the Sulphur of the Flints being diluted with the Spirit of Wine; but it is more probable, that this Colour proceeds from the Exaltation of the alcaline Salt in the Spirit of Wine, ſince a like Tincture is produced from Salt of Tartar.

LIQUOR OF FLINTS.

This Operation is a Reſolution of *Flints* into a Liquid, by means of Salt of Tartar.

Take equal Parts of calcin'd Flints and Potaſh, expoſe them to the cold and moiſt Air of a Cellar, in a flat Veſſel of Glaſs, and they will diſſolve into a Liquor, as clear as common Water, which filtrate, and keep for Uſe.

This Liquor is ſaid to be diuretic. The Doſe is from ſix to five-and-twenty Drops in ſome proper Liquor.

If you mix together equal Parts of this Liquor, and ſome corroſive, acid Spirit, they will immediately form themſelves into a Kind of Stone.

OBSERVATIONS.

The Salt of Tartar, or Potaſh, attenuates the *Flints* to ſuch a Degree, as to render them diſſoluble like itſelf, as we may obſerve in this Operation, in which the Humidity of the Cellar entering through the Pores of the calcin'd Matter, inſenſibly diſſolves it; and if this Solution be evaporated, you will find at the Bottom an alcaline Salt.

If this Liquor be mixed with an acid Spirit, there immediately ariſes an Ebullition; becauſe, the acid Spirits penetrate the Alcali, and afterwards there is form'd a Coagulation ſtronger than when you throw the acid Spirit upon the Liquor of Salt of Tartar, becauſe their Alcali contains more Tartar, than does Salt of Tartar.

This Liquor is capable of diſſolving ſome ſulphureous Obſtructions which ſometimes ſtop up the Paſſages, in which Caſe it provokes Urine; but if it meets with ſome acid Humour, it forms a Coagulation, which may poſſibly be converted into a Stone, for which Reaſon I would not adviſe the Uſe of this Remedy.

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From the Coagulation of these two Liquors might be explain'd, in a sensible Manner, the Formation of Stones in different Parts of our Bodies, since acid Liquors and Alcali's frequently enough meet together in those Places.

The Liquor of *Flints* is of Service in extracting the Sulphur from several Minerals: The Alchymists have given it the Name of *Alcahest*, that is, the *Universal Dissolvent*, a Name first used by *Paracelsus*, and compounded of two German Words, *Al Geest*, which signify *All Spirit*, (*Tout Esprit.*) *Van Helmont*, who borrowed that Word from *Paracelsus*, apply'd it to the pretended universal Dissolvent, of which, he says, he was the Inventor. The Name, however, seems to me to be but ill adapted to the Liquor of *Flints*, as well as to several others on which it has been bestow'd, since we find nothing in them but fixed Parts, without the least thing spirituous. *Lemery, Cours de Chymie.*

SILICETUS, in *Paracelsus*, imports flinty, and is us'd by him as an Epithet for very much indurated Tartar, or Gravel, in the urinary Passages.

SILIGNIS. σιλίγνις. The finest Wheat-Flower.

SILIGO. A Name for the *Triticum*; *Hybernum*; *Aristis carens.*

SILIPIT. Copper. *Rulandus.*

SILIQUA. A Weight in Use among the Antients, equal to three Grains and $\frac{1}{18}$.

SILIQUA, in Botany, is the Carob. See CAROBA.

SILIQUA HIRSUTA, is the COWHAGE, which see.

SILIQUASTRUM.

The Characters are;

The Wings [of the Flower] surmount the Standard; the Keel consists of two Petals; the Pointal, or Pistil, which arises out of the Calyx, is wrapped with the Stamina, and becomes a flat, membraneous Pod, full of Kidney-shap'd Seeds. The Leaves are alternate.

Boerhaave mentions two Sorts of *Siliquastrum*, which are;

1. Siliquastrum. *Tourn. Inst.* 647. *Boerh. Ind. A.* 2. 23. *Arbor Judæ*, Ger. 1240. Emac. 1428. Park. Theat. 1554. Raii Hist. 2. 1717. *Judaica Arbor*, J. B. 1. 423. *Siliqua silvestris rotundi folia*, C. B. P. 402. *Cercis prior Theophrasti quibusdam, aliis Colytea Theophrasti*, Raii Hist. 1717. JUDAS's TREE.

The Pod of this Plant is esteem'd astringent.

2. Siliquastrum; Canadensis. *T.* 647. *Siliqua, silvestris, rotundifolia, Canadensis.* H. R. Par. *Boer. Ind. Alt. Plant.*

SILPHIUM, σίλφιον, was a Root of great esteem in *Lybia*, about *Cyrene*, for its excellent Uses, either at the Table or in Medicine. It was originally called σίφι among the Natives, and thence σίλφι, which at last was formed into the σίλφιον of the *Greeks*. *Salmasius, Exercit. Plin. in Solin.* takes σίφι to be a barbarous Word; but I conceive it was the old *Chaldee* Word for Gum, which is סרף, *Sereph.* See *Schindler*'s and *Castellus's* Heptaglot Lexicon, under the Word. From hence the *Latins* deriv'd their *Serpe*, and the Juice of this Root they called *Lac-serpitium*, which became, afterwards, the *Latin* Name for *Silphium*, and was corrupted into *Laserpitium*, which they falsely deriv'd from *Laser*. This Juice or Gum of *Cyrene* was of so high Value, that the *Romans* deposited what they could get of it in the public Treasury, as the greatest Rarity, and which *Julius Cæsar* carried away in the Time of the Civil War, as *Pliny* says: And whatever was costly and rare, was, by the *Greeks*, called from hence Βάττου σίλφιον, *the Silphium of Battus*, that is, of *Cyrene*, of which Colony *Battus* was Founder. This *Silphium* of *Cyrene* has been long lost, even before *Pliny*'s Time; so that we know nothing of it more than by Conjectures, about which there are many. Modern Philosophers, and Botanists, seem to find it in our *Assa Fœtida*. This is the Opinion of Mr. *Evelin*, Dr. *Bently*, and Mr. *Laurence* in *his new System of Agriculture*. I must take leave to dissent from these great Authorities; for first, the σίλφιον of *Cyrene* is call'd by *Theophrastus* ἦσσμον, sweet smelling: By *Dioscorides*, as yielding, (ὀσμὴν προσηνεστάτην) a very sweet Savour: By the old Scholiast on *Aristophanes*, Σίλφιον ἡδύοσμον. How well this Description of the old fragrant *Lybian Silphium* agrees with the detestable Stink of *Assa Fœtida*, I shall submit to the Nose of every Man.

Kempfer indeed, in his Account of the gathering of *Assa Fœtida*, tells us, *That beyond the Territory of* Disguun, *the Plant of Asa is said to have lost almost all its offensive Smell, and grown so sweet, that Goats are fond of the Leaves, and feed themselves exceedingly fat with them*; but neither will this amount to the ἦσσμον σίλφιον of *Cyrene*.

And to this Description *Kempfer* has added the Figure of the Plant, which I have here given from him. Tab. the last.

Now as the strongest Argument, that I think can be furnished against Dr. *Bentley*, who says that he convinced Dr. *Mead* that the *Asa* of the Moderns *was the genuine Silphium*, I shall give a Medal or two, upon the Reverse of which we have the Figure of the old *Silphium* of *Cyrene* preserved. See TABLE the last.

The first Medal is of *Alexander*, the Son of *Ammon* who is, *therefore*, horned. The Reverse is the *Silphium* of *Cyrene*, in token of the Oracle of that Country, which declared him to be Son of *Hammon*.

The Legend we see is KYPA, implying *Cyrene*, which was represented by its Symbol the *Silphium*, as a Plant *proper only* to that Place, and the Σ, I conjecture, stands for σίφι, or סרף, *Sereph*, the original Name of this Plant, as is before mentioned. The Reason why the *Chaldee* סרף is implied under the *Greek* Characters Σ is, because this Medal was struck by the *Greeks*, in Honour of *Alexander*. As this Circumstance, therefore, on the Medal, is what was never taken Notice of by *Agostino*, *Angeloni*, *Spanheim*, or others, it may be worth our Observation, as giving a great deal of Light to the present Etymology of the Word; and shewing us, what we now call σίλφιον in Imitation of the *Greeks*, was originally known by the Name of סרף, or *Sirpi*, and from hence we may undoubtedly derive our *Sirrup*, or *Syrup*. We may, also, observe, on the other Side of the Plant, a Star in Designation of the Sun, to the intense Heat of which, in that Climate, perhaps, they ascribed all the remarkable Virtues of the *Silphium*.

The other, I suppose is either of *Hammon*, or else of *Old Battus*, according to the Epithet that CATULLUS gives him.

Et Batti Veteris *Sacrum Sepulchrum.*

The Reverse, as the first, is the *Silphium*, with the Legend KY for *Cyrene*, without the Σ.

Now if any one will compare the *Asa* of *Kempfer* with this Description of the *Silphium* of *Cyrene*, he must observe that there is not the least Resemblance in the World between these two Plants, the Juice or Gum of which Dr. *Bentley* convinced Dr. *Mead* and others to be one and the same.

Let us now consider the Proof upon which Dr. *Bentley* grounds his Assertion, that good *Asa* is the same with *Silphium.*—*Pliny* describes it thus, *Probatio sinceri prima, in colore modice rufo* (*Dioscorid.* ὑπέρυθρον) *et cum frangitur candido.* The good *Silphium* is of a reddish Colour, and white within when it is broken. Now the Doctor rests his Proof upon this, that his *Assa* answered in all Respects this Description of *Pliny*; and therefore concludes that good *Asa* is the same with the genuine Silphium. It might be the same, I grant; for the Description of *Pliny* relates to the *Silphium Persicum*, or what we call *Assa*, but not to the *Silphium Cyrenaicum. Pliny* owns, that *Multis jam annis in ea terra* (*Cyrene*) *non invenitur.*---That the *Silphium* of *Cyrene* had not been found for many Years. And a little after he adds, *Diuque non aliud ad nos invehitur Laser, quam quod in Persida aut Media & Armenia nascitur, sed multò infra Cyrenaicum.* From whence we may conclude, that the *Silphium* he describes was that of *Persia*, or what we call *Assa*, which was that which was common in his Time, and not that of *Cyrene*, which he never saw. So that Dr. *Bentley*'s Proof, by which he *convinced Dr. Mead and others*, is no Proof at all to the Purpose it is brought. All it proves is, that the Asa of this Day, when it is good, is of the same Marks with that which *Pliny* describes, and that *this* was *Persian Silphium* is hence evident; because he says no other had been found for many Years, (*diuque*) but what grew in *Persia*, *Media*, and *Armenia*. This ought to teach us, to be a little cautious how we give up our Assent to great Authorities, that have nothing oftentimes to support them but a Name.

This same Observation will likewise hold good with respect to *Dioscorides*; for when he described it ὑπέρυθρον, *colore rufo*, he meant the *Persian Laser*, or *Assa*, as we have it at this day; and which I make no doubt of, from the Figure of the Plant, which *Salmasius* has taken out of a manuscript Copy of *Dioscorides* 1100 Years old, and which seems to resemble very much the Figure in *Kempfer*, but to be widely different from that on the Medals, as may be seen by comparing them; for which purpose I had them engraved.

The Question that immediately presents itself here, is, how do we know that the Figure on the Medals is that of the *Silphium Cyrenaicum?*

The Answer is, that this Medal agrees with what *Aristotle* the Scholiast of *Aristophanes*, and *Tzetzes*, say of the Medals of *Cyrene*, that on one side they had the King Βασιλέα; for so I read it in the Scholiast of *Aristophanes*, not βασιλέα; and

On

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on the other the *Silphium*. But *Hesychius*, under Βάττου σίλφιον, is more expres. He says, the σίλφιον was so honoured among the *Cyrenians*, ὥστε καὶ ἐν τῷ νομίσματι ὅπου μὲν Ἄμμωνα, ὅπου δὲ σίλφιον ἐκκεκάχθαι, as is to be seen on their Medals, where was engraved on one side *Ammon*, and on the Reverse the *Silphium*. How well the Medals agree with this Account of the Ancients, is too evident to need any thing more to be said in Proof, that the Plant on the Reverse of these Medals is a true Representation of the *Cyrenian Silphium*, and which is very different from either that of *Dioscorides*, or *Kempfer*. From whence we may, with great Certainty conclude against Dr. *Bentley* and others, that the *Asa* of the Moderns is not the same with the celebrated *Silphium* of *Cyrene*. Upon the whole, it is to be supposed, that the *Silphium* of *Cyrene* is quite lost; and that we know no more of it but its Figure, and that it was of great Value for its medicinal and culinary Uses.

The Asa Fœtida of the Moderns is thus distinguished.

ASA FŒTIDA, Offic. C. B. Pin. 499. Worm. Mus. 222. Mont. Exot. 11. Scrod. 4. 184. Park. Theat. 1569. *Asa fœtida nostras Officinarum*, J. B. 3. 133. *Asa fœtida*, Ind. Med. 16. *Altith. seu Asa fœtida, Javanis & Malaiis Hindicta*, Bont. 41. *Asa fœtida Disgunensis, Hinaisch, umbellifera, Levistico affinis, instar Pæoniæ ramosis; caule pleno maximo; semine foliaceo, nudo, solitario, Brancæ Ursinæ vel Pastinacæ simili; radice Asam fœtidam fundente*, Kemph. Amæn. Exot. 535. Fig. 536. DEVIL's DUNG.

Silphium grows in the Countries of *Syria*, *Armenia*, *Media*, and *Libya*. Its ferulaceous Stalk is called *Maspetum*; the Leaves are like those of Smallage, and it has a broad Seed. The Root is heating, hard of Digestion, generates Inflations, and is hurtful to the Bladder. Made into a Cerate, it cures strumous Swellings, and Tubercles, and applied with Oil in a Cataplasm, removes Lividness contracted by Blows in the Face. Mixed with Cerate of Iris or Cyperus, it helps the Sciatica. Boiled in Vinegar in a Pomegranate Shell, and applied by way of Cataplasm, it takes off Excrescences about the Anus; the same drank resists Poisons. In Sauces and Pickles, it makes a grateful Ingredient to the Palate. They collect the Juice that distils from Incisions made in the Root and Stalk. The best is what is reddish, transparent, somewhat like Myrrh, and of a strong Smell, not porraceous, nor of a harsh Taste, but when diluted turns white.

The *Cyrenean* Juice, if you taste but a little of it, raises a Moisture over all the Body, and diffuses a most fragrant Odour, so as almost to take away the Breath of him who tastes it. The *Median* and *Syrian* Kinds are weaker in Virtue, and have a ranker Smell.

All the Liquor, before it is inspissated, is adulterated with *Sagapenum*, or Bean-meal, which may be discovered by the Taste, Smell, Sight, and by diluting it. Some give the Name of *Silphium* to the Stalk, but call the Root *Magudaris*, and the Leaves *Maspeta*. The Liquor is of most Virtue, next to that the Leaves, and least of all the Stalk. This Liquor generates Inflations, is of an acrimonious Quality, and cures an Alopecia, being mixed with Wine, Pepper, and Vinegar, and rubbed on the Part. Made into a Litus with Honey, it clears the Sight, and discusses a Cataract in the Beginning. For Pains of the Teeth, it is put into their Cavities; or mixed with Frankincense, and tied about them in a Linnen Rag; or, lastly, serves in a Collution, or to wash the Mouth, being mixed with a Decoction of Hyssop and Figs in Oxycras. It is good to be applied to the Wounds made by the Bite of a mad Dog; and is effectual against the Poison of all venomous Creatures, and envenomed Weapons, being either drank, or used to anoint the Part. Diluted with Oil, it makes an Ointment for the Sting of the Scorpion, and is infused into Gangrenes after Scarification. It is, also, applied to Carbuncles, either alone, or mixed with Nitre, Honey and Rue; and extirpates Corns and Calluses, after they have been first cut or pared; for which Purpose it is made into a Malagma with Cerate, or the Inside of dried Figs. Used with Vinegar, it cures a recent Lichen, and removes a Sarcoma or Polypus, being mixed with Vitriol or Verdigrease, and rubbed on the Parts affected for several Days together; but the Extuberances are to be extracted with the Forceps. It cures an inveterate Roughness of the Aspera Arteria; and diluted in Water and supped, it immediately relieves those who are taken with a sudden Hoarseness. Made into a Litus with Honey, it represses the Swelling of the Uvula; and with Oxymel, makes a good Gargarism in the Quinsey. It procures a good Colour to those who use it in Food, and taken in a poach'd Egg, is good for a Cough, and in sorbile Liquors for a Pleurisy. Exhibited with dry Figs, it is effectual against the Jaundice and Dropsy; and taken in Wine with Pepper and Frankincense, it removes a Rigor. It is given, to the Weight of an Obolus, in a Tetanos and Opisthotonos; and used in a Gargarism with Vinegar, it expels Leeches adhering to the Throat. Taken in Oxymel, it relieves under Coagulations of Milk within, and in the Epilepsy. Taken with Pepper and Myrrh, it provokes the Menses; and with Grape-Kernels helps the Cœliac Passion; and the same drank with a Lixivium, gives Relief under sudden Convulsions and Ruptures. For Potions it is dissolved by bitter Almonds, Rue, or hot Bread. The Juice of the Leaves has the same Virtues, but in a much inferior Degree. It is good, eaten in Oxymel, for the Aspera Arteria, [πρὸς ἀσθενείαν] and particularly for a broken Voice [ἀποκοπείσων ἤχους]; it is eaten, also, with Lettices instead of Rocket.

There is another sort of *Magudaris*, said to grow in *Africa*, whose Root resembles the *Silphium*, tho' not so thick, but is acrid, fungous, and void of Juice, yet works the same Effects with the *Silphium*. *Dioscorides*, *Lib.* 3. *Cap.* 94.

Asa Fœtida is a Gum Resin, brought to us in Lumps of different Colours, white, yellowish, blue or brown, which last is the worst Colour of all. It has a very strong fetid Smell, and we are obliged to *Kempfer* for a very exact History of the Tree which produces it, and of the manner of gathering it.

Asa Fœtida is an excellent Remedy in all hysteric Disorders, whether only smelled to, or mixed with what is taken inwardly. It is, also, reckoned a good Sudorific, and strengthens the Stomach. The Dose is from twelve Grains to half a Dram, but with a View to the Stomach only, it must be given in smaller Doses. Externally, it is a good Resolvent; and in that Intention, is an Ingredient in the *Ceratum de Galbano*, and is sometimes tied to the Bits of Horses Bridles. *Geoffroy*.

THE HISTORY OF THE ASA FŒTIDA OF DISGUUN.

The *Hingisch* is an umbelliferous Plant, a-kin to Lovage, with branched Leaves like Piony; a full and large Stalk; an edged Leafy-winged Seed, naked and single, like that of Branc-Ursin or Parsnep; and a Root yielding *Asa fœtida*. Its Root lives for many Years; is large, heavy, naked, black on the Outside, which in a Clayie soil is smooth, in a Gravel rough, and, as it were, wrinkled; for the most part single like a Parsnep, but often branched into two or three at a small Distance from the Top, some of which grow perpendicularly down; others run obliquely and irregularly, just as they are bent and twined by what they met in their Way. The Top of the Root throws itself out of the Ground, and is set round and thick like the *Peucedon*, with rough Fibres standing up like Bristles of a reddish-brown Colour. It has a fat juicy Rind, that easily comes off as one pulls up the Plant, and on the concave Part of it is smooth and moist. The Substance of the Root is heavy, solid and white, like a Turnep full of a fat, very white, and very fetid Juice, with a horrid ungrateful Smell, of the Garlick-kind, which is called by the *Persians* and *Indians*, *Hing*; and by the *Europeans*, *Asa fœtida*. The Leaves spring out from the Top of the Root in the latter End of Autumn, six or seven in Number, and always more or fewer in proportion to the Greatness of the Root; all Winter they flourish greatly, and wither away about the Middle of the Spring. The Leaf is branched out into several Parts, even about a Cubit long, shaped for the most part like the Piony, and of the Substance, Colour and Smoothness of Lovage. It has a Smell not so strong as that of the Root, and a rank Taste, joined with a Bitterness and aromatic Keenness. It consists of Stalk and Branches. The Stalk is a span or more long, not so thick as a Man's Finger, with Ridges winding round, like a Screw, stringy and of a grass-colour, channelled towards the Bottom, by reason of the Leaves inclosing one another, in the upper Parts round. Each Branch has upon it five, more rarely seven Wings, placed on the opposite Sides, but not directly over against one another, somewhat more than a Hand's-breadth long, running obliquely upwards; the lower one is longer than the others. Each Side of the Wing is divided into several Lobes of uncertain Number, and unequal Bigness, oblong and somewhat oval; in some Plants very narrow and long, distinct and at a good distance from one another, quite to the Ribs; and thus being few and separate from each other, every one looks like a Leaf by itself; in others they are broader, shorter, and more grown together, with oval or circular Indentures in them, according as Nature has been pleased to divert herself in forming them, which she does with such Variety, that the Difference of the Leaves shall make the Plants appear as if they were not of the same Species. The Lobes run obliquely upwards, are narrow at the Bottom, and lie along by the Sides of the Rib, of a sea-green Colour, smooth, Juiceless, stiff and brittle, a little hollow on the lower Side. They have one small String running from the Rib unequally along them, very rarely accompanied with others on each Side of it. The Bigness of the Lobes is uncertain; but one may reckon

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reckon them, at a Medium, about three Inches long and one broad. Before the Root dies, (which generally happens in the latter End of Summer) there riſes, with a Number of Leaves round it, a ſingle, ſtrait, round, furrowed, ſmooth, herbaceous Stalk or Stem, which grows up to the Height of ſix or nine Foot or more; at the Bottom it is larger than the Graſp of a Man's Hand; it grows leſs by degrees, and is divided into a ſmall Number of Branches, and they again ſubdivided into Umbrellas, like the reſt of the ferulaceous Plants. It is ſurrounded with very ſmall Leaves, which grow alternately about the Diſtance of a Hand's-breadth from one another; which, with their broad, membranous, and ſwelling Baſes, cling about the Stalk unequally and croſs-ways to each other; and when they fall off, leave Marks behind them, which make a falſe Appearance of its being divided into Joints. It is exceeding full of a white fungous Pith, not broken by Joints, but with a few ſhort Fibres amongſt it running irregularly lengthways. The Umbrellas are upon a Stem of a Foot, others of a Span long, or yet ſhorter, and ſhoot out into ſeveral Radii diſpoſed circularly; each of which making a kind of ſmaller Umbrella, ends in a few little *Radii* of about two Inches long; and on theſe grow the Seeds, naked and upright, upon ſhort or very ſmall Stalks. The Seed is plain and *edged*, (or *leafy*, *foliaceum*) of a reddiſh-brown, oval, nor unlike the Seed of *Sphondylium*, or Garden Parſnep, but ſomewhat larger and blacker than the latter, a little hairy and rough, marked with three Furrows, one of which runs through the Middle, and the others wind along the Edges, and all reach from End to End. It has a ſmall Scent of Garlic, and a ſtrong ſmart bitter Taſte. In the Middle of the outward Shell or Huſk is contained the true Seed, which is black, flat and oval, ending in a ſharp Point. The Flowers I did not ſee; but they ſay they are very ſmall ones, and of a whitiſh pale Colour; and I do not queſtion but they conſiſt of five Petala or Leaves.

The Plant of *Aſa fœtida* is called by *Avicenna* Andsjudaan and Haltut; which Word *Dioſcorides* renders ὀλιφιον, and *Matthiolus* Laſerpitium. In its own Country, both the Root and the Juice it affords, are called *Hingiſeh*, and in *India Hung*. But in common Speech, the Word *Hingiſeh* is uſed for the Plant, and *Hung* for the Juice; and in theſe Senſes I have uſed theſe Words in my preſent Deſcription. Whence the Name *Aſa* is derived or corrupted, I enquire not. The *Germans*, from its ſtrong and offenſive Smell, give it the Name of *Devil's Dung*. This Plant, by the Conjectures of Botaniſts, has been referred to ſeveral different Species, and by the famous Criticks, *Scaliger* and *Salmaſius*, ſet forth by its proper Marks and Names. I ſhall here give a genuine Hiſtory of it from my own Inſpection and Obſervation, having for that purpoſe taken a tedious and fatiguing Journey from the City of *Gamroon* to the Country where it grows.

Perſia, only, is its native Country, not *Media*, *Lybia*, *Syria*, or *Cyrene*; wherefore, all the ſeveral Diſtinctions that are to be found in Authors, between the Juice of this or that Country's Growth, are inſignificant. I was informed by two *Chineſe* Dealers in Spices, that this Plant grows in their Country near the great Wall which divides *China* from *Tartary*, and has a Juice gathered from it. But I am not ſatisfied of the Truth of this, becauſe I do not find any mention made of this Plant in the *Chineſe Herbal*; for the importing the Gum by the Way of the Wall may have given Occaſion to ſuch a Miſtake among the Ignorant. There are, at this time, but two Tracts of Land in *Perſia* which produce this Plant, the Fields and Mountains near *Heraat*, which is a Market-Town in the Province of *Choraſaan*, and a Range of Mountains in the Province *Laar*, which reach from the River *Cuur*, to the City of *Congo*, along the Bay of *Perſia*, at the Diſtance of two, or in other Places three or more Parafangs from the Shore. But it is not in every Part of either of theſe Tracts, that the Plant yields any Plenty of Juice; but about *Heraat*, that only which grows in the wild Champaign Country; and in the Province of *Laar*, that only which is found upon the Mountains near the Town or Territory of *Diſguun*. What grows on either ſide of theſe Countries, either yields a ſmall Quantity of Juice, and is therefore not worth the Pains of gathering; or if it will yield any, there is no body to gather it. For on this ſide of *Diſguun*, the Inhabitants of the Country, who are *Arabians*, Huſbandmen brought over from the oppoſite Shore, and Strangers to every other way of Life but that of Shepherds, never attempt to gather any of it, but concern themſelves only for the Supply of a low and humble Life, which they lead in poor Tents, and become ſupine and thoughtleſs of every thing beyond their own wretched Subſiſtence, and the Care of their little Flocks. Beyond *Diſguun* the Plant is ſaid to have loſt almoſt all its offenſive Smell, and grown ſo ſweet, that the Goats are fond of the Leaves, and feed themſelves exceeding fat with them. In order to fatten them the Day before they graze there, they are fed once with Mountain Salt, (the only Salt they have there) and for the firſt fourteen Days after they begin to feed on it, they are never ſuffered to drink. The Plant grows indifferently in Thickets and craggy Places, and indeed wherever the Wind ſcatters the Seeds; but moſt plentifully, and often at no more than a Foot's Diſtance between the ſeveral Plants, in Places flatted and ſunk into a Plain, as being fitter for retaining, and (on account of the better Condition of the Soil) nouriſhing the Seed.

It ſeldom grows in a moiſt or rich Soil, but more frequently in a ſtony, rocky, dry Soil, with a ſmall Mixture of Clay; and if the upper Part of the Land furniſhes not Moiſture enough, it ſupplies itſelf with it from below, by ſtriking the deeper Root. The People of *Heraat* account that which is called *Hingiſeh*, and grows (they ſay) upon the Mountains, and in the Woods of *Diſguun*, a different Species from that which they call *Huſſeh*, growing in their own Fields. The former, they tell you, affords but a ſmall Quantity of Juice, and even that thin and weak; whereas theirs at *Heraat* yields Abundance of Ouze, more fat, unctuous, and fetid, and therefore much the better Sort. To try the Truth of this, and to obſerve in what reſpects they differed, I careſully compared a Plant of the Growth of *Heraat* (which while I dwelt at *Gamroon* I procured from *Choraſmia*, and had loſt a great Part of its Strength) with one of *Diſguun*, and I profeſs I found no Difference in the Shape. I then ſhewed the Plant of *Diſguun* to the Carriers of the *Aſa* of *Heraat* (who yearly brought it to *Gamroon*) not telling them of which Growth it was, and they immediately declared it to be their own, the *Huſſeh* Plant the Parent of the true and genuine *Aſa*. Whence I gather, that the Difference between the Plants of *Diſguun* and *Heraat* ariſes only from the Difference of Soil in thoſe two Places. That of the Fields of *Choraſmia* is perhaps a fatter Soil, and therefore furniſhes the Root with a larger Quantity of Juice, than the barren Ridges of the Mountains of *Laar* can afford it; to ſay nothing of the Juices of the Plants of each Province, which, compared together, afford not the leaſt Suſpicion that they are of a different Species; but are exactly alike, except in Caſes where a Difference is made either by Adulteration, or by the Seaſon or Manner in which they were gathered, as will appear more fully by what follows. The People of *Diſguun* diſtinguiſh between the Male and Female Plants; thoſe of the former Sex, they ſay, yield no Juice, but ſhoot up into a Stalk, which produces Seed, and by that means they die at the Root; the latter afford the Juice, and have no Stalk: However, this is a falſe Diſtinction, and made through want of due Attention; for there is no Root ever found but what will yield Juice, if it be cut before it runs to Seed like Fennel; for it will, if left to itſelf, ſooner or later ſhoot out a Stalk; after which being deprived of its vital Moiſture, it withers and dies, which is common to it, with moſt other Plants of the umbelliferous kind. The Root is ſaid to live a vaſt while, even to vie with the Life of a Man for Duration; wherefore 'tis no Wonder if the Roots ſometimes be found of a monſtrous Size. If the Nature of the Soil be ſuch, that it riſes not to a Head in the former Part of its Life, (as it ſometimes happens) they affirm the Stem will grow to ſix Foot in Length, and to the Thickneſs of an ordinary Man's Waſte. In its middle Age 'tis as thick as a Man's Leg or Arm, and the Thickneſs got by one Years Growth is that of one's Thumb, always anſwered with a proportionable Length. The Fibres around the Head are ſometimes a Mark of Age, and I am inclined to think they are the Remains of the Stalks of the Leaves which have fallen off, and were too nervous and firm for the Teeth of Time to deſtroy.

All *Aſa Fœtida* flows from the Root when 'tis cut, and none either flows of itſelf, or can by any Art be preſſed out of the Stalk; that Diſtinction, therefore, of the famous *Wormius*, between the Aſa of the Root, and that of the Stalk, comes to nothing. A Root under four Years Growth, yields very little Juice, and is never cut; but as it grows older and larger, it yields proportionably more Liquor.

If it be taken out of the Earth, and not cut till the next Day, yet a milky Juice will flow from it; ſuch a Quantity of Juice it abounds with, that it becomes uncommonly heavy. If it be cut through croſs-ways, its whole upper Surface will be overſpread with this milky Juice, which ſprings up in a continued Line winding irregularly. If we obſerve the Root carefully, we ſhall not find it all of the ſame Subſtance; but in ſome Parts of a fibrous and harder Subſtance, the Fibres running lengthwiſe in an irregular manner; and in others of a ſofter, more ſpungy, and homogeneous One; the latter ſeems deſigned for retaining the Liquor, and digeſting it in its Veſſels, the former for the Circulation and Conveyance of it to nouriſh the Stem. And I add, alſo, that it contributes to the making the Root firmer and more durable, which is of itſelf brittle and fragile. When the Root is dried from all

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all its Moiſture, it looſes all its ſoſter Parts, and the fibrous ones only remaining, are contracted into a ſtringy Pith; but the rough Bark loſes little of its Dimenſions. The Liquor, when it firſt flows from the Veſſels of the Root, is very white, liquid and fat, exactly like the Cream of ſweet Milk, and therefore not in the leaſt clammy; but by being kept in the Air or Sun, it changes its Colour to a light brown, and grows firmer and glutinous. Its Scent is the Teſt of its Excellency; the ſtronger it is, the better the *Aſa*. When it firſt comes from the Root, it is of a prodigious ſtrong Scent, above what it is, when grown firmer by Age, and brought into *Europe*; inſomuch that one Dram of *Aſa* freſh from the Root, will caſt a ſtronger Smell than a hundred Pounds of what is dried by long keeping, and is uſually ſold by our Druggiſts. When I returned from the Mountains, I carried home with me a pretty many Roots, (into a very large Houſe with a Court in the midſt of it) but they filled every Room of it with ſo noiſome a Scent, that I was forced immediately to throw them away. When the *Caſila* (a Word they uſe for a Drove of laden Cattle and their Drivers) arrives with *Aſa*, from *Choraſmia*, this Sort of Ware is always unloaded in a Field at a good Diſtance from the City; but notwithſtanding this, if the Wind blows from that Quarter, the whole Air of the Place is infected with its Stench. It muſt be carried into *India* in a Veſſel by itſelf, not with any other Goods that are liable to be corrupted; for Experience teaches, it will infect and ſpoil them all, and does the ſame by all Liquors. The Veſſel in which I croſſed over into *Arabia*, had one ſingle Sack of *Heraat Aſa* hanging at her Stern, which made us prodigiouſly uneaſy with its offenſive Smell; and the Maſter of the Ship was apprehenſive, that even in that little Way, it would do harm to the Roſe-Water, *Schiras* Wine, and the Eatables on board.

Dioſcorides, Book 3. Chap 78. has given us a long Liſt of the medicinal Virtues of *Aſa*; and *Garcias Arom. Hiſt.* B. 1. C. 3. has ſaid a great deal of its Excellency that Way. The *Perſian* Phyſicians, by reaſon of the Nicety of that People, hardly ever uſe it. The Peaſants of the Province of *Laar* became acquainted with its Efficacy in curing Colic Pains, the Dropſy, and eſpecially the Tympany, from the Advice of the *Banjans*. A Citizen of *Diſguun* himſelf told me, that he was afflicted with the Tympany, and that by ſwallowing a Bolus or large Pill of *Aſa*, every Morning for ſix Weeks together, he was perfectly recovered. During this Courſe of *Aſa* the Wind diſcharged itſelf ſo frequently upwards and downwards, and was of ſo abominable a Scent, that he was forced to baniſh himſelf from all Society and Converſation. The Seed of the Plant has the ſame Effect, but in a leſs Degree, and, therefore, the *Indians* fetch it hence for phyſical Uſes. Wounds are ſaid to be healed to a Miracle by the Application of *Aſa* freſh gathered. If this Plant be laid in any Furrows where Water drains, and from thence runs into any Gardens or Groves of Palm or Date Trees, that Water will kill all the Worms at the Root of any Plant whatſoever. The *Indians* (eſpecially the *Banjans*) uſe *Aſa* commonly in their Sauces.

The famous *Renodæus* could hardly be brought to believe this Account of it given him by *Gazzia*; for, ſays he, *if this be true, ſurely either Aſa Fœtida does not ſtink in* India, *or the* Indians *Palates are made of Braſs*. I myſelf have taſted Cakes that have been mixed with this Liquor, which have had a far more tolerable Reliſh than I expected from them. 'Tis a common Thing among *Banjans* to rub the Rims of their Cups with this Liquor, to raiſe an Appetite.

There is a very great Diſpute between the Men of *Heraat* and *Diſguun*, whoſe *Aſa* is to be preferred; each think to advance the Worth of their own Commodity, by depreciating that of the others. At *Heraat*, the *Aſa* of the Mountains of *Diſguun* is decried, as lean, dry, and of a baſtard Kind; while their own is declared to be fat, ſoft, and of the higheſt Scent. The Men of *Diſguun* reply in behalf of their *Aſa*, that the Fatneſs of the *Heraat Aſa* is not natural but forced, by their mixing it at its firſt Gathering with the Cream of Camels or Goats; by theſe Means, they think it does not harden ſo ſoon, nor will it keep ſo long when it is thus ſophiſticated; thus, ſay they, the Buyer is cheated into a Belief, that what is really the Fatneſs of the Mixture, is the genuine Richneſs of the *Aſa*. Envy, and the Love of Gain, engendered this Quarrel; but there is no Reaſon thence to conclude the *Aſas* of theſe two Places to be of a different Species; wherefore, without Regard to this or any other Diſtinctions made by Druggiſts, I ſhall only diſtinguiſh between the Plants themſelves, and the *Aſa* they produce, as they grow in Fields or Mountains; at *Heraat* or *Diſguun*; or, if you would rather uſe the Names of the Provinces in which they grow, of *Chorafma* or *Laar*; the one is for the moſt Part fatter and ſoſter, and brought over wrapped in Sheeps and Goats Skins; the other is drier, and comes in Bags made of the Leaves of the wild Palm-tree. As all my Obſervations were made upon the latter, ſo I here give you an Account of the Manner of gathering it, which is the ſame with that of gathering the *Aſa* of *Heraat*, except in a very few Circumſtances.

The Harveſt of *Hingiſeh* or *Aſa*, is gathered by ſome of the Inhabitants of the neighbouring Villages, but principally, by the major Part of the People of *Diſguun*, who are, in all, about three hundred, and is compleated in four Seaſons, or, which is the ſame, in going four times from the City to the Hills where the *Hingiſeh* grows, which are diſtant about two, three or four Paraſangs. I will relate the Order of the ſeveral Times, or Seaſons, in which the Harveſt was reaped by the People of *Diſguun*, that Year I viſited theſe Mountains, which was 1687. The Order is indeed always the ſame, tho' perhaps the Day on which they begin their Harveſt, or the Diſtances between the ſeveral Seaſons of it, be not always exactly the ſame.

FIRST SEASON.

Before ever they began their Work, they made Enquiry what the foreign Demands for *Aſa* were, that they might not ſpend their Time and Labour in vain; as ſoon then as they are aſſured of a Vent for it, they flock to the Mountains about the Middle of *April*, becauſe that is the proper Seaſon to prepare the Root for yielding its Moiſture; of which the Paleneſs, Drooping, and Withering of the Leaves, is a certain Sign. If the Peaſants of the neighbouring Villages determine to gather any, they repair thither in the ſame Month. When they arrive, they diſperſe themſelves, and keep at a great Diſtance from one another, ſo that they who have agreed to make one common Stock of what they gather, whether they are a ſingle Family, or a Number of Families related to each other, or the People of one particular Street thus agreed, pitch ſeverally upon a certain Tract of the Mountain, and gather there. Here each Man chearfully falls to Work on the Plants he finds; and firſt, with a Spade, takes away the Earth a little Diſtance around the Root, which is commonly a firm Sand or Gravel, to about the Depth of a Span, ſo that the Root appears naked a good Height out of the Ground. Secondly, he takes the Stalks of the Leaves croſs-ways in his Hand, and twiſts them off from the Root, which, in that Seaſon of the Year, is eaſily done; then takes off the rough Crown of Fibres from its Head, which appears underneath bald and wrinkled. Thirdly, with his Spade, or Hand, he breaks the Clods of Earth he had dug up, and covers the Root again with them to the Top; then upon the Earth he lays the Leaves he has pulled off, or any other that chances to be near him, with a Stone upon them, leſt the Wind, which is here often exceeding violent, ſhould carry them away, and he, at his Return, not know where to find the Root.

The Reaſon of thus covering the Root, is to defend it from the Sun's Heat; for were it expoſed to it, it would, in twenty four Hours, putrefy, and yield no Profit to the Labourer. After they have thus prepared many thouſand Roots for gathering, (four or five Men uſually prepare two theuſand) they leave the Mountains and return home, having, in about three Days time, finiſhed the Labour of the firſt Seaſon, which they call *Kuſtian*, that is, *to kill*, as if this were *the Seaſon of Slaughter*; becauſe, in this Seaſon, the Plants are condemned hereafter to die, by being drained of their vital Juice.

SECOND SEASON.

After forty Days ſpent at home (this Year they ſtaid longer than they uſually did) the whole Number of Gatherers leave the City in the Evening, and in the Morning, the twenty fifth of *May*, arrive at the Mountains; they then divide themſelves, and each Company goes to its allotted Tract of Ground, to collect the Liquor from the Roots, prepared in the Manner deſcribed above; which being here got together for the Nouriſhment of the Leaves, now all ſtagnates at the Top. The Inſtruments they had, were, a ſharp Knife for cutting the Root, a Sort of Slice or Spattle made of Iron, broad at the End, to ſcrape the Juice from off the Root, and a Diſh or Cup fixed upon their Side, to put the Juice into, as they ſcraped it off, and two Baſkets hanging by a Yoke from the Shoulders, in which they carry off the whole Quantity of Juice they gather. It ought to be mentioned, that every Company divides its Portion of Land, and conſequently the Roots, into two Parts, and all in the Company work in each Part every other Day; becauſe, after the Root has afforded a good deal of Moiſture, it requires Time both to yield freſh Liquor, and to thicken what it has already yielded.

Each

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Each Man takes a Root, and removes the Bundles of Leaves and Earth which cover its Top. He then cuts off the rough Top croſs-ways, and leaves the upper Surface concave, whether the Liquor flows, without any Danger of running over, till after two Days it is ſcraped off. Then, as in the former Seaſon, he again covers the Root from the Injuries of the Sun's Heat, and takes Care to lay the Leaves over the Surface arch-wiſe, that they may not, by preſſing upon it, wipe off the Juice. When their Taſk is finiſhed for that Day, the next Day, the twenty ſixth of *May*, is ſpent from Day-break in the like Labour, in the other Diviſion of their Land: On the twenty ſeventh they reviſit the firſt Part with which they began, and after having taken away the Shelter of Leaves, they ſcrape off the Liquor they find at the Top of the Root, and put it into the Diſh that hangs by their Side. Then they take away a little more of the Earth about the upper Part of the Root, and with their Knife cut off the dry Surface, about the Thickneſs of an Oat-ſtraw; for it is enough if juſt the Outward Surface be cut off, which ſtopt up the Pores, which, when that is removed, diſcharge themſelves of their Liquor; and indeed they have experienced, that the thinner the Parings are, the freer and more plentifully the Root flows again. The ſame Perſuaſion they have of the Preferableneſs of one Manner of cutting it, which they require ſhould be performed by ſtriking the Knife through, and not the common Way of drawing it backward and forward; which, they ſay, does not make them ouze ſo plentifully as the other.

The Reapers frequently empty the Diſhes which hang by their Sides, and then put the Juice into larger Veſſels, or pour it into Leaves laid upon the Ground, that the Sun's Heat may ſtiffen it; by which means alſo it loſes its natural Whiteneſs; for its Subſtance being ſoft and differently ſituated, admits the Sun's Rays in a greater Quantity in ſome Parts than in others; its Colour alſo may be affected by what it is laid upon when freſh gathered.

Thus, after the Root is covered again, the Work is done. On the twenty eighth, the ſame Buſineſs is done in the ſame Manner, in the ſecond Diviſion. On the twenty ninth they return to the firſt Diviſion; and when they have gathered the Liquor from the Root a ſecond time, they take away the Earth, cut it, and cover it again as before. On the thirtieth, the Liquor in the Roots of the ſecond Part, is gathered a ſecond Time, and the Roots cut. This is the Work of the ſecond Seaſon, in which the Roots are thrice cut, and the Liquor that pours out of them twice gathered. Then each Man puts his whole Collection into the Baſkets, which hang on each Side of him, from a Yoke laid acroſs his Shoulders; and carries it away. Each Company of four or five Men carry off about ten or twelve *Maan* of *Diſguun*, that is, about fifty *German* Pounds. This *Aſa* of the firſt Gathering, is not eſteemed the beſt, but rather a meaner Sort.

THIRD SEASON.

After ten Days time (eight will do) allowed for the Roots to ſupply themſelves with freſh Liquor; on *June* tenth, at Day-break, they return to the firſt Diviſion, and go on with their Harveſt. Having removed the Shade of Leaves, and the Earth from about the Root as before, they ſcrape off the Liquor from the Top of it, and then cut it again, and cover up the freſh Wound as before. On the eleventh they do the ſame in the ſecond Diviſion.

This Liquor, which in ten Days time flows from the Roots in a larger Quantity, and is of a due Conſiſtency, is called *Piſpaas*, the other is called *Sjur*, that is *Milk*, from its Whiteneſs, and want of Conſiſtency. The *Piſpaas* is commonly eſteemed much better, and is a great deal dearer than the *Sjur*, whether on account of its Scarcity, or its greater Conſiſtency, I know not; this I am ſure of, that the *Sjur*, tho' it is thinner, is not of a worſe Subſtance than the *Piſpaas*; for if it be longer expoſed to the Air, it grows full as firm, and cannot be diſtinguiſhed from it. I am, therefore, inclined to think, that the People of *Diſguun* never before ſold the *Aſa Sjur* pure and genuine, but always adulterated it, which was eaſily done, when it was freſh gathered, becauſe it was ſo liquid and thin; whereas the *Piſpaas* being much more conſiſtent and firm, will not mix with any other Subſtance, and is therefore ſold neat and pure. All *Aſa* is of itſelf ſimple and unmixed, therefore, all heterogeneous Matter in *Aſa* comes by Adulteration. The Reapers themſelves confeſſed to me, that they uſed to mix with the *Sjur Aſa*, not Meal, nor any Sort of ſagapenous Gum, as moſt Writers have thought, but a pure Clay, which was juſt at Hand on the Mountains where they gather it. Moſt, they ſaid, put an equal Quantity of this to their *Aſa*; others twice as much, or in Proportion to their Deſire of Profit, ſtill putting in the more, the thinner the *Aſa* was. This made the Price of this *Aſa* very low; and after the Cheat was diſcovered, the *Aſa* of this Sort was deſpiſed; and indeed, they who thus adulterated it, ſuffered enough for it; for no body would buy any *Diſguun Aſa* for Fear of this Impoſition; having therefore learned more Prudence, they no longer uſe any Kind of foreign Mixture, but put the *Aſa's* of each Sort and Gathering promiſcuouſly together, and carry it in Bundles to *Congo* and *Ormus*, whence 'tis exported. And if there is yet any Mixture in it, it is through the Negligence of the Gatherers, in not covering the Roots carefully after they have cut them: Tho' indeed all their Care cannot prevent Dirt and Duſt from falling from the Leaves that ſhade the Roots, or from being blown upon them by the Wind, which will, in ſome Meaſure, foul the Liquor.

On the twelfth Day, in the firſt Diviſion, and on the thirteenth, in the ſecond Diviſion, they gather the Juice *Sjur*, and cut and cover the Root again; and on the fourteenth they do the ſame again in the firſt Diviſion, and on the fifteenth again in the ſecond; ſo the Roots, after having yielded once the thicker *Aſa Piſpaas*, and twice the thinner *Sjur*, are left under their Covers.

FOURTH SEASON.

After three Days Stay at home, on the third of *July*, they viſit the Roots again; having been taught, by Experience, that in a longer Intermiſſion, after they have been ſo often drained of their Moiſture, and brought nearer and nearer Death, they will be ſubject to putrefy, and whatever Liquor they have then in them, would be loſt, by deferring the Gathering of it any longer. The firſt Day is ſpent in gathering the *Aſa Piſpaas*, in the firſt Diviſion, in the Manner before deſcribed. The fourth Day is ſpent in the ſecond Diviſion, in the ſame Work. On the fifth Day they gather *Aſa Sjur* in the firſt Diviſion; and on the ſixth, in the ſecond Diviſion. On the ſeventh Day they finiſh the Work in the firſt Diviſion; they get what Juice they find there, and cut the Roots no further, but leave them uncovered, whereby the Air and Sun preſently kill them. On the eighth Day, they concluded the Buſineſs in the ſecond Diviſion, and leave the Roots, in the ſame Manner, to be deſtroyed. Thus is the Harveſt of *Hingeſeh* or *Aſa* compleated.

In three Excurſions to the Hills, they gather the *Sjur Aſa* eight Times, and the *Piſpaas* three times from each Root. But it is to be remembered, that the larger Roots, ſuch as are above twenty Years old, and are found in the furtheſt Parts of the Mountains, whither they cannot climb without great Difficulty, are not ſo ſoon laid aſide, but they will yield the *Aſa Piſpaas* four or five times. and the *Aſa Sjur* ſo much oftener in Proportion. So that theſe Roots are not compleatly drained of their Juice till *September*. However, in theſe Mountains few Roots are found above ten Years old, and none ever exceed twenty. For the great Price that *Aſa* hath bore for many Years together, made the Reapers gather all the Roots that ever they could find, ſo that there has not, of late, been Time enough allowed for any to arrive at ſo great an Age and Bulk. The Roots being drained of their Moiſture, and left uncovered, do every one of them putrefy: Tho' one of the Reapers affirmed to me, upon his own Experience, that if they were covered with Earth, they would grow again; but in this Point none of the reſt agreed with him. *Kempfer.*

SILURUS. Offic. Schw. Theriot. Sil. 444. Schonef. Ichth. 69. Rondel. de Piſc. 2. 180. *Silurus Rondeletii*, Raii Ichth. 128. Ejuſd. Synop. Piſc. 70. Geſn. de Aquat. 867. *Glanis*, Aldrov. de Piſc. 567. Salv. 210. Charlt. de Piſc. 40. Jonſ. de Piſc. 101. The SHOAR FISH.

This Fiſh is found in the *Danube*, and its Fleſh is nouriſhing when eaten freſh, and looſens the Belly; but ſeaſoned with Salt, affords very little Nouriſhment, but clears the *Aſpera Arteria*, and mends the Voice. The ſalted Fleſh applied draws out Splinters, and the Pickle cures a recent Dyſentery, being uſed by Way of Injection, by attracting the Flux of Humours in the Superficies; a Clyſter of the ſame cures the Sciatica. *Dioſcorides.*

SILYBUM. A Name for ſeveral Species of Thiſtles. Thus there is the *Carduus Lacteus, peregrinus, major, femine fuſco*, which is called by *Parkinſon*, *Silybum minus cinereum*. And the *Carduus lacteus peregrinus Camerarii*. J. B. *albis maculis notatus exoticus*. C. B. is called, *Silybum minus Bauhini*, by the ſame Author. See AGA CRETENSIUM.

SIMAROUBA.

The moſt celebrated Plants which have been pointed out and recommended, either by the ancient Botaniſts in general, or modern Travellers in particular, as ſpecific Remedies, are not really ſpecific, but in certain Caſes. Diſeaſes ſeem not to reſemble one another more in ſome certain Symptoms, which are common to them, than they ſometimes differ as to the Cauſes

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Causes on which these Symptoms depend. Hence it must of Necessity happen, that the same Remedies being employed in Diseases, which resemble one another only in Appearance, seldom or never produce the same Effects; and this has given Occasion to the ill Usage which is every Day made of the most salutary Plants, and that Neglect and Disregard which have afterwards been shown to those which were, at first, the most in vogue.

The Plant *Ipecacuanha*, which *Piso* had observed to be one of the most effectual Remedies for a Dysentery with the People of *Brasil*; that famous Root which the late *Helvetius* first employed with so good Success in this Country, and which, from that Time, justly passed for a Specific against that Disease, is on the Point of sharing the common Fate of all wonderful and extraordinary Plants imported from foreign Countries.

Ought we then to condemn as useless that Remedy, because it has not always succeeded in Dysenteries when prescribed? Or ought we not rather to lay the Blame on the Want of Experience in those, who being no Physicians, directed the Use of it on improper Occasions? And indeed what Remedy, tho' ever so effectual, would not be subject to lose its Reputation in such Hands?

The true Reason why *Ipecacuanha* is sunk in its Esteem among us, is, that instead of a prudent Use of it, in a Collection of Crudities in the *Primæ Viæ*, or the abdominal Viscera, it has been prescribed sometimes in hepatic Fluxes, sometimes in dysenteric Fluxes occasioned by an immoderate Use of Purgatives, frequently under an Inflammation about the Abdomen, and sometimes when a pungent and fixed Pain, which attends some Dysenteries, gives Room to suspect a cancerous Ulcer in the Intestines.

To direct the Use of *Ipecacuanha*, on any of these Occasions, would be, in a Manner, to force Nature to produce, by Means of this Remedy, Effects for which she never designed it. If the little Success which attended its Administration in all these Cases, was an evident Proof that they were all out of its Sphere, would it not be prudent and advisable for the practical Physician to abstain from the Use of it, because, in these Circumstances, it had not answered his Expectation? And since he was convinced by his Observations, that this Root cured no Dysenteries but such as were of a certain Character, should not that Experience have put him upon the Search for new Specifics, for the Cure of those which might be of another Kind?

It can hardly be doubted by those who have never so little consulted the antient Botanists, but that such there are in Being; and if the Ancients had the Knowledge of some of them, why should we despair of retrieving them from that State of Oblivion into which they are fallen since their Time?

Dioscorides speaks of a Root of a yellowish Cast, pretty thick, and very astringent, which, he says, was brought from *Barbary*, a Name given in his Time to the remotest Countries of the East. The Bark of this Root was then used in Decoction for Hæmorrhages at the Mouth and Nose, for Dysenteries and Fluxes [*Devoyements*]; he gives it the Names of Μακιὲ (*Macer*) and Μακὶρ (*Macir*).

Pliny calls by the same Names of *Macer* and *Macir*, the Bark of a Tree which was brought from the *Indies*, and which, he says, was of a reddish Colour.

Galen, who in the Description and Uses which he gives us of it, agrees with these two Authors, only adds, that it is aromatic.

And it is not at all strange that *Averroes*, and other *Arabian* Physicians, had the Knowledge of the *Macer*, since it is the Bark of a Tree which grows in the Eastern Countries.

All that has been said by ancient Authors concerning the *Macer*, may be found in the Relations given us by some who have travelled into the *East Indies*, and particularly those who have visited the Coasts of *Malabar*, and the Island of *Sainte Croix*. They tell us of a greyish Bark, which being dried, becomes, as they say, yellowish, is very astringent, and has the same Virtues as the *Macer* of the Ancients.

Christopher Acosta, who has given us one of the first Accounts of simple Drugs imported from the *Indies*, and was Physician to the Viceroy, says, that the Tree which bears that Bark, was, by the *Portuguese*, called *Arbore de las Camaras*, and *Arbore Sancto*; that is to say, "a Tree for Dysen-"teries," and, for its Excellence, "The Holy Tree;" by the Christians, *Arbore de Sancto Thome*, "the Tree of St. "*Thomas*," by the Natives of the Country, *Macruyre*, and by the Brachman Physicians *Macre*, which agrees with the ancient Word *Macer*.

The same Historian, who is the only one that has given us a Figure of that Tree, compares it with one of our Elms; and as to the Virtues and Use of its Bark, he relates such particular Matters of Fact, of which, he says, he had been an

Eye-witness, that there is hardly any Remedy which might with more Justice claim the Name of a *Specific*.

To shew the Value which they have for this Bark in the *Indies*, I shall only quote a Passage from the Works of that Physician, being an Elogy, or Commendation, given, he says, by an *Indian*, to the Tree which he called *Macre*, as he was shewing it to him. It was a Tree, he said, pointed out by Angels for the Health of Mankind, and that it was to be preferred in its small Dose before the large Quantity of Barks of *Myrobalans*, *Areca*, and *Coris*, which are usually prescribed, and have been always reputed by the *Indians* the most excellent Remedies against the Dysentery.

Clusius, a Botanist of the sixteenth Century, and particularly famous for his learned Inquiries into foreign Plants, had a Suspicion even in his Time, that a certain small Quantity of Bark, like that just before described, and which he saw at a Physician's at *Amsterdam*, for whose Use it was imported from the *Indies*, as a Specific against the Dysentery, was the same Bark which *Monardes*, a Physician of *Sevil*, says, in his *History of Drugs*, he had so happily made use of in that Distemper, without knowing what it was.

All these Descriptions, which seem to agree to the same Tree, and that Tradition of the Virtues of its Bark, proved true by the Experience of those Authors, have excited my Curiosity, in order to attain the Knowledge of so sovereign a Remedy, and to enquire into the Causes whence it comes to be intirely lost, since the Time of *Galen*, in the Western Parts of the World.

About the Year 1713, there was first imported from *Cayenna*, to M. *le Comte de Pontchartrain*, Secretary of State, the Bark of a Tree called in that Country *Simarouba*, and which he was assured was used, in those Parts, with good Success, in Fluxes and Dysenteries. This Account of its Usefulness induced that Minister to make a Present of it to the Academy of Sciences, and to M. *Fagon*, at that time first Physician to the King, who presented a Part to the Professors of the Royal Garden. But the small Quantity which was distributed to them not permitting them to make many Experiments, it only served to lie in their Druggery, as a Sample of a rare Drug, whose Effects were not as yet well attested in those Parts.

All that was then discovered relating to it, by the Experiments which M. *Fagon* caused us to make, was, that this Medicine was, at least, safe, and not dangerous, since it had no sensible Effect, neither by any manner of Evacuation, nor by the least Pain in the Intestines.

But in the Year 1718, when the Heats of the Summer were excessive, and gave Rise to vast Numbers of Dysenteric Fluxes, which were so far from yielding to Purgatives and common Astringents, or even to *Ipecacuanha* itself, which was accustomed to be used, with good Success, in repressing those extraordinary and violent Kinds of Evacuations, that, on the contrary, they were rather the more exasperated and increased by the Repetition of those Remedies, we had Recourse, as to the last and most sovereign Remedy, to the small Quantity of *Simarouba* which was left us, of the Distribution which M. *Fagon* had made to us, and we were soon satisfied, in short, that of all the Remedies which we had hitherto put in Practice, none had so readily succeeded as this Drug.

This happy Success having raised more and more my Esteem for this Bark, I intreated M. *Randot*, Intendant General of the Navy, to procure for me another Quantity, with a Design to use it not only in Dysenteries, which were ceased at the Beginning of 1719, but in Fluxes of Blood, which are so common in the Women of this Country, and so dangerous, on Account of the Use of Alum, which has been for some time past the Remedy in Vogue.

The Conjectures which I had entertained of the near Affinity of the Causes which produced those Fluxes, and certain Dysenteries, which are pretty common, induced me to make Trial of the same Drug in both these Disorders; and the continual Success which attended the Use of it on both Occasions, was so far from tempting me to make a Secret of the Discovery, that, on the contrary, it engaged me to compare all those Observations with those I had seen in our ancient Botanic Authors, concerning the Description and Effects of *Macer*, with a View of retrieving, and restoring to the Public, that previous Specific, so much extolled by them.

And such is the Matter of Fact, that in Truth it may be said, that if the *Simarouba* of the *Americans* be not the *Macer* of the Ancients, it has, at least, a very great Resemblance to it, both in Form and Effects.

The Colour of the *Simarouba* is a yellowish Grey. *Dioscorides* says, that the *Macer* is of a yellowish Colour.

Our Bark is more or less thick, in Proportion to the Age of the Tree; the same Author makes the Bark of the *Macer* to be of a competent Thickness.

It

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It is generally ackowledged, by all thoſe who have ſpoken of the *Macer*, that it is of a very aſtringent Quality; this, alſo, is the ſpecific Virtue of the *Simarouba*, the Decoction of which being drank, has the ſame Succeſs as that antient Specific exhibited in the ſame Manner.

It will, indeed, be difficult to demonſtrate a perfect Agreement between the *Simarouba* and the *Macer*, becauſe the Antients who ſpeak of the *Macer* are not agreed as to the Tree which bears that Bark, nor about the Quality of its Smell nor Taſte; and it is to the Variety of their Relations on this Head, and the Ignorance of Commentators, who confound *Macer* with *Macis*, that, I think, we ought to impute the Cauſe of that Oblivion into which that Drug has fallen ſince *Galen*'s Time; for as to the Point of its being a Native of the *Eaſt-Indies*, whence *Pliny*, *Serapion*, and *Averces*, all make it to come, *Garcias ab Horto*, *Acoſta*, and *John Morquet*, who travell'd thither in the ſixteenth Century, aſſure us, that it was a Remedy then uſed in the Hoſpitals, and that at *Bengal* they made a conſiderable Traffick with it.

With regard to the *Simarouba*, I ſhall now give you an Account of what I had an Opportunity to obſerve, after I had received fifty Pounds of that Drug from M. *Barrere*, Phyſician and Botaniſt, at his Return from *Cayenna*, in the Year 1723. This Bark, both as to its Inſide and Outſide, pretty much reſembles that of the Linden-Tree, and is of the ſame ſtringy Conſiſtence, which render it flexible, and hard to break; and being chew'd in the Mouth, it has a little bitteriſh Taſte, which is very tolerable, and communicates the ſame to the Water in which it is boiled.

It is obſerv'd, that in the boiling, the Liquor grows white and ſpumous, like Milk, and riſes conſiderably more in the Veſſel, than the Decoctions of common Drugs; and, when it is ſettled after boiling, takes a reddiſh Colour, much like that of Small-Beer.

During almoſt fifteen Years laſt paſt, in which I have uſed the *Simarouba*, I have obſerved, that two Drams of that Bark boiled in a Pint and half of Water to a Pint, is enough for three Glaſſes, one of which is the ordinary Doſe.

This ſimple Decoction having always better ſucceeded with me than the Powder of the Bark and its Wood, I preſcribe it with the more Freedom, in that it is not at all diſagreeable to the Taſte: But ſince we meet with ſome Patients, who had rather take the *Simarouba* in Powder, the Bark or its Wood muſt be raſped, almoſt in the ſame Manner we raſp Tobacco, and exhibit twelve or twenty Grains every three Hours, either in Pills, or in a Spoonful or two of Broth. This Manner of exhibiting it, ſeems preferable to that practis'd by the *Indian* Phyſicians, who give it, as *Acoſta* ſays, in ſour Whey.

Before I ventur'd to publiſh what I now write, I ſatisfy'd myſelf by my own Experience, that the Effects of the *Simarouba* were almoſt conſtantly the ſame in obſtinate and ſlimy Dyſenteries, and in bilious and bloody Fluxes, which very rarely failed of ſtopping at the third or ſixth Glaſs, without any Pain, or Evacuation upwards or downwards, except in a more plentiful Diſcharge by Urine, which becomes high-colour'd, and ſometimes, in particularly qualify'd Subjects, copious Sweats.

Almoſt all thoſe who have been cured by it, have inform'd me, that as ſoon as they had taken the ſecond Glaſs of the Decoction of *Simarouba*, they felt inwardly a dull Kind of Motion throughout their whole Body, which they call'd a *Combating with the Diſeaſe*, much like to the Effects produced by the *Quinquina*, when being ſeaſonably adminiſter'd it puts a ſudden ſtop to the Return of the feveriſh Fit.

In ſhort, though I have ſeen ſick Perſons, who were very much extenuated, and had loſt all Appetite, recover, after the Uſe of this Medicine for two Nights, a Serenity and Compoſure of Spirits, which were the Prognoſtics of approaching Health, and have their Sleep and Appetite, in a ſurprizing Manner, reſtored, yet I have met with ſome Subjects, who, either through Want of Regimen, or from ſome Remains of the Diſeaſe, have relapſed ſome Days after their Reſtoration, but by renewing the Uſe of the ſame Drink for two or three Days together, the Diſeaſe has at laſt been totally ſubdued.

Though ſuch are the good Effects of the *Simarouba*, as I can atteſt from my own Experience, it muſt, however, be confeſſed, that it would be dangerous, or at leaſt of no Service, to uſe it in Fluxes, Floodings and Dyſenteries, where an Evacuation of the *Primæ Viæ* might firſt be neceſſary before we think of ſtrengthening the Inteſtines; becauſe the Conſtipation which ſucceeds the Uſe of this Remedy, and continues for two or three Days, might occaſion ſome Congeſtion and Settlement of the Humours in ſome particular Part, eſpecially in Subjects where the Kidneys are obſtructed, or when the Party is not free to ſweat: Hence it appears to me adviſeable, not only to have recourſe to general Remedies, before the Uſe of the *Simarouba*, but alſo to be careful to proportion the Doſe to the Condition of the Patient.

If we might judge by that ſlight Reliſh of Bitterneſs perceiv'd in chewing the *Simarouba*, as well as by the whitiſh and milky Colour it communicates to the Water in which it is boiled, and by the Readineſs with which it repreſſes the moſt ſtubborn and inveterate dyſenteric Fluxes, not only by putting a Stop to the Blood mixed with the Stools, but by reſtoring the Excrements to their natural Conſiſtence, we may be pretty confident, that there enters into its Compoſition an acrimonious, ſaline Matter, involved in oily and balſamic Particles; for its Bitterneſs, and the Recovery of loſt Appetite, which it procures, depend on that acrimonious Matter, which becomes ſtomachic; the milky Colour which the Water receives from it in boiling, indicates it to be endu'd with an unctuous, balſamic Quality, the certain Proofs of which are, that calm Compoſure of Spirits, and ſudden Ceſſation of all griping and wringing Pains, and others of any Kind whatever; and, laſtly, by its quick Suppreſſion of the Hæmorrhage, and that conſiderable Conſtipation of the Belly which it procures, we are convinced of its vulnerary and aſtringent Virtue, which was the moſt valuable Qualification of the *Macer* of the Antients.

The Diſcovery of a Specific for the Cure of certain Dyſenteries, which yielded not, in theſe Countries, to the Uſe of *Ipecacuanha*, nor to other Remedies celebrated for curing that Diſtemper, is not the only Fruit which the Public may reap from the Obſervations here made; they inſtruct us beſides, and let us ſee that all Plants have their Uſe, and that we ought not ſlightly to leſſen the Number of thoſe which are uſeful, by retrenching ſuch as have not all their Properties diſplay'd before us; that it is the Duty of the practical Phyſician to cauſe a proper Value to be ſet on ſuch Remedies, and Aſſiſtances, which would come inſenſibly to be neglected, if Botany were to be regarded only as a Science of pure Curioſity; but that without the Lights afforded us from Botany, it would be impoſſible to come to the Knowledge of a conſiderable Number of Specifics indicated by the Antients, and loſt for many Ages; and, laſtly, we learn what Precautions are neceſſary in the Uſe of Things recommended to us and extolled by Travellers, that we may not employ them but in ſuch Caſes, and under ſuch Circumſtances as require their Aſſiſtance. *Memoires de l'Acad. des Scienc.* 1729. *par M. de Juſſieu.*

SIMBOR MANGIANAM, *ſive Cornu Alcis.* Bontii. The Name of an *Indian* Plant, which grows near the Sea in *Java*, and the Kingdom of *Bantam*, of the Figure of an Elk's Horn. It is ſaid to be emollient and reſolutive; to looſen the Belly, and kill Worms, if bruis'd and apply'd to the Region of the Navel. It is, farther, us'd as a Reſolver of cold Tumors. *Lemery des Drogues.*

SIMIA. Raii Synop. A. 148. Aldrov. de Quad. Digit. 225. Jonſ. de Quad. 96. Schw. de Quad. 121. Charlt. Exer. 16. Geſn. de Quad. Digit. 147. THE APE.

The Parts in Uſe are the Stone, or *Bezoar Simiæ*, which is ſometimes found in the Stomach of this Animal, the Heart, and the Fleſh. The Heart roaſted, or boiled in Hydromel, ſharpens the Sight. The Fleſh is cold and dry, auſtere, of very bad Juice, and unfit to eat. *Dale from Schwenckfeld.*

SIMIA is, alſo, a Name for a Fiſh found in the *Nile*.

SIMILA, or SIMILAGO. The ſame as SEMIDALIS. Fine Flower, or Meal.

SIMITAS. A Flatneſs of the Noſe.

SIMIVULPA. The Name of an Animal mention'd by *Aldrovandus*. It is thus call'd, becauſe it reſembles an Ape, and a Fox. It is of no Uſe in Medicine.

SIMITIUM. Ceruſs. *Rulandus.*

SIMOS, or SIMOTHES. Ceruſs. *Rulandus.*

SINAPELŒON. Oil of Muſtard Seed.

SINAPI.

The Characters are;

The Pod is full of very tart Seeds, which are of a roundiſh Figure, and of a very hot Taſte, and ends in a fungous Horn full of the like Seeds.

Boerhaave mentions fourteen Sorts of *Sinapi*, which are; 1. Sinapi, Rapi folio. *C. B. P.* 99. *Tourn. Inſt.* 227. *Beerh. Ind. A.* 2. 13. *Sinapi*, Offic. *Sinapi ſativum*, Ger. 189. *Sinapi ſativum alterum*, Ger. Emac. 244. *Sinapi ſativum ſecundum*, Raii Hiſt. 1. 803. Synop. 3. 295. *Siſativum ſecundum*, Park. Theat. 83. *Sinapi ſiliquâ latiuſculâ glabrâ, ſemine rufo, ſive vulgare*, J. B. 2. 855. *napi ſativum Rapi folio*, Rupp. Flor. Jen. 64. COMMON *Eruca Rapi folia*, MUSTARD.

Common Muſtard has the lower Leaves large, rough, and pretty much reſembling Turnep Leaves. The Stalk grows to be three or four Foot high, ſmooth, much branched, and having ſeveral ſmaller Leaves than thoſe below, thick,

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thick, ſmooth, and leſs cut in, but yet a little ſinuated about the Edges, and hanging downwards on long Foot-Stalks. The Flowers are ſmall and yellow, of four Leaves a-piece, ſet many together, and flowering by degrees; before they have done flowering, the Spike of the Seed-Veſſel is extended to a great Length; they are ſquariſh, claſping cloſe to the Stalks, and ſharp-pointed at the End, full of round, dark, brown Seed, of a hot biting Taſte. The Root is whitiſh, branched, and full of Fibres, but periſhes after it has ripened it; the Seed grows frequently in waſte Places, and among Rubbiſh, and is frequently ſown in Gardens, flowering in *June*.

The Seeds are uſed, and of them is made the Sauce of ſo common Uſe, called Muſtard, which is a wholeſome Condiment, provoking an Appetite, ſtrengthening the Stomach, and helping Digeſtion. It is, alſo, good for the Head, and uſeful in Apoplexies, Lethargy and Palſy, eſpecially of the Tongue. The Seed bruiſed and infuſed in Wine or Ale, is of great Service againſt the Scurvy and Dropſy, provoking Urine and the Menſes. Muſtard outwardly applied, is very drawing and ripening, and laid on paralytic Members, it recalls the natural Heat. *Miller's Bot. Off.*

Muſtard Seed, by the chymical Analyſis, gives a much greater Indication of an acrid than an acid Salt; but it affords a conſiderable Quantity of Oil, very little fixed Salt ſimply ſaline, a great deal of Earth, a little urinous Spirit, and no volatile concrete Salt.

This Seed is ſtomachic, diaphoretic and antiſcorbutic; it is good for the Hypochondria, Green Sickneſs, Cachexy, and ſleepy Diſtempers. It is proper for ſuch as are threatned with an Apoplexy, to chew Muſtard-Seed in the Morning faſting. The following Cataplaſm gives great Relief in Rheumatiſms of the Breaſt:

> Fry ſome Leeks, cut ſmall, with a little Vinegar; when they are enough, ſtrew them with a little bruiſed Muſtard-Seed: Apply this Cataplaſm to the Part affected; it is very reſolvent, and will raiſe Bliſters if you put in a good deal of Muſtard.

Some make a Cataplaſm with Turpentine, Pidgeons Dung and Muſtard, and apply it to the Parts affected with the Gout, and even to the Jaw in a violent Tooth-ach. *Martyn's Tournefort.*

It heats and dries, incides, attenuates, and attracts. Its principal Uſes are to excite an Appetite, promote Chylification, and purge the Head. Outwardly it is uſed in a Sinapiſm, being put in the Noſtrils, or applied to other Parts. It breaks mature Tumors, and excites Sneezing. *Dale* from *Schroder.*

When Muſtard is calcined, it leaves very little Salt in the Aſhes, becauſe the Salt is volatile, and flies off in the Calcination.

We have given the Diſtillation of Muſtard-Seed under the Article ALCALI. And muſt here remark from *Boerhaave*, that Muſtard, and other acrid Vegetables, prove excellent Medicines, when prudently given in Diſtempers attended with an indolent, watery, or cold phlegmatic Humor, no way ſaline, where acid Humors are lodged in the firſt Paſſages; where the Bile is ſluggiſh, and where no alcaline, fetid, or oily putrid Matter is lodged; but the Body remains cold, torpid, and ſwelled all over; as, on the other hand, they prove hurtful, where the Body is hot and feveriſh, the Bile ſharp, the Juices putrid, the Parts inflamed or waſted; or where the putrid Scurvy abounds.

Oil of Muſtard, by Expreſſion, is preſcribed with Succeſs in the ſevereſt Fits of the Stone. But this Oil, by Expreſſion, is more mild, and by no means like Oil of Muſtard-Seed, which is procured by Diſtillation, and is extremely acrid and igneous.

2. Sinapi; Apii folio; ſiliquâ hirſutâ; ſemine albo, aut ruſo. *Boerh. Ind. A.* 2. 13. *Tourn. Inſt.* 227. *Sinapi album*, Offic. *Sinapi Apii folio*, C. B. P. 99. *Sinapi album, ſiliquâ hirſutâ, ſemine albo vel ruſo*, J. B. 2. 856. Raii Hiſt. 1. 802. Synop. 3. 295. WHITE MUSTARD.

This Muſtard ſeldom grows ſo tall as the former, but it is rather more branched; its Branches are fuller of Leaves, which are rough and hairy, and more divided than the former. The Flowers are larger, and of a deeper yellow Colour; the Seed-Veſſels ſtand out farther from the Stalks, are very hairy, ending in a long empty Point, containing four or five white Seeds, which are larger than the common, and make the Seed-Veſſels appear knotted. They are not quite ſo hot as the other. This grows wild in ſeveral Places, but not ſo frequently as the former, flowering about *July*.

This is much of the Nature of the common Muſtard, and ſome prefer it before that to make their Sauce, becauſe it is leſs bitter, and pleaſanter to the Taſte. *Miller's Bot. Off.*

3. Sinapi arvenſe; præcox; ſemine nigro, *Tourn. Inſt.* 227. *Boerh. Ind. A.* 2. 13. *Rapiſtrum*, Offic. *Rapiſtrum arvorum*, Ger. 179. Emac. 233. Park. Theat. 862. Raii Hiſt. 1. 802. Synop. 3. 295. *Rapiſtrum flore luteo*, J. B. 2. 844. C. B. P. 95. *Eruca arvenſis vulgaris*, Rupp. Flor. Jen. 64. CHARLOCK.

It is frequently found among the Corn, flowers in Summer, and the Seed is uſed. It is of a drying, deterſive, and ſomewhat digeſtive Quality, and provokes Urine. *Dale* from *J. Bauhine.*

4. Sinapi; Indicum; Lactucæ folio, *Par. Bat.* 230.

5. Sinapi; Indicum; Lactucæ folio; minus, ſeu anguſto profundius crenato, *Par. Bat.* 230.

6. Sinapi; arvenſe; album; hyemale; folio Rapi; ſemine luteo.

7. Sinapi; Hiſpanicum; pumilum album, *T.* 227.

8. Sinapi; quod Sinapiſtrum; luteum; minus; folii quernis.

9. Sinapi; quod Sinapiſtrum; Siculum; ſiliquis Irionis.

10. Sinapi; arvenſe præcox; ſemine nigro; foliis integris, *T.* 227. *Rapiſtrum flore luteo, foliis non inciſis*, C. B. P. 95.

11. Sinapi; Siculum; luteum; minus; folio Rhapontici.

12. Sinapi; quod Sinapiſtrum; Syriacum; folio Irionis; altiſſimum.

13. Sinapi; Chinenſe; folio Acanthi.

14. Sinapi; Hiſpanicum; folio glaucii violacei. *Naſturtium ſylveſtre, Erucæ affine.* C. B. P. 105. *Boerh. Ind. Alt. Plant.*

If Muſtard-ſeed be eaten crude, the Vapour excited in the Mouth not only provokes Tears, but a Tumor, Itching and Sneezing. Externally it ſerves for the Sinapiſmus of the Ancients, which conſiſted in bruiſing the crude Seeds into a Poultice, and applying it to the Part where an Exulceration was to be raiſed; but if this be often repeated, it cauſes a Gangrene. As to internal Uſes, it is proper where an inert, aqueous, or phlegmatic Humor is predominant. I obſerved a ſurpriſing Effect of it on a Girl at *Amſterdam*, who labouring under Convulſions, after ſhe had tried all manner of Remedies in vain, was, at laſt, by the Advice of *Ruyſch*, cured by the Uſe of crude Muſtard bruiſed with Wine. What is commonly called *Muſtard*, is a Sauce made of the bruiſed Seed, and is ſo named becauſe in *Italy* they made it with *Muſt*, whence they called it *Muſtum ardens*, and by Contraction *Muſtard*. This Sauce, with Vinegar, is very ſerviceable in digeſting Food, and would be very proper for our (*Dutch*) Sailors, becauſe it is an excellent Preſervative againſt the Scurvy. The Seeds are attenuating and inciding; for which reaſon Muſtard is always added as a proper Sauce to Meats dried and hardned in the Smoke. The Seeds are, alſo, of Service, whether uſed internally or externally, in hypocondriac Diſorders, Inflations of the Stomach, Obſtructions of the Spleen, and other Diſeaſes proceeding from an Acid, of which Nature are the Scurvy, Cachexy, Chloroſis, and ſoporous Affections; they alſo ſtimulate to Venery, and provoke Urine. The expreſſed Oil is externally applied in the Palſy and cold Diſeaſes; the Seeds are alſo applied in a Quartan, and ſometimes in a quotidian Fever.

There is a new Plant, which may be reckoned a fifteenth Species under the Name Sinapi; luteum; Chelidonii quernifolio. *Hiſt. Plant. aſcript. Boerhaave.*

SINAPI ALBUM. A Name for the *Turritis*; *foliis inferioribus cichoraceis*; *cæteris Perfoliatæ.*

SINAPI ECHINATUM. A Name for the *Erucago ſegetum.*

SINAPI MONSPESSULANUM. A Name for the *Siſymbrium*; *paluſtre*; *minus*; *ſiliquâ aſperâ.*

SINAPISIS. Armenian Bole. *Rulandus.*

SINAPISMUS, σινάπισμὸς. A Sinapiſm; that is, a Cataplaſm of Muſtard-Seed, applied with a View of exciting a Heat and Redneſs of the Skin.

SINAPISTRUM.

The Characters are;

The Leaves grow three or five on one Pedicle, and are digitated. The End of the Pedicle thickens into a Placentula, whence ariſes the Calyx, conſiſting of four ſmall Leaves of the Colour of the Flower. The Flower is tetrapetalous, the four Petals being erected above, and ſix Stamina taking up the inferior void Part of the Flower. The Ovary grows out of the lower Part of the Placenta, three balſamic Spheres being ſeated at the upper Parts, is extended forwards, and becomes a cylindrical, bivalve, unicapſular Pod, full of many roundiſh Seeds placed all in one Row.

Boerhaave mentions four Sorts of *Sinapiſtrum*, which are;

1. Sina-

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1. Sinapiſtrum; Orientale; triphyllum; Ornithopodii ſiliquis. *T. Cor.* 17.

2. Sinapiſtrum; Indicum; pentaphyllum; flore carneo; minus; non ſpinoſum. *H. L. Pentaphyllum*; *peregrinum*; *ſiliquoſum*; *bivalve minus*, M. H. 2. 288. *Quinquefolium ſiliquoſum*, Alpin. Exot. 322.

3. Sinapiſtrum; Luſitanicum; triphyllum; flore rubro; ſiliquis corniculatis. *H. L. Trifolium*; *Luſitanicum*; *bivalve*; *flore rubro*. M. H. 2. 289.

Sinapiſtrum; Indicum; triphyllum; ſiliquâ maximâ; flore albo. *Boerh. Ind. Alt. Plant.*

This Plant was ſo called by *Herman*, as if it were a ſmaller Kind of *Sinapi*, becauſe in Figure and Acrimony it is ſo very like the Sinapi, that it may be uſed in its ſtead. *Hiſt. Plant. aſcript. Boerh.*

SINAPIUM. Muſtard; that is, a Preparation of Muſtard for culinary Uſes, and ſuch as is uſed in Food.

SINCIPUT. The anterior Part of the Head. See CAPUT.

SINE PARI. The *Vena ſine pari* is the ſame as AZYGOS. The *Emplaſtrum ſine pari*, the matchleſs Plaiſter, is the pompous Title of a Plaiſter deſcribed in the Old College Diſpenſatory, but left out of the laſt.

SINGULTUS. The Hiccup.

As Reſpiration conſiſts of Inſpiration and Expiration, ſo it may be injured with reſpect to either of theſe two. The Faults of Expiration are treated under the Article TUSSIS; but to the Diſorders incident to Inſpiration, belongs that by the *Greeks* called λυγμὸς, or λυγγὸς, and by us the *Hiccup*, which may be defined a Spaſmodico-Convulſive, interrupted and uneaſy Concuſſion of the Diaphragm, and ſome of the Parts affix'd to it, made in Inſpiration, and accompanied with a ſonorous Exploſion of the Air thro' the Mouth.

In order the better to explain the Nature of this Diſorder, we ſhall premiſe ſome Things concerning the Structure of the Parts which concur to its Production. The firſt, then, of theſe which occurs, is the Diaphragm, which in all its Circumference is muſcular; has Fibres which run from the Center to the Periphery; is tendinous in its Center; divides the middle from the loweſt Cavity of the Body, by its tranſverſe, and at the ſame time ſomewhat oblique Situation, ſince it is higher before, and ſomewhat depreſſed towards the poſterior Parts. Towards the Thorax it is convex, but towards the Abdomen concave. It is furniſhed with pretty large Nerves, partly from the vertebral Nerves of the Neck, and partly from the intercoſtal Branch and the Par Vagum. It has two Perforations, the Right of which, in a tendinous Circle, tranſmits the Vena Cava; the Left, in its muſcular Part, tranſmits the Oeſophagus and Par Vagum. The Diaphragm, alſo, adheres to various Parts; for on the anterior Part it adheres to the Ribs, Sternum and intercoſtal Muſcles; in the middle Parts, by means of the Pleura ſurrounding its convex Surface, to the Mediaſtinum; to the Stomach, not only by the Nerves, and exterior Coat produced from the Peritonæum, common to them both, and ſurrounding the concave Part of the Diaphragm, but, alſo, by means of the left ſuperior Mouth of the Stomach, by the *Greeks* called καρδία; to the Liver and its gibbous Surface, by the Ligamentum latum. And at the poſterior Region, it is firmly fix'd to the Lumbar Vertebræ, by two muſculous and tendinous Appendices.

In Conſequence of this Connexion of theſe Parts, a Change of Place in one of them muſt be ſucceeded by the Motion of the others, as we are taught by Reſpiration in its natural State; for in the firſt Act of Reſpiration, which is Inſpiration, the intercoſtal Muſcles partly draw the Ribs upwards, and partly forwards; and partly the Fibres of the Diaphragm, which is muſcular, contracting, and becoming ſhort from the Center to the Periphery, the Diaphragm is chang'd from a convex to a more plain Figure. Immediately the adjacent Parts imitate this Motion, and the whole Abdomen is drawn upwards and forwards, the Stomach, in the mean time, being compreſſed by the Abbreviation of the Fibres of the Diaphragm. But all theſe Parts return to their former Situation, when in Expiration the Diaphragm reſumes its convex Figure. Hence it follows, that when the Thorax and Abdomen are drawn upwards and forwards, and the Cavity of the Breaſt enlarged, then Inſpiration is performed, and Expiration when the contrary happens.

Now to apply this Doctrine to the Hiccup; Though the Diagnoſtic of this Diſorder is eaſy, yet from accurate Attention, we find its Hiſtory to be as follows. The Breaſt is exagitated with a quick Impetus, accompanied with an acute Sound. Under this Exagitation, the Thorax and Abdomen are raiſed, the Cavity of the Breaſt becomes larger, the Speech of the Patient is intercepted; and the Pain is frequently ſo great, that, according to *Dolæus*, in *Encyclop. Medic. Lib.* 3. *Cap.* 2. the whole Body ſeems to be thrown into a Commotion, and the Ribs, as it were, broken. The Sound with which this Diſorder is accompanied, is ſometimes ſo great, as to reſemble the Barking of a Dog, and be heard by Perſons paſſing in the Streets, or living in the Neighbourhood, as we are informed by *Lazarus Riverius*, *Obſ.* 1. *Thomas Bartholinus*, *Hiſtor. Anat. rarior. Cent.* 2. *Hiſtor.* 4. and *Vitus Riedlinus*, in *Obſ.* 31.

These Circumſtances, compared with the Phænomena of Inſpiration, ſufficiently inform us, that the Hiccup is a Diſorder of that Part of Reſpiration, or at leaſt happens under it. For as in natural Inſpiration, a Motion of the intercoſtal Muſcles is obſerved to precede; and a Conſtriction of the Diaphragm, and, at laſt, an Elevation of the Abdomen to follow; and all theſe are performed in a ſlow and gentle manner; ſo, on the contrary, in a Hiccup, as being a preternatural Inſpiration, there is firſt obſerved a Conſtriction of the Diaphragm, and in conſequence of the Conſent, a Motion of the Parts affix'd enſues; but all theſe happen quickly, and with Violence. When the Diaphragm is thus ſuddenly exagitated, the Throat and Stomach muſt of Courſe be ſo too. Hence a Part of the Air taken in being lodged in the *Gula*, is with a violent Impetus forced upwards thro' the whole Oeſophagus, and, at laſt, in the Palate, which is vaulted, forms that Noiſe commonly called the Hiccup. See *Langius in Pathol. Animat. Cap.* 36. At laſt the exagitated Diaphragm, when the Noiſe is diſcharged, is more or leſs ſlowly rendered convex; that is, its muſcular Fibres are again lengthned. Hence ariſes Eaſe, and the convulſive Exagitation only returns by Intervals.

Since, therefore, the Hiccup is a very quick Convulſion of the Diaphragm, but remits and recurs at certain Intervals, it is to be diſtinguiſhed from that ſpaſmodic Diſtenſion which keeps the Diaphragm long rigid, and produces a perpetual Difficulty of Breathing. See *Caſpar Hoffman*, *Inſt. Med. Lib.* 2. *Cap.* 86. *Sect.* 6. and *Galen de Sympt. Lib.* 2. *Cp.* 2. The laſt mentioned of theſe Diſorders is obſerved to approach to a convulſive Colic, or to violent hyſteric Paroxyſms, but is not accompanied with that Noiſe familiar to thoſe afflicted with the Hiccup.

It is, alſo, to be obſerved, that there is a great Difference between a chronical and an acute Hiccup; ſince the latter is obſerved to accompany acute Diſorders, ſuch as continual, malignant, exanthematous and peſtilential Fevers, and Inflammations of the more noble Viſcera. This Species of the Diſorder is not only of a ſhort, but alſo of a dubious Termination. A chronical Hiccup, on the contrary, generally accompanies long protracted Diſorders, ſuch as thoſe of the hyſteric and cachectic Kind, a bad State of the Primæ Viæ, or a bad Conformation of the Parts ſubſervient to Reſpiration. And this Species of the Diſorder may remain for ſeveral Days, Weeks, Months, or even Years. Thus *Bartholine*, *in Cent.* 3. *Epiſt.* 61. gives us an Account of a Woman, who for two Years laboured under ſo violent an Hiccup, that ſhe ſeemed to be poſſeſſed by a Devil. And in *Cent.* 2. *Hiſt.* 4. he mentions an Hiccup which laſted for four Years. Other Authors give other Inſtances of the ſame Kind; a large Number of which are found in *Marcellus Donatus*, *Lib.* 4. *Hiſt. Med. Cap.* 5. and *Schenckius*, *in Obſ. Lib.* 3.

Phyſicians entertain various Opinions with reſpect to the Seat of the Hiccup. The Ancients, and among the reſt, *Hippocrates*, *in Aph.* 36. *Sect.* 6. accuſed the Stomach alone, and affirmed that the Hiccup was a violent Commotion of it, by which it endeavoured to expel ſomething offenſive to it. But leſt by this means they ſhould confound it with a Vomiting or Eructation, they aſſerted, that by an Hiccup thoſe Things which were lodged in the ſuperior Orifice of the Stomach, were exagitated; whereas, in a Vomiting, the Subſtances in the Bottom of the Stomach were thrown into a Commotion. See *Foreſtus*, *Obſ.* 12. *Lib.* 18. Others, the moſt conſiderable of whom is *Felix Platerus*, *in Lib.* 2. *de Funct. Laſion. Cap.* 5. have placed the Seat of the Hiccup in the Diaphragma alone, when they ſaw that the former Opinion would not account for all the Phænomena of the Diſorder. Others ſteering, as it were, a middle Courſe, affirm that the ſuperior Mouth of the Stomach is primarily affected, but that by Conſent the Diaphragm is always exagitated. The moſt conſiderable Abettor of this Opinion is *Dolæus*, *in Encyclop. Med. L.* 3. *Cap.* 2.

But, in my Opinion the principal Seat and Organ of this Diſorder is the Diaphragm; for without the Aſſiſtance of this tranſverſe Muſcle there could be no Inſpiration; a preternatural Effect of which the Hiccup is: for ſince the ſuperior Mouth of the Stomach firmly adheres to the Diaphragm,

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phragm, that, as well as the Oesophagus, must necessarily be affected in this Disorder. Hence appears the Reason of dividing Hiccups into those of the idiopathic and those of the sympathetic Kind; the former of which is, when the immediate Cause of the Disorder is lodged in the Diaphragm itself; and the latter when the Cause resides in the Stomach, whose Vellication is propagated to the Diaphragm.

The immediate Cause of the Hiccup, is an Irritation or Stimulation, either of the Diaphragm or Stomach, and a convulsive Exagitation of the Parts induced by that means. For this Reason, the weaker the nervous System is, the more readily any Person is seized with this Disorder. Hence Infants, Children, and old Persons, are more subject to the Hiccup than others; so that they easily fall into that transitory Species of the Disorder which we do not here treat of, and which is produced either by a Refrigeration of the Stomach, greedy Drinking, drinking excessively cold Liquors, or Laughter. But the more secundary and remote Causes which concur to promote a morbid Hiccup, which requires the Physician's Aid, easily exert their Influence on such Patients, and are these following.

This Disorder, then, is very readily produced by a cold and moist Air, especially when the Patient is hot. Those who, contrary to their Custom, walk with their Breasts bare, or only slightly covered, or who walk upon cold Floors with their Feet bare, the more tender they are the more readily they are seized with an Hiccup. And Infants whose Fontanels continue to beat, and are not yet closed, are very frequently seized with this Disorder. *Carolus Raygerus*, in *M. N. C. Dec.* 1. *Anno.* 6. *Obs.* 211. gives us an Account of an Hiccup which lasted for three Days, and was produced by staying too long in the Water. But *Riverius*, in *Cent.* 3. *Obs.* 42. furnishes us with a still more memorable Case of a certain Girl, who was violently afflicted with the Hiccup during the Winter, but was freed from it every Summer.

Aliments either of a bad Quality, or used in too large a Quantity, produce an Hiccup. Voracious Eating alone, in which one Mouthful or one Draught immediately follows another, and remains in the superior Orifice of the Stomach, by vellicating it, produces an Hiccup, though of a slight Kind. Thus *Forestus*, in *Lib.* 18. *Obs.* 12. informs us, that an Hiccup was produced by a Piece of an Oxes Lungs remaining in the Oesophagus. Aliments, also, which by their too great Quantity load the Stomach, produce the same Misfortune, as is obvious in voracious and gluttinous Children. And *Epiphanius Ferdinandus*, in *Hist. Med.* 43. informs us, that Bread alone eaten too greedily and in too large a Quantity produces an Hiccup. Liquors drank in too large a Quantity, especially if the Person is exposed to cold, or if the Liquors themselves are too cold, produce a Cough, as we find from Experience, among those Topers, who remain with their Breasts bare when drinking; and among sucking Children, if cold Malt Liquors are exhibited to them. *Timæus a Guldenklee*, *Lib.* 3. *Cas.* 5. gives us an Instance of an Hiccup produced in a Man, who being pretty hot, drank a large Quantity of cold Water with Nitre. And *Riverius*, in his Treatise *de Morb. infrequent. Obs.* 1. informs us, that a violent Hiccup of half a Years Continuance was produced by a Draught of cold Water.

Whatever Aliments are either too acrid of themselves, or from various Causes degenerate within the Stomach into an acrid and viscid Sordes, capable of vellicating its Coats, produce a more or less violent Hiccup. Every one knows, that Milk and its Preparations becoming corrupted in the Stomachs of Children, produce the Hiccup; a fatal Instance of which is alledged by *Bartholine*, in *Act. Med. Haffn. Vol.* 2. *Obs.* 28. The same holds true, with respect to acrid and caustic Substances, or such as are absolutely poisonous. *Guldenklee*, in *Lib.* 7. *Cas.* 4. mentions an Hiccup produced by eating Hemlock. The same Author, in *Cas.* 7. gives us an Instance of one produced by Euphorbium. *Gatinarius*, *de Cognit. & Curat. Ægrit.* gives us Instances of its being produced by Onions, Garlick and Ginger. *Barbette*, in his *Prax. Med. Lib.* 4. *Cap.* 2. informs us, that he knew an Hiccup produced, by taking Oil of Vitriol instead of Balsam of Sulphur. And *Schenckius*, in *Lib.* 3. tells us, that Hiccups are produced by the too liberal Use of refrigerating and acid Julaps in acute Disorders. Among the Things capable of exciting this Disorder, we may, also, reckon drastic Vomits and Purges, especially those prepared with Hellebore, which, by corroding, stimulating, and inflaming the Stomach and Intestines, dispose to an Hiccup.

Acrid and corrupted Humours, impregnated with many saline Parts, and acting on the Diaphragm, excite the quickest and generally fatal Exagitations of it. I knew a Man, who being for thirteen Days afflicted with a violent Hiccup, at last died; and upon opening his Body, some Ounces of extravasated acrid Serum were found in his Thorax. To this Species, also, belongs that kind of Hiccup which is produced by the Translation of an arthritic or gouty Matter to the Diaphragm. An Instance of this kind arising from repelled arthritic Pains is mentioned by *Georg. Hieron Velschius*, in *Hecat.* 2. *Obs.* 54. Hiccups are, also, produced when Diarrhæas or Dysenteries are check'd in the Beginning, or suppressed by means of Opiates, or other Astringents, as is observed in *Hoffman's* Notes, *ad Poter. Cent.* 2. *Cap.* 47. A repelled Erysipelas, or in old and weak Habits, one not sufficiently expelled, is frequently accompanied with an Hiccup. All these Effects depend on an acrid, and, as it were, caustic Matter insinuating itself into the nervous Parts of the Diaphragm, or the superior Orifice of the Stomach.

An acute Hiccup is the Concomitant of such Disorders as have a quick and speedy Termination, of which the most considerable are Inflammations of the more noble Viscera. Thus an Hiccup succeeds Wounds or Inflammations of the Diaphragm, as appears in a Paraphrenitis; as, also, Wounds or Inflammations of the Stomach or Intestines, according to *Forestus*, in *Lib.* 18. *Obs.* 12. Hiccups, also, succeed Phlegmons of the Liver, according to *Celsus*, *Lib.* 2. *Cap.* 7. and *Barbette*, *Prax. Med. Lib.* 4. *Cap.* 2. And the pathognomic Sign of this Disorder, is a Pain ascending to the Throat. Inflammations, and violent Wounds of the Brain and Meninges, by reason of the Consent these Parts have, by means of the Par Vagum, with the Stomach and Diaphragm, also, produce Hiccups in a violent Degree. See *Hippocrates*, *Sect.* 7. *Aph.* 3. and *Heurnius*, in his Comment upon the same Aphorism.

An Hiccup generally accompanies continual, malignant, and exanthematous Fevers, when various remote Causes concur to its Production; for an Hiccup is either produced by a concomitant Inflammation, which, according to *Diemerbroeck*, *Cap.* 13. *Sect.* 5. and *Cap.* 15. *Annotat.* 15. principally happens in the pestilential Fever, from a Carbuncle on the Diaphragm or Stomach; or if the due Progress of Fevers is preposterously disturbed by Anodynes and Opiates, an Hiccup succeeds; a memorable Instance of which we have in *Riverius*, *Cent.* 3. *Obs.* 17. Hiccups, also, succeed the Repression of Sweats, and the Stopping or Repulsion of exanthematous Disorders; or Hiccups accompany an acrid Sordes of the Stomach; an Instance of which, in that Species of Fever called *Hemitritæa*, *Forestus* gives us in *Lib.* 5. *Obs.* 15. In these Cases, dangerous Symptoms appear, such as insatiable Thirst, considerable Weakness, Watchings, Deliriums, an unextinguishable Heat, a tremulous Motion of the inferior Jaw-Bone, Convulsions of the Nerves, Interception of the Voice, and a Thinness of the Urine: On the contrary, if the Hiccup happens about the critical Days, and the other Signs, especially that of Coction in the Urine, are good, it portends no Ill, but prognosticates a critical Vomiting or a Flux, after which it ceases. These acute Fevers are, also, sometimes attended with an Hiccup, which remains with them, and is augmented through the whole of the Fever. An Instance of which we have in *M. N. C. Ann.* 4. *Obs.* 48. Of this Kind, also, is the memorable Case related by *Poterius*, *in Cent.* 2. *Cap.* 47.

To the acute Hiccups of a dubious Event, we must, also, refer those which, according to the Ancients, succeed Inanition, or too large an Excretion of the Humors. That excessive Vomiting or Purging are accompanied with an Hiccup, is confirmed not only by Experience, but also by *Hippocrates*, *in Sect.* 7. *Aph.* 3. and 41. and *Sect.* 5. *Aph.* 41. and by *Sydenham.* Hiccups, also, succeed violent Hæmorrhages, whether natural from the Uterus, or from the Nostrils, or by a Spitting of Blood, or produced by violent Wounds, as *Hippocrates*, *in Sect.* 5. *Aph.* 3. informs us. In these Cases, the Hiccup, generally, as the last Efforts of Nature, precedes universal Convulsions and Death.

A chronical Hiccup sometimes arises from a peccant State of the Blood and Humors; when, for instance, these are either impregnated with any Acrimony, or in Consequence of a Retention of the usual Excretions, too copiously congested in the Vessels of the Diaphragm and Stomach. Hence the Hiccup is very familiar to pregnant Women during the last Months of their Gestation; as also to hysteric Women, whose Menses do not flow duly. Thus *Schurigius*, *in Parthenol.* gives us an Account of a Woman who, before the Eruption of her Menses, was always afflicted with an Hiccup, which ceased as soon as these began to flow. Chronical, as well as periodic Hiccups, generally afflict cachectic Patients, and such as labour under Indispositions of the Liver; in which Cases, the Cause is to be sought for in the Bile become acrid and vellicating the nervous Coats of the Stomach and Duodenum. Hence *Lentilius*, *in Jatrom.* mentions an Hiccup, which in a cachectic Patient lasted till a Vomiting ensued.

The Faults of the bony Parts surrounding the Breast, and a bad Conformation, sometimes contribute to the Production of

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of a chronical Hiccup. Thus, if the Cartilago Enſiformis is relaxed, or by any other Cauſe bended too much inwards, ſo as to ſtimulate the Stomach, it is forthwith obſerved to produce an Hiccup. Accordingly, *Fernelius* in *Lib.* 6. *de Part. Morb.* and *Sympt. Cap.* 3. mentions an Hiccup produced by a Depreſſion of this Cartilage, which laſted for three Months. 'Tis, alſo, certain from Experience, that Hiccups are produced by Luxations, Fractures, and Contorſions of the Ribs; hence *Fernelius*, in the Part laſt quoted, gives us an Inſtance of an Hiccup ariſing from a luxated Rib, which ceas'd immediately upon the Reduction: And *Rhodius*, in *Centur.* 2. *Obſ.* 61. makes mention of a continual Hiccup ariſing from a Compreſſion of the twelfth Vertebra of the Neck.

As for the Prognoſtic of an Hiccup, that Species produced by Viſcidities, Crudities, or an Acrimony of the Primæ Viæ, is by no Means dangerous, nor is that familiar to hyſteric Women much to be dreaded. Much leſs is an Hiccup dangerous, when it proceeds from Refrigeration, or drinking cold Liquors, provided too large a Quantity of them is not drank when the Body is covered with a Sweat. Hiccups are frequent in ſucking Children, in whom it prognoſticates no Harm, but is more inauſpicious in old Perſons. I know a Gentlewoman of forty Years of Age, who for twenty Years has been daily afflicted with an Hiccup, without any apparent Diſadvantage to her Health. But an Hiccup is more dangerous, when it happens in acute Fevers, eſpecially thoſe of the burning and peſtilential Kind; and if a Delirium, or Convulſions are brought on, it proves mortal. An Hiccup which principally ariſes from an Inflammation of the Liver, is generally mortal; nor is that Species of Hiccup to be leſs dreaded, which is produced by acrid Purgatives, Emetics and Poiſons. All Hiccups ſucceeding Inanition, Purging, or liberal Vomiting, are bad, but ſtill worſe, when coming after Hemorrhages and Wounds of the Head. Hiccups produced by ſtopping Diarrhæas, or Dyſenteries, or repelling eryſipelatous, gouty or arthritic Diſorders, are not free from Danger. As the Hiccups attending the Fevers of old Perſons labouring under Hernias ſcarcely admit of a Cure, they generally prove mortal, according to *Foreſtus* in *Lib.* 18. *Cap.* 12. Sneezing join'd to an Hiccup, eſpecially that which ariſes from Repletion, is beneficial, and prognoſticates that it will ceaſe.

Every Hiccup does not require a Cure; for that gentle Species which ariſes from a long protracted Inſpiration, or any Diſtraction of Mind, is eaſily terminated by exciting Pain in any Part of the Body, by thinking carefully upon any Object, or by Terror unexpectedly rais'd. But a morbid Hiccup, not yielding to theſe Means, calls for the Aſſiſtance of the Phyſician, who is principally to follow three Intentions of Cure: The firſt of theſe is, to mitigate and allay the preternatural, ſpaſmodic, and convulſive Motions: The ſecond is, to remove the material Cauſes: And the third is, to reſtore the Parts affected and weakened.

In order to anſwer the firſt of theſe Intentions, the Antients us'd Opium, and the Medicines prepar'd of it, ſuch as the Laudanum Opiatum, Mithridate, Philonium, Diaſcordium, and the Theriaca, by which, they affirm, that they cur'd the Hiccup. But I prefer gentler, antiſpaſmodic and anodyne Subſtances; ſuch as Amber, Cinnabar, Saffron and Caſtor; which laſt is ſo highly extoll'd by ſome Authors, that *Alexander Trallian*, in *Lib.* 7. ſeems perſuaded, that an Hiccup may be cur'd by its Means, us'd in the Form of an Amulet. From a long Series of Experience, I prefer in this Diſorder the anodyne Liquor, to all other Medicines, and exhibit it, either alone, or in Conjunction with Tincture of Caſtor. Nor is the Spiritus Nitri Dulcis leſs efficacious, provided it is mixed with a ſmall Doſe of the Balſam of Life. An Ounce, or half an Ounce of the Oil of Sweet Almonds mix'd with a few Drops of the diſtill'd Oil of Dill, is by ſome thought a Specific for the Hiccup.

But the Phyſician is, in a particular Manner, to purſue the ſecond Intention, which is, to remove the material Cauſes. When, therefore, any Sordes lodg'd in the Stomach, by ſtimulating its ſuperior Orifice, produces an Hiccup, this Sordes is to be corrected, and gently eliminated. If it is of an acrid and bilious Quality, Abſorbents impregnated with Citron Juice, or the precipitating Powders, are to be exhibited in cold Water. A viſcid Sordes, obſtinately fixed in the Foldings of the Stomach, is to be treated with digeſtive Salts, eſpecially with the Liquor of the Terra Foliata Tartari, and ſuch Roots as are at once of a reſolvent and corroborative Quality; ſuch as the Roots of Swallow-wort, which has ſomething of an anodyne Nature in it, and thoſe of the Calamus Aromaticus. The peccant Matter, when duly concocted, is to be eliminated either by Vomit or Stool; the former of theſe Intentions is anſwer'd by the Root of Ipecacuana, or, which is beſt of all, by four or ſix Grains of the Powder of Squills, mix'd with three Grains of purified Nitre. The Body is render'd ſoluble by Preparations of Manna and Rhubarb, by the Pilulæ Aloephanginæ, the Pilulæ Macroceſtinæ, or the Pilulæ de Succino *Cratonis* prepared with a large Quantity of Amber: With theſe Pills may be commodiouſly mix'd a few Grains of the Pilulæ de Styrace, or of the Pilulæ de Cynogloſſo, by which Means they anſwer a double Intention. In this Caſe, alſo, gently carminative Clyſters are ſufficiently ſafe, eſpecially in Infants, whoſe Hiccup is produced by corrupted Milk, in which Caſe, Sulphur of Antimony duly corrected, or Aurum Fulminans well prepared, and exhibited in a ſmall Doſe, are, alſo, of ſingular Service.

If an Hiccup ariſes from a Suppreſſion of Perſpiration by Cold, or any other Cauſe, the Phyſician ought principally to attempt the recalling of this Evacuation, beſides being kept temperately warm; this Intention is anſwer'd by Fomentations of the Parts affected, liberal Draughts of warm Liquors, and Infuſions of reſolvent and corroborating Roots and Herbs, in which it will be expedient to exhibit a proper Quantity of the bezoardic Powders prepared of Amber, calcin'd Hartſhorn, Diaphoretic Antimony, Cinnabar, and a ſmall Quantity of the Extracts of Saffron and Caſtor. In this Caſe, the Spiritus Bezoardicus Buſſii, mixed with the anodyne mineral Liquor, and the Eſſence of Caſtor, is an excellent Medicine. When in acute and exanthematous Fevers an Hiccup ariſes from a Suppreſſion of Tranſpiration, beſides a proper Regimen, Frictions and fix'd Diaphoretics are moſt properly us'd. In a chronical Hiccup ariſing from a Refrigeration, and of an obſtinate Nature, drinking the *Hippocratic* Wine affords Relief: Beſides this, hot Baths are of ſingular Efficacy, ſince they not only recall a Diaphoreſis, but, alſo, ſoften the ſpaſmodically conſtricted Parts, which *Riverius* in *Obſ. Infrequent.* evinces by an Example.

The ſame Method of Cure is to be obſerved in an Hiccup ariſing from an eryſipelatous, arthritic, or gouty Matter repell'd, or not ſufficiently expell'd: For in this Caſe, beſides the Diaphoreſis to be obtain'd by the already mention'd Medicines, it is expedient to recal the acrid and peccant Matter from the phrenic Nerves to its former Seat: For anſwering this Intention, mild Laxatives and Clyſters are of ſingular Efficacy; Sinapiſms, alſo, and Veſicatories applied to the Scapulæ, or Calfs of the Legs, afford great Relief, by drawing off the acrid Serum. When a Gout is receding, it is of ſingular Service frequently to bathe the Feet in warm Baths: For this Reaſon *Trallian* in *Lib.* 7. and *Riverius* in *Prax.* highly commend the Immerſion of the Hands in warm Water.

When by the Exhibition of an Emetic, a Purge, a cauſtic Medicine, or a Poiſon, an Hiccup is excited, ſuch Things are to be us'd as deſtroy and enervate the Force of the Poiſon, among which none are more valuable and efficacious than pinguious Subſtances, Oil of Sweet Almonds, Oil of Olives, mucilaginous Subſtances, Milk and Cream exhibited ſeaſonably, and before the Inflammation has ſeiz'd the Part; thus the Poiſon being ſheath'd up, its irregular Motion is to be check'd by the above-mentioned Anodynes. But if the Hiccup proceeds from a Poiſon received by Contagion, as in the Plague, from the Bite of a mad Dog, or the Sting of any Inſect boiling with Rage, then theriacal Medicines, Treacle-Water, and the Theriaca Celeſtis, in Conjunction with nitrous, antiſpaſmodic and diaphoretic Subſtances, and Camphire and Cinnabar, afford the greateſt Relief. This Method of Cure is, alſo, to be obſerved, when the Hiccup ariſes from a malignant, cauſtic, or exanthematous Matter repell'd from the Surface of the Body to the internal Parts; in which Caſe, a Powder conſiſting of a few Grains of Camphire and Nitre, as, alſo, Emulſions of ſweet Almonds, and the four greater cold Seeds prepared with the diaphoretic Waters, afford ſurprizing Relief.

Hiccups ariſing from violent Hemorrhages, are hardly to be remov'd, till the Effuſions of Blood whence they proceed are ſtopp'd. Now, violent Hemorrhages are to be check'd by internal, temperating, tonic and aſtringent Medicines, and by external Means, ſuch as proper Applications to the Part affected. When the Effuſion is ſtopt, we are to uſe ſafe Anodynes, in Conjunction with efficacious Analeptics: And, laſtly, the Patient is to be ſupported by Cordials and reſtorative Aliments.

Nor for the Cure of an Hiccup are we to deſpiſe corroborating Medicines, eſpecially in the Decline of the Diſeaſe; of theſe the moſt conſiderable are the corroborating Oils, ſuch as thoſe of Mace, Mint, and Worm-wood, mix'd with a few Drops of my Baliſam of Life, and exhibited in ſome of the ſpirituous Waters, ſuch as thoſe of Cinnamon, Mint, and Baum, or aromatic Aqua Vitæ, as, alſo, the carminative Eſſence of Wedelius, the carminative Water of *Dornerellius*, or a Draught of generous Wine. The Medicines in an Hiccup

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cup arising from a Retention of Flatulences, and a Vellication of the Stomach produced by them, answer both Intentions of Cure, when join'd with carminative Clysters. Among Topics, considerable Relief seems to be promis'd by applying to the Præcordia, antispasmodic, paregoric and anodyne Liniments prepared of express'd Oil of Nutmeg, human Fat, the Oils of Mace, Mint and Worm-wood, Saffron, Castor and Camphire. Nervine Cerates, and Plaisters applied to the Pit of the Stomach, as, also, Constrictions of the Parts affected by proper Bandages, seem not to be entirely useless.

An Hiccup arising from an Acrimony or Viscidity of the Stomach, is often cured by the copious drinking of warm Fluids, which sheath up the Acrimony, dilute the Viscidity, and remove the Cause of the Stimulus. But all cold Liquors render the Disorder worse.

An Hiccup succeeding a Diarrhæa, or Dysentery, unseasonably check'd, is of a dangerous Nature; for which Reason, the Means of Relief ought to be speedily us'd. In this Case, therefore, the safest and most efficacious Remedies are, Clysters prepared of emollient and gently laxative Substances, such as the Pulp of Cassia, with an Addition of Extract of Rhubarb frequently injected: But it is not expedient to exhibit Laxatives by the Mouth, for it is rather proper to correct the bilious and acrid Humours, which may be done by the Magnesia Alba, and other Absorbents, but especially by drinking sweet Whey; then we may, also, join internal Anodynes, and external Paregorics.

The Hiccup attending acute Fevers is cur'd by curing the primary Disorder, which is accomplish'd by an equable Promotion of a Diaphoresis. In this Case, we are to take great Care not to exhibit saline, much less laxative Medicines, aloetic Pills, too hot a Regimen, or very warm Drink; for as Cold, so, also, excessive Heat is unfriendly to the nervous Parts, especially if they labour under any Disorder.

For the like Reason we are to guard against the same Practice in Hiccups arising from an Inflammation of the Viscera, in which Case we must, with all Expedition, open a Vein in the Foot; if the Inflammation is as yet recent, and the Patient plethoric, then we must exhibit internally, Discutients, and other Medicines, which promote Sweat and resolve the stagnant Juices; to which, if the Pain is intense, we may add gentle Anodynes; but, particularly, the Body is to be always kept soluble by injecting Clysters; externally, Preparations of Camphire and Saffron, and discutient Bags are to be applied, the Physician at the same Time taking Care of his Reputation by a prudent Prognostic.

Hiccups seizing cachetic Persons, or those labouring under Disorders of the Liver, are cur'd by such Medicines as correct acrid Bile; that is, by resolvent, attenuating, bitter, and evacuating Infusions; and if these should prove ineffectual, nothing is more powerful and efficacious than hot Baths and mineral Waters. A memorable Instance of this is recorded in *Bonet. Med. Sept. Lib.* 5. *Sect.* 5. *Obs.* 6.

An Hiccup which accompanies hypocondriac Disorders, and is generally owing to a Suppression of the natural Excretions of Blood, is not to be cur'd till the primary Disorder is remov'd. In this Case, if all other Means prove ineffectual, the hot Baths, especially the *Caroline* Springs, using at the same Time those of *Toeplitz*, are of Use for corroborating the Parts. In scorbutic Patients, an Hiccup is most properly cur'd by Asses Milk mixed with the *Selteran* Waters warm'd. This Method is commended by *Paulini* in *Onograph. Cur. Sect.* 4. *Cap.* 3. *Par.* 1.

If fractured, distorted, or luxated Ribs produce an Hiccup, the Reduction of the Luxation, and the Consolidation of the Fracture by proper chirurgical Measures, are only capable of affording Relief. The Cartilago Ensiformis, when luxated and bended inwards, is most properly cur'd by blind Cupping-Glasses applied to the Pit of the Stomach. This Practice is greatly extoll'd by *Vitus Riedlinus Lin. Med. Anno* 1695. *Mens. Aug. Obs.* 4.

Anodynes must be cautiously us'd in checking Hiccups: If the peccant Matter is large in Quantity, it is above all Things to be corrected and eliminated; especially if it is of an acrid, caustic, or virulent Quality; for Anodynes, before this Matter is discharg'd, would be only adding Fewel to the Flame. As in all Disorders where an anodyne and soothing Quality is requisite, so more especially in spasmodico-convulsive Disorders of all Kinds, Opiates are rarely to be exhibited alone; but when mix'd with proper Evacuants, they are highly safe and efficacious: And this Secret of checking the Force of Opium is of an old Date, as is obvious from that celebrated Medicine of *Aselepiades*, mentioned by *Galen* in *Lib.* 8. *de Compos. Medicam. Cap.* 3. *Avicenna Lib.* 4. *Fen.* 13. *Tr.* 5. *C.* 19, and which consists of Costus, Saffron, Spikenard, Asarum, Mastich, Aloes, and Opium. In Imitation of this Medicine are made the Pilulæ Rondeletii, the Pilulæ Poterii, the Pilulæ Plateri, the Pilulæ Riverii, the Pilulæ Wildeganfii, the Pilulæ Starkii, and the Pilulæ Anglicanæ. In Asthmas, Chincoughs, Hiccups, and other painful and spasmodic Disorders, I with great Advantage use to mix the Pilulæ Aloephanginæ, or my Pilulæ Polychrestæ, with two or three Parts of the Pilulæ de Styrace, or de Cynoglosso.

An Hiccup arising from a slight Cause is often happily stopt, without the Use of Medicines: When, for Instance, under a voluntary Motion of the Thorax, made on purpose, the Diaphragm is so press'd, that its moving Fibres are either more stretch'd or relax'd; the former is done by strong Inspiration, by Running, Jumping, or violent Riding; and the latter by strong Expiration, Vociferation, or by tying the Thorax with a Bandage, which is a simple, and often an instantaneous Remedy. Of the same Kind is Sternutation, which as (according to *Hippocrates*) it removes an Hiccup when spontaneous, so the Physician ought artfully to promote it for the same Purpose; and especially when either a viscid or flatulent Matter is lodged in the Coats or Corrugations of the Stomach, Sneezing is to be excited, in order to remove it by violent Expiration, during which the abdominal Viscera, and especially the Stomach, are strongly exagitated. But an artificial Sternutation is by no means to be produced, when an Inflammation, or a subtile Caustic and virulent Matter have deeply insinuated themselves into the nervous Parts.

As for Prevention, a due Use of the Non-naturals, and especially the avoiding a cold Air, is of great Importance. Those whose Solids are weakened by long Diseases, must preserve themselves against an Hiccup by the prudent Use of chalybeate Baths, and chalybeate Medicines, drinking at the same Time proper Liquors, and using due Exercise. *Frederic Hoffman.*

The Hiccup generally happens to the Aged after an immoderate Looseness, but principally after excessive Vomiting, and frequently prognosticates imminent Death. I ingenuously own, that I have not been able to satisfy myself in my Enquiry into the Cause of this Symptom; but I have frequently observed it to arise from some Disturbance raised in the Stomach, and adjacent Parts, by violent Medicines; not without great Danger to the Patient, because Nature is unable to check and quiet this Commotion; and, on this Account, I judged it proper to assist her by Art, by giving a large Dose, of no less than two Drams of Diascordium, which seldom failed to remove this Symptom, when the Seeds of Dill, and other celebrated Specifics had proved ineffectual. *Sydenham.*

The famous *Julapium Moschatum* of *Fuller*, so much recommended as a Remedy for the Hiccup, is thus prepar'd.

Take of Damask Rose-water, six Ounces; of the Waters of Orange-flowers, one Ounce; of Barley Cinamon-water, two Ounces; of Compound Piony-water, one Ounce and an half; of Musk and Ambergrease, triturated with one Grain of Salt of Hartshorn, each two Grains; of Saffron, cut and tied in a Bag, one Scruple; of the Oil of Cloves, one Drop; of the Confection of Alchermes, two Drams; and of the Syrup of Cloves, an Ounce and an half.

This Medicine is a temperate, but powerful Cordial, and highly beneficial in malignant Fevers, which convey deleterious Vapours to the Stomach, irritate the languid Spirits, produce Spasms, and an Hiccup. But notwithstanding its almost divine Energy, I have not always found it sufficient for subduing this last-mentioned Symptom. The Dose is five Spoonfuls every three Hours. *Fuller's Pharmacop.*

PRESAGES FROM HICCUPS.

The Event of a Disease may be prognosticated from a Hiccup, though, indeed, it comes under the general Notion of Convulsions, being a Kind of Convulsion of the Stomach, as we are taught by *Galen* in his Comment on 5 *Aph.* 3. And the same Author, in his Comment on the Book of *Hippocrates de Rat. Vict. in Morb. Acut.* calls the Hiccup a convulsive Motion; and more expressly to the Purpose in his Commentary on the sixth Book of the *Aphorisms*, he tells us, "That though we may be allow'd to call a Hiccup "a Convulsion of the Stomach, when we would describe "its Nature, it would, perhaps, be better not to call it "by that Name, but rather a Motion of the same Kind "as Vomiting, only more intense and violent: For the "Stomach, while it labours to expel its Contents, is excited "to two Kinds of Motions, the most violent of which is "a Hiccup; the other is Vomiting, in which latter it en- "deavours

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" endeavours to expel what is contained in the wide and open " Capacity of the Stomach, but in the Hiccup only what " moleſts the Mouth of that Part." Hence it appears, that an Hiccough is an expulſive Motion of the Stomach, endeavouring to diſcharge itſelf of ſome offenſive Matter. We may then very properly call a Hiccup a Convulſion of the Stomach, but of ſuch a Kind of Motion as is obſerved in epileptic Patients, whoſe Brain is injured, or rather with *Galen Com. in Lib. de R. V. J. A.* a Sort of convulſive Motion. Theſe Motions, according to *Hippocrates*, 6 *Aph.* 39. are excited either by a Repletion or Inanition of the nervous Parts, and particularly, of the Mouth of the Stomach. A Repletion happens from an Exceſs in Eating or Drinking, from a Redundance of Humours, a Phlegmon, or Flatulences. A Dryneſs or Inanition, is cauſed by a burning Heat, all immoderate Evacuations, Purgations, Watchings, Faſtings, and the like. That a Hiccup is excited by the ſame Cauſe as a true Convulſion, we may infer from *Hippocrates*, where he ſpeaks of a true Convulſion of the Stomach, proceeding from one or other of theſe Cauſes. A Hiccup often happens from a biting Senſation in the Mouth of the Stomach, which excites Motions that many juſtly enough call convulſive, and is occaſioned by all ſuch Things as either oppreſs the Stomach by their Redundance, or injure it by ſome offenſive Quality. For when the Stomach is loaded with a Redundance of Humours, or Foods of bad Juices, or is vellicated by ſome acrimonious Matter, or diſtended with Flatulences, or irritated by Heat or Cold, or any other Quality, or ſuffers through Dryneſs, or is agitated in a Manner not unlike Convulſions, it endeavours to expel what offends it. To this Purpoſe we find *Galen* expreſſing himſelf, *Lib.* 8. *de Comp. Med. Cap.* 8. " Thus, he ſays, a Hiccup ſometimes happens either from a Coldneſs or Repletion of the Stomach, " or from a Vellication of acrimonious Humors, or ſuch as " are endued with ſome medicinal Quality." And a little after, " a Hiccup may be occaſioned by ſome acrimonious " or ſerous Humours, or ſome Medicine vellicating the Sto" mach, which being expelled by Vomiting, the Hiccough " immediately ceaſes." Many after taking the Medicine compoſed of the three Species of Pepper, and drinking Wine immediately upon it, are moleſted with a Hiccup, of which Number I myſelf am one; and every Body knows that ſome Perſons are ſubject to be taken with a Hiccup after Foods of a ſtimulating Quality, which, upon vomiting, immediately ceaſes; ſometimes a Hiccup is occaſioned by a Rigor of the Mouth of the Stomach. Children are very ſubject to the Hiccup, from a Corruption of the Aliment in the Stomach, and from a Coldneſs of the Part. Hiccups in Fevers are ſometimes occaſioned by a dangerous Inflammation of the Stomach, Brain, ſmall Inteſtine, or Liver, from a Compreſſion of the Mouth of the Stomach, from a Tumefaction of the concave Part of the Liver, a Communication of the burning Heat of that Part, or the Flux of an acrimonious Humour from the inflamed Part upon the Mouth of the Stomach and vellicating it, or ſome acrid Exhalation irritating the ſame. But let this ſuffice for the Cauſes of a Hiccup and let us now conſider the Prognoſtics which may be drawn from it.

A Hiccup then is only not to be dreaded, when it happens without a Fever, or any other Diſeaſe, and is occaſioned by Wine, or Foods, or even by ſome acrimonious, cold, hot, or corrupted cold or hot Humour. In Fevers they are always dangerous, as well as Convulſions, and moſt of all when ſucceeded by a Fever. Some Fevers are called Singultuous, becauſe the Patient is almoſt continually moleſted with the Hiccup, which increaſes and remits with the Fever, which, for that Reaſon, is called by the *Greeks* λυγώδης, *Lingodes* [from λυγξ, the Hiccup], mentioned by *Hippocrates*, *de R. V. J. A.* And *Galen*, in his Comment thereon tells us, that a Fever takes the Name of *Singultuous* from the Hiccup, which continually attends it, and is exaſperated, together with the Diſeaſe, through the whole Stage of the Diſorder; but Hiccups are moſt to be dreaded when they proceed from an Inflammation of the Stomach, ſmall Inteſtine, or Liver. *Celſus* tells us, that a frequent Hiccup indicates an Inflammation of the Liver; a Hiccup, however, does not ſimply proceed from an Inflammation of the Liver, but from an extraordinary Inflammation of that Part, as *Galen* obſerves, in his Comment on 5 *Aph.* 3. tho' *Hippocrates*, in that Aphoriſm, ſays abſolutely, " That the " Hiccup ſucceeds an Inflammation of the Liver." The Hiccup then, under an Inflammation of the Liver, is generally mortal, and the ſame is true of an Inflammation of the Brain or Stomach, and eſpecially when it comes after vomiting, to which Purpoſe *Hippocrates*, 7 *Aph.* 3. ſays, that after Vomiting, the Hiccup and Redneſs of the Eyes are bad Signs. *Galen* ſays of the Hiccup, that it is the ſame Diſorder with reſpect to the Stomach, that a Convulſion is to the Muſcles, and that ſometimes it affects the whole Stomach, ſometimes its Mouth, and the Oeſophagus, which are moleſted with Humours; and if theſe can be diſcharged by Vomiting, the Patient is immediately freed from the Hiccup; but if this has no Effect, it ſhews either that the Brain, the Original of the Nerves, or the Stomach, labour under a conſiderable Inflammation. A Hiccup, therefore, which comes after vomiting, is generally pernicious, and moſt of all in the Iliac Paſſion, according to that of *Hippocrates*, 7 *Aph.* 10. " The Ileos, ſucceeded by Vomiting, Hiccup, or Convul" ſion, is of bad Prognoſtication." And *Galen*, in his Comment thereon, ſays, that the Patients, in that Diſorder, do not always vomit, but only when it proves mortal, and if they are vehemently affected, the Excrements aſcend, and a Hiccup is excited. In acute Fevers, then a Hiccup ſucceeding Vomiting, and eſpecially that of a bad Kind, is to be eſteemed mortal. An Inſtance of this we find in *Hippocrates*, 3. *Epid.* of a Woman, who, on the twelfth Day of her Illneſs, vomited much black, fetid Matter, and was extremely moleſted with the Hiccup and a Thirſt, and died the next Day. We may well then venture to pronounce all Hiccups, eſpecially if frequent and troubleſome, in acute Fevers, mortal, and moſt of all, if conſequent upon a bad Kind of Vomiting, I mean that wherein fetid, black, virulent, or ſincere Humours are diſcharged; juſtly, therefore, in *Coac.* is a Hiccup condemned, which follows a Vomiting of ſincere Matters. An Hiccup, conſequent upon immoderate Evacuations, or Purgations, is generally mortal, as proceeding from a Vellication of the nervous Parts of the Stomach, occaſioned through Dryneſs. Hence *Hippocrate*, 5 *Aph.* 3. pronounces a Hiccup or Convulſion, ſucceeding a copious Hæmorrhage, a bad Sign; and in the following Aphoriſm he ſays, that the ſame Symptoms ſupervening upon an immoderate Purgation, are bad Prognoſtics. The moſt fatal of all Hiccups, is what is conſequent upon an immoderate Purgation, where the Body is naturally weak; agreeably to theſe of *Hippocrates*, 7 *Aph.* 41. where we are told, that a Hiccup coming after an immoderate Purgation, is no good Sign; and the like may be ſaid of a Hiccup, excited by a Tumor or Inflammation of the Liver under the Jaundice, according to that in *Coac.* 470. where it is ſaid, " They who " are affected with the Jaundice, and a Hebetude of the " Senſes, if a Hiccup ſupervene, fall into a Looſeneſs, or " perhaps labour under a Conſtipation of the Belly, and be" come of a greeniſh yellow Aſpect." A Hiccup is not conſequent upon every Affection of the Liver, but when that Part is highly inflamed, or the whole Stomach is oppreſſed or irritated by a Redundance of Bile, or labours under a violent Inflammation, the Hiccup is exaſperated to a high Degree. To confirm, however, our Predictions of the fatal Event of a Hiccup, we ought to take into our Conſideration other pernicious Signs, both preceeding and conſequent to that Diſorder, which is never mortal, but in Conjunction with other deſtructive Symptoms, appearing either before, or attendant upon it. To this Purpoſe we are told by the Author of the *Prorrhetica*, " That an Aphony, attended with " Hiccups, is a very bad Sign;" and *Coac. Præſag.* " That a Laſſitude, with a Hiccup and a Stupor, portend a bad Event. Other very bad concomitant Signs, are cold Sweat, an invincible Coldneſs of the extreme Parts in a burning Fever, no Thirſt, a Loathing of Food, copious Sweats, without an Intermiſſion of the Fever, Blood falling by Drops from the Noſe, with many other Signs of the like Nature, which you will find mentioned in the Hiſtory of the Woman who lay ill in Childbed, 3 *Epid. Sect.* 2. *Ægr.* 12. *Proſper Alpinus de Præſag. Vit. & Mort.*

Euriximachus, according to *Plato*, ſays, there are three Ways of curing the Hiccough; to hold ones Breath ſome time; to waſh the Throat with Water; and to ſneeze.

Alexander Trallian ſays, That any Surprize, or Intenſeneſs of Thought (as counting of Money) will immediately remove a Hiccup.

SINOPICA RUBRICA. See RUBRICA SINOPICA.

SINOPIS. The ſame as RUBRICA SINOPICA.

SINUS. In Anatomy, the *Vagina* is called the *Sinus Matrix*, or *Sinus Pudoris*; and certain Cavities in the *Dura Mater*, are called the *Sinuſes* of the *Dura Mater*. See CAPUT. A Sinus of a Bone, is a Cavity which receives the Head of another Bone. In Surgery, a *Sinus* is a Collection of Matter, with a ſmall Orifice for the Diſcharge thereof.

SION. See SIUM.

SJOUANNA *Amalpodi*, H. M. *Frutex Indicus pentapetalos Gemina Baccæ, Calyce, excepta.* It is an umbelliferous and bacciferous Shrub, growing in the *Eaſt Indies*. The Fruit comes forth in the lower Branches, while the upper ones are adorned with Buds and Flowers, and the whole Umbella, with its Buds, Flowers and Fruit ſeen altogether, afford a moſt pleaſant Sight.

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The Virtues are only in the Root, which is effectual againſt the Poiſon of Serpents and Scorpions. *Raii Hiſt. Plant.*

SIPHAC. The *Peritonæum.*

SIPHILIS. The Pox.

SIPHITA PARVA, in *Paracelſus*, is the *Chorea Sancti Viti*, St. *Vitus*'s Dance. *Siphita Stricta*, in the ſame Author, is Walking in the Sleep.

SIRA. Orpiment. *Rulandus.*

SIRACOSTUM, or ALSIRACOSTUM. The Name of a Medicine, recommended by *Meſue*, in acute Fevers.

SIRÆUM. σίραιον. The ſame as SAPA, or any ſweet Decoction.

SIRENES, See DRACUNCULI.

SIRIASIS. The Name of a Diſtemper to which Children are ſubject, which conſiſts in an Inflammation of the Brain, and its Membranes, attended with a Depreſſure of the *Fontanella*; a Cavity of the Eyes; a burning Fever; a Paleneſs, and Dryneſs of the whole Body; and an utter Proſtration of Appetite. *Caſtellus.*

SIRICON DE PLUMBO, is explained by *Rulandus*, *Cinis Plumbi.*

SIRINGA. Calx. *Rulandus.*

SIRONES. The ſame as SIRENES.

SIRYPUS. See SYRUPUS.

SIRSEN. A *Phrenitis.*

SIRZA. An Eſchar. *Rulandus.*

SISARUM.

The Characters are;

The Roots are like the *Napus*, and hang in great Numbers to one Head. The Leaves are pinnated, grow to a Rib, and end in an odd Lobe; the Seeds are narrow and ſtriated.

Boerhaave mentions but one Sort of *Siſarum*; which is,

Siſarum Germanorum. *C. B. P.* 155. *Tourn. Inſt.* 309. *Boerh. Ind. A.* 54. *Siſer.* Offic. *Siſer vulgare*, Park. Theat. 945. *Siſarum* Raii Hiſt. 1. 442. Ger. 871. Emac. 1026. Park. Parad. 506. *Siſarum multis*, J. B. 3. 153. SKIRRET.

The Root of the Skirret is branched into many long, glandulous Parts, of a whitiſh Colour, and a pleaſant ſweet Taſte when boiled. The Stalk ariſes to be three or four Foot high, thick, and channelled; cloathed with long pinnated Leaves, compoſed of three or five long, ſharp-pointed Pinnæ, ſerrated about the Edges, two oppoſite, the odd one at the End, being roundeſt and largeſt. The Flowers grow in Umbels, being ſmall and five-leaved. The Seed is ſomewhat like Parſley-Seed, but larger. It is planted in Gardens, and flowers in *June*.

The Roots only are uſed, and that but ſeldom in the Shops, being eaten at the Table like Parſneps, which they excell in Sweetneſs of Taſte, though ſomewhat windy. They are accounted nouriſhing and provocative, are diuretic and good for the Stone. *Miller's Bot. Off.*

The Root is of culinary rather than officinal Uſe, and is of a bitteriſh and ſomewhat aſtringent Taſte. It is good for the Stomach, excites an Appetite, is diuretic and lithontriptic; affords good Nouriſhment, is eaſy of Digeſtion, and eſteem'd a ſpecific Antidote againſt Quickſilver. *Dale from Schroder.*

Cordus takes it to be the wholſomeſt of all eſculent Roots. *Dodonæus* ſays they are moderately hot and moiſt; are eaſy of Digeſtion, and not ſlow of Paſſage; are moderately nutritive, and of no bad Juice: It is, however, flatulent, whence it provokes Luſt. *Raii Hiſt. Plant.*

Scarce any Root has a ſweeter Taſte than that of a Skirret; and *Pliny* tells us, that the Emperor *Tiberius* exacted it of the *Germans* by way of Tribute. It is of excellent Virtues, and very proper for thoſe who ſpit Blood or make bloody Urine, if they confine themſelves to eat no other Root but this boiled in Milk, Whey, or Fleſh-Broth; for by ſuch means they would procure a due Laxneſs of the Belly, and a Removal of the Diſorder. It is recommended, alſo, for the Strangury and Teneſmus, and is eſteemed a very good Remedy againſt a Dyſentery and Fluxes of the Belly. The Root boiled as aforeſaid, then bruiſed, and taken in the Morning before the Patient riſes, is very good in a Phthiſis, or great Extenuation of the Body; as it is, alſo, in all pectoral Diſorders. *Hiſt. Plant. Aſcript. Boerhaave.*

SISARUM SYRIACUM. A Name for the *Tordylium*; *Orientale*; *Secacul Arabum dictum Rauwolfio.*

SISER. The ſame as SISARUM.

SISON. A Name for the *Sium*; *aromaticum*; *Siſon Officinarum.* See AMOMUM.

SISYMBRIUM.

The Characters are;

It has a thin Pod, the Valves not burſting, nor wreathed into a ſpiral Form, nor forcibly diſcharging the Seeds; it has alſo a ſingular Appearance, the Leaves being jagged or cut into Pinnæ.

Boerhaave mentions thirteen Sorts of *Siſymbrium*, which are,

1. Siſymbrium; Pyrenaicum; latifolium; purpuraſcente flore. *T.* 226. *Naſturtium Pyrenaicum, aquaticum*, Pon. Bat.

2. Siſymbrium; aquaticum. *Tourn. Inſt.* 226. *Boerh. Ind. A.* 2. 15. *Naſturtium aquaticum*, Offic. *Naſturtium aquaticum vulgare*, Park. Theat. 1239. Raii Hiſt. 1. 816. *Naſturtium aquaticum ſupinum*, C. B. P. 104. *Naſturtium aquaticum ſive Cratevæ Sium*, Ger. Emac. 257. *Siſymbrium Cardamine, ſive Naſturtium aquaticum*, J. B. 2. 884. Raii Synop. 3. 300. WATER CRESSES.

The Roots of Water-Creſſes conſiſt of a great Number of white Strings, fixed in the Earth under the Water, from which ariſe many pinnated Leaves, of ſix Pair of blunt-pointed long Pinnæ, with an odd one at the End, larger than the reſt, a little waved about the Edges, many times of a dull green Colour. The Stalk grows to be about a Foot high, hollow and channelled, having ſmaller Leaves growing at the Joints. The Flowers grow in Tufts of ſmall four-leaved white Flowers, flowering gradually, ſo that the Stalk, with the Seed-Veſſels, run up into a long Spike. They are round and ſlender, full of very ſmall red Seed. It grows in Ditches and Rills of Water, and flowers in *June*. The Leaves are only uſed.

They conſiſt of fine volatile Parts, and are warming and opening, and of great Service againſt the Scurvy, and all its Symptoms, being one of the Plants whoſe Juice, mixed with that of Scurvy-Graſs, and other Herbs of the like Nature, is given againſt all ſcorbutic Affections. They are, likewiſe, good for the Stone, Gravel, Dropſy and Jaundice, and are frequently eaten as Sallad in the Spring. *Miller's Bot. Off.*

This Plant is acrid, and gives no Tincture of red to the blue Paper. It contains a Salt pretty much reſembling the *Oxyſal Diaphoreticum Angeli Salæ*, which is an alcaline Salt, over ſaturated with Acid. Beſides this Plant, there is in the Water-Creſſes a little Sal Ammoniac and Sulphur, and a great deal of Earth. For,

By the Chymical Analyſis we obtain from this Plant a great deal of Acid and Alcali, a little urinous Spirit and Sulphur, and a pretty deal of Earth. It is aperitive, diuretic, and antiſcorbutic. They boil a Handful of it in lean Broth of Cray-Fiſh Soop. Theſe Broths purify the Blood, and very much relieve thoſe that are dropſical, ſcorbutic, or hypochondriac. The Juice, Extract, and urinous Spirit of this Plant have the ſame Virtues. They affirm that this Juice takes away the Polypus of the Noſe, and makes it fall off, if it be often waſhed with it. *Martyn's Tournefort.*

3. Siſymbrium; Orientale; facie Barbareæ; folio Plantagini. *T. Cor.* 16.

4. Siſymbrium; Erucæ folio glabro; flore luteo. See BARBAREA.

5. Siſymbrium; Erucæ folio glabro; minus; & præcocius. *T.* 226. *Eruca, latifolia, lutea, ſeu Barbarea minor.* M. H. 2. 230.

6. Siſymbrium; Erucæ folio glabro; minus; folio eleganter variegati.

7. Siſymbrium; aquaticum; Raphani folio; ſiliqua breviore. *T.* 226. *Raphanus aquaticus, alter.* C. B. P. Edit. 1. 97. Prodr. 38. *Rapiſtrum aquaticum*, Tab. Ic. 408.

8. Siſymbrium; aquaticum; foliis in profundas lacinias diviſis; ſiliqua breviori. *Tourn. Inſt.* 226. *Boerh. Ind. A.* 2. 16. *Raphanus aquaticus*, Offic. Raii Hiſt. 1. 818. Ger. 187. Emac. 240. Park. Theat. 1228. *Raphanus aquaticus foliis in profundas lacinias diviſis*, C. B. P. 97. Prodr. 3. 8. Raii Synop. 3. 301. *Raphanus aquaticus Tabernæmontani.* J. B. 857. *Armoracia foliis laciniatis*, Volck. WATER-RADDISH.

It grows in marſhy Ditches, and flowers in *June* and *July*. It is ſuppoſed by ſome to agree in Virtues with the Horſe-Raddiſh.

9. Siſymbrium; paluſtre; repens; folio naſturtii. *T.* 226. *Eruca paluſtris, & naſturtii folio, ſiliquâ oblongâ.* C. B. P. 98.

10. Siſymbrium; annuum; folio abſinthii minoris. *Tourn. Inſt.* 226. *Boerh. Ind. A.* 2. 16. *Sophia Chirurgorum*, Offic. Ger. 910. Emac. 1068. Park. Theat. 830. *Eryſimum Sophia dictum*, Raii Hiſt. 1. 812. Synop. 3. 298. *Naſturtium ſylveſtre tenuiſſimè diviſum*, C. B. P. 105. *Seriphium Germanicum ſive Sophia quibuſdam*, J. B. 2. 886. *Accipitrina Rivini & Loniceri*, Rup. Flor. Jen. 64. *Thalictrum Dodonæi*, Lugd. 1146. *Cardamine ſylveſtris tenuiſſime diviſis foliis.* H. Monsp. FLIX-WEED.

Flixweed has a white, hard, woody Root, full of ſmall Fibres at the Bottom, periſhing after having ripened Seed. The Stalks ariſe to be about two Foot high, more or leſs, beſet with many long, winged, and very finely and neatly divided green Leaves, pretty much reſembling thoſe of the true *Roman* Wormwood, beſet with very ſhort fine Hairs. The Flowers grow at the End of the Branches, being ſmall, yel-low,

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low, and four-leaved, and are succeeded by very slender Seed-Vessels, about an Inch or thereabouts in Length, full of very small reddish Seed. It grows frequently in sandy Ground, and amongst rubbish, and flowers in *June*.

The Seed is the only Part used; and 'tis said, that the Decoction of it unbruised is a certain Remedy for the bloody Flux; but it will not have the same Effect, if the Seed be bruised. It is, likewise, commended for the Stone and Gravel. *Miller's Bot. Off.*

It has a Taste a little astringent, but acrid, and something like that of Mustard. It gives a faint red Colour to the blue Paper. The Sal Ammoniac predominates in this Plant, being mixed with a great deal of Sulphur and terrestrial Parts; so that it is vulnerary, detersive and febrifugous.

Cæsalpinus says, that its Seed kills Worms. *Tragus* allows that it stops the Dysentery, and all Sorts of Fluxes. They give a Dram of it in Pottage or Wine for a Looseness. The Water in which the Plant has been macerated cold, has the same Virtues. The Juice, Conserve, or Extract of the Leaves and Flowers, are good for spitting Blood, the *Fluor Albus*, and immoderate Fluxes of the Piles and Terms. Externally applied, it cures Wounds, and cleanses Ulcers. They sell the Seed at *Paris* under the Name of *Talitron*, which comes from *Thalictrum*; for *Dodonæus* has given it that Name. *Martyn's Tournefort.*

11. Sisymbrium; annuum; folio absinthii minoris latiore. *Nasturtium sylvestre, tenuissimè divisum, folio latiore.* C. B. P. Var. 105.

12. Sisymbrium; minus; Erucæ folio glabro, nigro, crasso, lucido. *Barbarea, minor, nigro, crasso, lucido, folio.*

13. Sisymbrium; palustre; minus; siliquâ asperâ. *T.* 226. *Sinapi parvum, siliquâ asperâ*, C. B. P. 99. Prodr. 41. *Erysimum annum, minus, siliquâ asperâ*. Vaill. *Boerh. Ind. Alt. Plant.*

The second Species is a medicinal Plant, and has the Smell and Taste of *Eruca*, or Rocket, accompanied with a Bitterness universally grateful; whence it is of Use in those scorbutic Affections in which Cochlearia and Nasturtium are proper, for which Purposes it is used in Sallads. It cures all Diseases proceeding from a Viscidity and Ropiness of Blood. The Juice taken in the Morning for Months together, is an excellent Remedy for scorbutic Ulcers. It has the Virtues of the Cochlearia, tho' a much less Root, and, also, the Taste of that Plant, but is less acrimonious, and has very salutary Qualities, (especially the seventh Species) which have been observed before of the *Erysimum* and *Eruca*. The tenth is the most effectual of them all, in deterging malignant Ulcers, and depurating sanious ones, and for consolidating them, especially if used internally as well as externally. Hence it has the Title of *Chirurgorum Sapientia*, for it is of a saponaceous as well as astringent Quality; and being applied to a Wound, conglutinates it without a Suppuration: It, also, provokes Urine, and is of Service in the Stone and Dropsy. *Hist. Plant. Ascript. Boerhaave.*

SISYRRHINCHIUM. Offic. *Sisyrrhinchium Theophrasti*, Raii Hist. 2. 1167. *Sisyrrhinchium minus angusti folium*, C. B. P. 41. *Crocus Italicus parvo flore, radice rostratâ*, Elem. Bot. 290. *Bulbocodium Crocifolium flore parvo, violaceo*, Tourn. Coroll. 50. SPANISH-NUT.

It grows in the Kingdoms of *Valencia* and *Murcia* in *Spain*, and flowers in *March*. The Root is said by the Inhabitants, where it is a Native, to be good for the Gripes; but the Body must be exercised with Dancing after taking it.

SITANIUS. The same as SETANIOS.

SITIOLOGICE. That Part of Medicine which treats of Aliments; from σῖτος, *Aliment*, and λόγω, *to speak*.

SITION. σῖτιον. Aliment in general; or Bread made of Wheat in particular.

SITIS. Thirst. This is excited either by a Defect of a due Quantity of Moisture in the Body; from a Thickness and Immeability of the Humours; from a redundant Heat; from a muriatic, ammoniacal, alcaline, aromatic, oleous and rancid Acrimony; or from Poisons.

It is worthy of Remark, that Thirst seems to be a kind of Instinct, which directs a Person to drink Fluids, at the same time when the State of his Body requires Dilution. Thus after Eating, a Thirst is excited, as a sort of Notice, that the Food wants something to dilute it. When the Humours of the Body are thick, viscid, and unfit for Circulation, Thirst gives a sort of Warning of the Condition of the Fluids, and a Persuasive to mend their Defects, by diluting them, and rendering them more thin, and fit for their due Distribution.

In feverish Disorders, Thirst seldom fails of putting the Patient in Mind, that it is necessary to attemperate his Heat by aqueous and acescent Liquors. In like manner, if any kind of Acrimony is offensive in any Part of the Body, Thirst gives notice of the Danger, and indicates the Remedy.

I am sensible, that the Thirst generally observed in Dropsies, may be esteemed a false Guide, and a Persuasive to drink, at a time that it is pernicious; but it must be considered, that the stagnating Waters in this Distemper putrify and contract an Acrimony, which is well corrected by drinking proper Liquors in due Quantities.

A Thirst arising from a Dryness of the whole Body is allayed by the liberal and long-continued drinking of warm, aqueous, and farinaceous Liquors, rendered grateful by the Admixture of a small Quantity of some proper Acid. Thin Decoctions of Barley, Oats, and Bread; Whey, Milk, and Water, Posset-Drink, and a thin unsalted Decoction of Veal, without its Fat, are beneficial. Among fermented Liquors, small Beer, though not that Kind impregnated with Aromatics, is serviceable. Baths, Fomentations, and Clysters, are, also, useful in this Case.

A Thirst arising from a Dryness of particular Parts, such as the Mouth, the Tongue, the Fauces, or Oesophagus, is allayed:

1*mo*. By the Use of the Things above recommended.

2*do*. By often washing and gargarising the Mouth with the same Things.

3*tio*. By opening the salival Glands and Ducts, by means of Epithems and Fomentations, consisting of laxative, moistning and aperient Ingredients. In this Case, Oxycrate with Crums of Bread is of singular Use.

A Thirst arising from an acrid lixivial Salt, or from an acrid aromatic Salt, is removed by the Things already mentioned, as being of a diluting Nature; but especially if acid and nitrous Substances are mixed with them. Hence we know how a Thirst, arising from a muriatic Salt, is to be allayed, since it only calls for aqueous Liquors.

But a Thirst arising from a Matter unfit for passing thro' the Vessels, is only to be removed by diluting and resolvent Liquors. *Boerhaav. Institut.*

SITOS. σῖτος. Wheat, or any fumentaceous Grain, of which Bread is made; or Bread. In *Hippocrates* it frequently imports solid Aliment, in Contra-distinction from sorbile Aliment; or Aliment in general; and sometimes the Recrements of the Aliment contained in the intestinal Tube.

SITOSPELTUM. σιτόσπιλτον. A Name for the ÆGYLOPS, a Species of Grass. *Gorræus.*

SITTA. σίττα. The Name of a Bird, a Species of *Pye*.

SIUM.

The Characters are;

The Root is like that of a Colewort, fibrous and ligneous. The Leaves are pinnated, growing by Pairs to one Rib, and ending in an odd one. The Petals of the Flowers are bifid; and the Seeds are roundish, gibbous and striated.

Boerhaave mentions six Sorts of *Sium*, which are;

1. Sium; latifolium. *C. B. P.* 154. *Tourn. Inst.* 308. *Boerh. Ind. A.* 55. *Sium*, Offic. *Sium majus*, Ger. 200. *Sium majus latifolium*, Ger. Emac. 256. Raii Hist. 1. 443. *Sium maximum latifolium*, J. B. 3. 175. *Sium Dioscoridis sive Pastinaca aquatica major*, Park. Theat. 1240. *Sium latifolium foliis variis*, Raii Synop. 3. 211. WATER-PARSNEP.

It grows in Rivers and marshy Places, flowering in *July*. The Leaves eaten either crude, or boiled, are said to break and expel the Stone; to excite Urine and the Menses; to promote the Expulsion of the Fœtus; and to be good in a Dysentery. *Dioscorides*, L. 2. C. 154.

2. Sium; Erucæ folio. *C. B. P.* 154. *Sion aquaticum, rugosis foliis, multifidis, trifidis, & dentatis.* M. U. 12. Ic. T. 5. *Sium aquaticum, foliis multifidis, longis & serratis.* M. H. 3. 283. *Sium alterum*, Dod. p. 589. *Cicuta, aquatica, Gesneri.* J. B. 3. 175. *Cicuta maxima*, H. Eyst. Vern. O. 7. F. 2. Fig. 2. *Herba venenosa*, Lob.

Our *Œnanthe Cicutæ facie, succo viroso*, which *Wepfer* has described by the Name of *Cicuta Aquatica*, and of the dismal Effects of which in some Children, who by Mistake eat of it, he has wrote a large Treatise, was very probably the *Cicuta* so much in use of old, especially at *Athens*, for Killing. At least the Violence of this makes it a much fitter Instrument of Death than the common Hemlock, which is not by far of so malignant a Quality.

Though we must withal allow differing Climates very considerably to heighten or abate the Virtues of Plants. And it is not altogether improbable, that the Poison with which the *Athenians* took away the Lives of Malefactors, was an inspissated Juice compounded of that of *Cicuta* and other corrosive Herbs.

But be this as it will, the Alterations which *Wepfer* observed the Roots of *Œnanthe* to make in the Body, were a violent Pain and Heat in the Stomach, terrible Convulsions, with the Loss of all the Senses, Distortion of the Eyes, and flowing of the Blood out of the Ears, the Mouth so fast shut that no Art could open it, Efforts to vomit, but nothing thrown

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thrown up, frequent Hiccups, with a great Diſtenſion and Swelling, eſpecially at the Pit of the Stomach; and when Death had concluded the Tragedy, a continued Running of green Froth at the Mouth.

Stalpart Vander Wiel gives the like Account of two Perſons killed at the *Hague* by the ſame Roots.

In a Dog, who, for Experiment's ſake, died by this Poiſon, the Stomach, when opened, was found quite conſtringed, and ſhut up at both Orifices, its inward Surface red, with livid Spots here and there; the Inteſtines were empty; only the Rectum contained a little greeniſh Mucus.

Thus it appears that this Plant conſiſts of hot, acrid, and corroſive Parts, which by rarifying the Juices of the Stomach, and wounding its nervous Membranes, are the Cauſe of all thoſe Diſorders which immediately follow.

For upon the Senſe of a violent Irritation and Pain, the Fluid of the Nerves is preſently in large Quantities determined to the Part affected; and this, if the Stimulus be not overgreat, will be only to ſuch a degree as is ſufficient, by contracting the Fibres of the Stomach and Muſcles of the Abdomen, to throw off the Cauſe of the diſagreeable Senſation; but the uneaſy Twitching being too terrible to be borne, the Mind, by a kind of Surprize, with Haſte and Fury, as it were, commands the Spirits thither; thus the Buſineſs is overdone, and the Action of the Fibres becomes ſo ſtrong, that the Orifices of the Stomach are quite cloſed; ſo that inſtead of diſcharging the noxious Matter, the Torment is made greater, and the whole Oeconomy put into Confuſion.

This forcible Contraction of the Muſcles was the Reaſon that one of the Children which *Wepfer* ſaw, made Urine in the Midſt of the Agony, to the Height of five or ſix Foot, with a Strength and Violence ſurpriſing to the Spectators.

Nor is it any Wonder, if in theſe Circumſtances all Senſe be loſt, Blood guſh out at the Ears, Noſtrils, *&c.* the Parts being all torn and broke by the Violence of the Convulſions, which though they began in the Muſcles of the Belly, muſt at laſt prevail in the Members too, till the whole Fabric is ſhocked and overturned, and ſome of the corroſive Salts, perhaps getting into the Blood, and by the Rarefaction of it diſtending the Veſſels, the membranous Coats of which being already over-ſtretched, will the more eaſily give way and let out their Fluid.

The Caſe of *Aconitum* is much the ſame; this is our *Napellus* or *Monks-hood*; and its Effects ſo nearly agree with thoſe now related of *OEnanthe*, that I ſhall not need to recite them; the Experiments of *Wepfer* are full and convincing. And indeed as all the Hiſtories which this ſame Author has ſo carefully given us of Trials made with ſeveral vegetable Poiſons, *Solanum*, *Nux Vomica*, *Coculus Indicus*, and the like, on different Creatures, put it out of all doubt that the common Miſchief of theſe is a Twitching and Inflammation of the Stomach; ſo it appears from hence that virulent Plants, although they may be diſtinguiſhed even from one another by particular Virtues, do, however, kill by a like Operation and Force, which differs principally in Degree from that of noxious Minerals.

And therefore, in order to know what the ſpecific Qualities of any ſuch Herbs are, they muſt be given only in very ſmall Doſes; and then perhaps it would appear, that they are not made (as ſome imagine) to be deliterious and deſtructive, but for very good and beneficial Uſes; as we particularly experience in the Caſe of Opium.

Nor is it at all ſtrange that the Symptoms from a vegetable, and from a mineral Virulency, ſhould be ſo different, although of the ſame Kind, and only of unequal Force; for the more ſolid Parts of Minerals, eroding the Coats of the Stomach, induce a perfect Mortification and Gangrene; and thus do their Work at once; whereas the weaker Salts of Plants can make but a ſlighter Excoriation, upon the painful Senſe of which thoſe Agonies and Convulſions that follow, rather gradually exhauſt the Strength; and thus the Animal is not killed ſo ſpeedily, nor with the ſame Appearances.

Upon this Score, tho' mineral Poiſons do not paſs the *Primæ Viæ*, vegetable ones in ſome Caſes poſſibly may; juſt as we find thoſe Medicines which have a great Degree of Irritation preſently to induce a Vomiting; whereas the ſame Twitching, a little weakned, ſuffers them to paſs into the Inteſtines, and work downwards by Stools.

By this we may, perhaps, give ſome gueſs at the Nature of thoſe Poiſons, with which they tell us the Natives in ſome Parts of *Africa* and *India* are ſo expert at Killing, that they can do it in a longer or ſhorter time as they pleaſe. Theſe are moſt probably either the Fruits or the inſpiſſated Juices of corroſive Plants, which inflaming the Bowels, may cauſe little Ulcers there, whoſe fatal Conſequences, we know, may very well be ſlow and lingering.

This I am the rather induced to believe, becauſe an ingenious Surgeon, who lived in *Guinea*, told me, that the Antidote by which the Negroes would ſometimes cure thoſe who were poiſoned, was the Leaf of an Herb, which purged both upwards and downwards. For by theſe means the Stomach might be cleared from the adhering corroſive Parts of the Venom. Yet I can hardly think it poſſible at the ſame time, that they ſhould be able, by varying the Compoſition or Quantity of the Doſe, to aſcertain the Time in which it will kill, to a Week, Month, and the like; nor indeed have I ever met with any Perſon who could atteſt this to be Matter of Fact. Though repeated Trials and Obſervations may help one well practiſed in ſuch Tricks to give notable Conjectures in this Point.

The Ancients, indeed, pretended much the ſame thing with their *Aconitum*, of which they ſeem to have made a kind of Secret and Myſtery, as we learn from *Theophraſtus*, who ſays, *the ordering of this Poiſon was different, according as it was deſigned to kill in two, three Months, or a Year.* But this he relates only as a common Tale or Opinion, and not as a Story to which he himſelf gave any manner of Credit.

It is very plain, that the common Cure of all Poiſons of this kind, muſt be by freeing the Stomach, as ſoon as poſſible, from the corroſive vellicating Particles, and defending the Membranes from their Acrimony, by ſuch Things as are of a ſmooth, oily, and lubricating Subſtance. *Mead on Poiſons.*

3. Sium; ſive Apium paluſtre; foliis oblongis. See Berula.

4. Sium; medium; ad alas floridum. *M. U.* 63. *Apium, paluſtre, minus cauliculis procumbentibus, ad alas floridum.* H. L.

5. Sium; arvenſe ſive ſegetum. *Tourn. Inſt.* 308. *Raii Synop.* 3. 211. *Boerh. Ind. A.* 55. *Selinum ſegetale*, Offic. Park. Theat. 932. *Selinum Sii foliis*, Ger. Emac. 1018. Raii Hiſt. 1. 443. HONE-WORT.

This Plant grows amongſt Corn in moiſt Soils. The expreſſed Juice mixed with Ale, and taken every Morning faſting, is ſaid to cure Tumors of the Cheeks. The Juice of one Handful of the Herb, is to be taken in half a Pint of Ale. *Raii Hiſt. Plant.*

6. Sium; aromaticum; Siſon Officinarum. See Amomum.

Boerhaave ſays, that notwithſtanding the Virtues aſcribed to the firſt Species, he never durſt uſe it, on account of the Reſemblance it bears to the ſecond Species, which is the famous *Cienta Aquatica*, of which *Wepfer* wrote an entire Treatiſe. This ſecond Species has a thick bulbous Root, of a ſweet Taſte, but is one of the greateſt Poiſons known; for if taken into the Stomach, it excites horrid Convulſions, which ſoon prove mortal, unleſs diſcharged from the Stomach by Vomit. The Method of Cure is, to pour down large Quantities of warm Oil, with Water, and a little Honey, and by this means to excite Vomiting, that the Poiſon may be diſcharged from the Stomach. Under the Article Cicuta, I have referred the *Cicuta Aquatica* by Miſtake to Phellendrium.

SMALTUM. Smalt. This is a chymical Preparation of a blue Colour, uſed by Painters and Enamellers, but of no Uſe in Medicine. It is commonly called Stone, or *Powder Blue.* It is made of *Cobalt*, Pot-aſh, and Powder of Flint-Stones. The Manner of preparing it is deſcribed in the *Philoſophical Tranſactions*, by Dr. *Krieg*, and by *Joh. Henry Linck* of *Leipſic*, in the ſame Work.

SMARAGDINUM EMPLASTRUM. The Name of a Plaiſter deſcribed by *Celſus*, *L.* 5. *C.* 19.

SMARAGDUS. Offic. Boet. 195. Calc. Muſ. 212. Geoff. Prælect. 80. Schrod. 331. Kentm. 47. De Laet. 33. Aldrov. Muſ. Metall. 973. Charlt. Foſſ. 38. *Smaragdus à nonnullis Praſinus*, Worm. 105. Mont. Exot. 14. THE SMARAGD OR EMERALD.

The Emerald is a green, diaphanous, ſhining Gem, very pleaſant to the Sight, but exceſſively brittle, which has given occaſion to many Stories. It is divided into Oriental and Occidental. The Oriental is the beſt in all Reſpects. The other, which comes from *Peru*, is not near ſo bright, and beſides, has generally ſome foul Spots. There is a third kind of Emerald, or *Pſeudo-Smaragdus*, found in the Mountains of *Switzerland* and *Auvergne*, which is extremely tender, and of the Paleſt Green.

Fragments of Emerald thrown upon a clear Fire, emit a fine Flame, and totally loſe their Colour, which is a Proof ſufficient that this Gem contains ſome Sulphur of Copper. Beſides the ſuperſtitious Uſes aſcribed to it, it is ſaid to ſtop Fluxes of all kinds. It makes Part of the *Electuarium de Gemmis*, and *Confectio de Hyacintho*, together with the other precious Fragments. *Geoffroy.*

SMARIS. Offic. Rondel. de Piſc. 1. 140. Bellon. de Aquat. 226. Geſn. de Aquat. 522. Aldrov. de Piſc. 227. Raii

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Raii Ichth. 319. Ejusd. Synop. Pisc. 136. Jonst. de Pisc. 55. Charlt. Pisc. 36. THE WHITE CACKEREL.

This is a Fish found in the *Mediterranean* Sea. The Head of this Fish salted and burnt, is said to repress the tumid Lips of Ulcers; to restrain phagedænic Ulcers; and consume Corns, and those Excrescences called *Thymi*. The salted Flesh is said to be a good Application in Case of the Sting of a Scorpion, or the Bite of a mad Dog.

SMECTIS. σμηκτίς. A Name for the CIMOLIA TERRA.

SMEGMA. σμῆγμα. Soap.

SMELE. σμήλη. This is explained by *Gorræus*, a dry Powder of any kind sprinkled upon the Skin, with a View of deterging or cleaning it.

SMERILLUS. The same as SMYRIS.

SMILAX.

The Characters are;

It has the Appearance of a scandent Plant, with Claspers, or Tendrels. The Stalks are spinous, and the Flowers polypetalous and rosaceous. The Berry is soft, roundish, and full of an oval Seed.

Boerhaave mentions four Sorts of *Smilax*, which are:

1. Smilax aspera; fructu rubente. *C. B. P.* 296. *Tourn. Inst.* 564. *Boerh. Ind. A.* 2. 60. *Smilax aspera*, Offic. Ger. 709. Emac. 859. J. B. 2. 115. *Smilax aspera fructu rubro*, Park. Theat. 173. Raii Hist. 1. 655. ROUGH BINDWEED.

This Plant is cultivated in Gardens, and flowers in Summer. The Leaves, Tendrils, Root, and Berries are used in Medicine, which are said to evacuate noxious Humours by Sweat, and Transpiration; to cure Disorders of the Skin; to expel Poison; and ease Pains of the Joints. It is a *Succedaneum* for *Sarsaparilla*; and is celebrated for curing Venereal Disorders, taken either in Decoction, or Powder.

2. Smilax; aspera; minus spinosa; fructu nigro. *C. B. P.* 236.

3. Smilax; aspera; Indiæ Occidentalis. *C. B. P.* 296.

4. Smilax; Orientalis; sarmentis aculeatis; excelsas arbores scandentibus; foliis non spinosis. *T. C.* 45. *Boerh. Ind. Alt. Plant.*

Boerhaave takes Notice of some other Plants under the Name of *Smilax*, to which he gives the following Characters.

The Root is perennial and creeping; the Flowers are naked, hexapetalous, furnished with six broad and thick Stamina, and disposed in Spikes. The Ovary in the Bottom of the Flower is of a spherical Form, furnished with a short Tube, and becomes a Berry containing a single Stone.

1. Smilax; aspera; racemosa; Polygonati folio. *T.* 645. *Polygonatum racemosum*, Corn. 36. *Lilium convallium, Virginianum, Polygonati foliis racemosum.*

2. Smilax; unifolia; humillima. *Tourn. Inst.* 654. *Boerh. Ind. A.* 2. 64. *Monophyllon*, Offic. Ger. 330. Emac. 409. Raii Hist. 1. 668. *Monophyllon, sive unifolium*, Park. Theat. 505. *Unifolium, sive Ophrys unifolia*, J. B. 3. 534. *Lilium convallium minus*, C. B. P. 304. ONE BLADE.

This Plant grows in Woods and Thickets, and flowers in *May* and *June*. The Flower is used, which is esteemed alexipharmic and vulnerary.

SMILAX DALECHAMPII. A Name for the Ilex; *foliis rotundiori, molli, modiceque sinuato; sive Smilax Theophrasti.*

SMILAX HORTENSIS. A Name for the *Phaseolus vulgaris.*

SMILAX HORTENSIS MINOR. A Name for the *Phaseolus hortensis minor.*

SMILAX LÆVIS MAJOR. A Name for the *Convolvulus; vulgaris; major; albus.*

SMILAX LÆVIS MINOR. A Name for the *Convolvulus; minor; arvensis; flore roseo.*

SMILE, σμίλη. A crooked Incision Knife, with two Edges. *Gorræus.*

SMILIUM EMPLASTRUM. See ABSESSUS.

SMIRIS. See SMYRIS.

SMODICON, σμοδικὸν. A Remedy for Sugillations; from σμώδης, a Sugillation.

SMYRIS *et* SMERILLUS, Offic. *Smiris*, Mer. Pin. Boet. 591. Worm. 65. Aldrov. Mus. Metall. 653. Charlt. Foss. 27. EMERY.

Smyris, Smyrillus, or Emery of the Shops, σμύρις of the *Greeks*, *Smergium* of *Serapion*, *Sumbagedi* of the *Arabians*, is a ferruginous, heavy, metallic Substance, of a Colour inclining to black, and so hard that Lapidaries use it in cutting and polishing their Diamonds, and Smiths to polish their Iron and Steel.

Emery is of three Kinds; the common, which is blackish, and very much used, is found in many Parts of *Europe*, especially in an Island on the Coast of *Tuscany*, and in *Guernsey* in the *British* Channel. The second is a hard uneven Sort of a reddish Colour, like Bloodstone or Oker, but does not stain the Hands. This is, by some, reckoned among the Bloodstones. The third is of a blackish red Colour, streaked with gold-coloured Veins. It is found in the Gold-Mines of *Peru*, and really contains Gold. This Kind is thought by Chymists to be a Gold-Ore, or rather a Sort of immature or imperfect Gold; and therefore they esteem it very much, and extract a Tincture from it with Spirit of Sea-Salt, with which they fix Mercury in an Instant, and give this Substance the Name of the miraculous Precipitate, because they fancy they shall at length attain the true Art of making Gold by Means thereof.

Emery is recommended by *Dioscorides* and *Galen* as a Dentifrice; but it corrodes the Teeth too much, and insensibly wears them away. It is not now of any other Use in Physick. *Geoffroy.*

SMYRNA, σμύρνα. Myrrh.

SMYRNIUM.

The Characters are;

The Leaves are large, various, and sometimes perfoliated, or perforated by the Stalk; the Seeds are thick, hemispherical, lunated, gibbous, channelled and black.

Boerhaave mentions three Sorts of *Smyrnium*, which are;

1. Smyrnium. *Raii Synop.* 3. 208. *Tourn. Inst.* 316. *Boerh. Ind. A.* 54. *Hipposelinum & Smyrnium*, Offic. *Hipposelinum*, Ger. 866. *quoad descript.* Emac. 1019. Raii Hist. 1. 437. *Hipposelinum, sive Smyrnium vulgare*, Park. Theat. 930. *Hipposelinum Theophrasti, vel Smyrnium Dioscoridis*, C. B. P. 154. *Macerone quibusdam Smyrnium, semine magno, nigro*, J. B. 3. 126. *Olusatrum quibusdam.* ALEXANDERS.

Alexanders has many large winged Leaves, of a yellowish green Colour, much larger than Smallage, or else pretty much resembling it. The Stalks grow to be three or four Foot high, channel'd or furrowed, having the like, but smaller, Leaves growing on them, and on their Tops pretty large Umbels of small five-leaved white Flowers, succeeded by large oblong corner'd black Seed. The Root is large and branched, blackish on the Outside, and white within. The whole Plant has a strong warm Taste. It grows upon the Rocks by the Seaside, and flowers in *June*. It is usually kept in Gardens for Use.

This is an Herb more used in the Kitchen than in Apothecaries Shops, being eat now as a Sallad among other Herbs, or else boiled and eaten with Salt Meat. It is accounted to be of the Nature of Parsley or Smallage, but stronger, and therefore may be serviceable in opening Obstructions of the Liver and Spleen, to provoke Urine and the Catamenia, and to help the Dropsy and Jaundice. *Miller's Bot. Off.*

It is aperient, diuretic, and sudorific; excites the menstrual Discharge, and promotes a difficult Birth; it is good for the Colic, Asthma, and Ischiadic Pains. *Hist. Plant. Boerhaavio ascript.*

2. Smyrnium; peregrinum; rotundo folio. *C. C. P.* 154.

3. Smyrnium; peregrinum; folio oblongo. *C. B. P.* 154. *Boerh. Ind. Alt. Plant.*

SODA. An Head-ach. Sometimes, according to *Blancard*, it imports a Heat of the Stomach. *Soda Subethica*, is a soporiferous Pain of the Head. *Castellus* from *Bonetus.*

SODA, is, also, the lixivial Salt of KALI.

SOIA. See PHASEOLUS.

SOL. The Sun, in Chemistry, is the Character for Gold. See AURUM.

In the *Collectanea Chymica Leidensia*, there are several Preparations of Gold described, which are not used in the present Pharmacy.

SOLANIFOLIA. A Name for the *Circæa; Lutetiana*; and for the *Circæa; minima.*

SOLANO-CONGENER. See BELLADONNA.

SOLANOIDES. Bastard Nightshade.

The Characters are;

It hath a rose-shaped Flower, consisting of five Leaves, whose Pointal afterwards becomes a roundish Fruit, having one hard Seed, which is covered with a thin Pulp, so as to have the Appearance of a Berry.

Miller mentions two Sorts of *Solanoides*, which are;

1. Solanoides Americana; Circeæ foliis canescentibus. *Tourn.*

2. Solanoides Americana Circeæ; foliis glabris. *Tourn.*

These Plants are Natives of the warmer Parts of *America*, from whence their Seeds have been brought into *Europe*; and the Plants are now become pretty common in the Gardens of the Curious.

The Fruit of these Plants afford a fine red Colour, when bruised; but it soon fades on Paper, which renders it worth little. If a Quantity of these Fruit is squeezed into a Glass

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Glaſs of fair Water, ſo as to colour the Water, of a deep red, and a Stem of Flowers of the Tuberoſe put into the Glaſs, it will in one Night imbibe ſo much of the Liquor as to variegate the Flowers with a Roſe Colour. *Miller's Dictionary.*

SOLANUM.

The Characters are;

It has the Flower of the Alkekengi; the Calyx is monophyllous, quinquefid, ſtellated, and not veſicary. The Fruit is ſoft, ſucculent, of an oval or globular Figure, and full of Seeds, which are generally flat.

Boerhaave mentions four and twenty Sorts of *Solanum*; which are,

1. Solanum; ſcandens; vel Dulcamara. See AMARA-DULCIS.

2. Solanum; ſcandens; vel Dulcamara; flore albo. *C. B. P.* 167.

3. Solanum; ſcandens; vel Dulcamara; foliis ex albo variegatis. *M. H. B.* 194.

4. Solanum; Officinarum; acinis nigricantibus. *C. B. P.* 166. *Tourn. Inſt.* 148. *Boerh. Ind. A.* 2. 67. *Solanum vulgare*, Park. Theat. 346. Raii Hiſt 1. 672. Synop. 3. 265. *Solanum hortenſe*, Ger. 268. Emac. 339. *Solanum hortenſe, ſive vulgare*, J. B. 3. 608. *Nilentſiunda*, Hort. Mal. Part. 10. p. 145. T. 73. *Aguara-quiyà*, Piſon. 224. NIGHTSHADE.

Cordus and *J. Bauhine* have taken the Flower of this Plant to be pentapetalous; whereas it is certainly monopetalous. It is commonly believed that the Seed of the Nightſhade, with black Fruit, produces thoſe which have a red and yellow Fruit. But beſides that Experience ſhews the contrary, theſe Species are diſtinguiſhed by other more particular Circumſtances, as will appear by their Deſcriptions.

The Nightſhade, with black Fruit, has a Root half a Foot long, three or four Lines thick at the Neck, waving, whitiſh, fibrous and hairy; the Stalk, which is full of Pith, riſes about a Foot and a half high, three Lines thick, greeniſh, rough, and angular, divided commonly at the Diſtance of nine or ten Inches, into ſeveral Branches, ſtretching out upon the Sides, and often bending downward; garniſhed with Leaves growing alternately, which beginning with a Tail half an Inch long, increaſe to an Inch and a half in Breadth, and two Inches long; they are pointed, waved rather than notched, dark, green, ſmooth, and ſhining; the Pedicle lengthens itſelf into a Rib; the Waves of which bend themſelves about till they are loſt in the Extremities of the Leaves. Thoſe which grow upon the Diviſions of the Branches, are ſmaller, rounder, and more pointed at the Top, where the Sprigs are ſet with two or three little Threads.

The Flowers do not uſually grow out of the Boſoms of the Leaves, as in moſt other Plants, but out of the Branches themſelves, a little below the Leaves. Theſe Flowers grow together from five to eight, upon a Stalk an Inch and a half long, divided into ſlender Pedicles, four or five Lines long. Each Flower is white, monopetalous, of the Shape of a Baſon, three Lines or three and a half in Diameter, perforated at the Bottom, where it is yellowiſh, and, as it were, terminated in a Ring; divided from the middle into five Segments, long, pointed and diſpoſed in Form of a Star. From the Sides of the Bottom of the Flower ariſe ſhort Chives, charged each with a yellow Summit, duſty, narrow, a Line and a half long. All theſe Summits join together, and hide the Bottom of the Pointal, the Baſis whereof is almoſt round, pale green; jointed in the Hole of the Flower, and fixed in the Bottom of the Empalement; this Empalement is a little greeniſh Funnel, cut into five obtuſe Points. When the Flower is gone, the Pointal becomes a ſpherical Fruit, pretty hard, at firſt of an Olive-green, afterwards black, about four Lines Diameter, full of a limpid Juice, and ſeveral whitiſh Seeds, a Line long, flat, rounded, bordered with a ſmall greeniſh Skin, eaſily ſeparated from it, diſpoſed in a Ring about the Placenta, which is in the middle of the Fruit, and diſtributes the Nouriſhment to all the Seeds.

The Root is in a manner inſipid; the Leaves have an herby Taſte, a little ſaltiſh; the Fruit is ſomething ſharp and winy; the whole Plant has a narcotic Odour, but not ſo ſtrong as in the other Species.

It flowers in *July*, *Auguſt*, and *September*; the Fruit is ripe in *September* and *October*.

The Leaves give but a faint Tincture of red to the blue Paper; but the ripe Fruit gives it a very deep one; which gives us Reaſon to conjecture, that the Sal Ammoniac in this Plant, is tempered in the Leaves by a conſiderable Quantity of fetid Oil and Earth; but that the acid Part of this Salt is very much diſengaged in the ripe Fruit; ſo that we muſt make choice of the Parts of this Plant, as different Occaſions may require. The Berries, for Example, are more cooling, but yet more repellent than the Leaves, which lenify by reſolving, cleanſing, and abſorbing.

By the Chymical Analyſis they yield a great deal of volatile concrete Salt.

Nightſhade is uſed to allay Inflammations, to ſoften and relax the Fibres which undergo too violent a Tenſion. They apply the bruiſed Herb to the Piles, or bath the Parts, with the Juice a little warmed. They work this Juice for ſome time in a leaden Mortar, to anoint the Cancer with. The ſame Juice quickened with a ſixth Part of Spirit of Wine, well deflegmated, is very good for the St. Anthony's Fire, Tetters, Puſtules, Pimples, and all the Diſeaſes of the Skin. The Nightſhade is uſed in the Ointment of Poplar, and all anodyne Cataplaſms. *Cæſalpinus* affirms, that they give the Water, or the Juice, to drink in the Inflammation of the Ventricle, and Heat of Urine; he ſays, that three Ounces of the ſame Water, taken with an equal Quantity of Wormwood Water, evacuates by Sweat. Nevertheleſs, the internal Uſe of this Plant is very much ſuſpected. *Tragus* ſays, that it kills Hogs, and adviſes not to uſe the Water of it internally, till it has been diſtilled two or three Years. *Martyn's Tournefort.*

5. Solanum; officinarum, acinis Puniceis. *C. B. P.* 166.

6. Solanum; officinarum; acinis ex luteo vireſcentibus.

7. Solanum; officinarum; folio laciniato Stramonii, flore parvo; albo; acinis nigris.

8. Solanum; lanuginoſum; hortenſi ſimile. *Raii H.* 672.

9. Solanum; tuberoſum; eſculentum. See BATTATA VIRGINIANA.

10. Solanum; pomiferum; fruteſcens; Africanum; ſpinoſum; flore Borraginis; foliis profundè laciniatis.

11. Solanum; pomiferum; fruteſcens; Africanum; ſpinoſum, flore Borraginis; folio pallidius vireſcente, ſubtus tomentoſo.

12. Solanum; pomiferum; fruteſcens; flore Borraginis; folio tomentoſo; incano; ſolo caule ſpinoſo.

13. Solanum; incanum; Chinenſe; minus ſpinoſum; floribus parvis, umbellatis. *Pluk. Almag.* 351.

14. Solanum; fruticoſum; bacciferum. See AMOMUM PLINII.

15. Solanum; lignoſum; Africanum; ſempervirens; Laurinis foliis. H. A. 2. 191.

16. Solanum; Africanum; lignoſum; folio; atroviridi; anguſti; oblongo, obtuſo.

17. Solanum; Guineênſe; fructu magno inſtar Ceraſi, nigerrimo, umbellato.

18. Solanum; Americanum; caule & pedunculo nigro; & folio Acanthi, ſpinoſis.

19. Solanum; Americanum; caule pedunculo; folio Malvæ, tomentoſis, & ſpinis albis donatis; fructu luteo.

20. Solanum; ſpinoſum; fructu rotundo. *C. B. P.* 167. *Pomum Hierachuntanum.* Imperat. 665. *Mala inſana, nigra.* Rauwolf. Lugd. Append.

21. Solanum; fruticoſum; Indicum; fructu rubro. *T.* 149. *Cheruhunda.* H. Mal. 2. 67. *Scheruſchunda*, Ic. Tab. 36.

22. Solanum; Africanum; ſpinoſum; fructu caneſcente, undulato. *Triumfett. Prælus.* 49.

23. Solanum; pomiferum; non ſpinoſum; fructu duro. *Vaill.*

24. Solanum; ſpinoſum; incanum; foliis ſinuatis; flore Borraginis; fructu luteo; ovuli Gallinacei magnitudine & formâ. *Triumf. Boerh. Ind. Alt. Plant.*

The firſt and ſecond Species are called *Dulciſamara*, or *Dulcamara*, (*Bitter-ſweet*) becauſe if you chew a Bit of them newly cropt, it diffuſes a Bitterneſs over all the Mouth, and ſoon after a Honey-like Sweetneſs. The Juice of this Plant is very penetrating, ſaponaceous and detergent, whence it is proper in Wounds where Blood is extravaſated and grumous. It is, alſo, diuretic, expelling Gravel from the Kidneys; and ſudorific, for which Reaſon Phyſicians adviſe a very ſtrong Decoction of the tender Branches to be drank in a Phthiſis, where Attenuants and Cleanſers are required; but where there is an exceſſive Thinneſs of Blood, which manifeſts itſelf by natural Sweats, it is prejudicial. It is a very ſerviceable Plant in Inflammations, and too great a Tenſeneſs of the Fibres, and the bruiſed Leaves are good in the Hæmorrhoids: The Juice is very good in a Cancer, to waſh the ſame; and with rectify'd Spirit of Wine, is proper in an Eryſipelas, and all cutaneous Diſeaſes. It has the Virtues of Liquorice, and the Decoction of it is highly ſerviceable in all Diſorders from Obſtructions, for it is deterſive and aperient, and is commended in all pectoral Diſtempers, Ulcers, external or internal, the Scurvy, and Lues Venera, It is very diuretic, and no Plant is more proper for a Camp, where the Soldiers have received any internal or external Hurt. Outwardly, it is uſeful in the Gout to eaſe the Pains. Phyſicians

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ficians highly extol the outward Use of this Plant, and, I think, with good Reason: They take the bruised Leaves, and expressing the Juice, mix it with Ointment of Roses, and apply it to the Head in a Phrensy, as a Refrigerent and Anodyne, whence the Juice is said to be an Antiphlogistic. The Leaves bruised with Salt, or Nitre, are proper in Inflammations, Gangrenes, and Suppurations. The Plant taken inwardly, is said to mitigate unnatural Heat, to refrigerate, and comfort the internal Parts. But as many Children in the Country are seiz'd with Convulsions, and destroy'd by the Use of it, which, also, proves mortal to Poultry, as we are assur'd by the Peasants, this Plant is to be suspected, as well as its Berries. The Leaves bruised are fit to be externally applied in Inflammations of the Hæmorrhoids. The seventh and eighth are not so soon to be trusted. The ninth has Tubera for Roots, and was first discovered in *America*, where it is commended as excellent Aliment; but if too freely eaten, they are suffocating. The Tubera roasted under the Ashes, are very wholsome Aliment, and are said to be provocative. The fourteenth is thought to be the *Solanum* of the Antients, and the Apples are said to be of a refrigerating Quality; but I can say nothing of their Virtue, for want of Experience. The seventeenth is very poisonous, for its Berries cause Death, almost without any visible Symptoms. *Hist. Plant. ascript. Boerhaave.*

Solani Species, Fockii Fockii *dicta javanensibus* Bontii.

By the Leaves, Flowers and Fruit, it is certain, that this Plant is a Species of *Solanum*, only the Fruit is much larger than that of our *Solanum*, as exceeding sometimes the Length of a Cubit, as thick as a Man's Arm, and of so smooth and polish'd a Rind, as to represent a Man's Face like a Mirror. It is full of minute Seeds, like that of the common *Solanum*. The Fruits in these Countries (*Java*, and the neighbouring Islands) are not only esculent, but of a very delicious Savour, if boiled with Wine and Pepper, and have the same Taste as the Stool of an Artichoke. They are of good Nutriment, and of a diuretic Quality, for which Reason they are very serviceable in the Stone of the Bladder, and Affections of the Kidneys.

There is a wild Species of this Plant, which bears a perfectly spherical Fruit, and of a yellow Colour when ripe (the Garden Sort being purple or white like Hail) and of a bitter Taste, so as none but the wild Boars and Rhinoceroses will eat it. *Raii Hist. Plant.*

Solanum vesicarium Indicum. C. B. *Solanum sive Halicacabum Indicum.* J. B. *Halicacabum Indicum rectum.* Park. *Camaru Basilienſibus.* Marggr.

This Plant has a pretty thick, and, according to *Parkinson*, a firm, erect, angulous and nodous Stalk, of the Height of a Cubit, or two, spreading into many Branches, adorn'd with Leaves somewhat larger than those of the common *Halicacabum*, jagged, and of a smutty green Colour. The Flowers grow single from the Divarications of the Branches, and the Bosom of the Leaves, and are of a pale yellow Colour, like those of the common *Solanum*. The Bladders, or Fruit, are equal to those of the *Halicacabum*, with a Stone so large, as sometimes to burst the Bladder into four Parts. The whole Plant is insipid, but exudes a mucilaginous Juice at the Joints, of the strong Smell of the *Lycopersicon*. *Raii Hist. Plant. ex Parkinſ.* I find no Virtue ascribed to it.

SOLANUM is also a Name for several Sorts of *Alkekengi*, *Jalapa*, *Lycopersicon*, and *Stramonium*.

SOLANUM BARBADENSE. A Name for the *Physacca*; *Americana*; *fructu minori*.

SOLANUM MELANOCERASOS. See BELLADONNA.

SOLANUM POMIFERUM. A Name for the *Melangena*, *fructu oblongo violaceo*; and for the *Melongena*, *fructu oblongo albo*.

SOLANUM QUADRIFOLIUM. A Name for the *Herba Paris*.

SOLANUM RACEMOSUM & *Virginianum*. Names for the *Physolacca Americana*; *fructu majori*.

SOLARIS HERBA, is the HELIOTROPIUM.

SOLATER, or SOLATUR. Quicksilver. *Rulandus.*

SOLDANELLA.

The Characters are;

The Root is perennial; the Leaves are stiff, and less than those of Asarabacca. The Flower is Bell-shaped, and fimbriated; and the Fruit is cylindrical, and gaping at the Top.

Boerhaave mentions but one Sort of *Soldanella*, which is,

1. Soldonella; Alpina; rotundifolia. *C. B. P.* 295. *Tourn. Inst.* 82. *Boerh. Ind. A.* 202. *Soldanella Alpina*, Ger. 690. *Soldanella Alpina rotundifolia*, C. B. P. 295. Tourn. Inst. 82. *Soldanella montana quibusdam*, J. B. 3. 817. MOUNTAIN BINDWEED.

It grows on the Alps, flowers in *July*, and the Herb is reckon'd by *Monti* among Vulneraries.

SOLDURA. The Fæces of alcaline Salts. *Libavius.*

SOLEA. The Sole-Fish.

There are but few Fishes which have so excellent a Taste, and are at the same Time so wholesome as the Sole. This Fish is of different Bigness and Kinds.

It is tender, short, firm, having but little viscous, and gross Juices, and contains a just Proportion of oily and volatile saline Particles, which makes it have so agreeable a Taste, and render it nourishing, productive of good Juice, and easy of Digestion. The Head of this Fish being dried and reduced to Powder, is reckoned good for the Stone, Gravel, and Scurvy. It produces no ill Effects, if it be not immoderately used.

Buglossus is another *Latin* Name for it from Βούγλωσσος, from Βοῦς, an Ox, and γλῶσσα, a Tongue, because in Form it resembles a Neat's Tongue. *Lemery on Foods.*

SOLELASAR. An alcaline Salt.

SOLEN. σωλὴν. A hollow chirurgical Instrument, in which fractur'd Limbs were plac'd. It is, also, the Name of an oblong Sea Shell-Fish, of which Naturalists take Notice of two Species.

SOLENARIUM. σωληνάριον. A channell'd chirurgical Instrument, in which the *Penis* was laid, as a fractur'd Limb in the *Solen*.

SOLEUS.

This is a large, fleshy, flat Muscle, nearly of an oval Figure, and thicker in the Middle than at the Edges. It has its Name from its supposed Likeness to a Sole. It is situated on the Backside of the Leg, lower down than the *Gastrocnemii*, by which it is covered; and these three Muscles form the Calf of the Leg.

It is fixed above, partly to the Tibia, and partly to the Fibula. It is fixed to above one Third of the upper Part of the Backside of the Fibula, and a little to the articular Ligament of the Head of this Bone. It is, also, fixed to the Backside of the Tibia, from the oblique Line or Impression which terminates the Insertion of the Popliteus, down to the Middle of the internal Angle of the Bone; afterwards, leaving these two Bones, it ends in a broad, strong Tendon, which, together with that of the *Gastrocnemii*, forms what is call'd *Tendo Achillis*. This strong Tendon contracts a little in its Passage to the Os Calcis, and then expanding a little, it is inserted obliquely in the Backside of the Bone, all the Way to the Tuberosity. The outer, or posterior Fibres of this large Tendon, are the longest; the inner, or anterior Fibres, shortest; and the rest are longer or shorter, in Proportion to their Nearness to these two Portions.

The fleshy Body of the *Soleus* seems to consist of two Planes of Fibres at least, that on the Backside of the Muscle being the most simple; and the other, or that next the Bone, being penniform.

This Muscle, and the two *Gastrocnemii*, form what Anatomists call a true Triceps.

The *Gastrocnemii* and *Soleus* make a Kind of *Triceps*, and by their common Tendon extend the Foot, and keep it extended against the strongest Resistance. It is by their Means that we raise the whole Body, even with an additional Burthen, when we stand a Tip-toes, and that we walk, run, and jump. The Length of the posterior Portion of the Os Calcis gives them a great Advantage in acting, by removing the Line of their Direction from the Axis of Motion.

The Motions of the Foot perform'd by these Muscles, may be referred to the first two Kinds of Levers. When we stand a Tip-toes, the Foot represents a Lever of the second Kind, the Fulcrum being then at one End, the Power at the other, and the Weight between them: And we have a Lever of the first Kind, when the Leg being fixed, we endeavour to overcome any moveable Resistance with the Toes, or whenever we move the Foot held off the Ground.

These Muscles not only extend the Foot on the Leg, but, also, the Leg on the Foot, as appears evidently when after a moderate Genuflexion, we raise our Bodies; for then the Foot remains fix'd, while these Muscles extend the Leg; and it is here to be observed, that this Genuflexion is not made by the Action of any Flexors, but only by the Relaxation of the proper Extensors.

The *Gastrocnemii*, by their Insertion in the *Os Femoris*, may in great Efforts move the Leg on the Thigh, and the Thigh on the Leg, as Assistants to the *Biceps*, *Semi-Membranosus*, *Semi-Tendinosus*, *Gracilis Internus*, and *Sartorius*. In these Motions the superior Extremities of the *Gastrocnemii* cross under the lower Extremities of the Muscles last named. The fleshy Fibres of the *Gastrocnemii* are very long, and there is a great Distance between their two Insertions; and, on

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on this Account, these Muscles are better fitted for large Degrees of Motion than for Strength.

The *Soleus*, by the Multitude of its fleshy Fibres, and its penniform Structure, is more proper for strong than large Motions, and seems principally to sustain the *Gastrocnemii* in the Motions begun by them. The tendinous Portions of this Muscle, and of the *Gastrocnemii*, though they form a strong Tendon altogether, seem nevertheless to slide a little upon each other in the different Flexions and Extensions of the Foot. *Winslow's Anatomy.*

SOLIDAGO. A Name for the *Doria*; *quæ Jacobæa*; *Alpina*; *foliis longioribus*; *serratis.*

SOLIUM. The Bathing Vessel in the antient Baths.

SOLIUM is, also, a Name for one Species of flat Worm, for there are two Sorts of *Tenias*; one properly so call'd, that neither moves, nor has any form'd Head; the other call'd *Solium*, from its being the only one of its Species in the Body, which moves, and has a very regular round Head, resembling a Wart.

SOLOMA. Silver; that is, Silver of the Chymists. *Rulandus.*

SOLSEQUIUM. Sulphur.

SOLVAS. An obscure Word in *Paracelsus*, importing something which dissolves Bole, but does not explain what.

SOLUTIO. Solution. This imports the Termination of a Disease; an Inflammation, for Example, by Resolution.

Chymical Solution is explain'd under the Article MENSTRUUM. Solution of the Belly, is rendering it laxative.

It has been a constant and received Opinion among the Professors of the Art of Chymistry, and still prevails among them, that the Solution of Bodies, which is of excellent Use in Chymistry, is effected principally by Means of the Pores of those Bodies. Solid Bodies, they say, on account of the different Structure and Connexion of the Parts of which they consist, are furnished with Variety of Pores and Passages, through which the smallest Particles of the Menstruum find an Entrance, and, by insinuating themselves into the Interstices, dissolve the Connexion. These Pores, they imagine to be of different Magnitude and Figure, and to belong to fluid as well as solid Bodies, and to admit none but congruous Particles, like to those of which the Dissolvent is composed; whence they conclude, that different Bodies require different Menstruums.

But, however subtile and ingenious that Opinion may appear, in point of Invention, or how specious soever in the Eye of Reason, we doubt not, upon a thorough Examination and deeper Insight into the Matter, to shew, that it is built upon a very weak and slippery Foundation, which we demonstrate in the following Manner.

First, then, we freely grant, that in all hard and compact Bodies there are some Pores or Cavities, not of the same, but different Figures, Part of which admit the Aereo-ethereal Fluid, while into others, from whom that Fluid is expelled or excluded, some other convenient aqueous or spirituous Liquid may find an Entrance. This Difference of Pores in Bodies is, also, the Cause of their specific Gravity, or that some are heavier or lighter than others. But, however, we ought to understand, that if the Pores or Interstices between the Parts of solid Bodies are possessed by Fluids, we are not so much to regard the Figure of those Pores, as their Diameter, whether it be larger or narrower; for it is known from Mechanics, that a Fluid enters Pores, of whatever Figure they are, if it be so qualified as to meet with no Obstruction on account of their Diameter. And, therefore, though we do not absolutely deny, that there are such Pores in solid Bodies, yet no Reason obliges us to grant the same in Fluids: For, though in solid Bodies the Parts more firmly cohere, and are at Rest among themselves; yet it is otherwise in Fluids whose Parts are agitated by the Interfluent Ether with a constant and continual Motion, and are perpetually changing their Situation. Since, therefore, it is impossible so much as to conceive any constant Disposition of Pores in a Fluid, it is evident, that the different Arrangement of their Parts has nothing to do in Solutions; for when a Liquid occupies the Pores of a Solid, it leaves it in a more light and subtilely fluid State than when it enter'd. But the Case is otherwise in Fluids, for these, when the Ether is expelled, which impels Fluids to continual Motion, are deprived of all Motion, and necessarily concrete into a Solid: Thus Water, when the subtile ethereal Matter is expressed by the incumbent very cold Air, congeals into a hard and compact Substance. To this it must be added, that Fluids, when they admit a large Quantity of Ether, affect a large Space, as it happens when they are heated, whereas Solids are not affected in the same Manner.

Besides, since Fire liquifies Metals and Stones, Mercury softens and amalgamates Metal, one Ounce of Acid dissolves the like Quantity of alcaline Salt, and one Ounce of highly rectify'd Spirit of Wine receives one Ounce of pure distill'd Oil, for instance, Oil of Cloves, of Lavender, or Camphire, I see not how this Reception of Solids into the Pores of a Fluid can any way take Place; for the Pores of the dissolvent Menstruum cannot be greater than, or equal to, the whole Body.

Nor can we by any Means comprehend how Copper put into a Solution of Silver, or Iron into a Solution of Copper, can cause a Precipitation in these Solutions, because these solid Bodies can by no Means enter the Pores of the Menstruum: Nor can it be explain'd from this Hypothesis why highly rectify'd Spirit of Wine pour'd on saturated Spirit of Sal Ammoniac should precipitate its volatile Salt, or why Water should precipitate a Solution of Camphire in Spirit of Wine.

Some there are who press'd with these Difficulties, take another Method of Explication, and alledge the Similitude of Parts between the Dissolvent and the Body to be dissolved. But neither will this Hypothesis put the Matter beyond all Doubt, since we observe that heterogeneous, or quite dissimilar Bodies easily unite with one another, and dissolve one another more readily than homogeneous Bodies use to do; for every one knows, that all Acids very readily dissolve Salt, or alcaline Bodies; that Water admits Earth, as we see, for Instance, in a Decoction of Quick-lime; that insipid Water receives all Kinds of Salts, and that alcaline Menstruums are well fitted for dissolving Sulphurs.

Nothing, then, remains but to search after some other, and these true and genuine, Causes of Solutions, which are affected by Menstruums. And the most probable Account which can be given of the Matter and the most easy to be conceived, seems to us to be, that we should suppose the Fluid, in putting the Parts of the Dissolvend in Motion, to hurry them along with itself in the same Motion of Fluidity, and by this Means unite itself with them. Thus we see that Water puts all Kinds of Salts into a like Motion of Fluidity, and so unites itself.

Moreover, all distilled Oils, all resinous Balsamics, are dissolved by a sulphureous, highly rectify'd Spirit of Wine, and by that Means are incorporated together. And Solutions are generally made when the active Principle, especially the saline, intimately unites itself with the Dissolvend in such a Manner, that both together constitute a third, that is, a neutral Salt; which done, this very neutral Salt, by an easy Compliance with the Motion of the Water, is itself readily dissolved. Thus menstruous Acids, which are nothing but a Solution of an acid Salt into a Phlegm, while they dissolve alcaline Substances, whether earthy or saline, pass into a neutral Salt, which, after the Manner of all Salts, liquifies into a Phlegm. In the same Manner Metals, when dissolved by menstruous Acids, as Aqua-Fortis, or Aqua-Regis, while these acid Salts associate with the metalline Particles, pass into a third Kind of Salt, which appears after an Evaporation of the Menstruum, and is readily dissolved in the Water contained in the Menstruum.

From all these Experiments it appears, that a Menstruum which cannot be united with the Dissolvend, can effect no Solution. Thus highly rectify'd Spirit of Wine cannot be united with common Salt, because the inflammable Sulphur refuses a Conjunction with this Kind of Salt; and hence it is that common Salt, as well as other Salts, cannot be dissolv'd by this highly rectify'd Spirit. For a like Reason, oleous and alcaline Menstruums dissolve not Metals, because neither the Sal Alcali, nor the Oil, can insinuate themselves into an intimate Union of the Parts which constitute the Metals, and not at all because they are contrary to one another in their Pores and the Figure of their Parts; on the contrary, highly rectify'd Spirit of Wine very readily unites with distilled Oils and Resins, which are only a more subtile Kind of Oil, coagulated by an Acid, because they meet together in a friendly Manner, and thus Water with Water, and Water with Ice, readily mix together.

As, therefore, a Solution is effected by an Union of the Dissolvent and the Thing to be dissolved, so when this Union is again destroyed, and the Dissolvent forsakes the Thing dissolved, or one of them is separated from another, the Fluidity itself ceases, and the dissolved Substance is separated from the Menstruum, which Action the Chymists call *Precipitation*. It is a great Error, therefore, to imagine that Precipitation happens because the Pores of the Menstruum, which contained the Thing dissolved, are occupy'd by some other Matter, whence there must of necessity be an Expulsion of the Parts of the dissolved Body from the Pores of the Menstruum. It might be more truly said, that Precipitation is no other than a new Solution, or a new Union of the Menstruum with another Body, I mean while the precipi-

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tating Matter unites more closely with that Menstruum with which the Body was before united.

The Reason why the Menstruum, with which the Body was before united, applies itself to a new and even precipitating Body, and unites itself with it, seems to be, that the Menstruum, more readily and freely incorporates with the Precipitant, than with the former Body, on Account of the greater Agreement of Parts, which is a Point that deserves Confirmation by Experiments. Thus Copper put in a Solution of Silver made by Aqua-fortis, causes it to subside; and Iron in a Solution of Copper, made in the like Manner by Aqua-fortis, soon precipitates the Copper; and Zinc, whenever added to a Solution of Iron by Aqua-fortis, immediately causes the Iron to subside to the Bottom; and if you have a Mind again to precipitate the Zinc, it may very well be done by throwing in some Salt of Tartar.

The Reason to be given for these different Precipitations is as follows: Because the acid Salt of the Nitre, which is in the Aqua-fortis, is better qualified to associate with the Salt of Tartar than with the Zinc, hence it lets the Zinc subside; and because the acid Salt of the Nitre will much more easily incorporate with Zinc than with Iron, hence the Iron is precipitated; and again, because the same acid Salt more readily unites with Iron than Copper, therefore Iron put into a Solution of Copper, causes it to sink to the Bottom, and thus it is in other Instances. And it is besides worth our Observation, that an Acid more violently precipitates such Bodies, which have been dissolved in a more subtile Acid. Thus Spirit of Vitriol, poured on Solutions of alcaline, earthy Bodies, such as Mother of Pearl, Corals, Crabs-Eyes, and Egg-shells, dissolved in Vinegar, suddenly precipitates them to the Bottom. The Reason is obvious, and is because a stronger Acid more intimately unites with terrestrial alcaline Particles, than does a milder one, whence this latter being left to itself, very speedily sinks and subsides. And therefore, whenever Spirit of Vitriol is poured on Sugar of Lead, which is a Salt prepared with Lead and distilled Vinegar, there happens in like Manner a Precipitation of the Lead; but when these are distilled, then the Spirit of the distilled Vinegar, and not the Spirit of Vitriol, ascends and is distilled, the Spirit of Vitriol being left in the Bottom, united with the saturnine Body; and the same Thing happens in those other Solutions of alcaline Substances made with Vinegar, which have been already mentioned.

Moreover, Water precipitates Solutions of resinous Bodies made with highly rectified Spirit of Wine, not because this Spirit enters the Pores of the Water, but because it more easily and freely unites with Water than with Resins. The same highly rectified Spirit of Wine precipitates the volatile Salt from the Spirit of Sal-ammoniac, which is prepared with Water. In short, a Solution of Salt of Tartar precipitates a Solution of Pearls, or of Crabs Eyes made with Vinegar, because the Salt of Tartar more easily and readily unites with these Acids than with these earthy Bodies, whence also an Addition of Crabs Eyes to the Solution of Salt of Tartar will not destroy the Union. It is a known Experiment also, that common Salt cast into a Solution of Silver by Aqua-fortis, precipitates it into a white Magistery, for scarce any other Reason, than that the highly penetrating Acid of the Nitre incorporates with the Earth of the common Salt, which is of an alcaline Nature, abandoning the Silver with which it was united.

From all these Experiments which have been produced, it abundantly appears that *Syncrisis* and *Diacrisis*, or *Union* and *Separation*, are the greatest Instruments and most simple Operations of Nature, for the performing so many and so great Effects, since neither Nutrition, Generation, Virtue, Accretion, Mutation of Form or Texture, Solution nor Coagulation, can be understood or explained without them. And hence we may be convinced, also, that the Doctrines of Pores and Particles of various Figures to which the Chymists and Naturalists betake themselves for Refuge, when pressed with Difficulties, is of no Service, as having no good Foundation in the Nature of the Thing itself; and that many and great Phænomena of Nature may far more easily, and with much less Perplexity, be explained and illustrated by the two fundamental Points of *Union* and *Separation*. *F. Hoffman. Observ. Physico-Chym.*

SOLUTIVA. Laxatives.

SOMNAMBULO. A Person who walks in his Sleep.

SOMNIFERA. Medicines which induce Sleep.

SOMNIUM. A Dream or Vision. See INSOMNIUM.

Pythagoras taught that the Air was inhabited by the Souls of Demons or Heroes, and that these Beings send to Mankind Dreams, Signs and Diseases, and also to Beasts.

The Ancients were strongly possessed with an Opinion, that their Gods communicated to the Sick in Dreams, Remedies for their Distempers.

Galen says, that once, when he had a fixed Pain in the Part where the Diaphragm is attach'd to the Liver, he dreamed that *Æsculapius* advised him to open the Artery betwixt the Thumb and the second Finger of the Right Hand; which he did, and found himself immediately cured.

Plutarch Synop. 9. 10. examines into the Reasons why autumnal Dreams are more uncertain than others.

Phayllus, General of the *Phoceans*, in the War betwixt them and the *Thebans*, dreamed that he was like the Statue of a consumptive Person, dedicated by *Hippocrates* at *Delphi*, and soon after died consumptive.

SOMNOLENTIA. Sleepiness. See LETHARGUS.

SOMNUS. Sleep. See OPIUM, and LETHARGUS.

All Bodies, by their Actions upon one another, and by the Action of the circumambient Bodies, are liable to be impaired and wasted; and all animal Bodies, from an active and Self-moving Principle within them, as well as from the Rubs of Bodies without them, are constantly throwing off some of their superfluous and decayed Parts; so that animal Bodies are in a perpetual Flux. To restore this Decay and Wasting of animal Bodies, Nature has wisely made alternate Periods of Labour and Rest, Sleeping and Watching, necessary to our Being; the one for the active Employments of Life, to provide for and take in the Materials of our Nourishment; the other to apply those Materials to the proper wasted Parts, and to supply the Expences of Living. And it seems as improper, in the Order of Nature, to disturb the animal Functions in the Time of Sleep, by any other Employment, than that of the secondary Concoctions (as they are called) that is, the applying the Nourishment to the decayed Parts, to recruit the Blood, perfect the Secretions, and to lay up plenty of Spirits, or (to speak more philosophically) to restore the weakened Tone of nervous Fibres; that is, in short, to restore the Decays of Watching and Action: This, I say, is as improper, as it would be (were it possible) to eat or drink, or make Provision for the Necessities of Life, in the Time of Sleeping. Hence is evident, the Absurdity of heavy, various and luxurious Suppers, or of going to Rest till many Hours after such a Meal, which must otherwise break in upon the Order of Nature, and the due and appointed Times of Sleeping and Watching. Wherefore, I advise the Valetudinary, the Studious, and the Contemplative, either to make no Suppers, or only of vegetable Food; and to take a due Time for Watching after them.

There is nothing more certain, than that (abstracting from acute Cases) our Sleep is sound, sweet and refreshing, according as the alimentary Organs are easy, quiet, and clean. If any one, not suffering under any Disease, is disturbed in his Sleep, 'tis certain his Stomach is filled with Food or Crudities; or his Guts filled with Wind, Choler, or superfluous Chyle: And those restless Nights, and the Difficulty of going to sleep, which are generally ascribed to the Vapours, are entirely owing to these Causes, tho' they be not so strong as to become sensible; for then Pain is added to Watching, and they are felt. And upon Complaints of such restless Nights, I never once failed, upon Enquiry, of finding the true Cause in the Diet of the preceding Day, or of some few Days before; and constantly have discovered, that some Error in Eating and Drinking, either in Quantity or Quality, has produced them. I have been astonished to see hypochondriacal and hysterical People, restless all Night, tossing and tumbling till towards the Morning, then dropping asleep till late Hours, awake heavy, oppressed and unrefreshed, complain of being hag-ridden, tired and wearied, as if they had been whipp'd, spurred, lashed, and beaten, through all the Watches of the Night; rise with foul Mouths and white Tongues, Belchings, Yawnings, Coughing, Spitting, or Reaching and Heaving, without Appetite, Spirits or Life, all the Day-time, begin to live and breathe, become chearful and hungry, about ten, eleven, or twelve o'Clock at Night, eat a hearty, various, and luxurious Supper, drink a Cheeruping Cup of the best, become as merry as Crickets, and long to sit up later, at last, tumble to bed, and repeat the same Farce over again. The Reason of all this Complaint is the Load on the Stomach, that will not suffer them to rest till it is got off. The sharp and crude Humours twitching and twinging the nervous Fibres, and Coats of the Bowels, become like so many Needles and Pins constantly running through them, tho' not always with sensible Pain; the unconcocted Chyle stopping or circulating slowly, first in the Bowels, then in the smallest Vessels, begets these Convulsions, Flatus, Night-mares, and Oppressions of Spirits. So that the secondary Digestions are not over till next Evening, (hence their Want of Appetite:) And when these are finished, their Stomachs come, and their

Spirits

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Spirits flow; and thus the perpetual Round is carried on. Did they but follow the Dictates of Nature, go to Bed for ſome Days with a light Vegetable, or no Supper at all, and bear the Inconveniencies thence ariſing, their Appetites would come in due Seaſon, and they would quickly find the Truth of the Aphoriſm of the *Schola Salernitana*.

Somnus ut ſit levis, ſit tibi cœna brevis.

The Seaſons for Sleeping and Watching, which Nature ſeems to point out to us, at leaſt in theſe our Climates near the Tropic, are the Viciſſitudes of Day and Night. Thoſe Damps, Vapours and Exhalations, that are drawn up into the higher Regions, and are ſo rarefied by the Heat and Action of the Sun, as to become innocent, or very weak in the Day-time, are condenſed, ſink low, near the Surface of the Earth, and are perpetually dropping down in the Night-ſeaſon, and conſequently muſt be injurious to theſe tender Perſons, that unnaturally watch in that Seaſon, and muſt neceſſarily obſtruct the Perſpiration, which the Activity of Watching, and the Motion of Labour promotes. Our Bodies ſuck and draw into them the good and bad Qualities of the circumambient Air, through the Mouths of all the perſpiratory Ducts of the Skin. And were we to view an animal Body with a proper Glaſs, it would appear with an Atmoſphere quite round it, like the Steam of a Boiling Pot. Now we may eaſily conceive what Injury a Conſtitution may receive, not only by ſtopping ſuch a perpetual Diſcharge of Superfluities, but alſo by forcing into the Habit, by the Air's Weight and Preſſure, thoſe noxious Fumes and Vapours, that are perpetually falling near the Surface of the Earth in the Night-time. Your true Topers are ſo ſenſible of this, that, by Obſervation, they have gathered it to be more ſafe for their Health, and better for prolonging their Lives, to get drunk betimes and go to Bed, than to ſit up and be ſober.

On the contrary, the Heat of the Sun in the Day-time, by its Action on human Bodies, the very Light, and free Air, and the Motions of Things about us, diſturbing the Quiet of the Air, muſt neceſſarily diſorder the equable Courſe of the Perſpiration, the Tenor of the ſecondary Concoctions, and the Tranquillity of the Spirits, ſo neceſſary to Reſt and Quiet. So that nothing ſeems more directly pointed out to us by Nature, than the Day for Labour, and the Night for Reſt: And this without taking in the Conſideration of the Neceſſity of the Sun's Light for the Ends of Labour, and providing the Neceſſaries of Life. Some Animals that are exceeding tender, are directed by Nature to alternate Periods of Watching and Reſt, not twice in twenty four Hours, but twice in the Year, as Summer and Winter; ſuch as Swallows, Bats, and many Sorts of Inſects, who ſleep all the Winter, and watch all the Summer. So conſiſtent is Nature, in appointing the brighteſt and moſt enlightned Parts of our Lives for Action, and the darkeſt and moſt inclement for Reſt. Not but that robuſt Conſtitutions (as well as Animals fitted by Nature for different Ways of Living) may, by Cuſtom, get the better of theſe natural Appointments: But I write for the Valetudinary, the Studious and the Contemplative.

I adviſe all ſuch, if they would preſerve their Health, and lengthen out their Days, to avoid, as much as is poſſible, Evening Dews, Nocturnal Studies, and unſeaſonable Watching; in Summer to go to Bed with the Sun, and in Winter to riſe, at leaſt, by Break of Day. Thoſe who live temperately, will neceſſarily ſleep but little: But to recompenſe that, their Sleep will be much more ſound, refreſhing, and fruitful of Chearfulneſs and free Spirits, than that of thoſe who live more freely. For, as I have before ſaid, the Quantity of Sleep will always be in Proportion to the Quantity of Eating and Drinking. Valetudinary, Studious, and Contemplative People, ought to go to Bed by eight, nine, or ten, at fartheſt, and riſe by four, five, or ſix, by which they will have eight Hours a-bed, and that is ſufficient for any Perſon, not under an acute, or the ſharp Fits of a chronical Diſtemper.

Nothing can be more prejudicial to tender Conſtitutions, ſtudious and contemplative Perſons, than lying long a-bed, or lolling and ſoaking in Sheets, any Time after one is diſtinctly awake, or has ſlept a due and reaſonable Time. It neceſſarily thickens the Juices, enervates the Solids, and weakens the Conſtitution. A free open Air is a Kind of a cold Bath, eſpecially after riſing out of a warm Bed; and conſequently, makes the Circulation briſker and more compleat, and braces up the Solids, which lying a-bed diſſolves and ſoaks in Moiſture. The erect Poſture, and the Activity of Watching, make the Perſpiration more plentiful, and the groſs Evacuations more readily thrown off. This is evident from the Appetite and Hunger thoſe that riſe early feel beyond that which they get by lying long a-bed. Add to all theſe the Influence of the freſh, benign, Morning Air, the retreating of all the noxious Damps and Vapours of the Night, together with the Clouds and Heavineſs that are thrown upon the Brain from Sleep; and laſtly, that Chearfulneſs and Alacrity which is felt by the Approach or Preſence of that glorious Luminary the Sun, which adds a new Force to the Heart, and a Spur to the Spirits.

All Nations and Ages have agreed, that the Morning Seaſon is the proper Time for ſpeculative Studies, and thoſe Employments that moſt require the Faculties of the Mind. For then the Stock of the Spirits is undiminiſhed, and in its greateſt Plenty, the Head is clear and ſerene, the Paſſions are quieted and forgot, the Anxiety and Inquietude that the Digeſtions beget in the nervous Syſtem, in the moſt tender Conſtitutions, and the Hurry the Spirits are under after the great Meal, are ſettled and wrought off. I ſhould adviſe, therefore, thoſe who are of a weak relaxed State of Nerves, who are ſubject to hypochondriacal or hyſterical Diſorders, whoſe Profeſſions lead them to much Uſe of their intellectual Faculties, or who would indulge ſpeculative Studies, to go early to Bed, and to riſe betimes, to employ their Morning Hours in theſe Exerciſes till eleven o'Clock, then to take ſome agreeable Breakfaſt of vegetable Food; to go on with their Studies and Profeſſions till three, four, or five, as their Spirits will hold out, and then to take their great Meal of Animal Food; all the reſt of the Day to throw off all Study and Thought, divert themſelves agreeably in ſome innocent Amuſement, with ſome gentle bodily Exerciſe; and as ſoon as the Digeſtion is over, to require and provide for going to Bed, without any further Supplies, except it be a Glaſs of fair Water, or warm Sack-Whey. But the Aged and Sickly muſt go ſooner to Bed and lie longer, becauſe Age and Sickneſs break Reſt, and the ſtiffened and hardened Limbs of the Ancient become more pliant and relaxed by much Sleep, a ſupine Poſture, and the Warmth of the Bed.

RULES FOR HEALTH AND LONG LIFE, DRAWN FROM SLEEP AND WATCHING.

1. The Valetudinary, the Sedentary, and the Studious, ſhould eat very light, or no Suppers; if any it ought to be vegetable Food; neither ought they to go ſoon to Bed, after any Supper whatſoever.

2. Going to Bed on a full Stomach, and Wind and Crudities ſomewhere in the alimentary Paſſages, is the Cauſe of the want of due Reſt, which is ſound and refreſhing always in Proportion to the Emptineſs and Cleanneſs of theſe Paſſages, and their Vacation from their proper Office of Digeſtion; and this is the Cauſe of the Want of kindly and refreſhing Reſt, in hypochondriacal and hyſterical People.

3. Watching by Night, and Sleeping by Day, is of the moſt pernicious Conſequence to Health and long Life, and plainly contrary to the Indications of Nature and the Conſtitutions of our Bodies.

4. The Valetudinary, Sedentary, and Studious, ought carefully to avoid Evening Dews, Nocturnal Studies, and uneaſy Watching, go to Bed by eight, nine, or ten, and riſe proportionally by four, five, or ſix, unleſs actually under a Fit of Sickneſs.

5. Nothing is more prejudicial to tender Conſtitutions, than lying long a-bed, indulging a lethargic and drowſy Sleep, or lolling or loitering awake, as appears by their Heavineſs, and Want of Appetite upon doing ſo; and their good Stomachs, Cheerfulneſs, and Freedom of Spirits, when they riſe early. *Cheyne on Health.*

In another Treatiſe the above-quoted Author thus ſpeaks with reſpect to Sleep.

Sleep I conceive to be cauſed by the Diſability and Incapacity of the bodily Organs to continue and perpetuate the active, rational and voluntary Functions. Without Repair, Nutrition, and Winding up, they grow languid and unelaſtic. When by Labour, or the common Expence of Living, the Organs are relaxed and debilitated, there muſt be an alternate Ceſſation to repair and refit them, which is called Sleep; and accordingly we find the animal Body ſhortned and compreſſed by its own Weight, by Action, and by the Loſs of its Spring againſt Night, and lengthened and extended again in the Morning. What hinders Sleep is the continual Action of an internal Fluid, Wind or Flatulence, acting on the internal Membranes (of which the Bowels principally conſiſt) pricking and ſtimulating them, and forcing them into Action; and by the Recoil or elaſtic Sharpneſs of this internal *Aura* or *Flatus*, producing wild Cogitation, or irregular intellectual Operations. Hence it is that the Body is reſtleſs; and often there is an Endeavour to gulp, expel and throw up this Wind;

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Wind; that Medicines that force the Perſpiration, as Opiates, Eaſtern Gums, animal Salts and Spirits, Aromatics, Cordials, and Diaphoretics, procure Sleep; and a Doſe of the Gum Pills, with an Aloetic, will give a good Night, as it drives out the perſpirable Matter every Way; and Cyder, and any flatulent Food (as green Peaſe) will hinder it. Dreaming is but partial ſleeping, for Sleep admits of all the Degrees of Quantity there are between ſound undreaming Sleep and perfect healthy Waking, all the Degrees and Terms that are between a given Quantity and nothing; and accordingly Labour, Fatigue, light Food, gentle Evacuations of all Kinds, will procure, in ſome Degree, undreaming Sleep; and the more rank, high, and poignant the Aliment, the more painful and terrifying will be our Dreams; as, on the other hand, the more mild, ſoft and light our Food is, the more pleaſant and gentle will be our Dreams, if otherwiſe healthy. And old Perſons, weak and ſickly Conſtitutions, and People under acute and chronical Diſtempers, eſpecially thoſe that are called nervous and cephalic, have the wildeſt, moſt inconſiſtent and painful Dreams, and the moſt imperfect Sleep, and ſometimes no Sleep at all, which is one of their greateſt Miſeries. I ſhould philoſophically define Sleep, a Diſability or Incapacity of the material Organs, from Exinanition, Uſe and Expence, to continue eaſily much longer the intellectual Functions and voluntary Motions, without a new Repair and Winding up, in the ſame Manner as Hunger is cauſed; and Dreaming to be only partial and imperfect Waking, by a perpetual Irritation from Flatulence and obſtructed Perſpiration, on the internal Nerves and Membranes, or from Pain; and Waking to be the perfect and pleaſant Pliancy of the intellectual and animal Organs, to obey the Impulſe of the ſelf-motive, ſelf-active Spirit; and that in this immaterial Agent there is a lower, and more ordinary and weaker Effect and Energy (or a contractile and expanſive Energy) by which the animal Functions are perpetuated without Interruption; and a higher and more intenſe and voluntary Degree of Agency, by which Waking, and the intellectual Operations are performed; and it is this, that in a ſound Sleep, and in a Deliquium, is ſuſpended, and in Death both, without a new Vehicle.

OF PROGNOSTICS FROM SLEEP IN DISEASES.

All *Sleep* from which the Patient awakes not at all, or not without Difficulty, but labours under an extraordinary Drowſineſs, or Propenſion to Sleep, is of a lethargic Kind, of which Nature is a *Coma* or *Cataphora*, a *Carus*, a *Catoche* or *Catalepſis*, and *Veternus* or *Lethargy*. For our Inſtruction in forming Prognoſtics from theſe diſorderly Kinds of *Sleep*, as well as from what is natural, we are to premiſe ſome Things which may be of Uſe to us in acquiring a juſt Knowledge of thoſe ſoporiferous Affections. And here, firſt, we ſhall divide *Sleep* into natural and unnatural. Natural *Sleep*, according to the *Definitiones Medicæ* aſcribed to *Galen*, is a Retreat, or Recourſe of the Soul from its Boundaries to its Original, according to the Courſe of Nature; or it is a Reſt and Ceſſation from animal Actions. In this *Sleep*, the natural Heat, which was fatigued and exhauſted with Labour and Watching, retires into the Viſcera, and there receiving freſh Recruits from the copious Humid reſiding in thoſe Parts, breaks forth with renewed Force, and rouſes the Subject from *Sleep*. In Conformity to this Sentiment, we are told by *Hippocrates*, 6 *Epid. Sect.* 4. *Aph.* 12. "That in Watching the external Parts are evidently hotter, "and the internal colder; but that the Reverſe happens in "*Sleep*." And *Sect.* 5. *Aph.* 28. he obſerves, "That in "*Sleep* the Blood retires more to the inward Parts." *Galen* makes the ſame Obſervation in his Comment, when he ſays, "That a Perſon, while awake, has his exterior Parts "hotteſt, and the interior coldeſt, and that the Reverſe happens to him in Sleep." And a little after, in Confirmation of the Judgment of *Hippocrates*, he adds, that in *Sleep* the Blood, and with it the natural Heat, retires to the inward Parts; and, in Waking, is diffuſed on the Parts towards the Superficies. By this inward Receſſion of the natural Heat, and the conſequent Refrigeration of the exterior Parts, all the Actions and Operations of the Senſes are ſuppreſſed and lie dormant, the Paſſages of the Nerves through which the Heat is diffuſed outwardly, and the animal Faculties exert themſelves, being obſtructed by the Cold, whence, as *Galen* obſerves, there follows a Ceſſation of all the Actions of the Soul. This, then, is natural *Sleep*, which, as we ſaid, is occaſioned by a Retirement of the natural Heat, exhauſted by Watchings, to the Viſcera, in order to be recruited. Hence it is that *Sleep* becomes cuſtomary after Meals, and, what is, alſo, a particular Cauſe of *Sleep*, that at ſuch a Time a Multitude of groſs and humid Vapours aſcending to the Head, obſtruct the Paſſages of the Brain, by which Means the Heat is repreſſed and incloſed within, and rendered incapable of diffuſing itſelf, in order to awaken the Subject, before it has accompliſhed an Extenuation and Excuſſion of thoſe Vapours. We conclude, then, that natural *Sleep* is occaſioned either by a Retirement of the natural Heat, dried up and exhauſted by Watching, and ſtanding in Want of the Humid to the Viſcera, in order to be recruited, or from Vapours ariſing from the Food, and obſtructing the Paſſages of the Brain. This laſt *Sleep*, indeed, is by ſome eſteemed a Kind of unnatural *Sleep*, and it is plainly ſo, and ſo much the more, when thoſe Vapours are more copious, as we may obſerve in drunken Perſons, who ſleep long and profoundly, from an Oppletion of the Brain with Vapours, generated by an exceſſive Quantity of Wine. With Relation to this Subject, we are told by *Hippocrates*, 5 *Aph.* 5. "That if a drunken Perſon loſes "his Voice on a ſudden, he dies in Convulſions, unleſs he "be ſeized with a Fever, or recovers his Voice at the Time "when a Crapula generally terminates;" for, in ſuch a Caſe, if the Wine and its Vapours be not digeſted and diſcuſſed by the Heat, they induce a Suffocation. Hence he had Reaſon to intimate, that Perſons in ſuch a Condition are relieved by the Acceſſion of a Fever, becauſe the febrile Heat, which is far more efficacious than the natural, digeſts the Vapours of the Wine.

This, then, is one of the unnatural Kinds of *Sleep* which Phyſicians call by various Names, according to the Diverſity of their Cauſes, tho' they all come under the general Appellation of *Lethargic*. This Affection is incapable of exerting itſelf outwardly, but remains latent and confined within, either on Account of the Multitude of Humidities which oppreſs the Brain, or the Cold alone, or on both Accounts, or from mere Weakneſs.

That Kind of unnatural *Sleep* which affects the Patient in a Lethargy, is properly called *veternous*; another Kind is what the *Greeks* call κάρος, a *Carus*, and the *Arabians Suboth*. Beſides, there are other Kinds, which take the Names of *Catache* or *Catalepſis*, or, as it is generally termed *Congelatio*, "a "Congelation," and a *Coma* or *Cataphora*; all theſe are Species of *unnatural Sleep*, whoſe nature is to be examined, in order to enable us to form Predictions from them.

Firſt, then, we will ſuppoſe that all who are affected with an unnatural Sleep, are ſaid to be *comatous*, or *veternous* (Lethargic). *Galen in* 3 *Epid. Com.* 1. *T.* 7. calls them *comatous*, who have a ſtrong Inclination or a Propenſion to *Sleep*. He calls it a *Propenſion to Sleep*, when the Patients are unable to watch, or remain with their Eyes open, but keep them winking or twinkling. And in his Comment on 2 *Aph.* 3. he calls a *Coma* a long *Sleep*, from which it is difficult to awake; and this Difficulty of Awaking, is what diſtinguiſhes this Affection from a long natural *Sleep*, as the ſame Author obſerves, *Com. in* 2. *Aph.* 1. where he ſays, "That many "are deceived, who perſuade themſelves that *comatous* Affecti"ons begin with a *long Sleep*; for we have ſaid enough to "convince them, that they cannot be called a *Coma*, be"fore they come in Conjunction with a Difficulty of A"waking, and that a *Sleep*, which exceeds the natural "Bounds in reſpect of Time, but is not attended with a "Difficulty of Awaking, is rightly called, *a long Sleep*." We beſtow therefore the Epithet of *comatous* or *lethargic* on a *Sleep* from which it is difficult to rouſe the Patient, or ſuch a Propenſion to *Sleep*, as keeps him with his Eyes not indeed open, but winking, and deſiring to ſhut his Eye-lids in Hopes of Sleeping. [See the Article COMA.]

The Species of a *lethargic* or *veternous Sleep*, are diſtinguiſhed, in that ſome imply no more than a *Propenſion to Sleep*, of which Nature are what we call a *Coma*, *Cataphora*, and a *Marcor* (preternatural Drowſineſs;) others include in their Notion not only a Propenſion to Sleep, but a violent Drowſineſs, and an almoſt invincible Neceſſity of ſleeping, as is obſerved in a *Lethargy*. Others again import beſides, a *Congelatio* or *Depreheníio*, affecting all the Parts of the Body, which Diſorder is called by the *Greeks Catoche* and *Catalepſis*. And, in the laſt Place, there are others which, together with a Difficulty of awaking, and an almoſt invincible Neceſſity of ſleeping, include a Deprivation of all Senſe and Motion, as well as Reaſon, as in that lethargic Affection which the *Greeks* call *Cares*, and the *Arabians Suboth*.

Theſe lethargic *Sleeps* admit, alſo, of another Diſtinction, for ſome of them are ſimple and exquiſitely ſuch; others mixed with Watchings. In this reſpect a *Coma* is diſtinguiſh'd into what is ſimply ſo called, and into what the *Greeks* call κῶμα ἀγρυπνῶδες, "*A wakeful Coma*;" as they, alſo, call the former, κῶμα ὑπνῶδες, "*A ſleepy Coma*." Thus we call an Affection compounded of a Lethargy and a Frenſy, by the Name

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Name of *Typhomania*, in which the Patients ſleep, wake, and are delirious; of ſuch a Diſorder are we to underſtand *Hippocrates*, 3 *Epid. Sect.* 3. where he ſays, "That of thoſe "who laboured under Phrenſies, none was outrageous, as "it generally happens in ſuch Caſes, but ſunk away under "the Weight and Oppreſſion of a malignant kind of *Topor* "and *Cataphora*."

Having premiſed theſe Things concerning the Differences of a *lethargic Sleep*, we proceed to enquire into the Cauſes. *Galen*, in 3 *Epid. Com.* 1. *T.* 7. aſſigns four Cauſes of a *Coma* or *Cataphora*. The firſt is an extraordinary Humectation of the Part which is the Fountain of Senſation, (and in which *Ariſtotle* has rightly demonſtrated that *Sleep* is produced) as it ſometimes happens in Drunkenneſs. The ſecond is only cold, as when it is occaſioned from the Uſe of Narcotics. But this Cold either affects the firſt Original, or reſults from a Conſumption of the natural Heat by an immoderate flammeous Heat, the Conſequence of which is mortal. The third Cauſe conſiſts of a Complication of Heat and Moiſture, from whoſe Concurrence, alſo, proceed what we call a *Comatous Sleep*. The fourth and laſt is a Decay of Strength; and this is the Cauſe of that kind of *Coma* which is obſerved in dying Perſons, who, on account of Weakneſs, are not able to keep their Eye-lids open; and it is peculiar to Perſons in this Circumſtance, that after they have ſhut their Eyes, they take little or no Sleep, but lie waking, and yet have not the Power to lift up their Eye-lids. *Galen*, in 2 *Aph.* 3. *et de Lec. Affect. Lib.* 3. *Cap.* 3. *et de Præſag. ex Pulſibus, Lib.* 4. *Cap.* 8. and in many other Places, teaches that the proper Sign of Dryneſs is Wakefulneſs, of Humidity profound Sleep, and of Coldneſs Dotage, accompanied, alſo, with a profound Sleep, as appears from the Uſe of Narcotics. From a Humidity of the Brain, attended with a Refrigeration, proceeds a lethargic Sleep, and the Conſequence of a Coldneſs and Dryneſs of that Part is a *Cataleptſis*, that is, a *Deprehenſio* [See that Article] or *Congelatio*, under which Diſorder the Patients are not comatous, but keep their Eyes fixed and ſtaring, without ever cloſing them.

Theſe, then, are all the Cauſes which *Galen* aſſigns of ſimple or exquiſite ſoporiferous Affections; but when theſe Diſorders are of a complicated Nature, as for inſtance, when a Perſon under a *Coma* continues waking, and even appears delirious, there muſt, of Neceſſity, be a complicated Cauſe. We have obſerved, that there is a ſleepy and a wakeful *Coma*; the Cauſe of the firſt we have already aſſigned, the other happens, according to *Galen*, on 2 *Aph.* 1. and *Lib.* 4. *de Præſag. ex Pulſ. Cap.* 8. when the Brain is oppreſſed with Heat as well as Humidities, in the ſame manner as when from a Mixture of hot and pituitous Humours in the Brain, there ariſes that Affection compounded of a Phrenzy and Lethargy, which the *Greeks* call τυφομανία, *Typhomania*, of which we have ſpoken before, and ſuppoſed to be the Caſe of thoſe deſcribed by *Hippocrates*, 3 *Epid. Sect.* 3. who died under a violent *Cataphora*, after labouring for a long time under a continual *Coma* of the wakeful kind. *Galen*, in his Comment, tells us, that a wakeful *Coma* proceeds from a Putrefaction of cold Humours in the Brain; for a *Coma* proceeds from Humidity; and a Delirium from an Acrimony excited by Putrefaction.

We proceed from the Cauſes of the various kinds of *Sleep* to the *Prognoſtics* which may be drawn from them, beginning with the Natural. Now as all unnatural *Sleep* is bad, ſo, on the other hand, all natural *Sleep* is good and beneficial; ſince, as *Galen* ſays, *Com. in* 6 *Epid. Sect.* 4. *T.* 12. it concocts the Humours, by virtue of the Heat retiring to the inward Parts; and, as he tells us, *de Cauſ. Pulp. Lib.* 3. *Cap.* 9. by the Increaſe of the internal Heat, the Concoctions in the Veins and Arteries, and in the whole Animal, are highly promoted. For this Reaſon *Sleep* is to be avoided in the Beginning of internal Inflammations, as attracting the Matter to the inward Parts and Viſcera; unleſs, as the ſame Author obſerves, *Com. in* 4 *Aph.* 67. it may be thought to prove more beneficial by concocting the Humours, than pernicious on that other Account. *Sleep* is beneficial in the Decline of a Diſeaſe, otherwiſe it proves mortal, as may be inferred from *Galen*, *Com. in* 2 *Aph.* 2. Sleep is known to to be good and ſalutary, by its mitigating the Inflammation, Fever, Pain, or Delirium, which it effects whenever it concocts the morbific Matter. To this Purpoſe is that of *Hippocrates*, 2 *Aph.* "Sleep which increaſes the Pain and Un-"eaſineſs in a Diſeaſe, is mortal; but Sleep which gives "ſome Relief is not mortal;" Nay, is rather good and ſerviceable in the Decline of Inflammations, Pains and Fevers; and, in ſhort, is always ſalutary, as indicating a Concoction and Digeſtion of the Humours by the Heat, agreeably to that of *Hippocrates* in the ſecond Aphoriſm of the ſame Book, where he ſays, "When *Sleep* compoſes a Delirium, "it is a good Sign." And *Galen*, in his Comment, approves that *Sleep* which mitigates an Inflammation, Fever, Pain and Delirium. *Sleep* is known to be good, when it appears to be profound and not turbulent; for ſuch *Sleep*, as you read *Coac.* 152. indicates a firm Criſis. But the beſt kind of *Sleep* is what ſucceeds long Watching, and which appears to be ſweet to the Patient, tho' it be of long Continuance. *Galen*, in 1 *Prorrhet.* ſpeaks of ſome who after three or four Days waking, ſlept a whole Day and Night, and found great Relief from it; ſuch long Sleep uſually proves of great Benefit to Children, and is commended in them.

We have ſaid enough with reſpect to the Indications and Prognoſtics to be drawn from natural *Sleep*, and proceed to treat of the unnatural kinds of *Sleep*. And firſt we read, *Coac.* 178. τὸ καρώδης παθος κακὸν, "A carous Diſpoſition is "on all accounts bad." For tho' in drunken Perſons, as ſome ſay, *Sleep* is neither to be abſolutely commended nor condemned, yet ſeveral have been known, who after a Day and Nights profound Sleep under a Debauch, have never awaked. Very juſtly, therefore, was it pronounced by *Hippocrates*, of ſuch Perſons, 5 *Aph.* 5. that if they be ſuddenly ſeized with an Aphony, they die in Convulſions, unleſs relieved by a Fever, or recover their Voice at the uſual Time when a *Crapula* is ſolved.

But can there be any good Indication produced from comatous *Sleeps*? Moſt certainly, ſince they are frequently Forerunners of ſuch Criſes as are form'd by Hæmorrhages at the Noſe, or from the Parotides, the Blood aſcending to the Head. But then this favourable Judgment muſt be confirm'd by Signs of Concoction in the Excrements, and by other critical Signs; with relation to which it is ſaid, 1 *Prorrhet.* 168. "That a *Coma* and Deafneſs attending a Cephalalgia, end "in an Eruption of an Abſceſs behind the Ears." And *T.* 169. "A Tenſion of the Hypochondrium, with a *Coma*, Reſt-"leſſneſs, and a Cephalalgia, terminate in the Parotides."

With relation to bad kinds of Sleep, all which exceed the Bounds of Nature are ſuppoſed to be ſuch, according to *Hippocrates*, 2 *Aph.* 3. where he ſays, "That both *Sleep* and "*Watching*, if they exceed the Bounds of Nature, are bad." But with reſpect to *Sleep*, we are to have a ſpecial Regard to Cuſtom, which is a ſecond Nature. Bad, alſo, is all *Sleep* from which the Patient receives no Benefit, and much more that *Sleep* which leaves him in a worſe State than before, for ſuch, 2 *Aph.* 1. is pronounced mortal; and *Galen*, in his Comment thereon, tells us, "That as *Sleep* in the Decline "of a Diſeaſe is of great Service, if it relieves the ſick; ſo "if it renders his State rather worſe, it proves mortal." In the ſame Place he teaches, that *Sleep* is hurtful in Fevers, when neither the Fever nor its Symptoms are diminiſhed, but increaſed or exaſperated by it; or new Symptoms, as Pains and a Delirium, are excited; or when the Patient, who was delirious before his *Sleep*, perſeveres in his Delirium after it; or if the *Sleep* degenerates into a *Coma*, from which it is impoſſible, or, at leaſt, difficult, to rouſe him. All theſe Aggravations proceed from the Malignity of the Humours, which being left unconcocted by the natural Heat, recur upon the Viſcera, and oppreſs thoſe Parts, as the above-ſaid Author there ſhews.

A *Coma* in the Beginning of Diſeaſes, as it is uſually occaſioned by a Redundance of Humidity oppreſſing and moiſtening the Brain, can be an Indication of no other than a ſevere and dangerous Diſtemper, ſince it is a manifeſt Sign, that the Brain begins to be injured by ſo great a Multitude of Humours, and if attended with ſome other pernicious Symptoms, proves mortal. Thus it happened in the Caſe of the Wife of *Olympiades*, 7 *Epid. T.* 49. who on the fifth Day being ſeized with a *Coma*, was inſenſible to Endeavours uſed to rouſe her; and recovered not the Uſe of her Speech, which ſhe had loſt, nor was any way relieved, but drew her Breath in a ſublime Way, [See PNEUMO.] through her Noſtrils, all which concomitant Symptoms portended a fatal Event to the *Coma*. A *Coma*, alſo, appearing not in the Beginning, but at the Height of a very hot and ſevere Diſtemper, is no leſs fatal than if it were excited by a Decay of Strength. An Inſtance of this Nature we have in *Hermocrates*, 3 *Epid. Sect.* 1. *Ægr.* 2. on whom *Galen* thus comments: "The "*Coma* which ſeized *Hermocrates* on the eleventh Day, was "induced either by an extraordinary Refrigeration of the "Brain, or an Imbecility of the Faculty; but from which "ſoever of them it proceeds, it is extremely pernicious: For "we have demonſtrated, that Coldneſſes conſequent on hot "and dry Diſorders are incurable; but what is occaſioned by "Weakneſs, ſignifies that Death is very near at hand." We have already obſerved, that this kind of *Coma* may be known by *Galen*'s Deſcription of it, *Com.* 1. *in* 3 *Epid. T.* 7. "The Patients, he ſays, after they have ſhut their Eyes, "have little or no Sleep, but lie waking, tho' unable to "raiſe their Eye-lids." Again that *Coma* is no leſs mortal, as *Galen*, *Com.* 1. *in Prognoſt.* in which the Patients lie with

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their Eyes ſtaring, and never ſhut them, a Symptom common to thoſe who are affected with a *Congelatio*, or *Deprehenſio*. Of this Sort of *Coma*, *Galen* diſcourſes in the Place above-quoted, in the following manner: "We ought to regard, "he ſays, the Suſpection, as *Galen* ſays, of the Eyes in Sleep; "for if any Part of the White of the Eye appears when the "Eyelids are ſhut, and the ſame is not occaſioned by a Flux of "the Belly, or taking a Medicine, or the uſual Cuſtom of the "Patient in ſleeping, it is a pernicious Sign, and highly deſtru-"ctive, as indicating an Extinction of the Faculty which moves "the Eye-lids." An inſtance to this Purpoſe we have in the Wife of *Theodorus*, 7 *Epid. T.* 27. of whom *Hippocrates* obſerves, that "Her Eyes were ſunk down, and reſted moſtly "on the lower Eye-lid, with a fixed and ſtupid Look, and "the Whites appearing pale and diſcoloured, and like thoſe "of dead Perſons." Such is the Aſpect of thoſe who are affected with a *Congelatio*, which Diſorder is by the *Greeks* called *Catoche* or *Catochus*, and *Cataleptſis*; and the Patients by *Galen* on the *Prorrhetica*, thoſe under a *Catochus*. Of thoſe the Author of the *Prorrhet.* 96. ſpeaks, where he ſays, that "A *Catochus* and an *Aphony*, attended with an *Eclyſis* (or "an univerſal Faintneſs and Feebleneſs) are pernicious."

But we may be inſtructed to paſs our Judgment upon a *Coma*, not only from the Variety of its Cauſes, but from other Symptoms which precede, attend, or are conſequent upon it. In the firſt Place, from preceding Signs, as, for inſtance, when a *Coma* ſucceeds long Watching, proceeding from a very hot and dry Cauſe; in this Caſe it is deadly, as we obſerved in another Place, where we ſhewed that a Coldneſs conſequent upon hot and dry Diſeaſes, is mortal. For this reaſon, all Phyſicians regard a Lethargy, which ſucceeds a Phrenſy, as a moſt fatal Diſorder. A *Coma*, therefore, which comes upon the Patient after long Watching, except it be critical, is pernicious. In the ſame manner is a *Coma* to be eſteemed good or bad, from the good or bad Signs which accompany it; for with other bad Symptoms it muſt neceſſarily be bad and dangerous: But when the Patient lies under a *Coma*, and at the ſame time continues waking, which indicates no ſmall Degree of Malignity in the Diſtemper, it foreſhews a difficult or dubious Criſis: And thus it is, alſo, when the *Coma* is attended with a Delirium. According to the Obſervation of *Hippocrates*, 3 *Epid. Sect.* 3. *Stat. Peſt.* and in particular Inſtances, whoſe Caſes are related in the ſame Book, ſevere and dangerous Symptoms attending a *Coma*, render it a very dangerous Diſorder. Thus the Author of 1 *Prorrhet.* 89. "A *Coma* with a Diſtortion of the Eye is bad." And *Coac.* 180. "They who in the Beginning of a Diſeaſe are "comatouſly affected, and ſweat a thin Matter, and diſ-"charge a concocted Urine; who labour under a burning "Heat, ſucceeded by Refrigerations without a Criſis, the "Heat returning after ſhort Intervals, and who become tor-"pid, comatous and convulſive, are in a dangerous State." And no wonder, ſince there is a Complication of ſo many formidable and deadly Symptoms. And in the following Text we read, "that comatous Sleep and extraordinary Re-"frigerations of the Body are mortal." But this is to be underſtood of a burning Fever, in which the Patients burn inwardly, and ſhiver with Cold outwardly; and in ſuch Diſorders a *Coma* is always deſtructive. In the laſt Place, it may very well be known what a *Coma* portends, from the Signs which appear after it; for it appears to be critical when followed by ſome good Excretion or Evacuation. But it ſeems proper to a *Coma* to portend the critical Appearance of the Parotides. Thus we read, *Coac.* 185. "That they who are "oppreſſed with a *Coma*, Nauſea, and Pain of the Hypo-"chondria, and ſpit little and frequently, may expect Ab-"ſceſſes behind the Ears; or perhaps the Coma may be at-"tended with a convulſive Diſpoſition." Sometimes a *Coma* is the Forerunner of a Flux of the Belly. Thus we read in the ſame Treatiſe, *T.* 182. "That they who labour under "a *Coma*, attended with a Laſſitude and Deafneſs, are re-"lieved by a critical Flux of the Belly, diſcharging itſelf in "red Stools." But the Author of 1 *Prorrhet.* 1. 1. which is repeated, *Coac.* 179. tells us, "That a Diſtillation of "Blood from the Noſe, under a *Coma*, is a mortal Sign." Of the ſame Signification, alſo, are all bad Evacuations and bad Symptoms appearing after a *Coma*, as portending a hard and dangerous Criſis. Thus for Inſtance, if a *Coma* be ſucceeded by Convulſions, a Delirium, Aphony, Anxiety, violent Pains of the Viſcera, or other bad Symptoms, they are ſo far from being good Prognoſtics, that they portend a fatal Event. *Proſper Alpinus de Præſag. Vit. & Mort. Ægrot.*

SONATH. The Name of a Remedy extolled by *Paraelſus*, as excellent in Apoſtemations.

SONCHITES. A Name for the *Hieracium*. Hawk-Weed.

SONCHUS.

The Characters are;

The Stalks are tender and fiſtulous; the Heads are large; the Calyx is contracted into a Cone, when the Flowers fall off; the Seeds are either ſmall, long and narrow; or larger and ſulcated, or rough as if granulated.

Boerhaave mentions fifteen Sorts of *Sonchus*, which are;

1. Sonchus; aſper; arboreſcens. *C. B. P.* 124. *Edit.* 2. *Hieracium*; *arboreſcens*; *paluſtre.* C. B. P. 127. Edit. 1.

2. Sonchus; repens; multis Hieracium majus. *J. B.* 2. 1017. *Raii Hiſt.* 1. 226. *Synop.* 71. *Tourn. Inſt.* 474. *Boerhaave, Ind. A.* 84. *Hieracium*, Offic. *Hieracium majus folio Sonchi, vel Hieracium Sonchites*, C. B. P. 126. *Sonchus arboreſcens*, Ger. 231. Emac. 294. *Hieracium majus Dioſcoridis*, Ger. Emac. 296. *Hieracium majus Sonchites*, Park. 788. THE GREATER HAWK-WEED.

It is found in the Fields, and flowers in *July*. The Leaves are ſaid to be cooling, and moderately aſtringent, and to be good in Inflammations. The Herb, together with the Root, is ſaid to be a good Topic for the Sting of a Scorpion. *Dale. Dioſcorides.*

3. Sonchus; Niliacus; gigas; *Lippii.*

4. Sonchus; aſper; non laciniatus. *C. B. P.* 123. *M. H.* 3. 360.

5. Sonchus; aſper; laciniatus & non laciniatus. *Park.* 804. *C. B. P.* 124. *Boerh. Ind. A.* 85. *Raii Hiſt.* 1. 223. *Synop.* 70. *Sonchus aſper*, Offic. Ger. 229. *Sonchus aſperior*, Ger. Emac. 291. *Sonchus aſper laciniatus folio dentis Leonis*, Tourn. Inſt. 474. *Sonchus laciniatus ſpinoſus*, J. B. 2. 1016. PRICKLY SOW-THISTLE.

This Sow-Thiſtle has a hollow, angular, channel'd Stalk, about two Foot high, having the lower Leaves long, ſtiff, and pretty much cut in, or indented about the Edge, every Indenting ending in a Prickle; thoſe which grow on the Stalks, do, as it were, encompaſs it with two roundiſh Auricles, and are leſs jagged than thoſe below. The Flowers grow ſeveral together on the Tops of the Stalk, in Shape like Dandelion, but much leſs, and of a paler yellow Colour, the under Part of the Petala being tinctured with Purple; they are ſet in longiſh ſcaly Calyces, and turn into Down, encloſing long thin flattiſh Seeds; the Root is thick, long and whitiſh; and the whole Plant, upon breaking, yields a milky bitter Juice. It grows every where upon Banks, and by Way-ſides, and flowers in *May* and *June*. The Leaves are uſed. *Miller's Bot. Off.*

6. Sonchus; lævis; laciniatus; latifolius. *C. B. P.* 124. *Tourn. Inſt.* 474. *Boerh. Ind. A.* 85. *Sonchus lævis*, Offic. Ger. 229. Emac. 292. Park. 805. Raii Hiſt. 1. 222. *Synop.* 70. *Sonchus laciniatus non ſpinoſus*, J. B. 1015. SMOOTH SOW-THISTLE.

The ſmooth Sow-Thiſtle has hollow-channel'd Stalks, like the rough, and grows as tall; the Leaves are ſmooth, and free from Prickles. Thoſe next the Stalk are cut like Dandelion into ſeveral Segments, that at the End being largeſt; thoſe which grow on the Stalk ſeem to encompaſs it, and have fewer Inciſions, being ſomewhat triangular and pointed at the End. The Flowers, Seed and Root, are much alike. This grows in the ſame Places with the former, and is no leſs frequent.

The Leaves of both the laſt Sorts are of the ſame Nature with Dandelion, being aperitive and diuretic; and good for the Gravel and Stoppage of Urine, ſome People boil the Leaves in Poſſet-Drink, and give it in Fevers. The young Shoots are eaten by ſome People among Sallads like Lettice. They are but ſeldom uſed in the Shops. *Miller's Bot. Off.*

It has a herby ſaltiſh Taſte, a little bitter, and gives a pretty deep Tincture of Red to the blue Paper. It contains a Salt, in ſome meaſure like that called *Oxyſal Diaphoreticum* by *Angelus Sala*; but in the Sow-Thiſtle this Salt is diſſolved in a great deal of Phlegm, and united with a great deal of Sulphur. The Sal Ammoniac is found there in a very ſmall Quantity; for,

By chymical Analyſis, it yields but a little urinous Spirit, and no volatile concrete Salt; thus the Sow-Thiſtle is a Diſſolver a little moderated; the Decoction is given to drink, to allay the Heat of the lower Belly; it facilitates the Circulation of the Humors in this Part, and removes the Obſtructions by which they ſtagnate. *Martyn's Tournefort.*

7. Sonchus; lævis; laciniatus; latifolius; flore niveo. *C. B. P.* 124.

8. Sonchus; muralis; cymis hirſutis. *H. C. Suppl.*

9. Sonchus; anguſtifolius; maritimus. *C. B. Prodr.* 61.

10. Sonchus; aſper; laciniatis; Creticus. *C. B. P.* 124. *Prodr.* 60. *Hieracium majus, folio Sonchi, ſemine incurvo.* C. B. P. 127. *Chondrillæ Creticæ, nomine miſſa, ſemine triſpo.* J. B. 1022.

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11. Sonchus; Tirgitanus; Papaveris hortenſis folio. *Flor.* 2. 27. *Chandrilla Tingitana, floribus luteis, papaveris hortenſis folio.* H. L. 657.

12. Sonchus; lævis; anguſtifolius. *C. B. P.* 124. *Sonchis affinis, Terracrepola.* J. B. 2. 1018. *Chandrillis quædam affinis, laciniata, an Trinciatella,* J. B. 2. 1021. *Hieracium anſinis, laciniata, an Trinciatella, foliis imis anguſtioribus, laciniatis, cauleſcentibus, glaucis & integris.* M. H. 3. 67.

13. Sonchus; chondrilloides; altiſſimus; folio oblongo, nitido, flore luteo magno, radice repente.

14. Sonchus; lævis in plurimas, tenuiſſimas lacinias diviſus. *C. B. P.* 124. *Prodr.* 61. *Chondrilla lutea,* J. B. 1029.

15. Sonchus; lævis, in plurimas, tenuiſſimas, anguſtiſſimaſque lacinias diviſus. *Cimel. Reg. Vaill. Boerh. Ind. Alt. Plant.*

SONDARI. H. M. The Name of an *Eaſt Indian* Shrub, called *Frutex Indicus Baccifer, floribus umbellatis, fructu tetracocco.* It is of no Uſe in Medicine. *Raii Hiſt. Plant.*

SOPHERA. A Name for the *Senna*; *orientalis*; *fruticoſa*; *Sophera dicta.*

SOPHIA CHIRURGORUM. A Name for the *Siſymbrium*; *annuum*; *Abſinthii minoris folio.*

SOPHISTÆ, σοφιζόμενοι ἰατροὶ. Theſe are deſcribed by *Hippocrates*, as Phyſicians guilty of Arrogance and Inſolence to others, on a Preſumption of their ſuperior Knowledge; whereas in fact they are guilty of the moſt notorious Errors, and exceſſively ignorant.

SOPHISTICATIO. Adulteration.

SOPHRONESTERES. The *Dentes Sapientiæ.* See DENS.

SOPIENTIA. Medicines productive of Sleep, or Eaſe from Pain. See ANODYNA, NARCOTICA, and OPIUM.

SOPIO. An old Name for *Opium. Rhodii Lexicon Scribonianum.*

SOPOR. The ſame as CAROS, or COMA.

SOPORARIÆ ARTERIÆ. The Carotid Arteries.

SOPORIFERA. Medicines inducing Sleep.

SORA. The ſame as ESSERE.

SORBET. The ſame as SERBET.

SORBTIO. Sorbile Aliment.

SORBUS.

The Characters are;

It reſembles the Pear and Cratægus in all Reſpects, except that the Leaves are pinnated as in the *Fraxinus.*

Boerhaave mentions two Sorts of *Sorbus*, which are;

1. Sorbus; ſativa. *C. B. P.* 415. *Boerh. Ind. A.* 2. 248. *Tourn. Inſt.* 633. *Sorbus*, Offic. Ger. 1287. Emac. 1471. Raii Hiſt. 1. 1456. Synop. 3. 452. J. B. 57. *Sorbus legitima*, Park. Theat. 1420. THE SERVICE-TREE.

This grows to be a pretty large Tree, whoſe Branches are cloathed with winged Leaves, ſomething like thoſe of the Aſh-tree, conſiſting of ſeven or nine ſerrated Pinnæ, each Leaf terminating in an odd one. It has ſeveral Cluſters of five leaved white Flowers, which are followed by Fruit of the Shape and Bigneſs of a ſmall Pear, growing ſeveral together on Foot-Stalks, an Inch long; they are of a greeniſh Colour, with a Mixture of Red, as it has been more or leſs expoſed to the Sun; of a rough, auſtere, choaky Taſte; but when ripe or mellow, ſweet and pleaſant. It is found wild in ſome Parts of *England*, as in *Staffordſhire* and *Cornwall*, flowering in *May*, but the Fruit is not ripe till *November*. The Fruit is uſed.

It is reckoned to be very reſtringent and uſeful for all Kinds of Fluxes; but when ripe, not altogether ſo binding. The Fruit is ſeldom or never to be met with in our Markets; and therefore, for a Succedaneum, we uſe the *Sorbus Torminalis. Miller's Bot. Off.*

2. Sorbus; aucuparia. *J. B.* 1. 62. *Tourn. Inſt.* 634. *Boerh. Ind. A.* 2. 248. *Ornus*, Offic. *Ornus ſive Fraxinus ſylveſtris*, Park. Theat. 1419. *Sorbus ſylveſtris, ſive Fraxinus Bubula*, Ger. 1290. Emac. 1473. *Sorbus ſylveſtris, foliis domeſticæ ſimilis*, C. B. P. 415. Raii Hiſt. 2. 1457. Synop. 3. 452. THE QUICKEN-TREE.

This Tree grows in mountainous and moiſt Places; it flowers in *May*, and produces ripe Fruit in *September*. The Fruit is ſaid to be a very good Hydragogue, and excellent for the Scurvy. The Liquor which diſtils from a Wound made in this Tree, is recommended as an excellent Antiſcorbutic, and as a good Remedy for Diſorders of the Spleen.

SORDES AURIUM. Ear-Wax.

SORDES ULCECUM. The ſordid Matter in foul and ill-digeſted Ulcers.

SOREX. See MUS MAJOR.

SORGHUM. A Name for the *Milium*; *arundinaceum*; *ſubrotundo ſemine*; *Sorgho nominata.*

SORNI. Mars; that is, Iron. *Turba Philoſophorum.*

SORY, σόρυ, or σόρι. See CHALCITIS.

SOSTRATI VINCULUM. A Species of Bandage deſcribed by *Galen*, in his Treatiſe of Bandages.

SOTEIRA, σώτειρα. The Name of an Antidote deſcribed by *Paulus Ægineta.*

SOTIRELLA. The Name of a Medicine in the Form of a hard Maſs, conſiſting of Opium and ſome other Narcotics, with Nutmeg, Saffron, Camphire, and Soot. It is deſcribed in the *Auguſtan Diſpenſatory*, and is directed to be put into hollow Teeth.

SOTIRELLA PARVA, is another medicinal Maſs, compoſed of much the ſame Ingredients; of the ſame Uſe; and deſcribed in the ſame Diſpenſatory.

SOTSITSOU. A Name in *Boerhaave's Index Alter. Plantarum*, for the *Palma*; *Japonica*; *ſpinoſis pediculis*; *Polypodii folio.*

SPADAM. The Name for a Species of Sword-Fiſh, neither uſed in Food or Phyſic. *Lemery des Drogues.*

SPADON, σπάδων. A Spaſm.

SPAGIRIA, or SPAGIRICA ARS. Chymiſtry, or Alchymy.

SPALAX, σπάλαξ. The Animal called a Mole.

SPALT, according to *Lemery*, is a flinty heavy Stone, which is uſed by the Founders in fuſing their Metals. It is eſteemed deterſive and deſiccative, externally applied.

SPANA, for *Hiſpana*, Spaniſh. In *Scribonius Largus*, No. 256. the *Pix Spana*, Spaniſh Pitch, is an Ingredient in a *Malagma*, there directed. The ſame Epithet is applied to Wine, Oil, Pitch, Alum and Opium, by various Authors.

SPANACHIA, according to *Blancard*, is the ſame as *Spinachia*, Spinnage.

SPANDARAPUM. The ſame as SPARADRAPUM. *Caſtellus*, from *Schenckius.*

SPANOPOGONES, σπανοπώγωνες, from σπανὸς, thin, and πώγων, the Beard. Perſons whoſe Beards are thin, or whoſe Hairs fall off from their Chins, are thus called.

SPARA. A whimſical Term in *Paracelſus*, to which it is not eaſy to affix any Meaning. It is thus defined, *Spara Vis Mineralis ex Ilech. primæ Subſtantiæ ex primo ente, eſt pars prima ex quatuor elementatis. Elementata iſta ſunt Mineralia majora. Paracelſus.*

SPARADRAPUM. A Sort of Cerecloth, called, alſo, *Tela Gualteri.*

Take of the *Diapalma* Plaiſter, and Diachylon with the Gums, each one Pound; Ceruſs, half a Pound; Root of Orris, finely powder'd, an Ounce and half: Melt theſe together, and whilſt they are in Fuſion, dip therein ſoft worn-out Linen-Rags, ſo that they may be covered with the Plaiſter on each ſide; then take them out, ſpread them, and let them dry, and render the Surfaces ſmooth with a Knife or *Spatula.* The principal Uſes of theſe are for Iſſues. *Lemery Pharmacop. Univerſ.*

There are two other Forms of Sparadraps in the old College Diſpenſatory; as the *Sparadrap* for Iſſues.

Take of Wax, half a Pound, Red Lead and Turpentine, each four Ounces; Cinnabar, and the Roots of Florentine Orris powder'd, each one Ounce; Muſc, four Grains: Mix, and uſe as above.

Take Oil of Roſes, half a Pound; Sheeps Suet, four Ounces; Wax, ten Ounces; Litharge, Reſin of the Pine, Frankincenſe, and Maſtich, each two Ounces; Armenian Bole, and volatile Meal, each an Ounce: Make a Plaiſter to be uſed as the preceding.

The laſt is, in the Old College Diſpenſatory, called *Tela Gualteri.*

SPARAGMOS, σπαραγμὸς. A Convulſion.

SPARAGUS. The ſame as ASPARAGUS.

SPARALLIUM. An uterine Clyſter. *Rulandus.*

SPAREDIA. In *Paracelſus*, is a Ligature anointed over with the White of an Egg.

SPARGANIUM.

The Characters are;

The Flowers are male, polypetalous, herbaceous, furniſhed with a vaſt Number of Stamina, and are cloſely connected to the Stalk in the Form of a Globe. The Ovaries grow on the ſame Stalk below the above-mentioned maſculine Flowers, and are crooked ſmall Tubes like Pods, which, when ripe, become oſſeous, unilocular, or bilocular *Capſulæ*, filled with a farinaceous Nucleus. Theſe Ovaries are, alſo, collated into Globes like Knots.

Boerhaave mentions two Sorts of *Sparganium*, which are;

1. Sparganium; ramoſum, *Ger. Emac.* 45. *C. B. P.* 15. *Theat.* 28. *Park. Theat.* 1205. *Raii Hiſt.* 2. 1311. *Synop.* 3. 437. *Tourn. Inſt.* 531. *Boerh. Ind. A.* 2. 168. *Sparganium*, Offic.

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Offic. *Sparganium quibuſdam*, J. B. 2. 541. BRANCHED BUR-REED.

It grows on the Banks of Rivers, and in marſhy Places, flowering in *July*. The Root is recommended by *Dioſcorides* as excellent againſt the Poiſon of Serpents, taken in Wine.

2. Sparganium; non ramoſum. *C. B. P.* 15. *Theat.* 231. *Platanaria altera*, Dod. p. 601. *Boerh. Ind. Alt. Plant.*

SPARGANOSIS, σπαργανωσις. A Milk Tumor in the Breaſts. *Galen.*

SPARSI MORBI. Scatter'd Diſeaſes. The ſame as Sporadic Diſeaſes.

SPARTIUM. The Broom-Tree.

The Characters are;

It hath a pupilinaceous Flower, whoſe Pointal, which riſes from the Flower cup, afterwards becomes a ſhort, roundiſh, ſwelling Pod, containing, for the moſt part, one Kidney-ſhaped Seed in each.

Boerhaave mentions three Sorts of *Spartium*, which are;

1. Spartium; alterum; monoſpermum; ſemine Rani ſimili. *C. B. P.* 396. *Geniſta Hiſpanica, floribus luteis parvis, monoſpermos, ſemine Rani ſimili.*

2. Spartium; tertium; flore albo. *C. B. P.* 396. *Geniſta Hiſpanica, floribus candidis.*

3. Spartium; orientale; ſiliquâ compreſſâ, glabrâ & annulatâ. *T. Cor.* 44. *Boerh. Ind. Alt. Plant.*

SPARTIUM is, alſo, a Name for ſeveral Sorts of GENISTA and SECALE.

SPARUS, σπάρος. The Name of a Fiſh found near the Sea-ſhore, ſomewhat like a Guilt-Head.

SPASMA, σπασμα, from σπάω, to draw. A Diviſion or Diſtenſion of the nervous Fibres of a Muſcle without Laceration, or a Wound. See CONTUSA.

SPASMODES, σπασμώδης. Spaſmodic, or convulſive; from σπασμός, a Convulſion.

SPASMODICUS. The ſame as SPASMODES.

SPASMOLOGIA. A Treatiſe or Diſſertation on Spaſms or Convulſions.

SPASMOTICUS. The ſame as SPASMODICUS and SPASMODES.

SPASMUS. A Convulſion, or Spaſm.

No Diſorder is more terrible to human Nature, or complicated with more dreadful Symptoms, than Convulſions, which are preternatural and violent Contractions of the nervous, membranous and muſcular Parts, eſpecially of the Trunk and Limbs, ariſing from a ſpaſmodic Stricture of the Membranes ſurrounding the ſpinal Marrow, and the Nerves diſtributed from it, and an impetuous Influx of the nervous Fluid into the Organs of Motion.

Hence appears the Difference between Convulſions and an Epilepſy; for as the primary Cauſe of the latter is ſituated in the *Pia* and *Dura Mater*, thoſe nervous Membranes which cover the Brain and the other Parts of the Head; ſo, on the contrary, the Cauſe of Convulſions is principally to be ſought for in thoſe Membranes which ſurround the ſpinal Marrow, and the Nerves diſtributed from it. The Symptoms, alſo, of thoſe two Diſorders are different, though moſt of them, on account of the intimate Conſent of theſe nervous Membranes, are found to have a great Affinity with each other: For in an Epilepſy the Patient is afflicted with an Alienation of Mind; a Depravation of the internal as well as the external Senſes; a foaming of the Mouth; a clenching of the Thumbs in the Fingers; and a Forgetfulneſs of every Thing that happens during the Fit. But theſe are Symptoms different from thoſe of Convulſions, in which there is neither an Alienation of Mind, a foaming at the Mouth, nor a clenching of the Thumbs; and if theſe Symptoms happen during Convulſions, they conſtitute the Diſorder of the convulſive epileptic kind.

Convulſions, like other ſpaſmodic Diſorders, principally exert their Tyranny upon the nervous, fibrous, and membranous Parts; and as theſe are copiouſly interwoven with other muſcular, glandular, cartilaginous and bony Parts, they, alſo, draw them into Conſent, and excite violent Commotions in them. And though theſe violent Commotions principally affect the external Parts and Limbs, yet they ſometimes penetrate to the internal Viſcera, and excite terrible Diſorders in them.

Convulſions attack the miſerable Patients in various manners; for in ſome they happen ſuddenly, without any Signs of the approaching Diſorder; whilſt in others they may be foreſeen by ſome Signs: The moſt conſiderable of which are, a Refrigeration of the Extremities, eſpecially of the Feet; or a Senſe of Formication, which, alſo, ſeizes the Os Coxygis, and like a cold Vapour aſcends through the Spine of the Back. The left Hypocondrium is affected with tenſive and flatulent Pains, and the Patient is ſo obſtinately coſtive, that neither the Flatulences nor Excrements can be diſcharged, whilſt the ſmalleſt Clyſter-Pipe cannot be introduced into the Anus; or if it is otherwiſe, the Clyſters and Suppoſitories are, by the Force of the Spaſms, thrown up by Vomit along with the Excrements. The Bladder is ſo ſtrongly conſtricted, that either none, or a very limpid and white Urine is diſcharged. In other Patients Convulſions are preceded by Oſcitations, Pandiculations, Tremors of the whole Body; Anxieties of the Præcordia; an unequal, hard, and contracted Pulſe; Cardialgias; Nauſeas; Vomitings; Palpitations of the Heart; a Difficulty of Deglutition; Pains of the Head and Teeth; a Ringing of the Ears, and a Vertigo.

During the convulſive Paroxyſm, the Limbs are ſurpriſingly agitated, drawn in different Directions, diſtended, toſſed, contorted and incurvated. Sometimes the Arms are ſo retorted towards the Back, that the Patient ſeems to ſit upon them: At other times they in vain beat the paſſive Air: At other Times the Legs are drawn into various Directions: Sometimes they ſtamp and ſtrike the Earth hard: Sometimes the Spine of the Back is incurvated, ſo as to form an Arch, whilſt the Breaſt is raiſed: And at other times the whole Body is ſtiff and immoveable, as a Stone. Theſe Agitations ſeize many in the very Poſture in which they are, without throwing them on the Ground; whilſt others, like epileptic Patients, fall ſuddenly down, weep, laugh, grind their Teeth, gape, hang out their Tongues, and are vertiginous. As the Geſtures and Motions of convulſive Patients are very various, as we find in *M. N. C. An.* 6. *Obſ.* 23. *Dec. an.* 9. *Obſ.* 64. *Dec.* 2. *an.* 3. *Obſ.* 77. *an.* 7. *Obſ.* 135. and *Horſtii Epiſtol.* ſo 'tis ſtill far more ſurpriſing, that ſuch Patients ſhould frequently ſpeak Languages they never learn'd, and like Prophets predict future Events; for which Reaſon they were by the Ancients accounted Demoniacs, as we are informed by *Foreſtus*, in *Obſ. Med. Lib.* 10. *Obſ.* 56. *Schol.*

After the Paroxyſm many Patients retain an incredible Languor of the whole Body and Feet; many fall into Deliriums, and a profound Sleep; and in others the Diſorder is terminated by Eructations, an Exploſion of Flatulences, Vomiting, and a copious Diſcharge of Lymph. Convulſions are frequently ſucceeded by an Evacuation of Mucus or Blood from the Noſtrils, Uterus, or hæmorrhoidal Veins. In ſome, alſo, the Paroxyſm is terminated by crying, and in numberleſs different manners. The Sleep of convulſive Patients is generally turbulent, and full of Dread and Terror; their Appetite unſtable, and their Bodies coſtive; they ſweat with Difficulty, and are ſubject to the Influence of various Paſſions of the Mind. The Paroxyſms are ſometimes longer, and ſometimes ſhorter; and happen ſometimes at longer, and at other times ſhorter Intervals, tho' for the moſt Part they ſtrictly obſerve the Variations of the Moon. I have known Patients in whom they have daily happened at a particular Time of the Year for a few Months, and have afterwards entirely ceaſed. In Women they either precede or accompany the Eruption of the Menſes; and are more frequent and violent after high Feeding. They are, alſo, eaſily excited by the ſlighteſt Cauſes, eſpecially by the Paſſions of the Mind.

Thoſe are moſt ſubject to Convulſions whoſe nervous Syſtems are either naturally, or by any other Cauſe, weak; eſpecially if their Juices are impure. Hence Convulſions are not only hereditary, but, alſo, ſometimes handed to very remote Generations; eſpecially if the Parents have been hypochondriac, hyſteric, arthritic, ſubject to the Hemorrhoids, or if the Mother, when pregnant, has been inclined to violent Paſſions: For this Reaſon, Children and young Perſons are more ſubject to Convulſions than Adults, and Women than Men. Perſons of a delicate Turn of Mind, an acute Genius, and thoſe of choleric Temperaments, are, alſo, more liable to them than others.

Having given the Hiſtory of Convulſions, we now come to conſider their Pathology. The proximate Cauſe, therefore, of Convulſions, is a ſtrong and violent Stricture of the Membranes ſurrounding the ſpinal Marrow, and of the nervous Parts diſtributed thence. Hence 'tis obvious, that in Convulſions thoſe Parts are only agitated, which receive their Nerves from the ſpinal Marrow. But ſince theſe Membranes have an intimate Communion with the Meninges of the Brain, of which they are Productions, it is eaſy to conceive why convulſive Motions are frequently complicated with thoſe of the epileptic Kind, into which they, alſo, often degenerate.

That theſe Things may be the more clearly perceived, 'tis to be obſerved, that the ſpinal Marrow, like the Brain, is compoſed of a white, medullary, and cineritious Subſtance, and is continuous to the Brain. See *Hippocrates, L. de Carnibus Sect.* 3. *Galen, L.* 12. *de uſu Partium, Cap.* 15. and *Veſlingius*, in *Anat. Cap.* 14. This ſpinal Marrow is covered with one common membranous Covering, which adheres to the Spondyls of the Vertebræ; and with three proper Membranes, the innermoſt and ſecond of which are Productions from

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from the Pia Mater, and the third from the Dura Mater. This ſpinal Marrow is lodg'd in the Cavities of the Vertebræ, and, according to *Vieuſſens*, in *Neurograph. Lib.* 2. *Cap.* 1. is furniſhed both with arterial and venous Blood-Veſſels diſtributed through its Subſtance; for it receives arterial Ramifications from the vertebral Arteries, and the Trunk of the Aorta Deſcendens, from which the returning Blood is diſcharg'd through the ſmall Veins, firſt into the venous Sinuſes of the Vertebræ, the Veins of the Vertebræ, the *Vena Sine Pari*, other ſmall Veins, and at laſt into the Vena Cava Aſcendens. See *Vieuſſens* in the Work above quoted, *Tab.* 18. *Fig.* 1. 2. and 3. The principal Function of the ſpinal Marrow ſeems to be, to diſtribute from it various Nerves, of which there are thirty Pairs, and two ſpinal Nerves, by *Willis* call'd the acceſſary Nerves, which are diſtributed to the *Par Vagum*. See the ſame Author, *Tab.* 19. *Fig.* 11. Theſe Nerves are firſt diſtributed to the Muſcles of the fore and back Parts of the Neck, of the Back, Breaſt, ſuperior and inferior Limbs, to the Motion of which they are ſubſervient; then they are diſtributed through the internal Viſcera of the Breaſt and Abdomen, conſtitute the Membranes in them, and laſtly ſend off various conſiderable Ramifications to the external Muſcles of the Face and Head, and contribute greatly to the Motion of theſe Parts.

Whoever duly compares what has been ſaid with all the Symptoms of the Diſorder, will eaſily diſcover a rational Connexion between them, and be able to aſſign the mechanical Cauſe of Convulſions. But 'tis to be obſerv'd, that this convulſive Irritation of the Parts may happen in a double Manner; for either the Membranes of the ſpinal Marrow are primarily irritated, convuls'd, and draw other Parts with which they are connected into conſent; or ſome of theſe Parts are firſt ſpaſmodically affected, and communicate the Convulſion to the ſpinal Marrow, from which it is propagated to other Parts. Hence we ſhall call the former of theſe Convulſions Idiopathic, and the latter Sympathetic.

Among the mediate Cauſes which diſpoſe to this Conſtriction of the ſpinal Marrow, the moſt conſiderable are violent Paſſions, than which nothing is more effectual both for inducing and ſupporting Convulſions, eſpecially if the Patient is expos'd to external Cold, or commits any Error in Regimen. *Henricus ab Heer*, in *Obſ.* 24. gives us a memorable Inſtance of violent Convulſions produced by a ſudden Conſternation of Mind, occaſioned by a Reflexion upon Fornication before committed. And nothing is more frequent than for Perſons, eſpecially ſuch as are young, to be ſeized with Convulſions by Frights, or exceſſive Paſſion. Immoderate or premature Venery are, alſo, of great Efficacy in exciting Convulſions; for which Reaſon Coition is call'd by Phyſicians, a ſlight Epilepſy.

Among the material Cauſes of Convulſions, we may juſtly reckon a peccant State of the Juices, and eſpecially a certain, acrid, ſaline, and ſcorbutic Dyſcraſy of them. Hence Convulſions are frequently produced by a Retropulſion of the Gout, arthritic Diſorders, the Itch and Purples; and the Convulſions are again mitigated upon the Erruption of the peccant Matter. But as nothing more contributes to the Impurity of the Humours, than the Redundance or Spiſſitude of them, eſpecially if the natural Excretions by Sweat or Stool, or the Hemorrhoids, or Menſes, are diminiſhed or ſuppreſſed. Hence 'tis obvious, why hyſteric and hypocondriac Patients, and thoſe afflicted with an Obſtruction of the Menſes or Hemorrhoids, are moſt ſubject to Convulſions. Hence 'tis frequently obſerved, that Girls before the Eruption of their Menſes, are often afflicted with Convulſions, which often ceaſe upon the Appearance of that Evacuation.

If we enquire into thoſe nervous Parts from which the convulſive Strictures are generally propagated to the Membranes of the ſpinal Marrow, the moſt conſiderable of them are found to be the Stomach and Inteſtines, the Vellications of which prove the Cauſe of Convulſions through the whole nervous Syſtem; for theſe Parts, by Means of their nerveo-membranous Structure, are very ſuſceptible of irregular Motions, and are greatly affected by the ſlighteſt Cauſe. But ſince the Stomach receives its Nerves firſt from the right and left external Ramifications of the eighth Pair, and likewiſe from the Nerves ariſing from the firſt and ſecond Vertebræ of the Back, and running off to the coſtal Ramification; and ſince the Inteſtines receive their nervous Branches from the internal Ramification of the eighth Pair, which concurs with the Intercoſtal, and forms the meſenteric Plexus, the Reaſon is obvious, why the Strictures of theſe Parts are eaſily propagated to the Membranes of the ſpinal Marrow, and the whole nervous Syſtem.

Hence no Species of Convulſions are more frequent than thoſe which have their primary Seat in the *Duodenum*, in which acid and viſcid Crudities mixing with the Bile and pancreatic Juice, quickly acquire an acrid and almoſt cauſtic Nature. Thus in *M. N. C. Dec.* 3. *an.* 3. *Obſ.* 138. we have a memorable Account of a Catalepſis, accompanied with violent Symptoms, the Cauſe of which was lodg'd in the *Primæ Viæ*. Hence, alſo, acrid, cauſtic, and poiſonous Subſtances, by corroding the Membranes, excite univerſal Convulſions. Thus in *M. N. C. Dec.* 3. *an.* 4. *Obſ.* 30. there is an Inſtance in which univerſal Convulſions were produced by drinking Wine edulcorated with Litharge. And 'tis ſufficiently known, that acrid Purgatives have often produc'd the ſame Effect. All theſe will the more eaſily and infallibly happen, if a ſcorbutic Diſpoſition of the Patient concurs. Hence in *M. N. C. Obſ.* 77. *Dec.* 2. *An.* 3. we have an Account of violent epileptic Convulſions ariſing from the imprudent Injection of an acrid Clyſter in ſcorbutic Pains of the Belly.

This is, alſo, confirmed by various Obſervations of impartial Authors, in which 'tis evinced, that Worms in the Inteſtines have produced ſurprizing ambulatory and rotatory Convulſions, eſpecially in Children. Memorable Inſtances of this Kind are found in *Georgius Horſtius Epiſt. Medecin. Sect.* 3. *M. N. C. Dec.* 1. *An.* 6. *Obſ.* 187. and *Dec.* 3. *An.* 3. *Obſ.* 99. and *Foreſtus* in *Obſ. Med. L.* 10. *Obſ.* 117. If we enquire into the Cauſes of theſe Convulſions, we ſhall find, that they not only conſiſt in Corroſions and Vellications of the Inteſtines, which happen to Children, but that they are, alſo, produc'd in Adults, by dead Worms in the Inteſtines, which diffuſe a putredinous Vapour, which inſinuates itſelf into the nervous Syſtem. Hence, in Caſes of this Kind, the Breath is often fetid and cadaverous.

But ſince the urinary Bladder and Uterus receive their nervous Ramifications from the loweſt Branches of the internal eighth Pair, and from ſome Ramifications ariſing from the Os Sacrum, 'tis eaſy to conceive why Vellications, Spaſms, and Wounds of theſe Parts terminate in Convulſions. Thus, according to *Ettmuller*, in *Coll. Pract. p.* 2. *Tom.* 1. there are numberleſs Inſtances of Convulſions produced by a Suppreſſion of Urine. 'Tis, alſo, frequently obſerv'd, that Women in Labour are ſeiz'd with peculiar convulſive Motions of the Limbs, when the Spaſms of the Uterus aſcend and affect the Nerves of the ſpinal Marrow. Hence the Hands and Neck are often agitated from one Side to another, the Breaſt is elevated, the Members and whole Body tremble; and unleſs thoſe Spaſms are allay'd and again deriv'd downwards, in order to expel the Fœtus, they often prove prejudicial, and even mortal, both to the Mother and Infant; for though 'tis certain, that there can be no Delivery without ſpaſmodic and convulſive Motions, yet 'tis to be obſerv'd, that their Seat ought to be principally in the Uterus, Os Sacrum, and adjacent Muſcles. But when from various Cauſes they are propagated to the ſuperior Parts, and invade the ſuperior Part of the ſpinal Marrow, they excite various and terrible Symptoms.

External Wounds of the ſpinal Marrow, and other remote nervous Parts, alſo, produce violent Convulſions. Every Surgeon knows, that Fractures and Luxations of the Vertebræ, where bony Splints prick the ſpinal Marrow, excite Convulſions: And every one knows, that Wounds of the nervous Parts, or of a ſingle Nerve, by Veneſection, for Inſtance, or any Puncture, Vellication, or any Cauſe whatever, produce violent Convulſions. *Rhodius* in *Obſ. Cent.* 1. *Obſ.* 32. and 50. gives us Inſtances of Convulſions produced by a Puncture of a Nerve in the Hand. *Foreſtus* in *Obſ. Lib.* 10. *Obſ.* 118. 119. informs us, that Convulſions were produced by the pricking of a Nerve in Veneſection. And in *Obſ.* 120. he informs us, that the like Effects was produced by a Wound. And *Rhodius*, in the Part above quoted, informs us, that violent Convulſions have ſometimes been produc'd by an incautious Pairing of the Nails. Hence Punctures, Wounds, and Injuries of ſome of the external Parts of the Head and Muſcles, are found to terminate in Convulſions, which I have ſeen excited by a Wound of the temporal Muſcle. Nor is this to be wonder'd at, ſince, according to *Vieuſſens* in *Neurograph. Tab.* 24. from the ſecond vertebral Nerve, ſome Ramifications diſtributed upwards through the external Ear enter various Muſcles of the Face.

The ſame is, alſo, the Reaſon of the Convulſions produced by the Stings of various Animals. In *M. N. C. Dec.* 1. *An.* 9. *Obſ.* 65. we have an Account of a ſurpriſing Species of Convulſions produced by the Bite of a large Fly. Many ſkilful Phyſicians have given us Inſtances of intenſe Pains of the Limbs, Agitations, and Incurvations of the Back, and Toſſings, accompanied with a diſordered Fancy, produc'd by the Bites and Stings of enraged Animals. Hence 'tis obvious, that the Matter is very ſmall and pernicious, which excites ſuch Tumults and irregular Motions in the whole nervous Syſtem.

Though

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Though Convulsions are very terrible, yet they are not suddenly mortal. When they are recent, the Patient young, and the Constitution sound, an easy and short Cure is to be hop'd for: But if they arise from a Suppression of the Menses or Homorrhoids, they are removed by recalling these Evacuations. But when the Humours are thick and impure, the Excretions suppress'd, the Constitution delicate, the Patient advanced in Years, and the Disease hereditary, and of long standing, the Cure is very difficult; for then the Fluids are not only peccant, but, also, the solid nervous Parts, in which the acrid exhal'd Matter is impacted and radicated. Besides, the Nerves when greatly distended with violent Concussions, instead of the subtile, etherial, nervous Fluid, are fill'd with a gross Vapour, and for that Reason not without great Difficulty reduc'd to their natural State. Hence, also, we are to account for the suprizing Strength of Persons under convulsive Paroxisms. Convulsions, also, frequently degenerate into a true Epilepsy, or a hypocondriac Melancholy, especially when a bad Regimen, or a preposterous Cure concur. Lastly, those who die of Convulsions are taken off by an Apoplexy. Hence on dissecting the Carcasses of these who have died of Convulsions, the Vessels of the Brain have been found infarcted and distended with stagnant Blood; or Extravasations of Blood have been found here and there in the Ventricles of the Brain, and in the spinal Marrow.

In the Cure of convulsive Motions, three Intensions are to be principally pursued; the first of which is, to correct the material Causes which support the Disorder, prepare them for an Elimination, and commodiously evacuate them. The second is, to sooth and allay the violent and irregular Commotions of the nervous Parts. And, thirdly, to corroborate the nervous System, in order to prevent a Relapse, which frequently happens. But the Patient, especially if the Disorder is inveterate, is above all things to be exhorted to Patience under the Cure for some Time; nor is the Cure to be obtain'd by a great Variety of drastic Remedies, but rather by mild Medicines, and such as are friendly to Nature; these, with the Assistance of Patience and a sufficient Time, will accomplish the Cure.

With respect to the Cure in general, 'tis to be observ'd, that if the Disorder, according to *Hippocrates*, arises from a Redundance of Humours; or if the Quantity of Blood is too great; or if it is thick, and the Pulse large, and especially if the Habit is sanguineous, we are to begin the Cure with Venesection either in the Foot or Arm; and these Venesections are to be repeated twice, thrice, or oftener, according to the Degree of the Plethora; or Scarifications may be interpos'd; but Venesection is more expedient after, than during the Paroxysm; for by bleeding in the Paroxysm, I have frequently observ'd violent and long protracted Symptoms produced.

I have, also, very rarely observ'd convulsive Motions remov'd without the Observation of a proper Regimen. Hence in inveterate Convulsions it is expedient to change the Air and Soil, especially if dank and moist, and to reside in a serene and mild Air; to travel and use frequent Exercise; proper Aliments, of a soft Texture and easy Digestion, are to be chosen; but all hot, spirituous, vinous, and Malt Liquors are to be carefully avoided. The Patient is, for ordinary Drink, to use Decoctions of the Root of Viper's Grass and Shavings of Hartshorn, or Whey, or the *Selteran* cold Springs. Baths for the Feet, prepared of River-water, Bran, and Chamomile Flowers are, also, to be us'd; and the Patient is to immerse his Legs pretty far into them when they are considerably tepid, before going to Bed, after which he is to procure a gentle Sweat; for these Measures have a singular Efficacy in promoting the Circulation of the Humours, and allaying the spasmodic Strictures.

But no Attempts towards a Cure are to be made, unless the Body is soluble; for which Reason, if the Patient is costive, we may exhibit a proper Dose of the *Pilulæ Balsamicæ*, or Infusions and Potions prepared with Manna, or Manna us'd instead of Sugar in some warm Infusion; or if the Patient is entirely costive, emollient and oleous Clysters are to be injected till the Body is duly soluble. But when 'tis certain that the Fomes of the Disorder is lodg'd in the *Primæ Viæ*, 'tis expedient, especially about the Changes of the Moon, to exhibit an Emetic in Conjunction with a Laxative, for which Purpose two or three Grains of emetic Tartar may be mixed with a Decoction prepared of one Ounce of Manna, that thus there may be a sufficient Evacuation of the peccant Humours both by Vomit and Stool.

Among the most simple and dietetic Medicines which are generally of great Service in convulsive Disorders, we may justly reckon large Draughts of cold and simple Water, by which Means I have seen the most violent Convulsions remov'd; for common Water, in consequence of its Levity and Fluidity, enters the capillary Vessels of the human Body, renders the Blood more fluid, corroborates the Parts, involves the acrid and sulphureous Humours and Vapours, and by exciting a gentle Sweat, eliminates them from the Body. Hence the proper and moderate Use of temperate, cold, and hot Springs, seems to be of singular Efficacy in convulsive Disorders.

But if Convulsions, especially about the State of Puberty or Youth, arise from excessive Venery, Anger, or any other Commotions of Mind, the Patient is carefully to abstain from every thing capable of producing a Commotion and Orgasm in the Fluids, or exciting the Solids to preternatural Motions and violent Strictures, such as Aromatics, acrid Purgatives, Emetics, all hot and spirituous Substances, violent Exercises of Body and Mind. On the contrary, greater Confidence is to be repos'd in Diuretics, emollient, demulcent, and nutritive Substances. Hence Cows Milk, that of Asses, or Whey, as, also, Baths of sweet Water mix'd with Milk, are of singular Service. Gelatinous, nutritive Broths, are, also, of great Service; and for ordinary Drink, the Patient is to use weak Chocolate, or Decoctions prepared of the Roots of Vipers-Grass, Barley, the Shavings of Hartshorn and Ivory, and the Flesh of Vipers. To these we are to add such Remedies as allay spasmodic Motions, together with Anodynes and Specifics, which are hereafter mentioned.

When Convulsions arise from Worms, these are to be kill'd and expell'd from the Body: But 'tis to be observ'd, that in this Case all Anthelminthics and Specifics are not equally proper; since the Preparations of Garlick, Vitriol, Copper, Aloes, drastic Purgatives, and Mercurials destroy Worms, they are nevertheless unfriendly to the nervous Parts when rashly exhibited. It is more expedient to attempt the Cure by external Remedies, such as Clysters of Milk, those prepared of sweet and oleous Substances, and Liniments of a purgative Quality, such as the Ointment of Sow-Bread, externally applied to the Navel and Abdomen. The Anthelminthics given internally ought to possess a corroborative and nervous Quality, such as Worm-seed, either reduc'd to Powder or an aqueous Essence, or Mercurius Dulcis mix'd with two Parts of medicinal Cinnabar, and reduc'd to the Form of Pills, with Extract of Tansy, Rhubarb, and the lesser Centaury. Other peccant, bilious, viscid, and acrid Sordes of the *Primæ Viæ*, are to be treated with inciding, resolvent, absorbent, digestive Medicines, such as correct Acrimony, and gentle Evacuants, either of the emetic or laxative Kind. If acrid Purgatives, or Things of a caustic or poisonous Quality have excited the Convulsions, the *Spiculæ* of these Substances are to be sheath'd up by pinguious, oleous, mucilaginous Substances, and Preparations of Milk.

If Convulsions are supported by a Suppression of the Menses, we are by no Means to recal that Evacuation by Emmanagogues, and other hot Medicines generally exhibited for that Purpose. In such a Case, 'tis more expedient to restore the free Circulation of the Humours by the Use of Baths of natural and medicinal Waters, by prudent Venesection, by bathing the Feet with tepid Liquors, by balsamic Pills, by warm Infusions of the Leaves of Baum and the Lime-Tree, and by correcting Powders. Then the irregular Motions of the solid Parts are to be allay'd by Antispasmodics and Anodynes, such as the anodyne Liquor mix'd with Essence of Castor, which is an excellent Medicine; then the weaken'd Parts are to be corroborated. When Convulsions arise from a Suppression or Diminution of the *Menses*, besides the above specified Remedies and Venesection, the Application of Leeches to the *Anus* is of singular Service.

It frequently happens, that the Retropulsion of Sweats, of ulcerous Excretions, of the Itch, Purples or Gout, induces Convulsions. In this Case, the acrimonious Sordes of the *Primæ Viæ* are to be corrected, and the spasmodic Strictures allay'd by absorbent Powders prepar'd of Crabs Eyes, the *Pulvis Marchionis*, prepar'd Amber, Cinnabar, Nitre, diaphoretic Antimony, and the Extracts of Saffron and Castor. In the Evening the Patient may take the anodyne Liquor, with a small Dose of *Bussins*'s bezoardic Spirit, and the Spirit of Castor, or antispasmodic Pills prepar'd thus:

Take of the Extracts of Yarrow, and of the Flowers of Chamomile, and the Herb Carduus Benedictus, each one Dram; of *Venice* Treacle, Amber, and Cinnabar, each half a Dram; of Saffron, twelve Grains; and Oil of Chamomile, eight Drops; form them into Pills, with which Laxatives are to be frequently interpos'd.

Then Asses Milk mixed with the *Selteran* cold Springs are to be drank, or Whey, both of which are to be persisted in for some Weeks, interposing, at proper Intervals, Manna in conjunction with Cream of Tartar.

If

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If, when by these Means, the material and especially the grosser Causes are removed, convulsive Motions should still remain, they are to be treated with such Medicines as allay exorbitant Motions, and with Specifics opposite to the subtile sulphureous Vapour which is impacted in the Nerves, and is the principal Support of the Disorder. To this Class principally belong antispasmodic and antipeleptic Specifics, taken from the animal Kingdom; for these, by their Fragrance immediately perceived by the Smell, are opposite to the fetid Vapours which support the Convulsions, and by a specific Virtue subdue them. The most considerable of this Kind, are the Shavings of the Sea-horse's Teeth, of Ivory, of the Bone found in the Head of the Sea-cow, of the Elk's Hoof, and of the human *Cranium*, as also human Blood and Secundines dried, the Viscera of Vipers and Serpents, together with their Hearts, Galls, and Liver; the Ankle Bones of Hares dried and pulverized, the Water of Swallows with Castor, but especially the Powder of Earth-worms. No less efficacious are some Medicines drawn from the vegetable and mineral Kingdoms, among which are the Coals of the Lime-tree pounded, the Extract of Saffron, the Flowers and Roots of Piony and wild Poppies, as also Medicinal Cinnabar. This Intention is, also, answered by Sedatives and Anodynes, such as the anodyne Liquor mixed with Essence of Castor, the Pilulæ de Cynoglosso mixed with *Aurum Fulminans* and Cinnabar, and the *Pilulæ Wildeganfii*, which, when the grosser Matter is removed, excellently check habitual convulsive Motions. And lastly, Corroboratives are to be used, in order to answer the third Intention of Cure.

Nor are we to neglect external Remedies, among which we may reckon Ointments and Liniments applied to the Nape of the Neck, and Spine of the Back. The Ingredients of these may be that of human Fat, Badgers, Bears, the Mountain Mouse, the Beaver, and Vipers. With these Fats we are to mix the distilled Oils of Rue, Lavander, Marjoram, Rosemary, Nutmeg, and, in order to render them more penetrating, a few Drops of the Spirit of volatile Salammoniac. But 'tis to be observed, that the distilled Oils are to be omitted in Patients who cannot bear them, and only the Fats and mucilaginous Substances used. No Medicine is preferable to Baths of fresh Water used about the Time of the Invasion. By these let a gentle Sweat be provoked, Nature being either spontaneously inclined to it, or, if not, by an Infusion of the Flowers of the Lime-tree, which are of singular Efficacy, of Cowslips, St. John's-wort, and Valerian Root, by which means, violent Paroxysms are frequently prevented.

When in Convulsions arising from Worms, Mercurius Dulcis is exhibited with a purgative, 'tis to be observed, that before the Use of this Medicine, or other Anthelminthics, mucilaginous Demulcents, such as a few Spoonfuls of the Oil of Sweet-almonds, are to be exhibited; or let Milk be drank immediately before or after, in order to allay the Strictures of the Intestines.

Tho' Venesection is often beneficial in convulsive Disorders, especially where there is a Plethora, a Spissitude or Dyscrasy of the Humours, a Suppression of the Menses or Hemorrhoids, or when the Head is violently affected, yet we are not to take away a large Quantity of Blood at one Time, nor to use Venesection promiscuously; for as the Disorder, when often recurring, more frequently proceeds from a Defect than a Redundance of laudable Blood, it easily happens, that by immoderate Venesection the Strength is impaired, the Stomach weakened, Perspiration retarded, and in Patients not manifestly plethoric, more Harm than Good done. Nor is Venesection to be performed on the Side affected, nor during the Equinoxes, but about fourteen Days before or after them; because at these Times the Paroxysms, during which nothing is to be attempted, are generally more violent than at other Seasons.

When a Suppression of the Hemorrhoids supports Convulsions, and a gentle Tumor and Obstruction of the Vessels are already formed, after other proper Measures, I know no more efficacious Medicine than Chalybeats. Hence the following vinous Infusion is of singular Service.

> Take of the Roots of Zedoary and Succory, each half an Ounce; of the Tops of the Lesser Centaury, and the Flowers of Clary, each four Pugils; of recent Citron Peel, half an Ounce; of Currans, two Ounces; and of Rhenish Wine one Quart; mix all together, digest over a gentle Fire, and keep for Use.

In convulsive Disorders no Medicines are more prejudicial than such as throw the Humours into violent Commotions, to which they are at these Times too much subject. Hence we are carefully to abstain from all hot spirituous volatile Substances, hot Tinctures and Essences, crude Astringents and Narcotics, which not only recal the Paroxysms, but also render the Disorder worse and more obstinate.

We are not rashly and immediately to have Recourse to Baths, which are not to be used, so long as the Patient is plethoric, or the *Duodenum* full of Sordes; for in such Cases, 'tis to be feared that the malignant Matter, being put in Agitation by the Baths, should be diffused thro' the whole Body. The same Caution is to be observed with respect to a Milk-Diet, instead of which bilious Patients ought to use Whey; nor is a Milk-Diet to be used at all, unless the *Primæ Viæ* and Viscera are sound and free from Sordes. A Course of Milk is most safely begun about the Middle or End of the Spring.

The Body in convulsive Disorders ought always to be kept soluble, since we observe them to be most violent when the Patient is costive. This Intention is best answered by mild laxative Preparations of Rhubarb, Raisins and Manna, Clysters, and an emollient Diet. Tho' Liniments are of singular Efficacy in soothing and relaxing Spasms, yet they are more properly used when the Paroxysm begins to remit, than at its Height, especially if the Patient has previously used the Bath.

Antipileptic Specifics and spirituous Corroboratives are by no Means to be exhibited in the Beginning of the Disorder, and not till after the material and gross Cause is removed; for when this Cause is removed, convulsive Motions frequently cease, without the Assistance of Specifics, whose Efficacy is found to be greatest in Convulsions arising from Commotions of Mind, especially if the Viscera are sound. Thus I knew a young Man, who for sixteen Years had laboured under violent epileptic Fits, happily cured by my antipileptic Powder, after having previously taken a Vomit.

The Return of Convulsions is best prevented by a due Use of the Non-naturals. Let the Patient, for Instance, live in a pure, serene and temperate Air. And as *Hippocrates*, in *Sect.* 2. *Aph.* 45. affirms, that in young Persons, Convulsions are cured by Change of Air, so the Patient is to be persuaded to remove from marshy, cold, and moist Places, infected with a thick and coarse Air, to higher, dryer and more healthy Parts. The Patient must not lie on the moist Ground, nor walk long in a bad Air, in the Night-time, or when the Sun shines excessively hot. Let his Food be of easy Digestion, and for ordinary Drink, let him use cold or medicated Water, or warm Infusions. He ought to preserve a serene Mind, abstain from immoderate Venery, use Exercise, take a good deal of Sleep, preserve his Body soluble, and, lest a Redundance of Blood should happen, use proper Venesections or Scarifications. *Frederic Hoffman.*

SPASNIA. A violent lancinating Pain in the Muscles of the *Thorax* during Coughing. *Castellus* from *Mercurialis.*

SPATHA. σπάθη. This sometimes imports a Rib, or a Scapula; but it is generally used to express a *Spatula*, an Instrument well known in Apothecaries Shops. *Spatha*, in *Celsus*, *L.* 7. *C.* 10. is a Sort of Incision Knife, the Shape of which *Heister* thinks is not known. *Celsus*, speaking of a *Polypus* in the Nose, says it must be loosened from the Bone by a sharp Iron Instrument, *in modum Spathæ factæ*, shap'd lik'd a Sword; for *Spatha*, σπάθη, signifies, properly, a Sort of Sword; whence all the other Things which are thus called, borrow the Name on account of their Similitude. *Spatha*, σπάθη, is, also, the external Covering of the Fruit of the Palm.

SPATHESTER. σπαθηστὴρ. from σπάω, *to draw.* A Chirurgical Instrument, contrived for drawing the Prepuce over the Glans, when too short to cover it.

SPATHOMELE. σπαθομήλη. A *Spatula.*

SPATILE. σπάλιλη. A liquid Stool.

SPATULA. An Instrument for mixing and spreading Plaisters, and for many other Uses.

SPATULA FÆTIDA. See XYRIS.

SPAUL. Blood. *Rulandus.*

SPECARIUM. The same as LAPIS SPECULARIS.

SPECIES, in Pharmacy, is a Powder.

The *Species* usually prepared are the following.

Species Diambræ cum & sine Odoratis. See DIAMBRÆ SPECIES.

SPECIES DIANTHUS. See DIANTHON.

SPECIES DIATRAGACANTHI FRIGIDI. See DIATRAGACANTHI FRIGIDÆ SPECIES.

SPECIES DIATRIῼN PIPEREῼN. See DIATRION PIPEREON SPECIES.

SPECIES HIERÆ PICRÆ. See HIERA.

Besides the foregoing *Species*, *Schroder* mentions the following:

Species Dianisi.

contra Apoplexiam.

Aromaticæ Caryophyllatæ cum & sine ambra & Moscho.

Aromaticæ Rosatæ cum & sine Ambra & Moscho Species

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Species Diacalaminthes.
Cephalicæ.
Diacinnamomi.
Diacorallii.
Confectionis Cordialis.
Cordiales cum & ſine Ambra & Moſcho.
Diacubebarum.
Diacurcuma ſive Diacrocu.
Diagalanga.
de Gemmis calidæ, cum & ſine Ambra & Moſcho.
de Gemmis frigidæ.
Ducis ſive Electuarii Ducis.
de Hyacintho.
Diahyſſopu.
Imperatoris.
Diaireos Salom.
Simplex.
Uſitatæ.
Juſtini ſive Electuarii Juſtini.
Dialacca.
Lætificantes Galen. cum & ſine Ambra & Moſcho.
Lætificantes Rhaſis.
Liberantes, confectionis liberant.
Lithontribon.
Diamargariton calidæ Avicen.
Diamargariton frigidæ Nicolai.
Diamoſchu Amaræ.
dulcis cum & ſine Ambra & Moſcho.
Diapenidion.
contra Peſtem, Ferdinandi Imper.
Diapleres archonticon, cum & ſine Moſcho.
Diapœonias, cum & ſine Ambra & Moſcho, Cord.
Benedictæ Laxativæ.
Diacarthamu.
Caryocoſtini.
Epiſcopi, ſive Eleſcophi.
de Succo Roſarum.
Diaturbith cum Rhubarbaro.
Diapraſſiu Nicolai.
Electuarii Reſumptivi.
Diarrhodon Abbatis, cum & ſine Moſcho.
Roſatæ novellæ.
Diaſpoliticon.
Diatrion Santalon.
Diathamaron, cum & ſine Moſcho.
Diatrogacanthæ calidæ.
ad Vermes, Confectio ad Vermes.
Dia-Xyloaloës, cum & ſine Ambra & Moſcho.
Dia Zingiberis.

SPECIFICA. Specifics.

Since 'tis certain from Experience, that ſome Medicines have a Kind of peculiar and ſpecific Efficacy in the Cure of particular Diſorders, and are for that Reaſon preferable to others, I ſhall conſider ſome of thoſe Medicines, which, from long Experience, I have found in a ſingular Manner beneficial in the Cure of certain Diſeaſes. But by *Specifics* I do not, with the common Herd of Phyſicians, mean ſuch Medicines as infallibly and in all Patients produce ſalutary Effects, and never fruſtrate the Hopes of him who preſcribed them. For ſuch Medicines are no where to be found, becauſe the Operations and Effects of Remedies are not formally inherent in them, but depend upon the mutual Action and Re-action of the Medicine upon the Body, and of the Body upon the Medicine; for all Medicines act not only according to their own Sphere of Activity, but alſo according to the Conſtitution of the Patient, ſo that the ſame Medicine, exhibited to ten different Perſons labouring under the ſame Diſorder, produces different Effects in each.

The high Pretences, therefore, to Panaceas, Arcanums and Specifics, againſt particular Diſorders, are falſe and ill-grounded, ſince by Specifics we ought to mean no more than ſuch Medicines as are more efficacious and infallible than others in the Cure of particular Diſorders; for ſome Medicines contain Elements or Principles every one of which contributes to remove the Cauſe of the Diſorder; ſo that the Compound, or Medicine itſelf, anſwers various Intentions of Cure at once. Thus Rhubarb is preferable to all other Laxatives in the Cure of Diarrhœas, becauſe it not only evacuates, but alſo by its balſamic Bitterneſs, blunts and corrects the acid and cauſtic Humours, and when the Purging is over, corroborates the relaxed Tone of the Viſcera by its earthy, ſubaſtringent Particles. Thus, alſo, in Diſeaſes of the Breaſt, and Coughs proceeding from Diſorders of the Stomach, in order to cleanſe the Primæ Viæ, Manna is preferable to all other Laxatives on account of its Sweetneſs, which obtunds and corrects the corroſive, acid, and acrid Humours. Other Remedies are, alſo, called Specifics, becauſe their Virtues and Power of producing certain Effects in particular Diſeaſes, have been diſcovered and confirmed by long Experience. Hence the *Peruvian* Bark is a Specific for ſtopping the Paroxyſms of Intermittents, Opium for alleviating Pain, and Mercurials for curing the Lues Venerea. Some Remedies are called Specifics, becauſe they are more friendly than others to the Parts affected, and by their Virtue have a particular Influence upon them. Thus the Nerves, together with the nervous and membranous Parts, are happily affected by Medicines abounding with a ſubtile, aromatic and fragrant Oil, whereas bad Effects are produced in them by Narcotics, Opiates and Aſtringents. The Stomach is delighted with Acids, by Means of which Appetite and Digeſtion are promoted, but the Bronchia of the Lungs are injured and ſtimulated to Spaſms by them. Cantharides, and Inſects abounding with a volatile cauſtic Salt, neither affect the Stomach nor Inteſtines, but the urinary Ducts of the Kidneys, the Ureters, Bladder and Urethra, are vellicated and agitated with ſpaſmodic Strictures by them.

Thus we are to form our Judgments of the Virtues of Specifics, which ought to be frequently uſed and greatly eſteemed by Phyſicians. But we ſhall now conſider what Specifics are appropriated and adapted to particular Diſorders. With regard then to intermittent Fevers, and eſpecially, in order to check their Paroxyſms, the *Peruvian* Bark is greatly celebrated, becauſe, beſides its aſtringent Quality, and that by which it ſtops febrile Motions, which it has in common with many other Medicines, ſuch as Preparations of Vitriol and Allum, the Roots of Tormentil and Biſtort, it is, alſo, in Conſequence of its bitter, balſamic Principle, poſſeſſed of a ſingular Efficacy for correcting the morbific Matter, and corroborating the languid Solids. This Bark may be exhibited in Subſtance, reduced to an Electuary or Eſſence, or, which is beſt of all, infuſed and gently boiled in *Rheniſh* Wine. Among the Specifics, alſo, for Intermittents are generally reckoned the Flowers of common Chamomile, ſo much extolled by *Baglivi*, becauſe both on Account of their Bitterneſs, Oil, and antiſpaſmodic Virtue, they are highly efficacious in Fevers, and by their gentle Aſtringency, reſtore the Tone of the Solids. But if Intermittents are highly obſtinate, which is generally owing to an Obſtruction of the Pancreas, this Obſtruction is by nothing more efficaciouſly removed than by *Mercurius Dulcis*, Medicinal Regulus of Antimony, and antimonial Sulphur corrected, and prudently exhibited.

In Quartans, the moſt celebrated Specific is the Eſſence of Rhubarb and Gentian, prepared with the Lixivium of the Salt of Tartar, and the urinous Spirit of Sal Ammoniac; for in Quartans, the Liver, and its Veſſels, are full of groſs Blood, the biliary Ducts infarcted with a thick and tough Bile, and the *Primæ Viæ* overloaded with acid Crudities: Hence this Medicine, becauſe it corrects and ſweetens the acid Humours, reſolves and attenuates the ſtagnant Blood and lenteſcent Bile, reſtores a due balſamic Quality to the Bile, and purges gently, is preferable to all others. But when Quartans are ſo inveterate and obſtinate as to elude the Force of all other Medicines, *Mercurius Dulcis*, or diaphoretic Mercury duly prepared, are highly efficacious; as alſo, the *Antiquartium* of *Riverius*, which is poſſeſſed of the ſame Virtue with Mercury. And tho' the Mercurials exhibited ſhould excite a Salivation, yet it is not to be dreaded as dangerous, ſince frequently the Fever ceaſes whilſt it ſucceeds.

All Inflammations, which are always accompanied with a Fever and Danger, and generally happen in the Nerveo-membranous Parts, ſuch as the Pleura and Bronchia of the Lungs, are by a certain Specific Virtue cured by purified Nitre, mixed with a ſmall Quantity of Camphire, by Demulcents, gentle Anodynes, Emulſives, and fixed Diaphoretics. In extinguiſhing all febrile Heats, Nitre is preferable to all other Things, becauſe, beſides that Virtue by which it fixes and abates the inteſtine Motion of the ſulphureous Parts of the Blood, it reſolves and attenuates the thick Blood and Lymph lodged in the narrow Veſſels, and at the ſame time moiſtens and relaxes the tenſe and rigid Fibres, and conſequently exerts an antiſpaſmodic Virtue.

When there is a malignant Diſpoſition of the Humours, or ſuch a State of the Juices as is prone to Putrefaction, or when by Contagion, ſuch Miaſmata are conveyed into the Body as are fit to induce ſuch a putrid Corruption of the Juices both in acute and chronical Diſorders, I find nothing more effectual than Camphire, eſpecially when exhibited in Conjunction with Nitre; for the Camphire, by its balſamic Quality, preſerves the due Craſis and Mixture of the Blood, diminiſhes the Force of the Ferment, and by augmenting Perſpiration, without exciting an exceſſive Heat of the Blood, excellently promotes the Elimination of the Sordes, through the Pores of the Skin. But if the Fever or Inflammation are of the malignant Kind, Camphire is never to be exhibited alone, but always mixed with Nitre. In order to reſtore Strength, which is greatly impaired in almoſt all Diſeaſes, and eſpecially thoſe of the malignant Kind, I know no more efficacious

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efficacious Remedy than Citron Peel, on Account of the Oil which it contains; as alſo, Cinnamon, and a weak Water diſtilled from it, with the fragrant Juices of Straw-berries, Raſp-berries, and Cherries. When the Fever is abſent, Oil of Cinnamon, and an Elæoſaccharum prepared of it, are of ſingular Uſe in reſtoring the Strength. In a Plague, the moſt malignant of all Diſorders, the beſt Specific is Vinegar, either ſimple, or prepared with Alexeterial and Cordial Roots. The Juice of Lemons and Citrons, and the Syrup of Citron Juice, mixed with Oil of Cedar, as Acids, powerfully reſiſt Putrefaction, the Source and Support of which is an exalted alcalino-ſulphureous Principle tending to a corruptive Diſſolution of the Humours, and a Deſtruction of their due Mixture.

We now come to treat of Pains, which, if they ariſe from ſpaſmodic Strictures, ſuch as the Cardialgia, the Colic and the Stone, are moſt ſurprizingly relieved by my anodyne mineral Liquor, which is not only poſſeſſed of a gently anodyne and diſcutient, but alſo of a corroborative Quality not to be found in other Sedatives. When Flatulences become ſtagnant, and ſo pent up as to diſtend the nervous Coats of the Stomach and Inteſtines with violent Gripings, I have found no more powerful Specific for their Diſcuſſion than Orange Peel, Camomile Flowers, Caraway and Cumin; becauſe, on account of the ſubtile vaporous Oil they contain, they are anodyne and mitigating, and by their bitter, aromatic, acrid and fragrant Principle, corroborative, and proper to reſtore the Tone of the Parts. By which Means the Crudities, which are the Cauſe and Fomes of the Flatulences, are afterwards commodiouſly eliminated.

Nor are there Specifics wanting for other Diſorders. Thus ſcorbutic and rheumatic Pains of the Limbs, and a wandering Gout, are greatly alleviated by Earth-worms, the Juice or Powder of them, eſpecially, when mixed with Abſorbents, Cinnabar and Nitre, and long and copiouſly uſed with Aſſes Milk or Whey. I have, alſo, ſeen long continued rheumatic Pains and Contractions of the Limbs, cured by gradually exhibiting the Powder of crude Antimony from about ten Grains to half a Dram. Let this Medicine be taken daily, interpoſing a mild Decoction of the temperate Woods. Aſſes Milk, according to *Pliny* and *Dioſcorides*, was by the Ancients looked upon as a Specific for the Gout, and frequently uſed; and ſuch gouty Patients are alſo ſurprizingly relieved by Decoctions of the Roots of Mugwort, Vipers Graſs, Sarſaparilla, China-root, Liquoriſh, Polypody and Hermodactyles, liberally and for a conſiderable Time uſed. In a Tooth-ach, an Ounce of Elder Rob drank in Broth, in order to promote a Diaphoreſis, and ſome of the ſame Rob diſſolved in Ale, with which the Mouth is to be frequently waſhed, affords infallible and preſent Eaſe to the Patient.

Hypochondriac and hyſteric Diſorders have a great Affinity, and principally exert their Violence by inflating and ſpaſmodically conſtricting the Inteſtines, by which Means they draw the whole nervous Syſtem into Conſent. Theſe Diſorders have, however, their peculiar Specifics, by which they are allayed, the moſt conſiderable of which are hot and cold medicinal Waters, Baths, proper Exerciſe, fetid Gums and Medicines, ſuch as Aſa Fœtida, Sagaponum, Opoponax and Caſtor, which when exhibited alone in the Form of Pills, or rather with Purgatives, ſuch as corrected Aloes, or the Extracts of Rhubarb and black Hellebore, or mixed with Myrrh and Saffron, and frequently tho' moderately uſed, ſurprizingly allay the Spaſms, corroborate the Tone of the nervous Parts, and colliquate and gently evacuate the viſcid Humours.

In Diſorders of the Head, and eſpecially of the Nerves, which proceed from a Weakneſs of the Brain, and a languid feeble State of the whole nervous Syſtem, ſuch as an Hemiplegy, a Palſey, a Diminution of the Senſes, a Torpor and Stupor of the animal Functions, a Difficulty of Hearing, a Ringing of the Ears, a Syncope, a Vertigo, a Weakneſs of the Stomach and Inteſtines, as alſo a Diarrhæa and Vomiting, I have found no more infallible and inſtantaneous Specific than my Balſam of Life, prepared of genuine cephalic and aromatic Oils, and uſed both internally and externally.

Beſides, for Madneſs, whether of the furious or melancholic Kind, not only Veneſection, but, alſo, the Uſe of hot and cold medicinal Waters and Emetics are celebrated as Specifics. The Antients, and *Hippocrates* himſelf, for this Purpoſe principally uſed white Hellebore, the Virulence of which, according to *Proſper Alpinus*, *in Med. Method.* they corrected by Boiling it with Oil or Oxymel, and giving the Patient a large Quantity of Milk before its Exhibition. But this Practice is now obſolete, perhaps, becauſe the Moderns are ignorant of the Method of collecting and exhibiting Hellebore. See *Schulzii Diſſert. de Helleboriſmis veterum.* Nor is it to be doubted but Hellebore is a Specific in Deliriums and Madneſs, eſpecially if its Operation is aſſiſted by Veneſection and Baths of ſweet Water, which are beneficial in all Diſorders of this Kind. But in Madneſs ariſing rather from the Exorbitance of Paſſion, than an Obſtruction of the Hypochondria, Aſſes Milk, Nitre, and Aſſes Blood dried and reduced to a Powder, are excellent Demulcents, greatly allay the exceſſive Strictures of the nervous Fibres, and in the Beginning of the Diſorder, produce happy Effects, eſpecially if the Patient changes his Climate, and avoids every Occaſion of Paſſion.

The more terrible and frightful an Epilepſy is, the more ſollicitous Phyſicians have been about Remedies to remove it; and certainly there are many Specifics extolled for this Purpoſe; but I believe none are better, or more infallible, than the Powder of Earth-Worms, Cinnabar, the Powder of human Secundines, the Shavings of the human Cranium, the Elks Hoof, and human Skin. But as theſe are proper in an idiopathic and chronical Epilepſy, ſo in that of the ſymptomatic Kind, nothing is more efficacious than my anodyne Mineral Liquor, which greatly alleviates epileptic Fits.

When in an Aſthma the veſicular and vaſcular Compages of the Lungs is obſtructed, and infarcted with a viſcid Phlegm, Gum Ammoniac, Saffron, Peruvian Balſam, and Opoponax, either reduced to Pills, or made into an Eſſence with Tincture of Tartar, are of all others the beſt Specifics: But when the Lungs are affected with any Phthiſical Diſorder, the beſt Specific is Aſſes Milk, either alone or mixed with the *Selteran* Waters, which are highly beneficial in Diſorders of the Lungs. This Intention is, alſo, anſwered by pure diſtilled Sulphur, eſpecially if diſſolved with the Fat of Animals, ſuch as Human Fat, or the recent Fat of a Dog; as, alſo, with Sperma Ceti, adding, in order to corroborate the Stomach, a few Drops of the Balſam of Capivi, or of the Oils of Saſſafras Wood and Fennel; for ſuch is the Nature of Sulphur, that it not only ſtrengthens the languid Parts, but, alſo, diſſolves and diſcuſſes the viſcid Juices, by which means it is highly beneficial in Diſorders of the Lungs, ſuch as Exulcerations, Tubercles, and Vomicas, ariſing from a Stagnation and Condenſation of a viſcid, caſeous, and mucilaginous Humour precipitated from the Chyle.

Beſides a Phthiſis, Dropſies are reckoned among the moſt dangerous and hardly curable Diſeaſes. But if they admit of a Cure, Elaterum was by the Ancients extolled as a Specific for this purpoſe; becauſe, when duly exhibited, it carries the Waters off both by Vomit and Stool. And if the Body is duly prepared, the Humors render'd fluid, and Emollients exhibited both before and during its Uſe, it is of all other Medicines the moſt efficacious. But as the Waters are, alſo, evacuated by Urine, this Intention, if the Waters are diſpoſed for ſuch an Excretion, is excellently anſwered by the Powder of Cantharides, mixed with Salt of Tartar, adding, in order to prevent any Inflammation, a few Grains of depurated Nitre, and one Grain of Camphire. The Jaundice is alſo, frequently, a very obſtinate Diſeaſe; but beſides Emetics which act powerfully on the biliary Ducts, Rhubarb, the Roots of Turmeric and Madder, eſpecially if boiled in Water and Wine with the Addition of Nitre and Salt of Tartar, are found very efficacious in this Diſorder; an Infuſion of the middle Bark of Elder, unleſs the Patient is too much weakened, is, alſo, uſeful, by colliquating the viſcid Bile, and expelling the ſmall Stones from the biliary Ducts.

In a calculous State of the Kidneys, the beſt Specific is an Infuſion of the Tops of Yarrow long and frequently uſed. Nor is a ſingular and ſpecific Virtue to be denied to dried Strawberries, Winter-Cherries, Hounds-Tongue, Carrot-Seeds, and eſpecially the Bark of the Ægyptian Thorn-Root, if either infuſed in Water or taken in weak Geneva; for in theſe Subſtances there is a traumatic, gently balſamic, and ſubaſtringent Quality, by which they corroborate the weakned Tone of the renal Duct, and conglutinate and cure the exulcerated, and, in ſome meaſure, diſſolved Subſtance of the Kidneys. Bitter Almonds, on account of their anodyne Oil, and Oil of ſweet Almonds, are excellent demulcent and mitigating Medicines under the Paroxyſm.

The Diſeaſes peculiar to Women from ſome Diſorder of the Uterus, eſpecially an irregular State of the *Menſes* or *Lochia*, are moſt commodiouſly treated with corrected Aloes, Myrrh, Saffron, Amber, round Birthwort duly reduced into Pills; for which reaſon the *Pilulæ Becherianæ*, and others compoſed in the ſame manner, have acquired ſo great a Character. In Men the Irregularities of the hæmorrhoidal Diſcharge are corrected by Manna and an Infuſion of the Tops of Yarrow, becauſe this Plant contains a ſubtile Oil, which alleviates Spaſms, and with reſpect to its Smell, Taſte, and eſpecially its bluiſh Colour, greatly reſembles the Oil of Chamomile.

A Dyſentery, which is contagious, weakens the Patient by numberleſs Stools, and often proves mortal, is not removed by Medicines appropriated to ordinary Fluxes, but by certain Specifics peculiar to itſelf. Thus 'tis certain from Experience, that Ipecacuanha is of all other Medicines the moſt powerful

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ful Antidysenteric, if exhibited once, twice, or thrice, in due Doses, in the Beginning of the Disorder. Then afterwards other Things capable of obtunding Acrimony, mild Diaphoretics and Correctors internally and externally, as also Rhubarb as the best Laxative are to be used; but the Cascarilla Bark is the best Specific for corroborating the flaccid Fibres of the Intestines, and checking their irregular Motions.

Terrible Symptoms are sometimes excited by Worms in the Intestines, for the Extirpation of which there are various Specifics, by the *Greeks* called Anthelmintics. And though there are numberless Medicines extolled for this purpose, they are not all equally efficacious, the best, however, are Asa Fœtida and Sagapenum, especially when reduced to the Form of Pills, with Purgatives, such as *Mercurius Dulcis* and Extract of Rhubarb. Only 'tis to be observed that both before and after the Exhibition of such Pills, the Patient is to take a few Spoonfuls of the Oil of Olives or sweet Almonds, which, like all other oleous Substances, are highly offensive to the Worms, and sooth the intestinal Fibres spasmodically affected by the Corrosion of the Worms, whose Discharge by Stool they procure; for Asa fœtida and Sagapenum, by their ungrateful Smell, kill the Worms as effectually as we know from Experience Garlick does. The Seeds, also, of Worm-seeds, and the Herb Tansey, are successfully exhibited against Worms, but they operate in no other manner than by resisting the putredinous Colluvies, which impairs the Strength, and induces a slow Heat and Languor; whilst, at the same time, by corroborating the Tone of the Intestines, they facilitate the Expulsion of the Worms.

Violent Hemorrhages, from whatever Part, require speedy Relief, and efficacious Remedies, lest terrible Symptoms should ensue. In Cases, therefore, of this Nature, nothing is more efficacious than Nitre dissolved in common Water, and successively applied; and in order to prevent a fresh Hemorrhage, the Powder of the Tooth of the Sea-horse is to be frequently used. Six or eight Grains of the *Pilulæ de Cynoglosso* may, also, be exhibited with Success; and the Oil and Seeds of Henbane, by their narcotic Quality, obtund the exquisite Sense of the Solids, and by that means hinder the Spasms from solliciting the Blood to a certain Part, where it might be discharged. In seminal Fluxes, especially of the virulent Kind, there is not a more powerful Specific than Venice Turpentine, and its ætherial Oil; or in their stead, the Balsam of Capivi, or that of Mecha, which, after the Use of Purgatives, especially of the mercurial kind, produce excellent Effects, either with or without Camphire, if exhibited either in an Emulsion of the four cold Seeds, Milk or Whey.

In no Disorder is the Impurity of the Humours greater than in the Scurvy, which is principally endemial, arises from bad Aliments, a cold and moist Air, and is increased by a sedentary Life, and especially by Grief. But a long Course of Experience has found the most powerful Specifics for this Disorder to be Marsh-Trefoil, Scurvy-Grass, Beccabunga, Cresses and wild Raddish-Root; the Effects of which will be more conspicuous and infallible if their expressed Juices are drank with sweet Whey or Goats-Milk, and the Patient's Body duly prepared for such a Course. But in inveterate Scurvies, accompanied with Pains, I have known singular Relief afforded, by drinking for some time a Decoction of Pine Cones, with an Addition of the Marrow taken from the Bones of Beef and Veal.

A Lues Venerea can hardly be totally exterminated from its latent Recesses, without the Assistance of Specifics, the most powerful of which are Quicksilver, Guajacum and its Bark, and duly prepared Antimony; for there is not in the whole Materia Medica a Medicine which so powerfully moves the whole Mass of Lymph and Humours, and excites so copious a Discharge of the Saliva, which is frequently continued for some Weeks, as Mercury, which when conveyed into the Body, by the specific Gravity of its Molicules, which is greater than that of the human Juices, penetrates into the internal Parts of the Body, and passing with Force thro' the smallest Ducts, removes Obstructions in them. It, also, totally changes the Crasis of the Fluids, and, by a certain intestine Motion, induces, as it were, a putredinous Colliquation of them, and by this means, tho' not without some Trouble and Danger, removes the Lues Venerea and other obstinate chronical Disorders arising from an Impurity of the Serum. The softest Mercurial used for exciting a Salivation is *Mercurius Dulcis*, joined with Absorbents, and exhibited for some Days, ascending gradually from five to twelve Grains, till the Saliva begins to flow copiously, and observing at the same time a proper dietetic Regimen. Guajacum, by the subtle, acrid and resinous Salt with which it impregnates the Water in which it is boiled, vellicates the Fibres and Coats of the Vessels, and increases the Circulation of the whole Mass of Humours and Lymph, by which means the viscid Juices are resolved, and the Obstructions removed.

For a malignant Leprosy, Herpes, Itch, and other Defedations and Exulcerations of the Skin, the best Specifics are Preparations and Decoctions of Vipers, Antimony, and especially its diaphoretic Sulphur. The *Plica Polonica*, stopping or preposterously cut off, produces violent Symptoms, for removing which no better Specific is as yet found than a Decoction of the Herb and Seeds of Club-moss, with which the Head is to be often washed; for, by this means, the viscid excrementitious Serum, so much indisposing the Brain and Head, is safely eliminated through the Hairs and Pores of the Skin with which the Cranium is covered. If the Eyes are afflicted with a saltish Defluxion, accompanied with Redness, as in an Epiphora, and if, especially in the Night-time, the Eyelids are conglutinated by a viscid Humor, a Grain of white Vitriol, mixed with fresh Butter, and put upon the larger Orbit of the Eye, affords surprising Relief, and quickly removes the Disorder. Pellicles of the Eyes, intercepting Sight, are quickly removed by dropping the recent Fat of Vipers into the Eye, and a beginning *Gutta Serena* is excellently discussed by Sulphur of Antimony taken internally.

When any Parts are afflicted with Contractions or Rigidity, nothing affords more instantaneous Relief, than frequently putting them into recently opened, and as yet warm Animals, by which mild oleous and natural Warmth, the tense and rigid Fibres are excellently relaxed. When after a Fall, or a violent Contusion or Blow on the external Parts, Stagnations and Concretions of the Blood and Humors produce various untoward Symptoms, a Decoction or Infusion of German Leopards-Bane almost compleats the Cure, on account of its singular inciding, resolvent and discutient Quality.

When treating of Specifics, we must mention Asses Milk, so much extolled by the Antients as highly conducive to Health and Longævity. But with respect to this, the Reader may consult the Article LAC, and *Patinus, in Tom. 2. Epistolar.*

These are the most select and approved Specifics in all the *Materia Medica*. But 'tis to be observed, that they are not possessed of absolute, but of relative Virtues, and that their Success depends upon certain limited Conditions and Circumstances, which ought to be duly adverted to in using them. Besides, tho' these Remedies are of singular Use when rightly used, they are, nevertheless, of no manner of service, unless the Body is properly prepared for them, and the Obstacles which might impair or hinder their Operation removed. Thus when there is a Redundance of Blood, and the *Primæ Viæ* are overcharged with Sordes, Venesection must be used, and the Stomach and Intestines freed from the Load of crude, bilious, and excrementitious Sordes, before Specifics can be of any Service.

Nor is it to be thought that when Specifics are used, there is no Necessity for other external and internal Medicines, capable of correcting and evacuating the peccant Humours: For Specifics do not so much affect the peccant Matter as the Motion of the Solids and Fluids, which they assist by reducing it to its natural State; and this they perform best when after the material mortific Causes are removed, and the peccant State of the Humours corrected by Medicines of a temperating, resolvent, discutient, and deobstruent Quality, they are exhibited in a due Dose, at a proper Season, and in a laudable manner. In a particular manner, we are to take Care that the *Primæ Viæ* be free from impure and viscid Juices, by which the Force of the Medicine is greatly obtunded, or totally suffocated: Whereas, when these are cleansed, the Texture of the Medicine remains entire, and produces its desired Effect on the nervous Substance of the Stomach and Intestines; as is obvious with respect to Emetics, Purgatives, Opiates, Analeptics, and all other Substances, small Quantities of which produce considerable Effects.

Lastly, with respect to Specifics, the Physician ought to know not only the Time and Dose in which they are to be exhibited, but, also, how long they are to be used, and what Regimen and Method of Living is most proper for the Patient; for that Method of Cure which consists only in the Prudence and Judgment of the Physician, and his diligent Attention and Observation of the Constitution of the Patient, is of so great Importance to the desired Effect, that it is preferable to the Use of Specifics alone: And without such an Observation and Attention to the State and Constitution of the Patient, he will find the best of Medicines fail, and cannot properly be said to understand his Profession. He who duly considers what has been said, will see how far Art is necessary for the Cure of Diseases. *Frederic Hoffman.*

SPECILLUM. A Probe. *Specilla*, also, sometimes imports Pledgets, or Tents.

SPECULARIS LAPIS. Offic. Boet. 397. Kentm. 26. Mont. Exot. 14. Schrod. 356. Worm. Mus. 59. *Lapis Specularis*

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cularis Neatericis, Charlt. Foſſ. 23. *Glacies Mariæ*, *ſeu Lapis Specularius*, Koning. MUSCOVY-GLASS.

It is a foſſile Stone, reſembling Cryſtal, tranſparent, and diviſible into very thin *Laminæ*. It is erroneouſly ſuppoſed, ſays the learned *P. Amman*, to be the *Glacies Mariæ*, [the Virgin *Mary*'s Looking-Glaſs] as it was formerly believed to be the *Aphroſelene*, or *Selenites*: For both Opinions are fabulous; the firſt, becauſe it is uncertain whether the Virgin *Mary* ever made uſe of ſuch a Glaſs; and the laſt, becauſe it neither contains the Image of the Moon, nor increaſes or decreaſes as that Planet does. We have it imported from *Muſcovy*, *Spain*, and other Parts; and it is of Uſe in Surgery, in the Cure of ſordid Ulcers. It is of Service, alſo, in difficult Labour, and is an Arcanum againſt the Epilepſy; and is, alſo, reckoned among Coſmetics.

SPECULUM. A Probe; or an Inſtrument for dilating the natural Paſſages, or Cavities. Thus there are the *Speculum Ani*, repreſented Tab. 55. Fig. 15. The *Speculum Oculi*, Tab. 38. Fig. 15. and 16. The *Speculum Oris*, Tab. 41. Fig. 11. and 12. And the *Speculum Uteri*, of which there are many Sorts deſcribed by Authors.

The *Tunica Aranea* of the Eye is called *Speculum*. *Speculum Citrinum* is yellow Arſenic; *Speculum Album*, white Arſenic.

SPECULUM INDICUM, is Filings of Iron. *Rulandus*.

SPELTA. See ZEA.

SPELTRUM. Speltre; the Name by which Mechanics call Zink. See ZINCHUM.

SPERAGUS. According to *Blancard*, the ſame as ASPARAGUS.

SPERGULA. A Name for ſeveral Species of ALSINE, which ſee.

SPERMA CETI. Parmacitty. See BALÆNA.

The *Emplaſtrum de Spermate Ceti* is thus prepared:

> Take of White Wax, four Ounces; Sperma Ceti, two Ounces; Galbanum diſſolved in Vinegar, ſtrained and boiled, an Ounce. Mix and make a Plaiſter, according to Art.

This Plaiſter is eſteemed an Emollient, and is much recommended as an Application to the Breaſts, to prevent their growing hard, and the Milk from coagulating therein. It is, alſo, ſaid to be good for ſtrumous Swellings.

SPERMATICOS. σπερματικὸς. Spermatic. An Epithet for the Organs of Generation, and the reſpective Parts thereof.

SPERMATOCELE. A Species of *Hernia*, conſiſting in a Tumor of the Spermatic Veſſels; a Diſorder frequently conſequent to a humoral *Hernia*, or venereal Swelling of the Teſticles.

SPERMATOPÆA. Medicines which increaſe the Seminal Juices.

SPERNIOLA, or SPERNIOLUM. Frogs Spawn. *Rulandus*.

SPHACELUS, in Botany, is a Name for the *Scordium Alterum*; *ſive ſaliva Agreſtis*.

SPHACELUS. σφάκελος, or σφακελισμὸς. A Sphacelation. See GANGRÆNA.

The Terms σφάκελος, σφακελισμὸς, σφακελίζειν, σφακελίζεσθαι, have various Significations in *Hippocrates*; ſometimes they mean a Sideration and Corruption peculiarly of a Bone, as 7 *Aph.* 79. and in ſeveral Places, and *Lib. de Tract.* where we read, for inſtance, ἢ θέλῃ κίνδυνος σφακελίσαι τὸ ὀστέον τὸ τῆς πτέρνης, "and thus the Bone of the Heel is in danger of Sideration." They bear the ſame Senſe in many Places of the Book *de Artic.* And this Expoſition of the Words is warranted by *Galen*, who, in his Comment on 7 *Aph.* 50. ſays, τὸ σφακελίζειν μὲν ὡς πολλαχοῦ εἴρηκεν ἐν τῷ περὶ ἀγμῶν ἢ ἄξεων ἐπὶ τῦ διαφθείρεσθαι πάνυ φέρων, "the Word σφακελίζειν [to be afflicted with a Sphacelus] is often uſed in the Books *de Fract.* and *de Artic.* for διαφθείρεσθαι [to be corrupted."] *Celſus* uſes the Verb *vitiari* in the ſame Senſe concerning a Bone; for inſtance, *Lib.* 8. *Cap.* 9. where we read, *Omnis mora vitanda erit, ne Os infra vitietur*, "All Delays are to be avoided, leaſt the Bone "underneath ſhould be corrupted." But theſe Words are ſpoken, alſo, in general, of the Sideration and Corruption of any Part, whether Fleſh, Nerves, or Bones, as *Galen* writes in many Places, and eſpecially, *Com.* 2. *in Lib. de Fract.* where he ſays, τὸν ὅλον τῆς οὐσίας ἰχῶρα μοῖραν φθορὰν, &c. "The "Antients call the Corruption of the whole Subſtance of any "Part a *Sphacelus*; but to expreſs a Corruption of the fleſhy "Parts, they uſe other Words; for which reaſon he (*Hippocrates*) uſually calls the Fleſh, in ſuch a Caſe, σαπρὸν, μυδῶσαν, σηπεμένην. [*Sapran*, *Mydoſan*, *Sepomenen*, Words importing Putrefaction] and by other like Names; but when "he ſpeaks of a Corruption of the whole Subſtance of the "Bone, he uſes the Word σφάκελος, which Affection is occaſioned by a Converſion of the adjacent Fleſh into vitious "Ichos [or Sanies] which by their Irrigation corrupt the "Bone." The ſame Author, *Lib. de Tumor.* has theſe Words, "I call, ſays he, by the Name σφάκελος, every Cor"ruption of the ſolid Parts, as well what happens to the "Bones as to the Fleſh and Veſſels;" and he there makes a Gangrene a Species of *Sphacelus*. Agreeable hereto, σφάκελος, *in Exeg.* is expounded φθορὰ πᾶσα καθ' ὁτιοῦν ἂν γίγνηται τρόπον, "every Corruption, after what manner ſoever it happens." The ſame Author, *Comm. in 7 Aphoriſm.* 50. expreſly tells us, that σφάκελος is ſometimes taken for a Sideration or Corruption of a Part which tends to Deſtruction, but is not yet a confirmed Gangrene; and more he ſays to the ſame purpoſe, *Com.* 4. *in Lib. de Art.* where, tho' he diſtinguiſhes a *Sphacelus* from a *Gangrene*, yet, becauſe of their Vicinity, he acknowledges the Words are ſometimes erroneouſly uſed by Phyſicians. In this univerſal Senſe, I think, is to be underſtood the σφάκελος ἐγκεφάλου, "the Sphacelus of the Brain," *Lib.* 2. *de Morb.* the σφακελισμὸς ἐγκεφάλου, in the ſecond and third Book, and ἡ σφακελίζουσα ὁ ἐγκέφαλος, *Lib.* 2. in two Places; and σφακελίζεται ἐγκέφαλος, in the ſame Book; σφάκελος τὸ ἐγκέφαλον, *Lib. de Aer. Aqu. & Loc.* ἐκίνησεν σφακελισθῆναι ὁ ἐγκέφαλος, 7 *Aph.* 50. and ἐγκέφαλον σφακελίσαν, *Coac.* 187. So that a σφάκελος, Sphacelus, of the Brain is ſo called, when the Brain, from any Cauſe whatſoever, is ſo far corrupted as to be in danger of a *Sphacelus*. And by κεφαλῆς σφάκελος, 7 *Epid.* we are to underſtand an Inflammation of the Head, or ſuch a Diſorder as threatens a Sphacelus, or a very intenſe Pain of the Head which naturally tends to the Deſtruction of the Patient in an acute Fever. Thus again is the σφακελώδεις ἱδρωκεφαλίας of *Archigenes* expounded by *Galen*, *Lib.* 2. *de Loc. Affect.* of thoſe who have ſo intenſe a Pain, or ſo violent an Inflammation on one Side of the Head, as to be in imminent Danger of a *Sphacelus*. Agreeably to this Senſe, *Heſychius* expounds σφακελος by ἀμέτρος ὀδύνη, "an immoderate Pain;" and *Varinus* expounds σφακελίζειν by ἀλγεῖν μετὰ σπασμῦ, "to be affected with convulſive "Pains." *Pliny*, alſo, *Lib.* 17. *Cap.* 24. expounds the σφακελισμὸς of the Trees in *Theophraſtus*, *Hiſt. Plant. Lib.* 4. *Cap.* 16. by *Dolor Membrorum*, "a Pain in the Members," or Branches; and σφακελίζει, in *Heſychius*, is ὀδυνᾶται ἢ ἀλγεῖται, [Verbs importing Pain.] Theſe various Senſes of the Word σφάκελος were known to *Galen*, as appears, *Lib.* 2. *de Loc. Affect.* where he ſays, "All are not agreed as to the Signifi"cation of this Word σφάκελος; for ſome underſtand by it a violent Pain, others an Inflammation in ſo high a Degree as to create Danger of a Corruption of the Part, which ſome call a Gangrene. Some call a Corruption of the Part itſelf σφάκελος; others σπασμὸς [a Convulſion]; others, again, give the Name of σπασμὸς not to Corruption in general, but only to what proceeds from an Inflammation of nervous Bodies. Some underſtand it not of a σπασμὸς actually preſent, but what is expected from the Greatneſs of the Inflammation; ſome call it a ſtrong Tenſion, others a Putrefaction. The σφακελισμὸς νεύρου καὶ ὀστέου, "Sphaceliſmus of the Nerve and Bone," in Wounds, *Prorrhet.* 2. ſeems to be expreſſed in *Celſus*, *Lib.* 5. *Cap.* 26. by *Nervi Reſolutio*, "a Reſolution of the Nerves." In much the ſame Senſe are we to underſtand ὀδόντος σφακελισμὸς, "a Sphaceliſm of a Tooth" *Coac.* 236. σφακελισμὸς τῆς γναθου, "a Sphaceliſm of the Cheek," *Lib.* 5. *Epiſt.* σφακελισμὸς σιαγόνος, "a Sphaceliſm of the Jaw," from a Tubercle and Abſceſs, 7 *Epid.* and ἰσχίον ἰσφακέλισε, "the Os Iſchium was affected with a Sphacelus," from a Luxation, "that is, "dead and withered," 5 *Epid.* ὁ πῦς ἰσφακέλισε, "the Foot "was affected with a Sphacelus;" and πήχεος σφακελισμὸς, "a "Sphaceliſm of the Cubit," from a Fall, *Lib. eodem.* There is alſo a σφάκελος which proceeds from an Inflammation of the Part, *Lib. de Ulcer.* We are told, alſo, by *Galen*, *Com.* 4. *in Lib. de Art.* and *Com.* in 7 *Aph.* 50. that σφάκελος is taken for an incipient Gangrene; in which Senſe is to be underſtood that Paſſage, 1 *Epid.* ἰσὰ σφακελίζει ἀπολαβόντα τὴν φλέβα ἐκκοπεῖσα ἢ ἐγιωσαι, "Where Things tend to a Sphacelus, the Veſſels are "to be cut, a Wound made, and the Cure thus effected." Here the Author plainly gives Directions how to manage an incipient Corruption, or a Gangrene not yet confirmed.

SPHACERUS. σφάκερος, in *Galen*'s *Exegeſis*, is a Word aſcribed to *Hippocrates*, for which he quotes a Paſſage in the Additions to the Book *de Cap. Vulner.* but obſerves, at the ſame time, that moſt Copies read σφάκελος. *Foeſius* here reads σφάκελος for σφάλερος, and ſo the Paſſage quoted will read κεφαλὴ δὲ ἢ σφάκελος ἢ ἦ, "If there be a Pain of the Head, and "a Sphacelus;" whence he infers, that the Word σφάκερος, in the *Exegeſis*, is put for σφάκελος. What Additions there were to the Book *de Cap. Vulner.* in *Galen*'s Time, is not eaſy to be known; at preſent there are none remaining but thoſe which relate to the Book *de Aere, Locis & Aquis*.

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SPHÆNOIDES OS. The Sphænoide, or Cuneiform Bone; from σφὴν a Wedge. See CAPUT.

SPHÆNOPALATINUS. The Name of a Muſcle of the Uvula, which ſee.

SPHÆRION. σφαιρίον. A Pill.

SPHÆRISTICA, *ſive Pilæ Ludus*, is a Species of gymnaſtic Exerciſes performed with a Ball. Of the *Sphæriſtica*, there were four Kinds in Uſe among the *Greeks*, which were thoſe with *the little Ball*, *the great Ball*, *the empty Ball*, and *the Corycus*; which laſt *Mercurialis* reckons among the *Balls*, tho' *Galen*, *Oribaſius*, and *Paulus* make it a diſtinct Thing, becauſe it was, as he ſays, a *Ball*, or at leaſt ſomething like it, as will appear from the Deſcription below.

The Exerciſe with the Ball, ſays *Oribaſius* from *Antyllus*, induces a greater Promptneſs to Motion, and ſtrengthens the vital Actions. Of the Exerciſe with the *little Ball* there were three Kinds: The firſt was with a *Ball* of a very ſmall Size, in which the Parties held their Bodies very erect, and played with their Hands at a very near diſtance. This Exerciſe was very beneficial to the Legs, which were kept very much upon the Stretch all the Time; it was, alſo, good for the Back, the ſhort Ribs, and Arms, and rendered the Fleſh ſolid.

The ſecond *Ludus parvæ Pilæ* was with a *Ball* a little bigger than the former; in this they intermingled Arms, but kept off with their Bodies, held their Heads erect, and mov'd in various manners, to this Side, or to that Side, according to the Direction of the *Ball*. This, ſays *Oribaſius*, is the beſt and moſt ſalutary Exerciſe performed with the *Ball*, rendering the Body not only healthy and prompt to Motion, but robuſt and vigorous, giving a Perſon a firm Look, and not loading the Head.

The third Exerciſe of this Nature, was with a *Ball* of a larger Size than the two former. In this one Party ſtood while the other moved; the firſt gave the *Ball* a violent Stroke, which ſent it to a great Diſtance, in which Action there accrues ſome Benefit to the Arms and Eyes, while the other Party, who is in Motion, is the better for it, not only in the fore-mentioned Reſpects, but, alſo, in his Legs on account of Running, and in the Spine of the Back, becauſe of the Inflexions he makes while he runs. And theſe are the three Exerciſes with the *little Ball*.

The Exerciſe with the *great Ball* differed from the former, not only with reſpect to the Size of the *Ball*, but the Poſition of the Hands; for all the former were played or performed with the Hands always below the Shoulders, but in this they held their Hands above their Heads, and ſometimes moved on Tiptoe, that they might reach the higher; and ſometimes vaulted, that they might catch the Ball when it flew over their Heads. This Exerciſe procured Firmneſs to the whole Body, and was particularly good for the Body, as it drew the Humours downwards. But if the Ball be of above a moderate Size, as ſome there are which require both Hands to throw them, it ſtrengthens, indeed, the Arms in diſcharging it; but then it gives ſevere Strokes, and is improper for thoſe who are ſick, or upon the Recovery; and not good for Perſons in Health.

This Account of the *Ludus parvæ & magnæ Pilæ*, or the Exerciſes of the *little* and *great Ball* is found in *Oribaſius*, *Med. Col. Lib.* 6. *Cap.* 32. taken from *Antyllus*. In the *Ludus parvæ Pilæ* the Philoſophers *Epigenes* and *Cteſibius* of *Chalcis*, are ſaid to have excelled: And beſides the three Kinds above deſcribed, *Pollux* mentions the *Aporraxis* and *Uranía*, in which they reclined their Bodies, and threw the Ball directly upwards, and intercepted its falling to the Ground.

Among the Kinds of *Parva Pila*, *Mercurialis* reckons, alſo, what, in *Athenæus*, is called ἁρπαστὸν, *Harpaſtum*, and φαινίνδα, *Pheninda*, both becauſe the *Herpaſtum* is deſcribed by *Galen*, in his Book *de Ludâ parvæ Pilæ*, among other Plays of that Kind, and becauſe *Clemens Alexandrinus* makes the *Pheninda*, which *Pollux* makes to be the ſame with the ἁρπαστὸν, a kind of Play with the *parva Pila*. Of the Nature of this Exerciſe, ſee below.

As to the *empty Ball*, we have no clear Notion of it, ſays *Mercurialis*; but if we may be allowed to conjecture from the Words of *Antyllus*, in the Chapter of *Oribaſius* above quoted, we may ſuppoſe it to be like the reſt, ſewed up with Leather, but full of nothing but Air or Wind; whereas the others were ſtuffed with Feathers, or ſome other Matter. Thus *Mercurialis*; to which we may add from *Antyllus*, that *the empty Ball* was, alſo, called a *Follicle*, and gave the Party as much Exerciſe of Motion and Running as the third kind of *Ludus parvæ Pilæ*, to thoſe who played the moving Part, but was unwieldy and clumſy, and difficult to be managed.

The *Corycus*, and the manner of Exerciſe with it, is deſcribed by *Oribaſius* from *Antyllus*, as *Mercurialis* took it from a Copy in the *Vatican* Library, in the following manner:

"The *Corycus* for weak Bodies, who chuſe that Exerciſe, is "ſtuffed with Figs or Floor, but for thoſe of a robuſt Habit "with Sand. The Size of it is accommodated to the Age "and Strength; and it is hung to the Roof of the Gymna-"ſium, with its Bottom as high above the Floor, as is the "Navel of the Perſon who is to exerciſe it. The Party "takes the *Corycus* in both Hands, and heaves and ſhoves it, "firſt gently, afterwards with greater Force, ſo as to follow "it when it recedes, and to give way when it returns, as "being compelled by its Violence, till at length he diſ-"charges it out of his Hands with a Spring, that it may "recur with the more Violence on the oppoſed Body. At "laſt, after many Recourſes, he reſtores it by Degrees to "its firſt Situation and Reſt, obviating its Returns, and "breaking the Shock ſometimes with the Hands protended, "ſometimes with the Hands upon the Breaſt, and ſome-"times with the Breaſt alone, the Hands being caſt behind "the Back." From this Paſſage of *Antillus* we have good Reaſon to conjecture, that the *Corycus* was ſpherical, or at leaſt of a roundiſh Figure; for if it had been angular, it could not have thus ſtruck upon the Breaſt and Hands without hurting thoſe Parts. *What follows is from Mercurialis.*

There were, alſo, four kinds of *Balls* in Uſe among the *Latins*, which they called the *Follis*, the *Trigonalis*, the *Paganica*, and the *Harpaſtus*, which ſome will have to be all comprehended by *Cælius Aurelianus* under the Name of *Italica Sphæra*.

The *Follis* was a great Ball made of Leather, and full of nothing but Wind; if it were of a larger Size, it was impelled with the Arm, and was then ſometimes ſimply called *Pila*; and from the Figures in ſome Coins of the Emperor *Gordian* the third, we may conjecture that every one of the Players had his own *Pila*. If the *Ball*, or *Pila*, were of a leſſer Size, it was thrown out of the Hand, and was called a *Follis pugillaris*, as in that of *Plautus*'s *Rudens*, *Exemplo hercle ego te Follem pugillatorium faciam*. And I believe it was ſometimes called *Folliculus*, as by *Suetonius* in the Life of *Auguſtus*, who, he ſays, took great Delight in playing with it.

The *Pila Trigonalis* was a *little Ball*, and had its Name, as ſome think, from the Place where it was uſed, which they ſuppoſe to be triangular, but more probably from the Number, Figure, and Situation of the Players. This was ſometimes ſimply called *Follis*, as in that of *Martial*.

Non *Pila*, non *Follis*, non te *Paganica Thermis*
Præparat — — — — — — —
— — — — — — — — — —
Non Harpaſta *vagus pulverulenta rapis.*

For if there are only four Kinds of the *Pila*, and the other three are named, the *Pila trigonalis* muſt here come under the ſimple Denomination of *Pila*. And I ſuppoſe *Celſus* to ſpeak in the ſame manner, where he ſays, *Ab alvo citata vexatis Pilam, et reliqua ſuperiores Partes exercentia convenire.* "For thoſe who are moleſted with a Looſeneſs, the *Pila*, "and other Diverſions which exerciſe the upper Parts, are "proper." For in this Play the lower Parts remained at reſt, while the upper Parts were in continual Agitation, the Players, as we gather from *Martial*, being placed in a triangular Situation, in ſuch a manner as to receive the *Ball* ſometimes from the Right, and ſometimes from the Left, and always to preſerve it from falling to the Ground.

The *Pila Paganica* was ſo called becauſe it was very common, and uſed in the Country-Villages called *Pagi*, or in the *Pagi* of the City, which, according to *Dionyſius Halicarnaſſus*, was formerly divided into four Tribes, which were, alſo, called *Pagi*, and the Inhabitants *Pagani*. This *Pila* was made of Leather, ſtuffed with Feathers, broader than the *Trigonalis*, and harder than the *Follis*. That this, among the reſt, was uſed in the *Gymnaſium*, appears from the Verſes of *Martial*, and it was the Cuſtom of the *Romans*, immediately after exerciſing themſelves with the *Pila*, to go into the Bath.

The fourth and laſt *Pila* of the *Latins* was the *Harpaſtum*, which from the Name ſeems to be the ſame as the ἁρπαστὸν of the *Greeks* beforementioned. This was a Ball which they ſnatched or wreſted one from another; but the Size or Materials are unknown; only it appears from *Athenæus* to have been of a round Figure, though it was probably of Leather like the reſt, the Deſcriptions of all which are omitted by Authors becauſe they were known to every Body in their Time. *Galen*, however, who gives the beſt Account of it, in his Book before-mentioned, ſhews it to be a *little Ball*, and not one of a middle Size, as ſome will have it; whence the Play now called *Foot-Ball*, tho' in ſome Particulars it reſembles that with the *Harpaſtum*, yet differs from it in the Size of the Balls, our *Foot-ball* much exceeding the *Harpaſtum*

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Harpaſtum of the Ancients in Bigneſs. The Exerciſe of the *Harpaſtum* appears, from the before-cited Verſe of *Martial*, and other Paſſages, to have been very laborious and quite improper for Women; and therefore I uſed to wonder why *Cælius Aurelianus* adviſes the Nurſes of epileptic Children to exerciſe themſelves at playing with the *Sphæra*, or at ſome kind of Dancing, unleſs we ſuppoſe him to mean by the *Sphæra* the ſame as the *Follis*, which was uſed by Children, as well as infirm and aged Perſons, as appears from the following Verſe of *Martial*.

Folle decet pueros ludere. Folle ſenes.

Beſides what has been ſaid of the good Effects of the Exerciſe of the *Pila*, we may obſerve that *Galen* and *Paulus* reckon the Uſe of the *Parva Pila* among thoſe Kinds of quick Motion, which are not attended with Violence, but have a Virtue of attenuating groſs Particles. And I ſuppoſe, that *Tralian* had the Play with the *Pila Magna* in view, when, in the Cure of the *Priapiſmus*, he recommends the Exerciſe of the *Sphæra*, by which the peccant Matter is diverted to different Parts, and the flatulent Spirit is digeſted. *Aretæus* was of opinion that the Exerciſe both of the *little* and *great Ball* were bad for vertiginous Perſons, becauſe the Circumvolutions and Strainings of the Head and Eyes were ſubject to produce a Vertigo. *Paulus* reckons that of the *Corycus* among quick Exerciſes, which having a Virtue, as we ſaid, of attenuating groſs Particles, *Cælius Aurelianus* had very good reaſon to preſcribe the Exerciſe which the *Greeks*, as he ſays, call *Corycomachia*, in a *Polyſarchia*, or too corpulent a Habit of Body; and *Hippocrates*, *Lib. 2. de Diæt.* that the *Corycomachia*, and the *Chronomia*, will have the ſame Effects as the *Acrocheiria* [a Sort of Wreſtling at Arms-length.] *Antyllus* ſuppoſes the Exerciſe of the *Corycus* to render the Body muſculous and robuſt, and to be adapted to the whole Body, and to all Parts of the Viſcera, on account of the Blows to which it expoſes the Party. *Aretæus*, alſo, recommends the *Corycobolia* in an *Elephantiaſis*. But if we conſider the Blows which are uſually received from the *Corycus* on the Breaſt, we ſhall be convinced that it muſt be dangerous for thoſe who are of an infirm Breaſt to uſe that Exerciſe, and that it may poſſibly produce a Rupture of the Veſſels of the Thorax.

Having thus ſpoken of the good or bad Effects of the Uſe of the ſeveral Kinds of the *Grecian Pila* with reſpect to Health, we proceed to the like Conſideration of the *Latin* or *Roman Pila*, as diſtinguiſhed into its ſeveral Kinds, which, as we have obſerved, were equal in Number to thoſe of the other. And, in the firſt place, the Uſe of the *Follis* exerciſes the whole Body, and in a particular manner, when it is ſtruck, the Arms and the Back; and ſtrengthens thoſe Parts; for which reaſon, I ſuppoſe, *Cælius Aurelianus* intends this Kind of *Pila*, when he adviſes epileptic Perſons to exerciſe their Shoulders in playing with the *Sphæra*. When this Sort of Ball is thrown with the Hand, that Part indeed receives moſt Benefit; but, upon the whole, this kind of Exerciſe is good for the Viſcera, and is of admirable Uſe in the Expulſion of Stones and Gravel from the Bladder and Kidneys. And therefore *Auguſtus*, I ſuppoſe, who was much ſubject to theſe Diſorders, uſed to divert himſelf, as we are told by *Suetonius*, with the Exerciſe of the *Folliculus*; which, as it principally employs the ſuperior Parts, is very judiciouſly adviſed by *Celſus*, to thoſe who labour under a Flux in the Belly, or a Trembling of the Body. I imagine, alſo, this kind of Exerciſe to be meant by *Pliny the Younger*, when, in one of his Epiſtles, giving an Account of the manner of Living, and of the Regimen obſerved by *Spurina*, a very prudent Man, and very ſtudious of his Health, he obſerves, that he exerciſed his Body with the *Pila*, and with that kind of Exerciſe uſed *cum Senectute pugnare*, "to ſtruggle with old "Age." So that there is a great deal of Truth in that Verſe of *Martial* above quoted.

The *Pila trigenalis*, which was ſmall, and anſwered to the third Species of the *Parva Pila* deſcribed by *Antyllus*, as before mentioned, produced the ſame Effects as that did; but in a particular manner, it exagitated and exerciſed the Eyes, which were always neceſſarily upon the Stretch, and turned ſometimes this way, ſometimes that way, now upwards, then downwards, but perpetually in Motion. *Horace*, therefore, had reaſon to ſay that this Kind of Exerciſe was bad for a Lippitude, as in the following Verſe.

Namque Pila *Lippis damnoſum & ludere crudis.*

It is certain that a Lippitude, or a lachrymous Diſpoſition of the Eyes, are exaſperated by the leaſt Motion, but Reſt comforts and refreſhes them; and the ſame may be ſaid with reſpect to thoſe who are moleſted with Crudities; for it is a general Rule, "That no Exerciſe is to be undertaken before "the Food be perfectly digeſted." But as for thoſe who are moleſted with Flatulences in the Belly and Stomach, or Pains proceeding from Cold, the Exerciſe of the *Pila* is ſo far from being prejudicial, that it proves of very great Benefit, by heating them, and powerfully diſcuſſing thoſe Flatulences. *Cælius Aurelianus*, therefore, deſerves Praiſe, for particularly recommending, among other Exerciſes, the Uſe of the *Pila* for the Cholic; and for the ſame Reaſon has *Celſus* commended it as proper for thoſe who are of a weak Stomach.

The *Pila Paganica*, on account of its Breadth and Hardneſs, was difficult to be manag'd, and therefore more proper for Peaſants, and thoſe of hard and robuſt Bodies, than for Citizens, and ſuch as are not inur'd to Labour. And it would be thought utterly unfit in theſe preſent Times, for old Men and Children, and thoſe of a valetudinary Diſpoſition of Body, to exerciſe themſelves with this Kind of *Pila*.

The Uſe of the *Harpaſtum* is to be reckon'd among quick and violent Exerciſes, on which Account it may be ſaid to attenuate, expel Excrements, increaſe Heat, ſtrengthen the Body, and particularly the Arms and Shoulders: "And "while they encounter together as *Galen de Ludo parvæ* "*Pilæ* deſcribes it) and ſtrive to hinder one another, that the "Perſon placed in the Middle might not receive the Ball, "there ariſes a great and mighty Struggle, with much Col- "laring and Wreſtling, by the firſt of which the Head "and Neck, and by the other, the Sides, Thorax, and Bel- "ly, from ſuch a Multitude of Liftings, Depreſſions, "Throwings off, and Puſhes with the Head, and other "Ways of taking hold in uſe among Wreſtlers, are ex- "tremely fatigued: The Loins, alſo, and the Legs, in ſuch "Kinds of Exerciſes are ſtretched in an extraordinary "Manner." We may conclude, therefore, that as the *Harparſtum* confirms more and more thoſe who are ſound and robuſt, ſo it is very prejudicial to thoſe who have a weak Head, or infirm Neck, ſome Defect in the Thorax, or have their Kidneys or Loins overheated. *Mercurialis de Arte Gymnaſtica.*

SPHÆROCEPHALUS. The Name of a Species of *Carduus*, with round Heads, call'd *Carduus Eriocephalus.*

SPHÆROMATA. σφαιρώματα. Carnous, round Protuberances of the Buttocks.

SPHAGE. σφαγή. The anterior Part of the Neck, or Throat. Hence,

SPHAGITIDES, The Jugular Veins.

SPHAGNUM. A Species of Maſs. See the Explication of botanick Terms, under the Article BOTANY.

SPHATULA FŒTIDA. The ſame as SPATULA FOETIDA.

SPHENDAMNOS, according to *Blancard*, is a Name for the Maple.

SPHENDONE. σφένδονη. A Sling, or a Bandage reſembling a Sling; or a Woman's Girdle. *Galen. Exeget.*

SPHINCTER. A Name appropriated to many Muſcles, which cloſe the natural Paſſages. Thus there is the

SPHINCTER ANI. This is a large, thick, fleſhy Muſcle, encompaſſing the Anus; its Figure and Series of Fibres externally, immediately under the Skin, incline to an oblong Oval; it is connected forwards to the *Accelerator Urinæ*, backwards to the *Os Coccygis*: As it is continued farther upon the Body of the *Inteſtinum Rectum*, its Fibres are circular for near two Inches in Breadth. It is much larger in Man than in other Animals, in whom, by Reaſon of the erect Poſition of the Body, there is greater Force required to retain the Fæces, which is the Office of this Muſcle. See *Tab.* 14. *Fig.* 1. *s.* See COELIA.

The SPHINTER GULÆ, is the OESOPHAGÆUS.

The SPHINCTER LABIORUM, is the ſame as the *Conſtrictor Labiorum.* See CAPUT.

SPHINCTER VAGINÆ. This lies immediately under the Clitoris, incompaſſing the Vagina with circular Fibres, three Fingers in Breadth: In ſome Subjects, it ſcarcely appears fleſhy.

This acting not only ſtrengthens the Vagina, but thereby, alſo, it hinders the Blood, in its Return from the Plexus Retiformis of the Pudendum, by compreſſing ſome of its ſubjacent Veins which paſs underneath, by which Means the Labia became diſtended, and the Vagina contracted.

SPINCTER VESICÆ.

Falloppius obſerves, that the Anatomiſts of his Age had not well deſcrib'd this Muſcle in placing it below the Proſtatæ, in which Caſe, as he alledges, the Semen in the venereal Act could not be emitted without the Urine; which Obſervation latter Authors have not taken Notice of, either through Inadvertency in Diſſection, or being impoſed on by Part of the *Levatores Ani*, which remained on the Proſtates, which *Riolanus* calls the *Sphincter Externis*. It is ſeated in the upper Part of the Neck of the Bladder, immediately above the *Glandulæ*

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Glandulæ Proſtatæ, where (as *Fallopius* ſays) you muſt not expect to find an entire Muſcle and Subſtance diſtinct from the Subſtance of the Canal, like that of the Anus, but the more fleſhy Part of the Neck of the Bladder, compoſed of many tranſverſe Fibres, whoſe Contraction hinders the involuntary Egreſs of the Urine.

To diſcover theſe tranſverſe Fibres, our Author adviſes to immerge the Bladder in ſcalding Water after Inflammation, the external right Fibres being removed, theſe will appear underneath.

SPHINGONTA. σφίγγοντα. Aſtringent or obſtruent Medicines.

SPHONDYLIS. The Name of an Inſect about the Size of one's little Finger, with a red Head, white Body, and eight Feet. It is boil'd for medicinal Uſes in Oil or Wine, and is eſteem'd reſolvent, good to fortify the Nerves, to diſſipate rheumatic Humours, and is applied to Fractures. *Lemery des Drogues.*

SPHONDYLIUM.

The Characters are;

It has a long perennial Root; the Leaves are very large, variouſly jagged, and cut into large Labos. The Petals of the Flowers are bifid, horned, and the outer Petal larger than the reſt. The ſeed is large, flat, oval, with an Apex emarginated, or ſloping inwardly; it is, alſo, ſtriated, generally depoſits its Invelucrum, or Husk, and is mark'd with black Streaks on the Superficies.

Boerhaave mentions ſix Sorts of *Sphondylium*, which are;

1. Sphondylium; vulgare; hirſutum. *C. B. P.* 157. *Tourn. Inſt.* 320. *Boerh. Ind. A.* 66. *Sphondylium*, Offic. Ger. *Quæad deſcript.* 856. Emac. 1009. Raii Hiſt. 1. 408. Synop. 3. 205. *Sphondylium vulgare*, Park. Theat. 953. *Sphondylium quibuſdam, ſive Branca Urſina Germanica*, I. B. 3. 160. COW PARSNEP.

It grows on Meadows and the Borders of Fields, and flowers in *July*. The Seed is commended by Dr. *Willis*, *de Morb. Convulſ.* from *Joannes Anglicus*, as of excellent Service in hyſteric Paroxyſms. It is reckon'd by *Buxbaume* and *Schroder* one of the five emollient Herbs. *Dale.*

The Virtues aſcribed by *Dioſcorides* and *Pliny* to the *Sphondylium* ſeem not to belong to this Plant, whence it is juſtly doubted whether it be the true and genuine *Sphondylium* of the Antients, though the Deſcription of the *Sphondylium* in *Dioſcorides* pretty well agrees with it.

The Root, according to *Tragus*, has the Virtue of mollifying and repreſſing Tumors, particularly thoſe of the Matrix, Liver and Spleen. The Surgeons uſe the expreſſed Juice of this Herb in emollient Ointments. *Fuchſius* aſcribes the ſame Virtues to the Root as to that of the *Acanthus Verus*, which is of a drying and ſomewhat inciding Quality: But *Geſner*, with whom agrees *C. Hoffman*, ſays it is very far from having the Virtues of the *Acanthus Verus*. *Schroder* ſays it is of principal Uſe in Clyſters, and other Paregorics, under what Form ſoever, but generally in Cataplaſms. The Inhabitants of *Poland* and *Lithuania*, as *Dodonæus* relates, boil the Leaves and Seeds of *Sphondylium* in Water, and of the ſame, with an Addition of Ferment, make a Drink called *Parſt*, which ſerves the Poor inſtead of Beer. The Leaves of *Sphondylium* are very grateful Food to Rabbets. *Raii Hiſt. Plant.*

The *Sphondylium* has Leaves reſembling, in ſome Meaſure, thoſe of the Plane-Tree, and ſhaped much like thoſe of the *Panax*. The Stalks riſe to the Height of a Cubit, or more, and are like thoſe of Fennel. The Seed on the Top is like that of *Seſeli*, double, but broader, whiter, and more chaffy, and of a ſtrong Smell. The Flowers are white, and ſo is the Root, and like a Radiſh. It grows in marſhy and watry Places.

The Seed purges pituitous Humours by Stool, and cures thoſe who labour under Diſorders of the Liver, the Jaundice, Orthopnæa, Epilepſy and Hyſterics. Uſed in a Suffumigation, it rouſes thoſe who are ſeiz'd with a Cataphora. The Oil is proper in an Embrocation for the Head under a Phrenſy, Lethargy, or Head ach. Applied with Rue, it ſtops the ſpreading of a Herpes. The Root is exhibited in the Jaundice, and Diſorders of the Liver; ſcraped and thruſt into Fiſtula's, it conſumes Calloſities therein. The Juice of the recent Flowers is good for ulcerated and purulent Ears. It is prepared by Inſolation, like other Juice, and then repoſited. *Dioſcorides*, *Lib.* 3. *Cap.* 90.

Pliny gives the ſame Deſcription and Virtues of the *Sphondylium*, or, as he has it, *Sphondylien*, with *Dioſcorides*, whom he ſeems, in this and other Particulars of the *Materia Medica*, to agree.

2. Sphondylium; maximum; Tranſilvanicum; Ricini folio. *Panaces Heracleum.* Matth. 544.

3. Sphondylium; hirſutum; folio anguſtiore, minutius laciniato, caule atropurpureo; flore rubello.

4. Sphondylium; majus; ſive Panax Heracleum quibuſdam. *J. B.* 3. 2. 161. *Panax, Sphondylii folio, ſive Heracleum, C. B. P.* 157.

5. Sphondylium; hirſutum; foliis anguſtioribus. *C. B. P.* 157. *Prodr.* 83.

6. Sphondylium; Alpinum; glabrum. *C. B. P.* 157. *Prodr.* 83. *J. B.* 3. 163. *Boerh. Ind. Alt. Plant.*

It is called *Sphondylium*, becauſe it has an unpleaſant Smell, like the Animalcule, or Inſect called *Sphondylis*.

It is of an acrimonious Quality, like the Ferula and Thapſia, and not receiv'd in Medicine, though it be look'd upon in the Country as an Emollient. The Plant, however, is ſaid to be very good in Clyſters and Cataplaſms, and to be of ſervice in the Epilepſy. A Decoction of the Leaves or Roots is good for the Hyſterics. *Hiſt. Plant. aſcript. Boerhaave.*

SPHONDYLUS. The Name of a Stone, found in the Head of the MUGIL.

SPHYGMICA. That Part of Medicine which treats of Pulſes, from σφύγμος, a Pulſe.

SPHYRA. σφυρὰ. The Ankle.

SPHYRÆNA. σφυραίνα. The Name of a long, thin Fiſh, with a pointed Noſe like a Beak.

SPICA. A Spike. See the Explication of botanic Terms under BOTANY.

SPICA NARDI. See NARDUS INDICA.

SPICA TRIFOLIA. A Name for the *Melilotus*; *Cretica humillima*; *humifuſa*; *flore albo, magno.*

SPICA VULGARIS. A Name for the *Lavandula*; *anguſtifolia*, and, alſo, for the *Lavandula*; *anguſtifolia*; *flore albo.*

SPICA, in Surgery, is a Species of Bandage. See FASCIA.

SPICATUM. An Epithet for a precious Ointment mention'd frequently by *Galen*, and much us'd by the Rich and Luxurious.

SPINA. The *Spine* is that long Pile of Bones reaching from the *Condyloide* Proceſſes of the *Occiput*, to the Extremity of the Rump. It ſomewhat reſembles two unequal Pyramids, whoſe Baſes are common, or joined together. The Spine is not however ſtrait, but has four or five remarkable crooked Turns; for in deſcending from its ſuperior Part, it is made to advance forwards by the Force of the Muſcles, which pull the Head and ſuperior *Vertebræ* back, being greater than the contracting Power of the Flexors, and thereby it ſupports the *Oeſophagus*, and Veſſels of the Head. Its Middle gives Way backwards to the Heart and Lungs, then it is again bended forwards, to ſupport the *Viſcera* of the *Abdomen*; afterwards a ſecond Time turns back for the Enlargement of the *Pelvis*; and, laſtly, is reflected forwards for ſuſtaining the laſt great Gut. We ſhould however obſerve, that notwithſtanding this crooked Figure of the Spine, it is ſo contrived, that the Centre of Gravity of all that Part of it which ſuſtains any conſiderable Weight, falls on the Middle of the common Baſe.

The *Spine* is commonly divided into *true* and *falſe Vertebræ*, the former conſtituting the ſuperior long Pyramid with its Baſe inferior, while the *falſe Vertebræ* make the inferior ſhorter Pyramid, whoſe Baſe is ſuperior.

True Vertebræ are the twenty-four ſuperior Bones of the *Spine*, on which the ſeveral Motions of the Trunk of our Bodies are performed, from which Uſe they have juſtly got their Name.

Each of theſe *Vertebræ* is compoſed of its Body and Proceſſes.

The Body is the thick, ſpungy, anterior Part, which is convex before, concave backwards, horizontal and plain in moſt of them above and below; their anterior and poſterior Surfaces having ſeveral remarkable Holes made in their thin external Plate, both for the firmer Connexion of the Ligaments, and for the Paſſage of Veſſels into their cellular Subſtance.

Between theſe Bodies of each two adjoining *Vertebræ*, a Subſtance between the Nature of Ligament and Cartilage is interpoſed; which is compoſed of concentrical curve Fibres, the exterior of which are the moſt ſolid and hardeſt, while thoſe in the Centre are very ſoft and full of a glairy Liquor, and therefore this Subſtance was not improperly called by the Ancients *Ligamentum mucoſum*: This is firmly fixed to the horizontal Surfaces of the Bodies of the *Vertebræ*, and therefore not only allows theſe Bones to recede from each other, and to be preſt cloſer together without breaking, but ſerves to connect them, in which it is aſſiſted by a ſtrong membranous Ligament, which lines all their concave Surface, and by ſtill a ſtronger Ligament that covers all their anterior convex Surface. This laſt it is, that *Blancard* aſſures us he diſcovered to conſiſt of two Rows of tendinous *Fibres*,

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Fibres, decuſſating each other in Form of X, ſo as to be alternately diſpoſed through all the *Vertebræ*, that is, the firſt, third, fifth, and ſeventh, ſhould be ſimilar, and the ſecond, fourth, ſixth, and eighth, diſtinct from the firſt Claſs, but alike among themſelves.

We may lay down as a general Rule, notwithſtanding ſome Exceptions, that the *Bodies* of the *Vertebræ* are ſmaller and more ſolid above, but as we reckon downwards, appear larger and more ſpungy, and that the Cartilages between them are thick, and the ſurrounding Ligaments ſtrong in Proportion to the Largeneſs of the *Vertebræ*, and to the Quantity of Motion they are to perform: By which Diſpoſition the greater Weight is ſupported on the broadeſt beſt ſecured Baſe, and the Middle of our Body is allowed a large and ſecure Motion, which is of conſiderable Benefit to us.

From each Side of the Body of each *Vertebra*, a bony Bridge is produced backwards and to a Side; from the poſterior Extremity of which, one ſlanting Proceſs riſes, and another deſcends; the ſmooth, and what is generally the flatteſt Side of each of theſe four Proceſſes, which are called the *oblique*, is covered with a ſmooth Cartilage, and the two inferior oblique Proceſſes of each *Vertebra* are fitted to, and articulated with the two ſuperior or aſcending oblique Proceſſes of the *Vertebra* below.

From between the ſuperior and inferior oblique Proceſs of each Side, the *Vertebra* is ſtretched out laterally in Form of a Proceſs, that is univerſally named *Tranſverſe*.

From the poſterior Roots of the two oblique and of the tranſverſe Proceſs of each Side, a broad oblique bony Plate is extended backwards, where theſe meet the ſeventh and laſt Proceſs of the *Vertebræ* takes its Riſe and ſtands out backwards; this being generally ſharp-pointed and narrow-edged, has therefore been called *Spinal* Proceſs, from which this whole Chain of Bones has got its Name.

Beſides the common Ligament which lines all the interior Surface of theſe Proceſſes, as well as of the Bodies, there are particular Ligaments that connect the Proceſſes of each two contiguous *Vertebræ*.

The Subſtance of the Proceſſes is conſiderably ſtronger and firmer than that of the Bodies of the *Vertebræ*, having a thicker external Plate, and without ſo many large Holes made in it.

The ſeven Proceſſes conſidered conjunctly, as forming the poſterior Shares of the *Vertebræ*, are hollow at their anterior middle Part; which Concavity, joined with that at the poſterior Part of the Bodies, makes one great *Foramen*, which anſwers to ſuch another in the *Vertebra* above and below: Therefore the *Foramina* of all the *Vertebræ* taken together, form a long great Conduit, which is widened or ſtraitened in Proportion to the Size of the *Medulla ſpinalis* which it contains.

In the lateral Bridges, which join the Bodies to the Proceſſes of each *Vertebra*, a ſemicircular Notch is obſervable both above and below; which, exactly correſponding with others in the contiguous Bones, when the *Vertebræ* are joined, form a round Hole in each Side, between each two *Vertebræ*, through which the Nerves that proceed from the *Medulla ſpinalis* and the Blood-veſſels paſs.

The Articulations then of theſe true *Vertebræ* are plainly double; for their Bodies are joined by *Synchondroſis*, and their oblique Proceſſes are articulated by the third Sort of *Ginglymus*. Hence it is evident that their Centre of Motion is altered in different Poſitions of the Trunk: For when we bow forwards, the ſuperior moved Part bears entirely on the Bodies of the *Vertebræ*; if we bend back, the oblique Proceſſes ſupport the Weight; if we recline to one Side, we reſt upon the oblique Proceſſes of that Side and Part of the Bodies; if we ſtand erect, all the Bodies and oblique Proceſſes have their Share in our Support.

Hence it follows: 1. That becauſe the Joints, of which the Spine is compoſed, are ſo numerous, the *Medulla ſpinalis*, Nerves, and Blood-veſſels, are not ſubject to ſuch Compreſſion and Overſtretching in the Motion of the Trunk of the Body, as they would be otherwiſe; ſince ſeveral *Vertebræ* muſt be concerned in every Motion of the Spine, and therefore a very ſmall Curvature is made at the Conjunction of any two *Vertebræ*. 2. That an erect Poſture is the ſureſt and firmeſt, becauſe the Surface of Contact of the *Fulcra* is largeſt, and the Weight is moſt perpendicular to them. 3. That the Muſcles which move the Spine act with greater Force in bringing the Trunk to an erect Poſture than in drawing it to any other: For in bending forwards, back, or to a Side, the Muſcles which perform any of theſe Actions are nearer the Centres of Motion; conſequently the Lever, with which they act, is ſhorter than when the Centre of Motion is on the Part of the *Vertebræ* oppoſite to that where theſe Muſcles are inſerted, which is the Caſe in raiſing the Trunk. This is extremely neceſſary, ſince in the Deflexions of the Spine from a perpendicular Bearing, the Weight of the Body ſoon inclines it which Way we deſign; whereas in raiſing us erect, this great Weight muſt be more than counteracted. 4. In calculating the Force exerted by the Muſcles which move the Spine, we ſhould, with *Borelli* and *Parent*, always make Allowance for the Action of the Cartilages between the *Vertebræ*, which muſt, in every Motion from an erect Poſture, be ſtretched in one Side, and compreſſed on the other, to both which they will reſiſt; whereas, in raiſing the Trunk, theſe Cartilages will aſſiſt by their ſpringy Force. 5. We are hence naturally led into the Reaſon of the *Phænomenon* obſerved by Mr. *Waſſe*, that our Height of Stature is increaſed in the Morning, and diminiſhed at Night: For the intermediate Cartilages of the *Vertebræ* preſſed all Day long by the Weight of our Body, in the Evening become more compact and thin; but when in the Night they are relieved from this Preſſure, they again expand themſelves to their former Thickneſs; and ſeeing the Bulk of any Part muſt vary according to the different Diſtenſion or Repletion of the Veſſels compoſing it, we may underſtand how we become taller after a plentiful Meal, and decreaſe after Faſting or Evacuations, which Difference the *Abbé Fontenu* has proved to depend moſtly, if not ſolely, on the different Thickneſs of theſe Cartilages. 6. From the different Articulations of the Bodies and oblique Proceſſes of the *Vertebræ*, and the different Strength of the Ligaments, it is plain that they are formed ſo as to allow a much larger Motion forwards than backwards; this laſt being of much leſs Uſe, and might be dangerous by overſtretching the large Blood-veſſels that are contiguous to the Bodies of the *Vertebræ*.

The *Vertebræ* at the ordinary Time of Birth conſiſt of three bony Pieces, connected by Cartilages; that is, the Body, which is not fully oſſified; and a long curved Bone of each Side, on which we ſee a little Share of the bony Bridge, the oblique Proceſſes complete, the beginning tranſverſe Proceſſes, and the oblique Plate, but no ſpinal Proceſs; ſo that the Teguments might be in no Danger of being hurt by the ſharp Extremities of theſe ſpinal Proceſſes, as they would be, if there were any ſuch ſharp bony Proceſſes, while a Child is in the bended Poſture it remains in in the Womb, nor by the Preſſure which it undergoes in the Birth.

From this general Mechaniſm of the Spine, an Account is eaſily deduced of all the different preternatural Curvatures the Spine is capable of: For if one or more *Vertebræ* are of unequal Thickneſs in oppoſite Sides, the Spine muſt be reclined over to the thinner Side; which now ſuſtaining the greateſt Share of the Weight, muſt ſtill be more compreſſed, conſequently hindered from extending itſelf in Proportion to the other Side, which, being too much freed of its Burden, has Liberty to enjoy a luxuriant Growth. The Cauſes, on which ſuch an Inequality of Thickneſs in different Sides of the *Vertebræ* depend, may vary: For either it may be owing to an Overdiſtenſion of the Veſſels of one Side, and from thence a preternatural Increaſe of the Thickneſs of that Part; or, which more commonly is the Caſe, it may proceed from an Obſtruction of the Veſſels, by which the Application of proper Nouriſhment to the bony Subſtance is hindered, whether that Obſtruction depends on the faulty Diſpoſition of the Veſſels or Fluids, or if it is produced by an unequal mechanical Preſſure, occaſioned by a paralytic Weakneſs of the Muſcles and Ligaments, or by a ſpaſmodic Overaction of the Muſcles on any Side of the Spine, or by a Perſon's continuing long, or putting themſelves frequently into any particular Poſture, declining from the erect Poſture: In all theſe Caſes, one common Effect will follow, that is, the *Vertebræ* return thick on the Side where the Veſſels are free, and remain thin on the other Side where the Veſſels are ſtraitned or obſtructed. Whenever any morbid Curvature is thus made, almoſt neceſſarily a ſecond Turn, but in an oppoſite Direction to the former, muſt be formed. Both becauſe the Muſcles on the convex Side of the Spine being ſtretched, muſt have a ſtronger natural Contraction to draw the Parts to which their Extremities are fixed, and that the Patient will make Efforts to keep the Center of Gravity of his Body perpendicular to its Baſe, that the Muſcles may be relieved from a conſtant violent contractile State, which always creates Uneaſineſs and Pain.

When once we underſtand how theſe crooked Spines are produced, there will be little Difficulty in forming a juſt Prognoſis of our Patient's Diſeaſe, and a proper Method of Cure may be contrived, which muſt vary as to the internal Medicines, according to the different Cauſes on which the Diſeaſe depends; but one general Indication muſt be purſued by Surgeons, which is to counteract the bending Force, by increaſing the Compreſſion on the convex Part of the Curvature, and diminiſhing it on the concave Side. The Manner of executing which in particular Caſes muſt be very different, and requires a very particular Examination of the Circumſtances both of the Diſeaſe and Patient. In many ſuch Caſes I have

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I have found ſome ſimple Directions as to Poſtures in which the Patients Body ſhould be kept, of very great Advantage.

Hence alſo it is eaſy to deduce the Reaſon of old People generally bowing forwards, and at laſt being incapable to raiſe their Spine erect; ſince the Cartilages ſhrivel in becoming more ſolid: And as this muſt happen moſt and ſooneſt where theſe Griſtles are leaſt ſtretched and extended, therefore this Curvature is generally firſt moſt remarkable in the *Vertebræ* of their Back, or they become round-ſhoulder'd.

Tho' the *true Vertebræ* agree in the general Structure which I have hitherto deſcribed, yet becauſe of ſeveral Specialities proper to a particular Number, they are commonly divided into three Claſſes, that is, *Cervical*, *Dorſal* and *Lumbar*.

The *Cervical* are the ſeven ſuperior *Vertebræ*; which are eaſily diſtinguiſhed from the reſt by theſe Marks. They are all, except the firſt, of near an equal Breadth. Their Bodies are ſmaller and more ſolid than any others, and flattened on the Fore-part, to make Place to the *Oeſophagus*; or rather this flat Figure is owing to the Preſſure of that Pipe, and to the Action of the *longi Colli* and anterior *recti* Muſcles. The poſterior Surface, which is alſo flat, is generally rough, or has ſmall Proceſſes riſing from it, where the Ligaments are fixed. The ſuperior Surface of the Bodies of each *Vertebra* is made hollow, by a ſlanting thin Proceſs being raiſed on each Side; and the inferior Surface is alſo excavated, but in a different Manner from the former; for the poſterior Edge is raiſed a little, and the anterior is produced a conſiderable Way. Whence we ſee how the Cartilages between thoſe Bones will be more firmly connected, and the Articulation of any two *Vertebræ* will be more ſecure.

The Cartilages between theſe Vertebræ are thicker, eſpecially in reſpect of their Bulk, than thoſe belonging to the Vertebræ of the Thorax, becauſe of the larger Motion that is allowed here; and they are thickeſt at their Fore-part, which is one Reaſon of the Vertebræ advancing forward as they deſcend.

The oblique Proceſſes of theſe Bones of the Neck more juſtly deſerve that Name than thoſe of any other Vertebræ. They are ſituated ſlanting, the ſuperior Proceſſes having their ſmooth, and almoſt flat Surfaces, facing obliquely backwards and upwards, and the inferior oblique Proceſſes, with theſe Surfaces, facing obliquely forwards and downwards.

The tranſverſe Proceſſes of theſe Vertebræ are framed in a different Way from thoſe of any other Bones of the Spine: For beſides the common Proceſs riſing from between the oblique Proceſſes of each Side, there is a ſecond that comes out from the Side of the Body of the Vertebræ; and the two, after leaving a circular Hole for the Paſſage of the cervical Artery and Vein, being united, are conſiderably hollowed at their upper Part, with riſing Sides to protect the Nerves that paſs in the Hollow; and at laſt each Side terminates in a tuberculous Point, for the Inſertion of Muſcles.

The ſpinal Proceſſes of theſe cervical Bones ſtand pretty ſtrait backwards, are ſhorter than thoſe of any other Vertebræ, and are forked or double at their Extremity; and hence allow a more convenient Inſertion to the Muſcles, and a larger Motion backwards.

The Holes between the bony croſs Bridges, for the Paſſage of the Nerves from the *Medulla ſpinalis*, have their largeſt Share formed in the loweſt of the two Vertebræ, to which they are common.

The Subſtance of the cervical Vertebræ, eſpecially of their Bodies, is not ſo porous or tender as of the other two Claſſes.

So far the cervical Vertebræ agree in their general Characteriſtics, but ſtill have ſome particular Differences, which oblige us to conſider them ſeparately.

The firſt, from its Uſe of ſupporting the globular Head, has got the Name of *Atlas*; and by ſeveral Authors is called *Epiſtrophea*, from the Motion it performs on the ſecond.

The *Atlas*, contrary to all the other Vertebræ of the Spine, has no Body; but inſtead of it there is a bony Arch; in the anterior convex Part of which, a ſmall Riſing appears, where the *Muſculi longi colli* are inſerted; and on each Side of this Protuberance a ſmall Cavity may be obſerved, where the *Recti interni minores*, commonly (tho' wrongly) aſcribed to *Cowper*, take their Riſe. The ſuperior and inferior Parts of the Arch are rough and unequal, where the Ligaments that connect this Vertebra to the *Os occipitis* and ſecond Vertebra are fixed. The poſterior Part of the Arch is concave, ſmooth, and covered with a Cartilage in a recent Subject, to receive the Tooth-like Proceſs of the ſecond Vertebra. This Hollow makes the Paſſage for the *Medulla ſpinalis* ſeem much larger in this Vertebra than in any other. On each Side of this Concavity a ſmall rough Sinuoſity may be remarked, where the Ligaments going to the Sides of the Tooth-like Proceſs of the following Vertebra are faſtened; and on each Side a ſmall rough Protuberance and Depreſſion is obſervable, where the tranſverſe Ligament, which ſecures the Tooth-like Proceſs in the Sinuoſity, is fixed, and hinders that Proceſs to injure the *Medulla ſpinalis* in the Flexions of the Head.

The *Atlas* has no more ſpinal Proceſs than Body; but inſtead of it there is a large bony Arch, that the Muſcles which paſs over this *Vertebra* at that Place, might not be hurt in extending the Head back. On the poſterior and ſuperior Part of this Arch there are two Depreſſions, where the *Recti poſtici minores* take their Riſe; and at the inferior Part are two other Sinuoſities, into which the Ligaments which connect this Bone to the following are fixed.

The ſuperior oblique Proceſſes of this *Atlas* are large and hollow, riſing more in their external than internal Brim; by which their Articulations with the *Condyloide* Proceſſes of the *Os occipitis* are firmer; for, as I remarked from *Galen*, in the Deſcription of theſe *Condyles*, they cannot ſlip to either Side; and then this Protuberance ſerves to defend the *Foſſa* or Channel formed behind the external and poſterior Part of each of them, in which the vertebral Arteries make the circular Turn, as they are about to enter the great *Foramen* of the occipital Bone, and where the tenth Pair of Nerves go out. The inferior oblique Proceſſes are large, extended from within outwards and downwards, and are ſlightly hollowed: So that this firſt Vertebra, contrary to the other ſix, receives the Bones with which it is articulated both above and below.

The tranſverſe Proceſſes are not much hollowed or forked, but are longer and larger than of any other Vertebra of the Neck, to ſerve for the Origin and Inſertion of ſeveral Muſcles. Thoſe of the Muſcles fixed to the tranſverſe Proceſſes that ſerve to move this Vertebra on the ſecond, gain a conſiderable Lever to act with, by the Diſtance which each of theſe long Proceſſes make from the Axis of Revolution.

The *Condyles* of the *Os occipitis* move forwards and backwards in the ſuperior oblique Proceſſes of this Vertebra, by means of their double *Arthrodia*, which makes the third Species of *Ginglymus*; but very little Motion can here be allowed to either Side, and there muſt be ſtill leſs circular Motion, which the Head obtains principally by the Circumvolution of the *Atlas* on the ſecond Vertebra.

In new born Children this Vertebra has only the two lateral Pieces oſſified, the anterior Arch, which it has inſtead of a Body, being cartilaginous.

The ſecond *Vertebra* of the Neck is called *Dentata*, from the Tooth-like Proceſs on the ſuperior Part of its Body. Some Authors call it *Epiſtrophea*; but improperly, ſince this Deſignation is only applicable to the firſt, which moves on this as on an Axis.

The Body of this Vertebra is ſomewhat of a pyramidal Figure, the inferior Part being large, and produced, eſpecially at its Foreſide, to enter into a Hollow of the Vertebra below; while the ſuperior Part has a ſquare Proceſs, with a ſmall Point ſtanding out from it. This it is that is imagined to reſemble a Tooth, and has given Name to the Vertebra. The anterior Surface of this Proceſs is cylindrical, ſmooth, and covered with a Cartilage, where it plays in the Hollow of the anterior Arch of the firſt Vertebra. The poſterior Surface is much the ſame Way diſpoſed, for moving on the croſs Ligament, which is cartilaginous in the Middle. From the Sides of the *Proceſſus dentatus*, the Ligaments go off to fix it to the firſt Vertebra; and from its Point a ſtrong one is ſent out to the *Os occipitis*. Immediately below the two lateral Ligaments, a Sinuoſity may be obſerved on each Side, where the firſt vertebral Nerves eſcape.

The ſuperior oblique Proceſſes of this *Vertebra dentata* are large, very near in a horizontal Poſition, and ſlightly convex, to be adapted to the inferior Proceſſes of the firſt Vertebra. A moveable Cartilage is ſaid by ſome Authors to be interpoſed between theſe oblique Proceſſes of the firſt and ſecond Vertebra; but I could never find it. The inferior oblique Proceſſes of this *Vertebra dentata* anſwer exactly to the Deſcription given of thoſe common to all the cervical Vertebræ.

The tranſverſe Proceſſes differ from thoſe of the other cervical Vertebræ in this, that they are ſhorter, very little hollowed at their ſuperior Part, and not forked at their Extremities; and that the Canals through which the cervical Arteries paſs, are about the middle Subſtance of the Proceſs reflected outwards, ſo as the Courſe of theſe Veſſels may be directed towards the tranſverſe Proceſſes of the firſt Vertebra; which are further produced, and therefore make a Turn of the Arteries neceſſary: But if this had been any where in ſuch a moveable Part as the Neck is, and the Artery not defended by a Bone, and fixed to that Bone, ſcarce a Motion could be performed without the utmoſt Hazard of Compreſſion, and a Stop put to the Courſe of the Liquids, with all the Train of its ill Conſequences. Hence we obſerve this ſame Mechaniſm ſeveral Times made Uſe of, when there is any Occaſion for a ſudden Curvature of a large Artery. This is the third remarkable Inſtance of it we have ſeen: The firſt was the Paſſage of the *Carotides* through the *Oſſa tempo-*

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ram; and the second was that lately described in the vertebral Arteries, turning round the oblique Processes of the first Vertebra, to come at the great *Foramen ossis occipitis*.

The spinal Process of this *Vertebra dentata* is thick, strong and short, to give sufficient Origin to the *Musculi recti majores*, and *obliqui inferiores* and to prevent the Contusion of these Muscles in pulling the Head back.

This second *Vertebra* consists at the Birth of four bony Processes; for besides the three which I already mentioned as common to all the Vertebræ, the Tooth-like Process of this Bone is begun to be ossified in its Middle, and is joined as an Appendix to the Body of the Bone. Whence we may deduce one good Reason, why Midwives ought to apply Staybands to keep the Heads of new-born Children from falling too far backwards, till the Muscles attain Strength enough to be able to prevent that dangerous Motion.

When we are acquainted with the Structure and Articulation of the first and second Vertebræ, and know exactly the Strength and Connexion of their Ligaments, there is no Difficulty in understanding the Motions that are performed upon or by the first, tho' this Subject was formerly Matter of hot Dispute among some of the greatest Masters of Anatomy. 'Tis none of my Purpose at present to enter upon a Detail of the Reasons advanced by either Party, but to explain the Fact as any one may see it who will remove the Muscles, which in a recent Subject hinder the View of these two Joints, and then will turn the Head into all the different Positions it is capable of. This done, he will observe the Head to move forwards and back on the first *Vertebra*, as was already said; while this *Atlas* performs the *Circumgyration* upon the second *Vertebra*, the inferior oblique Processes of the first *Vertebra* shuffling easily in a circular way on the superior oblique Processes of the second, and its Body or anterior Arch having a Rotation on the Tooth-like Process, by which the perpendicular Ligament that is sent from the Point of the Tooth-like Process to the occipital Bone is twisted, while the lateral Ligaments that fix the *Processus dentatus* to the Sides of the first *Vertebra* are very differently affected, for the one upon the Side towards which the Face is turned by the *Circumgyration* is much shortned and lax, while the opposite one is stretched and made tense, and yielding at last no more, prevents the Head from turning any further round on this *Axis*, so that these lateral Ligaments are the proper *Moderators* of the *Circumgyration* of the Head here, which must be larger or smaller as these Ligaments are stronger or longer, and more or less capable of being stretched. Besides this Revolution on this *Axis*, the first *Vertebra* can move a small Way to either Side, but is prevented from moving backwards and forwards, by the anterior Arch of the first *Vertebra*, and by the cross Ligament which is closely applied to the Tooth-like Process. The Motion forwards here would have been of very bad Consequence, as it would have brought the Beginning of the *Medulla spinalis* upon the Point of the Tooth-like Process.

The rotatory Motion of the Head is of great Use to us on many Accounts, by allowing us so quickly to apply our Organs of Sense to Objects, and the *Axis* of Rotation was altogether proper to be here; for if it had been at a greater Distance from the Head, the Weight of the Head, if it had at any time been removed from a perpendicular Bearing to the small very moveable Joint, and thereby had acquired a long Lever, would, at every Turn inconsiderately performed, have broke the Ligaments to Pieces; or these Ligaments must have been formed much stronger than could well have been connected to such small Bones: Neither could this circular Motion be performed without Danger on the first *Vertebra*, because the immoveable Part of the *Medulla oblongata* is so near, as at each large Turn the Beginning of the *Medulla spinalis* would have been in Danger of twisting, and suffering by the Compression this would make on its tender Fibrils. On the whole, we may be convinced, that the quick circular Motion of our Head is of good Use to us; and that this second *Vertebra* of the Neck is altogether proper, both by its Structure and Situation, for being the Axis on which that Motion is to be performed.

But then I must take notice that the lateral, or the *Moderator* Ligaments, confine the Motion of this Joint so much, that tho' it may serve us in several Occasions, yet we often require to turn our Faces so far round as this Joint could never allow, without the greatest Danger of immediately twisting the spinal Marrow too much, and also of the oblique Processes of the *Vertebra* being luxated; therefore, in the large Turns of our Face backwards, we increase the Rotation by a little Assistance from each of the Vertebræ of the Neck, from the Vertebræ of the Loins, and from most of the Joints of the lower Extremities. This Combination of a great many Joints towards the Performance of one Motion, is also to be observed in several other Parts of the Body; notwithstanding such Motions being generally said to be performed by some one Joint only.

The third Vertebra of the Neck is by some called *Axis*; but this Name is given without any Reason to this third Vertebra, while it might be applied very properly to the second. This third and the three below have nothing particular in their Structure, but all their Parts come under the general Descriptions formerly given, each of them being larger as they descend.

The seventh Vertebra of the Neck comes near to the Form of those of the Back, having the upper and lower Surfaces of its Body less hollow than the others, the oblique Processes are more perpendicular, neither spinal nor transverse Processes are forked. This seventh and the sixth Vertebræ of the Neck have the Hole in each of their transverse Processes more frequently divided by a small cross Bridge, that goes between the cervical Vein and Artery, than any other Vertebræ.

The twelve *Dorsal* may be distinguished from the other Vertebræ of the Spine, by these proper Characteristics. Their Bodies are of a middle Size, betwixt those of the Neck and Loins; are more convex before than either of the other two Sorts, and flatned laterally by the Pressure of the Ribs, which are inserted into small Cavities formed in their Sides. This Flatning on their Sides, which makes the Figure of these Vertebræ near an half Oval, is of good Use, as it affords a firmer Articulation to the Ribs, allows the *Trachea arteria* to divide at a smaller Angle, and the other large Vessels to run secure from the Action of the vital Organs. The posterior Part of these Bodies is more concave than in any of the other two Classes. Their superior Surfaces are all horizontal, with their Edges tipped with *Epiphyses*, which *Fallopius* alledges are only some Parts of the intervening Ligaments become bony. The Cartilages interposed between the Bodies of these Vertebræ are thinner than in any other of the true Vertebræ, and contribute to the Concavity of the Spine here at its Fore-part, by their being thinnest near the anterior Edge of the Vertebræ.

The *oblique* Processes are placed almost perpendicular, the superior slanting very little forwards, and the inferior as much back. Neither they, nor the oblique Processes of the Bones of the Neck, have as much Convexity or Concavity as is worth remarking. At their Roots a small Roughness is observable, where the Ligaments that surround their Articulations are inserted; and on the posterior Surface of the Bone, between the Processes of opposite Sides, several sharp little Processes stand out, where strong Ligaments are fix'd.

The *transverse* Processes of the *dorsal Vertebræ* are long, thicker at their Extremity than in the Middle, and turned obliquely backwards, which may be owing to the Pressure of the Ribs, the Tubercles of which are inserted into a Depression near the Extremity of these Processes.

The spinal Processes are long, small-pointed, and run sloping down; and at the superior Part of their posterior Surface, a small Ridge rises, which is received by a small Channel in the anterior Surface of the spinal Process immediately above, which is connected to it by a Ligament. Hence little Motion can be allowed of here, lest the Heart and Lungs should be disturbed in their Actions.

The Conduit of the *Medulla spinalis* is more circular, but corresponding to the Figure of that Cord, smaller here than in any other *Vertebræ*; and a larger Share of the Holes in the bony Bridges, for the Transmission of the Nerves, is formed in the superior than in the inferior *Vertebra*.

The Bodies of the four superior *dorsal Vertebræ* deviate from the Rule of the Vertebræ becoming still larger as they descend, for the first of these four is the largest, and the other three inferior gradually become smaller, to allow the *Trachea* and large Vessels to divide at smaller Angles.

The two uppermost Vertebræ of the Back, instead of being very prominent forwards, are flatned by the Action of the *Musculi longi colli* and *recti majores*.

The proportional Magnitude of the two little Depressions in the Body of each *Vertebra* for receiving the Heads of the Ribs, seems to vary in respect to each other, in this manner; the Depression on the superior Edge of each *Vertebra*, decreases as far down as the fourth, and always after that increases.

The transverse Processes are longer in each lower *Vertebra* to the seventh or eighth, with their smooth Surfaces, for the Tubercles of the Ribs, facing gradually more downwards; but afterwards as they descend become shorter, and the smooth Surfaces are directed more upwards.

The spinal Processes of the *Vertebræ* of the Back become gradually longer and more slanting from the first, as far down as the eighth or ninth Vertebra, from which they manifestly turn shorter and more erect.

The

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The first *Vertebra*, besides an oblong Hollow in its inferior Edge, that assists in forming the Cavity wherein the second Rib is received, has the whole Cavity for the Head of the first Rib formed in it.

The second has the Name of *Axillary*, without any Thing particular in the Structure of it.

The eleventh often has the whole Cavity for the eleventh Rib in its Body, and wants the smooth Surfaces on each transverse Process.

The twelfth always receives the whole Head of the last Rib, and has no smooth Surface on its transverse Processes, which are very short. The smooth Surfaces of its inferior oblique Processes face outwards as the *Lumbar* do. And indeed we may say in general, that the superior Vertebræ of the Back come nearer the Resemblance of those of the Neck, while the inferior are liker the *Lumbar*.

The inferior and last Class of the true Vertebræ is the *Lumbar*, which five Bones may be distinguished from any others by these Marks; 1. Their Bodies, though of a circular Form at their anterior Part, are somewhat oblong from one Side to the other, which may be occasioned by the Pressure of the large Vessels, and of the *Viscera* contiguous to that Fore-part The *Epiphyses* on their Edges are larger, and therefore the superior and inferior Surfaces of their Bodies are more concave than in the Vertebræ of the Back. 2. The Cartilages between these Vertebræ are much the thickest of any, and render the Spine convex within the *Abdomen*, by their greatest Thickness being anterior. 3. The oblique Processes are strong and deep, those in opposite Sides being almost placed in parallel Planes, the superior, which are concave, facing inwards; and the convex inferior ones outwards, and therefore these Vertebræ do plainly receive each other above, and are received below, which is not so evident in the other two Classes already described. 4. Their transverse Processes are small, long, and near erect, for allowing a large Motion to each Bone, and sufficient Insertion to Muscles, and for supporting and defending the internal Parts. 5. Betwixt the Roots of the superior oblique and transverse Processes, a small Protuberance may be observed, where some of the Muscles that raise the Trunk of the Body are inserted. 6. Their spinal Processes are strong, strait, and horizontal, with broad flat Sides, and a narrow Edge above and below, this last being depressed on each Side by Muscles. And at the Root of these Edges, we see rough Surfaces for fixing the Ligaments. 7. The large Canal for the *Medulla spinalis* is rather larger here than in the Back. 8. The Holes for the Passage of the Nerves are more equally formed out of both the contiguous *Vertebræ* than in others, but the superior furnishes however the larger Share of it.

Both transverse and spinal Processes of the middlemost Vertebra of the Loins are longest and thickest, and on each Side of that they decrease, so that these Processes of the first and fifth are the least, which is very necessary, especially as to the transverse Processes of these two Vertebræ, lest if they had been long, they had struck on the Ribs or *Ossa Ilium* or bruised the interposed Muscles in the Deflexions of the Spine to a Side.

The *Epiphyses* round the the Edges of the Bodies of these Vertebræ are most raised in the two lowest, and consequently make them appear hollower in the Middle, than the others are.

The Body of the fifth *Vertebra* is rather thinner than that of the fourth. The spinal Procesi of this fifth is smaller, and the oblique Processes face more backwards and forwards, than in any other *Lumbar Vertebra*.

From the whole, we may deduce the Uses of the true Vertebræ in these few general Heads. To give us an erect Posture; to allow a sufficient and secure Motion to the Head, Neck, and Trunk of the Body on all necessary Occasions; and to support and defend the *Viscera* and other soft Parts.

After considering the Structure of the particular Vertebræ, and their mutual Connexion, we may observe in each a solicitous Care taken that they shall with great Difficulty be disjoined; for their Bodies enter either so into each other, as to prevent their being displaced any how, as in the Vertebræ of the Neck; or these Bodies are prop'd on all Sides, as these of the Back are by the Ribs; or their Surfaces of Contact are so broad, and the Ligaments so strong and firmly connected, as to render the Separation almost impracticable, as in the Loins; while the Depth and Articulation of the oblique Processes are exactly proportioned to the Quantity of Motion the other Parts of the Bone will allow, or the Muscles can perform: Yet as these oblique Processes are small, and therefore not capable of so secure a Conjunction as the larger Bones, they may sooner yield to a disjoining Force; but then their Dislocation is not of near so bad a Consequence; for by their being displaced, the Muscles, Ligaments, and Medulla Spinalis, are indeed stretched; whereas, when the Body of the Vertebra is removed out of its Place, the Medulla Spinalis must be completely compressed, or intirely destroyed.

The *False Vertebræ* compose the under Pyramid of the Spine. They are distinguished from the former justly enough by this Epithet of *False*; because tho' each Bone resembles the true Vertebræ in Figure, yet none of them partake of their Use of serving in the Motion of the Trunk of the Body, all of them being intimately united, except at one Part where there is a moveable Joint; whence the common Division of these false Vertebræ into two Bones, Os Sacrum and Coccygis. See Coccyx, and Sacrum Os. *Monro's Osteology*.

The Cartilages of all the Vertebræ in general, are of two Kinds; one proper to each Vertebra, the other common to the two Vertebræ that lie next each other: The first I term Cartilages of Articulation, the others, Cartilages of Symphysis.

The proper articular Cartilages of each Vertebra of the whole Spine are those four which cover the Surfaces of the four small articular Apophyses. In the natural State they are very white and smooth, and much thicker than in dry Bones. Their Circumference is the same with that of the articulated Sides of the Apophyses, except in those Places where there are small superficial Notches. In the first Vertebra of the Neck, and Vertebræ of the Loins, these Cartilages are thicker than in the rest.

The two inferior articular Cartilages of the first Vertebra, and the two superior Cartilages of the second, seem to be disproportionate, tho' not so much as in dry Bones; and in some Subjects we find moveable or inter-articular Cartilages between the Apophyses of these two Vertebræ.

The first Vertebræ of the Neck has a small cartilaginous Incrustation in the Middle of the concave Side of its anterior Arch, answering to another on the Fore-side of the odontoide Apophysis of the second Vertebra; so that these two Vertebræ have five articular Cartilages each, besides the inter-articular ones already mentioned.

The Vertebræ of the Back, besides the four Cartilages of their small Apophyses, have others which do not belong to their Articulations with one another, that is, those that cover the lateral Fossulæ in the Bodies of these Vertebræ, and the Fossulæ of their transverse Apophysis, by both which they are articulated with the Ribs.

The Cartilages of Symphysis lie between the Bodies of the Vertebræ, one of them being contained between, and closely joined to the lower Surface of the Body of one Vertebra, and to the upper Surface of that next under the former; the Breadth and Circumference of them answering exactly to that of the Surfaces to which they are connected; but their Height or Thickness is different in each Class of the Vertebræ. In the Vertebræ of the Loins they are a quarter or third Part of an Inch in Thickness, according to the Stature of the Subject. In those of the Neck, they are not so thick, and the thinnest of all are those of the Vertebræ of the Back.

These Cartilages are not of an equal Thickness in all their Parts. Those of the Neck and Loins appear to be thickest on the Fore-side, and those of the Back rather thickest on the Backside; but these Differences are most remarkable in the Vertebræ that lie near the Middle of each Class.

The internal Structure of these Cartilages is different from that of all the other Cartilages of the Body; and indeed they resemble the rest in nothing but Whiteness and Elasticity. When we view their Circumferences only, they seem to be one uniform Mass, as the others generally are; but when they are divided by an Incision parallel to the Surface of the Vertebra to which they are joined, we see that they are made up of a great Number of cartilaginous concentrical Rings contained within each other, a small Distance being left between them. They are closest and thinnest near the Centre, and about the Middle seem to degenerate into another softer kind of Substance.

These Rings do not form an entire Circumference, being turned inward on the Backside, answerably to the posterior Slope in the Body of each Vertebra. They lye horizontally, one Edge being fixed to the lower Side of one Vertebra, and the other to the upper Side of the Vertebra next below the former. The Interstices between the Rings are filled with a mucilaginous Substance, less fluid than that of the Joints; and their Breadth or Height is proportionable to the Distance of the Vertebræ between which they lie.

Each cartilaginous Lamina taken separately, is very pliable according to its Length; but taken altogether, they are not so easily bent, partly because of their circular Figure, and partly

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partly becauſe of their Proximity and Multiplicity. They yield, however, in the Inflexions of the Spine, and their external Surface, which, in the ordinary Situation of the Spine, is even with the Surface of the Vertebræ, becomes prominent, or jets out on that Side towards which the Inflexion is made, the Cartilages being then compreſſed by the Vertebræ.

They likewiſe yield on all Sides without any Inflexion of the Spine, to the Weight of the Head and upper Extremities; but this is done by very ſmall and imperceptible Degrees, and moſt of all, when the upper Parts of the Body are loaded with any exterior Weight.

They reſtore themſelves afterwards merely by being freed from Compreſſion; ſo that a Man is really taller after lying ſome time, than after he has walked or carried a Burden for a great while: The moſt natural and ſimple Reaſon that can be given for the different Heights of the ſame Perſons at different Times, firſt obſerved in *England*, and afterwards confirmed by M. *Morand*, a Member of the Royal Academy of Sciences; being the different State of the inter-vertebral Cartilages.

The inter-vertebral Cartilages of the Neck, lying for the moſt part between the convex Side of one Vertebra, and the concave Side of another, are of a greater Extent in proportion to the Size of theſe Vertebræ than thoſe of the Back and Loins. Without the Convexity and Hollowneſs in theſe Vertebræ, which are the leaſt of all, the Cartilages could not have been made large enough to be able to reſiſt Strains and great Motions.

The Vertebræ are ſtrongly connected to each other by three Kinds of Ligaments. Each Vertebra is connected to that above and below it, by a great Number of very ſhort and ſtrong Ligaments, which croſs each other obliquely, and are fixed round the Edges of the Body of each Vertebra.

Theſe crucial Ligaments cover the Circumference of the inter-vertebral Cartilages, and adhere cloſely to them. They ſeem to be looſer in the cervical and lumber Vertebræ than in thoſe of the Back, and by that means yield to the Cartilages in the different Inflexions of the Spine already mentioned.

The Bodies of all the Vertebræ from the ſecond of the Neck to the Os Sacrum, are covered by ligamentary half Vaginæ on the convex Side, in which theſe Vaginæ are fixed, ſurrounding all the crucial Ligaments, and made up of ligamentary Faſciculi and Filaments, partly oblique, but moſtly longitudinal.

All the Vertebræ are likewiſe ſtrongly connected by a ligamentary Tube, which lines the inner Surface of the medullary Canal from the occipital Hole, to the Os Sacrum, repreſenting a kind of long flexible Funnel, its Cavity at the upper Part being equal to that of the occipital Foramen, and ending in a ſmall Point at the Os Sacrum.

This Ligament is made up of ſeveral Strata of longitudinal and oblique Fibres interwoven together, adhering cloſely to the Inſide of the great Foramen in each Vertebra, by a great Number of Filaments detached from it to the porous Subſtance of the Vertebra.

The firſt Vertebra is not only fixed to the Os Occipitis by a Portion of this ligamentary Funnel, but, alſo, by a diſtinct and very ſtrong ligamentary Covering, which ſurrounds and adheres very cloſely to that Portion of the Funnel. This Covering is fixed above, round the great occipital Foramen, where it begins to adhere to the Funnel, and below, quite round the Circumference of the firſt Vertebra. The ſecond Vertebra has two Ligaments peculiar to it, one which connects the Apophyſis Dentiformis to the Os Occipitis; and another tranſverſe, which confines this Apophyſis within the anterior Portion of the Cavity of the firſt Vertebra. The firſt may be termed the Occipital, and the ſecond, the tranſverſe Ligament of the odontoide Apophyſis.

The occipital Ligament is very ſtrong and thick, and adheres in a very ſingular manner to the three Planes of the Apex of the Apophyſis, and is afterwards divided into two or three Portions which are fixed in the like manner, in the anterior Edge of the great occipital Foramen, and in the Inequalities of the Apophyſis Baſilaris near that Hole.

The tranſverſe Ligament may be ſaid more juſtly to belong to the firſt Vertebra, both Ends of it being inſerted in the lateral Impreſſions of the inner Surface of that Vertebra; but is ranked among the Ligaments of the ſecond Vertebra, becauſe of its Uſe, and becauſe of the Inſertion of its middle Portion.

This thick Ligament is ſtretched from one Side of the inner Surface of the firſt Vertebra to the ſecond about the Middle of the Foreſide, its Texture is very cloſe, and it is fixed by this Portion in the Back-Part of the Apophyſis Dentiformis; and ſometimes it ſeems to have additional Faſciculi, which adhere by one End to both Extremities, and by the other, to each Side of the Apophyſis.

Along the whole bony Canal of the Spine, between the Baſis of each ſpinal Apophyſis, lies a flat and very elaſtic Ligament, of a yellowiſh Colour, which fills up the poſterior great Noches of the Vertebræ adhering to their Edges, and likewiſe to the neighbouring Portions of the Funnel or great ligamentary Tube.

Between the Extremities or Apices of the ſpinal Apophyſis, we find ſmall ligamentary Ropes which run from one Spine to that next it, and which are really double, though they ſeem to be ſingle in the Vertebræ of the Back and Loins. In the Vertebræ of the Neck they are fixed ſeparately to the forked Extremities of the Spines.

Between all the ſpinal Apophyſes, from their Apices to the Middle of the Baſes, lies a ligamentary Membrane going between each two Apophyſis, and thereby diſtinguiſhing the Right Side of the Vertebra from the Left. There is a Ligament of the ſame kind between the tranſverſe Apophyſis.

Theſe are inter-muſcular Ligaments, or ligamentary Septa, which divide the Muſcles of one Side from thoſe of the other. The firſt Kind may be termed *Inter-Spinales*, and the other *Inter-Tranſverſales*.

The articular Ligaments of the Spina Dorſi, are thoſe which tie the glenoide Cavities of the firſt Vertebra to the Condyles of the Os Occipitis; thoſe that join the cartilaginous Surface of the Apophyſis Dentiformis, to the anterior Cavity of the firſt Vertebra; and thoſe by which all the oblique or articular Apophyſes are connected together.

Theſe are all ſmall, ſhort, ſtrong ligamentary Faſciculi, fixed by both Extremities, round the cartilaginous Surfaces of the Apophyſes, ſurrounding very cloſely all the capſular Ligaments of theſe Articulations.

The vertebral Ligaments of the Ribs, or theſe which connect the Ribs to the Bodies, and tranſverſe Apophyſes of the Vertebra of the Back, are of the ſame kind, being inſerted round the cartilaginous Foſſulæ, in the Body and Apophyſes of each Vertebra.

Beſides all theſe Ligaments of the Spina Dorſi, there is one which goes in form of a Membrane, from the Os Occipitis, all the Way to the laſt two Vertebræ of the Neck. It is broad at the upper Part, and from thence diminiſhes gradually, by its upper broad Extremity; it is fixed along the occipital Spine, and by one Edge, in the poſterior Tubercle of the firſt Vertebra, between the two ſpinal *Furcæ* of the following Vertebræ, and in the Apices of the ſpinal Apophyſes of the loweſt Vertebræ; but the other Edge is looſe. This is a true inter-muſcular Ligament, and I give it the Name of *Ligamentum Cervicale Poſterius*.

There are two lateral Ligaments of the ſame Kind fixed to the tranſverſe Apophyſes of the Vertebræ of the Neck.

THE MUSCLES OF THE SPINE.

The Muſcles which lie along the Spine, the greateſt Part whereof ſerve for the Motions of the Neck, Back and Loins, have, by the greateſt Anatomiſts, been thought very difficult to be well diſſected and clearly deſcribed, eſpecially thoſe of the Back. All theſe Muſcles are very complex, interwoven with each other, and multiplied in various Manners; ſo that it becomes neceſſary either to make their Number much greater than that of the Vertebræ, or to reduce them to a ſmall Number of long Muſcles interſected at different Places.

Steno, in order to facilitate the Knowledge, Diſſection and Deſcription of theſe Muſcles, thought proper to rank them in the following manner. By Vertebral Muſcles he underſtands thoſe which are fixed in the Vertebræ alone; and he diſtinguiſhes them all into *Recti* and *Obliqui*. The *Recti* are thoſe which run parallel to the Medulla Spinalis, or whoſe Direction is longitudinal. The *Obliqui* are thoſe which run obliquely between the ſpinal and tranſverſe Apophyſes.

He divides the *Recti* into Middle and Lateral; the middle *Recti* are thoſe which are fixed to the Spinal Apophyſes; the lateral, thoſe fixed to the tranſverſe Apophyſes.

He moreover divides all theſe Muſcles into Simple and Compound; the Simple being thoſe which are fixed in two Vertebræ only; the Compound, thoſe fixed in are more than two.

The *Obliqui*, according to him, are of two Kinds; ſome run up from the tranſverſe to the ſpinal Apophyſes, approaching each other; and ſome run up from the ſpinal to the tranſverſe Apophyſes, diverging from each other. The firſt Sort he terms *ad medium vergentes*; the ſecond, *a medio recedentes*. Theſe Terms are borrowed from Optics; and accordingly theſe two Kinds of Muſcles might be named converging and diverging Muſcles. Laſtly, he adds, that ſeveral Muſcles of the firſt kind go from one tranſverſe to ſeveral ſpinal

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ſpinal Apophyſes, and from ſeveral tranſverſe to one ſpinal Apophyſis.

According to this Account of the Vertebral Muſcles, the ancient Terms *Spinales Tranſverſales* and *Semi-ſpinales*, may ſtill be applied to them, underſtanding by *Spinales* thoſe Muſcles which are wholly fixed in the ſpinal Apophyſis; by *Tranſverſales*, thoſe which are wholly fixed in the tranſverſe Apophyſes; and by *Semi-ſpinales*, thoſe which are fixed in the ſpinal Apophyſis by one Extremity only. At preſent the two Kinds of oblique vertebral Muſcles are better expreſſed by the two compound Terms *Tranſverſo-Spinales* and *Spino-Tranſverſales*.

It is, however, neceſſary to retain the general Names of *Vertebrales Recti*, and *Vertebrales Obliqui*, becauſe though the Terms already mentioned agree very well to the poſterior Obliqui, they cannot be applied to the anterior Obliqui, one End of which is fixed not in the ſpinal Apophyſis, but in the Bodies of the Vertebræ.

The ſmall ſimple Muſcles which go between two Vertebræ, may be termed *Vertebrales Minores*; and the large compound Muſcles that reach ſeveral Vertebræ, *Vertebrales Majores*; both Sorts being afterwards divided into *Spinales* and *Tranſverſales Majores* and *Minores*. The ſmall Muſcles are likewiſe called *Inter-ſpinales* and *Inter-tranſverſales*; and as there are ſome ſmall oblique Muſcles that cannot be ſaid to reach either the tranſverſe or ſpinal Apophyſes, theſe may be termed ſimply *Inter-vertebrales*.

The *Tranſverſo-Spinales* that go from ſeveral tranſverſe to one ſpinal Apophyſis, are diſpoſed in this manner: The Portion that comes from the moſt diſtant tranſverſe Apophyſis, is inſerted in the Extremity of the ſpinal Apophyſis, the Portion from the next tranſverſe Apophyſis is inſerted more laterally; and the ſame Rule holds in all the other Portions, except in that which comes from the tranſverſe Apophyſis, which is neareſt the ſpinal Apophyſis.

This laſt Portion is not fixed in the ſpinal Apophyſis, but rather in its Root or Baſis, and likewiſe very near the Baſis of the tranſverſe Apophyſis; ſo that it is more properly *Inter-vertebralis* than *Tranſverſo-ſpinalis*. Thus in the *Tranſverſo-ſpinales*, that go from the ninth, eighth, ſeventh and ſixth tranſverſe Apophyſes of the Back, to the fifth ſpinal Apophyſis of the ſame Claſs, we find that the laſt and ſmalleſt is fixed in the Baſis of the ſixth Tranſverſe and of the fifth ſpinal Apophyſis.

The *Tranſverſo-Spinales* which go from one tranſverſe to ſeveral ſpinal Apophyſes, are diſpoſed in this manner. The Portion that goes from the Baſis, or near the Baſis of the tranſverſe Apophyſis, is fixed either in or near the Baſis of the ſpinal Apophyſis immediately above it. The next Portion which is more diſtant from the Baſis of the tranſverſe Apophyſis, runs up beyond the next ſpinal Apophyſis, and is inſerted in that above it, a little further from the Baſis.

The other Portions obſerve the ſame Order, that which comes from the Apex of the tranſverſe Apophyſis, being inſerted in the Apex of the moſt diſtant ſpinal Apophyſis. From this Diſpoſition we ſee, that the moſt ſuperior vertebral Muſcles which go from one tranſverſe to ſeveral ſpinal Apophyſes, are the moſt inferior of thoſe which go from ſeveral tranſverſe to one ſpinal Apophyſis.

It muſt be obſerved, that in ſpeaking of the oblique vertebral Muſcles, I conſider their Direction from below upward, and not from above downward; becauſe the inferior Vertebræ commonly ſupport thoſe above them, except when a Perſon ſtands upon his Head, with his Feet erect, in which Caſe the ſuperior Vertebræ ſuſtain the inferior.

We ought likewiſe to remark, that in ſpeaking of theſe Muſcles the Term Tranſverſalis is more proper than Tranſverſus, which laſt points out a certain Direction very different from that which theſe Muſcles have; whereas the other marks the Relation which they have to the tranſverſe Apophyſes.

Beſides the Vertebral Muſcles properly ſo called, ſeveral other Muſcles, not inſerted wholly in the Vertebræ, ſerve to move them. Some of the Ancients called theſe Semi Spinales, to diſtinguiſh them from thoſe they termed Spinales, which included all the vertebral Muſcles; and therefore as we have termed theſe Vertebrales, the other may be named Semi Vertebrales.

Among the Vertebrales properly ſo called, ſome from their Inſertions ſeem to be common to the Neck and the Back, ſome to the Back and Loins; but for Diſtinction Sake, I reckon among thoſe of the Neck, not only the Muſcles entirely fixed in the Vertebræ thereof, but, alſo, thoſe whoſe ſuperior Inſertion is in the ſeventh Vertebra of the Neck, though all their other Inſertions be in thoſe of the Back; and I obſerve the ſame Method with reſpect to the Loins.

All theſe Muſcles vary very much in their Inſertions and reciprocal Communications; by which laſt they are often ſo much confounded together, that it is a very difficult Matter to diſtinguiſh them for thoſe who are not previouſly acquainted with them. In general, they are more eaſily diſtinguiſhed in Children than in Adults, and in Adults than in very aged Perſons.

The Muſcles which move the *Vertebræ* of the Neck, are, by *Winſlow*, reduc'd to twelve, ſix on each Side, which are,

1. The *Longus Colli*.
2. *Tranſverſalis Colli Major*.
3. *Tranſverſalis Gracilis, ſive Collateralis Colli*.
4. *Semi Spinalis, ſive Tranſverſo-Spinalis Colli*.
5. *Spinalis Colli parvi, ſive Inter Spinales*.
6. *Tranſverſales Colli minores ſive, Inter Tranſverſales*.

See a Deſcription of theſe Muſcles, under the reſpective Articles of their Names.

The *Spinales Minores*, and *Tranſverſales Minores*, are here reckoned collectively; for if we take them ſeparately, there are ſix or ſeven of each Sort on each Side of the Neck; neither is the Number of them always the ſame. The *Tranſverſalis Gracilis* has often been looked upon as a Portion of that long muſcular Maſs termed *Longiſſimus Dorſi*. It has likewiſe been taken by ſome for the *Cervicalis Deſcendens* of *Diemerbroek*; and by others it has been called *Acceſſorius Stenonis*.

We ought likewiſe to reckon among the Muſcles of the Neck, the OBLIQUUS MAJOR, and RECTUS MINOR; which ſee under their Names.

The Muſcles which move the Vertebræ of the Back and Loins would amount to a much greater Number, and be much more difficult to conceive, than thoſe of the Neck, were they to be reckoned ſeparately as vertebral, or ſemi-vertebral Muſcles. It is therefore proper to reduce them to a collective Number, which may conveniently enough be fixed to twenty-four, twelve on each Side, that is,

1. *Sacro Lumbaris*.
2. *Longiſſimus Dorſi*.
3. *Spinalis Dorſi Major*.
4. *Spinales Dorſi Minores*.
5. *Tranſverſalis Dorſi Major*.
6. *Tranſverſales Dorſi Minores*.
7. *Semi Spinalis, ſive Tranſverſo Spinalis Dorſi*.
8. *Semi Spinalis, ſive Tranſverſo Spinalis Lumborum Sacer Veterum*.
9, 10. *Spinales & Tranſverſales Lumborum*.
11. *Quadratus Lumborum, ſive Lumbaris Externus*.
12. *Coccygæi*.

The Vertebræ of the Back, and eſpecially thoſe of the Loins may likewiſe be moved by the Muſcles of the Abdomen. The inferior Portion of the *Longus Colli* may contribute ſomething to the Motion of the upper Vertebræ of the Back; the *Pſoas* to that of the Vertebræ of the Loins, and the *Glutæus Maximus* to that of the *Os Coccygis*.

The Deſcriptions and Uſes of theſe Muſcles may be found under their reſpective Names, except thoſe of the Muſcles of the *Os Coccygis*, which are omitted under the Article COCYX.

Theſe are ſmall, thin, radiated Muſcles, lying on the inner or concave Side of the *Os Sacrum*, and neighbouring Parts of the Pelvis: They are four in number, two on each Side, whereof one is placed more forward, the other more backward; for which Reaſon the firſt may be termed *Coccygæus anterior, ſive Iſchio-Coccygæus*; the other *Coccygæus poſterior, ſive Sacro-Coccygæus*.

The *Coccygæus anterior* is fixed by a broad Inſertion in the anterior Portion of the ſmall tranſverſe Ligament at the upper Part of the Foreman Ovale of the *Os Innominatum*, which is no more than a particular Fold of the great tranſverſe Ligament of the Pelvis: From thence it runs between this great Ligament and the *Muſculus Obturator Internus*, with which it is often confounded by Anatomiſts; and contracting in Breadth, it is inſerted in the lower Part of the *Os Coccygis*.

The *Coccygæus poſterior*, or *Sacro-Coccygæus*, is fixed to the inner or concave Edge of the two firſt Vertebræ of the Os Sacrum to the inner and lower Edge of the *Ligamentum Sacro-Sciaticum*, and to the Spine of the *Os Iſchium*: From thence contracting in Breadth, it is inſerted in the Inſide of the *Os Coccygis* above the former Muſcle. *Winſlow*.

SPINA ACIDA. See BERBERIS.

SPINA ACUTA. A Name for the *Meſpilus*; *Apii folio*; *ſylveſtris*; *ſpinoſa*; *ſive Oxyacantha*; and, alſo, for the *Meſpilus*; *ſpinoſa*; *Pyri folio*.

SPINA ALBA. A Name for the *Meſpilus*; *Apii folio*; *ſylveſtris ſpinoſa, ſive Oxyacantha*; and, alſo, for the *Ebenus, folio Acanthi aculeati tenuiter laciniato, flore albo*.

SPINA ARABICA. Offic. *Carduus ſpinoſiſſimus ſphærocephalus rigidis aculeis armata*. C. B. 385. *Carduus ſpinoſiſſimus ſphærocephalus, Cardui Arabici nomine miſſus*, Park. Theat. 978. ARABIAN THISTLE.

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It is eaſily naturaliz'd in Gardens, and flowers in Summer. The Root and Leaves are uſed.

The *Spina Arabica* ſeems to be of a like Nature with the *Spina Alba*, for it is aſtringent, and good for the Fluor Uberinus, Vomiting of Blood, and other Kinds of Fluxes, as is the *Spina Alba* beforementioned. *Dioſcorides Lib. 3. Cap. 15.*

The *Spina Arabica* of *Dioſcorides* is to be reckon'd among ambiguous Plants, and no Wonder, ſince all that he ſays of it is, that it appears to be of the Nature of the *Spina Alba*; which is ſo obſcure an Expreſſion, that it has been almoſt impoſſible for any one to unty this Gordian Knot. *C. Bauhine*, and after him *Parkinſon*, affirm it to be the Plant which, on their Authority, I have here mention'd; but *Cæſalpinus* and *Anguillara* have refer'd it to the *Carduus tomentoſus Adverſariorum.*

SPINA CERVINA. See } RHAMNUS CATHARTICUS.
SPINA INFECTORIA. See }

SPINA LUTEA. A Name for the *Scolymus*; *chryſanthemus.*

SPINA SOLSTITIALIS. A Name in *Boerhaave* for ſeveral Sorts of *Jacea.*

SPINA SOLUTIVA. See RHAMNUS CATHARTICUS.

SPINA TOMENTOSA. A Name for the *Carduus tomentoſus*; *acanthi folio, anguſtiore.*

SPINA VENTOSA. The Name of a Diſorder of the Bones. See Os.

SPINACHIA.

The Characters are;

The Root is annual; the Flowers apetalous, ſtaminous, ſeated at the Wings of the Leaves, conſiſting of a quadrifid Calyx and Stamina, on a ſeparate, or male Plant. The Ovary is a Capſule, either turbinated, horned, or angulated, furniſhed with hairy Tubes, and contains a turbinated Seed on the female Plant.

Boerhaave mentions four Sorts of *Spinachia*, which are;

1. Spinachia; vulgaris; capſulâ ſeminis aculeata. *Tourn. Inſt.* 533. *Boerh. Ind. A.* 2. 103. *Spinachia.* Offic. Ger. 260. Emac. 330. Raii Hiſt. 1. 162. *Spinachia ſive Olus Hiſpanicum.* Park. Parad. 496. *Spinachia fœmina.* J. B. 2. 963. *Lapathum hortenſe, ſeu Spinachia ſemine ſpinoſa.* C. B. P. 114. SPINACHE.

Spinache has a long whitiſh Root, from which ſprings ſeveral pretty broad, ſharp-pointed Leaves, hollowed in next the Stalk, and in Shape ſomewhat like Aron; but they are more wrinkled, and covered with an unctious Mealineſs. The Stalk is fat and ſucculent, growing to be about two Foot high, having the like but ſmaller Leaves growing on it, with ſeveral Spikes of green herbaceous Flowers, and after them come large prickly Seed. It is ſown yearly in Gardens.

It is more uſed for Food than Medicine, being a good boiled Sallad, and much eaten in the Spring, being uſeful to temper the Heat and Sharpneſs of the Humours. It is cooling and moiſtning, diuretic, and renders the Body ſoluble. *Miller's Bot. Off.*

Spinache, which is now ſo celebrated and uſeful a Green, ſeems unmention'd and unknown to the Antients. It is ſo called by the Moderns, from it ſpinous Seed, though there is, alſo, a Species of it which bears Seed which is ſmooth. We are not certain where it grows ſpontaneouſly, but it is probably of *Spaniſh* Original, ſince ſome call it *Olus Hiſpanicum*; but it refuſes no Soil or Climate, and is in Uſe in almoſt all Parts of *Europe*. It is boiled without Water, for it affords Liquor enough in the Dreſſing to boil itſelf without the Help of any other.

Among all culinary Greens, ſays *Tragus*, Spinache is, in my Opinion, the moſt laudable and grateful, whence it may be eaten in almoſt all Kinds of Diſeaſes. It is very ſerviceable in ſeveriſh Diſorders, and is proper for old Perſons who are ſubject to Coſtiveneſs: In the firſt, by allaying the Heat, though it be even of a hectic Quality; and for aged Perſons, by lubricating the Belly, which is much better than by always ſtimulating it to Excretion by Cathartics and Suppoſitories. It is cooling and moiſtening, by its nitrous Quality, mollifies the Belly, cures Roughneſs of the *Aſpera Arteria*, and is good for a dry Cough. It eaſily creates a Nauſea, unleſs it be ſeaſoned with Ginger or the like. The Juice and diſtill'd Water mitigate the Heat and gnawing Pain of the Stomach, and are ſaid to procure Milk. Externally, it is apply'd by way of Cataplaſm to the Stomach and Liver, in order to remove a Pain and Inflammation. *Raii Hiſt. Plant.*

2. Spinachia vulgaris; ſterilis. *T.* 533. *Lapathum, hortenſe, ſeu Spinachia ſterilis.* C. B. P. 115.

3. Spinachia; vulgaris; capſulâ ſeminis non aculeatâ. *T.* 533. *Lapathum, hortenſe, ſeu Spinachia ſemine non ſpinoſa.* C. B. P. 115.

4. Spinachia; Cretica; ſupina; capſulâ ſeminis aculeatâ, *T.* 533. *Beta, Cretica, ſemine ſpinoſo.* J. B. 2. 963. *Lapathum Creticum ejuſdem.* Ibid. *Boerh. Ind. Alt. Plant.*

Spinache is mollifying, but not nouriſhing; for if one eat a Pound of it, he voids it all again by Stool, for the Juice goes all off in Concoction, and ſpends itſelf in looſening the Belly. The freſh Herb affords a thick, but very wholeſome Juice, which mitigates the Aſperity of the Lungs, and is of Service in Inflammations of the Inteſtines. *Hiſt. Plant. aſcript. Boerhaave.*

SPINALIS MEDULLA. The Spinal Marrow. See CEREBRUM.

SPINALIS. Spinal; belonging to the Spine. This is an Epithet of certain *Apophyſes* of the Vertebra of the Spine; and of ſeveral Muſcles. Thus there are the

SPINALIS COLLI MINORES. See INTERSPINALES.

SPINALIS DORSI MAJOR.

This is a pretty long and ſlender Muſcle, lying upon the lateral Part of the Extremities of the ſpinal Apophyſes of the Back.

It is compoſed of ſeveral muſcular Faſciculi of different Lengths, which croſſing each other, are inſerted laterally by ſmall Tendons in the ſpinal Apophyſes from the ſecond, third, or fourth Vertebra of the Back, and ſometimes, though ſeldom, from the laſt of the Neck or the firſt of the Back; all the Way to the firſt or ſecond Vertebra of the Loins, with ſeveral irregular Decuſſations, which vary in different Subjects.

The longeſt Faſciculi are a little incurvated, becauſe they incloſe the reſt, which are gradually diſpoſed between the long ones and the ſpinal Apophyſes, ſo that this Muſcle, which terminates by both Extremities in Points, is of ſome conſiderable Breadth in the Middle.

It communicates by ſome Fibres with the *Longiſſimus Dorſi* and *Semi Spinalis* or *Tranverſo-Spinalis*; and it ſends off Faſciculi to ſeveral tranſverſe Apophyſes of the Back, from the fourth to the eleventh.

It is commonly named *Semi-Spinalis*, but very improperly.

SPINALES DORSI MINORES.

Theſe Muſcles are of two Kinds; ſome go laterally from the Extremity of one ſpinal Apophyſis to another, being often mixed with the ſhort Faſciculi of the *Spinalis Major*: The reſt lie directly between the Extremities of two neighbouring ſpinal Apophyſes, being ſeparated from their Fellows on the other Side by the ſpinal Ligament. They are ſmaller and thinner than thoſe of the Neck, and are properly enough termed *Inter-ſpinales.*

All the *Spinales* and *Tranſverſales* of the Back and Loins belonging to the Claſs of the *Vertebrales Recti*, the *Spinales* to the middle Muſcles, and the *Tranſverſales* to the lateral, are principally uſeful to aſſiſt, moderate and maintain the Motions of Extenſion and lateral Inflexion, whether ſimple and direct, or oblique and compound; much in the ſame Manner as is done by the like Muſcles of the Neck.

The *Spinales Majores* and *Tranſverſales Majores* have this peculiar to them, that their fleſhy Portions not lying in a ſtrait Line between their Inſertions, they may perform not only direct Motions when they act in even Numbers, but, alſo, oblique Motions, when the Numbers of each Side are unequal. The ſmall *Spinales* and *Tranſverſales* being confined between two neighbouring Vertebræ, cannot co-operate but in direct Extenſions and Inflexions.

SPINALES ET TRANSVERSALES LUMBORUM.

There are ſome Faſciculi which run up from the ſuperior falſe Spines of the *Os Sacrum* to the lower ſpinal Apophyſes of the Loins, which may be looked upon as ſo many *Spinales Lumborum Majores.* There are likewiſe ſome *Spinales Minores* between the ſpinal Apophyſes of the Loins, and *Tranſverſales Minores* between the tranſverſe Apophyſes, which are ſometimes of a conſiderable Breadth. *Winſlow's Anatomy.*

SPINUS ALBUS. A Name for the *Meſpilus*; *Apii folio*; *ſylveſtris*; *Spinoſa*; *ſive Oxyacantha.*

SPINUS; or *Ligurinus* of *Jonſton*, is a little Bird, of the Size of a Goldfinch, generally of a yellow and black Colour. Its Beak is of a moderate Length, ſlender, and pointed. It feeds upon Seeds, and is found in warm Countries. It builds its Neſt in mountainous Woods, and ſings very agreeably. It contains a large Quantity of volatile Salt, and, when eaten, is reckon'd good for the Epilepſy.

SPIPOLA. The Name of a ſmall Bird, of which *Aldrovandus* reckons ſeveral Species.

SPIRACULA. The Pores of the Skin.

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SPIRÆA.
The Characters are;
The Calyx is monophyllous, quinquefid, and ſtellated; the Flowers roſaceous and pentapetalous; the Petals growing out of the interior Margin of the Calyx, at the Interſtices of the Segments; the Stamina are very numerous. The Ovary in the Bottom of the Calyx becomes a Fruit compoſed of five Pods, each growing on its Placentula, and full of an oblong Seed.

Boerhaave mentions four Sorts of *Spiræa*, which are;

1. Spiræa; Salicis folio. *Tourn. Inſt.* 618. *Boerh. Ind. A.* 2. 238. *Spiræa*; Offic. Raii Hiſt. 2. 1699. *Spiræa Theophraſti forte Cluſio.* J. B. 1. 559. Park. Theat. 1437. *Frutex ſpicatus foliis ſalignis ſerratis.* C. B. P. 475.

SPIKED WILLOW.
It is cultivated in Gardens, flowers in *July*, and the Seed is ripe in *Auguſt*. The Part of Uſe in Medicine is the Seed, which is of an aſtringent Quality.

2. Spiræa; Opuli folio. *T.* 618. *Anonymos, Ribeſii foliis Icon.* Roberti. *Euonymus Virginiana, Ribeſii folio, capſulis elegantèr bulatis.* H. A. 1. 169. See ANONYMOS RIBESII FOLIIS.

3. Spiræa; Hyperici folio, non crenato. *T.* 618. *Pruno ſylveſtri affinis Canadenſis.* C. B. P. App. 517. *Hypericum, fruteſcens, Canadenſe.* Robin.

4. Spiræa; Africana; odorata; foliis piloſis. *Commel. Rar.* 3. *Boerh. Ind. Alt. Plant.*

SPIRITUS. Spirit. Any fine volatile Subſtances, which exhale from Bodies in a given Degree of Heat, are called Spirits: Hence, by a Sort of imaginary Analogy, upon a Suppoſition of their extreme Fineneſs and Volatility, the nervous Fluid has had the Name of *Spiritus*, Spirits appropriated to it. Upon the niceſt Scrutiny, it appears, that the cortical Subſtance of the Brain is a Collection of extremely minute Glands, from whence diſtinct medullary Fibres ariſe, which by their Union form the *Medulla Oblongata*; that a vaſt Quantity of pure, fine, arterial Blood is convey'd to the Brain; that a large Quantity of a very thin Fluid is found in the medullary Part of the Brain when cut, which in Diſorders of the Head, and nervous Syſtem, is often found to be more copious; and that the Blood convey'd to the Head, is afterwards returned by the Veins to the Sinuſes, thence to the Jugular Veins, and by theſe to the Heart. This Structure renders it highly probable, that the cortical Subſtance of the Brain conſiſts of minute Glands, which ſecrete a very fine Fluid, to be convey'd by the medullary Fibres to the *Medulla Oblongata*, whence, and from the ſpinal Marrow (a Continuation thereof) all the Nerves of the Body ariſe.

It is, farther, remarkable, that all the Nerves conſiſt of the ſame medullary Subſtance, incloſ'd in a Coat borrow'd from the *Pia Mater*, and another from the *Dura Mater*; that if the *Medulla* of the *Cerebrum*, or *Cerebellum*, is any Way injur'd by a Wound, Compreſſure, Putrefaction, or Corroſion, every Action of the Body depending upon the Nerves which ariſe from thoſe Parts, immediately ceaſes, though the Nerve itſelf remains intire; that the Nerves, notwithſtanding their Laxity, Incurvation, and winding Progreſs, very readily convey Senſe and Motion to all the Parts of the Body; that if any of the Nerves are divided, or compreſs'd, all Senſation and Motion betwixt the Diviſion or Ligature, and Part to which that Nerve is diſtributed, immediately ceaſes, though it remains in the Parts betwixt the Diviſion or Ligature, and the Origin of the Nerve. Hence 'tis evident, that Senſation and Motion are convey'd to all the Parts by Means of the Nerves: And it is concluded, though not with an equal Degree of Certainty, that the Animal Spirits are the Inſtruments of Senſation and Motion.

This is all that is certainly known of theſe Spirits, which are diſtinguiſh'd into Natural, Vital, and Animal. The Natural are ſaid to preſide over the Digeſtion of the Aliment, and Elaboration of the Chyle, or the natural Actions: The Vital over the Motion of the Lungs, and Heart, or vital Actions: And the Animal, over the animal Actions, as Senſation, voluntary Motion, *&c.*

Upon ſo precarious an *Hypotheſis*, as that of the real Exiſtence of theſe Spirits, many elaborate Theories have been form'd, which have introduc'd a great deal of Error, Confuſion, and bad Practice. Thus *Morton* ſpeaks much about *ſomething deleterious conceal'd in the animal Spirits*, which, according to his Syſtem, muſt be drove out by warm Cordials; a Practice which has deſtroy'd more Lives than War, Peſtience, and Famine. And thus *Willis* amuſes us with a *Phlogoſis*, or Inflammation of the animal Spirits, with no great Degree of Information to his Readers.

Dr. *Cheyne*, a Gentleman who had Candour enough to own the Errors of his Profeſſion, and Spirit enough to think for himſelf, thus treats of the animal Spirits.

The Doctrine of Spirits, to explain the animal Functions and their Diſeaſes, has been ſo readily and univerſally received from the Day of the *Arabian* Phyſicians (and higher) down to our preſent Times, that ſcarce one (except here and there a Heretic of late) has called this Catholic Doctrine in queſtion. And thoſe, who perhaps had Courage or Curioſity enough to doubt of, or examine the Matter, either out of Lazineſs, or to avoid a tedious Way of expreſſing themſelves, have implicitly gone into the common Dialect, which is now very convenient. The Syſtem firſt was but rude and imperfect, but having been adopted by Philoſophers and Mathematicians, as well as Phyſicians, they have brought it to a more conſiſtent and leſs abſurd Theory. *Borelli* gave it a great Countenance, by receiving it to explain Muſcular Motion, in his Book *de Motu Animalium*. *Willis* gave it all the Advantages of Eloquence and Metaphor. *John Bernoulli* has added to it a kind of Geometry and Calculation. And laſt of all, *Monſieur des Molieres*, in the *Memoirs de l'Academie Royal* for 1724, has added Plainneſs, and ſome Conformity to the natural Appearances, and taken off moſt of the common Objections. I ſhall not tire myſelf nor the Reader, by detailing the Syſtem at length, nor the ſeveral Steps by which it has been reformed and amended. *Goelike*, Profeſſor at *Francfort*, in a ſmall Treatiſe, has ſolidly expoſed and ridiculed it, as far as *Borelli* went, or the precedent or co-temporary Phyſicians: And Dr. *Pemberton* has, I believe, geometrically ſhewn the Inſufficiency of what *Bernoulli* has advanced to mend the Matter, in his Preface to Mr. *Cowper*'s Book on the Muſcles. I ſhall therefore only ſuggeſt ſome general Reflexions, which perhaps equally diſtreſs this Syſtem, however improved or amended.

I will not urge, that the beſt Eyes or Senſes, however aſſiſted, have not hitherto been able to diſcover any Cavity in the Subſtance of the Nerves, or in the ſmall Filaments into which they are divided; that, on the contrary, as far as *Leeuwenhoek*, doubtleſs the beſt Obſerver, or others who have examined the Matter with great Accuracy, could perceive, they appear ſolid, tranſparent, and with broken Reflections, even when dry, like crack'd Glaſs, Wire, Horn, or any other ſolid Subſtance, without any apparent Cavity. Nor that by compreſſing them by Ligatures, ſtopping the Influx, or by ſtroaking and milching their Lengths, are any Appearances to be obſerved like thoſe in other Veſſels, which we know carry Fluids in them, more than muſt neceſſarily happen from compreſſing the ſmall Arteries that go along by them. It is true, that by ſtopping and tying the Trunks of the greater Nerves, the Muſcle itſelf will turn paralytic and motionleſs, but it will equally do ſo, upon intercepting the Motion or Influx of the Blood, which concludes nothing but this, that theſe Nerves are neceſſary towards the Action of the Muſcles, whether from their carrying a Fluid, or from their own tonic Nature, their internal Configuration, or any other Manner they may act, is not thereby determined. And if Probabilities could any Way influence a Fact, they muſt lie on the other Side of the Queſtion, ſince that thin and ſoft Liquor, which ſeems only fit to keep them moiſt and lax, rather derogates from the Exiſtence of any ſpirituous Fluid in them, proper for the intended End. Nor, thirdly, will I urge againſt it Dr. *Gliſſon*'s Experiment, of putting the Arm of a ſtrong, brawny Porter into a large Tube full of Water, and fixing it cloſe to his Shoulder, that the Water might not get out, but aſcend into a ſmall conical Tube, paſſing out of the Side of the larger one; whereby he found, that upon the ſtrongeſt Action of the Muſcles, the Water ſubſided and fell in the ſmall Tube, and roſe again upon their ceaſing to act; from whence he concludes, that muſcular Motion is not performed by the Inflation or Swelling of the Muſcles, but that, on the contrary, when they are moved, they are contracted into a leſſer Figure, and more compact Subſtance, or are hardened; which would ſcarcely happen, if any Matter, how ſubtile ſo ever, flowed in the Nerves, and thereby was added to the Subſtance of the Muſcles: For ſince the Impenetrability of Matter is demonſtrable, the leaſt ſuch an Addition could effect, was, that tho' the Fluid, by its Subtilty, would not ſenſibly increaſe the Bulk, yet ſurely it could not leſſen it. I ſay, I ſhall not urge theſe obvious Objections againſt this Doctrine; becauſe, tho' I think they cannot be ſolidly anſwered, yet they may be evaded; but ſhall proceed to offer a few Conſiderations, which I think equally diſtreſs it, in all the Improvements that have been made on it.

Some have imagined the Nature of this Fluid of animal Spirits, to have ſome Reſemblance with that of Light, (the moſt ſubtile, active, and penetrating Fluid apparent in this our Syſtem) which would make them quickly penetrate, fly through, tear, break, and conſume their rare and tender Preſſons, which could be of no more Uſe to them, to determine them to regular and uniform Motions, than Glaſs Tubes are to Light. And were they like unctuous or inflammable

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flammable Spirits, yet neither would such slender Prisons contain them any Time, or convey them uniformly for regular Purposes. And lastly, if they were like Water or aqueous Fluids, they could neither have Activity nor Subtilty sufficient to solve the Appearances, nor could they move with Velocity enough to answer the Purposes of Volition, Sensation, and voluntary or involuntary Motions, under that more gross and sluggish Form, and would even then ouze through their containing Tubes.

In a Word, give them what Nature you will, they will never answer the animal Functions and Appearances. For suppose them to have any Resemblance to the other Fluids in our System, if extremely volatile and active, they would fly away, and tear, in a very short time, their containing Tubes, and Canals of the Nerves, and could not receive regular Determinations from them; and yet such they must be, to answer the Ends of Volition and Sensation: And if they were grosser, denser, and less refined, they would not answer quick and sudden Motion and its Cessation. And they can never be supposed to be extremely active and volatile, and gross and thick at the same Time. We find in Dropsies, that a grosser Fluid than they can be supposed to be, will ouze in great Quantities through Vessels of as close a Texture as theirs, not to mention the sudden Effects of all Kinds of Spirits (taken inwardly) upon the Nerves, which from this Appearance must even be supposed to penetrate the Substance of these Nerves, and yet the nervous Fluid must be, at least, as subtile and penetrating as they.

Quick and instantaneous, strong and violent Motions, (increased by adding great Weights, as we know by Experience) seem absolutely to have determined the Nature of animal Spirits, to that of the most active and volatile Kind of Fluids imaginable, because none else is capable of so quick and strong Actions, in order to determine the instantaneous Obedience of the Muscles to the Orders of the Will: And such strong, violent, and quick Motions, must necessarily make a great Waste and Expence of these animal Spirits, so as to require a constant Supply of such fine and subtile Parts from the Food: And yet we find, that aqueous, vegetable, and earthy Substances only, make up most of the Nourishment of those who have the best and strongest Spirits, and live in a constant Course of such Action; and the animal Heat employed to generate them, rises no higher than that of Vegetation or Incubation only, which is not sufficient for any other Kinds of Spirits, inflammatory or urinous. But how any Fluids at all, of what Kind soever, can be supposed or imagined to go backwards and forwards in the same indivisible Instant almost, (to convey Pain, for Example, to the sentient Principle, and muscular Action at the same Instant, to shut the Eyes upon Appearances of Danger, or to actuate all the Muscles necessary for running away under a Panic, and a thousand other Instances that may be given) seems very hard to explain from the known Nature of Fluids.

The Existence of animal Spirits has been principally contrived to solve the Appearances of nervous Distempers, as Obstructions of the Nerves, or their Incapacity to act under some Circumstances. Now, if these Appearances can be accounted for, more conformably to the Analogy of Nature, without this Supposition than by it, then the Dispute will be at an End, and they useless. As to the Obstructions of the Nerves, since they are plainly cylindrical (or nearly such) it does not seem agreeable to Mechanism, that any Fluid should readily be obstructed in them. For whatever Fluid, of whatever Nature, can enter the one Extremity in the Brain, will move on by the same Impulse to the other. For Example, a Ball of the same or less Diameter than the Cavity of a cylindrical Tube, will move on (by the Force first impressed) from one End to the other, without Stop or Hindrance from the Tube; and the same may be concluded of any Fluid; which makes Obstructions pretty unaccountable in cylindrical Tubes. Besides, it is no small Prejudice against any Fluids moving in the nervous Fibres, even that their Figure is cylindrical; for we see in all Tubes that contain Fluids (as the Veins, Arteries, and Lympheducts) to accelerate the Motion of the Fluid, their internal Figure is conical, or tapering or nearly so, which readily accounts for the Obstructions in these last mentioned Vessels; and it is not improbable that Nature, which is always similar or consistent with itself, had the Nerves been designed to carry a Fluid, would have hollowed them in this Form. And on the contrary, the frequent Obstructions that happen in those Vessels, which are of this mentioned conical Figure, and the Hardness of such Obstructions, may be sufficient to account for the Obstructions of the Nerves themselves. From all which we may, I think, pretty firmly conclude, that the Notion of animal Spirits is of the same Leaven with the substantial Forms of *Aristotle*, and the celestial System of *Ptolemy*.

Perhaps there may be in Nature material Systems of Fluids of several Degrees of Rarity and Subtilty, even indefinitely many and different. What makes it not impossible that there may be more such Systems of subtile elastic Fluids, than that mentioned Æther described by Sir *Isaac Newton*, is, that the Elasticity, Attraction, and other Qualities of this *Newtonian* Æther, must necessarily be caused by some other more æthereal and subtile Fluid, else we must admit Elasticity, Attraction and Activity in the Particles constituting this *Newtonian* Æther without a Cause; or we must suppose these Qualities innate to them, and to have been impressed on them immediately by the first and supreme Cause. And thus we are necessarily thrown into one or other of the two Horns of this Dilemma, either to admit of Fluids descending in *infinitum*, in Tenuity and Subtilty, to produce Elasticity and Attraction, or allow Particles of Matter impressed with these Qualities in their Creation immediately by the Supreme Being. It is true, this *Newtonian* Æther advances us one Step further into the Nature of Things; but here we must necessarily stop, the Works of God appearing literally inscrutable to Perfection. A few of the first Steps we may go in this infinite Progression, but in all the Works of God there is a *ne plus ultra*; perhaps it may be in the inanimate material System of Things, as it is most certainly in the Animal Kingdom, that Nature and its Author, to distinguish itself from finite Mechanism, always operates by Systems and Organs in Number even infinite, if not infinite in the highest Sense, yet certainly indefinite or infinite in a relative Sense, and in regard to a finite Capacity; and thus he leaves Images and Signatures of himself on all his Works, as is manifest in Quantity, Time, and Motion; and their Signs or Characters, infinite Divisibility, infinite Progressions, Eternity, Series's and Fluxions. Mercury is grosser or denser than Water, Water than Air, Air than Light, Light than Æther; and how far further Nature may go in descending in Tenuity, Subtilty, and refining of other Systems of Fluids, none alive can certainly tell. This as a Conjecture of the Analogy of Things, the infinite Divisibility, or Increase of Matter, from finite, till it becomes infinitely great or small, at least, as to our Conceptions, Nature's never passing from positive to negative Quantities, till it goes through the Medium of Nothing, or infinitely small of the same Denomination; its never passing from Motion to Rest, but through infinitely small Motion: In a Word, its never acting in generals, by Starts, Jumps, or unequal Steps; I say, all these Hints seem to point out something like this. From all which, and a great deal more might be urged, it may not be improbable, that as in Quantity there is one or more means between the least and the greatest; so in Substances of all kinds, there may be Intermediates between pure, immaterial Spirit and gross Matter, and that this intermediate, material Substance, may make the Cement between the human Soul and Body, and may be the Instrument or Medium of all its Actions and Functions, where material Organs are not manifest: And may possibly be the Cause of the other secret and inscrutable Mysteries of Nature, and the same (for ought I know) with Sir *Isaac Newton*'s infinitely fine and elastic Fluid or Spirit; for since he has not, I believe none else will take upon him to determine its Specific Nature, or indeed, whether it actually be or not: The innumerable Appearances seem to imply some such Thing.

To conclude this dark Subject of Animal Spirits, if they must be supposed, we may affirm they cannot be of the Nature of any Fluid we have a Notion of, from what we see or know. Indeed, the large Size, the wonderful Texture, and the great Care and Security Nature has employed about the Brain, makes it probable it has been designed for the noblest Uses, that is, to be the Temple or Senforium of the sentient and intelligent Principle. And its Resemblances, in many Circumstances, to the other Glands, which certainly separate Liquors, makes it not impossible that it may have Uses analogous to these. But how to assign them, explain, or accord them with what has been suggested above, I know not. May not the sentient Principle have its Seat in some Place in the Brain, where the Nerves terminate, like the Musician shut up in his Organ Room? May not the infinite Windings, Convolutions, and Complications of the Beginning of the Nerves which constitute the Brain, serve to determine their particular Tone, Tension, and consequently the intestine Vibrations of their Parts? May they not have interwoven Blood-Vessels and Glands to separate a milky Liquor; to soften, moisten, and continue their Elasticity, and innate mechanic Powers through the whole nervous Systems? And, also, to keep them in a proper Condition to play off the Vibrations, Tremors and Undulations made on them by Bodies, or their Effluvia? May not these Vibrations be propagated through their Lengths, by a subtile, spirituous, and infinitely

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infinitely elaſtic Fluid, which is the Medium of the intelligent Principle? As Sound is conveyed through Air to the Tympanum, and by it to this Medium or Æther, and from the Medium to the intelligent Principle, and as Sight is performed through or by Light; and is not the Analogy of Nature and Things thus in ſome meaſure preſerved? I own it is much eaſier to confute than eſtabliſh; and I ſhould not be very ſanguine about the Non-Exiſtence of Animal Spirits, but that I have obſerved the Dwelling ſo much upon them has led Phyſicians too much to neglect the mending the Juices, the opening Obſtructions, and the ſtrengthning the Solids, wherein only the proper and ſolid Cure of nervous Diſtempers conſiſts; and apply to Volatiles, Fetids, and Stimulants; which, at beſt, are but a Reprieve, and is not unlike blowing up the Fire, but at the ſame time forcing it to ſpend faſter, and go out ſooner; for Volatiles, Aromatics, and Cordials, are much of one and the ſame Nature, and all but Whips, Spurs, and pointed Inſtruments to drive on the reſty and unwilling Jade. *Cheyne's Engliſh Malady.*

Upon the whole, it ſhould ſeem, that whoever lays any Streſs upon the precarious Doctrine of Animal Spirits, in accounting for Diſtempers, or inveſtigating Remedies, is either weak enough to be impoſed upon himſelf, or malicious enough to amuſe others.

SPIRITUS RECTOR. The prevailing, or ruling Spirit of Vegetables. This reſides in the Oil of Plants, and is extremely volatile, being inimitable by Art, and imparting that Smell and Taſte to every individual Plant, which is peculiar to it, and to be found in no other.

In Pharmacy, there are many Liquors which go by the Name of Spirits, the principal of which are the following.

SPIRITUS ACETI. Spirit of Vinegar. See ACETUM.

SPIRITUS ALKERMES.

Take Spirit of Cinnamon, Citrons, black Cherries, and Roſemary, of each four Ounces; Juice of Chermes, two Ounces; Sugar, two Ounces. Mix all well together, and let them ſtand to ſettle a proper Time; decant off clear by Inclination, and filter the Remainder. To the whole add ten Leaves of beaten Gold, broke ſmall, and keep for Uſe.

This is a mighty grateful Cordial, and by the Virtues of its reſpective Ingredients, cannot but be good in all Intentions where the Spirits are to be raiſed, and the Nerves ſtrengthned; and from the Chermes it is ſuppoſed to be particularly uſeful in aſſiſting Delivery. It may be taken at Diſcretion.

SPIRITUS ANTI-EPILEPTICUS PUERORUM.

An anti-epileptic Spirit for Children.

Take Flowers of Lavender, Roſemary, Marjoram, Sage, of each two Handfuls; Caſtor, two Ounces; Camphire, three Ounces; Spirit of Wine, three Pints; Sal Ammoniac, four Ounces; Salt of Tartar, three Ounces; and ſimple Lavender Water, enough to cover the Ingredients. Then, after a Digeſtion of three or four Days, draw off one Pound and a half or two Pounds by a Retort, in which drop Oil of Rue, thirty Drops; Amber, twenty Drops; Oil of Mace and Juniper, of each forty Drops, and they will perfectly diſſolve in it.

This is taken out of the *Collectanea Chymica Leydenſia*, where it ſtands prodigiouſly recommended for all ſpaſmodic Affections, and whatſoever appears with Convulſions of the Nerves, and particularly in thoſe of Children. The Ingredients ſufficiently demonſtrate its Properties that way, and it is very convenient for taking; tho' if the chymical Oils were omitted it would be better, and not much the worſe in Efficacy: For the other Ingredients pretty well ſate it, inſomuch as to turn an aqueous Vehicle it is dropt into milky. It may be given from two to twenty Drops in any proper Liquor, and repeated according to the Urgency of the Symptoms.

SPIRITUS AURANTIORUM.

Spirit of Oranges.

Take Orange-Peels, freſh and clear'd from the White, one Pound; Proof Spirit, two Gallons. Draw off, in an Alembic, one Gallon and a half, and dulcify it with fine Loaf-Sugar at Pleaſure.

This makes an excellent pleaſant Dram, and can hardly be exceeded by any Thing, if a few freſh Orange Flowers be ſtrew'd upon its Surface afterwards. The laſt Running makes a good Carminative; and if no ſuch Uſe takes it off in the Shop before, it will be worth keeping to throw into the Still at the next making of the Spirit. After the ſame manner are to be made the Spirit of Citrons, Lemons, or any Thing of the like Kind; and their Flavour will be greatly heightned with the leaſt Touch imaginable of Ambergreaſe.

SPIRITUS BENZOINI. See BENZOINUM.

SPIRITUS CASTOREI. See CASTOR.

SPIRITUS CERASORUM NIGRORUM.

Spirit of black Cherries.

Take any Quantity of the Cherries, and bruiſe them, ſo as to break all the Stones and Kernels; then let them ſtand till they ferment, and draw off what is ſpirituous by an Alembic.

The Doſe is from two Drams to one Ounce.

SPIRITUS COCHLEARIÆ.

Spirit of Scurvy-Graſs.

Take of Garden Scurvy-Graſs in Flower (or freſh and newly gathered at any other Time) twenty Pounds, bruiſe it groſsly, and put it into a Copper-Still tinned within; put to it of the Grounds of Ale, three Gallons, with one Pint of new Yeaſt; ſtir them well together; lute on the Head, and kindle a little Small-Coal under it, to give juſt a fermenting Warmth; let it ſtand twenty-four Hours, and then give Fire to diſtil the Spirit. That which comes firſt is the beſt, and muſt be kept by itſelf; the other Running will ſerve for more Graſs, in the Room of common Water, another Time.

The great Quickneſs and Volatility of the Herb ſeems ſo little to want any of this Help, that it is to be feared it is the worſe for it; for let the Head be ever ſo cloſe luted, ſome will make its Eſcape. Therefore we take the following to be much the better Way.

Take the ſame Quantity of Scurvy-Graſs, and put to it of common Proof Brandy, two Gallons; a gentle Fire will bring over the Spirit, which may be drawn to near the Quantity of Spirit of Wine put in.

This will be ſtrongly impregnated with the volatile Parts of the Graſs, and keep much longer than the other; the Pungency of the Graſs being naturally kept alive, as it were, in this Spirit, which of itſelf would either find an Eſcape, or die and flatten, as it will do in Time, with all the Contrivances that can be invented to prevent it. If two or three Pound of Horſe-Radiſh be added to it, it will be much the better. This is given in all ſcorbutic Caſes in common Liquors, from twenty to one hundred Drops; and poſſeſſes the principal Virtues of the Herb itſelf in Subſtance.

SPIRITUS COCHLEARIÆ AUREUS.

Golden Spirit of Scurvy-Graſs.

Take of the foregoing Spirit, one Pound; and diſſolve in it of Reſin of Jalap, or Scammony, or Gamboge, one Ounce. If there be any Sediment, decant the tinged Spirit off carefully from it.

This is kept up in great Eſteem amongſt the common People, by the great Pretenſions of ſeveral Venders of it; but it is an indifferent and uſeleſs Medicine, unleſs to athletic Conſtitutions, and is very unfit to anſwer the Expectations its Name raiſes. Its Doſe is from twenty to ſixty Drops.

SPIRITUS CORNU CERVI. See ALCALI and CERVUS.

SPIRITUS CROCI. See CROCUS.

SPIRITUS JUNIPERI.

Spirit of Juniper.

This is made as that of the Oranges; two Pounds being allowed to one Gallon of Spirit of Wine. The poor and common People have it in a great Eſteem, but theirs is made with the worſt of Spirits, inſomuch that it paſſes by the Name of the Beggar's Cordial, and is moſt commonly called Gin.

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SPIRITUS LAVENDULÆ.

Spirit of Lavender.

The Manner of making this, from the College Diſpenſatory, is already deſcribed under the Article LAVENDULA, which ſee. But *Boerhaave* orders it to be prepared in the following manner.

Take ſix Ounces of freſh and ripe Lavender-Flowers, gathered in a warm clear Afternoon, and twelve Pounds of common Spirit of Wine, and diſtilled by the Rules of the Art, in the Alembic and Worm, till the Liquor begins to come over milky. What ariſes firſt, is a limpid Spirit impregnated with the Taſte and Odour of the Plant, and muſt be kept ſeparate. A thick white Liquor will now begin to follow; a Pint whereof is to be collected and kept apart, there will remain behind a browniſh black Liquor, together with the Flowers, but not much of the manifeſt Virtue thereof. The firſt Liquor is called the Spirit, and the ſecond the Water of Lavender.

Take three Ounces of the like Flowers, and pour the former Spirit and Water upon them, and diſtil as before. Keep the pure limpid Spirit ſeparate, under the Title of the double Spirit of Lavender, but draw off none of the white Water, for fear of Burning. A Quart of freſh Water may, however, be poured into the Still, and then a Pint drawn over, which will ſerve in other the like Diſtillations. In the ſame manner, two Ounces of recent Flowers may be diſtilled with the preceding double Spirit, and the Water be afterwards obtained; by which means the Spirit will be ſo much the richer in the native Spirit of the Lavender. Water is here added, leaſt the Flowers, added after the firſt Diſtillation, ſhould become dry, and burn, whilſt the laſt Spirit was running off, and by repeating the Diſtillation with freſh Flowers every time, the Spirit thus becomes excellent. The ſame Operation may be performed, tho' flower, in a Glaſs-Body or Retort, with little Trouble, and without Foulneſs. And thus I have often carried theſe Spirits to the higheſt Perfection. And this Operation is univerſal for obtaining all the Spirits from odoriferous, aromatical Flowers; the principal whereof are Garden-Cloves, Saffron, Jaſmin, Lavender, Lilies, Marum, Orange-Flowers, and Roſemary Flowers, but a principal Spirit of this Kind is that of Roſemary every where celebrated, and too much uſed under the Name of *Hungary Water*.

REMARKS.

It is eaſy to perceive that the eſſential Oil of the Flowers is here raiſed in the Diſtillation; and along with this Oil the Spirit of Wine riſes almoſt pure, like Alcohol; and therefore this Spirit diſſolves the Spirit of Lavender, and the Oil that riſes with it: But after the Alcohol is drawn off, and the Water begins to follow, then the aſcending Oil turns the Water milky. Whence is eaſily underſtood how theſe Spirits are procured by Art, and exalted at the Pleaſure of the Artiſt.

SPIRITUS MELLIS.

Spirit of Honey.

Mix one Pound of Honey with three Pounds of clean Sand, and put it into a Retort in a Sand-Furnace; make a Fire of the firſt Degree for two Hours; increaſe it to the ſecond for two Hours more, and ſo go on to the third; where let it remain till no more Fumes nor Drops will fall: There will then come over an empyreumatical Spirit and Oil: Put them both into a Cucurbit, and with a Fire of the firſt Degree draw off the inſipid Water, and the ſecond will raiſe the Spirit.

This is a Spirit only in the ſame Senſe that other Acids are; for this is an Acid, and will diſſolve Coral or Pearl, as diſtilled Vinegar. It is affirmed to be good to make the Hair grow, and uſed ſo much for that Purpoſe, by rubbing any bald Place with it, that it is to be met with almoſt in every Shop, altho' it is of no Value for any one thing elſe.

SPIRITUS, SAL VOLATILE, ET OLEUM MILLEPEDUM.

Spirit, Volatile Salt, and Oil of Hog-Lice.

Put any Quantity of Millepedes into a long-bodied Retort, ſo that it be not above half full; place it in a Sand-Furnace, lute on its Receiver, and give it the firſt Degree of Fire till the Retort is thoroughly hot; then increaſe the Fire to the ſecond, in which keep it two or three Hours, according to the Quantity of Millepedes made uſe of, and ſome Liquor will drop into the Receiver, and the volatile Salt will begin to riſe; increaſe it to the third and fourth Degree, then ceaſe and take off the Receiver, when it is cool, where there will be a Spirit, and Oil, and a Salt, which muſt be ſeparated and rectified apart, or put altogether into a long-neck'd Matraſs, luting on a Head and Receiver, and ſeparate the Salt by Sublimation, as that of Vipers.

The volatile Salt is the only Part this Proceſs produces that is of Value; and this has the Virtues of the Millepedes in Subſtance, and is good for all the Purpoſes of the *Vinum Millepedum*. Its Doſe is from four to ſixteen Grains in a Bolus, which is the beſt Form for its Adminiſtration.

SPIRITUS NITRI. See NITRUM.

SPIRITUS NITRI BEZOARTICUS. See BEZOARTICUM MINERALE.

SPIRITUS NITRI DULCIS. See NITRUM.

SPIRITUS NITRI CUM OLEO VITRIOLI. See NITRUM.

SPIRITUS SACCHARI.

Spirit of Sugar.

To one Pound of powder'd Sugar put three Pounds of Fullers-Earth alſo in Powder, or in its Room ſo much Sand clean waſhed; place a Receiver half full of the Mixture in a Sand-Furnace, and give it Fire of the firſt Degree for two Hours; then increaſe it to the ſecond for two Hours more; proceed to the third, where keep it till no Fumes appear in the Receiver. Then let all cool, and in the Receiver there will be found a fetid Oil and Spirit, which ſeparate as uſual. Put the Spirit into a Retort or Cucurbit; ſet to it a Receiver unluted; make Fire of the firſt Degree, and there keep it till the Drops have a little Acidity; put away the Phlegm, lute on the Receiver, increaſe the Fire to the ſecond Degree, where keep it till all is come off.

This will diſſolve Pearl or Coral, and is alſo accounted a good Medicine in the Stone and Gravel in the Bladder or Kidneys; but it is hardly made or preſcribed. The Doſe is from ten to fifty Drops. 'There is another Spirit of Sugar, which the Chymiſts call Compound, that has half as much Sal Ammoniac as Sugar. It makes a finer and ſtill more aperient Spirit, but is not uſed.

SPIRITUS SACCHARI ARDENS.

A burning Spirit of Sugar.

Take of coarſe Sugar or Moloſſes, any Quantity at pleaſure, in proportion to the Still; put to it ten or twelve times its Weight of Water; and let them ſtand a ſufficient time to ferment: As ſoon as the Fermentation is over, put the Liquor into a Copper-Still with its Refrigeratory, and give it gradual Fire till it begins to drop. Obſerve ſo to manage the Fire, that the Spirit come from the Mouth of the Worm in a ſmall Thread, and ſo continue till it runs inſipid; then let out the Fire, and rectify the Spirit by a ſecond Diſtillation, either in a Glaſs Body or Head; or if the Quantity be great, in a Copper-Veſſel, obſerving to ſeparate the Spirit from the Phlegm, as in the firſt Diſtillation, which may be further rectified till it will burn all away, and then it is called Alcohol.

This is of the ſame Uſe as the Spirit of Wine, and is much preferable to our Malt Spirits, both for Softneſs and Flavour, and is exceeded by none but that of the Grape.

SPIRITUS SALIS. See SAL.

SPIRITUS SALIS AMMONIACI. See AMMONIACUM.

SPIRITUS SALIS AMMONIACI SUCCINATUS. See AMMONIACUM.

SPIRITUS SALIS DULCIS. See SAL.

SPIRITUS SALIS MARTIS.

Spirit of the Salt of Iron.

Put into a Retort of Stone, or of Glaſs, covered with Clay, eight Ounces of the Salt of Iron, made with Oil of Vitriol, and Spirit of Wine; place the ſame in a Re- verberatory,

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verberatory, cover the Junctures exactly with Clay, and make a small Fire of the first Degree, in order to heat the Vessel gently: Augment the Fire to the second Degree; when nothing more comes over, augment the Fire to the third Degree; and white Vapours will arise, so as to fill the Receiver: Continue this Fire till these Vapours clear up; then augment it to the fourth Degree, and continue the same till nothing more comes out from the Retort. The Operation ordinarily lasts twelve Hours. Let the Vessels cool, and take the Clay from them, and there will come out of the Receiver a very strong Smell of Sulphur; and one shall find there five Ounces and five Drams of a clear Spirit, having an acid Taste almost like the ordinary Spirit of Vitriol, but more stiptic, and participating much of the Spirit of Steel. Keep it in a Glass Bottle well stopt.

The Author of it says, the Iron will not rise so well without a Mixture of Spirit of Wine in its Preparation; but it is the Degree of Fire to which such Rise is rather to be attributed. It may be given from four Drops to twelve in any convenient Liquor.

SPIRITUS SALIS CUM OLEO VITRIOLI. See SAL.

SPIRITUS SALIS VOLATILIS OLEOSUS. See AMMONIACUM.

SPIRITUS SAMBUCI.

Spirit of Elder.

Ferment any Quantity of the Berries, and draw off the Spirit by an Alembic.

After the same manner is to be obtained the Spirit of any Fruit or vegetable Substance. The last Spirit is commended for possessing the Virtues of the Elder in internal Uses, and is applied outwardly as the *Spiritus Ceraforum Nigrorum*. The Dose is one, two, or more Spoonfuls.

SPIRITUS SAPONIS.

Spirit of Soap.

Cut into small Pieces sixteen Ounces of *Alicant* Soap, and soften it in an Earthen Vessel by a gentle Fire, and mix in it seven or eight Ounces of Clay-Powder: Put the Mixture in a Retort big enough that one third Part may remain empty; place the same in a Furnace of Reverberation, adopt a Recipient, lute the Joints exactly, and make a little Fire in the Furnace to the third Degree; and continue doing so till nothing more distills. Separate the Vessels when cooled, and pour the whole contained in the Recipient into a Funnel furnished with grey Paper, and there will come out a watery and clear Liquor, which is yellowish and of a bitter Taste; which may be called the Spirit of Soap, of which there will be six Ounces.

I do not know that this has been made in our Shops, but it seems naturally suited for so many Purposes of Moment, as to deserve Recommendation; for it cannot but be very opening and resolutive, both inwardly and outwardly applied; and seems admirably calculated for Embrocations, with other suitable Ingredients, against arthritic and such like obstinate Pains. I cannot, also, but think it efficacious in the Jaundice, Scrophulas, and the like glandulous Foulnesses; as also, a good Menstruum for Opium, to make a liquid Laudanum with.

SPIRITUS TARTARI.

Spirit of Tartar.

Take of the pure Chrystals of Tartar four Pounds; distil in a Retort with a large Receiver, increasing the Fire by Degrees till the Fumes altogether disappear. There will come out a Phlegm, a Spirit, and an Oil: After the last of these is separated, put the other into a Glass Cucurbit, and rectify in a Sand-Heat two or three times over, drawing off every time not above a third Part. Of the Remainder may be made a Salt of Tartar by Calcination; from whence, also, may be obtained an Oil of Tartar by Fusion.

The Spirit is extremely aperitive; but to make it yet more so, to three Parts of the Oil and Spirit which were procured by Distillation, put one Part of *Spiritus Nitri Dulcis*; shake them well in the Receiver, and put them carefully into a clean Glass Retort, which set in a Sand Furnace; fit and lute on a Receiver, and give it a Fire of the first Degree, till the Lute be dry; then advance to the second, in which will come over a penetrating and grateful Spirit, which is a most powerful Diaphoretic, and also assists by Urine. It is given from two Scruples to two Drams, in any proper Vehicle, in the most obstinate chronic Diseases.

AQUA SEU SPIRITUS THERIACALIS CAMPHORATUS, CROLLII.

Take of Theriaca Andromachi, five Ounces; choice Myrrh, two Ounces and a half; Oriental Saffron, half an Ounce; Camphire, two Drams: Mix them, and pour thereto ten Ounces of rectify'd Spirit of Wine. Put them in a Cucurbit, and place thereon an Alembic will closed, and let them stand in a warm Place for four and twenty Days; after which distil them in *Balneo Mariæ*, by which means you will obtain a fine Spirit, which you must pour again upon the Dregs; digest them in the Cucurbit, and distil them over again, and repeat it the third Time.

REMARKS.

The Myrrh must be grosly pulverized, and put together with the Saffron into a Glass Cucurbit; the Camphire and *Theriaca* must be dissolved in Spirit of Wine, and this Solution poured into a Cucurbit, which must be carefully cover'd, and set in a warm Place, where the Matter must be suffered to digest for twenty four Days; after which you must adapt a Head and Receiver to the Cucurbit, exactly luting the Junctures, and distil off the Liquor in *Balneo Mariæ*. You are to pour back the distilled Spirit on the Dregs in the Cucurbit; and after a Digestion of four and twenty Hours, distil as before; and the same Distillation, or Cohobation, must be repeated the third Time, and the distilled Water or Spirit reserved in a Bottle well stopped.

It provokes Sweat, and represses Vapours; resists Poison, and the Malignity of Humours, and is of Service in pestilential Seasons. The Dose is from one to two Drams.

The Author directs a long Digestion of the Ingredients, and several Cohobations, the better to exalt and separate all the volatile Parts in the Distillation. But it is to be feared, that in those repeated Cohobations the most subtile of these Particles will be dissipated, either through the Pores of the Glass, or through the Junctures, let them be never so well luted. I should rather think, therefore, that one Distillation was enough, after a Digestion of four and twenty Days, so long a Time being sufficient to render it easy for the Dissolvent to dissolve, and exalt all the Ingredients which enter that Composition, and so much the more as those Principles are almost wholly sulphureous and volatile. *Lemery Pharmacopée universelle.*

Heister in many Places bestows great Encomiums on the *Spiritus Vini Theriacalis*, (by which, I presume, he means the Medicine here described) and speaks of it as an external Remedy of great Efficacy in Gangrenes, Whitlows, and several other Chirurgical Cases.

SPIRITUS VENERIS.

Spirit of Copper.

This is an acid Liquor drawn from the Crystals of Copper by Distillation, and may be prepared in the following manner.

Fill two Thirds of a Glass Retort with Crystals of Copper, prepared with distilled Vinegar. Put your Retort in Sand, adapt a large Receiver, and lute the Junctures. Use at first a gentle Fire, in order to raise by Distillation a small Quantity of insipid Water. This Water will be followed by a volatile Spirit. Then augment the Fire by Degrees, and the Head of the Retort will be filled with white Clouds. Towards the End of the Process surround the Retort with Live-Coals, in order to make the last Spirit, which is the strongest, come over. When the Clouds disappear, and the Receiver is cold, suffer the Fire to go out, unlute the Junctures, and pour all that is contained in the Receiver into a Glass Alembic, in order to distil it to Dryness with a Sand Heat; and this will be the rectified Spirit of Copper.

This Medicine is used against Apoplexies, Palsies, Epilepsies, and other Disorders of the Brain. Seven or eight Drops of it are to be taken in any proper Liquor. It dissolves Pearls, Corals, and other Substances of a like Nature.

There remains in the Bottom of the Retort a black Matter, which may be again converted into Copper, by fusing it in a Crucible, with the Addition of a little Saltpetre and Tartar. *Lemery Cours de Chymie.*

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SPIRITUS VINI. See ALCOHOL.
SPIRITUS VINI CAMPHORATUS. See CAMPHORA.
SPIRITUS VINI RECTIFICATUS. See ALCOHOL.

SPIRITUS VINI TARTARIZATUS.

Tartarized Spirit of Wine.

Take Salt of Tartar, two or three times coagulated and diſſolved, one Pound; give it a ſtrong Fuſion in a Crucible, for two Hours; powder it in a warm Mortar, and whilſt warm put it into a Matraſs to four Pints of rectify'd Spirit of Wine: Shake them well together, and place them in a Sand-Furnace; lute the Junctures of the Head and Receiver; give Fire to ſuch a Degree, as may make the Drops ſucceed each other very quickly, and continue it till all the Spirit is come over.

This Spirit volatilizes and carries over ſome Part of the Salt of Tartar along with it; which is demonſtrable by the Salt ſuſtaining the Loſs of, at leaſt, one Ounce of its Weight. And by this Operation the Spirit of Wine obtains a more agreeable Scent and Taſte than before, and is, alſo, more ſubtile and penetrating.

Another Way.

Take the Salt of Tartar left in the Bottom of the Matraſs in the foregoing Operation, diſſolve it in pure rectify'd diſtilled Vinegar; filter the Diſſolution, and coagulate the Salt, which diſſolve again in more diſtilled Vinegar; filter and coagulate as before. Repeat this Operation ſo often, that no black Fæces remain, and that the diſtilled Vinegar comes off as ſtrong as it was put upon the Salt. And then is the Salt prepared, which ſome call volatile Salt of Tartar.

If a farther Exaltation of this Salt is required, take of the foregoing Salt of Tartar four Ounces, and put to it of the Spirit of Wine one Pound, which will readily diſſolve it. Let the Diſſolution ſtand quiet for three or four Hours, and decant it gently from the Fæces; draw off the Spirit of Wine in a gentle Sand-Heat in a Retort: Diſſolve the Salt again in the ſame Spirit of Wine, and repeat the Operation till no Fæces remain: Return the Salt again into the Spirit of Wine, in which it will totally diſſolve.

This is the true tartarized Spirit of Wine, with which Mr. *George Wilſon* ſays he uſed to extract the Tincture and anodyne Sulphurs of Metals, and unite them with vegetable fixed, and animal volatile Alcalies; and he farther owns it to be the principal Ingredient in the anti-rheumatic Tincture (of which he does not give the Recipe) that cured him of a violent Rheumatiſm, which afflicted him three Years ſucceſſively; and that he was not only freed from thoſe acute Pains which attend the Diſtemper, but then continued without any Return, which was about fifteen Years after. Nor are its Virtues (he continues to inform us) confined to that Diſeaſe only; for the Gout, Scurvy, Dropſy, Jaundice, Colic, Green-Sickneſs, and Stone in the Bladder or Kidneys, give way to it. Its Doſe (that is of this Spirit) is from fifty Drops to two Drams, diluted in Wine and Water, or both mixed.

SPIRITUS VITRIOLI. See VITRIOLUM.

SPIRITUS VITRIOLI DULCIS. See VITRIOLUM.

SPISSAMENTUM. The ſame as STYMMA; which ſee.

SPITHAMA. σπιθαμὴ. A Meaſure of Length, called a Span, which is uſually ſaid to be twelve Fingers Breadth, or as much as from the End of the Thumb to the End of the little Finger, when extended.

SPLANCHNICA. σπλαγχνικὰ, from σπλάγχνα. An Entrail or Bowel. Medicines appropriated to the Diſeaſes of the Bowels or *Viſcera*.

SPLEN. The Spleen. See LIEN.

SPLENECTOMIA. An Exciſion of the Spleen.

SPLENETICA. Remedies for Diſorders of the Spleen.

SPLENIA. Compreſſes.

In dreſſing Wounds, after the Plaiſter and other Neceſſaries, it is uſual to apply Compreſſes, which are made of clean ſoft old Linen, four, ſix, or eight times doubled. They were called *Splenia* by the ancient Phyſicians, becauſe of the frequent Reſemblance of their Figure to that of the Spleen; and they are called Compreſſes, becauſe they ſerve to keep the Plaiſter and other Dreſſings firm. Compreſſes are alſo often applied without Plaiſters, ſometimes dry and ſometimes moiſten'd with Waters, Spirits, &c. of different Kinds and Qualities, according to the Nature of the Diſorder.

The Figure and Size of Compreſſes are different, according to the different Parts of the Body to which they are applied. Sometimes they are ſquare, as in Tab. 23. N°. 12. oblong, as in N°. 13. triangular, as in N°. 14. crucial, as in N°. 15. According to their Situation, alſo, they are called right, oblique, and tranſverſe, and ſometimes angular, when they ſurround the Arm or Leg. Some are ſhaped like an Aſteriſk or Star, as in N°. 16. Some are cut either on one Side or both Sides, as far as the Middle, ſee N°. 17, 18. Some are hexagonal, like N°. 19. and others are globular, like a Ball, which are placed under the Arm-pits, in Luxations of the Shoulder-bone, ſee N°. 20. Some are ſmall and ſquare, like N°. 21. which are uſed in ſtopping Hæmorrhages from wounded Blood-veſſels; others are ſlender, as N°. 22. and are uſeful in Sutures of Wounds and Ligatures of the Arteries. Thoſe which are deſigned for covering Plaiſters, ought to be made broader than the Plaiſters.

The principal Intentions of Compreſſes are, 1. To cheriſh the natural Heat of the Part affected, and keep out the Cold. 2. To ſecure the Dreſſings under them. 3. To convey liquid Remedies to the Parts wounded, or otherwiſe diſordered, and to contain them longer on the Part. 4. To fill up any Inequalities or Depreſſions about the wounded Part, that the Dreſſings may be kept firm, eſpecially in Fractures. 5. To prevent the Skin from being irritated by the Striƈture of Bandages, which might occaſion troubleſome Itchings, and even Pain. *Heiſter's Surgery.*

SPLENICA. Medicines appropriated to Diſorders of the Spleen.

SPLENISCOS. σπληνίσκος. A Compreſs.

SPLENITIS. σπληνῖτις. An Inflammation, or Tumor of the Spleen. *Splenitis* is, alſo, a Name for a Vein in the Left-Hand, the ſame as the *Salvatella*, which in the Right-Hand is called *Jecoraria*.

SPLENIUM. The ſame as the *Aſplenium*, or *Ceterach*.

SPLENIUS MUSCULUS. See MASTOIDÆUS SUPERIOR.

SPLIT. A Name for the *Fumaria lutea*.

SPODIACON. σποδιακὸν, from σποδὸς, Aſhes. The Name of a *Collyrium*, deſcribed by *Paulus Ægineta*, and thus called, becauſe it was of an Aſh Colour.

SPODITES. σποδίτης. An Epithet for Bread, importing its having been baked under the Embers. *Galen. Exeget.*

SPODIUM. See CADMIA.

SPODOS. σποδὸς. The ſame as Spodium. Properly it ſignifies Aſhes.

SPOLIATORIUM. The ſame as APODYTERIUM.

SPONDYLIUM. See SPHONDYLIUM.

SPONDYLOS. σπόνδυλος. The ſecond *Vertebra* of the Neck, or a *Vertebra* in general.

SPONDYLOLITHOS. A Sort of Stone found in the Country of *Tirol*, reſembling the Vertebra of a ſmall Animal.

SPONGIA.

The Characters are;

It is a thin, bibulous, and ſtrangely implicated Subſtance, generally ſofter than the *Keratophytus*.

Boerhaave mentions ſeventeen Sorts of *Spongia*; which are;

1. Spongia; ad uſum præſtantiſſima; foraminibus exiguis pervia. *T.* 575.

2. Spongia; compreſſa, magna. *C. B. P.* 368.

3. Spongia; globoſa. *C. B. P.* 368. *Imp.* 635. *Tourn. Inſt.* 575. *J. B.* 3. 816. *Raii Hiſt.* 1. 80. *Boerh. Ind. A.* 8. *Spongia marina alba.* Ger. 1383. Emac. 1577. *Spongia marina uſualis*, Park. 1303. SPUNGE.

The Spunge is an imperfect Plant, or Sea Vegetable growing under Water at the Bottom of the Sea, upon the Rocks and Stones, of a kind of woolly or hairy Subſtance, of a ſpringy Nature, full of a great Number of ſmall Cavities, light and porous.

Spunges uncalcined, are never uſed inwardly, being accounted of a poiſonous Nature, ſwelling up the Stomach, and not digeſting; they are uſed by Surgeons in Embrocations, and to ſtop Bleeding. *Miller's Bot. Off.*

Of *Spunges*, thoſe which are full of fine Perforations, ſome call *male* Spunges, and of theſe the hardeſt *Tragi*; thoſe which are of a contrary Diſpoſition to the before-mentioned, they call *female* Spunges; they are burnt like the *Alcyonium*.

Spunges, while new and not pinguious, are vulnerary, and repreſs Tumors; applied with Water or Poſca, they conglutinate recent Wounds, and with boil'd Honey heal old Sinuſes. Old Spunges have no ſuch Effect, tho' they ſerve to ſeparate and widen the Lips of Ulcers and Calluſes when ready to cloſe, by being tied up dry in a Linen Rag, and intruded after the Manner of Lint. New Spunges applied, dry rheumatic and cancerous old Ulcers, and repreſs Hæmorrhages. Burnt with Vinegar they are ſerviceable in a dry Lippitude, and where Abſtergents or Aſtringents are required; but for Ophthalmic Remedies they do beſt waſhed. Burnt with Pitch, they are good for an Hæmorrhage. Thoſe which are ſofteſt are whitened in the hot Seaſon by irrigating them with the Spume of the Salt, which ſticks to the Rocks, and then expoſing them

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them in the Sun, in doing which we must be careful to turn the hollow Part upwards, and that by which they were cut off downwards. If the Weather be fair, they may be exposed by Moon-light, being irrigated with the Spume of Salt, or with Sea-water; and Spunges so exposed become whitest of all. *Dioscorides*, *Lib.* 5. *Cap.* 138.

A burnt Spunge is of an acrimonious and digestive Faculty. Impregnated with Bitumen, and used while it is on Fire in order to be dried, it stops an Hæmorrhage from a Wound. If Bitumen be wanting, Pitch may serve. A new Spunge is manifestly drying, for if you apply it to a Wound either with Water, Posca, or Wine, it will prove as good an Agglutinant as those Medicines which are applied for stopping an Hæmorrhage. *Oribas. de Virt. Simpl. Lib.* 2. *Cap.* 1.

The Use of a Spunge is in deterging Sordes, Sanies, Blood, Pus, or Medicines themselves from the Body, or in relieving the same under a biting or itching Sensation. But for the Face we use a Spunge in order to revive and raise the Spirits when sunk, as in a Lipothymy, for which Purpose we apply a Spunge, dipt in the Summer in cold Water, but in the Winter in what is Milkwarm. But we must be cautious in such Cases, and not make the Application in the Beginning or Increase of the Fit, but in the State or Decline thereof; for in the Beginning we make Use of odoriferous Things. *Archigenes* for a burning Fever, when near its Height, would have us apply the Spunge not only to the Face, but also to the Breast. *Aetius*, *Tetrab.* 1. *Serm.* 3. *Cap.* 170.

4. Spongia; cinerea; cava; vaginam referens.

5. Spongia; Americana; compressa; spinosa; echinata; eleganter punctata.

6. Spongia; Americana; infundibulum referens; spinosa; echinata; eleganter punctata.

7. Spongia; flava; Priapeia; cava; mirabilis.

8. Spongia; flava; cava; cylindrica durior.

9. Spongia; fusca; cava; conica; tuberculosa; ingens.

10. Spongia; ramosa. *C. B. P.* 368. *Conferviæ marinæ genus.* Lob. Ic. 257.

11. Spongia; ramosissima; occulata.

12. Spongia; ramosa; fluviatilis Newtoni. *Raii H.* 8.

13. Spongia; dura; ambarum griseum penitus referens.

14. Spongia; ingens; anomala; Pelvim referens.

15. Spongia; dura; ramosa; nigra; suberis instar.

16. Spongia; ramosa; fistulosa; millepora.

17. Spongia: pulcherrima; reticulata; fistulosa; lacunata. *Boerh. Ind. Alt. Plant.*

Sponge is a soft, light, porous Plant, resembling a Fungus, and adhering to the Rocks in the Sea. Almost all Spunges are brought from the *Mediterranean* Sea. Spunges are of Use for enlarging Wounds when too small, and being burnt, afford an excellent Powder for cleaning the Teeth. There are sometimes found in Spunges some very small Corpuscles, which, by the Help of a Microscope, appear to be small *Conchæ*, which being reduced into Powder, are said to be good for the Sand and Gravel in the Kidneys, and the Scrophula, and also for Worms in Children. All these being burnt together, afford a very absorbent Powder, and emit a Smell like that of burnt Horn. *Hist. Plant. ascript. Boerhaave.*

Spunge is a very remarkable Plant, because when subjected to Distillation, it affords an urinous Spirit, exactly resembling that procured from animal Substances. Calcined Spunge is celebrated for its Virtues in curing the King's Evil, and not without Reason; for 'tis certain that in this Distemper many remarkable Cures have been performed by it.

SPONGIÆ LAPIS. Offic. *Lapis Spongiæ*, Boet. 407. De Laet. 135. Schrod. 357. Worm. 54. Charlt. Foss. 23. *Lapides in Spongiis*, Matth. 1390. *Spongites*, Aldrov. Mus. Metall. 671. SPUNGE STONE.

It is a Stone quite friable, concreted in a Spunge, and of a white or grey Colour. It is an Attenuant without any remarkable Heat, and is good to break the Stone in the Kidneys and Bladder, and also to discuss strumous Swellings.

The Stones found in Spunges being taken in Wine, are good to break the Stone in the Bladder. *Dioscorides*, *Lib.* 5. *Cap.* 163.

SPONGIOLI. Small Mushrooms which are produced in the Spring, and are esteemed, of all others, the best.

SPONGION. σπόγγιον. The Name of an Epithem, and of a Malagma, described by *Paulus Ægineta*, thus called, because said to imbibe hydropic Humours like a Spunge.

SPONGIOSUM OS. A Name for the *Os Ethmoides*, or *Cribriforme* of the Head. See CAPUT.

SPONGOS. σπόγγος. A Spunge.

SPONSUS. Mercury. *Rulandus.*

SPONTUM. Ashes wetted with Water, and used in the Depuration of Gold or Silver.

SPORADES. σποράδες. An Epithet for Diseases, importing *interspersed* or *disseminated*. Sporadic Diseases are such as seize particular Persons at any Time or Season, or in any Place; whereas epidemical Diseases are peculiar to certain Times or Seasons, and endemial to particular Places. The Word is derived from σπείρω, to sow, or scatter.

SPORADICI MORBI. Sporadic Diseases. See SPORADES.

SPORETOS. σπορητὸς. The Beginning of Winter, or latter End of Autumn, in which the Seed of Winter-Corn is sown.

SPOROS. σπόρος. The seminal Fluid.

SPUMA. Froth or Foam. *Spuma Argenti* is *Litharge*. See LITHARGYRUS. *Spuma* in Chymistry, is Ashes. *Spuma Maris*, is the *Halcyonium*.

Spuma Nitri, is the *Apronitrum*. *Spuma trium Draconum*, is Butter of Antimony.

SPURIUS. Illegitimate. This is applied as an Epithet to various Diseases. The Ribs, also, which do not reach to the *Sternum*, are called *Spurious Ribs*.

SPUTAMEN. The same as SPUTUM.

SPUTUM. Prognostics from *Spit*, or Excretions by Spitting.

Tho' the Name *Sputum*, Spit, be given by Physicians to whatever comes from the Mouth, except what is discharged by Vomiting, in which Sense it comprehends all Excretions by Screation or Hawking, simple Spitting and Coughing, yet the Word is more properly applied by them to the Matter excreted by means of a Cough, and under this Acceptation we shall now consider it with respect to the Signs on which we may ground our Predictions concerning the Death or Recovery of the Patient.

The Matter discharged by Coughing, provided it be simple, and not in the least mixed with other Humours, is a mucous, pituitous Excrement distilled from the Lungs. Sometimes indeed bilious, or merely purulent Substances are discharged, but these are the Effects of very bad Disorders. Now these Excretions by Means of a Cough, to which, as was said, we shall give the Name of *Spit*, are, as *Galen* tells us, Indications of the Affections of the Lungs, Thorax, Aspera Arteria and Throat, and, in short, of all the Organs of Respiration. And they differ from one another in Substance, Figure, Colour, Quantity, Simpleness and Mixture, Smell, Taste, Facility of Screation, an in Alleviation or Aggravation of the Pain and Cough. In respect of Substance, they are either thin or thick, viscid or not viscid; in regard to the Figure, they are called smooth, equal, round, spumous, bloody and purulent; as to Colour, they are said to be white, pale, yellow, russet, red, green, livid, black, and sometimes particoloured; in Quantity, they amount to much, or little or nothing; in respect to Simpleness and Mixture, they are either merely simple, or more or less mixed; as to their Smell, they are either said to have an ill Smell, or to have no ill Smell; in Taste they take the Epithets of insipid, sweet, salt, bitter and acrid; as to Facility or Difficulty of Excreation, we say they are easily, or with Difficulty, or by no means dischargeable by Coughing; they are also either such as mitigate or increase the Pain and Cough; and, to seek for no more Distinctions, are either concocted, or crude and malignant.

The Causes of all these different Excretions by Coughing, are to be known and understood; and, first, as to *thin* and *liquid Spit*, its Thinness proceeds, according to *Galen* on the sixth of the *Epedemics*, from the weak Heat of the Brain, which is incapable of concocting the aqueous Excrement, as are also the Lungs on the same Account, or a Defect of Heat sufficient to thicken the Humour. This Sort of *Spit*, in a Pleurisy, he makes the Beginning of Concoction, as the thick *Spit* is a Sign of perfect Concoction; for *Spit*, in its State of Maturation, grows thicker and thicker.

Spit becomes moderately viscid, when the thin or liquid Parts are throughly concocted, but an extraordinary Viscidity indicates an intense Heat resolving the Humid, by which Means, the Phlegm being agitated by a high Degree of Heat, thickens and becomes viscid. Such a Viscidity of the *Spit* is very pernicious in pleuretic and pulmonic Disorders, because it adheres so firmly to the Parts as hardly to be disengaged, and oftentimes, by obstructing the small Arteries of the Lungs, induces a Suffocation, of which *Galen*, *Lib.* 4. *de Loc. Affect. Cap.* 6. gives an Instance in *Antipater*, a *Roman* Physician. For in a Pleurisy, or Peripneumony, and even in an Asthma, what cannot be thrown off induces a Stertor and Ebullition, and is frequently the Cause of Suffocation or an Empyema. But a watery and fluid Phlegm, which is void of the least Viscidity, is a Sign of a weak Heat, which is incapable of consuming the thin Humidity.

A *smooth* and *equal Spit* indicates the Phlegm to be not only of one simple Substance, but that it is equally agitated in all Parts by the Heat; as one unequal and variously figur'd, indicates the contrary.

Spumosi,

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Spumous, or *frothy Spit*, in which the Spume continues for a conſiderable Time, is from a pituitous and viſcid Subſtance, agitated with a great Degree of Heat; *Spit* remarkably ſpumous is juſtly condemned by *Galen*, *Lib. de totius Morbi Temp.* This Sort of *Spit* may proceed alſo from a flatulent Spirit mixed with the Phlegm, or ſome other Humour, as it happens when the excrementitious Parts diſcharged from the Lungs are mixed with a great Quantity of Air. In this reſpect we are told by *Paulus*, that ſpumous *Spit* is frequently diſcharged from the Throat, becauſe it is a Part concerned in Reſpiration. In a Pleuriſy and Peripneumony what is expectorated by Coughing appears ſpumous, not from a flatulent Spirit, but an igneous Heat contracted by the affected Parts. Under theſe Diſorders, if ſpumous Blood appear among the *Spit*, it ſhews the Subſtance of the Lungs to be injured, as we are taught by *Galen*; and it appears from *Hippocrates*, 5 *Aph.* 13. that the ſpitting of ſpumous Blood is a certain Sign of an Ulceration in the Subſtance of the Lungs.

Spit of a *round Figure* expectorated by Coughing, is from a thick and tenacious Humour collected in the Fibres of the Lungs, and agitated by an extraordinary Degree of Heat, according to the Sentiments of *Galen*, *Com. in* 6 *Epid.* to which we add, that it takes this round Form, becauſe the glutinous Humour contained in the Aſpera Arteria, aſſumes the ſame Figure with that Part, which is globous, as having its interior Cavity turned orbicularly. I have obſerved this Sort of *Spit* in ſome Perſons who were free from a Fever, and for a very long Time ſeemed to be no way indiſpoſed, but at laſt died all of them of Conſumptions. Round *Spit*, according to *Hippocrates*, 6 *Epid. Sect.* 3. *Aph.* 27. and *Sect.* 6. *Aph.* 21. indicates a Delirium, perhaps from the Heat ſignified by it, which, as *Galen* ſays, *de loc. Affect. Lib.* 4. *Cap.* 8. fills the Head, but it can never by itſelf, and alone, portend a Delirium.

Of much the ſame Kind with *round Spit*, is *Spit* in the Figure of Hailſtones; this was obſerved by *Galen*, of a certain Perſon who could not avoid falling into a deep Conſumption.

Bloody Spit is from an Extravaſation of Blood, occaſioned ſometimes by an Aperture of the Mouths of the Veins, which the *Greeks* call *Anaſtomoſis*; an Effuſion of this Kind is not attended with Pain, Inflammation or Fever, and the Blood is thin and watery, and much in Quantity, if proceeding from large Veins, and but little, if iſſuing from ſmaller Veſſels. Sometimes the Extravaſation and conſequent Hæmoptoe is cauſed by an Eroſion of the Veſſels, called *Diabroſis* and *Anabroſis*, which Affection is indicated by a troubleſome Cough without a manifeſt Cauſe. The Blood in the Beginning is but little in Quantity, and is evacuated at Intervals, tho' ſometimes, when the Eroſion is conſiderable, or affects the larger Veſſels, there is a copious Efflux. In the third and laſt Place, the Hæmoptoe may be occaſioned by a Rupture of the Veins, which Affection is called a *Perirrhexis*, and is indicated by a Pain, eſpecially if the Flux proceed from a Rupture of the Veſſels about the Thorax or Lungs near a Membrane, and the Blood is alſo much in Quantity, if the Rupture be occaſioned by a Redundance of Humours, violent Motion, Clamor, a Fall, a Blow, or the like. Bloody *Spit* then you ſee, is occaſioned by an Aperture, Corroſion, or Rupture of the Veins. But in a Pleuriſy this Kind of *Spit* ſhews that Nature attempts the Concoction of the morbific Matter by gently attenuating the ſame, whence the Paſſages being dilated for the Exhalation of the Vapours, the thinner Part, and what is next to the Vapours, takes Occaſion from the Laxneſs of the Pores to ſlip through them into the internal and neighbouring Spaces, from which, by the Riſe of a Cough, and Expectoration of *Spit*, an incipient Concoction is indicated. This kind of bloody *Spit* is mixed with Phlegm, and is incident to thoſe Pleuriſies which *Galen*, *Com.* 3. *in* 6 *Epid.* pronounces of the mildeſt Sort. But very bloody *Spit* in pleuretic Diſorders, is utterly condemned by the Author of *Coac.* 390, becauſe it is much the ſame as if pure Blood were expectorated, and indicates another kind of Diſorder, which is either a *Diabroſis* of ſome of the Veſſels by an acrimonious and corroding Bile attenuating the Blood, and opening the Veins; or a *Rhexis*, that is, a Rupture from a violent Compreſſion of the Thorax, which proved ineffectual in diſcharging the Contents of the *Phlegmon*.

Purulent after bloody *Spit* indicates an approaching Phthiſis, 7 *Aph.* 15, 16. but in a Pleuriſy and Peripneumony it is a Sign of a Suppuration and Empyema, whence proceeds a Conſumption; for if the peccant Matter be not removed in fourteen Days, it either deſtroys the Patient by Suffocation, or becomes more putrid, and is converted into Pus, the Signs of which are a Horror, either recent or increaſed, or violent Fever, and a Weight or Load. Agreeable to this are the Sentiments of *Hippocrates*, 2 *Aph.* 47. where he ſays, "That "Pains and Fevers happen more about the Time of the "Generation of Pus, than after it is generated."

With reſpect to the *Colours* of the *Spit*, or Matter excreted by Coughing, it appears *white* when it is either pituitous or purulent. White *Spit* from Phlegm, in pituitous Diſeaſes, is of Service; in bilious Diſorders, it is not only of no Benefit, but a bad Sign, as indicating that nothing of the Matter which cauſes the Diſtemper, for Inſtance a Pleuriſy, is diſcharged. Of white *Spit* from *Pus* we have ſpoken juſt now.

Yellow, *pale*, and *black Spit*, are from Bile of the ſame Colours impregnating the ſame. *Com.* 4 *in* 6 *Epid. T.* 4. The ſame Author, *Lib.* 2. *de Loc. Affect. Cap.* 9. comprehends the Colours of *Spit*, with their various Cauſes, in the following Paſſage: "We have already ſhewn, he ſays, that "all Inflammations proceed from a Conflux of Blood; "wherefore if the Blood be bilious, the *Spit* will be yel"low, or pale; if pituitous and ſpumous, the *Spit* will be "white; if the Blood be melancholic, the *Spit* will be "either black or livid; if none of theſe Humours affect "the Blood, the *Spit* will be red. In Pleuriſies, the *Spit* "is frequently obſerv'd to have more of a bilious Hue; in "a Peripneumony it has uſually more of a phlegmatic "Caſt."

Party-colour'd Spit, according to *Galen*, indicates a Variety of Affections, and conſequently a difficult and hazardous Diſtemper.

Much *Spit* indicates a Multitude of Humours, and if expectorated with Eaſe, and white and thick, ſhews the Phlegmon to be concocted and ſubdu'd. If it be much and purulent, and the Pus therein be white, ſmooth, equal, and not fibred, it ſignifies that the ſuppurated Plegmon will be ended by an Excretion of the Pus. Much bilious, green, livid and black *Spit*, ſhews the Diſeaſe to be very crude and malignant, and very difficult to be ſubdu'd by Nature.

Spit little in Quantity with reſpect to the Diſeaſe, tho' concocted, is of no Service, and therefore juſtly to be dreaded in a Peripneumony, as we are taught by the Author of the *Coac.* 416. and find confirm'd by an Inſtance in *Hippocrates*, 7 *Epid. T.* 58. of the Wife of *Euxenus*.

No *Spit* at all excreted in pleuritic and peripneumonic Diſorders is highly dangerous, eſpecially when the Patient has not the Benefit of Expectoration either in the Progreſs or Beginning of the Diſorder. Not to ſpit in a Pleuriſy is of the ſame Signification as aqueous Urine in other Fevers, indicating the extraordinary crude State of the Diſeaſe, as *Galen* tells us, *Lib.* 1. *de Criſibus*, *Cap.* 18. The ſame Author, *Com. in* 1 *Aph.* 12. ſays, that want of ſpitting ſhews the Inflammation or Phlegmon to be difficult of Concoction, and of long Continuance. And, *Lib. de Conſtitut. Art. Medend. Cap.* 16. he ſays, that to ſpit nothing is pernicious, partly becauſe it ſignifies that the Matter is as it were bound up in the Phlegmon, and partly in that the inward Parts are univerſally corrupted by its Detention. Hence the Author of the *Coac.* 381. juſtly pronounces dry Pleuriſies, in which nothing is diſcharged by ſpitting, very dangerous. And *Galen*, *Lib.* 2. *de Criſibus*, *Cap.* 10. expreſſes himſelf to the ſame Purpoſe, as follows: "When the Diſorder, he ſays, is exquiſitely ſtrait, and binds up, as it were, in itſelf the whole "Flux [Confluence of Humours] it produces deadly Di"ſtempers, which are called ἄπνοοι (*Apnoi*) ſpitleſs." And *Lib. de Totius Morbi Temp. Cap.* 16. he poſitively determines, that want of ſpitting, attended with great Pain and a Difficulty of Reſpiration, is mortal.

It is no leſs fatal under the ſame Diſorders for ſpitting to be ſuppreſſed for no manifeſt Reaſon, as the ſame Author obſerves, *Lib. de Conſtit. Art. Med.* for ſuch a Suppreſſion, he ſays, *Com.* 2. *in Prognoſt.* is owing either to the Thickneſs and Viſcidity of the Humour, or to the Laxneſs of the Membrane which incloſes the Lungs; or, laſtly, to the Weakneſs of the Faculty in the Patient. To the ſame Purpoſe the Author of *Prorrhet.* 97. tells us, that "They who "are affected with a Pain of the Side attended with bilious "Spittings, if theſe ceaſe for no Reaſon, are ſeized with "Madneſs." Here *Galen*, in his Comment on the Place, writes, that "This is not always the Conſequence, but "only when there is a Tranſlation of the bilious Humour "to the Head." In a Tabes and Suppuration there is nothing worſe than a Suppreſſion of *Spit*; in the latter Caſe it ſignifies a Phthiſis or Death, and in the former it portends a fatal Event. *Galen*, in 7 *Aph.* 16. ſays, that conſumptive Perſons live under their Extenuation as long as they can cleanſe and free their Lungs by coughing; but when the Pus remains within, the Paſſages for Reſpiration being by that Means obſtructed, the Patient is ſuffocated on a ſudden. To the ſame Purpoſe we are told by *Hippocrates*, 7 *Aph.* 16. that "Upon ſpitting of Pus comes a Phthiſis; and when the

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" Spit is retained, the Patients die." An Excretion, alſo, which is weak and fruitleſs, and is not projected by the Lungs, but on Account of an exceſſive Plenitude rattles in the Throat, ſhews either the Redundance and Viſcidity of the Humours, or the Weakneſs of the Faculty.

In a Pleuriſy, Peripneumony, Empyema, and Tabes, for the Patient to be able to ſpit out readily and freely, is a very good Sign, as we are told by *Galen*, *Lib. de Conſtitut. Art. de Medend.* This in a Pleuriſy and Peripneumony, ſhews that Nature has begun her Work of Concoction, and that the Spit has no bad Quality; and in a Suppuration it gives Hopes that the Pus may this Way be evacuated, and a Phthiſis prevented. Of ſuch Sputation we find *Hippocrates* ſpeaking in *Prognoſtic.* where he ſays, " That in all Pains " and Diſorders about the Lungs and Sides, a prompt and " eaſy Excretion is required." For this ſhews both the Strength of the vital Faculty, and, alſo, of the animal Faculty in the Brain, and that Nature's Inſtruments, the Muſcles, are no way incommoded in Reſpiration by an Obſtruction or Compreſſion of the Paſſages; and, alſo, that the Matter is neither ſo viſcid as not to be ſeparated from the Parts, nor too thick nor too thin to be raiſed.

Pure, or ſimple and unmixed *Spit*, except ſuch as is meerly pituitous, is occaſion'd, as we are told by *Galen*, *Lib. de Humoribus*, from a Conſumption of all the aqueous Humidies by a flammeous Heat, whence it ſhews an internal Burning of the Parts, and that the Diſeaſe is of a very difficult and dangerous Nature, becauſe ſuch *Spit* is of a malignant Quality, and can hardly be expectorated. *Hippocrates* in his *Prognoſtics* condemns pure or ſimple *yellow Spit*, but moſt of all *black Spit* when pure.

Spit appears mix'd with an aqueous Humid, when either the humid Parts are not conſumed by the febrile Heat, or there is a Redundance of the pituitous Humour.

What we call *various* or *Party-colour'd Spit*, appears mixed with a Variety of Humours; and this is much worſe than the former, as indicating a Complication of Diſorders.

Fetid Spit, by its ill Smell, denotes a conſiderable Putrefaction in the Humour of which it is compoſed. For this Reaſon *Galen*, *Lib. de Tot. Morb. Tempor.* highly condemns very fetid Spit in a Pleuriſy and Peripneumony: And *Hippocrates*, *Coac.* 406. 409. pronounces it mortal in an Empyema.

Inſipid Spit is occaſioned by crude Phlegm, *ſweet Spit* by Phlegm concocted, *bloody Spit* by concocted Phlegm mixed with Blood. *Salt Spit* is from ſalt Phlegm, which acquires its Saltneſs from an exceſſive Agitation and Aſſation by Heat, and, alſo, according to the Sentiments of the *Arabian* Phyſicians, from torrid Vapours, or a Mixture of bilious Humours. *Acrimonious* and *bitter Spit* is from yellow, ruſſet and æruginous Bile; *acid Spit* from a melancholic Humour.

Spit, by which a Mitigation of Pain is occaſion'd, is eſteemed very ſalutary, becauſe it indicates a due Evacuation of the Humours, according to that of *Hippocrates*, 1 *Aph.* 25. " When Things are evacuated which require Eva- " cuation, it conduces to Health." And, as he ſays in another Place, 2 *Aph.* 2. " That Sleep which removes a Deli- " rium is good, but the contrary bad;" thus it happens in Affections of the Pleura and Lungs, that where *Spit* cauſes no Alleviation of the Pain, it is of no Service, but of worſe Conſequence when the Pain increaſes by it: For *Spit* which gives no Relief to the Patient under his Pain and Anxiety, though in itſelf of no bad Quality, prognoſticates a Suppuration, according to *Hippocrates* in the following Paſſage of his *Prognoſtics*: " Whenever a Pain in thoſe Parts is not " removed either by Expectoration, or Evacuation of the " Belly by Stool, or Veneſection, or Medicines, or Diet, " the Diſorder tends to a Suppuration." And to the ſame Purpoſe he ſays juſt before, " That all Ex- " cretions which remove not the Pain are bad; but the " worſt of all are the black, whereas thoſe by which the " Pain is alleviated are of the beſt Kind."

In the ſame Manner, *Spit* by which the Cough ceaſes is a very good Prognoſtic, becauſe it indicates that the Humour which is the Cauſe of the Cough and Inflammation, diſcharges itſelf the moſt commodious Way. *Spit* and Excretions which, on the contrary, excite much Coughing, are pernicious; for the Humour, either through the Depravity of the Matter detained in the Lungs, or the Weakneſs of the Organ, or of the Faculty, or its own Thickneſs, is with great Difficulty raiſed, and is ſometimes intercluded in a narrow Paſſage, in ſuch a Manner, as to occaſion Suffocation. Sometimes it contracts ſuch a Degree of Viſcidity, as not to be ſeparable from the Parts to which it adheres; and oftentimes when it is raiſed into the Tubes of the Lungs, is there detained, and adheres to them like Glue. Thin *Spit*, on account of its Diffluence and Incoherence, is no leſs difficult to be expectorated. By all theſe Kinds of *Spit* then, or Excreations, much Coughing is excited, which, on the contrary, is reſtrained by *Spit* of a moderate Conſiſtence, and not too viſcid or too thin. For ſuch Reaſons *Hippocrates*, in his *Prognoſtics*, utterly condemns all Expectoration of *Spit* which provoke much Coughing.

Concocted Spit in a Pleuriſy or Peripneumony, is white, light, neither too thick nor too thin, as *Galen* ſays, *Com.* 2. *in Prognoſt.* which is eaſily diſcharg'd by Screation, and is of equal Conſiſtence; this is from Nature having got the better of the Diſtemper.

In a Suppuration, *Hippocrates Prognoſtic.* requires *Spit* which is white, pure, and free from Fetidneſs. And in the ſame Treatiſe he commends ſuch *Spit* as is mixed with yellow Bile, eſpecially in Pleuriſies, as indicating that a great Part of the Matter which cauſed the Inflammation diſcharges itſelf in a due Manner. On the contrary, thin *Spit*, or what is too thick, or too thin, or two viſcid, is of a crude Subſtance, and ſhews that Nature has not as yet concocted any thing.

Of a malignant Kind are the purely yellow, ruſſet, green, livid, black, party-colour'd, highly fetid *Spit*, with ſuch as increaſes the Pain and Cough, or is attended with a great Difficulty of Reſpiration. And ſo much for the Cauſes of the different Kinds of Reſpiration; we ſhall now treat of the ſalutary Kinds of Spit.

Of the good Kinds of SPIT, *which are Prognoſtics of Recovery.*

In ſpeaking of the good Kinds of *Spit*, we ſhall firſt obſerve how they ought to be when the Subject is or is not moleſted with a Fever, Cough, Difficulty of Reſpiration, or a Pain: Secondly, what Kind of Spit is requir'd in a Pleuriſy and Peripneumony: And, thirdly, what is to be deſir'd in an Empyema, or Suppuration.

Firſt then, in Affections of the Thorax, without an Inflammation or Fever, the beſt *Spit* is what is white, ſmooth, equal, moderately thick, with a ſlight Degree of Viſcidity, ting'd with no bad Colour, that is to ſay, yellow, pale, ruſſet, green, livid or black; for *Spit* ting'd with Colours, and eſpecially yellow, is utterly condemned by *Galen*, *Lib.* 4. *de Loc. Affect. Cap.* 8. That *Spit* is, alſo, well circumſtanced which is eaſily excreted, without much Coughing, and which, alſo, reſtrains a Cough, and gives Relief under a Difficulty of Reſpiration.

In a Pleuriſy and Peripneumony, the *Spit* is eſteem'd ſalutary which reſembles that of Perſons in Health, as we are aſſured by *Galen*, *de Criſibus*, *Lib.* 1. *Cap.* 7. for it is not poſſible that, when the Parts of the Thorax and Lungs are very much injur'd, the *Spit* ſhould be like that of ſound Perſons, but there muſt of Neceſſity be a Difference. Now *Spit* which reſembles that of healthy Perſons, is never diſcharg'd but in the State of the Diſeaſe, at which Time there is a perfect Concoction. Hence *Galen*, in 1 *Aph.* 12. ſays, that concocted *Spit* is white, ſmooth, equal, neither too thick nor too thin, and which is eaſily and readily excreted. The ſame Author, in 6 *Epid.* tells us, that in a Pleuriſy and Peripneumony, which are of a favourable Kind, the Patients have ſome Diſcharge of *Spit* at the Beginning of the Diſtemper, and that this Diſcharge indicates that the Concoction is begun, and that if the Matter diſcharged be thin, it is a Sign of a moderate Concoction, if thick, of a perfect one. And *Com.* in 1 *Aph.* he ſays, that for the Sick in thoſe Diſorders not to ſpit, indicates a very crude State of the Diſeaſe; to ſpit ſomething, but of a thin Conſiſtence, ſhews the Concoction is begun; for the *Spit* afterwards to become thicker, indicates a greater Concoction; and when it comes thick, as was ſaid, white, ſmooth, equal, and is eaſily diſcharged, it indicates a perfect Concoction. The beſt *Spit*, therefore, has theſe Qualities; and ſuch was that obſerv'd by *Hippocrates* of *Anaxion*, on the twenty-ſeventh Day, 3 *Epid. Sect.* 3. *Ægr.* 8.

But this, perhaps, may be liable to Objections, if it be juſt what *Hippocrates* ſays, *Lib. Prognoſt.* where we read, in ſuch Caſes, " The *Spit* ſhould appear deeply tinged with " yellow Bile." And a little after it is ſaid, " That an " Excreation of yellow *Spit*, not mixed with much Blood, " in the Beginning of a Peripneumony, is very ſalutary." To the ſame Purpoſe we are told by the Author of *Coac.* 386. " That in pleuritic Pains it is good for the Spit to " be coloured," and ibid. 390, " That in all Pleuriſies " and Peripneumonies it is beſt when the Spit is eaſily and " readily diſcharged, and has a yellow Mixture." Hence it follows, that not only white *Spit* is good, but, alſo, if yellow, bloody, and pale Matter be mixed with the ſame.

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This indeed is very true, but not in the State or Heighth of the Diſeaſe, but in the Beginning or Increaſe of the ſame; for which no other Reaſon is to be given, than that theſe Kinds of *Spit* ſhew the Inflammation to proceed from yellow Bile and Blood, which, as *Galen* ſhews, is leſs dangerous than ſuch as are excited by other Humours, and, alſo, diſcharges ſome of the Matter which is the Cauſe of the Inflammation; ſo that theſe Kinds of *Spit* diſcharg'd in the Beginning or Increaſe of the forementioned Diſorders are not unſerviceable. But if ſuch *Spit* happens later, it is leſs ſafe, and ſhews that the Diſeaſe will be ſlow in Concoction, *Coac.* 385. 390. or of long Continuance, and not void of Danger. It is not, however, mortal, but only foreſhews a long Diſeaſe; nor yet uſeleſs, as was ſaid, becauſe it ſignifies that ſome Part of the Humour which is the Cauſe of the Inflammation is evacuated, and, alſo, that the Inflammation itſelf is not of a malignant Nature, but milder, and leſs dangerous than when it proceeds from other Humours. Hence it appears, that neither green, nor black, nor party-colour'd *Spit* is good, ſince it ſignifies that the Inflammation is excited by very depraved Juices, and conſequently that green and black *Spit* is more depraved than the yellow and bloody.

That is to be eſteemed good *Spit*, alſo, which, beſides the foremention'd Characters, has moreover this, that it is eaſily and freely diſcharged, according to that of *Hippocrates*, *Lib. Prognoſt.* where it is ſaid, "That in all Diſorders affecting the Parts about the Ribs and Lungs, it is requir'd "that an Excreation of the *Spit* be ſoon and readily perform'd." It is early and ſeaſonable enough, when it happens within the third and fourth Day; and if it be, alſo, of a good Kind, it is a Sign that the Diſeaſe will be ſhort and favourable, as we are aſſur'd by *Galen*, *Com.* 3. *in Aph.* and *Lib.* 1. *de Criſibus*, and *Com.* 3. *in* 6 *Epid.*

Spit much in Quantity, and concocted, on a critical Day is a very good Sign, and one of thoſe which are critically determining; and if it removes the Pain, Cough, and Fever, there will be no Neceſſity of any other Sign to pronounce it very good and critical. We have an Inſtance to this Purpoſe, 3 *Epid. Sect.* 3. *Ægr.* 8. in *Anaxion*, of whom it is ſaid, "That on the ſeventeenth Day he began to ſpit a little "concocted Matter, and found ſome Relief; on the twenty-"ſeventh the Fever returned, he cough'd, and expectorated "plenty of concocted Matter, his Urine had a large, white "Hypoſtaſis, his Thirſt went off, and he fell into a Sleep."

We may add to what has been mention'd, that this *Spit* is very good and ſalutary, when it appears in Conjunction with ſome other good Evacuation.

In Suppurations, alſo, the *Spit* is to have the ſame Qualifications as are mention'd in the aforeſaid Diſorders, and are requir'd by *Hippocrates*, *Lib. Prognoſt.* where he ſays, that "The beſt *Spit* is white, ſmooth, of one Colour, free from "Phlegm, and expectorated without Pain, or violent "Coughing." To which we may add, that it is copious, and removes the Fever, Thirſt, Cough, and bad Reſpiration.

Of bad SPIT, *which is a Prognoſtic of a fatal Event.*

We ſhall here, firſt, enumerate the bad Kinds of *Spit*, which portend a fatal Event to thoſe who labour under no Diſeaſe, beginning with the *pituitous.*

A pituitous Matter, or *Spit*, which has for a long Time diſtilled from the Lungs, and is in Subſtance immoderately thin or thick, or viſcid, much in Quantity, of a round Figure, or of a ſaltiſh or acrimonious Taſte, are generally very much ſuſpected. *Spit* very *thin* excites a very troubleſome Cough; and the *thick*, by obſtructing the Paſſages of Reſpiration, endangers a Suffocation; as does, alſo, the *viſcid*, by long adhering to the Bronchia of the Lungs. A *ſaltiſh* or *acrimonious Spit*, by corroding the Arteries, paves the Way to a Hæmoptoe, and from thence to ſpitting of Pus, and ſo at laſt to a *Pthiſis*. *Round Spit*, which has been ſhewn before to proceed from a thick and tenacious Phlegm, agitated by exceſſive Heat, always renders a Perſon very ſubject to a Phthiſis, as appears from the beforemention'd Inſtances recorded by *Galen.*

Bilious Spit, alſo, is condemn'd by *Galen*, eſpecially in ſuch as are ſuſpected to be conſumptive. This Kind of *Spit* is known by the Colour, which is either yellow, pale, or ruſſet; and by the Taſte, which is acrid or bitter. Thoſe Colours, eſpecially the yellow and the pale, are evident Characters of bitter Bile, as we are aſſur'd by *Galen*, *Lib.* 2. *de Loc. Affect. Cap.* 10. By the Colours, then, we manifeſtly diſcover when *Spit* is of a bilious Kind; but we are not ſo certain with regard to the Taſte, which may be blunted and obſcured by a Mixture of Phlegm. Hence Phyſicians, otherwiſe very skilful, ſometimes happen to be deceived in not diſcovering the bilious Humour concealed within the Lungs, becauſe the *Spit*, tho' appearing of a yellow, pale, or ruſſet Colour, is not obſerved by them to have the leaſt Taſte of Acrimony or Bitterneſs, when all the while the Lungs are corroded, and the *Spit* at length by this means is rendered bloody, or purulent, whence proceeds a Phthiſis. We have Inſtances to this Purpoſe related by *Galen*, *de Locis Affect. Lib.* 4. "A certain Perſon, he ſays, on a ſudden, ſpit "out a Humour very much reſembling liquid Bile in Colour, "which was between yellow and pale, but of no acrid Taſte; "after that he continued to ſpit up a greater Quantity every "Day, till at length a ſlow Fever coming upon him he began to decline, and expectorated purulent Matter, and "continued ſo to do for the Space of four Months, when "he brought up Blood with the Pus, and the Fever with "the Phthiſis increaſed, together with the ſpitting of Pus, of "which he expectorated a vaſt Quantity. The Fever ſtill increaſing, and the Strength at laſt being exhauſted, the Patient "dy'd under all the Marks of a Conſumption. I knew one "who laboured under much the ſame Diſorder for ſix "Months, and another who lingered a long Time. The "firſt of theſe Patients, with whom I was concerned, ſeem'd "at firſt to be free from any Diſtemper, but was at laſt affected in a moſt miſerable manner. The ſecond of theſe "Patients, whom alſo I attended, I endeavoured to relieve "by immediate Remedies, as knowing his Diſorder from the "Beginning, and much more that of the third Perſon, who "applied himſelf to me. But tho' I endeavoured with much "Application of Thought, to effect the Cure of theſe Diſorders, yet neither of the Perſons, in the Circumſtances "before-mentioned, nor any one ſince them, could be recovered; for when they were very near their End, they "ſpit out putrid Pieces of their very Lungs."

It ſeems ſtrange that ſuch a kind of *Spit*, when free from Bitterneſs and Acrimony, ſhould corrupt the Lungs; but it is ſtill more ſurpriſing, how the Lungs can be infected by *Spit*, which appears to be pituitous, and is free from any thing of an acrimonious, ſalt or bitter Taſte. To account for this latter Circumſtance, it muſt be ſuppoſed, either that all the bilious and acrimonious Humour lies concealed within the Lungs, and by adhering to their Bronchia corrodes them; or that the Phlegm, by Putrefaction, acquires an Acrimony, by which it is rendered capable of corroding and putrefying the Lungs; in the ſame manner, perhaps, as when the Air, being infected with a phthiſical Contagion, or rendered highly acrimonious, infects the Lungs of thoſe who live and breathe in it. But how comes it to paſs, when the *Spit* appears yellow or pale, but has nothing in its Taſte of Acrimony, Saltneſs or Bitterneſs, the Subject ſhould fall into a Conſumption? The Reaſon of this is, becauſe by the Mixture of the pituitous Humour in them, the Taſte is more eaſily concealed and diſguiſed than the Colour, and that a moſt acrimonious and highly putrid Humour, by its Diſtillation upon the Lungs, corrodes them: Or, it muſt be ſaid, that the Appearance of this ſame yellow and pale *Spit* is a Sign of a Collection of much bilious Humour within the Lungs, by which they are putrefy'd and corroded, and the Patient brought into a Conſumption.

Black and *melancholic Spit* is of a very bad kind, as appears from *Galen*, *Lib. de Conſtit. Art. Med. Cap.* 16. where he writes, that a melancholic Humour, when predominant, is very pernicious, both on account of its very bad Qualities, and that it is highly corroſive, difficult of Concoction, and not eaſy to be expelled; and, alſo, becauſe it indicates an extraordinary Heat, which is neceſſary for its Generation and Aſſation. *Spit* of this Kind is frequently ſucceeded by *Bloody Spit*, which is more to be dreaded by Perſons in Health than under a Pleuriſy, agreeably to that of *Hippocrates*, 4 *Aph.* 25. "Blood of any kind diſcharged upwards is "bad." In ſuch *Spit* Blood thrown up by a Cough is always to be dreaded, tho' it be not conſtantly ſucceeded by a mortal Diſtemper, eſpecially if it diſtils from the Head upon the Fauces, and is thence diſcharged by Help of a Cough, as I experienced in myſelf, when after a quartan Fever I threw up a great Quantity of Blood by Coughing, which was a critical Excretion, and removed the Fever. But whenever it is not the Matter of a Diſtillation from the Head, but proceeds from the Breaſt and Lungs, it induces Danger of a Phthiſis. *Galen*, indeed, *Lib.* 5. *Meth. Med.* writes, that he recovered a *Roman* Matron and a young Man of an Hæmoptoe, and all others who applied to him for the ſame Diſorder, on the firſt Day of their Illneſs; but as for thoſe who delayed it for ſome Days, or till a Phlegmon had ſeized them in ſuch a manner as to render their Urine like that of feveriſh Perſons, he never knew one of them perfectly cured. Juſtly, therefore, is ſpitting of Pus, after ſpitting of Blood, pronounced by *Hippocrates*, 7 *Aph.* 15. a bad Sign: And *Galen*, in his Comment, truly ſays, that all ſpitting of Blood is not malignant, but ſuch as is ſucceeded by Pus, for this induces

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induces a Phthiſis, according to 7 *Aph.* 16. which ſays, "After ſpitting of Pus comes a Phthiſis." We have juſt Reaſon, therefore, to conclude, that bloody *Spit* expectorated from the Breaſt and Lungs, and ſucceeded by a Diſcharge of Pus, is a mortal Prognoſtic.

All copious Diſcharges of *Spit*, alſo, which no way relieve the Patient, nor alleviate the Pain, Cough, or Difficulty of Reſpiration, are always uſeleſs, and portend a bad Event. And theſe are the bad Kinds of *Spit* in the Subjects beforementioned.

In Perſons under a Pleuriſy or Peripneumony, *Spit* very thin, or very thick, or viſcid after the Beginning or firſt Days of the Diſorder; alſo *Spit* which is ſpumous, round, copious but uſeleſs, ſcanty or none; *Spit* ſuppreſſed, frequent, white, yellow, pale, ruſſet, green, æruginous, porraceous, of a deep yellow, livid, black, parti-coloured, fetid, pure or unmix'd, excreted with great Difficulty, or with a Stertor and Rattling in the Throat, and ſuch as no way mitigates the Pain, Cough, and Difficulty of Reſpiration, are all condemned; but the worſt of all, and moſt deſtructive, is what excites and exaſperates the Cough, Pain, Difficulty of Reſpiration, and Fever.

Spit very thin, or very thick and viſcid, which Kinds indicate the Diſeaſe to be conſiderably crude, if they happen in the Beginning, are eſteemed not wholly unſerviceable, ſince they give Hopes that they may be concocted in Time; but if they appear afterwards, that is to ſay, after many Days, and are not concocted, they are very bad *Signs*. *Spit* very ſpumous is alſo condemned, and more particularly the unmixed, bilious, ruſſet, green, livid and black; for theſe Kinds, as we have ſhewn, proceed from an immoderate Burning, or colliquative Heat.

Whitiſh *Spit*, and what is ſpumous, conſiſting of Phlegm agitated by Flatulences, as in the Caſe when the pituitous Matter in its Paſſage from the Lungs becomes ſpumeſcent by contracting much Air, are not ſo dangerous. In a Peripneumony the Blood which is diſcharged by Spitting is generally ſpumous. The Author of the *Coac.* 408. ſays, "That in "a Pain of the Right Hypochondrium, the ſpumous Blood "diſcharged by ſpitting flows from the Liver, and the Pa"tient generally dies."

Spit of a round Figure is very much condemned, becauſe it is a Sign of an immoderate internal Heat, by which the Humour is dried; the ſame Spit, perhaps on account of a Repletion of the Head by the ſame inward Heat, is ſaid by *Hippocrates*, 6 *Epid. Sect.* 3. *Aph.* 27. and *Sect.* 6. *Aph.* 21. to portend a Delirium. The Author of the *Coac.* 390. condemns round *Spit*, as pernicious in a Pleuriſy; but *Hippocrates*, *Lib. Prognoſt.* ſays more juſtly, "That round white "Spit, in pleuritic Diſorders, is of no Service to the Pa"tient."

Much *Spit* of a bad kind portends a great deal of Danger, eſpecially if it appears on a critical Day, and no way relieves the Patient; for it is to be eſteemed one of the critical Signs which determine nothing.

Spit little in Quantity is no leſs condemned, as being inſufficient to purge off the Humour which is the Cauſe of the Inflammation; but moſt of all is it to be dreaded, when it is not only ſcanty but crude, and excreted with much Difficulty. Of Patients under this Circumſtance we find *Hippocrates* ſpeaking, 1 *Epid. Sect.* 1. "They expectorated, he ſays, by "Coughing, a denſe, concocted Matter, little in Quantity, "which they brought up by Degrees, and with much Diffi"culty; but in thoſe who laboured under the moſt violent "Symptoms, the *Spit* had no Signs of Concoction, but was "perpetually crude."

Under a Pleuriſy not to ſpit at all is of no leſs fatal Signification, as indicating the Diſeaſe to be in a highly crude State: See the Quotations from *Galen* to this Purpoſe before, under the Cauſes of no *Spit*. This Abſence of *Spit*, then, muſt of Neceſſity ſhew the Matter of the Diſorder to be difficult of Concoction, and conſequently portend the long Continuance of the Inflammation, as we are told by *Galen*, *Com.* 1. *in Aph.* 10. For the ſame Reaſon the Author of the *Coac.* 381. ſays, "That dry Pleuriſies, in which nothing "is evacuated by Spitting, are very dangerous."

Bilious Spit, in the ſame Diſorders, ſuppreſſed without Reaſon, after it had at firſt appeared, portends a Delirium, according to the Author of 1 *Prorrhet.* 97. and is ſaid by *Galen*, *Lib. de Conſt. Art. Med. Cap.* 16. to be a Sign of approaching Death; conſumptive People, alſo, live as long as they can bring up their *Spit*, but when that is retained they die. 7 *Aph.* 26.

Frequent Spit, but not diſcharged by Coughing, if attended with any other phrenitical Sign, indicates a Phrenſy, according to the Author of 1 *Prorrhet.* 6. And a little after the ſame Author, *T.* 12. utterly condemns frequent Spitting in Fevers; and indeed juſtly, becauſe, as *Galen* expreſſes it, it is a Sign of a diſordered Brain, which ſuffers under a Repletion. Again, 1 *Prorrhet.* 31. this frequent Spitting, attended with a Perfrigeration, is ſaid to be the Forerunner of black Vomitings, which is a moſt pernicious Symptom.

White, pituitous Spit, in bilious Diſeaſes, is of no Service to the Patient, according to *Hippocrates in Prognoſtic.* where it ſaid, "That white, glutinous and round Spit, is of no Be"nefit;" and for a good Reaſon, as indicating that nothing of the Humour, which is the Cauſe of the Inflammation, is diſcharged, which in Inflammations from Bile is none of the leaſt pernicious Signs. Some Years ago there raged at *Baſſano* and *Moroſtica* a peſtilential Pleuriſy, which proved mortal in four, or at the moſt in ſeven Days. Under this Diſorder whatever was excreted by Spitting, was of a white pituitous Subſtance, which a certain Phyſician not well verſed in *Galen*'s Doctrine, took for a good Sign, and always had good Hopes of the Patient. But he ſtill found himſelf deceived, as not knowing that thoſe white pituitous Spittings were an Indication that the morbific Matter of the Inflammation was not thereby evacuated, and conſequently that the Diſeaſe was highly crude and pernicious. This is confirmed by an Inſtance in *Hippocrates*, 7 *Epid. T.* 58. of the Wife of *Euxenus*, who had a Cough, and ſpit up a white, thinniſh Matter, and but little at a Time, and dy'd at laſt of a Pleuriſy.

Yellow and *pale Spit*, alſo what is *bloody*, not well mixed, if they are firſt diſcharged after the Beginning, or firſt State of the Diſorder, indicate the ſame to be difficult of Concoction, of long Continuance, and therefore by no means void of Danger. On the contrary, if they appear in the Beginning, they ſhew that the Diſeaſe will have an eaſy Solution, as we obſerved before. Of the yellow and ruſſet kinds of *Spit* it is obſerved in the *Prognoſtics*, that if they happen a conſiderable Time after the Beginning of the Diſeaſe, they are very bad; or, as it is expreſſed a little after, if they appear not till the ſeventh Day, or later, they are leſs ſecure.

Pale, ruſſet, green, deep red, livid and *black Spit*, are of the ſame Prognoſtication; *green* and *æruginous Spit* indicate much Heat and Aduſtion, with Plenty of æruginous Bile. *Hippocrates*, in the *Prognoſtics*, utterly condemns the deep green *Spit*, as *Galen*, *Lib. de tot. Morb. Temp.* does the deep red, as highly pernicious.

Livid Spit is ſtill more dangerous, as proceeding from a Redundance of black Bile, or Extinction of the natural Heat, and is therefore juſtly condemned by the Author of the *Coac.* 390, if appearing in the Beginning of a Diſeaſe.

Spit of a *black* Colour is the moſt pernicious and fatal of all the Kinds, becauſe it proceeds, as we have already obſerved from *Galen*, *Lib.* 1. *de Criſibus*, from a vehement Aſſation, or an univerſal Refrigeration, on account of the Extinction of the natural Heat. Juſtly, therefore, does he make it an Indication of a moſt formidable Diſeaſe, and *Lib.* 1. *de Criſ.* a Prognoſtic of Death. The Author of the *Coac.* 390, 407. tells us, that they who throw up a black Matter by Vomiting are in a dangerous State. *Hippocrates*, *Lib.* 3. *de Morb.* ſays, that thoſe who caſt up black Clots of Blood by Coughing, die on the ſeventh Day.

Spit of *various Colours* ſeems to be no leſs deſtructive, as it indicates a Multiplicity of Diſorders; for which Reaſon *Hippocrates* pronounces this kind of Spit, attending an acute Pain, mortal.

Spit ſimple or *unmixed* is always condemned, for good Spit ought to be of a mixed kind; and the contrary to this is bad, but eſpecially the *pure* and undiluted, as proceeding from a Conſumption of all the ſerous Humidity by the Heat.

We conclude, then, that in Pleuriſies and Peripneumonies, Spit of a yellow Colour, ſimple or unmixed, ruſſet, æruginous; Spit of a deep red, or livid, but moſt of all black, and pure or undiluted, are of bad Prognoſtication, and are condemned as ſuch by *Hippocrates*, in his Book of *Prognoſtics*; for they are too ſure Indications of a deſperate Diſeaſe.

Fetid Spit is, alſo, conſtantly condemned in acute Diſeaſes, becauſe it is an Indication of an extraordinary Putrefaction. *Hippocrates*, 5 *Aph.* 11. makes the ill Smell of the *Spit* a diſtinguiſhing Character of Perſons in a Conſumption, and alſo a mortal Symptom.

Spit diſcharged with much Difficulty by Secreation has been cenſured as bad, agreeably to the Obſervation of *Hippocrates*, 1 *Epid. Sect.* 1. before quoted.

Spit which rattles in the Throat, and induces a *Cerchnos* or *Stertor*, is no leſs to be condemned; of ſuch we find *Hippocrates*, in *Prognoſt.* thus pronouncing: "Bad, alſo, ſays "he, is the Spit which cannot be worked off, or ejected "by the Lungs, but fills and rattles, or bubbles in the "Throat."

In the ſame Liſt of the bad Kinds of *Spit* are to be reckoned thoſe which are ſo far from mitigating, that they increaſe and

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and exasperate the Cough, according to the Book of *Prognostics*, which passes the same Censure on those which mitigate not a Pain. These, however, are not sufficient for a Prediction, unless accompanied with other Signs, which, as *Galen* says, are accurately to be considered.

Other Kinds of bad *Spit* are such as (tho' frequent and troublesome) neither remove a Difficulty of Respiration, nor a Cough, nor a Fever.

Lastly, a Discharge of *Spit* on a critical Day, after which the Patient finds himself in a worse State than before, if accompanied with some other bad Sign, is succeeded by inevitable Death.

And these are the kinds of Spit which are to be condemned in a Pleurisy and Peripneumony. See PHTHISIS. *Prosper Alpinus de Presag. Vit. & Mort.*

SPYRAS, or SPYRATHOS. σπυρὰς, or σπύραθος. The Dung of Goats in small round Balls. Goats Tricklings. *Hippocrates* advises to use these by way of Suffumigation in Disorders of the Uterus.

SQUALOR. See AUCHMOS.

SQUALUS. The Name of a Fish mentioned by *Aldrovandus.*

SQUAMA ÆRIS. See Æs.

SQUAMARIA, & SQUAMATA. Offic. *Orobanche radice dentatâ major*, C. B. P. 88. Raii Hist. 2. 1229. *Orobanche radice dentatâ, sive Dentaria Major Matthioli*, Park. Theat. 1363. *Dentaria major Matthioli*, Ger. 1387. Emac. 1585. *Anablatum Cordi, sive Aphyllon*, J. B. 2. 783. Raii Synop. 3. 288 TOOTH-WORT.

It grows on the shady Banks of Hedges, and flowers in *April.*

Tooth-wort is consolidating, conglutinating, and good in Hernias, Wounds, and various Affections proceeding from Fluxions.

SQUAMOSA SUTURA. The squamose Suture of the Skull.

SQUATINA. Offic. Aldrov. de Pisc. 471. Salv. de Aquat. 152. Rondel. de Pisc. 1. 367. Bellon. de Aquat. 78. Raii Ichth. 79. Ejusd. Synop. Pisc. 26. Charlt. Pisc. 12. Gesn. de Aquat. 899. Jonst. de Pisc. 23. Mer. Pin. 186. THE KING-STONE, OR MONK-FISH.

It is taken in the *British* and other Seas. The Eggs, Skin and Ashes, are used. The dried Eggs are found to be very serviceable in stopping a Looseness, by the Experience of the Fishermen, who use it for all manner of Fluxes of the Belly. *Rondel.* Of the Skin is prepared an excellent *Smegma* for the Psora and Scabies, and the Ashes are effectual against the Alopecia and Achors. *Aldrovand.*

The Skin of this Fish is recommended, by *Galen*, for rubbing Parts affected with an *Alopecia.*

SQUILLA, in Botany, is the same as SCILLA; which see.

SQUILLA, Offic. *Squilla gibba*, Schonef. Ichth. 72. Rondel. de Pisc. 1. 549. *Squilla parva*, Mer. Pin. 192. *Squilla gibba Rondeletii*, Aldrov. de Exang. 150. THE SHRIMP.

It is taken in the Sea, and agrees in Virtues with the *Astacus*, Lobster.

SQUILLINUM, AZIZA. Horse-Dung. *Rulandus.*

SQUINANTHIA. A barbarous Word importing a Quinsey.

SQUINANTHUM. The same as SCHÆNANTHUM.

SRINT. The *Hungarian* Name for any inflammatory Tumor in the Mouth, Throat, or Anus.

STAC. Coagulation, or Congelation. *Rulandus.*

STACHYS.

The Characters are;

The Leaves, Stalks and Branches are hairy, hoary, and covered with a very soft Down. The Galea is fornicated, or arched, erect, and somewhat bifid; the Beard trifid, the middle Segment large and pendulous. The Flowers are disposed of at first in thick Whorles, but towards the Top in Spikes.

Boerhaave mentions thirteen Sorts of *Stachys*, which are;

1. Stachys; major; Germanica. *C. B. P.* 236. *Sideritis, Heraclea Dioscoridis*, Col. Phytob. 1. 31.

2. Stachys; major; Germanica; folio angustiore, *Flor.* 2. 66.

3. Stachys; Cretica; pro Pseudo-Stachyde I. in Prodromo describitur. *C. B. P.* 236. *Prodr.* 113.

4. Stachys; Alpina; magna; flore ex albo rufescente. *Pseudo-Stachys Alpina*, C. B. P. 236. Prodr. 113.

5. Stachys; Creticæ similis; flore purpureo triplo majore.

6. Stachys; minor; Italica. *C. B. P.* 236. *Tourn. Inst.* 186. *Boerh. Ind. A.* 154. *Stachys*, Offic. Ger. 563. Emac. 695. Raii Hist. 1. 554. *Stachys Dioscoridis*, Park. Theat. 47. BASE HORE-HOUND.

The *Stachys* is a shrubby Plant, resembling *Marrubium*, but somewhat longer, and producing numerous rare, hard, and somewhat hairy Leaves, white, and of a pleasant Smell, with several Stalks, which shoot up from one Root, and are whiter than those of *Marrubium*; it grows in mountainous and rugged Places. *Stachys* is of an acrimonious and heating Quality; for which reason a Decoction of the Leaves being drank, provokes the Menses, and expels the Secundines. *Dioscorides, Lib.* 3. *Cap.* 120.

It is cultivated with us in Gardens, and flowers in *June.*

7. Stachys; verticillata; odora; Betonicæ foliis pallidis. *H. C.* 2.

8. Stachys; Canariensis; frutescens; Verbaci folio. *T.* 186. *Salvia sylvestris; amplissimis Verbascifoliis; grevelens, flore albo, parvo, Canariensis*, Pluk. Almag. & Phytogr. T. 322.

9. Stachys; hormini folio obscurè virenti; flore ferrugineo; *M. H. Bloef.* 198.

10. Stachys; spinosa; Cretica. *C. B. P.* 236. *Gaidarethymum.* Alpin. Exot. 86.

11. Stachys; orientalis; altissima; fœtidissima. *T. Cor.* 12.

12. Stachys; alba; latifolia; major.

13. Stachys; Cretica; latifolia; *T.* 186. *Boerh. Ind. Alt. Plant.*

All these Species of *Stachys* have a very strong and rank Smell; whence they are good in hysteric, apoplectic, and epileptic Disorders. *Hist. Plant. ascript. Boerh.*

STACTE. See MYRRHA. In another sense it imports a Lixivium distilling from Ashes; or it signifies Brine.

STACTICON. σακτικὸν. The Name of a Collyrium in *Scribonius Largus*, N° 34. and in *Paulus Ægineta*, L. 7. C. 16.

STADIEUS. σταδιεὺς. A Person who walks a *Stadium. Galen. Exeges.*

STAIS. σαὶς. Meal moistened with Water, and kneaded with the Hands; or it signifies Fat or Suet.

STAGIUM. The same as *Sextula*, the sixth Part of an Ounce, that is, four Scruples.

STAGMA. A Liquor exposed to Distillation. *Blancard.*

STAGNEA VASA. Vessels tinned on the Inside; or incrusted, or lined, in order the better to preserve their Contents. *Scribonius Largus.*

STAGONIAS. σταγωνίας, from στάζω, to distil. An Epithet for that Species of Male Frankincense which is in small round Lumps, like Drops.

STALAGMA. A distilled Liquor. *Blancard.*

STALAGMOS. σταλαγμὸς. A Distillation from the Head.

STALTICA. σάλτικα, from σέλλω, to contract. Repellents; or Medicines which render the Lips of Wounds even.

STAMINA. See the Explication of Terms under the Article BOTANY.

STAMNOS. σάμνος. An Urn, or Bason for holding Water.

STANNAR. The Mother of Metals, or the occult Fume of which Metals are generated. *Rulandus.*

STANNUM. Tin. See JUPITER.

STAPES. The Name of a Bone in the internal Ear. See AURIS.

STAPHIS. A Raisin.

STAPHISAGRIA. Staves-acre. A Name for the *Delphinium; Platani folio; Staphisagria dicta.*

STAPHYLE. σταφυλὴ. A Grape. Or a Disorder of the Uvula, which consists in an Extenuation of its superior Part, and a Tumor of the inferior; whence it depends in the shape of a Grape. The Uvula, or Gargareon, is, also, thus called.

STAPHYLEPARTES. σταφυλεπάρτης. A Chirurgical Instrument for elevating the *Uvula*, mentioned by *Paulus Ægineta*, L. 3. C. 16.

STAPHYLINUS. A Name for the *Daucus Vulgaris.*

STAPHYLIS. σταφυλὶς. In *Moschion, de Morbis Mulierum*, C. 116. this is a sort of Cup for feeding Children, contrived with an Orifice resembling a Nipple, or a Grape.

STAPHYLODENDRON.

The Characters are;

The Calyx is pentaphylloidal, caducous and expanded; the Flower rosaceous, pentapetalous, erect, as it were, in the Figure of a Bell, and furnished with five Stamina. The Ovary, in the Bottom of the Calyx, is furnished with two Tubes, and becomes a membranaceous Fruit inflated like a Bladder, and divided into Capsules full of stony Seeds.

Boerhaave mentions four Sorts of *Staphylodendron*, which are;

1. Sta-

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1. Staphylodendron, *Offic. J. B.* 1. 247. *Raii Hist.* 2. 1681. *Synop.* 3. 468. *Tourn. Inst.* 616. *Boerh. Ind. A.* 2. 235. *Pistachia sylvestris*, C. B. P. 401. *Nux Vesicaria*, Ger. Emac. 1437. Park. Theat. 1417. 1249. THE BLADDER NUT-TREE.

It is sometimes found in Hedges, flowers in *May*, and the Nuts are ripe in Autumn. The Nuts are by some supposed to have the same Virtues with Pistachios.

Ray says, that he knows no Use of them in Medicine, but that they serve the poorer sort of People in many Places instead of Beads, to number their Prayers. *Raii Hist. Plant.*

2. Staphylodendron; Virginianum; trifoliatum. *H. L. Pistacia sylvestris, trifolia, Virginiensis.* H. R. Par.

3. Staphylodendron; Africanum; folio singulari, lucido, *Par. Bat.*

4. Staphylodendron; Africanum; folio lanuginoso Rosmarini latiori. *Boerh. Ind. Alt. Plant.*

It has its Name from σταφυλὴ, (*Staphyle*) a Grape, and δένδρον, (*Dendron*) a Tree; because its Fruit grows in Clusters.

Scaliger says that the Nuts are eatable, and that he has often eat them instead of Pistachios. From the Seeds is expressed an Oil of a resolvent Virtue. *Hist. Plant. ascript. Boerh.*

STAPHYLOMA. A Disorder of the Eye. See OCULUS.

STARAPHAXAT. A restringent Medicine, or one which restrains Fluxions. *Rulandus.*

STASIS. στάσις. A Stagnation.

STATER. στατὴρ. A Weight equal to four Drams.

STATHEUSIS. σταθευσις, or στατευσις, from στατέω, to roast by a slow Fire. A gentle or imperfect roasting, or toasting.

STATICA. The same as STALTICA.

STATICE.

The Characters are;

The Root is fibrous and perennial, the Leaves grassy, and the Stalk naked. The Calyx being squamous, membranaceous, and consisting of a Multiplicity of Series of Squamæ, is common. The Floscules are polypetalous, resembling Clove-Gilly Flowers, each seated in its proper Calycle, which is shaped like a Funnel, monophyllous, and deeply cut into Segments. These Floscules are collected in great Numbers together into one floriferous globular Head, surrounded by that one common squamous Calyx before described. The Ovary proceeding from the Center of the Calycle consists of five Eggs, which grow together in a Circle round the Basis of the Placenta, and are each furnished with a long Tube.

Boerhaave mentions four Sorts of *Statice*, which are;

Statice, *Lugdun.* 1190. *Scabiosa, montana, globoso flore, gramineis foliis, latioribus. Caryophyllus, montanus, major, flore globoso*, C. B. P. 211. *Gramen Polyanthemum, majus.* Dod. p. 564. *Armerius, montanus, tenuifolius, major.* Clus. H. 287. *Limonium majus, flore globoso.* M. H. 3. 600.

2. Statice; foliis angustioribus; flore rubro. *Scabiosa, montana, globoso flore, gramineis foliis angustioribus, flore rubro.* H. L.

3. Statice; foliis angustioribus; flore albo, *Scabiosa, montana, globoso flore, gramineis foliis angustioribus, flore albo.* H. L.

4. Statice; montana; minima. *T.* 341. *Scabiosa, montana, globoso flore, gramineis foliis angustissimis, minima.* H. L. *Caryophyllus montanus, minimus, flore globoso.* H. R. Par. *Armerius montanus, tenuifolius, minor.* Clus. H. 287. *Limonium minimum, vulgatius, flore globoso*, M. H. 3. 601. *Boerh. Ind. Alt. Plant.*

Dodonæus pretends that the *Statice* is of no Use in Medicine, but that the Flowers are beautiful enough in Garlands. But *Dalechampius* assures us, that the whole Plant is of an astringent Taste, and is of surprising Virtue in drying up and repressing the Eruptions of Humors, being either bruised and applied, or the Juice of it drank; that it cures the Dysentery, an excessive Flux of the Menses, Bleeding at the Nose, and spitting of Blood; that it is also a Vulnerary, and cicatrises malignant Ulcers.

It is astringent, whence it is of Use in immoderate Fluxes, and may be of service in Disorders proceeding from a Laxness of Fibres, and where the Humors are too fluid, and disposed to Eruptions. *Hist. Plant. ascript. Boerhaave.*

STATIONARIÆ FEBRES. Stationary Fevers.

There are certain general Constitutions of Years, which owe their Origin neither to Heat, Cold, Dryness, nor Moisture, but rather depend upon a certain secret and inexplicable Alteration in the Bowels of the Earth, whence the Air becomes impregnated with such Kinds of Effluvia as subject the human Body to particular Distempers, so long as that Kind of Constitution prevails, which, after a certain Course of Years, declines, and gives way to another. Each of these general Constitutions is attended with its own proper and peculiar Kind of Fever, which never appears in any other; and therefore I call this Kind of Fevers Stationary. *Sydenham.*

STATIVA. The same as STALTICA.

STATUS. The Constitution, or State of any thing, and in this sense it is the same as CATASTASIS. It, also, imports the same as ACME.

STAXIS. στάξις, or ἀπόστάξις, from στάζω, to distil. A Discharge of Blood from the Nose by Drops. This is the general signification of the Word στάξις, in *Hippocrates*, tho' sometimes he adds ἐκ ῥινῶν, or ἀπὸ ῥινῶν, "from the Nostrils."

A *Staxis*, in the Doctrine of *Crises*, is justly condemned as indicating a Weakness and Decay of Strength in Nature. Thus, 1 *Prorrh.* it is said, ἰσδικαίαισι στάξις δύσκολαι, "Distillations of Blood from the Nose on the eleventh Day are bad," where *Galen* on the Place condemns all such Distillations. The same is repeated, *Coac.* 336. And *Coac.* 57. we are told that στάξις ἰσχνῖσαι κακαὶ, "small Distillations of Blood from the Nose are bad;" particularly in Pleurisies and Phrenzies. Such Distillations are condemned as very bad Signs, *Coac.* 405. 227. 1 *Prorrhet.* 1. On the contrary, free and copious Discharges of Blood from the Nose are, in the Doctrine of Signs and Crises, esteemed a Solution of the Disease, according to that in 1 *Epid. Sect.* 1. where we read that αἱμορῤῥαγίαι λαυραὶ, &c. "copious Hæmorrhages from the Nose for the most part relieved the Patients." And not only small and sparing Eruptions of Blood from the Nostrils, which stop within their due Measure, but all weak, small and imperfect Excretions, whether by Urine, Vomit or Stool, are condemned as bad Prognostics, *Coac.* 400. and the Judgment there passed upon them is confirmed by Matter of Fact in many Cases recorded in the *Epidemics.*

STEAR. στέαρ, in *Hippocrates*, sometimes signifies simply *Fat*, as in many Places of the Books *de Morbis Mulieb.* Sometimes it signifies not only Fat, but Leaven or Dough, or Paste, in the same sense as στέαρ, *Stear.* Thus (*Lib.* 1. περὶ γυναικ) ταῦτα ἐψεῖν ὡς ὅτι στέαρ γενέσθαι, "Boil them till they become like a Lump of Dough;" which is repeated in Words to the same Effect, *Lib.* περὶ γυναικ. φύσ. And *Dioscorides*, *Lib.* 2. *Cap.* 202. στέαρι δὲ ἢ πολλῷ περιπλάσσειν, "It is wrapped up in Paste or Clay," where tho' the printed Editions read the Word σταφῖδι, yet that the ancient Reading ought not to be changed, appears from *Pliny*, *L.* 20. *C.* 9. who seems to have read στέαρι, and to have mistranslated it *Adeps*, where he says, *Coquitur plurimis modis; in olla quæ conficiatur in Clibanum aut Furnum, vel Adipe aut Luto illita.* "It is prepared many Ways, either by baking it in a Pot, or dawbing it over with Fat or Clay." Again, *Dioscorides*, *Lib.* 5. *Cap.* 99. says of *Stibium*, ἐπιπλᾶται δὲ στέαρι περιπλασθὲν, &c. "It is wrapped up in Paste, and so roasted under the Coals." Where *Pliny* again, *Lib.* 33. *Cap.* 6. translates the Word by *Adeps*. *Galen*, *Lib.* 2. & 5. *de C. M. S. L.* uses the Words στέαρος and στεαρώδη in the same sense; I mean, as signifying Paste or Dough, or some such Composition; and *Hesychius* expounds στέαρ by λίπος, ζύμη, "Fat, Leaven." *Fœsius.*

STEATOCELE. From στέαρ, Suet, and κήλη, a *Hernia.* A Species of *Hernia*, caused by a Collection of a Substance in the *Scrotum*, resembling Suet.

STEATOMA. στεατωμα, from στέαρ, Suet. A Species of Tumor, containing in a *Cystis*, or Bag, a Substance resembling Suet. In the *Definitiones* ascribed to *Galen*, *Steatoma* is described, a preternatural Increase of Fat.

STEGNOSIS. Constipation, Condensation or Obstruction.

STEGNOTICA. στεγνοτικὰ. Astringents, from στεγνόω, to brace up.

STEILÆUS. στειλαῖος. The Handle of an Instrument. *Hippocrates.*

STELECHIEA. στελεχίαι, from the preceding Word. An Epithet for the *Vena Portæ*. *Galen.*

STELECHITES. The Name of a Stone found in some Parts of *Germany*, about the Size of a Finger, of the same Nature as the BELEMNITES. It is esteemed deficcative, and good to clean the Teeth, as a Dentifrice.

STELENCHIS, or STLENCHIS. στλεγχὶς, or στλεγχίς. A *Strigil*, an Instrument used in the ancient Baths to rub off Sweat.

STELLA. A Star. See ASTRONOMIA.

STELLA MARINA. The Star-Fish, a Sort of Sea Insect, of which there are many Species. They are esteemed opening, if taken by way of Decoction; and their Smoke when burned, is said to cure the Epilepsy.

STELLA OCCIDENS, is *Sal Ammoniac.*

STELLA TERRÆ, is Talc.

STELLARIA AQUATICA. Water Star-Wort, or star-headed Water Chickweed. *Raii Hist. Plant.*

STELLARIS LAPIS. See ASTROITES.

STELLIO. A small Species of Lizard, or Eft, marked upon the Back with Spots resembling Stars. The Bite of this Animal is said to inspissate the Humours, and stupify the Senses; to remedy which, Venice Treacle and volatile Salts are

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are recommended. The Fleſh is ſaid to excite Sweat, and reſiſt Poiſon. *Lemery des Drogues.*

STELLIO ADUSTA, is Cinnabar. *Rulandus.*

STEMA. στῆμα. The *Penis. Ruffus Epheſius.*

STEMPHYLA. στέμφυλα. The Huſks of Vines; or the Maſs remaining after the Wine is preſſed out of the Grapes. Sometimes this Word is applied to the Recrements of Olives, after the Oil is preſſed out.

STEMPHYLITES. στεμφυλίτης. A Sort of Wine; the ſame as LORA.

STENYGROCHORIE. στενυγροχωρίη, ſo *Galen* reads the Word, *Lib. de Artic.* whereas all the Copies have it στενοχορίη, (*Stenochorie.*) The Word ſeems derived from the Verb στενυγρῶσαι (*Stenygroſai,*) which *Galen*, in his *Exegeſis*, expounds by στεῶσαι (*Steneſai,*) to ſtraiten; and adds that ſome will have it to import a ſtraitening, obſtructing the Paſſages of the Humours, and drying them up. This Senſe agrees with *Erotian*, who makes στενυγρῶσαι to mean the ſame as ἀποστεγνῶσαι καὶ συκνώσαι τοπον τινὰ ἐν ᾧ ὑγρασία ἐστι, "To ſtraiten and block up "a Place in which is ſome Humidity." Thoſe Expoſitions have certainly a Relation to the firſt Aphoriſm of the ſecond Section of the ſixth of the Epidemics, and prove the Word στενγρὸς to be compounded of στενὸς, narrow, and ὑγρὸς, moiſt. *Galen*, however, in his Comment on this Aphoriſm, denies this, and aſſerts that the ſecond Syllable is attenuated and not aſpirated, becauſe the Word ὑγρὸς is not contained in it; and that the Word στενγρὸς, with the *Ionians*, ſignifies no more nor leſs than στενὸς, which he proves by the Authority of *Simonides*, who has μοῦνος στενγρῇ συμπισῶν ἐν ἀτρεμῷ, "Meeting "alone in a narrow Path," which Quotation is very corruptly read, *Com.* 1. *in Lib. de Artic.* where, on the Word στενγροχορίη, *Galen* approves of the ſame Etymology, as not deriving from στενὸς, and ὑγρὸς, and χώρα (*Chora*, a Place) but from στενγρὸς, which ſignifies no more than στενὸς; ſo that στενγροχωρίη is no more than στενοχωρίη, and this no more than στενότης, Narrowneſs. Hence it appears, as was obſerved in the Beginning, that for στενοχωρίη, as it is generally read, *Galen* reads στενγροχωρίη. The Verb στενγρῶσαι is by the ſame Author, *Com.* 1. *in* 6 *Epid.* expounded by πυκνῶσαι, to condenſate, and στεῶσαι, to ſtraiten; ſince it is oppoſed to ἐυρῦναι, to dilate. And by the Doctrine of *Hippocrates*, Things dilated are to be cloſed by Aſtriction and Refrigeration.

STEPHANIÆUS. στεφανῖος, Coronary. See CORONARIA, and CORONALIS.

STERA. A barbarous Word, ſignifying the *Uterus*, by Corruption for ὑστέρα.

STERCUMEZEFF, or STERCORUMECEFF. Litharge. *Rulandus. Johnſon.*

STERCUS. Dung. See FIMUS.

STERGETHRON. A Name for the larger *Aizoon*, Houſleek.

STERILITAS. See BALSAMICA.

STERIPHNOS. The ſame as STRUPHNOS.

STERNO-COSTALES, *vulgo Triangulares Sterni.*

Theſe are five Pairs of fleſhy Planes diſpoſed more or leſs obliquely on each Side the Sternum, on the Inſide of the Cartilages of the ſecond, third, fourth, fifth and ſixth true Ribs.

They are inſerted by one Extremity in the Edges of the Inſide of all the lower half of the Sternum. From thence the firſt Muſcle on each Side runs up obliquely, and is fixed in the Cartilages of the ſecond Rib. The ſecond runs leſs obliquely to its Inſertion in the Cartilage of the third Rib. The reſt are inſerted, in the ſame manner, in the Cartilages of the following Ribs; their Obliquity decreaſing, and their Length increaſing in Proportion as they are ſituated lower down; ſo that the loweſt is almoſt tranſverſe.

This laſt Muſcle, which is fixed by one Extremity in the Cartilage of the ſixth true Rib near the Bone, and ſeems to paſs the *Appendix Enſiformis*, immediately above the Inſertion of the Diaphragm in that Appendix, and to join the Muſcle on the other Side. The ſuperior Portions of the tranſverſe Muſcles of the Abdomen, united with the loweſt *Sterno Coſtales* have nearly the ſame Appearance, ſo that theſe might be reckoned to belong to the *Tranſverſales*, did not the Inſertion of the Diaphragm come between them.

The Inſertions and Direction of the *Sterno Coſtales* being carefully examined, it will be found that their Uſe is to depreſs the cartilaginous Portions, and anterior Extremities of the Ribs, eſpecially the ſuperior Ribs, except the firſt; and at the ſame time to draw the Cartilages of the inferior Ribs near the Sternum, by Reaſon of the Curvature. They may therefore very well be called *Depreſſores Coſtarum* as the *Supra Coſtales* are named *Levatores. Winſlow's Anatomy.*

STERNO-HYOIDÆUS, *ſive Sterno-Cleido-Hyoidæus.*

This is a long, thin, flat Muſcle, broader at the lower than at the upper Part, and ſituated, together with its Fellow, on the Foreſide of the Throat, from whence ſome have very improperly termed it *Sterno Maſtoidæus.*

It is fixed by its lower Extremity in the ſuperior and lateral Part of the inner poſterior Side of the Sternum, in the poſterior Part of the ſternal Extremity of the Clavicula, in the tranſverſe Ligament which connects theſe two Bones, and in the inner or back-ſide of the Cartilage of the firſt Rib. All theſe other Inſertions are more conſiderable than that in the Sternum, which is ſometimes ſcarce perceivable.

From thence it runs upon the Foreſide of the Aſpera Arteria, joined to its Fellow by a Membrane, which forms a ſort of *Linea alba*, and is inſerted laterally in the lower Edge of the Baſis of the *Os Hyoides.*

There is ſometimes a tranſverſe tendinous Line, about the Middle of the Backſide of this Muſcle.

The *Sterno-Hyoidæi* draw the *Os Hyoides* directly downward, and ſerve to counterbalance the different Motions of the *Stylo-Hyoidæi*, *Omo-Hyoidæi*, and *Genio-Hyoidæi.* They may in ſome Caſes be aſſiſted by the *Sterno-Thyroidæi* and *Thyro-Hyoidæi. Winſlow's Anat.*

STERNO-MASTOIDÆUS. See MASTOIDÆUS ANTERIOR.

STERNO-THYRODÆI. See LARYNX.

STERNUM. See THORAX.

STERNUTAMENTUM, ſignifies the ſame as STERNUTATIO; or as STERNUTATORIUM.

STERNUTATIO. Sternutation, or Sneezing. A Branch of the fifth Pair of Nerves united with thoſe of the ſixth Pair, is diſtributed in the Cavities of the Head, lined by the pituitary Membrane; and when any Part of this Nerve is irritated to a certain Degree, the Intercoſtal Nerve, and the *Par Vagum*, are drawn into conſent, in ſuch a Manner, that the Muſcles ſubſervient to Reſpiration, ſuffer a Kind of Convulſion, and the Air is expelled the Lungs with Violence, and acting upon all the Parts of the pituitary Membrane, abſterges, and brings away the Mucus there ſecreted; and beſides, this excites all the Actions which depends upon the Brain, ſometimes to ſuch a Degree as to become fatal, tho' often ſalutary when the Faculties are languid, or the Mucus indurated upon the pituitary Membrane, as it frequently happens after a Night's Reſt. See CAPUT.

STERNUTATORIUM. A Sternutatory, or Medicine which excites Sneezing. Snuff is the moſt common Sternutatory; but any Thing which will ſtimulate the Nerves mentioned under STERNUTATIO, to a ſufficient Degree, will excite Sneezing.

STERNUTATORIUM CUM EUPHORBIO.

A Sternutatory with Euphorbium.

Take Powder of Euphorbium, half a Scruple; white Wine an Ounce; Spirit of Scurvy-graſs, two Drams; Oil of Marjoram, two Drops; ſhake all together.

This with the Euphorbium is too ſharp and violent to be truſted therein to ſnuff up; and therefore 'tis beſt to dip a little Cotton, and juſt thruſt it into the Noſtrils. *Ludovici* is ſo timorous, as to order but half a Dram in half a Pint of Water, to be boiled and ſtrained, and even then to be uſed but very ſparingly.

STERNUTATORIUM CUM MARJORANA.

A Sternutatory with Marjoram.

Take of an Infuſion of Marjoram made like Tea, one Ounce; diſſolve in it Salt of Vitriol ten Grains, and put it in a Glaſs for Uſe.

This is directed and much recommended by *Ettmuller*, and it may be made ſtronger or weaker, by a greater or leſſer Quantity of Water, as is found needful. But of all the Medicines to this Purpoſe the following is preferable.

STERNUTATORIUM CUM SALE VOLATILE OLEOSO.

A Sternutatory with Sal Volatile.

Take *Sal Volatile Oleoſum*, two Drams; Spirit of Lavender, twenty Drops; Damaſk Roſe-Water, or Orange Flower-Water, half an Ounce; mix.

This is both mild and grateful, and very refreſhing to the Head, as well as a gentle Provoker of what is ſecerned by the Noſe.

STER-

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STERNUTATORIUM CUM SUCCIS.

A Sternutatory with Juices.

Take Leaves of Honeysuckle, four Handfuls; Primrose, three Handfuls; Betony, two Handfuls; Marjoram, one Handful; bruise them all together, and press out their Juice.

This is much milder than either that with Euphorbium or Turpeth Mineral, and may be used in any Disorders and Stoppages of the Head, either by snuffing a little out of the Hollow of the Hand, or blowing it up the Nostrils with a Quill, and these liquid Snuffs have this Advantage over Powder, that they do not clog up and heat the Nose.

STERNUTATORIUM CUM TURPETHO MINERALI.

A Sternutatory with Turpeth Mineral.

Take Turpeth Mineral, half a Scruple; Powder of Liquorice, half a Dram; Nutmeg, one Scruple; Oil of Rosemary, two Drops; mix together.

This is very powerful in all such Illnesses of the Head as proceed from tough viscid Matter sticking upon the Glands and Sinuses, and have been of long Continuance, and obstinate; for it brings it away in such Plenty, that 'tis almost like a Salivation; but it is subject to make the Nose sore, and therefore the Nostrils should be rubbed sometimes with a little Oil of Almonds, or warm Milk.

STERTOR. A Snoring; or what the Vulgar call a Rattling in the Throat; a fatal Symptom in Apoplexies, and many other Distempers. See RHENCHOS.

STLÆ. στλαι. Sea PEBBLES. *Galen. Exeges.*

STIBI. στίβι. The same as STIBIUM.

STIBIALIA. Antimonial Medicines.

STIBIUM. Antimony. See ANTIMONIUM.

STICA, according to *Blancard*, are external Astringents, as Bole, and Dragons Blood.

STICHOS. στίχος. The Name of an Arteriacal, or pectoral Confection, the principal Ingredient in which is *Marrubium* Horehound, described by *Galen*, *Lib.* 7. *de Comp. M. S. Loc. C.* 2.

STICTICUM EMPLASTRUM. An Adhesive Plaister.

STIGMATA. The Marks of Blows, Bruises, Wounds, or Burns.

STILBOMA. στίλβωμα, from στίλβω, to shine, a general Term for any Cosmetic used to procure a shining Countenance. *Castellus.*

STILBUS. Antimony. *Rulandus.*

STILISCUS, the same as *Scalmus*, or *Priapiscus*. *Oribas. de Machin.* See PRIAPISCUS.

STILLA. A Drop.

STILLATICUS, the same as DISTILLATUS, distilled, an Epithet of Liquors passed through an Alembic. *Castellus.*

STILLICIDIUM has two Significations, one *pathologic*, in which Sense it is the same as STRANGURIA, which see; the other *pharmaceutic*, in which it signifies an Instillation of Liquor upon some Part of the Body, being much the same as *Embrocation. Castellus.*

STIMMI. στίμμι. Antimony. *Dioscorides.*

STIMULANS. κνῆσα, stimulating, the same as *pungens*, pungent, is an Epithet applied to a Kind of Pain, *Galen in 6 Aph.* 5. The Words *stimulans* and *stimulus*, are, also, applied to some of the more active Kinds of Medicines, which are added to those which are slower, in order to quicken their Operation. *Castellus.*

STINCUS, as *Fuchsius* observes, *Not. in Myrepsi. Antid.* 69. is a corrupt Word for *Scincus*, taken from a Manuscript Copy which has στίγγα, *Stinga*, for σκίγγα, *Scinga*, which Corruption, he says, is still retained in the Shops to this very Day, where instead of *Scincus*, they say *Stincus.*

STIPATIO. The same as *Constipatio*, or STEGNOSIS; which see.

STIPES. That Part of a Plant which is between the Root and the Branches, the Trunk, Stem or Stalk. *Blancard.*

STIPHROS. στυφρὸς. The same as STRYPHNOS; which see.

STIPTE, *Stipteria*, are corruptly read for *Stypte*, *Stypteria*. Alum. We meet also with *Stiptica* for *Styptica*. *Castellus.*

STIPULÆ, according to *Blancard*, are the Leaves which surround the Stalk in Corn.

STLENGIS. στλεγγὶς. The same as STRIGIL or STRIGILIS, which see.

STOEBE. A Name for several Sorts of JACEA.

STOEBE *Plantaginis Folio.* See CATANANCE.

STOECHAS.

The Characters are;

The Galea is erect and bifid, the Beard trifid, and the Flower appears quinquefid. The Spikes of the Flowers are thick, squamated, and crowned at Top with small, coloured Leaves.

Boerhaave mentions three Sorts of *Stœchas*, which are;

1. Stœchas; purpurea. *C. B. P.* 216. *Tourn. Inst.* 201. *Boerh. Ind. A.* 153. *Stœchas Arabica*, Offic. *Stœchas Arabica vulgo dicta*, J. B. 3. 277. Raii Hist. 1. 514. *Stœchas vulgaris*, Park. 67. *Stœchas sive Spica Hortulana*, Ger. 469. Emac. 585. FRENCH LAVENDER.

This beautiful Shrub grows three or four Foot high, clothed with long hoary Leaves less than those of common Lavender, two at a Joint, with smaller coming forth among them, the Stalks are square, bare of Leaves to the Top, on which grow thick, round scaly Spikes, or Heads of Purple, galeated Flowers; set in hairy Calyces. On the Top of the Spikes grow two or three slender Purple Leaves, the Seed is small and round, four succeeding each Flower; the Root is thick and woody, and much branched; the Leaves and Flowers have a strong aromatic Scent. It grows naturally in the southern Parts of *France* and in *Spain*. It took its Name, according to *Dioscorides*, from the *Stœchades* Island in the *Mediterranean* Sea, not far from *Marseilles*. It is planted with us in Gardens, where it is easily increased, and bears our severest Winters with moderate Shelter; and pity it is not more propagated, the fresh Heads being certainly of greater Virtue and Efficacy than those which comes from abroad, there being not fresh Importations in many Years. It flowers in *June*, and its Heads ought to be gathered when they are firm and hard, which is about the latter End of *July*. The Flowers are only used.

They are cordial and cephalic, strengthning the *Genus Nervosum*, and are useful for Apoplexies, Palsies, and all Kinds of Convulsions; they are opening and attenuating, promote the *Catamenia*, resist Poisons, and the Bites of venemous Creatures. They are an Ingredient in the Theriaca and Mithridate. *Miller's Bot. Off.*

Stœchas is absterging, attenuant and aperitive; its principal Uses are in Affections of the Head and Nerves, as the Vertigo, Apoplexy, Palsy and Lethargy. In Diseases of the Breast it has the same Effects as Hyssop; it also provokes Urine and the Menses, resists Poisons, and gives Relief under hypochondriac Disorders. Outwardly it is used in Lotions of the Head, Suffumigations, and other Ways. *Mesue* is very prolix in describing its Virtues; there are three Preparations of its Syrup in Use, the Simple, and Compound, and that of *Fernelius*. They are all esteemed cephalic, and used with good Success in cold Affections of the nervous Parts. *Mesue* writes that *Stœchas* purges Phlegm and Melancholy; but because it is slow and weak in Operation, he orders an Addition of a sixth Part of common Salt, Sal Gemmæ, black Myrobalans, or Cepula. He also advises Persons of a bilious Constitution to abstain from it, for which Reason, perhaps, says *C. Hoffman*, it is grown out of Use. *Raii Hist. Plant. p.* 514.

2. Stœchas; folio verrato. *C. B. P.* 216. *Lavandula, foliis crenatis.* T. 198.

3. Stœchas; cauliculus non foliatis, *C. B. P.* 216. *Boerh. Ind. Alt. Plant. Vol.* 1. *p.* 153.

The first Species is called *Stœchas Arabica*, not because it grows in *Arabia*, but because of the high Commendations given it by the *Arabian* Physicians. *Stœchas* is somewhat of a ranker Quality than *Lavender*; in other respects it has the same Virtues, and is recommended for the same Diseases; hence a Syrup of *Stœchas* is so much commended by the *Arabian* Physicians, that they prescribe no cephalic Medicine in which this is not an Ingredient. But the common Preparations of this Syrup is good for nothing, because the Virtue is lost in the Boiling. The Conserve therefore, or the distilled Water, or only a simple Decoction, taken inwardly, are of excellent Virtue. Bruised, and the Juice expressed without Exhalation, there is no better Medicine for strengthening the Brain. The Plant has a very pleasant and fragrant Smell, and is anti-hysteric, attenuant, diaphoretic, detergent and inciding. Hence it is of Service in Obstructions of the Menses, Retention of Urine, Head ach and Melancholy, resolves coagulated Blood, but excites Catarrhs. It is reckoned of excellent Use for freeing the Lungs of acrimonious Humours, and kills Worms. Outwardly it is a very good Emollient in a Hardness of the Uterus, and to strengthen the Head in an Apoplexy. *Hist. Plant. ejusdem Boerhaave.*

STOECHAS CITRINA. A Name for several Sorts of HELICHRYSUM.

Besides the foregoing Species of *Stœchas*, *Dale* mentions the following.

STOECHAS

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STOECHAS CITRINA GERMANICA, Offic. *Stœchas citrine Germanica latiore folio.* J. B. 3. 153. Raii Hiſt. 1. 281. *Elichryſum ſeu Stœchas citrina latifolia*, C. B. P. 264. Tourn. Inſt. 453. *Amaranthus luteus latifolius*, Ger. Emac. 646. *Gnophaleum luteum*, Volck. 193. GERMAN GOLDY-LOCKS.

It is cultivated in Gardens, and flowers in *May*. The Flowers, which are the Part uſed in Medicine, are of Service in Obſtructions of the Liver and Spleen, and provoke Urine and the Menſes; they reſolve coagulated Blood, dry up Rheums, and expel Worms.

Tragus ſays, that the Flowers of *Amarantus* (ſo he calls this Plant) are of a hot Nature, which is known by their Taſte and Smell. Boiled in Wine and taken they expel Worms of the Belly, which *Tragus* ſays is verified by his own Experience. Taken in the ſame Manner, they provoke Sweat, and therefore he eſteems them effectual in Obſtructions of the Liver, Spleen, Kidneys and Bladder. A Lye made of the Flowers cures ſcald Heads, and kills Lice, and put among Clothes preſerves them from Moths. The Decoction thereof in Water being uſed by Way of Vaporation or Fomentation, mollifies the Hardneſs and Swelling of the Matrix. Some uſe the Flowers, as *Breynius* ſays, with good Succeſs in the Jaundice. *Raii Hiſt. Plant.*

STOIBES, στοίβης καρπός, "the Fruit of the Stœbe," in *Galen*, *Exegeſis*, is expounded by τὸ ἱππόφαες σπέρμα, "the "Seed of the Hippophaes." But *Foeſius* thinks we ſhould read στοιβῆς and ἱπποφάους, and that they have a Relation to that Paſſage, *Lib.* 2. περὶ γυναικ. where a Cataplaſm of the Seed of the *Stybe*, or the Bramble boiled in Water and Oil, is directed to be applied to the Breaſts, in order to mollify their Aſperities. But there we read στυβῆς, as *Galen* alſo in his *Exegeſis* ſays, that the *Hippophaes* is called alſo στύβος, *Stybus*. Now the στοιβὴ, *Stœbe*, is an Herb fit for making green Beds or Banks on which to ſit or repoſe, and may ſerve inſtead of Flocks to ſtuff Beds or Couches, and is called by ſome *Phleos*, according to *Pliny*, *Lib.* 21. *Cap.* 15. from *Theophraſt. Hiſt. Plant. Lib.* 6. *Cap.* 1. *Heſychius* writes στοίβη, and expounds it by ἰδὸς χόρτου, "a Kind of Stubble." Some read in *Galen* στίλβης for στοίβης, and στίλβου for στύβου. It is alſo written στοιβὴ, *Lib.* περὶ γεν. φύσ.

STOLIDES. στολίδες. Wrinkles in the Forehead.

STOLONES. The Suckers of Plants.

STOMACACE, from στόμα, the Mouth, and κακὸς, Evil. A Symptom of the Scurvy, conſiſting in a Fœtor of the Mouth, and an Eroſion and ſpontaneous Hæmorrhage of the Gums.

STOMACHICA.

The Stomach has the leading Part both in Pleaſure and Pain, for by its commodious Vicinity to the Heart it has the principal Share in contributing to the Strength of the Body, and by its ſympathizing with the Soul, has a mighty Influence towards the Exaltation or Depreſſion of the Spirits. From Pleaſure proceed a good Concoction, a lively Colour, and fleſhy Habit of the Body; from Pain or Uneaſineſs the contrary to theſe, and ſometimes a Dejection of Mind, the Stomach receiving no Aliment, or Melancholy, with an Averſion to all Food.

A Diſorder of this Part [the *Stomachica Paſſio*] is attended with a Hatred and Averſion to all Food, not only when it is offered, but when out of Sight; for the Patient recals the Idea of it to Mind, accompanied with a Nauſea, Anxiety, Redundance of Humidities, Cardialgia, an Effuſion of the Saliva, and ſometimes Vomiting: And tho' the Body ſuffers, and the Belly be empty, he bears the Pain of Faſting better than that of Eating; and if he finds it neceſſary to eat, he is forced to endure a Pain much worſe than that of Hunger. It is very troubleſome to him to chew his Meat, and much more irkſome to ſwallow it; beſides, he has an Averſion to common and wholeſome Food, and longs for what is abſurd and contrary to common Uſe. Nature with him is perverted, he is tired with every Thing, and hates and ſhuns his very Food. He is moleſted with a Pain between the Shoulders, which is increaſed after Eating and Deglutition, Reſtleſſneſs, Anxiety, Dimneſs of Sight, Noiſe in the Ears, Heavineſs of the Head, Numbneſs and Palſy of the Limbs, a Palpitation of the Hypochondria, and fancies that the Spine of his Back moves towards his Legs. Whether ſtanding or lying, he ſeems to be agitated and moved this Way and that Way, like a Reed or a Tree by the Blaſts of Winds. He ſpits a cold watery Phlegm, and if abounding with Bile in a bilious Conſtitution [χολὴ ἢ πικροχόλοις.] is ſubject to a Scotomia. He is free from a Thirſt, tho' after Eating he ſeems to deſire Drink, continues waking tho' ſluggiſh and drowſy, like thoſe who labour under a Coma, is lean, pale, feeble, faint, ſpiritleſs, timid, ſilent, yet ſoon angry, very much moleſted with black Bile, and ſometimes falls into Fits of Melancholy.

The Influence of theſe Symptoms being communicated by the Stomach to the Soul, a Diſeaſe muſt neceſſarily ariſe, but Men, through Ignorance of the ſympathiſing Parts, from whoſe Conſent proceed the moſt ſevere and dangerous Diſorders, aſcribe the Cauſe of the Diſeaſe (merely) to the Stomach. What confirms my Aſſertion is the Contiguity of the Heart, the Original of all the Faculties; for the Heart is ſeated in the Midſt between the Lungs, to the Middle of theſe is the Stomach connected, and this with the others to the Spine of the Back. From this Vicinity of the Heart proceed the Cardialgia, Fainting, and melancholy Diſorders.

The Cauſe of this Diſeaſe, among a thouſand others, is more eſpecially a Diſcharge of Pus from the Belly upon the Stomach. This Diſorder is alſo incident to thoſe who through Neceſſity are forced to live on thin and hard Diet, and to ſuch, alſo, as ſpend their Time in Study, and learned and laborious Reſearches, who are ſmitten with the Charms of divine Knowledge, and deprive themſelves of due Reſt and Food, neglecting the Care of themſelves, and thinking nothing worthy of their Regard but a wiſe Saying, or a wiſe Action. Theſe hard Students and Contemplators deſpiſe a Fulneſs and Variety of Meats, abſtaining from Food and Sleep, and ſatisfying their Thirſt with Water. Inſtead of a ſoft Bed, they lie on the Ground, without any Covering but the common Canopy of the Sky, and go muffled up in a thin and Thread-bare Cloak, coveting no Riches nor Poſſeſſions but the invaluable Acquiſition of divine Wiſdom and Knowledge, which comprehends all that deſerves to be called good in their Eſteem. When they find it neceſſary to eat, they are contented with what is cheap and common, and uſe it not for the ſake of ſatiating an Appetite, but for the Suſtentation of Life. They indulge not themſelves in drinking of Wine, or chearful Converſation, in Tours or Promenades, but neglect the due Exerciſe as well as Clothing of the Body. Whither will not a Love of Learning divert a Perſon, and draw him aſide? It ſeduces him from his Country, Parents, Brothers, and Siſters, and even from himſelf, and his own Life. Thus the poor Student becomes extenuated, looks ill-coloured, and old while young, is ſilent, thoughtful, never laughs, but is conſtantly ſevere and ſtern in his Behaviour. The Stomach is affected with Loathing, or is ſoon ſatiated with ſuch cheap and ordinary Food as comes firſt to hand, being unaccuſtomed to Varieties, and of a dull Appetite to all Manner of Meats, and offended by any unuſual Food, the taking of which is immediately ſucceeded by a general Loathing.

This Diſorder of the Stomach is a chronic Affection, and different from a Phlegmon, Fluxes, Cardiogmus, and Pain of the Stomach.

The Stomachic Paſſion is moſt common in Summer, at which Seaſon there is a Weakneſs of Digeſtion, Appetite, and all the Faculties. The Time of Life moſt ſubject to it is old Age, which, on account of its Vicinity to Death, is but too liable to a Failure of Appetite, even without a Diſeaſe. *Aretæus de Cauſ. & Sign. diutin. Morb. Lib.* 2. *Cap.* 6.

The *Stomachic Paſſion* takes its Name from the Part affected, the *Stomach*; but not every Diſorder complained of in that Part is without further Conſideration to be called the *Paſſion of the Stomach*, unleſs it be attended with the Concurrence and Continuance of many Symptoms together, and becomes of the Nature of chronic Diſtempers with repeated Exacerbations and Remiſſions. A Number of Phyſicians have preſcribed ſingly for the Cure of this and that particular Symptom of the Diſeaſe, ſometimes treating of the Hardneſs of the Stomach, ſometimes of its Ventoſity, of the Rheumatiſm in particular of the Stomach, and ſo of its Weakneſs, its Loathing and Averſion to Food, and the reſt. *Themiſon*, in his firſt *Book of chronical Diſeaſes*, calls a Solution of the Parts about the Stomach by the Name of *Rheumatiſm*. In his ſecond Book he gives it the Appellation of *Ventoſity*. *Theſſalus* in his ſecond *Book of Diætetics* treats diſtinctly of the Cure of a Solution, and of an Inflation of the Stomach. Our Deſign is to ſpeak of them all under one general Head, in which we ſhall reduce *Ventoſity* or Hardneſs from an Inflammation, under Diſeaſes of *Striƈture*, and a Loathing or Abhorrence of Food, and a *Corruption* of the ſame, a Diſorder of an ambiguous Nature under the two principal Diſeaſes.

The antecedent Cauſes of the *Stomachic Paſſion*, beſides thoſe which it has in common with other Diſtempers, are, more particularly a continual Indigeſtion or Vomiting after Eating, a taking Cold, Sorrow, alſo, and taking a ſtrange and nauſeous Draught of Phyſic.

The Symptoms attending this Diſeaſe in the Time of the Fit are, a Fainting, a cold Numbneſs of the Joints, or a Heat more piercing than the natural, diffuſing itſelf through all the Members, and moſt ſenſible in the Palms of the Hands, with a dewy Sweat, a Reſtleſneſs, Jactation, and Anxiety, a Lowneſs of Spirits, and Deſpondency of Mind, a Change of Colour,

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Colour, a ſmall, ſwift, and weak Pulſe, a Waſting of the Body, or, on the contrary, an immoderate Appetite, with a Corruption of the Food, which acquires an acid, unſavoury or nidorous Quality. Sometimes the Patient lies ſpeechleſs, and grinds or clenches his Teeth; there is always a Cold in the Head, with a Ringing in the Ears. Sometimes, alſo, there is an inſatiable Thirſt, and when the Inflammation is at the Height in the Time of the Fit, a Dryneſs of the Mouth, and a leaping under the Region of the Præcordia; there is, alſo, a Pain in the ſame Parts, or between the Scapulæ, which extends itſelf further, if the Inflammation happens to be more diffuſed, with a Difficulty of Deglutition, and a Strangulation, which has induced ſome leading Men of our Sentiments, in their Books of Epiſtles, to call this Kind of Symptom a *Stomachic Quinſey*.

A *Hardneſs* of the Stomach, without Heat or Pain, is attended with other common Symptoms, and beſides with a ligneous Senſation of the ſame Parts, and eſpecially between the Shoulders, if the Stomach be wholly dry'd. If there be only a Dryneſs of its upper Part, there will be a Difficulty of Deglutition till what is received arrives at the Bottom of the Stomach; or if the Dryneſs or Hardneſs affect its Bottom, which the *Greeks* call βάσις *(Baſis)* Deglutition will be eaſy; but when it is perfected, will be ſucceeded by a Senſe of Weight, with a Hardneſs, and a viſible Tumor in the interior Parts of the Præcordia.

A *Ventoſity* of the Stomach is attended by a Tenſion together with an Inflation. There is a Repletion of the Head, from a Retention of Flatuoſities, with continual Eructations, which manifeſts itſelf by a Senſe of Heavineſs of that Part, which is increaſed after taking Food, at which Time there is a Sound, alſo, of the Liquids in the interior Parts, as of a Bladder half full, the Wind ruſhing through the empty Spaces, till the Parts are relieved from this Tenſion, and relaxed by the Benefit of Eructations. If the Inteſtines be, alſo, inflated, there follows a Rumbling of their interior Parts, which the *Greeks* call βορβορυγμὸς *(Borborygmus.)* A *Solution* of the Stomach, which they call *Rheumatiſmus*, [a Rheumatiſm] is ſucceeded by a Flux of the Saliva, and ſometimes by a continual Spitting, and a nauſeous Humectation of the Mouth, with a biting Senſation in the inward Parts. Some, in this Circumſtance, vomit up vaſt Quantities of a groſs, tenacious, or a bilious and porraceous Humor, or ſome other Subſtance of the ſame Colours. If the *Solution* be *occult*, which the *Greeks* call ἄδηλος *(Adelos)* or the Signs are not apparent, which the *Greeks* call λογοθεώρητα *(Logotheoreta)* there follows a Weakneſs of the Pulſe, with a Senſe of Trembling and Pendulouſneſs of the Stomach, a Faintneſs and Swooning, which the *Greeks* call λιποθυμία *(Lipothymia)*. This Symptom is removed for the preſent by taking ſome Food, and the Patient finds himſelf refreſhed, though but for a while, for he relapſes into his former Fainting-Fit, and is in the ſame Circumſtances as in the laſt Paroxyſm; ſo that unleſs he receives ſpeedy Recruits of Aliment he falls away as dead. Hence we are told by the Antients, that Numbers under this Diſorder have continued eating and drinking for a whole Day and Night without ceaſing. And *Aſclepiades* relates, that a Servant of *Praxagoras* eat every Day three Loaves, each of two Pounds in Weight, and after he had eaten them was no otherwiſe affected than if he had taken nothing. And this laſt Character diſtinguiſhes the forementiond Diſorder from a *Phagedæna*; for in this latter the Food received is not digeſted, nor continues in the Stomach, but is expelled thence by Vomiting. *Cælius Aurelianus Morb. Chron. Lib.* 3. *Cap.* 2.

THE CURE.

In other Diſeaſes, after the Cure, there remains nothing to confirm the Health and ſtrengthen the Body, but a proper Regimen with a good Concoction. To *ſtomachic* Patients alone a Regimen proves of no Service, or prejudicial, for want of rightly digeſting his Aliments. I ſhall, therefore, briefly give Directions in uſing proper Means for promoting a due Concoction in ſuch Subjects. For Geſtation, Walking, with other Exerciſes of the Body and of the Voice, may procure an Appetite, and ſubdue a Loathing or Inappetence of the Stomach, but prove inſufficient to remove a long and habitual Indigeſtion, and to render a lean and extenuated Body earnous, and of a good Habit. The Sick in ſuch Caſes are more to be indulg'd than other Patients, and to be managed in the niceſt Manner: The Phyſician, alſo, is to comply with their Deſires, provided they extend not to ſomething which would prove very prejudicial to them; for this is the beſt Way you can take, if they cannot be perſuaded into a Liking of what would be moſt proper and beneficial.

Medicines to be taken inwardly are the Juice of Worm-wood, Unguentum Nardinum, Theriaca, the Seeds of Parſley, Ginger, Pepper, and Seſeli; theſe promote Concoction. Outwardly, to the Sternum may be apply'd an aſtringent Epithem, compos'd of Nard, Maſtich, Aloes, Acacia, and Juice of Quinces. Another of the like Nature may be prepared of the Pulp of Apples bruiſed with Dates. Beſides theſe Remedies, others may be uſed, which I have preſcribed for the Cure of a Thirſt in a Diabetes. The ſame Remedies, indeed, which are proper in this Diſorder, would excite a Thirſt in a Diabetes; but in Stomachics, the Tone of the Stomach is not at all diſpoſed to render the Patient thirſty. *Aretæus de Curat. Chron. Morb. Lib.* 2. *Cap.* 6.

STOMACHICA.

Stomachic Corroboratives, or ſuch as ſtrengthen the Tone of the Stomach and Inteſtines, among which are *Carminatives*, as the Roots of Galangals, red Gentian, Zedoary, Pimpinella, Calamus Aromaticus, and Arum; Of Barks and Rinds, thoſe of Canella Alba, Saſſafras, Citrons, *Seville* and *China* Oranges, the Cortex Africanus, the Cortex Winteranus, Caſcarilla; Of Spices, Pepper, Ginger, Cloves, Cinnamon, Cardamums and Mace. Other Things of this Nature are, among Simples, as *Roman* and common Chamomile, Worm-wood, Mint, Carduus Benedictus, and the four Carminative Seeds; Of Preparations, the Oil of Cedar, Oil of Oranges by Expreſſion, Oils of common Chamomile, Daucus Creticus, Aniſum Stellatum, Cumin, Caraway, Mint and Wormwood, with the Spirit of Salt and ſweet Nitre. Among Compounds are the Sal Volatile *Sylvii*, our ſtomachic Elixir, and that of *Michaeli*, the carminative Eſſence of *Wedelius*, the ſtomachic Powder of *Birkmannus*, the Eſſence of Orange-Peel, with ſweet Spirit of Nitre, Tincture of Tartar, Oils of Oranges prepared by Expreſſion, the compound Eſſence of Wormwood of *Conordingius*, the carminative Water of *Dornerellius*, and the Spiritus de Tribus.

Though many cephalic and nervine Remedies are, alſo, of excellent Service in Diſeaſes of the Stomach and Inteſtines, eſpecially ſuch as proceed from a Weakneſs or Decay of their Tone, there are yet other Medicines which, with Regard to the particular Kind of Diſorder, are accommodated, as it were, by a ſpecific Virtue to the Diſtempers of thoſe Parts. Thus, for Example, under a Weakneſs of Appetite, from a Congeſtion of viſcid and acid Crudities in the Stomach, beſides Bitters, ſuch as the Root of red Gentian, the Herbs Wormwood, and Carduus Benedictus, and the ſeveral Sorts of Spices; the Roots, alſo, of Galangal and Pimpinella, the Canella Alba, Pepper, Ginger, and Arum, are of eſpecial Service. For a Nauſea, Vomiting and Inverſion of the Stomach, the moſt preſent and effectual Remedies are Mint, its ſpirituous Water, and Oil carefully diſtilled; Maſtich, and its Spirit, with what is prepared of *Peruvian* Balſam and Salt of Tartar, and our mineral anodyne Liquor. Againſt the Cardialgia, Colic, and Gripes, the ſpeedieſt and beſt adapted Remedies are freſh Orange Peel, and the Eſſence of the ſame duly extracted, the Water and Oil of *Ethiopian* Cumin, the genuine Oil of the Flower of common Chamomile, with the ſweet Spirit of Nitre. To correct an exceſſive Lubricity of the Inteſtines, and reſtrain a Looſeneſs, the Caſcarilla is endu'd with a peculiar Virtue. Under Inflation of the Inteſtines, the moſt effectual Medicines to expel the Flatuſes are the carminative Water of *Dornerellius*, the carminative Eſſence of *Wedelius*, the Spiritus de Tribus incorporated with the ſweet Spirit of Nitre, the Eſſence and Water of Zedoary, and Cardamoms, with the genuine Oils of Caraway and Cumin. *Frederic Hoffman.*

STOMACHOTROTOS, from στόμαχος, the Stomach, and τιτρώσκω, to wound, wounded in the Stomach.

STOMACHUS, στόμαχος, has many and various Significations with the antient Phyſicians. Properly, it ſignifies a narrow Neck like an Iſthmus placed before any conſiderable Cavity reſembling a Belly; and this was what the Antients meant by the Word. The Name was afterwards tranſlated to ſignify the *Oeſophagus*, or *Gula*, the Gullet; and ſince that, to denote the Mouth of the Stomach, which the Antients call καρδία *(Cardia)*. This laſt Senſe was impos'd upon the Word in *Galen*'s Time, as he informs us in the Beginning of his fourth Book *de Uſu Partium*. The ſame Author, *Lib.* 5. *de Loc. Affect. Cap.* 5. tells us, that Writers ſince the Time of *Ariſtotle* uſually give the Name of *Stomachus* to the Part between the Fauces and the Mouth of the Stomach, which the Antients called *Oeſophagus*, and thoſe in his Time, *Gula*, "the Gullet;" but that *Ariſtotle* always called this Part by its antient Name. Thus *Tully*

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Tully, Lib. 1. *de Nat. Deorum*, makes the *Stomachus* adhere to the Roots of the Tongue, whither the Food is firſt tranſmitted from the Mouth, with the Aſſiſtance of the Motion and Agitation of the Tongue, and through which it is impelled downwards. *Celſus*, alſo, *Lib.* 4. *Cap.* 1. *et* 3. takes the *Stomachus* for the *Gula*, when he ſays, that it is ſituated under the Fauces, and receives the Food; though the ſame Author ſeems to uſe the Word improperly for the lower Part of the Stomach, when he makes the *Stomachus* the Beginning of the Inteſtines, and deſcribes it as a nervous Part beginning from the ſeventh Vertebra of the Spine, and join'd to the Stomach about the Præcordia. *Lib.* 4. *Cap.* 1. And *Pliny Lib.* 11. *Cap.* 37. calls the upper Part of the *Gula*, or Gullet, the *Fauces*, and the other Part the *Stomachus*, which Appellation, alſo, was not unknown to the Antients, as appears from *Homer. Il.* 7. verſ. 292. ἠ ἀπὸ στομάχου ἀρὴν τάμε νηλεῖ χαλκῷ. "And cut the Throats (*Stomachi*) of the "Lambs, *&c.*" To proceed, *Galen* in many Places writes, that *Stomachus* was a Name for the Mouth of the Stomach; and *Lib.* 4. *Cap.* 5. *de Loc. Affect.* he ſays, that the Antients call'd the Mouth of the Stomach καρδίαν; the Appellation being given it from ſome Symptoms which it ſeemed to induce; but in his Time it was call'd *Stomachus*, by a wrong Uſe of the Word, as he writes, *Com. ad* 7 *Aph.* 56. where he ſays, that in his Time not only the common People but the moſt eminent Phyſicans call the Mouth of the Stomach, by an Abuſe of the Word, *Stomachus*. To the ſame Purpoſe he writes in many other Places, and particularly *Lib.* 2. τῶν καλὰ τόπ. he ſays, that *Stomachus* is the Name by which *Archigenes* calls the Mouth of the Stomach, and is the uſual Appellation beſtow'd on it by the Phyſicians, who uſe the Phraſe *Stomachicæ Syncopæ* (to ſignify a Syncope proceeding from an Affection of that Part) and call ſome *Stomachici* from a Diſorder in that Part, and particularly thoſe who have an Oppreſſion at the Mouth of the Stomach, as he writes in the Beginning of *Lib.* 8. καλὰ τόπ.

Hippocrates, Lib. περὶ ἀνθρώπ. and *Lib.* περὶ καρδίης, calls the *Oeſophagus*, or *Gula*, στόμαχος, which was the uſual Name the Antients had for it. *Stomachus* was, alſo, us'd among the *Latins* to ſignify the ſame as *Gula*, or the Canal ſubjacent to the *Fauces* at the Root of the Tongue, which tranſmitted the Meat and Drink to the Stomach, as we are aſſured by *Gellius, Lib.* 17. *Cap.* 11. Thus, according to the Opinion of *Eraſiſtratus*, στόμαχος κοιλίης, in *Hippocrates*, will ſignify that narrow Pipe, or Neck of the Stomach prefix'd to its Cavity, from that antient and proper Signification of στόμαχος, obſerv'd in the Beginning, in which Senſe it is very often uſed by *Hippocrates*. For Inſtance, στόμαχος κύστεως, is expounded in *Erotian* to be the Neck of the Bladder, and τῆς μήτρας στόμαχος, the Neck of the Womb.

STOMARGUS. στόμαργος. *Galen*, in his *Exegeſis*, writes, that *Dioſcorides* reads στομάργε in the ſecond of the *Epidemics*, and underſtands it τῷ καλῶς μαινῶς, of one who talks madly. Others, he ſays, read στομάργῳ, and make it a proper Name.

STOMATICA. στοματικά, from στόμα, the Mouth. Remedies for Diſorders of the Mouth, and *Fauces*.

STOMOMA. στόμωμα. Purified Iron, that is, Steel.

STOMOMANICON. στομωματικὸν. A Name for the Muſcle call'd otherwiſe *Platyſma Myoides*.

STOPAROLA. The Name of a ſmall Bird mention'd by *Aldrovandus*.

STORAN. See STYRAX.

STORYNE. στορύνη. An Inſtrument us'd by the Antients for drawing Blood from the Noſe, as we learn from *Aretæus, de Curat. Diuturn. Morb. L.* 1. *C.* 1. As this Author but juſt mentions it, and I don't know that it is taken Notice of by any other, I cannot deſcribe it.

STRABISMUS, STRABILISMUS, or STRABOSITAS. A Diſtortion of the Eye, or ſquinting. See OCULUS.

STRAMONIUM.

The Characters are;

The Root is annual; the Leaves are alternate, and ſinuated at the Edges; the Calyx is pentagonal, and tubulated. The Flower is monopetalous, Funnel-ſhaped, quinquefid, and open. The Ovary in the Bottom of the Calyx becomes a prickly, roundiſh Fruit, divided by a decuſſated, or cruciform Partition, into four Cells, containing many Kidney-ſhap'd Seeds.

Boerhaave mentions ſix Sorts of *Stramonium*, which are;

1. Stramonium; fructu ſpinoſo, rotundo; flore albo ſimplici. *T.* 118. *Salanum, Pomo-ſpinoſo, rotundo, longo flore. C. B. P.* 168. *Datura Turcanum. H. Eyſt. Aut.* 0. 2. F. 12. F. 1.

2. Stramonium; fructu ſpinoſo, oblongo; caule, & flore, violaceo. *Boerh. Ind. A.* 261. *Stramonium, Offic. Stramonium majus album*, Park. Parad. 360. Raii Hiſt. 1. 748. *Stramonium ſpinoſum*, Ger. 277. Emac. 348. *Stramonica fructu ſpinoſo oblongo flore albo.* Tourn. Inſt. 119. *Stramonia altera major, ſive Tatura quibuſdam*, J. B. 3. 624. *Solanum fœtidum pomo ſpinoſo, oblongo*, C. B. P. 168. THORN APPLE.

The common Thorn-Apple has a white, thick, woody Root, pretty much branched, and full of Fibres, from which ariſes a thick, round, hollow Stalk, two or three Foot high, divided at the Top into ſeveral Branches, and cloathed with large Leaves, waved and ſinuated about the Edges, in Shape like the common Night-ſhade, but much larger, of an ugly fœtid Smell. The Flowers are long, white, hollow Tubes, dilated at the Ends into large pentangular Brims, each Angle ending in a long *Ligula*: They ſtand in looſe, green, five-cornered Calyces, and are ſucceeded by large Seed-Veſſels, near as big as a Walnut, covered all over with long, thick, upright Thorns; and as they ripen, they ſeparate into four Parts, ſhewing the flat, black, and ſomewhat rough Seed. It is ſown in Gardens, and is ſometimes found wild among Rubbiſh, and flowers in *July*.

The Leaves are accounted cooling, and good for Burns, Scalds, and Inflammations in any Part. The Seed is narcotic and ſoporiferous, and rarely uſed. *Miller's Bot. Off.*

3. Stramonium ferox. *Boerh. Ind.* 261. *Tourn. Inſt.* 119. *Datura*, Offic. *Solanum fœtidum Pomo grandiore Aculeis donato*, Raii Hiſt. 1. 748. DUTROY.

The Seed of *Stramonium* pulveriz'd and drank diſorders the Senſes, and induces a Delirium, which laſts twenty-four Hours, whence, as we are told by *Garcias*, it is us'd by Thieves to mix with the Food of thoſe whom they deſign to rob. And *Acoſta* tells us, that it is cuſtomary with lewd Women to give half an Ounce of the Powder to their Gallants, in Wine, or any other Liquor they like beſt. He who is ſo unfortunate as to take it remains for a long Time like one without Reaſon, either laughing, weeping, or ſleeping, and ſometimes talking, and giving rational Anſwers as if he were in his right Senſes, though the contrary be true, for he neither knows whom he talks with, nor remembers a Word of what has been ſaid after he comes to himſelf. Some of theſe Women are ſo experienc'd in adminiſtring this Medicine, and know how to temper it in ſuch a Manner, that its Effects ſhall laſt for a certain Time, or for as many Hours as they pleaſe. There are ſome Phyſicians among the Pagans, who uſe the Seed to provoke Urine; their Method is firſt to exhibit ſome Emetic, then inject an acrimonious Clyſter, and apply ſtrong Ligatures to the Arms and Legs, and rub them very well, and ſometimes to apply Cupping-Glaſſes to them: If theſe have no Effect, they find it neceſſary to open a Vein in the great Toe.

As the Pagan Phyſicians, as well as the Chriſtian Natives, abhor the Uſe of Veneſection and Cupping-Glaſſes, they do nothing but provoke Vomiting, and apply ſtrong Ligatures and Frictions. If theſe will not anſwer the Intention, they preſcribe a Bath of warm Water to provoke Sweat. After vomiting they exhibit a Draught of Wine mixed with Pepper and Cinnamon. A Dram of the Root taken in Wine induces a profound Sleep and ſtrange Dreams full of ſurprizing and extravagant Images. The Seeds macerated a Night in Vinegar, then carefully powder'd, are good to anoint a miliary Herpes, and ſpreading Eryſipelas. An Ointment prepared of the Juice of the Leaves with Swines Fat is a moſt approved Remedy for a Burn by Fire or ſcalding Water. *Raii Hiſt. Plant.*

4. Stramonium; fructu ſpinoſo, rotundo; flore violaceo, duplici, triplicive. *T.* 119.

5. Stramonium; Americanum; minus; Alkekengifolio.

6. Stramonium; folio Hyoſcyami; flore toto candido; fructu propendente, rotundo, ſpinis innoxiis ornato. *Datura, folio Hyoſcyami latiſſimo, flore toto candido, fructu propendente, rotundo, ſpinis, fere innoxiis, copioviſſimis, & longiſſimis, ſpinis munito, ſemine pallido.* H. Mauroc. *Boerh. Ind. Alt. Plant.*

The Leaves, Roots, Flowers, and Seeds of *Stramonium* taken inwardly, induce a Sapor, if uſed in great Quantity. The very Smell thereof cauſes Ebriety. A large Doſe deſtroys the Memory of all things paſt. The Whores in *Java* uſe it when they are hir'd by People of Quality; the Women, alſo, give it to their Husbands, who become delirious afterwards; they will, alſo, take it themſelves in the Preſence of their Husbands out of Wantonneſs. Too large a Doſe induces Stupidity, Faintneſs, and at laſt Death. The Plant induces a ſtrange Kind of Madneſs, or Drunkenneſs: They who take it, make Anſwers with their Eyes open, but remember nothing, nor concern themſelves in the leaſt about any

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any thing. For this Reason the *Indian* Princes make use of it to render their Rivals stupid, and consequently incapable of Government, in which Condition they suffer them to live and shew themselves to the People. These Effects are caused by the Drink called *Datyra*, which is composed of Opium, Stramonium, and Hyoscyamus. This Drink has no Taste nor Smell, yet the Diseases proceeding from it are incurable. *Garcias*, indeed, speaks of a Remedy, which is immediately to take a Vomit with a large Quantity of Salt and Vinegar; this in some measure cures, but they never recover their Strength of Brain. See *Bernier*'s Travels thro' the Dominions of the *Great Mogul*. This Plant taken in a small Quantity causes Sleepiness, in a large Dose Madness, Convulsions, cold Sweats, and at last Death. Outwardly, in the Form of a Cataplasm, it is of Service in an Erysipelas, Convulsions, inveterate Ulcers, and all kinds of Inflammations, but is never to be used internally. *Hist. Plant. Ascript. Boerhaave.*

STRANGALIDES. στραγγαλίδες. Hard Tumors in the Breasts from concreted Milk.

STRANGULATIO. Strangulation; a Sensation of Suffocation in hysteric Disorders.

STRANGURIA. στραγγουρία, from στράγξ, a Drop, and οὖρον, Urine. A Strangury; that is, a Discharge of Urine by Drops, attended with Pain. See CALCULUS, CATHETER, CATHETERISMUS, GONORRHÆA, and RENES.

STRATIFICATIO. Stratification; that is, the laying different Substances upon each other; *Stratum super stratum*; Layer upon Layer.

STRATIOTES, Offic. *Stratiotes Ægyptia*, J. B. 3. 787. Raii Hist. 2. 1384. *Stratiotes aquatica vera Dioscoridis & Ægyptiaca*, Park. Theat. 1249. *Lenticula palustris Ægyptiaca, sive Stratiotes aquatica folii sedo majore latioribus*, C. B. P. 362. *Hay alem el maovi*, id est, *Stratiotes*, Alpin. Ægypt. 2. 51. WATER SEA-GREEN.

It grows in the Canals derived from the *Nile* near *Damiata* in *Egypt*, and swims on the Water like the *Lenticula Palustris*; has no Stalk, but has Leaves resembling those of the *Cynoglossum*, somewhat short, broad, thick, hard, hairy and whitish; to these Leaves, instead of Roots, hangs a little thin Sort of Down. From its Resemblance to the greater *Sedun* or Sea-green, they call it *Hay alem el maovi*, that is, *Water-Sea-green*. It has no Smell but what it has from the Water, but has a dry and astringent Taste like *Acacia*, and is found by Experience to be good for the same Diseases as Plantain. Hence the Countrywomen, whom they call *Bedovi*, use the Decoction or Juice, or take a Dram of the Powder every Day, to stop an Hæmorrhage of the Uterus; and the Peasants apply the bruised Leaves to Wounds, with surprising Success. I suppose this to be the true *Stratiotes* of the Ancients, of which *Dioscorides* gives the following Description: "The *Stratiotes*, which grows upon the Water, "and which some call the *River Stratiotes*, the *Egyptians* "*Tibus*, the *Magi* the Blood of *Ælarus*, swims upon the "Waters, and lives without a Root, whence it has its "Name. It is like the *Sempervivum*, only has a larger "Leaf." That Author ascribes to it the same Virtues for which the *Egyptians* now use it; so that there can be no doubt but this is the true *Stratiotes*. The same is more clearly demonstrated by *Pliny*, in the following Words: "The *Stratiotes* is a Plant in much Esteem among the "*Greeks*, but it grows only in *Egypt* among the Inundations, being like the *Aizoon*, only its Leaves larger." *Prosper Alpinus, de Plant. Egypt.*

STRATIOTICON. στρατιωτικὸν, or STRATIOTÆ COLLYRIUM. The Name of a Collyrium described by *Scribonius Largus*, No. 33. and *Paulus Ægineta*. L. 3. C. 22.

STRATUM SUPER STRATUM. See STRATIFICATIO.

STREMMA. στρέμμα, from στρέφω, to turn. A Strain, or, as it is usually called, a Sprain, of the nervous and membranous Parts about a Joint.

STREPITOSUS. The Name of a flatulent Disorder common in those Parts of the *Alps* which belong to the House of *Austria*, in which the Face, Neck, and Arms, are so distended with Flatulences, as to make a Noise, when struck, like a dry Bladder half distended with Wind. *Castellus* from *P. de Sorbait. Med. Septentr.*

STRIATA CORPORA. Two Protuberances of the Brain, upon the *Crura* of the *Medulla Oblongata*. See CEREBRUM.

STRIBILIGO. A cutaneous Efflorescence. *Helmont. Tumul. Pestis.*

STRICTOR. The same as Sphincter.

STRICTUM, in *Scribonius Largus*, No. 45. is Dense.

STRICTURA. Stricture, Rigidity. I have made several References to this Article in the Course of this Work, at that Time intending to explain the Doctrine of Disease from Stricture or Rigidity here; but as I afterwards judged it more proper to be inserted under the Article FIBRA, the Reader must have the Trouble of consulting that. See, also, in the Preface, the Methodic System.

STRSDOR DENTSUM. A Grinding of the Teeth.

Prosper Alpinus, in his Treatise *de Præsag. Vit. et Mort. Ægrot.* tells us, that a *Stridor Dentium*, which he calls a Convulsion of the Teeth, has been frequently observed by him to be a mortal Symptom; and he confirms his Observation by the Authority of *Hippocrates*, 1 *Prorrhet.* 48. and in the Book of the *Prognostics*, where it is said, that "the Grinding of the Teeth in Fevers, where a Person has not been "accustomed to do the same from his Childhood, portend "Madness and Death; and if it be attended with a Delirium, is so much the more dangerous and fatal." And *Galen* commenting thereon says, "That a Grinding of the "Teeth, when the Patient has not been used to it from the "Beginning, indicates an approaching Delirium; but if you "perceive the Patient to labour under both Symptoms, that "is, to grind his Teeth, and to be under a Delirium, you "may conclude him to be near Death." We read the same Prognostics from a *Stridor Dentium*, 1 *Prorrhet.* 48. And we have it confirmed by an Instance which *Hippocrates* gives us, 7 *Epid. T.* 20. in the Person who lay sick in the House of *Metron*, who, the Day before he died, was affected with this Contrition or Grinding of the Teeth, among other mortal Symptoms. We may conclude, therefore, that a *Stridor Dentium*, in acute Diseases, portends nothing but Death. *Prosper Alpinus.*

STRIGENSIS TERRA. See TERRA SILESIACA.

STRIGIL, STRIGILIS, was an Instrument in Use among the Ancients in their Baths and some gymnastic Exercises, and served to abstergе Sweat and Sordes from the Body. Persons who intended to bathe or use some Exercise, when they came into the Gymnasium, put off their Clothes in the Apodyterium [see the Article]; after which some of them, especially such as designed to box or wrestle, went into the *Alipterium*, where they were anointed, and thence proceeded to the Place where the Dust was, with which they were sprinkled as they passed along, and then entered on their several Exercises; which being finished, they returned to the *Alipterium*, and had the Strigments and Sordes absterged from their Bodies by the *Aliptæ* [see the Article] with Iron *Strigili*; and as they consisted of a Mixture of Oil, Dust and Sweat, they were preserved for medicinal Uses, and called by the *Attics Conisalus*, κονίσαλος, and by others *Patos*, πάτος, as appears from *Dioscorides*, *Pliny*, *Galen*, and *Aetius*; tho' *Avicenna*, in his second Book, mentions the dry Sweat of Wrestlers, which I suppose to be such as had no Mixture of Oil or Dust. And tho' *Strigils* were used in Bathing in *Galen*'s Time, they were generally Spunges, or made of Linnen, and not always common, but every one carried with him his own *Strigil*, especially those who had an Aversion to Instruments which were of common Use. *Strigils* were of Iron, Gold, Silver, Horn, Ivory or Brass, and were of a crooked Shape, like a Gardiner's Pruning Knife, as appears from ancient Monuments, and that Verse of *Martial.*

Pergamus hoc misit curvo distringere Ferro.

STRIGMENTUM, γλοιὸς, ξύσμα, the Strigments, Filth, or Sordes, absterged from the Skin in Baths, and Places of public Exercises, or from the Walls or Statues belonging to those public Places. Hence *Strigments* are of three Kinds, first of the Baths, consisting of the Sweat, Oil, and Sordes collected in those Places; secondly, of the *Palæstra*, consisting of the same Things, with an Addition of Dust, collected partly by Insperſion after anointing with Oil, and partly in the Colluctation of the Combatants offensively, and insidiously throwing Dust upon each other, besides what was raised by Conflicting. The third Kind was obtained by Abrasion from the Walls and Statues belonging to the *Gymnasium*; and these Strigments, or Sordes, consisted in a great measure of Oil, (the same with which the Combatants were anointed) with a Mixture of Particles of that particular Substance to which it adhered, and consequently some Communication of its Virtues; as, for instance, what was scraped off from Copper Statues had a Mixture of the Substance and Virtues of Ærugo.

Archigenes in *Galen*, *Lib.* 3. κατὰ τόπ., uses Strigments with Lime for discussing the Parotides; and uses, also, for the same Purpose an Application of Nitre, with a third Part of *Rubrica Sinopica*, and with *Unguentum Cyprinum*, reduced to a strigmentitious Consistence.

Strigments absterged in the Baths are of a heating, mollifying, and discutient Quality; and therefore proper to anoint the *Rhagades* and *Condylomata* affecting the Anus.

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The ſtrigmentitious Sordes of the *Palæſtra*, which have a Mixture of Duſt, diſcuſs Collections of Matter about the Joints; and, being applied hot by way of Fomentation, or in a Malagma, give Relief under the Pain of the Sciatica.

The Strigments which are ſcraped off from the Walls and Statues belonging to the *Gymnaſia* [public Places of Exerciſe] are heating, and diſcuſs Tumors which are difficult of Maturation, and are proper for Abraſions, and Ulcers in old Perſons. *Dioſcorides*, *Lib.* 2. *Cap.* 34, 35, 36.

STRINGENS. Aſtringent.

STRIX. The Screech-Owl, a Bird deſcribed by *Aldrovand.* This nocturnal Bird is a Species of Owl, and as large as an ordinary Hen. It lives in mountainous and maritime Places, near the Folds in which the Goats are kept, becauſe it is fond of their Milk, and ſucks them when it can have any Opportunity of doing ſo. It contains a large Quantity of volatile Salt and Oil. Its Fleſh, when dried and reduced to a Powder, is proper for the Cure of Palſies and Quinſies. The Doſe is from half a Dram to one Dram. Its Fat, when externally applied, is emollient, reſolvent, and proper for corroborating the Nerves. Its Gall is deterſive, and proper for removing Specks of the Eyes. *Lemery des Drogues.*

STROBILE. στροβίλη, from στρέφω, to turn. An intorted Pledget of Linnen.

STROBILITES. στροβιλίτης. An Epithet for Wine impregnated with Pine-Cones. *Dioſcorides*, *L.* 5. *C.* 44.

STROBILUS. στόβιλος. An Artichoke. But *Strobilus*, alſo, ſignifies a Pine-Cone; and in *Dioſcorides*, as *Marcellus Virgil* renders him, a Pine-Kernel.

Pine-Kernels cleanſed and eaten, or taken in *Paſſum* with Cucumber-Seeds, provoke Urine, and correct the Acrimony of Humours infeſting the Kidneys and Bladder. They, alſo, give Relief under the gnawing Pains of the Stomach, being taken in the Juice of Purſlain; they ſtrengthen a weak Body, and correct the corrupted Humours. The whole *Strobili*, or Pine-Cones, gathered freſh from the Tree, then bruiſed and boiled in Paſſum, are three Cyathi of the Liquor, if taken every Day, are good for inveterate Coughs, and a Phthiſis. *Dioſcorides*, *Lib.* 1. *Cap.* 88.

STROMBITES. A Stone in Form of that ſort of Shell-Fiſh, called *Strombos.*

STROMBOS. στρόμβος. A Periwinkle, or any Species of turbinated Shell-fiſh, from στρέφω, to turn.

STROPHOI. στρόφοι. Gripes of the Inteſtines.

STRUMA. See SCROPHULA.

STRUTHIO. Offic. Schrod. 5. 323. Charlt. Exer. 79. *Struthio-Camelus*, Will. Ornith. 100. Raii Ornith. 144. Ejuſd. Synop. A. 36. Schw. A. 350. Aldrov. Ornith. 1. 587. Geſn. de Avib. 670. Jonſ. de Avib. 35. Bellon. des Oyſe, 232. THE OSTRICH.

The Parts of this Animal uſed in Medicine are the *Coat of the Craw*, the *Fat*, and the *Eggs*. The *inner Coat of the Craw* corroborates the Stomach, and diſſolves Stones in a ſurpriſing manner. The *Fat* is agreeable to the nervous Parts, mollifies the Hardneſs of the Spleen, and mitigates nephritic Pains, the Parts being anointed therewith. The *Eggs* burnt and triturated in Vinegar cure the Impetigo.

STRUTHIO-CAMELUS. The ſame with the preceding. It is alſo called AFRA.

STRUTHIOFERA. A Species of *Filix*, ſo called becauſe its Leaves reſemble the STRUTHIO.

STRUTHIOMELA, STRUTHIA. A ſmall Species of Quinces, more odoriferous, and of a ſweeter and leſs aſtringent Juice than the common ſort. *Plin. Lib.* 15. *Cap.* 11. *Oribaſ. Med. Col. Lib.* 2. *Cap.* 50.

STRYCHNODENDRON. *Raii.* A Name for the *Solanum fruticoſum bacciferum.*

STRYCHNOS, STRYCHNON, στρύχνος, στρύχνον, in *Dioſcorides*, is the *Solanum.*

STRYPHNOS. στρυφνός. The ſame as ACERBUS, which ſee.

STULTITIA. μωρωσις. See MOROSIS.

STUPEFACIENS. See NARCOTICA.

STUPHA. The ſame as *Balneum Laconicum*, or a Vapor-Bath. See BALNEUM.

STUPIO. *Stannum*, or Tin. *Rulandus.*

STUPOR. νάρκη, νάρκωσις. A Stupor, or Numbneſs.

STUPOR DENTIUM. An Affection of the Teeth; for which ſee DENS.

STUPPA, STUPA. A Stupe, in Surgery, is a Piece of Cloth dipt in ſome proper Liquor, and applied to an affected Part. *Blancard.* Or, as *Caſtellus* deſcribes it, it is a Linen or Hempen Bag uſed by the Surgeons in ſtopping a Cavity, and, alſo, in Epithems to the Forehead, Nucha, and other Parts, and in Fractures.

STURIO, Offic. Schrod. 5. 333. Aldrov. de Piſc. 517. Bellon. de Aquat. 101. Geſn. de Aquat. 931. Jonſ. de Piſc. 75. Raii Ichth. 239. Ejuſd. Synop. Piſc. 112. *Acipenſer*, *Rondel.* de Piſc. 1. 410. Charlt. de Piſc. 34. *Acipenſer*, *ſive Sturio*, Schonf. Ichth. 9. *Acipenſer*, *Sturio*, Mer. Pin. 188. *Sturio*, *ſive Sturus*, Sale de Aquat. 113. THE STURGEON.

It is a Native of the Sea, but for the moſt part an Inhabitant of Rivers. The Parts in Uſe are the *Bones* and the *Caviar*, which is a Maſs reſembling green *Hamburgh* Soap, both in Colour and Subſtance, and is exported in great Quantities from *Ruſſia* to *Italy* and other Countries. The Way of preparing it is thus related by *Geſner*: They take the Eggs of the Sturgeon, and firſt cleanſing them from the Nerves which are therein, waſh them in Vinegar or White Wine, and ſpread them upon a Table to dry. This done, they put them into a Veſſel, and cover them with Salt, then break them abroad with the Hand, not uſing an Inſtrument, and afterwards put them into a Bag of a rare Texture, that the Humor may run through. When this is done they put it into a Pot with a Hole in the Bottom, by which the remaining Humor, if any, may be evacuated, and after well preſſing and covering it cloſe, ſet it aſide for Uſe.

The *Bones* are commended in the wandering Gout, and are exhibited in the Pain of the Colic. The *Caviar* is nouriſhing, increaſes the Semen, and excites Luſt. *Dale.*

Sturgeon is a large Fiſh that lives both in the Sea and freſh Water; it has an excellent Taſte, and grows fat in the Rivers, and more delicious than if it had continued always in the Sea; it uſually weighs a hundred Pounds, but ſometimes double. This Fiſh is able to ſtrike a Man down with its Tail, and it will frequently break the Nets in which it is taken. In Ponds they cannot live long; and as it has no Teeth, it cannot feed upon Fiſh, but ſubſiſts upon the Filth and Froth of the Sea.

Sturgeon was much eſteemed by the antient *Romans*, and the Belly is reckoned beſt. It contains much Oil and volatile Salt, and yields a nouriſhing and ſolid Food, becauſe of its thick and groſs Juices. It is, alſo, hard, toughiſh, fat, and difficult of Digeſtion; and therefore it is injurious to weak and tender Perſons, and thoſe who are ſick or recovering from Illneſſes. As Sturgeon is fat, it relaxes the Fibres of the Stomach and Bowels, and renders the Body a little ſoluble. The Bones of this Fiſh, taken to the Quantity of a Dram, are looked upon to be opening, good for Rheumatiſms and the Gravel; they extract what is called Mouth or Water-Glue from it, which is not ſo ſoon diſſolved as the common ſort, but produces the ſame Effects. *Lemery on Foods.*

STURNUS. Offic. Bellon. des Oyſe, 321. Geſn. de Avib. 677. Charlt. Exer. 90. Jonſ. de Avib. 96. Schw. A. 351. Will. Ornith. 144. Raii Ornith. 196. Ejuſd. Synop. A. 67. *Sturnus vulgaris*, Aldrov. Ornith. 2. 632. Mer. Pin. 177. THE STARE, OR STARLING.

It makes its Neſt about Towers, and the Tops of Houſes. Its Dung is eſteemed a Coſmetic, and is ſaid by *Galen* to cure the Alphi, Pani, Impetigo, and Morphew.

STYGIA. An Epithet of cauſtic or corroſive Waters, and particularly *Aqua Regia*. *Caſtellus.*

STYLISCUS. στύλισκος. See PRIAPISCUS.

STYLOCERATOHYOIDÆUS See STYLOHYOIDÆUS.

STYLO-CHONDRO-HYOIDÆUS. So *Douglas* names one of the Muſcles called *Stylohyoidæus*, becauſe it is inſerted into the cartilaginous Appendix of the *Os Hyoides.*

STYLO-GLOSSI. See LINGUA.

STYLO-HYOIDÆUS. This is a ſmall Muſcle lying obliquely between the *Apophyſis Styloides* and *Os Hyoides.*

It is fixed laterally by one Extremity to the Root or Baſis of the *Apophyſis Styloides*, and by the other to the *Os Hyoides*, at the Place where the Baſis and Cornu unite; and alſo to the Cornu itſelf, from whence it has been called *Stylo-Cratohyoidæus.*

The fleſhy Fibres of this Extremity, are often parted, and incloſe the middle Tendon of the *Digaſtricus. Winſlow.*

The *Stylo-Hyoidæi* move the *Os Hyoides* upward and backward in a middle Direction between thoſe in which they lie; and they draw it more upward and backward when they act freely, that is, without being checked or confined by other Muſcles. When one acts more than the other, the Bone is moved obliquely. *Winſlow's Anatomy*, *Sect.* 3. No. 1145.

STYLOIDES *Proceſſus*, *ſive Apophyſis.* See CAPUT.

STYLO-PHARYNGÆUS. The Name of a Muſcle belonging to the PHARYNX; which ſee.

STYLOS. στύλος. A Probe, of which various Sorts are uſed in Surgery.

STYMMATA, στύμματα, from στύφω, to aſtringe or inſpiſſate, in Latin *Spiſſamenta*, Spiſſaments, are the Name which the Antients had for their moſt ſolid and ſubſtantial Ointments, and, alſo, for ſuch Things as gave a Spiſſitude and Solidity to their Ointments. Theſe latter *Stymmata* were ſome ſweet-ſcented Simples, ſuch as Coſtus, Nardus, Amaracus, Amomum, and Mint; which being mixed in the Compoſition

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position of Ointments, communicated to them a Fragrancy, and preserved them from Corruption, as *Galen* says, *de C. M. S. L. Lib.* 3. *Cap.* 1. *Stymmata* differ from *Hedysmata*, ἡδύσματα, in that these latter are liquid. *Stymmata*, then, seem to be properly such Things as not only communicate a Fragrancy, but exercise their astringent Quality in such a manner as to preserve the Ointment, with which they are mixed, from Corruption. Thus *Ætius*, *Tetrab.* 3. *Serm.* 1. *Cap.* 49. in the Composition of a Troche, directs *Stymmata*, or Spissaments of a Decoction of the Bramble, Myrtle, Pomegranate Flowers, the Root of the Capparis, with the Leaves of the Willow, and other Things of that Nature. A little after, in the same Chapter, he directs dry Spissaments pulverized; also Pomegranate Flowers, Galli, Malicorium, Myrtle, Lentisk, and other things of the like astringent Quality. For the same Purposes, the *Stymmata*, in the Oil of Roses, are Lentisk, Calamus, and Aspalathus, as we are informed by *Dioscorides*.

STYPTERIA, στυπτηρία, from στύφω, to astringe, Alum. See ALUMEN.

STYPTICA, from στύφω, to astringe. Styptics, or Medicines, which stop Hæmorrhages. When a considerable Hæmorrhage is stopt by Absorbents or Styptics, it is always produced by means of a Clot of Blood secured by Compression, so that the Orifice of the Vessel is stopt. This Clot generally consists of two Parts, the one without and the other within the Vessel; that without is formed by the last flowing Blood, which, in coagulating, incorporates itself with the Lint, Moss or Powders, used for stopping the Blood. The other Part of the Clot within the Vessel, is only that Portion of the Blood which was ready to be discharged when the Vessel was stopped. These two Parts are often but one continued Clot; that without the Vessel performs the Office of a Covering, whilst that within it serves as a kind of Stopper. Both contribute to the stopping of the Blood by the Solidity they acquire in Coagulation, and their future Adherence the one with the internal Part of the Vessels, and the other with its external Orifice.

When Styptics or Escarotics are used, the Clot is sooner formed, than when Absorbents or simple Astringents are only employed. The Clot in the former Case possesses a larger Space in the Cavity of the Vessel, which makes the Stopper more deep. The Covering or external Portion of the Clot is also thicker, because at the same time the Styptics and Escarotics coagulate the Blood, they also burn a Portion of the Vessel and adjacent Flesh, which incorporating with the coagulated Blood, form together a thicker and more extensive Covering. *Mem. de l'Acad. Royale*, *An.* 1731. *Mr. Petit.*

Alcohol, or pure Spirit of Wine, is the most usual, and, perhaps, the best Styptic; and is the Basis of most of the celebrated *Arcana* for stopping Hæmorrhages. *Boerhaave* says, it becomes an immediate Styptic, as it prevents Putrefaction, and occasions a thin but very solid Eschar. For if Pledgits be dipp'd in pure Alcohol made hot, and applied to a bleeding Wound, if it be closely compressed upon the Part, and covered with a Piece of Bladder, lightly besmeared with Oil, and kept on with a proper Bandage, the Hæmorrhage presently ceases, and the whole Dressing may continue unremoved for three Days, in which Time the Vessels are usually closed, and strangely contracted and consolidated by means of the Alcohol. So far *Boerhaave*.

HELVETIUS's STYPTIC.

The Method of curing fresh Wounds in a few Days without Suppuration, where neither Nerves, large Vessels, Bones, or any of the Viscera were concerned, has been long ago observed. *Purman*, a famous Surgeon of *Breslaw*, in his *Chirurgia Curiosa*, tells us of a Mountebank, who gave himself thirteen Wounds, by Incision, in the upper Part of his Left-arm, and thereupon applied his Nostrum, and with the Help of a good Roller was cured in two Days Time.

Next he mentions a martial Styptic, which stopped Bleeding incomparably, and healed fresh Wounds (as he says) in two Days, especially if the Patient took withal a few Drops inwardly. This has, also, been mentioned by *Blegny* near thirty Years ago.

When I came into *France*, I found that many little Trials were made there, also, with a Styptic Ball, mixed with *French* Brandy, by sticking a Cock through the Head, opening the Crural Artery of a Dog, or chopping off a Dog's Leg, *&c.* But I found that it did not amount to any Thing of Consequence; yet I have still a Ball, made above twenty Years ago of Filings of Iron and an equal Quantity of Tartar, mixed well with *French* Brandy upon a Marble; this, with some Alteration, was afterwards published by the famous *Helvetius*, Physician to *Lewis* XIV. of *France*, in a Book called, *Recueil des Methodes pour le Guerison de diverses Maladies*; which was reprinted in *Holland* in the Year 1710. This Preparation was then sold by *Pierre Rottermond*, Apothecary at the *Hague* in *Holland*.

The Recipe for his Medicinal Ball I have translated, and it is as follows:

> Take four Pounds of the Filings of Steel, and eight Pounds of Tartar, well powdered; mix these well together, and put them in a new earthen Pot, and pour thereon as much *French* Brandy as will make it into a Poultess. Let this stand fermenting in a Cellar for four Days, and stir it between whiles. Then put it in *Balneo Mariæ*, and distil it according to Art with a moderate Fire, to draw off the Brandy. When you find that nothing but the Phlegm comes off, take it from the Fire, and take out the Mass, stamp it very fine that not the least Lump may remain; then mix it again, as before, with a sufficient Quantity of Brandy, and put it into the Cellar to ferment, as before, and then distil it a second Time. This Operation may be reiterated seven or eight Times, but the last Time mix your Mass well upon a Marble, and form it into two Ounce Balls. One of these Balls is steeped in a Pint of good *French* Brandy, a little warmed, and hung only in it by a Wire, till the Brandy has received the Colour of the Ball. But if you are in great Haste, then grate a sufficient Quantity of the Ball in some Brandy, stir it well, and you may use it that very Instant.

No doubt but the Author thought, by often grinding, fermenting and distilling this Mass, to communicate and subtilize its Particles, so as to make it more fit to contract the Fibres and Vessels of a Wound, and to prevent Stagnations of the Fluids, both within and without, upon Contusions; but the Success did not answer, and therefore it was laid aside. Neither did *Helvetius* ever recommend it as an universal Styptic, astringent, or consolidating Medicine, but merely in fresh Wounds, and that only for a first Dressing, and where People lived at a Distance, and could not get immediately Assistance from a Surgeon. Besides, he makes several Exceptions where it should not be used, and in general advises where Chalybeat Medicines may be made Use of according to Experiments.

But last Year a Balsamic Styptic was published by one Dr. *Eaton*, good to stop all Manner of Bleeding without or within, and that without any Manner of Exceptions. This made me desirous to see it, and soon after I had an Opportunity to examine it: I found presently that this was the same old Medicine, which was got hither also, after other Countries had discarded it. But I neglected it that Time as not worth my Notice, till I saw lately a Treatise of Consumptions published by Sir *Richard Blackmore*, giving it the greatest Encomium that ever was given to any Invention whatsoever. For, says he, *Dr.* Eaton's *Balsamic Styptic bids fair for the Credit of a certain Remedy in stopping of Blood outwardly or inwardly, where the Crasis of the Blood is not entirely ruined, and will be of more Service to Mankind than all the Discoveries made by Galenical Compounders of Drugs, and systematical Methodists.*

Finding this Remedy recommended in so extraordinary a manner by so eminent a Physician, I began now to think that possibly I might have been mistaken, and therefore desired Mr. *Winterbottom*, an Apothecary in *Bow Lane*, immediately to prepare the Recipe, as described by *Helvetius*. When this was ready, I sent for a Bottle of Dr. *Eaton*'s Styptic, and tried them both with Galls before several Gentlemen; the Tincture was the same, a deep Purple. I then precipitated the Contents with Old Hock, and found the precipitated Matter to be the same in both. Not contented with my own Enquiry, I sent several small Quantities to others, and went myself to Mr. *Godfrey* the Chymist. They all told me, that there was no Difference betwixt them. I tried several ways to find out its balsamic Quality, from whence it has its Name, but found none. Then I confessed it surprized me, that a Man who had a Mind to vend a Thing as a Secret, had not done so much as to alter it either in Taste, Smell, or Colour, and yet this might very well have been done, without robbing it of its Virtue in the least.

My next Business was to try these two upon the crural Artery. Having got a good middle-sized Dog, Mr. *Ranby* laid the Artery bare, and opened it with a Lancet the length-wise of the Artery, for near half an Inch. The old Trick used to be to cut the Artery crosswise, and there was no Necessity of a Styptic at all, nor indeed here neither. But at first *Helvetius*'s Tincture was applied, and stopped the Bleeding; then we opened the Artery again, and tried Dr. *Eaton*'s with the same Success. I then had the Artery open-

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ed in the other Thigh, and tried it only with *French* Brandy, which I found did as the other two. I opened the Artery again, and had diſſolved in *French* Brandy a little *Sal Martis* and *Saccharum Saturni*, and applied that, and it anſwered in the ſame manner. This made me immediately conjecture, that there was but little Virtue in either of them, but only that the Brandy by its great Heat did merely contract the Fibres of the Artery, which, no doubt, might be a little aſſiſted by the Chalybs; but this could not be much. I then reflected upon the Smallneſs of the Crural Artery in a Dog, and that it was no more to be compared to the crural Artery of a Man, than a Cock's Head to a Man's Head, and that a little Pledgit of Lint might have ſtopped the Blood without more to do, as well as the Temporal Artery, when opened with a Lancet, which we did, and the Pledgit of Lint ſtopped it. We then untied the Dog, and ſent him going, who ran directly home. The Miſtreſs of the Houſe tore off the Pledgits, and had the Dog well waſhed with Butter and Beer warmed, ſhe not knowing what had been done to him; upon which the Dog fell a bleeding again, tho' not much, and the Blood ſtopped of itſelf. Thus far as to its outward Uſe, and I could wiſh it were as harmleſs within. If only, according to *Helvetius*, it had been ordered to have been taken inwardly in freſh Wounds and Contuſions, one might have let it paſs; but when, without Exception, Dr. *Eaton* recommends it, as alſo even Sir *Richard*, in all outward Bleedings, I then thought it high time to make ſome Animadverſions upon it. For Sir *Richard* himſelf ſays, in his Treatiſe of Conſumptions, *p.* 99 and 101, that in ſpitting of Blood there is an Orgaſm or ſtimulating Ferment: What is this but a Feveriſh Indiſpoſition? And is there any Hæmorrhage without it? Now if ſo, will not Brandy and Chalybeats heighten this? which by their Heat and Stimuli brace and irritate the Fibres, and accelerate the Blood's Motion. And will not then the Blood take up more Room, and preſs harder againſt the Sides of the Veſſels, and whatſoever oppoſes it? Is not this the Way to make an Orgaſm, and cauſe an Hæmorrhage?

Dr. *Eaton* tells us himſelf, in his Book, *p.* 57, That it did very much overheat a Gentlewoman, and that her Bleeding ſtill continued after the taking of it, and ſhe might have periſhed, if a Surgeon had not given her a cooling and aſtringent Apozeme. And but juſt before, *p.* 47, he complains of a Phyſician, that was not willing that his Patient ſhould take it, who had a hectic Fever upon her, becauſe he was afraid that it was too hot.

Since the former Trials, on the 10th of *June* laſt, I deſired Mr. *Ranby* to open the carotide Artery of a Dog, thinking that this Artery might give me more Satisfaction than the crural Arteries had done, to try the ſtyptic Quality of the Tinctures of *Helvetius* and *Eaton*. Having laid bare the Jugular Vein, divided, and tied it, that its Bleeding might not hinder us from finding the carotide Artery, we were obliged to cut ſome of the Muſcles through likewiſe, till, with ſome Difficulty, we found the Artery, which being opened with a Lancet, the Blood ſpouting forth, I applied to it *Helvetius*'s Tincture, upon which the Blood ſtopped. I took it off in leſs than a Minute, and made it bleed again, but it bled but little, and then I applied Dr. *Eaton*'s Styptic; we filled up the Wound with Lint, and ſtitched up the Integuments, then untied the Dog, and let him run down Stairs; where, after ſome Time I ſaw him again, and found he had bled a good deal, and was ſtill bleeding. I was very well ſatisfied, that he would not bleed to Death, the Artery being ſo very ſmall; and if he had had nothing but Lint upon it, it would have done as well. It muſt be obſerved, that the carotide Arteries are largeſt in Proportion in human Bodies, and that this Artery of the Dog was but little bigger than the crural Arteries of the former Dog. This ſhews that the ſtyptic Quality of theſe Tinctures is very inconſiderable; and that *Helvetius*'s Tincture is rather better than Dr. *Eaton*'s, if there is any Difference, tho' I believe it proceeded from the Brandy, for my Brandy was ſtronger than Dr. *Eaton*'s. I enquired for the Dog next Morning, and found him alive and well, only hanging his Head on one Side, which proceeded from the cutting through of the Muſcles. *Dr. Sprengal, Philoſophical Tranſactions abridged, Vol.* 8.

A RESTRINGENT PREPARATION OF IRON, SOLD BY THE NAME OF COLBATCH'S STYPTIC POWDER.

Take any Quantity of Filings of Iron, and pour upon them Spirit of Salt to the Height of three or four Fingers above them; let them ſtand in a gentle Digeſtion till the Fermentation is over, and the Spirit of Salt is become ſweet; then pour off that Liquid, and evaporate it in an Iron Glaſs Veſſel until half is conſumed; at which time put to it an equal Quantity of *Saccharum Saturni*, and evaporate to a dry Powder. If upon its firſt becoming dry, the Operation be ſtopt, it has exactly the Appearance of *Colbatch*'s Powder; but if it be continued longer, and the Heat raiſed, it will turn red. It muſt be kept cloſe ſtopt from Air.

If this is not kept cloſe ſtopt, it will imbibe the Air, and flow ſo as to loſe its Efficacy. I have been informed from very good Hands, that this is the Styptic with which there was ſo much Noiſe made ſome time ago, by the Author of *Novum Lumen Chirurgicum*, and for the Sale of which a Patent was procured; only in that was uſed Oil of Vitriol, inſtead of the Spirit of Salt in this: but that Difference is inſignificant. This is a Preparation of *Mael*'s, once Profeſſor at *Leyden*, and is in the *Collectanea Chymica Leydenſis*; how much ſoever ſome have pretended to make a Secret of it ſince. It is commended as a Reſtringent in moſt Kinds of Fluxes inwardly, and particularly Hæmorrhages. The Doſe is from four to twelve Grains, and is conveniently given in any Forms, but Powders or Pills.

EXPERIMENTS MADE WITH MR. COLBATCH'S STYPTIC, BY MR. WILLIAM COUPER.

I. A large Dog being provided, an Aperture was made through the common Integuments of his Abdomen, whence the ſmall Guts were extruded. After an Inciſion made in one of them according to its Length, they were again reduced; the Wound in the Abdomen being ſtitched up, a Solution of this Powder was applied; the Dog continued without any ill Symptoms, and became perfectly well in a few Days after. The like Experiments I have made on another Dog, who in like manner recovered without the Appearance of any Medicine.

II. The Leg of a Dog was amputated three Inches above the Patella; the Expence of Blood from the Arteries was great, which did partly proceed from Unaptneſs of the Applications which were prepared; but after two or three Attempts, the Flux of Blood was ſtopped, and ſuch a Bandage made uſe of, as was neceſſary only to keep on the Dreſſings. The Dog continued without any conſiderable Flux of Blood, and the next Day he was found on his three Legs.

III. The diſeaſed Arm of a Man in St. *Bartholomew*'s Hoſpital, was amputated above the Elbow; but for a Quarter of an Hour's Time many ſucceſsleſs Applications of this Styptic were made, and at length a ſmall Tent, dipped in the Powder itſelf, inſerted into the Extremity of the bleeding Artery, before the Flux of Blood would admit the Application of Bandage. Five Hours after, a freſh Flux of Blood appeared, and ſtrict Bandage was applied. The ſame Morning the abovementioned Amputation was made, a Boy about twelve or fourteen Years of Age, had his Leg alſo taken off below the Knee, to whoſe Stump divers ſucceſsleſs Applications of this Styptic were alſo made, before it was bound up; and in leſs than an Hour after, a freſh Flux of Blood happened, and ſtrict Bandage was added. Some Hours after theſe Operations, both theſe Patients ſuffered extravagant Pains. Three Days after, the Applications were taken off; and had any Perſon, a Stranger to what had been done, ſeen the Stumps, he would have ſuppoſed nothing leſs than an actual Cautery had been applied, as could have occaſioned ſuch large Eſchars, and ſo horrid an Appearance; which did ſufficiently denote this vulnerary Powder to be a violent Cauſtic.

Trials of Styptics on the Bodies of Quadrupedes have been commonly practiſed, to commend them to the Public; but it is not without Cauſe that Pretenders to ſuch Remedies have made choice of younger Animals, as Dogs, Calves, and the like, for that purpoſe. But ſince the only Standard of their Uſe is their Succeſs on the Human Body, we ought to make our Experiments on thoſe Animals, whoſe Magnitude and Age bear a Proportion to it. For nothing is more obvious in wounding the Arteries of living Animals, than that the Profuſion of their Blood bears a Proportion to their Bulk; and in Diſſection, the Arteries of the Fœtus are remarkably thinner than thoſe of an Adult; and thoſe of aged Bodies grow ſtill thicker, and frequently become cartilaginous, and at length entirely bony. *Mr. Couper, Philoſophical Tranſactions abridged, Vol.* 3.

STYPTICUM REGALE.

The Royal Styptic.

Upon the ſympathetic Powder four Ounces, infuſe of good Oil of Vitriol half an Ounce; ſtir them well in a Glaſs Mortar,

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Mortar, with a Peſtle of the ſame, and let them ſtand twenty four Hours on warm Sand, in a wide mouth'd Glaſs; grind this Mixture again with a little Spirit of Wine, and put it into a Matraſs; pour upon it more Spirit of Wine, to make that already uſed a Pint. Lute it well, and let it ſtand forty eight Hours in Digeſtion, often ſhaking it: Then let it ſtand to cool and ſettle, and decant the Spirit of Wine, which keep well ſtopt. Remove the Cucurbit or Matraſs into a Sand Furnace; lute on its Head and Receiver, and drive over the Helm all that will riſe by the third Degree of Fire, which alſo keep by itſelf: Let all cool, and take out what is left at the Bottom; powder it, and put it into a Cucurbit, and pour upon it diſtill'd Rain-water, one Pint; ſet it on warm Sand for forty eight Hours, and ſhake it often; then let it ſettle, decant and keep it for Uſe.

The impregnated Spirit and Water may be uſed apart or mixed; and if the Mixture be deſired ſtronger, there may be put to it ſome of the acid Spirit drawn off, after the Spirit of Wine was decanted: But equal Parts of the impregnated Spirit of Wine and Water, evaporated to a Dryneſs, make the beſt Styptic of all. This is commended for a very powerful Styptic, and to be one of the beſt Vulneraries in the World, in curing all freſh Wounds by the firſt Intention (as is boaſted ſo much of by *Colbatch*'s Grand Styptic) that is, without Suppuration and Digeſtion.

STYRACINUM OLEUM. Oil of STYRAX, made by boiling a *Sextans* of Styrax in a Sextary of the beſt Olive Oil. *Aetius Tetrabib.* 1. *Serm.* 1.

STYRAX.

The Characters are;

The Leaves are roundiſh, the Calyx is dentated and ampullous. The Flower is monopetalous, tubulated in the lower Part, and multifid in the upper, with its Lobes expanded in Form of a Star. The Ovary in the Centre of the dentated, multifid Calyx, becomes a roundiſh, fleſhy Fruit, generally incloſing one or two Stones, which contain a Kernel.

Boerhaave mentions but one Sort of *Styrax*, which is, Styrax; folio Mali Cotonei, *C. B. P.* 452. *Tourn. Inſt.* 598. *Boerh. Ind. A.* 2. 218. *Styrax*, Offic. *Styrax Arbor*, Ger. 1342. Emac. 1526. J. B. 1. 341. Raii Hiſt. 2. 1680. *Styrax arbor vulgaris*, Park. Theat. 1530. THE STORAX TREE.

It grows in *Italy* and other Countries. The Part uſed in Medicine is the Reſin, of which there are two Sorts to be had at the Shops, the dry and the liquid. The dry *Storax* of the Shops, *Styrax Calamita*, *Rand. Ind.* 87. *Mont. Exot.* 11. is a fat reſinous Subſtance, of a yellow Colour, inclining to red, concreted into Grains of various Bigneſſes, of a reſinous, and ſomewhat acrid Taſte, a very fragrant Smell, and flowing ſpontaneouſly from the Trunk of the Tree.

Obſerve, here, firſt, that our Apothecaries and Druggiſts ſell in their Shops a moſt impure *Magma*, mixed with various heterogeneous Bodies, as Chaff, Hairs, Bran and Saw-duſt (which perhaps gave Occaſion for the *Styrax rubra nonnullis*) for *Styrax Calamita*. Secondly, we meet with Preſcriptions in which the *Storax Calamita* and *rubra* are ordered diſtinctly. Now what is the Meaning of *Nicolaus* in making ſuch a Diſtinction, there are different Opinions. Some by the *Styrax rubra* underſtand the *Thymiama*, others the beſt Sort of *Styrax*, which runs into Grains; and others again will have it to be nothing but the *Styrax* grown red with Age. The learned *Commelin* writes, that there are two Sorts of *Reſin*, the dry and the liquid; the dry is ſold in the Shops under two different Names, the *Styrax Calamita* and the *Styrax rubra*, which differ only in Purity. And *Hoffman*, (with whoſe Opinion we agree) tells us they are the ſame Gum, but different in Purity; for the *Calamita* alſo participates ſomething of a Reddneſs. But when we find in Medicinal Preſcriptions the *Styrax Calamita*, we are to underſtand it of the *Styrax* in Grains, or of what is cleanſed from Impurities; but by the *Styrax rubra* that moſt impure *Magma* of *Styrax* which is commonly ſold in our Shops. Chuſe what is fat, viſcous, conſiſting of pale reddiſh Fragments, of a laſting Smell, and which yields a mellcous Liquor when it is worked.

The *Storax liquida*, Offic. LIQUID STORAX, is a pinguious Liquor, of a mellcous and tenacious Subſtance, of a brown Colour, or brown inclining to red, of a ſtrong Smell, and flows from the Bark of the Tree. It heats, dries, mollifies and digeſts, and is very ſerviceable in Diſorders of the Brain and Nerves, and cures Coughs, Catarrhs, Hoarſeneſs, and the like.

There are alſo great Diſputes among Authors about the *Styrax Liquida*. Some will have it to be the ſame as *Stacte*, that is, ſtillatitious Myrrh, which appears to be a Miſtake in that the Tears of Myrrh, on account of the Similitude of Subſtance, will diſſolve in any aqueous Liquor, whereas the *Styrax Liquida*, like other Reſins, will diſſolve in none but fat and oleous Liquors. Others affirm it to be a factitious Subſtance, prepared of a Solution of *Styrax Calamita*, in Oil and Wine, boiled with a Mixture of *Venice* Turpentine. When this Decoction is grown throughly cold, the *Styrax Liquida* is ſaid to ſeparate, and fall to the Bottom, ſending up a more liquid and oleous Subſtance to the Superficies. Some will have it made by Expreſſion, and others aſſert it an Oil expreſſed from the Kernels of a Tree whence the *Storax* flows; ſome, again will have it made by a Decoction of the Bark or Wood of the *Styrax*, others of liquid Amber. *Hoffman* aſſerts, that the *Styrax Calamita* and *Liquida* are the ſame Gum, and different only in Purity, ſo that the *Liquid* is the beſt. But what is ſold for *Liquid Styrax* in our Shops is a Subſtance merely factitious, as I am aſſured by ſeveral Apothecaries in *London*. The *Storax liquida vera* is a Kind of Bird-lime prepared of the Bark of the *Roſa Mallos*, boiled in Sea-water, as I am aſſured by M. *Petiver*, in the *Philoſoph. Tranſact.* N°. 313. What Sort of a Tree the *Roſa Mallos* is, and to what *Genus* to be reduced, is quite unknown to me, and therefore I can only add, that it grows in *Cobroſs* an Iſland in the upper *Red-Sea*, not far from *Cadeſh*, which is three Days Journey from the Port of *Suet*. Whether *Cattar-mija* be a Name given by the *Turks* and *Arabians* to the Tree, or the Birdlime made of its Bark, is a Thing uncertain. This Birdlime is brought to *Judda*, and from thence in the Months of *June* or *July* to *Mocha*, where in Proportion to its Goodneſs it is ſold from ſixty to one hundred and twenty Dollars a Veſſel, which weighs one hundred and twenty Pounds. The beſt is what has the leaſt Mixture of Dirt or Duſt, with which it is very often ſoiled, but very eaſily purified from them by the Help of Sea-water. *Dale.*

The Storax-tree has a Trunk like that of a Quince-tree, but has a whiter Bark; the Leaf, alſo, reſembles the Leaf of that Tree, only is leſs and roundiſh, or ending in a blunt Point, covered with a hoary Down underneath, but green and ſmooth above. The Flowers on the young Sprays are like thoſe of the Orange-tree, white, and ſeveral joined together, conſiſting of ſeveral Petals, and ſweet-ſcented. The Fruit is of the Size of a Filberd, hoary, callous, of a brown Colour and bitteriſh Taſte, opening into three or four carinated Figures, and diſcovering a ligneous Stone, of the Colour of Box, which contains ſometimes but one Kernel, channel'd with four Furrows, ſometimes a double angulous Kernel, and ſometimes a third. I ſuppoſe this, ſays *Ray*, to be accidental, for naturally one Stone includes only one Kernel. The internal Subſtance of this Kernal is unpleaſant to the Taſte. It grows plentifully in the Hedges and Woods in the Country about *Rome*.

The *dry Styrax*, called the *Styrax Calamita* of the Shops, has its Name from the *Calami*, or Canes, in which, as we are told by *Galen*, it was formerly brought from *Pamphylia*: It is a gummous and reſinous Juice of the Tree before deſcrib'd, concreted, dry, and of a very ſweet Smell.

It was for a very good Reaſon that the *Styrax* was imported in Canes, ſince *Parkinſon* found by his own Experience, that the pure Gum of *Styrax*, after he had by Art and the Help of a Preſs alone, rendered it depurated and fluid, did not only penetrate the Joints and Commiſſures of the Veſſels, but the very Wood itſelf in the Summer Time, and flowed out, ſo that he was obliged to keep it in a Glaſs Veſſel well ſtopped; but the Spaces between the Joints of Canes have no Chinks nor Commiſſures, and therefore are the better adapted for containing ſo ſcented and ſubtile a Gum. It may be obſerved, that the *Styrax-Tree* in *Italy* produces but a ſmall Quantity of Tear, which is the Caſe of many other Trees in that Country, which in a very hot Climate abound with Plenty of Juice. *Raii Hiſt. Plant.*

There are ſeveral gummy Subſtances, which are the Produces of this Tree: The firſt is the *Styrax Rubra*, "red Styrax," or, as ſome call it, *Thus Judæorum*, "the *Jews* Frankincenſe," becauſe they ſuppoſe it to be the Reſin which the wiſe Men offer'd to our Saviour. This is a reddiſh, or yelloviſh Subſtance, extracted from the Tree by Inciſion. A ſecond Sort is the *Styrax Calamita*, ſo called becauſe it was tranſported in *Calami*, or Canes of Reeds, to preſerve its Odour: This *Styrax* is reddiſh on the Outſide, and white within, and of a very pleaſant, aromatic Smell. The third Kind is the *Styrax Liquido*, "liquid Styrax," which is an oily, viſcous Matter, of the Conſiſtence of an Ointment, of a greyiſh Colour, and aromatic Smell. Some extract an Oil from the Nuts, which is called *Styrax Liquida*.

The Virtues are the ſame as in Turpentine, only a little more effectual, as it is more fragrant: It is of Service in raiſing the Spirits, as, alſo, againſt Coughs, and Colds in the Head,

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Head, being used by Way of Suffumigation: It is, also, useful in mollifying the Nerves and Tendons, and dissolving scirrhous Tumors. *Hist. Plant. ascript. Boerhaave.*

SUBACTIO. The working of any medicinal Ingredients, either with the Hands, as in making Plaisters, or with a Pestle in a Mortar.

SUBALARIS VENA. The Auxiliary Vein.

SUBBUTEO. The Name of a Bird, resembling the Bittern, but less.

SUBCARTILAGINEUM. The same as HYPOCHONDRIUM.

SUBCLAVIA VASA. The subclavian Vessels; that is, the Arteries and Veins which are situated under the Clavicles.

SUBCLAVIUS MUSCULUS. The subclavian Muscle. This is a small oblong Muscle lying between the Clavicle and first Rib. It is fixed by one End in all the middle lower Portion of the Clavicle, at the Distance of about an Inch from each Extremity; and by the other, in the Cartilage and a small Part of the Bone of the first Rib. It seems, also, to adhere to the Extremity of the Clavicle next the Sternum, by a Kind of broad, thin Ligament.

The *Subclavius* can have no other ordinary Use, but to bring down the Clavicula, after it has been raised together with the *Acromion*, by the Action of the *Trapezius* and *Serratus Major*. It may, also, hinder not only the *Clavicula* in which it is inserted, but, also, the *Acromion* from rising, especially when assisted by the *Pectoralis minor*, *Rhomboides*, and *Angularis*.

When we stand, or sit, the Weight of the Arm alone seems to be sufficient to bring down the *Clavicula*, when raised; and therefore in this Case there would be no Occasion for the *Subclavius* to act upon the Clavicle, nor for the *Pectoralis minor*, *Rhomboides*, and *Angularis* to act upon the *Acromion*. But when we lie, or are situated in any other Manner, the Weight of the Arm has no such Effect; and in these Cases, these four Muscles become more or less necessary.

The *Subclavius* therefore is a proper Depressor of the *Clavicula*; and an Assistant Depressor of the *Acromion*, or of the Shoulder in general, together with the *Pectoralis minor*, *Rhomboides*, and *Angularis*, all which in their Turns assist the *Subclavius* in its Action on the *Clavicula*.

I cannot conceive what has led several great Anatomists to rank this among the Muscles of Respiration, since it is inserted not only in the Bone, but in the Cartilage of the first Rib; since this Cartilage is not articulated with the Sternum, but joined to it as immoveably as to the Bone of the Rib by its other Extremity; and lastly, since this Cartilage is much shorter, much broader, and much less pliable than the Cartilages of all the other Ribs of equal Thickness. *Winslow's Anatomy.*

SUB-COSTALES.

These are fleshy Planes, of different Breadths and every thin, situated more or less obliquely on the Insides of the Ribs near their bony Angles, and running in the same Direction with the external Intercostals.

They are fixed by both Extremities in the Ribs; the inferior Extremity being always at a greater Distance from the Vertebræ, than the superior and several Ribs lying between the two Insertions.

These Muscles are more sensible in the lower Ribs than in the upper, and they adhere closely to the Ribs that lie between their Insertions.

The *Sub-Costales* having the superior Extremities of their Fibres much more distant from the vertebral Articulations of the Ribs, than the lower Extremities, it follows, that they can more easily move the upper than the lower Ribs, and consequently that they are Assistants to the *Sterno-Costales*. *Winslow's Anatomy.*

SUBDITA, or SUBDITITIA. Medicines which are introduc'd into any of the natural Orifices, as Pessaries, and Suppositories.

SUBDUCTIO ALVI, is purging the Belly, or procuring Stools.

SUBER.

The Characters are;

It is in all Respects like the *Ilex*, except in its Bark, which thick, spungy, and light.

Boerhaave mentions but one Sort of *Suber*, which is,

Suber; latifolium; perpetuò virens. *C. B. P.* 424. *Tourn. Inst.* 584. *Boerh. Ind. A.* 2. 178. *Suber*, Offic. *Suber latifolium*, J. B. 1, 2. 103. Raii Hist. 2. 1393. Ger. 1163. Emac. 1347. Park. Theat. 1397. THE CORK TREE.

The Cork-tree is a Kind of ever-green Oak, of a thicker and firmer Texture, green above, and whitish underneath, not cut into so many Segments; in some Leaves smooth, and in others only a little indented about the Edges; the Acorns are smaller than those which grow on the common Oak, set generally two together upon one short firm Stalk; the Bark of the Trunk is rough, and of a great Thickness, which, if not taken off in its stated Time, will burst of itself, and come off, the young Bark appearing of a reddish Colour; they separate it by making a long Incision from the Head to the Root of the Tree, which they take Care to do in dry settled Weather, for the young, tender Bark is liable to be destroyed, and the Trees killed by Rain. The Cork-tree grows in the southern Parts of *France*, and *Spain*, and *Italy*.

Cork is said to be restringent, and good for all Kinds of Fluxes; the same is said of its Ashes, or burnt Cork. *Miller's Bot. Off.*

The Bark bruised and drank in warm Water, stops an Hæmorrhage; the Ashes of it burnt have the same Effect. *Raii Hist. Plant.*

The Fruit is astringent, and serviceable in the flatulent Colic; the Bark is detergent and astringent, and useful in Hæmorrhages, and a Diarrhæa; and burnt to Ashes, is resolvent and demulcent in the Hæmorrhoids. *Hist. Plant. ascript. Boerhaave.*

SUBETH. The *Arabic* Name for a CARUS.

SUBETH SAHARA. The *Arabic* Name for a COMA VIGIL.

SUBFASCIATIO. The same as HYPODESMIS. See HYPODESIS, and EPIDESMOS.

SUBFRONTALIS SUTURA. The Suture by which the *Os Frontis* is connected with the Bones of the superior Jaw.

SUBHUMERATIO. The same as CATOMISMUS.

SUBINTRANTES FEBRES, are Fevers in which one Paroxysm begins, before the preceding ends.

SUBLIGAMEN. The same as HYPODESMIS.

SUBLIGAMENTUM. The same as ENÆOREMA.

SUBLIMATIO. Sublimation.

Sublimation differs little from Distillation, excepting that in Distillation the fluid Parts of Bodies only are raised, and in Sublimation the solid and dry Parts. The Matter to be distilled may be either solid or fluid; but Sublimation is concerned only in solid Substances.

Another Difference is, that Rarefaction, which is of great Use in Distillation, has little or no Efficacy in Sublimation; for the Substances which are to be sublimed, being solid, are incapable of Rarefaction, and can only be raised by Impulse. It may not, however, be improper to inquire into the Reason of such a Diversity in the Elevation of Bodies; why some ascend with a gentle Heat, and others are not to be raised with the most vehement Degree of Fire.

Fixed Bodies are such as abide the Fire; volatile, such as not being able to endure the Fire, are raised by the Force of its Heat. We will therefore begin with the first, and explain the Manner how in volatile Substances, which seem to be of the same Nature, there happens so great a Variety and Difference in their Elevation.

The Cause of this Elevation and Ascent in the Particles of Bodies, is to be ascribed to the Fire, not only on Account of its Impulse, but of another Property. The Fire insinuates itself into all the Interstices of these Bodies, and thus breaks the Cohesion of their Parts, so that they are at last divided into very small Particles, if not the most minute to which Art can reduce them. Particles thus separated lose much of their Gravity, for the Gravity of the same Particle decreases in the same Proportion as the Cube of its Diameter is lessened. Suppose, therefore, a Body whose Diameter is 12, and its Gravity 12: If then its Diameter be made less by 1, the Gravity of that Body will be only $9\frac{1}{4}$ or thereabouts. For 1331, which is the Cube of the last Diameter, bears the same Proportion to $9\frac{1}{4}$, which 1728, the Cube of the first Diameter, does to 12, the Gravity of the Body. But if the Diameter be reduced to 10, the Gravity will but just exceed 6; and if it be diminish'd half, that is to 6, then the Gravity will be less than 2; so that very minute Corpuscles, when their Diameter is lessen'd in the utmost Degree, have scarce any Gravity at all. Therefore, when once they are thus divided, they are very easily sublimed.

But besides the Decrease of Gravity, there is another Result from this Division of the Particles of Bodies, which conduces very much to hasten the Ascent, and that is, the Variety of their Surfaces. For, the Surface of a Body decreases, in a very different Manner from it Gravity, only as the Square of the Diameter is lessened. Now, the Gravity decreases in such a Series as is expressed by the Numbers 1728, 1331, 1000, but the Diminution of the Surface will observe this Proportion, 144, 121, 100. And when upon reducing the Diameter to 6, the Gravity will be less than 2, and the Surface will still amount to 36. So that though the Gravity of a Particle be so lessen'd, as to be reduc'd almost to no-

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thing, yet there will be Surface enough left, which will serve to raise it. This Argument, which has been explained by Calculation, may be demonstrated, as it were, to Sense, by the following Experiment. If Water be poured upon the Filings of Iron, and a little Oil of Vitriol dropped upon it, a Fermentation will presently arise, and the Globules of the Air, in striving to disengage and extricate themselves, will carry up with them some of the Particles of Iron to the Surface of the Water. This can happen upon no other Account, but that the Proportion of Gravity in the Filings of Iron is very small in respect to the Largeness of their Surface; and therefore Iron is forced upwards by a Body, which is a great deal specifically lighter than itself. But how much this must contribute to a more quick Ascent, will be much more evident to the Senses from the Sublimation of Camphire, Benjamin, and Arsenic; whose Particles, as they cohere but loosely, are for that Reason diffused into a larger Surface; upon which Account they are more easily sublimed than any other Substance; and, upon Account of their Surface, will even ascend sooner than some Fluids. So Flower of Sulphur rises sooner than the lightest Oil. By this Contrivance of Nature, that the Gravity of Bodies decreases in a triplicate, but their Surface in a duplicate Proportion of their Diameters, it happens that Bodies, which have a very different Gravity, may be raised with the same Force. Thus the Salts of animal Substances, as of Hartshorn, human Blood, Vipers, and the like, being composed of very minute Corpuscles, as is found by Experience in distilling them, easily ascend, because the Surface in them is not lessened so much as the Gravity. And the Salts of Vegetables, though of a more close Texture, are, by reason of their large Surfaces, without much Difficulty raised. The Corpuscles, also, of Minerals and Metals, though very compact and heavy, in some Measure yield to the Fire, and are capable of being sublimed. In all these Instances, the Breadth of the Surface, which exposes the Particles more to the Impetus of the Fire, is the Reason why they are raised with as much Ease as if their Gravity had been lessened by diminishing their Surface. So that Particles, though ever so different in Weight, may be equally raised by the same Degree of Heat, if the Proportion of their Gravity be reciprocal to that of their Surfaces. From what has been thus explained, may easily be deduced the Reason of all that Variety observed in the Volatility of Bodies. With regard to Fixation, as it proceeds from contrary Causes, it wants little Explanation; for he that thoroughly understands why some Substances can be sublimed, must, at the same Time, apprehend why others cannot. *Quincy.*

SUBLIMATORIUM. A subliming Vessel.

SUBLIMIS MUSCULUS. A Name for the PERFORATUS *Digitorum.*

SUBLIMITORIUM. The same as HYPALEIPTRON. *Castellus.*

SUBLINGUALES GLANDULÆ. The sublingual Glands.

SUBLINGUALIA. Medicines lay'd under the Tongue, in order to dissolve there, and cure a Cough, or *Bronchocele*, or mend a fetid Breath.

SUBLUXATIO. An incompleat Luxation.

SUBMERSIO. Drowning. See the Operation of *Bronchotomy* under the Article ANGINA.

That in populous Towns, and even in less considerable Places situated on the Banks of Rivers, some Persons have almost every Year the Misfortune to be drown'd, is a Truth not to be call'd in Question; but it is not equally known and believ'd, that many Persons taken out of the Water without any Appearance of Life, would be rescu'd from approaching Death, if, for a sufficient Time, the proper Means of Relief were afforded.

After some short Attempts, we continue to esteem as dead, those in whom all Appearance of Life seems to be extinguish'd, especially if they have remained for a considerable Time, a few Hours for Instance, in the Water, in which Case no Measures are taken for their Recovery. Histories, however, related by Authors worthy of Credit, sufficiently evince, that the Lives of Men, who for several Hours have been not only in, but under Water, have been preserv'd, and that sometimes two Hours have elaps'd before there appeared any Sign that they were not really dead. The steep and dangerous Banks of some deep Lakes of *Switzerland* frequently occasion dismal Accidents of this Nature. The good Success of the Measures us'd for restoring such Persons, sometimes sooner, and sometimes later, have been publish'd in the *Swiss Mercury*, and these Measures we shall here enumerate, since it is to be wish'd that they were universally known, that they could be put in Practice on all Occasions that require them, and that in putting them in Practice, the World might discover Measures still more efficacious and infallible.

Formerly it was thought the best and most expedient thing that could be done for the Recovery of the drown'd Person, to hang him up by the Heels: But since, from the Dissections made by skilful Anatomists, 'tis certain, that drown'd Persons have generally less Water in their Stomachs, than if they had voluntarily drank a considerable Quantity, it does not seem expedient to put the drown'd Person in a Position which would prove uneasy as soon as the Humours of the Body should resume their ordinary Motion. It may however happen, that the Person may have swallowed too much Water, and in order to know whether he has or not, and to make him vomit it up if he has, 'tis proper to put him into a Tun, open at both Ends, and which for some Time is to be roll'd backwards and forwards in different Directions. He may, also, be excited to vomit the Water by frequently introducing into the Oesophagus the bearded End of a Feather.

After taking off the Cloths of the drown'd Person, instead of letting him lie stretch'd and naked on the Shore, which is too often the Practice, we ought, with the utmost Expedition, to shelter him from the Impressions of the cold Air, and begin to warm him by wrapping him up with Cloths and Coverings.

In order to warm him the more effectually, he is afterwards to be put into a Bed, the Cloths of which are pretty warm, applying, also, frequently to his Body hot Napkins and Cloths.

There are Instances of drown'd Persons, on whom the Influences of a hot and scorching Sun, to which they have been expos'd, have produc'd the same happy Effects which the warm Cloths have upon others. Some have been warm'd in hot Baths, but these are not on all Occasions to be had.

The great Intention to be pursued is, to put the solid Parts of the Machine in Action, that thus they may restore the Motion of the Fluids. In order to answer this Intention, the drown'd Person is not to be left in Bed in a State of Rest, but agitated in an hundred different Manners, turn'd from one Position to another, listed up and let fall, and shak'd in various Directions in the Arms of Persons of Strength sufficient for that Purpose.

Spirituous Liquors ought, also, to be poured into his Mouth, and where these cannot be had, 'tis customary to pour warm Urine into it, which has been observ'd to produce happy Effects. Some prescribe a Decoction of Pepper and Vinegar, to be us'd as a Gargarism.

We must, also, attempt to irritate the internal Fibres of the Nose, either by volatile Spirits, and the Liquors us'd in apoplectic Cases, or, by tickling the Nerves distributed to the Nostrils by the bearded Part of a Feather, or by blowing into the Nostrils through a Quill, Snuff, or some more powerful Sternutatory.

One of the Measures taken with such drown'd Persons as have been restored to Life, has been by Means of a Quill, or small Pipe, to blow warm Air into their Mouths, that thus it might be convey'd into their Intestines, into which it has, also, been successfully introduc'd by Means of a pair of Bellows. For this Purpose we may, also, use a Syringe, which might perhaps be still employ'd to better Purpose, in injecting warm Clysters capable of irritating the Intestines, and producing more considerable Effects than the Air generally convey'd to them.

But, perhaps, the most efficacious Method that can be taken with a drowned Person, is, by Means of a proper Pipe, to blow the Smoke of Tobacco into his Intestines. There have been several Instances at once of the speedy and happy Effects of this Smoke on drowned Persons.

None of all these Measures specified ought to be neglected, since they may possibly concur to produce an happy and salutary Effect; but they will prove most successful, when taken under the Management and Inspection of a judicious Physician. If a Surgeon can be had, Venesection is by no Means to be neglected, and perhaps it is most commodiously instituted in the Jugular Vein; for in drown'd Persons, as well as in those that are hang'd or seiz'd with an apoplectic Fit, the Veins of the Neck are too much distended and choak'd with Blood. Now if these Veins can happily be in some Measure emptied, they will be in a more proper Condition to act upon the Fluid they contain, and which, in order to restore the Patient, they ought to put in Motion.

When these Measures prove unsuccessful, the Surgeon's last Recourse is to Bronchotomy, or opening the *Arteria Trachæa*; for perhaps the Air entering freely into the Lungs, through the Aperture made in the Canal through which they receiv'd it in their natural State, and the warm Air which may

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may be blown through this Aparture, will reſtore the Playing of the Lungs, and all the Motions of the Breaſt.

But we muſt carefully adviſe all thoſe who ſhall employ themſelves in the humane and beneficent Office of reſtoring drown'd Perſons, not to be diſcourag'd if the firſt Appearances do not anſwer their Expectations; for 'tis certain from Experience, that ſome drowned Perſons have not begun to diſcover any Signs of Life, till they have been toſſed about and tormented for more than two Hours. Beſides, the Man who has ſucceeded in reſtoring to Life a Perſon whoſe Death, without his Aſſiſtance, was certain, is ſufficiently rewarded for his Pains by the Succeſs; and if his Pains and Diligence ſhould fail of their deſired Effects, he will ſtill receive an exalted Pleaſure from a Reflection on his having acted with the moſt noble and generous Views. *Brubier.*

SUBMISSIO, ſometimes ſignifies a Remiſſion; ſometimes it imports the ſame as *Syſtole*, with reſpect to the Arteries, that is, their Contraction.

SUBPOPLITEUS MUSCULUS. The ſame as POPLITEUS.

SUBPURGATIO. A ſlight, or gentle Purgation.

SUBSCAPULARIS MUSCULUS.

This Muſcle is of the ſame Breadth and Length with the *Scapula* of which it occupies all the inner or concave Side, and from this Situation it has its Name. It is thick, and made up of ſeveral penniform Portions, nearly in the ſame Manner with the *Deltoides*.

It is fixed in the internal Labium of the whole Baſis, and in almoſt the whole internal Surface of the *Scapula*, its fleſhy Portions lying in the Intervals between the bony Lines when theſe are found. Near the Neck they leave the Bone, and form a very broad Tendon, which is inſerted in the Surface of the ſmall Tuberoſity of the Head of the *Os Humeri*, cloſe by the bony Channel. The lower Edge of this Tendon, probably ſends off the ligamentary *Frænum* mentioned in the Deſcription of the *Latiſſimus Dorſi*, *Teres Major*, and *Coraco Brachialis*.

This Muſcle covers immediately the *Serratus Major*, being in a Manner incloſed between it and the *Scapula*. The upper Edge of its Tendon is joined to the lower Edge of that of the *Supra-Spinatus*, except at the upper Part of the bony Channel, where they give Paſſage to one Tendon of the Biceps. It likewiſe adheres to the capſular Ligament. The Tendons of the *Supra-Spinatus*, *Infra-Spinatus*, *Teres Minor*, and *Subſcapularis*, being all joined by their Edges, form a Sort of Cap, which covers the upper Part of the Head of the *Os Humeri*.

The Uſe commonly aſcribed to the *Subſcapularis*, of preſſing the Arm againſt the Ribs, from which it has the Name of *Porte-feuille* in *French*, is without Foundation. When the Arm hangs down in its natural Situation, this Muſcle may turn it round its Axis, from without forward, as it happens when in this Situation we beat the Breaſt with the Fore-arm bent; and it likewiſe ſtrongly aſſiſts the *Latiſſimus Dorſi*, when we turn the Hand behind the Back.

When the Arm being raiſed, we move it backward, as in giving a back Stroke with the Elbow or Fiſt, the *Subſcapularis* hinders the Head of the Os Humeri from being luxated forward; for which Purpoſe it is well fitted both by its Structure and Number of its Fibres, this Motion being ſometimes performed with great Violence.

It may likewiſe, by Means of the Nearneſs and lateral Union of its Tendon with that of the *Supra-Spinatus*, aſſiſt that Muſcle in keeping the Head of the Os Humeri in the Glenoid Cavity, when the other Extremity of the Bone is raiſed. *Winſlow's Anatomy.*

SUBSIDENTIA. The Sediment, or *Hypoſtaſis* in Urine.

SUBSTILLUM SANGUINIS. A dropping of Blood from the Noſe.

SUBSULTIO. A Palpitation.

SUBSULTUS. An involuntary twitching, or ſpaſmodic Contraction of the muſcular Parts.

SUBVERSIO STOMACHI. A Subverſion of the Stomach is a violent Vomiting, when what ſhould paſs into, or through the Inteſtines, is diſcharged by the Mouth.

SUBVOLA. The Part of the Hand otherwiſe called HYPOTHENAR, which ſee.

SUCCAGO. The inſpiſſated Juice of any Plant. A *Rob* or Jelly.

SUCCEDANEUM. Any Drug, or Medicine, ſubſtituted for another.

SUCCENTURIATI RENES. Two glandulous Bodies ſituated near the Kidneys, called alſo, *Glandulæ Renales*, or *Capſulæ Atrabilariæ*.

SUCCENTURIATUS MUSCULUS. A Name for the *Pyramidalis*. See ABDOMEN.

SUCCIDA LANA. Greaſy Wool, that is, Wool impregnated with the Sweat of the Sheep.

SUCCINGENS MEMBRANA. The Diaphragm.

SUCCINUM. Amber. See AMBRA.

SUCCISA. A Name for ſeveral Species of SCABIOSA.

SUCCOLATA. Chocolate.

SUCCOTRINA ALOES. Alloes of *Succotra*, eſteem'd the beſt Species. See ALOES.

SUCCUBUS. A Species of Night Mare. See EPHIALTES.

SUCU. The Name of a *Chineſe* Species of Apple.

SUDAMINA. The ſame as HIDROA.

SUDOR. Sweat.

Under the Skin, above the Fat, are diſpoſed all over the Body what we call *the Miliory Glands*, which are cloſely united, each Gland furniſhed with an Artery, Vein and Nerve, and produce an excretory Duct or Veſſel, which paſſes through a Perforation in the *Reticular Body*, and diſcharges through a wide Orifice, the Sweat under the Epidermis. Theſe Ducts are cover'd with a hollow, and raiſed Valve, of a round Figure, and ſeated under the Skin; its Uſe is to tranſmit or reſtrain the Humour. This excretory Duct is the principal Organ of *Sweat*, in Conjunction with the VASCULA *Ruycheiana*.

The *Sweat*, thus ſecreted, varies according to the Differences of Air, Soil, Sex, Age, Temperament, Emunctories, Diet, Way of Living, and Time of Concoction, almoſt in the ſame Manner as does the Urine.

Sweat is ſeldom or never obſerv'd in a ſound Body, unleſs from an Error in the Non-naturals; in its primary Effects it is always hurtful; by Accident it ſometimes proves beneficial.

Perſpiration according to SANCTORIUS.

There are, beſides the excretory Veſſels above deſcribed, under the Scales of the Epidermis, exhaling Veſſels, which open obliquely, and are of ſuch exquiſite Subtilty, that *Leeuwenhoeck* computes that a hundred twenty-five Thouſand of them will take up no more Space than a common Grain of Sand. Through theſe Veſſels perpetually tranſpires a very ſubtle Humour, from all Points of the Body, which has the Name of *Sanctoriana Perſpiratio*, from *Sanctorius*, who has the Glory of being the Diſcoverer and Perfector of this important Doctrine in Medicine.

The Exhalation of this Humor is from the whole external Epidermis, and alſo from the Cuticula of the Mouth, Noſtrils, Fauces, Larynx, Lungs, Oeſophagas, Stomach, Inteſtines, Bladder and Uterus. Hence in Quantity it exceeds the Sum of all other Excretions; for in the Air of *Italy*, the Vigour of Age, eaſy Circumſtances of Life, and moderate Eating and Drinking, the Quantity exhaled through the external Skin, and by the Mouth and Noſtrils, amounts to five Eights of the Aliments received.

When this *Exhalation* or *Perſpiration* is highly ſubtile, equable and undiſturbed, in Quantity copious, and is augmented after Sleep, it is at once a Sign and a principal Means of perfect Health.

A Deviation, or Alteration, in any Manner, from the Qualification juſt required in *Perſpiration*, is the firſt and moſt certain Forerunner of ſome Diſorder, and perhaps the Cauſe of it.

Perſpiration is effected, preſerved, increaſed and reſtored by a robuſt State of the Viſcera, Veſſels and Fibres, by Exerciſe and Motion to the Degree of an incipient, gentle Sweat, by the moderate Exerciſe of Venery, excited by the Health and Strength of the Body, and not by the Advice and Inſtigation of the Mind, by a Sleep of ſeven or eight Hours, with the Body well cover'd, but not oppreſſed under a Load of Clothes; by moderate Cheerfulneſs, Youth, ſolid but light Aliments, fermented, not fat, and ſeaſon'd very ſlightly with Spices, and by pure, ſerene, dry, weighty and cold Air.

The Contraries to all theſe Requiſites beſoremention'd, as well as an Augmentation of all the other Excretions, diminiſh, obſtruct and deprave the Action of Perſpiration.

Hence we learn the Matter, Cauſe, Effects, Neceſſity and Uſes of this *Perſpiration*; that it is eſpecially ſerviceable to Flexibility, Softneſs, and Reſtoration of loſt Subſtance, and principally that the humid and quick nerveous Papillæ might be fit for the Impreſſion of Objects, and tranſmitting the Effects of that Impreſſion.

It appears alſo that when Sweat is increaſed, and its Veſſels enlarged, that *Perſpiration* is of Neceſſity diminiſhed, and its Veſſels compreſſed.

And that with violent Motion, and exceſſive Heat, this *Perſpiration* is turned into Sweating; but that with gentle Motion and a moderate Degree of Heat, it is very much promoted.

That nothing more conduces to a free *Perſpiration* than gentle and long continued Friction.

That

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That long and copious Sweats highly check and weaken it, and that such Sweats are constantly and necessarily Attendant on weak, wasting, consumptive, fainting and dying Persons.

Questions to be solved on this Head are;

Why immediately after Eating, and also a long Time after the same, *Perspiration* in a healthy Person is diminished?

Why *Perspiration* is greatest in the fifth and the twelfth Hours after Eating?

Whence it comes to pass that riding on Horse-back, or Gestation in a Coach, or Ship, but especially violent Motion on the Ice, or in the Snow, so highly promote *Perspiration?*

SUDOR ANGLICUS. The Sweating Sickness.

This Disorder is so call'd from the Island in which it first appeared, in 1483. among the Soldiers of *Henry* VII. when he landed at *Milford Haven* in *Wales*, whence it spread itself and rag'd in *London*, from the 21st of *September* till the End of *October*. In the same City it returned five Times, and always in the Summer: First in 1485; then in 1506. Afterwards in 1517, when it was so violent as to take off the Patient in three Hours, and so universal as to attack People of all Ages and Conditions; so that half of the Inhabitants of several Towns in *England* fell Victims to its irresistible Fury. It appear'd the fourth Time in 1548, when it generally prov'd mortal in six Hours; and then it appear'd in 1529, at which Time alone it spread itself to the *Netherlands* and *Germany*; in the latter of which it prov'd very fatal. The last Return of it in *London*, was in 1551, when it rag'd with such Fury, as in one Day to take off 120 of the Inhabitants of *Westminster*. At *Shrewsbury*, the Residence of the celebrated *Caius* or *Kaye*, from whom this Account of the Disorder is taken, it rag'd with such Inclemency as almost to depopulate that whole Quarter of the Country, cutting off some when travelling on the Road, and others when at home minding the Concerns of their Families. Some when awake, and others when fast asleep; so that in large Families few remained free from the Disorder; in such as were less numerous generally none; and among those, who were seiz'd with it, some died in a Moment, and others one, two, three, four, or more Hours after they began to sweat. So that those who were brisk and healthy at Dinner, were often dead before Supper; but none who surviv'd the Disease were ever out of Danger, till 24 Hours after its first Attack. From such Beginnings it increased so much, and spread so far, as to strike Terror into the Inhabitants of all *England*; and had this unlucky Circumstance, peculiar to itself, that Flight, which in other contagious Disorders is the best Method of Prevention, was of no Use; for not only such of the Natives of *England* as left the Towns, and betook themselves to the Fields, but, also, those who retir'd to *France*, *Holland* and *Scotland*, were equally subjected to it as if they had taken no Precaution; whilst, what is equally, or still more surprizing, Foreigners residing in *England* were not attack'd by it.

It seiz'd different Patients in different Manners; for in some it first appeared with a Pain in the Neck, Scapulæ, Legs or Arms; whilst others perceived only a Kind of warm Vapour or Flatulence running through these Parts. And these Symptoms were suddenly succeeded by a profuse Sweat, which the Patients could not account for. The internal Parts became first warm, and were soon after seiz'd with an incredible Heat, which thence diffus'd itself to the Extremities of the Body. An intolerable Thirst, Restlessness and Indisposition of the Heart, Liver and Stomach, were the next Symptoms, which were succeeded by an excessive Head-ach, a Delirium, in which the Patient was very trifling and talkative, and after these a Kind of Extenuation of the Body, and an irresistable Necessity of Sleeping.

In some the Sweat stopp'd in the Beginning, and their Limbs became moderately cool. But this Evacuation being afterwards promoted, the Matter of it was of a disagreeable Smell, of different Colours, according to the Nature of the Patients Humours; sometimes more and sometimes less in Quantity, and of a pretty thick Consistence. Some were seiz'd with a *Nausea*, and others with a Vomiting; but these Symptoms happen'd almost only to such as had overloaded their Stomachs with Aliments. All without Exception were afflicted with a difficult and frequent Respiration. The Urine had nothing preternatural, except that it was of a thicker Consistence, and ting'd with a fainter Colour than usual. The Pulse was also more quick and frequent than in a natural State. In those, however, who breath'd the least corrupted Air, and of the best Constitutions, the Disease was more mild and temperate, being generally accompanied with no worse Symptoms than a preternatural Heat and Sweat.

From the Symptoms now enumerated, *Kaye* defines this Disorder to be a diary Fever of the pestilential and contagious Kind, and to support his Definition reasons in the following Manner.

The profuse Sweat is, in this as well as in other Fevers, produc'd as a Symptom by the excessive Agony and Heat of the Patient; for as they who work hard have the Whole of their Bodies cover'd with Sweat, so those who labour under violent internal Disorders are subject to copious Sweats, which are the Instruments Nature uses, in order to carry off the Cause of the Disease. If she is vigorous enough to produce this Effect, the Patient is preserv'd; but if she is too faint and languid, he falls a Victim to the superior Force of his Disease; for if this Sweat flows spontaneously, and is duly carried on, it is of the salutary and beneficial Kind; but if it is totally check'd, or too much diminished, it is either mortal, or highly dangerous; for the Truth of which the Author appeals to the Experience of his Countrymen.

The learned and ingenious Author next proceeds to shew;

1. Why this Fever is of diary Kind.
2. From what Causes it proceeds, *&c.*
3. Why the Inhabitants of *Britain* alone are subject to it.

The First he accounts for from the particular Nature of the Poison which, he says, is of the putrid Kind. The Second he explains from the Situation and Air of *Britain*; which last is subject to be impregnated with noxious Exhalations, proper to produce Diseases of the putrid Kind. And the Third he Accounts for from a particular Fitness and Disposition in *English* Constitutions, to receive and be acted upon by this Poison. But as the learned Disquisitions of the Author, on these Points, would swell the Article too much, and are not very satisfactory, we shall proceed to give the Method he prescribes, both for the Prevention and Cure of this Disorder.

For preventing this Disease, then, he orders Temperance, and the Choice of salutary Aliments, and Drinks. No crude Pot-herbs nor Sallads are to be used, because they may have received a noxious Quality from the Air; or if they are us'd, they are to be previously wash'd with warm Water. The following Powder is to be sprinkled on the Aliments.

Take of Mace and Cloves each two Parts, of Zedoary and Dittany Root each one Part; of all the Sanders each half a Part, of red Coral and red Roses each one Part; of Cinnamon three Parts, of Pearles one Part, and of Sugar a sufficient Quantity. Beat all and reduce to a fine Powder.

The Air is, also, to be render'd as pure as possible, by removing those Things which can corrupt it; such as Carcases of Animals, stagnant Waters, and other Things of a like Nature, and by correcting and altering its peccant Quality, by Means of constant Fires, especially in the Morning and Evening; and by burning in the Room fragrant Substances. When we go abroad, which should be as rarely as possible, we should carry in our Hand a Preparation to smell to, which he orders be made in the following Manner.

Take of the *Nux Unguentaria*, Mace, Cloves, Saffron, Cinnamon, and Chian Mastick well triturated, each one Part and an half, of Storax two Parts and an half, of Ladanum four Parts, with a few Grains of Amber and Musk, dissolve in aromatic Wine, and make into a proper Consistence for a Paste, to be smell'd to.

The Steam of Scordium or Vervain, receiv'd into the Mouth before going abroad, is an excellent Preservative against this Disease; as also holding continually in the Mouth a Piece of Zedoary or Elicampane Root, macerated for a Night in Vinegar of Roses.

No one must go abroad fasting, for at that Time the Body is more subject to Infection than at others. 'Tis, therefore, proper to take, before going out of the House, a proper Quantity of *Theriaca*, either by itself, or in a Glass of distill'd Water of Sorrel, or Scabious. The Troches of Vipers, and several other Things of a like Nature, are, also, proper for the same Purpose; but the most efficacious Preservative is by the Author said to be the following.

Take of Sorrel, red Roses, yellow Sanders, Spikenard, Cinnamon, Saffron, and Citron Seeds each one Part, of *Armenian* Bole one Part and an half, of seal'd Earth half a Part, of prepar'd Pearles half a Part, with the Addition of some Leaf-Gold, all which are to be triturated, and taken in a small Quantity of Vinegar.

In plethoric Persons the Quantity of Humours are to be diminish'd by Abstinence, or by Venesection, and other Evacuations, as the State of the Person shall require.

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After the Sweating Sickneſs has ſeiz'd a Patient, the beſt Method to be purſued is to promote the Sweating for a due Time; for by this Means alone the Diſorder is remov'd. For this Purpoſe the Patient is to be kept warm, and due Care is to be taken, that he does not, thro' Ignorance or Reſtleſſneſs, expoſe any Part of his Body to the open Air. The Patient muſt be attended, and have his Sweat continued for twenty-four Hours, becauſe at that Time the Diſeaſe generally terminates in an happy Manner. During all this Time, the Patient muſt abſtain from all Aliments, and from Drink of every Kind for at leaſt five Hours, unleſs the Patient's Strength is ſo exhauſted, as to call for a ſupply of them, which, however, can hardly happen in ſo ſhort a Time. If the Sweat does not flow ſpontaneouſly, Frictions with moderately warm Cloths may be us'd, taking Care to prevent the Acceſs of the Cold; and if by this Means he ſweats, we are to abſtain from other Methods; but if none of theſe will do, ſudorific Potions are to be us'd. Sleep is to be prevented, by calling on the Patient with a ſhrill Voice, and pulling him till both the Deſire and Neceſſity of ſleeping are remov'd. After the Patient is recovered, he is not too ſoon to go abroad, nor expoſe himſelf to the open Air, by doing which many have been taken off by an incurable Flux. *Caius de Ephemer. Britannica.*

SUDORIFERA. The ſame as SUDORIFICA.

SUDORIFICA. Sudorifics; Medicines which excite Sweat. See DIAPHORETICA.

SUFFERSURÆ. Puſtulous Eruptions, which break out upon Children, on Account of Heat. *Foreſtus.*

SUFFIMENTUM. A Suffumigation. This differs from odoriferous Subſtances, becauſe the latter diffuſe their Odour without the Aſſiſtance of Fire; whereas the former does not exert its Influence without the mediate or immediate Action of Fire.

There are two Kinds of Suffumigations, one ſubſervient to Pleaſure, and another contributing to Health; both of them are either dry or moiſt. The Suffumigation for Pleaſure is, alſo, call'd θυμίαμα; whereas that for Health is more properly call'd a Vapour or Steam.

That ſubſervient to Pleaſure, and the Purpoſes of Luxury, is made up of fragrant and ſweet-ſcented Subſtances, and may be us'd either in the Form of a Powder, Troches, or medicated Candles. The firſt of which may be prepared of Storax, Benjamin, the Root Acorus, Zyloaloes, Marjoram Leaves, Orange and Lemon Peel, Mace, Cloves, Cinnamon, Camphire, Amber, Musk, and Civet, in due Quantities, reduc'd to a Powder. The ſecond may conſiſt of the ſaid Powder put in melted Gum Tragacanth, and made up with ſome proper Water: And the third may be prepared of the odoriferous Gum melted, with an Addition of the abovemention'd Powder, Gum Tragacanth, or Ladanum melted, and a proper Quantity of Muſk, or Amber. Though this Species of Suffumigation is principally intended for Pleaſure, yet as it conſiſts of cephalic and cordial Ingredients, it muſt neceſſarily contribute to corroborate the Brain, recruit the Spirits, and prevent their aſſuming a malignant Quality. The moiſt Suffumigation for Pleaſure conſiſts of Storax and Benjamin; or if you pleaſe, a ſmall Quantity of the abovemention'd Powder diſſolv'd in ſome odorous Water, ſuch as that of Roſes.

The Suffumigation contributing to Health, is either corroborative, and conſiſts almoſt of the ſame Ingredients with that for Pleaſure, or it is alterative, dries the Brain, purges the Lungs, provokes the Menſes, and prevents a Suffocation. The dry Species of this Suffumigation is prepared of ſweet-ſcented Subſtances, ſuch as Ladanum, Storax, and Benjamin, and ſometimes of Galbanum, Aſſa-Fœtida, and Caſtor, which are highly beneficial in ſeveral Diſorders of the Uterus. This, alſo, may be exhibited either in the Form of a Powder, conſiſting of the abovemention'd Ingredients, or in the Form of Troches, prepared as above. A Suffumigation of this Kind is, alſo, ſometimes made by throwing Tobacco alone on the Coals, and collecting the Steam in a Funnel, or ſome proper Inſtrument; this powerfully purges the Brain, and frees the Breaſt from pituitous and bilious Excrements. This Species of Suffumigation is us'd either for corroborating or altering, for drying the Brain, removing Catarrhs, and Phlegm generated in the Breaſt in various Diſorders. Suffumigations of Tobacco, Colt's-Foot, and Sulphur are beneficial for drying Ulcers of the Lungs, and for ſeveral other Diſorders of the ſame Kind. The moiſt Fumigation for Health, conſiſts either of ſome ſimple Liquor, ſuch as Vinegar, Wine, Aqua Vitæ, or Roſe-water; but in hard, œdematious Tumors to be diſcuſs'd, the Fire-Stone, or a Brick ignited, are to be put into the Vinegar, and the Steam received; this is, alſo, frequently done in the Plague: Or the moiſt Suffumigation for Health may conſiſt of a Decoction of proper Ingredients. This Preparation is principally us'd in Diſorders of the Uterus, in ſtopping or promoting the Menſes, in Dyſenteries, Diſorders of the Anus, Ears and Eyes. This Species of Suffumigation is us'd for drying, conſtricting, relaxing, ſoftening, diſcuſſing and opening. *Morelli de Formul. Remedior.*

SUFFIMENTUM CATARRHALE.

A Fume for a Catarrh.

Take Olibanum, Amber, Benjamin, Storax, Gum Guaiacum, and Balſam of Tolu, of each two Scruples; make all into a groſs Powder to burn.

Where the Deſluction is very thin, and has much of its Cauſe in the Laxity of the Glands, ſuch Means may do Service by conſtringing the Parts, and repelling the Flux, inſomuch that it may be thrown off by other more proper Outlets; but where there is an Aſthma, and very weak Lungs, there is great Reaſon to fear Miſchiefs; becauſe checking the Rheum will thicken it, and make it paſs with greater Difficulty through the pulmonary Veſſels, when, in the Courſe of Circulation, it comes thither. The following, therefore, may be leſs inconvenient, though this may, alſo, be uſed in the ſame Manner, to burn upon Coals, only receiving the Steams with a Cap before it is put on, eſpecially at Night going to Bed.

Take of Gum Guaiacum, Gum Juniper, Maſtich, Myrrh, each a Dram; Cloves, two Drams; Balſam of *Peru*, ſixteen Drops: Make them into a coarſe Powder.

Filling a thick Cap frequently with the Steam of this burnt upon Coals, may, with ſometime uſing, ſtrengthen the Fibres, and particularly the Glands about the Head; whereby they will not be ſubject to thoſe Suffuſions of Lymph, which ought to be remanded by other Secretions, and principally by Urine.

SUFFIMENTUM HYSTERICUM.

An Hyſteric Fume.

Take of Aſſa-Fœtida, one Ounce; beſt White-Wine-Vinegar, a Pound; boil them in a Pot with a narrow Mouth, and let the Patient hold her Head over it, with her Mouth open.

This is an untoward Application, and ſeems juſtifiable only in Caſes where other Means cannot be uſed; though in ſome Kind of hyſteric Convulſions, Steams this way received up the Noſe have very ſudden and remarkable Effects.

SUFFIMENTUM ODORIFERUM.

A ſweet-ſcented Fume.

Take of Benjamin, one Ounce; Storax, half an Ounce; Labdanum, two Drams; Muſk and Amber-greaſe, each five Grains: Make them into a fine Powder, to mix with Wax for Candles.

The Scent of this burnt in Places ſuſpected of Contagion, or infected with any noiſome Steams, is not only pleaſant but beneficial. They are likewiſe very agreeable to light Pipes with.

ANOTHER.

Take of Cypreſs Roots, and Calamus Aromaticus, each one Ounce; Roſemary, one Handful; Storax, and Benjamin, each two Drams; Frankincenſe, two Ounces: Make all together into groſs Powder to burn.

This is uſeful to take away the ill Scent of a Room, from what Cauſe ſoever it be; and in a Time of peſtilential Contagion, would be beneficial to burn for an Hour or two every Morning in all the Rooms of an Houſe, or ſome convenient Place, where the Whole may be filled with its Steams. And, by this Caution, many Families who lived in *London* during the laſt great Plague, eſcaped being hurt by it.

SUFFIMEN-

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SUFFIMENTUM AD PBOCIDENTIAM ANI.

A Fume againſt the falling down of the Fundament.

Take of Frankincenſe, Maſtich, Amber, and Cloves, each a Dram; Red-Roſe Leaves, and Balauſtines, each two Drams: Make them into a groſs Powder.

This is to be burnt upon a Chaffindiſh of Coals under a Chair, with a Hole in it, over which the Patient is to ſit with the Part bare, after the Gut is thruſt up; and by ſuch Means continued, will the Sphincter at laſt get Strength enough to keep it up without any ſuch Help. In a Teneſmus it is, alſo, of Uſe.

SUFFIMENTUM AD PROCIDENTIAM UTERI.

A Fume againſt the falling down of the Womb.

Take of Myrrh, Maſtich, Cinnamon, and Spikenard, each a Dram; Mint, and red Roſes, each two Drams; Cloves, Zedoary, and Pimento, each half a Dram: Make them into a groſs Powder to burn.

This is to be uſed as the preceding, and in the ſame Weakneſs it is, alſo, good, as that is of Service in this. Theſe are very eaſy Remedies, and might be beneficial in many uterine Weakneſſes, where Perſons are too ſqueamiſh or Prejudiced to take neceſſary Medicines another Way. Fumes from hot, aromatic Liquors, which are ſometimes directed to the ſame Purpoſes, are hardly ſo efficacious as thoſe which ariſe from the burning, dry Ingredients; becauſe their Moiſture prevents their being ſo immediately reſtringent.

SUFFITUS. The ſame as SUFFIMENTUM.

SUFFO. This is explain'd by *Rulandus* and *Johnſon*, *Panis Porcinus*.

SUFFOCATIO UTERINA. A Strangulation of the *Uterus*, an hyſteric Symptom. See HYSTERICA.

SUFFRUTICES, in Botany, are Under-Shrubs, or ſmall Shrubs, with ligneous Branches, and ſmall Leaves.

SUFFUMIGATIO. The ſame as SUFFIMENTUM.

SUFFUSIO. A Cataract. See CATARACTA.

SUFFUSIO AURIGINOSA. A Jaundice.

SUFUFF. Compound Powders, in the Shops call'd *Species*. *Caſtellus*, from *Libavius*.

SUGILLATIO. Sugillation. See the Article CONTUSA, for the Difference betwixt a *Sugillation* and *Ecchymoſis*.

SUGITIVA. Medicines which conſume the Seroſities of hydropical Perſons. *Caſtellus*.

SULPHUR.

The Sulphur of the Shops, called θεῖον in *Greek*, becauſe uſed in all expiatory and other ſacred Rites, is a mineral, concreted Juice, ſolid, dry, friable, fuſible by Fire, and very eaſily inflammable. The Flame it emits is blue, and the Smell of burning Sulphur is ſtrong, ſubtile, acid, and very prejudicial to the Lungs.

Sulphur is of various Kinds; it is, in the firſt Place, divided into ἄπυρον, or native Sulphur, which has never been expoſed to the Fire; and ἐμπυρέυμενον, or factitious Sulphur, prepared by Fire. It is either of a yellow, yellowiſh, Aſh, or light Colour, and either pure or impure in Subſtance.

Native Sulphur, termed *Sulphur Vivum* in *Latin*, is of two Kinds; one pellucid, and ſhining like Gold, and either of a citrine or greeniſh Colour. This is found about the gold Mines in *Peru*, *Switzerland*, and many other Places. The other is opake, found either in hard, ſolid, ſhining, greeniſh, or yellow Lumps, or in form of a clayiſh Glebe, of a light Aſh Colour, or yellow. This Kind is dug near all the burning Mountains, near ſome ſulphureous Springs, and in ſeveral other Places of *Europe* and *America*.

Factitious Sulphur is prepared in different Manners: In ſome Places it is obtained by boiling of Water; and at *Buda* in *Hungary*, according to *Agricola*, it is evaporated along with the Water of the mineral Springs, and concretes in the Covering, or Dome of theſe Fountains, like Flower of Brimſtone, and is gathered from thence, once every Year, with great Care. It is, alſo, extracted from a Sort of Aſh-coloured, argillaceous Earth. Thus in ſome Places of *Italy* there are Mines, out of which a fat, white, argillaceous Earth is dug, mixed with ſome blackiſh Veins; and this Earth being put into very capacious earthen Veſſels, and diſtilled, the melted Sulphur runs out at the Roſtrum of the Alembic into a Receiver, where it ſoon concretes into large Lumps. After the Diſtillation is over, a red Earth remains, which is thrown away as uſeleſs. Sulphur is, alſo, often extracted from a Kind of *Pyrites*, eſpecially near *Liege*, where there is a Kind of *Pyrites* like Lead Ore, which being dug up, is broken into ſmall Pieces, and then thrown into very large Crucibles, or rather earthen Cucurbits of a quadrilateral Figure, with a narrow Orifice. Theſe Veſſels are placed in proper Furnaces, in an inclined Poſition, where by the Sulphur contained in theſe Stones, being melted by the Fire, runs into Leaden Veſſels filled to a certain Height with Water, where it concretes immediately; the Subſtance which remains in the Cucurbit containing a large Portion of Vitriol. If by this firſt Operation, the Sulphur be not ſufficiently pure and clean, it is melted a ſecond Time in Iron Veſſels, and boiled with the Addition of a certain Quantity of Linſeed Oil; afterwards it is made up, either in large Lumps, or is thrown into hollow Cylinders of Iron, rubbed over with Oil on the Inſide, and ſo is formed into Rolls.

Sulphur ſo prepared is called common Brimſtone, or common Sulphur, and is of two Kinds, yellow, or greeniſh; which laſt is preferred for the Extraction of Oils or Sulphurs from other Bodies, as containing the greateſt Quantity of vitriolic Salt. Common Sulphur melts by Fire, is eaſily inflammable, emitting a fine blue Flame, with acid Effluvia, which effecting the Noſtrils and Lungs, excite Coughing: An electrical Quality is likewiſe obſerved in it. It is not ſoluble by Acids, but very readily by alcaline or oily Subſtances. When fired in the open Air, it flies almoſt all away, a ſmall Portion of a Kind of metallic Earth only remaining: But if the Vapours that aſcend from burning Sulphur be collected with Care, it becomes an acid Liquor, of the ſame Nature with Spirit of Vitriol, without any apparent Mixture of oily or bituminous Parts: But if Sulphur be diſtilled in an Alembic, or any other cloſe Veſſel, the Vapour does not then turn to a Subſtance of a different Kind, but concretes in form of a yellow, ſooty Duſt, called Flowers of Sulphur, which is of the ſame Nature as it was before Diſtillation. *Geoffroy*.

THE EXAMINATION OF SULPHUR.

Perfect Sulphur is found in the Mines, under very different Forms; ſometimes ſmooth and yellow; ſometimes yellow and almoſt tranſparent, like Amber; ſometimes red, and almoſt tranſparent, like a Ruby; but more frequently of an opake, grey Colour. Any of theſe Sorts being put into a Crucible, eaſily melt in the Fire, and ſo long appear tranſparently red; but when cold, they again become opake. Sulphur, as ſoon as melted, readily takes Flame upon the Admiſſion of the external Air, and burns blue; the Vapour whereof, being received with the Breath into the Lungs, proves ſuffocating to all Animals. It entirely burns away, or ſcarce leaves any Fæces behind: If kept melting in the Fire without burning, it diſcharges a ſtrong-ſmelling Acid, but not ſuffocating Vapour. As ſoon as melted, ſome Part of it goes into the Air; and if long kept fuſed, without burning it, it all gradually becomes volatile, and vaniſhes. When cold, it is extremely brittle; and when melted by Heat, it ſeems viſcous, like Pitch; and in neither Form will mix with Water. It will never diſſolve in Alcohol alone; if its Powder be mixed with any Acids or Alcali, it gives not the leaſt Signs of Ebullition, or Effervescence; ſo that it has not thus the Effect of an Acid or an Alcali. If taken crude into the Body, by ſmall Doſes frequently repeated, it wonderfully cleanſes the firſt Paſſages, at length purges ſtrongly, and then effectually cures certain cutaneous Diſeaſes, and ſuch as proceed from Worms or mercurial Fumes.

REMARKS.

Hence the Nature of Sulphur may be in ſome Meaſure underſtood, as found naturally in the Earth. And hence it appears, why the Chymiſts have called it the Roſin of the Earth; for, excepting that it does not diſſolve in Spirit of Wine and Alcohol, in other Reſpects it approaches to Roſin.

THE FLOWERS OF SULPHUR.

1. Take ſix Ounces of common Sulphur, put it into a Body of *Heſſian* Earth, apply a capacious Glaſs-head, cloſe the Junctures with a Mixture of equal Parts of Clay and Aſhes, wrought up with Water; ſet it in a Sand-Furnace, ſo that the ſame may almoſt touch the lower Rim of the Glaſs-head; let the Pipe of the Head, and, alſo, the Body itſelf incline a little downwards, that the Moiſture may run into the Receiver fixed for that Purpoſe; make a gradual Fire, and continue it till the Head begins to grow dark

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dark with the aſcending Flowers; a little Water will riſe and come into the Receiver; cautiouſly keep up the Fire, that the Heat may not melt the Flowers in the Head, and yet be ſufficient to ſublime the Sulphur; continue thus for eight Hours, and at length increaſe the Fire, till the lower Rim of the Head grows almoſt ſo hot as to melt the Sulphur; the Sulphur will now be ſublimed into a yellow, light, rarified, ſoft powdery Subſtance, called Flowers of Sulphur.

2. This Experiment is ſufficient for our preſent Purpoſe; but thoſe who make Flower of Brimſtone for Sale, have entire Furnaces built for the Purpoſe; with two Chambers or Partitions, one containing the Sulphur to be ſublimed, where the Fire is placed, and the other adjoining to it, communicating therewith, and kept cold. Both of them are exactly ſtopped up, to exclude the Air; and thus the Sulphur being urged in one Chamber, by the Heat of the Furnace, and render'd volatile, flies into the other which is cold, and there collects together. When the Operation is ended, and all grown cold, the Furnaces are opened, and the Flowers ſwept out; and thus they repeat the Operation with freſh Sulphur. And as they thus prepare the Flower of Sulphur in large Quantities, with little Labour and ſmall Expence, hence it is uſually ſold but little dearer than rough Brimſtone.

REMARKS.

The Sulphur by theſe Means is attenuated and purified; in other Reſpects it is not chang'd; but thus it becomes very fit for internal, medicinal Uſe. For when thus divided, it exerts its Virtues to greater Advantage in the Body; and thus, alſo, it proves fitter for external chirurgical Uſes, principally when it comes to be mixed with Balſams, Liniments, and Ointments. Hence we underſtand its wonderful Nature; for though ever ſo often ſublimed, it always remains the ſame, without being changed or mixed: It therefore can never become a Metal, or enter the Compoſition of Metals. This therefore is not the Sulphur of the Philoſophers, nor can never he made to afford it, as being no more than an Oil mixed with an Acid. So long as the Air is excluded from this Sulphur, heated even to the Degree of Fuſion, it remains unchanged by the Fire; but as ſoon as the free Air is admitted, it preſently takes Flame, and then ſoon changes, and divides into ſeparate Parts. *Paracelſus* directs theſe Flowers to be ſublimed from the red Calx of Vitriol, and recommends them for the Cure of exulcerated Lungs. I made the Experiment, but without finding that theſe Flowers, which he ſo much commends, had greater Virtues than the common Flower of Brimſtone.

THE ACID SPIRIT OF SULPHUR.

1. Chuſe a cool, moiſt, ſtill Day, and melt pure Flower of Brimſtone, in an earthen, cylindrical Pan, three Inches deep, and as many over. When the Sulphur is thoroughly melted, but not fired, put the Veſſel under a Chimney that does not ſmoke, but diſcharges all Fumes made upon the Hearth. Now light up the melted Brimſtone, and immediately cover it with a glaſs Bell, the Center whereof is over the Center of the Flame. The Bell ſhould firſt be ſuſpended in the Vapour of hot Water, to moiſten its internal Surface, and let it be ſo ſupported by Bricks, ſet triangularly, as not entirely to extinguiſh the Flame of the burning Brimſtone; otherwiſe, the nearer it is to the Flame the better. As ſoon as the Flame begins to go out, let there be at hand another ſimilar Veſſel full of melted Brimſtone, to be fired and applied as the former, and continue thus for a whole Day. A ſtrong-ſmelling, acid Vapour, will begin to collect in the Bell, eſpecially during the Coldneſs of the Night; apply a little Glaſs Receiver to the Bell, which is to be ſet ſo inclining, as that the Liquor may gently run out of it into the Receiver. Thus, by continuing the Operation, and increaſing the Number of the Bells, there will be obtain'd a gratefully acid, ponderous, yellow, and ſometimes red Liquor, that is wonderfully fixed at the Fire, ſo as to require almoſt the ſame Heat to raiſe it as Oil of Vitriol. It, alſo, ſtrongly attracts Water; and therefore gradually increaſes its Weight in an open Glaſs. If all theſe Directions be well obſerved, the Operation will always ſucceed. The Vapour here muſt be carefully avoided.

2. Mr. *Homberg* finding this Method too tedious, has invented a much eaſier and better, whereby five Ounces may be obtain'd in twenty-four Hours. He took the moſt capacious Glaſs Receiver he could get, and cut a round Hole in the Bottom of it, eight or ten Inches wide. This is done by firſt finding the Centre of the Baſis, by letting a Plumb-Line fall down through the Mouth of the Glaſs till it touch the Bottom, and remain every way equidiſtant from the Sides; the Point of Contact is mark'd with a Diamond; then ſetting the Foot of a Pair of Compaſſes on that Point, and opening them to the Diſtance of five Inches, the Periphery of a Circle is ſtruck with Ink. When the Line is dry it is to be cut with a Diamond, the deeper the better. Then have at hand an Iron ring of the exact Size with the Circle drawn. When the Iron is heated, apply it to the round Line, and the Piece will fly off, and leave the Baſis open. When the Bell is thus procured, paſte a Slip of ſtrong Linnen about the Neck, with a Loop-hole for a String to run thro', in order to ſuſpend the Bell; then have ready a cylindrical earthen Pan, ſix Inches wide, full of pure melted Sulphur; light it, and ſet this Veſſel upon a glazed earthen Foot, plac'd upon the riſing Part in the middle of a large glazed Diſh; ſuſpend the Bell exactly over the middle of the Flame, at ſuch a Diſtance as not to extinguiſh it. Make the Sulphur always burn equably, by adding freſh Supplies of it, and taking off the Cruſt with an Iron Rod, when it grows hard; ſo that the Diſtillation may thus proceed uninterrupted. The other Particulars abovementioned, of moiſtning the Inſide of the Bell with a warm aqueous Vapour, of taking the Opportunity of a cold, moiſt, ſtill Air, and of a Chimney that does not ſmoke, are here alſo to be regarded.

REMARKS.

The Sulphur ſublimed into Flowers is freed from its Earth and metallic Part. When lighted after being melted, it burns only on its Surface contiguous to the Air; its blue Flame conſiſts of Fire, or the inflammable oily Part of the Sulphur, agitated by the Fire, and a mineral Acid, which is the other conſtituent Part of the Sulphur, now agitated, attenuated, made cauſtic and volatile, by the Flame. Thus the unctuous combuſtible Matter is conſumed by the Fire, and the ponderous Acid diſſipated, which ſoon after condenſes by its own Weight, when it gets clear of the Flame that throws it off. Hence this Vapour becomes ſo mortal, becauſe the violently cauſtic Acid, thus ſtrongly agitated, comes in Contact with the Nerves, which move the Muſcles, that join the Interſtices of the cartilaginous Rings of the Larynx, Bronchiæ, and Veſiculæ of the Lungs, whence it contracts them ſpaſmodically, ſo as to ſtimulate the Lungs into a panting Endeavour to cough, while they are entirely contracted, and not ſuffer'd to expand by the Weight of the Air; altho' the Breaſt be dilated with a laborious but fruitleſs Endeavour. The ſame Vapour, ſhut up with fermentable Liquors, ſtops Fermentation; and if ſtrongly repeated, prevents Putrefaction, in all Bodies that otherwiſe eaſily putrefy. Hence this Fume is a proper Preſervative againſt peſtilential Poiſon, and the Contagion that flies abroad, or remains fixed in Goods, ſo as to infect them.

And hence we underſtand why the Flame of Nitre and Sulphur put together, but principally of Gunpowder, afford a very healthy Fume in the Height of the Plague; for the explosive acid Vapour of Nitre and Sulphur corrects the Air; and the ſame Vapour, if received in a ſmall cloſe pent-up Place, kills Inſects. This Spirit of Sulphur, called by the Name of *Oleum Sulphuris per Campanam*, or Oil of Sulphur by the Bell, is no other than the Oil of Vitriol, which was lodg'd in the vitriolic *Pyrites*; and afterwards joining with the Oil of Coals, conſtitutes Sulphur. This appears from all kinds of Trials, preſſion, which is wanting in the Spirit of Sulphur prepared from the Flowers of Sulphur. The great *Homberg* has, with much Labour and Subtilty, computed the Quantity of this Acid contained in Sulphur, and found it to be nearly a tenth Part. And thence, perhaps, we have the Reaſon why Alcohol will not touch Sulphur; that is, becauſe its Oil is ſaturated with Acid: And again, why a tenth Part of Alcali, mix'd with it by the Fire, occaſions Alcohol to diſſolve it; becauſe thus having Alcali to abſorb the fix'd Acid, it leaves the Oil free to diſſolve in the Alcohol: And again, why Sulphur reſiſts Acids, and is not reſolved thereby: Why when once diſſolved with its own Acid, it admits no more: Why Metals melted or calcined with Sulphur, are corroded by it; that is, becauſe the Acid of the Sulphur forſaking its own Oil, is ſtrongly attracted into the Metals, and thus corrodes them into a kind of Vitriol. Hence let thoſe leſs ſkilful Chymiſts grow more prudent, who endeavour to fix Sulphur, which is only a foſſil Acid united with an inflammable Oil, and no longer attempt to fix metallic Mercury with it, for ſuch heterogeneous Things cannot enter each other; nor can they give the Gravity and Solidity here ſo requiſite, nor indeed the Simplicity or Malleability. This Spirit of Sulphur, being purified, barely by ſtanding, then mix'd with Julep, gives them an agreeable Acidity, and renders them a wholeſome Drink in all Inflammations, and hot Diſeaſes, attended with

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with thirſt and Corruption. *Helmont* ſays it is conducive to the Prolongation of Life.

SULPHUR DISSOLVED IN FIXED ALCALI.

Take nine Drams of pure Flower of Sulphur, melt it in a Crucible, and add two Drams of dry fixed Alcali in Powder; the Sulphur will preſently begin to change of a new and particular Odour, and of a high red Colour; ſtir the Mixture over the Fire with a Tobacco-pipe, then, when thoroughly melted and united, pour it out upon a cold Marble. It will be a red brittle Maſs, ſoluble in Water, and ſoon relenting in the Air; whereas the Sulphur before would neither reſolve by the Action of the Air or the Water.

REMARKS.

The fixed Alcali being here actuated by the Fire, intimately unites with the melted Sulphur, attracts its Acid, and joins therewith, ſo that the Sulphur reſolves into its two ſeparate Principles; yet the Oil does not here remain ſeparate, but is intimately united with the Alcali, and acid Salt, ſo as immediately to produce a wonderful Soap, conſiſting of Acid, Alcali and Oil; and therefore the Combination of the foſſil Acid, Alcali and Oil, in the Compoſition of Sulphur, changes the Oil to another Nature; but the Acid remaining almoſt unchanged, comes out the ſame upon the Reſolution: And hence we may underſtand the Power of fixed Alcali in Metallurgy. Sulphur is often mixed with Metals, and makes them brittle; but, if fix'd Alcali be added to them in Fuſion, it takes the Sulphur into itſelf, from the Metal; and floating upon the Surface, as a lighter Soap, leaves the heavier Metal, now freed from its Sulphur, to fall to the Bottom, in the Form of a Regulus, whilſt the Alcali has no Entrance into, or Power upon the Metal. Hence, therefore, if there be any Doubt, whether any foſſil Glebe or Ore contains Sulphur, the Way is to grind and melt it with fixed Alcali, for thus the Alcali will manifeſt the Sulphur by the Colour and Smell produced.

SULPHUR DISSOLVED IN VOLATILE ALCALI.

Mix any ſtrong alcaline Spirit, whether prepared from Sal Ammoniac, Harts-horn, Blood, or the like, with pure Flowers of Sulphur; diſtil and cohobate, by which means the Sulphur will be diſſolved; or if the Mixture be long kept in a cloſe Veſſel, and frequently ſhook, by this Method, alſo, a golden Tincture may be obtain'd.

REMARKS.

This Proceſs ſerves to ſhew the Power which volatile Alcali has upon the acid of Sulphur, and the conſequent Change thereof. But whether the Tincture poſſeſſes ſuch great medicinal Virtues, eſpecially in Diſeaſes of the Breaſt, as an eminent Chymiſt imagined, may be juſtly queſtioned.

THE SOLUTION OF SULPHUR IN ALCOHOL.

Take Sulphur firſt opened by fixed Alcali, as in the laſt Proceſs but one, and whilſt it remains ſtill hot from the Fire, and conſequently dry, grind it fine in a hot and dry Mortar; put it into a dry Glaſs, and pour pure Alcohol thereon, ſo as to float five Inches above it. The Alcohol thus perfectly diſſolves the Sulphur, as ſoon as it comes in Contact with it, into a rich, gold-colour'd, unctuous Liquor, which by ſhaking, becomes ſtill richer. Let the Tincture be decanted clear from its Fæces, pour freſh Alcohol upon the Remainder, and this being again tinged, ſeparate it, and repeat the Operation, till the Alcohol becomes tinged no longer. Keep all the Tinctures mixed together; they make a Liquor that has a very particular Smell, though not ungrateful, but with ſome Fragrance. It is of an exceeding aromatic heating Taſte, and of a correſponding medicinal Virtue; the Fæces left behind are grey-coloured, ſaline and earthy.

REMARKS.

Alcohol will not touch native Sulphur, though ever ſo long digeſted therewith; but as ſoon as the Sulphur is opened by Alcali, it is then eagerly taken up by Alcohol; ſo that I ſcarce know any quicker Solution. Hence we learn the Power that Alcalies have upon Sulphur, for procuring Entrance to Alcohol. Sure, therefore, Sulphur frequently lies concealed in many foſſile Glebes, but eſpecially in Ores; whence it happens, that a ſimple Tincture of Sulphur has often been ſold for the moſt ſecret and valuable metallic Tincture, even to Princes; and I remember a boaſted Tincture of Gold thus put off for *Aurum potabile* at a high Price. This Tincture was made by mixing Gold with crude Antimony, and the Alcali of Tartar, or *Glauber*'s Alcaheſt, melted and ſtirred together; then the whole being afterwards bruiſed, and brought to Powder, it afforded a golden Tincture with Alcohol; but this, I ſay, was a mere Tincture of Sulphur; for the Gold here remains unchanged: But Antimony abounds with Sulphur, and in melting, the Alcali attracts this Sulphur, ſeparates it from the metalline Maſs, and opens it; then the Alcohol being added to the whole ground Maſs, extracts only the ſulphureous Part opened by the Alcali, and leaves the Gold, or metallic Part of the Antimony, perfectly untouch'd. This Obſervation is of infinite Uſe in examining numerous other ſham Tinctures; for as ſoon as a ſkilful Artiſt knows that fixed Alcali is employed in making them, he knows they muſt proceed from Sulphur; becauſe the metallic, or as the Chymiſts call it, the mercurial Part, is never touch'd by vegetable Alcali. In the mean time, our Tincture of Sulphur affords a wonderful warming Medicine, that cauſes Eructation, reſiſts Acids, and cuts Phlegm; a few Drops of it being taken upon an empty Stomach, in Mead, *Spaniſh* Wine, or any proper Syrup, which it thus turns white, ſo as to be called the Milk of Sulphur. But I could never diſcover its antiphthiſical Virtue, as a laſt Refuge in ulcerated Lungs, though I have diligently ſought for it; notwithſtanding the great Doctor *Willis* has wonderfully recommended it in this Diſtemper; but I judge ſuch Preparations ſhould be more ſparingly praiſed by Phyſicians.

THE SYRUP OF SULPHUR.

Take a Dram of Sulphur opened with Alcali; dilute it with thrice its Weight of Water, wherein it almoſt wholly diſſolves; add to the Solution twice or thrice its Weight of Sugar, a little boiled; mix them together, and thus a kind of Syrup of Sulphur is prepared, containing the Virtue of the opened Sulphur, and may thus be conveniently employed for medicinal Uſes. It is made more expeditiouſly by mixing the Tincture with ſix Times its Weight of the Syrup of Liquoriſh, or the like Syrup.

REMARKS.

What Opinion Phyſicians ſhould have of this Compoſition we hinted above, in conſidering the Tincture of Sulphur. The Syrup is heating, drying, and ſtimulating, which are Properties that do not ſuit Coughs and Conſumptions; eſpecially where the Body is worn down, and attended with conſtant Sweats. But hence we advantageouſly learn, how wonderfully the Powers of Foſſils may be concealed in almoſt every Thing; for if any foſſile Glebe, rich in Metals and Sulphur, be firſt gently waſhed, ground to Powder, calcined with fixed Alcali; and afterwards diſſolved in Water, Syrup, Wine, Alcohol, or other Liquors, the alcaline ſulphureous Part eaſily diſſolves, and lies concealed. Whence the Liquor receives ſome particular Virtue, which ſhould be carefully examined before the Liquor is uſed internally.

SULPHUR PRODUCED FROM OIL AND ACID.

Take four Ounces of pure rectified Oil of Turpentine, put it into a Retort, and let fall thereon by a Drop at a Time, an Ounce of highly rectified Oil of Vitriol; ſhake the Retort, after the Addition of each Drop, that it may be thoroughly mixed. The Liquor will now heat, ſmoke, grow red, and exhale a variable Odour. After the whole is thoroughly mix'd, digeſt it for eight Days; then apply a capacious Receiver, and diſtil in a Sand-furnace, the Juncture being well luted; a new and particular oily Liquor will come over. The Matter at the Bottom appears firſt like a Fluid Bitumen, but gradually thickens, and at length becomes pitchy, and bituminous; the Liquor that comes over is fetid, ſulphureous and ſuffocating, if received into the Lungs. If the Diſtillation be carefully carried through with ſucceſſive Degrees of Fire, there will at length ariſe a true Sulphur into the Neck of the Retort, as may appear from its Form and manner of burning.

REMARKS.

Hence we learn the artificial Method of preparing Bitumen and Sulphur; and that the fix'd Acid of Vitriol, Alum, and burnt Sulphur, is the incombuſtible Baſis of Sulphur, while the other Part is the combuſtible pure Oil; which two, by their intimate Union, compoſe Sulphur. If this factitious Sulphur be burnt, its oily Part affords a Flame without Smoke; and the other Part, in the burning, affords an acid, cauſtic, ſuffocating Vapour, which is preſervative and ponderous, to

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as not to rise high, and if condensed by a Glass Bell, it drops down into Oil of Vitriol, exactly like that of the natural Sulphur. A pure inflammable Oil seems to be collected in Sulphur, such as can scarce be otherwise obtained; whilst the gross, uninflammable, terrestrious, or other saline Matter is excluded in this Combination; no other Acid, produced by Nature or Art, will make Sulphur by mixing with Oil. The Acid of Vitriol, wherever it be, or wherever subtilely concealed, joins with any inflammable Oil so as to make Sulphur. Tartar of Vitriol, *Glauber*'s Sal Mirabile of Sea-Salt, and of Nitre, the Salt of Vitriol, burnt Alum, and other Bodies containing this Acid, as often as they are, by Means of it, joined with an inflammable Oil, always afford true Sulphur. Hence this Acid alone has the Property of producing Sulphur, whilst all inflammable Oils serve therewith for the same Purpose; and hence Sulphur can never be produced where this Acid did not pre-exist; whence numerous obscure Particulars may be understood in the chymical History of Fossils and Metals; and, therefore, whoever would explain them, should remember what is here delivered. To give an Example from *Becher*; Melt *Glauber's* Sal Mirabile in the Fire, throw powdered Wood-Coals thereon, a sulphureous Flame arises, and a brown Mass is left at the Bottom, which being dissolved in Water, and precipitated, a true sulphureous Matter is obtained. Here it is plain, that the Oil of Vitriol in the Sal Mirabile lays hold of the inflammable Matter in the Coal, and becomes Sulphur; therefore, in determining the Effect of any chymical Operation before hand, we must carefully examine whether any of the Matters imployed, either manifestly, or secretly, contain the Oil of Vitriol, Alum, or Sulphur, and whether any inflammable Matter is, also, applied; for in this Case, the Action of Sulphur is immediately produced.

SULPHUR OBTAINED FROM ALCOHOL AND ACID.

Into a tall Glass Body put eight Ounces of Alcohol, prepared without Alcali; let fall to it, by a Drop at a Time, highly rectify'd Oil of Vitriol; shake the Glass well after each Drop, and rest a little, otherwise a great Heat, and suffocating Vapour would arise; continue thus, by Degrees, till an Ounce of the Oil of Vitriol is added. The Mixture will have the sweet Fragrance of Southern-Wood, which will spread over the whole Place, but ought to be avoided, as being suffocating; if received in a small Quantity into the Lungs, it causes a violent Cough; and if received in a large Quantity, at once, I judge it might prove mortal: The Liquor will become reddish. Let it now be gently digested, in a close Vessel, for five Days; then distil it gently in Glasses close luted; a wonderful, subtile Spirit will come over, which proves incredibly suffocating, and is so much the more dangerous, as, by its grateful Smell, it treacherously leads one to take it in freely. Continue this gentle Distillation for some Time, till the mixed Matter grows black; then the Spirit which last came over will be exceeding sweet and fragrant; and now there will begin something acid to arise, which was not in the former Liquor; then change the Receiver, still keeping a gentle, but constant Fire, that the Liquor may rise slowly; for if the Fire was to be urged too strongly, but for a Moment, the Matter would immediately swell and rarify, so as to come over at once into the Vessels, and disturb the Operation. If the Distillation be thus gently continued, there arises an aqueous, fetid Liquor, and along with it another that is ponderous, pure, limpid, and keeping separate and unmixed with the Phlegm. After all this is come over, and about one Half of the Whole, again change the Receiver, and distil by Degrees of Fire, up to the highest; a fetid Liquor will arise, that does not mix with the former ponderous Kind; at the Bottom of the Vessel remains a black, brittle and uninflammable Matter, though otherwise in some Degree approaching to Sulphur; so that by these Means we have three distinct Liquors arising from this Mixture, as, also, a suffocating Vapour, and a fixed *Caput Mortuum*, of a very particular Nature, remaining behind.

REMARKS.

The strongest Fossil Acid, by thus barely mixing with the most subtile vegetable Oil, or Alcohol, causes such a violent Heat, as, if imprudently mixed, almost to take Flame, and produce a considerable Effervescence. At the Instant of mixing, there arises a sweet Odour, which diffuses itself widely; but by a long Digestion, the disagreeable Odour of Garlick is produced. The sweet suffocating Odour is attended with an Acid. Here, 1. a spirituous, fragrant, suffocating, inflammable, and tartish Liquor is separated; whereas the Oil of Vitriol was a little before so fixed, and no way fragrant. 2. There comes over a fetid, sulphureous, aqueous, uninflammable, acid Liquor, though neither the Alcohol nor Oil of Vitriol contain much Water. 3. There comes over a limpid, ponderous Liquor, that smells and tastes gratefully aromatic, but will not mix with the two former, yet dissolves in Alcohol, and then extracts somewhat of a Tincture from calcined Gold, and hence is esteem'd the philosophical Oil of Vitriol. It is certainly a dulcified Oil of Vitriol, concerning which *Isaac Hollandus*, *Gesner*, Mr. *Boyle*, but particularly Dr. *Hoffman*, may be consulted. The black Fæces being diluted with Water, return almost into acid Oil of Vitriol. We have here a great many unexpected Phenomena from a simple Combination; perhaps this may be the philosophical Spirit of Wine, which, by its Fragrance, calls in the Neighbours while it is made, according to *Lilly*'s Account of it. Perhaps it is the ducified, fragrant Spirit of Vitriol of *Paracelsus*, which he esteemed powerful in the Falling Sickness; and possibly the Tincture prepared with it from Gold is a Species of *Paracelsus*'s *Aurum Potabile*, digested in the Stomach of the Ostrich. Certainly this Operation may excite the truly Curious to examine with Care, whether there be any thing of these great Secrets concealed therein. We find it does not produce true Sulphur, but only certain Properties of it. *Boerhaave's Chymistry.*

As Sulphur cannot be resolved into its different Principles in close Vessels, the Distillation of it remained very imperfect, till M. *Homberg* completed it. His Method, as explained in the Memoirs of the Royal Academy of Sciences for the Year 1703, is this:

Take Flower of Brimstone, four Ounces; Oil of Turpentine, a Pound; digest them in a Matrass over a Sand-heat for eight Days, till the Sulphur is dissolved, the Liquor appearing of a dark red Colour. Then, if the Solution be set in a cool Place, in a Vessel cooled by Art, about three Fourths will turn to yellowish Crystals, the other fourth Part remaining dissolved in the Liquor. The Crystals being separated from the Tincture, let a Pound of fresh Oil of Turpentine be poured upon them, and thus continue to repeat all the Parts of the Operation till the Flower of Sulphur be quite dissolved; mix all the Tinctures together, and distil them in a large Glass Retort over a gentle Fire; the greatest Part of the Oil of Turpentine will come over limpid, together with a small Portion of a whitish and very acid Liquor; but as soon as the Drops from the Neck of the Retort appear red, change the Receiver, and increase the Fire by Degrees, till nothing more will come over. Near the End of the Operation, a thick, browniish Oil will appear, mixed with a small Portion of a whitish, acid Liquor. In the Bottom of the Retort is found a black, rare, spongy Earth, or *Caput Mortuum*, in some Measure foliaceous, shining, insipid, and remaining fixed in the most vehement Degree of Fire. Let the thick, dark-coloured, and bituminous Oil be put into another Glass Retort, and when the Remains of the Oil of Turpentine, and of the white acid Liquor, are all drawn off by a very gentle Heat, red Drops will begin to rise; then immediately remove the Fire, and upon the bituminous Matter in the Retort pour rectify'd Spirit of Wine, which being drawn off again, in a gentle Heat, will have a very fetid Smell; pour fresh Spirit on the Remainder, and continue this Process till the Spirit that comes off has lost all its unpleasant Smell; and the black Matter which then remains in the Retort will Smell agreeably enough, and is the true bituminous and inflammable Part of Sulphur.

It is here to be observed, that only a certain Portion of this bituminous Substance is dissolvable in Spirit of Wine, another Part remaining which is soluble neither by that Spirit, nor by any lixivial Liquor, but only by essential distilled vegetable Oils. This indissoluble Substance is a strong Cathartic given in the Quantity of two or three Grains; but that Portion which yields to the Spirit of Wine is an excellent Balsam for the Lungs.

By this Analysis, three very different Substances are obtained from Sulphur, almost in equal Quantities, one acid, the second bituminous, and the third earthy and fixed. The acid Liquor is not different from Spirit of Vitriol, and when saturated with Salt of Tartar, is formed into Crystals like those of vitriolated Tartar. This Similitude of these two Liquors is farther confirmed by the artificial Production of Sulphur.

Dioscorides informs us, that Sulphur is good in Coughs, when mixed with an Egg; and *Hippocrates* used it in hysterical Affections accompanied with Coughing, by way of Fumigation, sometimes alone, and sometimes mixed with other Substances. The internal Use of Sulphur is recommended by Physicians in Diseases of the Lungs, of which it is, by way of Eminence, termed the Balsam; because it promotes Expectoration, and clears and strengthens that Organ, and is therefore very beneficial in a Phthisis, Asthma, and Catarrh. It has in all Ages been a famous Medicine in cutaneous

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neous Diſeaſes, Scabs, and Pſoræ, uſed inwardly or outwardly. Externally applied, it diſcuſſes hard Tumors, ripens and digeſts Buboes; but no Medicine prepared with Sulphur is thought to be agreeable to Women with Child, becauſe it is ready to cauſe Abortion. Inwardly taken, it is laxative, and promotes inſenſible Perſpiration, as may be perceived by the ſulphureous Smell of ſuch Perſons as have taken it, and by the browniſh or black Colour which it gives to the Gold or Silver they carry about them. It is therefore very quickly and readily diffuſed through the whole Body, and, by its balſamic Parts, it blunts and entangles the acrid Salts, with which the Fluids abound in theſe Diſeaſes; and thus reſolves their native, mild, ſoft, and oily Qualities, by which Means it readily cures ſmall Ulcers in the Lungs and Skin.

Though Sulphur may be given inwardly, even in a groſs Powder, yet it is ſeldom ordered without ſome Preparation. It may be puriſied different Ways; ſome put it into Water with melted Wax, which ſwims at the Top while the Sulphur falls to the Bottom; and by repeating this Mixture till the Sulphur begins to acquire a red Colour, it is then thought to be more defecated. Some boil it in Water for ſeveral Days, changing the Water every now and then, and afterwards they ſet it for two Hours in hot Smoke, that ſome Fumes may exhale, and the remaining pale yelloviſh Sulphur they judge to be very pure. Others make Milks and Magiſteries of Sulphur, which they think much preferable to common Sulphur; but all theſe Preparations either change the true Nature of Sulphur, or elſe are of no Effect at all. The beſt Way to purify it, is by Sublimation, or the Reduction of it to Flowers, by which common Method it is freed from the earthy or metallic Parts that may have been mixed with it. Sulphur thus prepared may be ordered in the Diſeaſes already mentioned, in the following Manner:

Take Flower of Brimſtone, four Ounces; Sugar of Roſes, one Ounce; Syrup of Maiden-Hair, a ſufficient Quantity to make a ſoft Opiate; of which three Drams, or half an Ounce, are to be taken every Morning faſting, and every Evening, at the greateſt Diſtance between Meals, for a long Continuance of Time, in the Scabies and Aſthma.

Take Flower of Brimſtone, an Ounce; white Sugar, four Ounces; Roſe-Water, a ſufficient Quantity: Boil them according to Art, and make them into Tablets, or Lozenges; to be taken at a great Diſtance from Meals, in Coughs, Conſumptions, and Aſthmas.

Take Flower of Brimſtone, two Drams; mix it well in a poched Egg, and ſwallow it early in the Morning faſting, and repeat it again in the Evening, for the Itch, rubbing the Body with the following Ointment:

Take the Roots of wild, ſharp-pointed Dock, and Elecampane, of each two Ounces; freſh Butter, four Ounces; Flower of Brimſtone, an Ounce and half: Mix them together, and make them into an Ointment.

As the powerful Acid contained in Sulphur is very prejudicial to the Lungs, Chymiſts, in order to make it a more ſafe, and equally efficacious Medicine, have endeavoured to mitigate or inviſcate that acid Salt, by the Preparation called Balſam of Sulphur, for which, on any Quantity of Flower of Brimſtone, they pour as much Oil of any Kind as will ſwim three or four Fingers Breadth above it, and then digeſt them in a gentle Sand-heat, till the Oil begins to look red or brown. This Liquor, when cold, is ſeparated from the Fæces, and kept for Uſe. In this Manner are the different Balſams of Sulphur prepared; ſuch as the *Balſamum Aniſatum, Fœniculatum, Terebinthinatum, Juniperiſatum, Succinatum*, ſo called from the different Oils uſed. The Doſe is from ten Drops to thirty in Aſthmas, immoderate Coughs, Ulcers in the Lungs, nephritic Pains, and Ulcers in the Kidneys, and Bladder. From this Balſam are prepared the balſamic Pills of *Morton*, which in ſlow, ſcorbutic, or ſcrophulous Phthiſis, are attended with a very ſmall Fever, if any at all; and where the expectorated Matter is glutinous, as in an Aſthma, are very beneficial, both in the Beginnings and ſubſequent Stages of the Diſeaſe.

Take of Powder of Millepedes, three Drams; Gum Ammoniac, well purified, a Dram and an half; Benjamin Flowers, two Scruples; Extract of Saffron, and Balſam of *Peru*, each ten Grains; Terebinthinate Balſam of Sulphur, a ſufficient Quantity: Mix and make them into Pills, which muſt either be gilt or rolled in Powder of Liquoriſh. The Doſe is fifteen or eighteen Grains, to be repeated three Times a Day, at medicinal Hours.

But the beſt Balſam of Sulphur that has ever been prepared, is undoubtedly that of the great *Homberg*, made by extracting a Tincture, with Spirit of Wine, from the bituminous Part of Sulphur, freed from all its acid and earthy Parts. This Tincture, evaporated over a gentle Fire to the Conſiſtence of a Syrup, is the genuine Balſam of Sulphur; and of excellent Uſe, not only in Diſeaſes of the Lungs, but in all Diſorders in which the animal Functions are diſturbed by acrid Salts in the Fluids. It is taken a few Drops at a Time, in any Syrup, or licked from the Palm of the Hand.

The Spirit of Sulphur is proper in burning, malignant, and peſtilential Fevers. It quenches Thirſt, prevents the Putrefaction of the Fluids, and calms the Effervescence of the Blood and Bile, not by coagulating the whole Maſs of Fluids, as the other mineral, acid Liquors, but only by entangling the ſulphureous Parts: For, according to *Borelli*'s Obſervation, a Dram or two of Spirit of Sulphur, injected into the Jugular Vein of a Dog, did not kill the Animal; but the ſame Quantity of Aqua-fortis, even diluted with Water, throws a Dog into terrible Convulſions, of which he ſoon dies; and upon opening his Body, the whole Blood contained in the Veins and Heart is found in grumous Clots. Moreover, Spirit of Sulphur attenuates groſs, viſcid Humours, and thereby often removes Obſtructions; whence it is recommended by ſome in Aſthmas: However, I do not think it proper in phthiſical Caſes, becauſe, like other acid Liquors, it excites Coughing. It is given only in a few Drops at a Time, ſufficient to give a grateful Acidity to any proper Vehicle; and by repeating this Doſe at the Beginning of every Paroxyſm, intermitting Fevers are often cured by it.

Spirit of Sulphur, either by itſelf, or mixed with Honey of Roſes, cures ſimple Aphthæ in a very ſmall Time, provided there be no Inflammation, by only touching theſe little Ulcers with the Spirit or Mixture, imbibed by a Bit of Cotton, or Linnen Rag. *Riverius* is of Opinion, that it is an excellent Remedy in putrid Fevers; and that it is found by Experience to cool, open, reſiſt Putrefaction, prevent the Inflammability of the Fluids, and quench Thirſt. But it is never to be given in Pleuriſies, Peripneumonies, Spitting of Blood, Phthiſis, and other Diſeaſes of the Lungs, except the Obſtruction ariſes from a thick, pituitous Matter, in Inflammations of the Stomach, Dyſentery, bloody Urine, and Ulcers of the Kidneys and Bladder. *Geoffroy.*

SUMA. Tartar. *Rulandus.*

SUMACH. A Name for the *Rhus*; *folio Ulmi.*

SUMEN. The Hypogastrium.

SUMMITATES. The Tops of Plants.

SUPERBA. A Name for the *Caryophyllus*; *tenuifolius*; *plumarius*; *Flore pleno*, *purpuraſcente.*

SUPERBUS MUSCULUS. A Name for the *Elevator Oculi.*

SUPERCILIA. The Eye-brows.

SUPERCILIUM ACETABULI. The Margin of the Acetabulum, which ſee.

SUPERCOMPOSITIVA SECTA. The Epiſynthetic Sect of Phyſicians among the Antients. See the Preface.

SUPEREXCRETIO. The ſame as HYPERCRISIS.

SUPERFICIES, in *Rulandus*, is the White of an Egg.

SUPERFŒTATIO. Superfœtation. See Epicyesis.

SUPERGEMINALIS. The *Epididymis* is ſometimes thus call'd.

SUPERGENUALIS. The Patella.

SUPERHUMERALIS. The ſame as Epomis.

SUPERIMPRÆGNATIO. The ſame as Epicyesis.

SUPERLIGULA. The Epiglottis.

SUPERMONICUM. This is explain'd by *Dorneus*, Ænigmatical.

SUPERPURGATIO. The ſame as Hypercatharsis, which ſee.

SUPERSCAPULARIS SUPERIOR. A Name for the *Muſculus* Supraspinatus.

SUPERSCAPULARIS INFERIOR. A Name for the *Muſculus* Infraspinatus.

SUPERVACUATIO. The ſame as Hypercrisis.

SUPIM. The Name of a *Chineſe* pomiferous Tree, of no Uſe in Medicine, that I know of.

SUPINATOR LONGUS, SIVE MAJOR.

This is a long, flat Muſcle, lying on the external Condyle of the Os Humeri, and on the convex Side of the Radius, from one End to the other.

It

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It is fix'd by fleshy Fibres to the external inter-muscular Ligament, and to the Crista of the external Condyle of the *Os Humeri*, for five or six Fingers Breadth above the Condyle, between the *Brachiæus* and *Anconæus Externus*; from thence it runs along the whole convex Side of the Radius, and is inserted by a flat, narrow Tendon, a little above the Styloide-Apophysis in the Angle between the concave and flat Sides of the Extremity of this Bone.

The *Supinator Longus* was believed to be concerned only in the Motion of Supination, till *Heister* very justly observed that it was, also, a Flexor of the Fore-arm: And indeed, a very small Degree of Attention to its Insertions and Situation, must convince us, that it is much better fitted for this last Use than for the first; for before it can act as a Supinator, the Hand must be in the greatest Degree of Pronation; and even then, it can do little more than bring the Radius back to its natural Situation, without compleating the Supination, excepting it be by Jerks. It would, therefore, be much more properly named *Radialis Longus*, than *Supinator Longus*.

This Muscle may bend the Fore-arm, by Means of the Connexion the Radius with the Ulna, in several different Situations; that is, when the Fore-arm is fully extended, the Radius being either in a Motion of Pronation or Supination, or in a middle Situation between both.

On this Occasion it is proper to observe, that the Method of examining the Uses of the Muscles on dead Bodies, by pulling them in order to move the Bones in which they are inserted, is very uncertain, except particular Care be taken to pull them in their true natural Direction, which is often different from what it appears to be when they are dissected, by reason of the lateral Connections, and *Fræna*.

Supination performed when the Fore-arm is fully extended, is commonly attributed, in part, to the Rotation of the *Os Humeri*, by Means of its Articulation with the Scapula, as if this Supination, when the Fore-arm is extended, were greater than when it is bent; whereas the Difference in Supination is really but very small, though it be very considerable in the Motions of Pronation.

SUPINATOR BREVIS, SIVE MINOR.

This is a small, thin, fleshy Muscle, surrounding a great Portion of the upper third Part of the Radius.

It is fixed by one End to the lower Part of the external Condyle of the *Os Humeri*, to the external lateral Ligament of the Joint, to the annular Ligament of the Radius, and to Part of the lateral Eminence in the Head of the Ulna.

From thence it passes obliquely over the Head of the Radius, covering some Part of it, and running down upon, and in some Measure surrounding the Neck, it turns in under the bicipital Tuberosity, and is inserted by the Side of the inter-osseous Ligament in the Inside of the superior Quarter of the Bone, and even a little lower. In some Subjects we may observe the Marks of the Passage of this Muscle over the Outside of the Bone. It makes an Angle with the *Pronator Teres*, resembling the *Roman* V.

The *Supinator Brevis* seems to have no other Use than what is expressed by its Name; and as it is a short, small Muscle, it must be very weak. Its Use is principally owing to the Obliquity of its Fibres; but still neither this nor the former Muscle would be able to perform Supination, where a great Force is required, without the Assistance of the Biceps, which is the most powerful of all the Supinators, and the principal Actor in this Motion. *Winslow's Anat.*

SUPPEDANEA, or SUPPLANTALIA. Topical Medicines apply'd to the Feet.

SUPPOSITORIUM.

A Suppository, is a Kind of medicated Cone, or Ball, which is introduced into the Anus for opening the Belly. Suppositories are usually made of Soap, Sugar, Allum, or a Piece of Tallow-Candle, about the Length of a Thumb, and the Breadth of a Finger; though they may be made smaller for Children, and sometimes a little thicker for Adults. Suppositories are sometimes compounded of Ingredients adapted to the Disease, and Circumstances of the Patient, as of Honey, Salt, Powder of Aloes, Colocynthis, and the like. If one Suppository does not occasion a Stool, it must be supplied by a stronger; and if that does not succeed, the Repetition must be continued till the Effect required is produced. They are sometimes lubricated with Oil or Butter, that they may be introduced with greater Ease. Some use a Lozenge of Sugar, or a small Piece of thin Linnen Cloth rolled up, with a little hard, salt Butter, which greatly loosens the Belly. For Ulcers of the Rectum, the best Suppositories are made of Honey of Roses, Powder of Mastich and Myrrh, or of Colophony. The stronger Suppositories, which are composed of acrid and stimulating Ingredients, are advantageously used in promoting a difficult Birth, if the Infant be in a natural Position, and, also, for expelling the Secundines, when they are tenaciously retained in the Uterus. In exhibiting them, the Patient should be put in the same Posture as in giving a Clyster, and the Suppository must be gently thrust up the Anus with the Finger.

SUPPRESSIO. A Suppression, or Retention; it is generally us'd relative to Urine, or the *Menses*.

SUPPRESSIONIS IGNIS. A Fire of Suppression, in Chymistry, is, when the Vessel containing the Ingredients to be acted upon is covered with Sand, upon which live Coals are laid, so that the Matter contain'd in the Vessel may be acted upon both from below and above.

SUPPURANTIA. Suppurative Medicines.

SUPPURATIO.

If an Inflammation, by Neglect, too late Use, or ill Success of the Methods, directed under the Article INFLAMMATIO, tends to a *Suppuration*, and it appears so to do by the Signs there given, the Indications will be,

1. To maturate the crude Humour, as soon as may be, into one similar Substance.
2. To mollify the same, with the adjacent Parts.
3. To attract it outwards.
4. To procure a Vent for the concocted Pus.
5. To mundify the Place.
6. To manage the rest of the Cure as a Wound.

An Abscess, ἀπόστασις, ἀπόστημα, *Abscessus*, with the antient Physicians, had various Significations. *Hippocrates, Epidem.* 1. gives that Name to the Change of one Disease into another, when he says, ἐξ ἄλλων πυρετῶν καὶ νοσημάτων ἀποστάσιες τεταρταῖαι ἐγένοντο; "Of other Fevers and Diseases there was a "Mutation into Quartans". The Name *Abscess* was, also, given to those Efforts of human Nature, by which some noxious Matter was separated from the Blood, and either discharged from the Body, or deposited on some Part. The Antients, therefore, divided these Kinds of *Abscesses* into such as were form'd, κατ' ἔκχυσιν, "by Efflux", [See ECROE] and those which were form'd, κατ' ἀπόθεσιν, "by Deposition" *Galen.* 1. *Com.* 2. *in* 1 *Epid.* Thus, for Example, in a Peripneumony, the Matter of the Disease is observed to find a Vent by Spitting, by a bilious Flux of the Belly, or by Plenty of thick Urine with much Sediment, and in these Circumstances there is an *Abscess* by an *Efflux*. But where there is no such Excretion, and yet from the salutary Signs which appear, we can predict the Recovery of the Patient, we are directed by *Hippocrates, Lib. Prognost.* to expect an *Abscess*, either at the Ears, or towards the inferior Parts of the Body, the Matter of the Disease being deposited in those Parts. But at present we understand by an *Abscess*, according to the common and received Sense of the Word, the Transition of an Inflammation into a Suppuration, and a Collection of Pus thence generated in some Part of the Body. In this Sense is an *Abscess* defined by *Galen, M. M. ad Glauc. Lib.* 2. *Cap.* 21, "An Affection in which Bodies that were "before in mutual Contact, secede from one another. "Hence it is necessary that some void Space should be left "in the Middle, which will contain some flatulent or hu- "mid Matter, or a Mixture of both. Some Inflammations, "and many erysipelatous and phlegmonoide Tumors are "changed into an Abscess." For while the obstructed Extremities of the inflamed Vessels are separated by the Force of the vital Fluid, which presses on them behind, they become intermingled with the effused Humours, and being cherished by the Heat of the Place, pass into Pus, which by removing at a Distance from one another the Parts which were before contiguous, makes Room for itself. But since a true Phlegmon almost constantly resides in the Panniculus Adiposus, this Membrane, which easily gives Way, may by a Collection of Pus be sometimes distended into a very great Tumor. Now, that such a preternatural Cavity is formed by a Collection of Pus, after the Phlegmon has been suppurated, which did not exist before, is demonstrated, in that if you make an Incision with a Lancet into the inflamed Part, before the Pus be generated, there will be an Eruption either of Blood, or some thinner, Ichorous Fluid, and the whole Tumor appears solid: But if the Incision be made after Suppuration, there appears a manifest Cavity after the Effusion of the Pus, occasion'd by a Secession of the Parts which were before contiguous.

The best Cure of an Inflammation, is undoubtedly by Resolution; but when this is out of the Power of the Physician or Surgeon to effect, as is frequently the Case, there remains nothing but Suppuration, since other Mutations or Consequences of an Inflammation, which are either a Gangrene or Scirrhus, are much worse. If, therefore, from the Signs enumerated under the Article INFLAMMATIO, it appears that

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that the Inflammation is of such a Nature, that a Resolution cannot reasonably be expected; or though perhaps there were some Hopes in the Beginning, that the same might be effected; yet through unsuccessful Application, or Neglect, or too late Use of proper Remedies, (after the Impetus of the vital Liquid, by a continued Pressure for several Days together, has consolidated the obstructing Molecules, and rendered them quite irresoluble by expressing the most fluid Parts) all Expectations of a Resolution are absolutely vain and fruitless; the curative Indications are to be directed in such a Manner, that by forming a Suppuration as soon as possible, all the Parts, both in the Fluids and Solids, which are corrupted by the Inflammation to such a Degree that they can no longer be subservient to the Laws of Health, may be removed out of the Way; and this being effected, that afterwards the lost Substance may be restored, and the separated Particles be reunited and restored to their natural Cohesions.

1. The material Cause of the Disease, as long as it continues in such a Disposition as qualifies it for causing or increasing the Disorder, is called *crude*; but when by the vital Forces, its own Nature, or proper Medicines, it becomes changed in such a Manner as to be more conformable to the Laws of Health, and less injurious to the natural Functions, it is termed *concocted*; and that State of the Disease, in which this material Cause is so alter'd as to be less pernicious, is called *Maturation*, or *Concoction*. Now this *Crudeness* may take Place as well in the Fluids as Solids, and consequently the same may be said of *Maturation*. In a Phlegmon we bestow the Epithet *crude* on all Matter which so obstructs as to be incapable of Resolution, and every Vessel so obstructed that it cannot be open'd, comes under the same Denomination. In order, therefore, to the Restitution of Health, this obstructed Vessel, together with its contained stagnant Matter, must be separated from the other quick and pervious Vessels, and with the effused Liquids be changed into one homogeneous Humour called *Pus*. As long, therefore, as the Cohesion of the obstructed Extremity, with the other Parts of the Vessel which are pervious, remains undissolved, the vital Force acting upon the Place obstructed, causes an Increase of all the Symptoms of the Inflammation; but when a Separation is effected, and a free Passage is opened for the Humours through the dilacerated Extremity of the Vessels, it is very reasonable to conclude, that all these bad Symptoms must be very much diminished. A *Crudeness*, therefore, is known by the Increase or Height of all the Symptoms; and *Maturation*, on the contrary, by their Remission. We have an elegant Description of the whole Affair in *Celsus*, *Lib.* 5. *Cap.* 28. where treating of Abscesses, he says, "*Crude* is what has in it, as it were, a great Motion of "the Veins, attended with a Weight, Heat, Distention, "Pain, Redness and Hardness; and if the Abscess be con"siderably large, there is a Horror, with a slight conti"nual Fever; but if the Suppuration be deeply seated, in"stead of those Symptoms which otherwise appear on the "Skin, the Patient is molested with pungent Sensations. "When there is a Remission of the beforemention'd Symp"toms, and the Place itches, and becomes whitish, or "somewhat livid, the Suppuration is maturated."

2. The Hardness and Resistance of the inflamed Part proceeds from the close Compactness of the Liquids and Solids. [See INFLAMMATIO] and while these continue, the Disease is justly said to be *crude*. But *Maturation* requires a Separation of the obstructed Extremities from the other Parts of the Vessels. The more, therefore, the Parts are soften'd, and, as it were, withered, the sooner, and with the less Pain, may this Separation be effected. But if the Part be affected with a violent Phlegmon, it is generally observed, that though the Middle of the diseased Place begins to soften, all the circumjacent Parts retain their Hardness, for which Reason they are to be treated with the like Emolients, as *Celsus* advises us in the Chapter before quoted, where he says, "If "the Parts about the Phlegmon are harder than ordinary, "they are to be mollify'd with Fomentations of bruised "Mallows, or Seed of Fenugreek, or Linseed, boiled in "*Passum*."

3. If the Pus generated from the Suppuration of the inflamed Part settles about the Superficies of the Body under the Skin, there is generally a spontaneous Elevation of the Skin into a Tumor, especially if the Place be treated with mollifying and relaxing Medicines: But if the Pus should have a deeper Seat, the Danger is the greater, lest it should have Sinuses in the Panniculus Adiposus; or if it be latent in the interior Parts, it is to be feared that it will communicate a purulent Contagion to the Viscera. As soon therefore, as by the Signs described under the Article INFLAMMATIO, it appears that the Inflammation tends to a Suppuration, we are to try all Methods for deriving the Pus to the exterior Parts. *Celsus*, *Lib.* 4. *Cap.* 6. treating of the Cure of a Pleurisy, for a violent and recent Pain commends Bleeding; but if that proves useless, or is administer'd too late, he bids us have "Recourse to Cupping or Scarification: "A Sinapism, also, prepared with Vinegar, may properly "be applied to the Breast, till it raises a Blister, to which a "proper Medicine is to be afterwards apply'd, in order to attract "the Humours to the Place." And speaking of a Peripneumony, *ibid. Cap.* 7. when arriv'd at its Height, he says, "It may be of Service to apply to the Breast Salt, pounded "very small, and mix'd with Cerate, because it slightly cor"rodes the Skin, and diverts the Impetus of the Matter "which infest the Lungs to the exterior Parts. It may be "of good Use, also, to apply a Malagma, of that Kind "which operates by Drawing." If the Pus now totally formed can be conveniently attracted to the exterior Parts, the Event of the Inflammation is not so much to be dreaded: For even in a suppurated Pleurisy, for Instance, the Patient dies either of a Suffocation from a Compression of the Lungs by the Ulcer turgid with Pus, and prominent towards the interior Parts, or of a Rupture of the same Ulcer discharging its Pus into the Cavity of the Thorax, the Consequences of which are an Empyema, Phthisis, and Death. But if the Impostume generated in the intercostal Parts tends towards the superficial Parts, and there rises into a Tumor, an Incision being made therein, and the Pus evacuated, the Patient generally recovers. With this View the antient Physicians irritated the external Parts with stimulating Medicines, or treated them with highly mollifying Cataplasms or Fomentations, in order to divert the Impetus of the Disease towards the exterior Parts.

4. When the Extremities of the obstructed Vessels, with the stagnant Blood contained in them, by Means of Heat, a Mixture of Humours, and long Settlement in a close Place, are chang'd into a pinguious, white, and homogeneous Liquor, a maturated Pus is then said to be form'd. By what Signs we may know the Presence of such a Pus, shall be declared hereafter: But when the Pus is too long confined within this close and hot Place, it grows by Degrees thinner, and at the same Time more acrimonious; and as the small resorbent Veins expand their open Orifices in all the Superficies of the Cavity in which the Pus is contained, they will absorb the same, and, by transmitting it to be mixed with the Mass of Blood, induce a purulent Cacochymy, the Consequence of which may be a hectic Fever and Phthisis. Besides, the Pus being render'd more acrimonious, will much injure the whole Superficies of the Place in which it is contained; and being at the same Time attenuated, will very easily find Ways for itself into the Panniculus Adiposus, the Consequences of which are often very bad Sinuses and Fistulas, which are all owing to a Neglect of procuring in Season a proper Outlet for the concocted Pus. Hence, also, we clearly understand the Difference between the Resolution of an Inflammation, and the Cure of it by a Suppuration: For in the Resolution of the Inflammation, the Matter of the Disease is, by Means of the vital Forces and proper Remedies, alter'd in such a Manner, as to become very like what is of a laudable and wholesome Substance, and qualified for Circulation through the Vessels with the other Humours, without injuring the Functions; so that in this Case no Evacuation is required. But when by Means of Suppuration there happens a Separation of those Fluids and Solids which were corrupted by the Inflammation, they are converted into a mild Pus, though quite different from the Nature of our Humours; for which Reason, when mixed with them, it creates Disorders every where, and excites Fevers, until it be evacuated from the Body, or secreted from the Blood by a Translation, and deposited in some Part of the Body, whence it must again be expelled before a Cure can be effected. It appears, then, that an Evacuation of the concocted Pus is required, and that in a speedy Manner, since the longer it stays, the more acrimonious it becomes. What great Mischiefs and Disorders arise from too long a Detention of Pus in an Abscess, we learn from the Observations of Physicians. A Virgin, forty Years old, had her left parotid Gland suppurated; and on the fourteenth Day of the Disease, the Abscess there generated was elevated to the Bigness of one's Fist. And though in the Beginning of the Disorder the Patient was free from a Fever, and took Care of domestic Affairs, yet at last, for want of a due and seasonable Discharge of the Pus, she was seized with a Fever, attended with very bad Symptoms, as Fainting, Nausea, Watchings, and other pernicious Concomitants, which in a few Days put an End to her Life. The Abscess, indeed, broke of itself a few Days before her Death, but little or no Pus flow'd out of it. *Hilden. Obs. Chirurg.*

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Chirurg. Cent. 1. *Obſ.* 39. A Child of three Months old had an Abſceſs upon its right Shoulder, and the Parents not ſuffering an Inciſion to be made in the Place, the Tumor began to ſubſide of itſelf; but the Pus being reſorbed, was tranſlated to the Pudenda, where it cauſed a mortal Gangrene of theſe Parts. *Ibid. Obſ.* 81. Numbers of the like Obſervations occur in Authors, which ſhew how dangerous it is to ſuffer maturated Pus to continue long incloſed in a Vomica.

5. As long as the ſuppurated Place remains cloſed, it is called a *Cloſe Vomica*; but after an Outlet, whether ſpontaneouſly or by Art, is procured for the Pus, it is called an *Open Vomica*. But the whole Superficies of the Cavity which contained the Pus, was macerated in the ſame; whence it muſt of Neceſſity have been more or leſs injur'd by it, eſpecially if the Pus were by Delay and Heat rendered conſiderably acrimonious. An Union, therefore, and Conſolidation of the ſeparated Parts, or a Reſtitution of theſe which are deſtroy'd, can never be accompliſhed before all that Superficies be reduced to the Condition of a pure Wound; and therefore, the half mortify'd Extremities of the Veſſels, with the half-corrupted Parts of the Panniculus Adipoſus, muſt be ſeparated, and every Thing elſe be done which is requir'd in Wounds. [See the Article VULNUS.] "Ulcers, ſays *Hippocrates*, *Lib. de Ulcer.* before they are cleanſed will not "unite, though their Lips are brought together; nor will "they admit of a ſpontaneous Coalition. Ulcers, alſo, whoſe "circumjacent Parts are inflamed, can never unite as long "as the Inflammation continues. Or if the Parts ſurrounding the Ulcers appear black, or if there be any putrify'd "Blood, or a *Varix* ſupplying an Influx of Blood into the "Place, in ſuch Caſes there can be no Coalition before the "circumjacent Parts of the Ulcer are made whole and "ſound."

6. After Depuration, the Ulcer paſſes into the Nature of a pure Wound, but with Loſs of Subſtance; and therefore a Regeneration of what is loſt, and a Re-union of what is ſeparated, are next to be procured.

Maturation is effected by the Application of ſuch Medicines as,

1. Increaſe Motion in the Part affected, by cheriſhing, ſtimulating, heating, communicating Heat actually or virtually; they have the like Effect on the whole Body, exciting a ſlight Fever.

All Maturation of an inflammatory Crude Matter into concocted Pus, muſt be effected by Means of the vital Forces; for ſoon as theſe fail or languiſh, the Formation of Pus is obſerv'd to ceaſe. And therefore *Hippocrates*, *Lib. de Ulcer.* enumerates among the Signs of Death the Exſiccation or Drying up an Ulcer, whether generated before, or during the Time of Sickneſs: And in the laſt Stage of a Pthiſis, the Spit is diminiſhed, and frequently even ceaſes, for the like Reaſon. Now, the vital Force is eſtimated by the Circulation of the Fluids through the Veſſels. Since then the Extremities of the obſtructed Veſſels are to be ſeparated, together with their ſtagnant Contents, by the Force of the Fluid preſſing upon them forward, the ſpeedieſt Way of effecting this muſt be by augmenting the Strength and Celerity of the Motion of the Fluids through the Veſſels in the Part which requires Suppuration; for in that Caſe, the Fluid projected through the Veſſels will, within a given Time, act upon the obſtructed Extremities with ſtronger and oftener repeated Strokes, and by that Means deſtroy their Coheſion. Hence an increaſed Motion is mention'd under the Article INFLAMMATIO as one Condition requir'd to cauſe a Tendency in a Phlegmon to Suppuration. It is, however, to be obſerved, that too ſwift a Motion of the Liquids through the Veſſels cauſes a ſudden Rupture of the Capillaries, inſtead of a gradual Separation; the Conſequence of which is a Gangrene, inſtead of a laudable Suppuration. A juſt Moderation, therefore, is requir'd, ſo as that the Motion in the Part be greater indeed than, in a State of Health, and yet not exceſſive. Now, the Heat of the inflamed Part, if it be on the Superficies of the Body, or the Fever, in a greater or leſſer Degree, if the Diſeaſe have a deeper Seat, will diſcover whether the Motion ought to be increaſed or diminiſhed. If the Motion be too ſlow or languid, it is to be quicken'd and increaſed, either by the Application of Topics to the Parts affected, or by internal Remedies.

We have obſerved under INFLAMMATIO, that a Phlegmon is attended with a Fever, either univerſal or partial, and therefore the Motion is to be increaſed in the inflamed Part alone, if it be poſſible, or in the whole Syſtem by exciting a ſlight kind of Fever. Thus we ſee in a Phthiſis, where Pus is generated every Day, that the Patient is never free from a ſlow hectic Fever, which is exaſperated while the Pus is generating; but diminiſhed during the Expectoration of the ſame when generated; and therefore it is ſaid by *Hippocrates*, in the Place quoted under INFLAMMATIO, "That Pains "and Fevers are more incident about the Time of the Ge-"neration of Pus, than after it is generated." Things qualify'd for anſwering the aforeſaid Intention, are the aromatic Gums, Ammoniac, Galbanum, Opopanax, and the reſt; in all which there is a moderate Stimulus, and at the ſame time a good meaſure of Tenacity, by which they adhere to the Part to which they are applied. And thus by confining their very ſubtile Exhalations, they cheriſh the Part as it were in a Vapour-Bath of their own Creation; and, at the ſame time, by relaxing the Veſſels, inſinuate their ſtimulating Aromatic Principle; which is the Reaſon why ſuch Remedies are of extraordinary Efficacy in all Inflammations, where, on account of too languid a Motion, we are apprehenſive of a Scirrhus. All theſe Medicines, alſo, which thus by a gentle Stimulus excite a greater Motion in the affected Part, are at the ſame time virtually or potentially heating, becauſe a greater Heat is the Conſequence of an increaſed Motion of the Fluids through the Veſſels, as is demonſtrated under the Article INFLAMMATIO. Thoſe Medicines, alſo, are very ſerviceable, which are actually hot, provided their Heat be not ſo intenſe, as by diſſipating the moſt fluid Part, to convert the reſt into a ſcirrhous Hardneſs. The beſt Heat then, in this Caſe, is of a humid kind, as when Fomentations and Cataplaſms are applied wrapt up in heated woollen Cloths, or the like, by which means the affected Part is fomented and cheriſhed with a continual tho' gentle Heat. For, "A hot Suppuratory, tho' not in all "Ulcers, is a very good Sign of a ſafe State, for it ſoftens "the Skin, attenuates, and mitigates Pain." *Hippocrat.* 5. *Aph.* 22. with other good Effects. Why he ſays, "Not in "all Ulcers," is explain'd by *Galen* in his Comment on this Aphoriſm, where he ſays that Heat is prejudicial to putrid and rheumatic Ulcers, by increaſing the Putrefaction, and attracting Defluxions.

2. Maturation is promoted by the Application of ſuch Remedies as reſtrain the excited Motion and Heat to the Place affected, by glutinous emplaſtic Subſtances, which prevent too great an Exhalation and Diſſipation, and by Lenitives correcting an Exceſs of Acrimony.

The inflamed Place is always hotter than it is uſually in a State of Health; and ſince all the Symptoms of an Inflammation are increaſed, when it tends to a Suppuration, the Heat muſt be ſo too before the Abſceſs be formed. But by an Increaſe of Heat the moſt liquid Part of our Humours is diſſipated, whence it muſt be highly beneficial to apply ſuch Things as cheriſh the Part affected by a continual Homeſtation, and reſtore what is diſſipated by the increaſed Heat. Hence thoſe Remedies muſt be of extraordinary Service, which are able to retain a large Quantity of Water, and will not eaſily part with it. But ſuch is the Nature of all glutinous Things, which with Water will form themſelves into a ductile Paſte, as will all farinaceous Subſtances, and particularly the Meal of Linſeed, which will abſorb a vaſt Quantity of Water. Of Things of the like Nature are formed highly emollient Cataplaſms, of which there are various *Formulæ*. And if the Place which requires Suppuration be kept Night and Day well wrapt up in them after the Manner preſcribed, eſpecially if Care be taken that they may be always warm, all Inflammations which will not admit of Reſolution, are generally ſpeedily enough maturated, and converted into good Pus. And ſince all theſe Remedies have, beſides their moiſtening Quality, an emollient Virtue, and relax the ſolid Parts of the Body, they muſt in an extraordinary meaſure mitigate the Pain which attends the Suppuration, and is generally pretty ſharp; and beſides exert their lenient Virtue, by inviſcating and obtunding all manner of Acrimony; in which laſt reſpect they are of Service, becauſe a mild Diſpoſition of the Humours is requir'd in order to a Suppuration, as we have obſerv'd under INFLAMMATIO. And ſince there is great Danger here of a Degeneracy into a Putrefaction, on account of a Stagnation of the Fluids in the obſtructed Veſſels contiguous to the others, and the increaſed Heat, for this Reaſon we take care to ſelect ſuch Topics, as by the Heat of the Part to which they are applied are in a ſhort time ſo alter'd, as to become of a Nature quite oppoſite to Putrefaction, or to acquire an acaſcent Quality. With this View our Surgeons add to their maturating Cataplaſms the Meal of Rye, which very ſoon becomes acaſcent, Vinegar itſelf, Sorrel and the like. They, alſo, uſe to add freſh Butter, Oil of Linſeed, or the like remarkably

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markably soft and pinguious Substances; partly because by obstructing the Pores of the Skin, they prevent the Dissipation of the Humid; and partly, because, by these Additions, they take care that those Cataplasms shall not become too soon dry.

Suppuratives, or Remedies effecting a Maturation into Pus, are,

1. Simple aromatic Gums, such as Gum Ammoniac, Bdellium, Elemi, Galbanum, Opopanax, Sagapenum.
2. Emollients, Relaxers, Moisteners.

Formulæ to these Purposes occur under the Article ABSCESSUS.

3. A third Means of promoting Maturation is, by moderating the Motion and Temperament of the whole vital Fluid, in such a manner, as that it may neither be too sluggish, nor too much exalted.

This Rule is of the greatest Importance in the Practice of Medicine, with respect to the Cure of internal as well as external Diseases. The accelerated Motion of the Humours causes a Tendency of the Phlegmon to a Suppuration; but too great a Degree of Acceleration, by suddenly destroying the very tender Contexture of the capillary Vessels, produces a Gangrene; as, on the contrary, a sedate and moderate Motion is what takes place in the Resolution of an Inflammation. While there are Hopes, then, of a Resolution, the Physician makes no Scruple of checking the Impetus of the vital Liquid, by such Remedies as have been mentioned under the Article INFLAMMATIO, in order to prevent any farther Injury of the inflamed Vessels. But when he perceives by undoubted Signs that a Resolution is impracticable, he knows that a greater Degree of Motion is always requir'd than is natural in a State of Health, for separating the obstructed Extremities of the Vessels, and converting them, with the extravasated Humours, into good and laudable Pus; and is therefore sensible, that such Methods as give too great a Check to the Impetus of the Circulation may oftentimes be prejudicial. In this Case, therefore, either by means of internal Remedies, or the Application of Topics, we are to endeavour such a Regulation of the Circulation of the Humors through the Vessels, as will produce in the Place which is to be suppurated a greater Heat and quicker Motion than is consistent with a State of Health, but not in so intense a Degree as by a sudden Destruction of the minute Vessels, wholly to deprive the Part of the Influx of the vital Humours, and by that means induce a Gangrene. And such a Regulation is known to be made, if the Heat in the Part inflamed exceeds that in Health, but not much; if there be a Pain, but not intense; if a moderate Pulsation may be perceived; and if the Tumor, Redness, and other Symptoms of an Inflammation increase indeed, tho' but slowly and by due Degrees. The Signs, then, which are afforded by the very Part affected, indicate whether the Motion of the vital Fluid is to be augmented or diminished. But when the Inflammation is so very considerable as to disorder the whole Body, in such a Case the Greatness of the Fever, the Thirst, with the Dryness of the Tongue, are plain Indications of what ought to be done, in order to obtain that just Regulation which is requir'd. Now there is no universal Suppurative; but different Remedies are necessary, in proportion as the Motion of the Humours is to be increased or diminished. For a hot and juvenile Constitution, a Cataplasm composed of Oatmeal, Milk and fresh Butter, will be proper to be applied to the Place which is to be suppurated; for the Melancholic, Aged, and Persons of a cold Temperament, Bulbs of Onions roasted under the Ashes, Galbanum, Gum Ammoniac, and the like Stimulants are added, that by quickning, in some measure, the Motion of the Fluids, the Suppuration may succeed the better, and a Scirrhus be avoided, which otherwise often happens in such a Circumstance, if the Inflammation seizes the glandulous Parts of the Body. The same Regulations are to be observed in internal Inflammations. Thus in the Beginning of a Pleurisy, Bleeding boldly administer'd, even to Fainting, often removes the Disease; but when, for want of timely Assistance, the Physician perceives that the Cure cannot be effected by a Resolution, he knows that the only Way left for a Recovery is by a Concoction of the morbific Matter, and an Evacuation of the same when concocted by Spitting, Urine, or other Ways, or a Conversion of it into an Abscess. But to attempt a Cure, in such a Circumstance, by Venesection, or other Evacuants, which must of Necessity highly weaken the vital Force, cannot but prove to the Detriment of the Patient, since the Case requires a moderate Fever for the Maturation of the crude inflammatory Matter.

The Use of the Decoction under the Title of *A thin aromatic Liquor to be drank warm*, found under the Article INFLAMMATIO, will answer the Intention of exciting a sufficient Motion.

4. The Intention of Maturation is answered by keeping the Place closed, till all the inflamed irresoluble Matter be suppurated; and this is a fourth Method, which, with those before prescribed, will not fail of procuring good and laudable Pus in the Part affected.

It often happens in a large Abscess, that the Middle becomes soft and yielding to the Touch, when the greatest Part of the inflamed Tumor, which lies more remote from the Center, continues hard. But because many Disorders are consequent on keeping the Place too long closed, after the Generation of the Pus, the Surgeon is therefore often intent on opening such Tumors as soon as he perceives the least Fluctuation. But all the pernicious Consequences observed to proceed from a delayed Evacuation of the Pus depend on the Putrefaction and Acrimony which it acquires by long Continuance, whence, as it increases in Quantity, it works out Passages for itself into the *Panniculus Adiposus*, and produces Sinuses and Fistulas; or being attenuated, is absorb'd by the bibulous venous Vessels, and by this means infects the Blood with a purulent Cacochymy; or, lastly, having its thinner Part dissipated, the rest is condensed, and forms scirrhous Tumors, especially about the glandulous Parts. But as long as the Place remains closed, and the Air has no Access to it, there can be no sudden Degeneracy into a Putrefaction; and while the Pus is contain'd in a Cavity whose circumambient Parts are all hard, it will not easily insinuate itself into the *Panniculus Adiposus*; nor will there be any great Fear of a Resorption of the attenuated Pus, since the arterial Vessels, which are distended by the inflammatory irresoluble Matter, compress the adjacent Veins. Besides the very Pus itself, which is lodg'd in this half-ripen'd Abscess, affords a very good Remedy for the Resolution of the crude and hard adjacent Parts; while, by its Heat and long Residence, it induces in them a Colliquation, which Manner of Expression is used by *Hippocrates*, *Lib. de Cap. Vuln.* where he says, ἀνάγκη γὰρ τὰς σαρκας τὰς φλασθείσας ὑπὸ κοπίσιος πύον γινομένας ἰκλαχῆναι, "for the contused and lacerated Flesh must of necessity be "converted into Pus and consumed." For Pus generated in a Wound resolves the semilacerated Parts, and the inflamed Extremities of the Vessels, together with the contained Liquids. It appears, then, of how great Benefit it is to leave the suppurating Place close or unopened, till all the inflamed crude Matter be maturated; for in so doing we imitate Nature, which best performs her Work of Suppuration, when the Place to be suppurated is closed up. Thus in a recent Wound, where the Parts are divided, after the Flux of Blood is ceased, a bloody Crust is formed upon the Cavity of the Wound, and under this Covert, by a gentle Suppuration, is the Surface of the Wound depurated. Hence *Hippocrates*, who always follows Nature, has established it as a Maxim in Medicine, 6 *Epid.* "Whatever requires Concoction is to be "closed up; but the contrary to this is to be kept open and "dry'd."

When the Methods prescribed under these four Heads are observed, the Consequence is the Generation of a good Pus; the Qualities of a good and laudable Pus may be found under INFLAMMATIO.

Unless the Matter of the Inflammation be thus changed as is above described, the opening of the Abscess is both useless and dangerous.

If the inflammatory Tumor be opened before it comes to perfect Maturity, no Pus, but pure Blood, is discharged, as is observed under INFLAMMATIO; or if any Part of it be changed into Pus, when that is evacuated, the rest is indurated, and is with more Difficulty, and after a larger Space of Time, brought to Maturation. And besides, when an Incision is made in such Tumors while they are crude, the Pain is much sharper, and the greater the Danger of injuring the subjacent Parts. For in a mature Abscess, the collected Pus elevates the Skin above the Parts which lie under it; and therefore it may be safely opened, since the Point of the Lancet, after perforating the Skin, enters a hollow Place full of Pus; whence there can be no Danger of hurting the Vessels or muscular Fibres. For this reason, *Celsus*, *Lib.* 7. *Cap.* 2. treating of Abscesses in nervous Parts, says, "That Abscesses in "other Places may be opened somewhat crude, but with re"spect to those among Nerves, the last Degree of Maturity "is to be expected, till the Skin be extenuated, and the Pus "brought near to it, that it may be the more easily "come at." The same Regard is to be had of these Places where the large Blood-Vessels have their Course; as for instance, the Groin, and under the Arm-pits, where such inflammatory Tumors often occur, and re-

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quire Suppuration. For no prudent Artiſt will venture to open ſuch Abſceſſes before they are perfectly ripe, ſince the great Veſſels, or ſome conſiderable Branches of them, may very eaſily be injured, to the vaſt Detriment of the Patient, upon ſuch Inciſion; and how much the Cure is retarded, and the Pain augmented, by opening a crude Abſceſs, the Obſervations of the beſt Surgeons will inform us. A Man of Quality, after a Fever, had an inflammatory Tumor under his Arm-pit, which was very painful. The Surgeon, who had the Care of it, deſpiſing the Advice of wiſer Perſons, as ſoon as he perceived a ſlight Fluctuation in the Tumor, made a deep Inciſion in it with his Lancet, which was very painful to the Patient, who received no Relief from the Diſcharge of a very ſmall Quantity of Pus on that Occaſion, but, on the contrary, had his Fever and Inflammation increaſed. After long Application of the moſt emollient Cataplaſms, the Place was at laſt healed; the Cure of which might have been accompliſhed in a few Days, if the Tumor had not been opened in a raſh manner before perfect Maturation. M. *de la Motte*, in his *Traité Complet de Chirurgie*, *Tom.* I. gives ſeveral Inſtances which confirm the Truth of this Obſervation. So I have ſometimes ſeen venereal Buboes too ſoon lanced, for fear of a Lues, on account of the long Retention of the Pus, produce very troubleſome Conſequences; by which means the Cure has been protracted many Months, while the Surgeon was obliged to uſe Corroſives, to conſume what the Pus, if left alone in its cloſed Cavity, would moſt certainly have reſolved in a few Days. It is to be obſerved, however, that in Abſceſſes there often happens to be ſomewhat of a Hardneſs in their outer Margin, when their other Parts are perfectly maturated. But when ſuch Tumors break ſpontaneouſly, and the Pus is by that means all evacuated, theſe hard Reliques uſually waſte away and vaniſh; and therefore the Opening of ſuch Tumors as theſe would have produced no bad Effects, becauſe they were already ſuppurated in almoſt every Part.

A Softneſs of the Part, a Fluctuation of the Tumor when preſſed, its Whiteneſs, a Remiſſion of the Pain, Heat, Redneſs, Tenſion, Pulſation and Fever, the Head or Top of the Tumor mucronated, and a Weight ſucceeding the Pain, are Indications that the Pus is maturated, and diſpoſed for Evacuation.

As it is dangerous to open the ſuppurated Place before perfect Maturity; and, on the other hand, the Conſequences of too long a Retention of the Pus in a cloſed Place, are many and pernicious, the greateſt Attention is due to thoſe Signs, which ſhew, that the Pus which is now formed and collected in the Abſceſs, may be diſcharged with Advantage. Now theſe Signs are deduced from an Alteration of the Phænomena, in the ſuppurated Part, while the irreſoluble inflammatory Matter is changing to perfect Maturity.

A Softneſs of the Part. It has been demonſtrated under the Article INFLAMMATIO, that in a Phlegmon there is great Hardneſs proceeding from a cloſe Compactneſs of the Solids and Liquids together, becauſe the condenſed Blood ſettles in the Veſſels, which remain as yet entire, tho' obſtructed. But when the diſtended Veſſels, while the Phlegmon is under Suppuration, are broken, the Liquids extravaſated, and the tendereſt of the ſolid Parts ſuffer an Attrition, Reſolution and Change into Pus; the Hardneſs muſt of neceſſity be ſucceeded by a Softneſs, ſince we have now a fluid and not a hard and crude inflammatory Matter under the Skin. Bodies may, alſo, be vaſtly hard, tho' conſiſting for the moſt part of Fluids, provided they are contained in diſtinct Veſſels, and are not confluent into one Place; as we find by Apples, Pears, Turneps, and ſome other Fruits, which, tho' they contain an extraordinary Quantity of Juice, are yet oftentimes very hard; but when they are bruiſed, they become a very ſoft Pulp, as they do, alſo, when placed pretty near the Fire; for then the elaſtic Air, latent in theſe Fruits, being rarified with the Heat, breaks the Veſſels, which cauſes an Effuſion of the Humors, by which a very hard Apple may within a Quarter of an Hour become ſo ſoft as to be almoſt fluid; and the ſame happens, if the Continuity of the Veſſels in theſe Fruits be diſſolved by means of Putrefaction.

A Fluctuation of the Tumor when preſſed. The Surgeon, in order to aſſure himſelf that the inflamed Place is equally ſuppurated, uſes to apply his Fingers to the Tumor, and gently preſſes it, now on this, now on that ſide; and if while he preſſes it on one ſide, he perceives an Undulation of the contained Humour on the Side oppoſite, he ſatisfies himſelf that the Tumor is ſufficiently maturated in all its Parts. But where ſuch a Fluctuation is not perceived, tho' it appears to be ſoft on both ſides, there may be ſtill ſome crude inflammatory Matter in the middle of the Tumor, which may prevent the Impreſſion made on one ſide from being communicated to the oppoſite Part. That there are ſuch Abſceſſes, which are in a manner divided into two, by remaining crude in the middle, while the outer Parts are maturated, we learn from chirurgical Obſervations. And the ſame was obſerved by *Hippocrates*, *Epid.* 6. where he ſays, that "Tubercles "externally protuberant, elevated to a Head and faſtigi- "ated, equally maturated, neither hard in the Extremities, "bending downward, nor bifid, are of the better ſort; "but the contrary to theſe are bad, and the moſt con- "trary worſt of all." And *Galen*, in his Comment on the Place, ſays, that "in bifid Abſceſſes, the middle is "never without Fault, as being crude [ἀπεπτότερον] "unſup- "purable and hard." It is true indeed, that a mature Abſceſs has this Fluctuation in common with Aneuriſms, and ſome ampullous Swellings containing Humours; but an Abſceſs is very well diſtinguiſhed from them, in that it is preceded by an Inflammation. It is plain enough, that the Fluctuation of a preſſed Tumor cannot well be perceived, unleſs the Tumor be eminent; for while the Abſceſs is latent in the *Panniculus Adipoſus*, deeply ſituated among the Muſcles, it is not eaſily diſcovered by this Mark of Fluctuation.

Whiteneſs. It has been demonſtrated under the Article INFLAMMATIO, that a Redneſs ought to accompany an Inflammation, becauſe the obſtructed and dilated Veſſels are replete with a red thick Blood. But when all that thick inflammatory Matter, together with the obſtructed Extremities, are changed into a white and equal Pus, the Cauſe of a Redneſs no longer exiſts. Beſides, while the Pus from within, and the moſt emollient Fomentations or Cataplaſms from without, are macerating the Skin, it decays in a manner, and acquires a white Colour; for when a Plaiſter of any ſort is applied, the Skin being under a continual Fomentation from the reflected Vapour of the exhaling Liquid, becomes throughly white in a few Days, and being inſenſibly waſted and extenuated, appears at length of the Colour of the ſubjacent Pus. We ſee then the Reaſons why a white Colour is juſtly reckoned a Sign of the Maturity of an Abſceſs. *Celſus*, *Lib.* 5. *Cap.* 28. treating of Abſceſſes, ſays, "that ſuch as become ſofter on a ſudden, are of the moſt "favourable Sort; as are thoſe which have their red Colour "fading into a white; and theſe are Signs that Pus is ac- "tually forming; for a Tumor and Redneſs were long pre- "exiſtent."

A Remiſſion of the Pain, Heat, Redneſs, Tenſion, Pulſation and Fever. All thoſe Symptoms of an Inflammation are produced by the Blood impelled by the vital Force, and with an increaſed Impetus and Celerity preſſing upon the obſtructed Extremities of the Veſſels, an Account of which is found under the Article INFLAMMATIO. When, therefore, the Extremities of the Arteries, which were obſtructed are by the Suppuration, ſeparated, the Cauſe of theſe Symptoms ceaſes, and conſequently the Symptoms themſelves diſappear, or, at leaſt are very much diminiſhed. Hence *Hippocrates*, 2 *Aph.* 47. already quoted, juſtly obſerves that "the Pain and Fever are "more intenſe at the Time when the Pus is generating, "than when it is generated." It is, however, to be obſerved, that the Pain is ſometimes very acute, tho' the ſuppurated Part be perfectly maturated, becauſe the Collection of Pus, which is every Day augmented, diſtends the incumbent Skin, and more and more dilacerates it; but this Pain has its Original, it is plain, from another Cauſe; and when the Abſceſs breaks ſpontaneouſly, or when perforated by the Lancet, it ceaſes immediately. *Celſus*, therefore, in the Place before quoted, after enumerating the Symptoms by which an Abſceſs is known to be crude, preſently ſubjoins, "But when theſe are remitted, and the Place itches, and appears "whitiſh or ſomewhat livid, the Suppuration is mature." But we muſt here obſerve, that tho' the Skin, when the Abſceſs is mature, be generally whitiſh, yet the cutaneous Veſſels are ſometimes compreſſed by the diſtending Pus to ſuch a Degree, that all vital Influx and Efflux of the Humours being quite ſuppreſſed, the Skin begins to gangrene, and acquires a ſomewhat livid Colour. The like Signs of a mature Abſceſs we have in *Ægineta*, *Lib.* 4. *Cap.* 18. where, after enumerating the Signs of an inflamed Part tending to Suppuration, he tells us that "After the Abſceſs is come to its Height, many of "theſe Signs are mitigated, the Part is affected with a prick- "ing kind of Itching, a Numbneſs is felt, and the Tumor "riſes into a ſharp Head, which is ſoft, and yielding to the "Touch, and has its Surface near the Head abraded [ἀπορρῆξαι]." Here he remarks that the Skin on the mucronated Top of a mature Abſceſs ſeceedes *per Stratas*, by a ſort of Excoriation.

The Top of the Tumor is mucronated. When the Phlegmon begins to maturate by Suppuration, there is almoſt conſtantly perceived a Softneſs and Fluctuation in the Middle, tho' the exterior Parts remain ſtill hard. For ſince the moſt emollient Cataplaſms are uſually applied to promote the Suppu-

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ration, the relaxed Integuments in this Place will give way to the Pus as it gradually increaſes, and be extended beyond the equable Superficies of the Tumor, becauſe the greater Hardneſs of the reſt of the Parts prevents their eaſy Extenſion. For this Reaſon the mucronated Top of the Tumor will be eminent above the other Parts; and in this Place, the Integuments being gradually diſtracted and weaken'd, the Abſceſs will break ſpontaneouſly, or may be very ſafely open'd with the Lancet.

A Weight ſucceeding the Pain. We have already obſerved, that the Pain increaſed as long as the inflamed Part was under Suppuration; for the Extremities of the obſtructed Veſſels muſt be ſeparated by Degrees, and, conſequently, when the nervous Fibres, diſperſed through the Coats of the Veſſels, are juſt about to break, the Pain muſt be ſharpeſt, but will ceaſe after an intire Rupture. But when the Abſceſs is broken, there will appear a Collection of Pus without the Veſſels, lodged either in a Cavity preternaturally produced, or in a natural Cavity enlarged, and this Pus with its Weight preſſes upon the Parts on which it ſettles. For a Perſon in Health, tho' he feels not the Weight of his own Body, yet, as ſoon as there is a Collection of extravaſated Humours, he will immediately be ſenſible of their Weight. When the Veſſels are broken by a violent Contuſion, and there is a Collection of Blood in the *Panniculus Adipoſus* under the entire Skin, the Patient preſently complains of an unuſual Heavineſs of the Part. When the Legs are diſtended with an Accumulation of Serum in the Anaſarca, the miſerable Patients move their Limbs as if they were oppreſſed with Weights of Lead. But this Senſe of Weight takes place only where there is a conſiderable Suppuration, as is eaſy to imagine; and in internal Diſeaſes the principal Sign of a latent Abſceſs is the Senſe of a dead Weight, ſucceeding an acute Pain in the affected Part; as it happens in a Pleuriſy, Peripneumony, and the like Diſeaſes.

If the Pus be then ſuffer'd to remain long in a cloſe Place, it becomes thin and acrimonious, putreſies, increaſes, corrodes and conſumes the neighbouring Parts; and by its Bulk, Weight and Motion, creates various kinds of Sinuſes and Fiſtulas in different Parts, particularly very pernicious ones in the *Inteſtinum Rectum*; or elſe, the thinner Part being diſſipated, the reſt becomes indurated, and forms hard Tumors, eſpecially about the Glands; or laſtly, being abſorbed by the lymphatic Veins, or Blood-Veſſels, through their corroded Orifices, it is mix'd with the Blood, which it contaminates, and forming Collections in the Viſcera, corrupts thoſe Parts, diſorders their Functions, and produces numerous Diſeaſes, and thoſe very ſevere and dangerous.

When it appears, by the Signs before enumerated, that all the inflammatory crude Matter is maturated, and converted into good Pus, that Pus is as ſoon as poſſible to be evacuated; ſince after it is arrived at its ultimate Perfection of Whiteneſs, Thickneſs, Smoothneſs, Equability, and Want of Smell, it begins to degenerate, and alters every Day for the worſe. For it ſettles without the Veſſels, and is no longer ſubject to the Laws of Circulation, but ſtagnates; and through the Heat of the Place, undergoes a ſpontaneous Change, by which it tends to Putrefaction. For tho' in a cloſe Place, where no Air is admitted, all animal Parts are ſlower of Corruption, yet they putrefy. Beſides, a greater Thinneſs is obſerved to be produced in our Humours, by means of Putrefaction; for Blood diſcharged from the Veins immediately concretes, but when afterwards it becomes putrefy'd, it is entirely diſſolved. The Bile in the Gall-bladder in ſound Animals, which are at reſt, is of a thick Conſiſtence, but in putrefying diſſolves into a thin Subſtance. For the ſame Reaſon Pus, if too long retained in a mature Abſceſs, loſes that Unctuoſity, and balſamic Viſcidity, in which Reſpect it pretty well reſembles Cream, and is changed into a thin, ichorous Fluid; and this Thinneſs, which increaſes in putrefying, is always attended with a greater Acrimony. The whole Superficies, then, of that hollow Place in which the Pus render'd thus thin and acrimonious, is contain'd, being continually ſoaked in a thin and corroding Ichor, the tender Extremities of the Veſſels which have their open Orifices diſpoſed on the Surface will be deſtroyed, and the extravaſated Humours corrupted, whence the Sides of the containing Cavity being corroded, the Extent of the Abſceſs will be enlarged, and the Quantity of the Pus increaſed by the Conflux of the Humours through the corroded Veſſels. Now we have numberleſs Inſtances from the moſt approved Authors which prove, that the ſolid Parts of the Body have been corroded by Pus too long ſuffer'd to ſettle, and become putrefied. We read in *Schenckius, Obſ. Medic. Lib.* 2. that after an Empyema the Lungs have been conſumed to ſuch a Degree, that there have been ſcarce any Remainders left of that noble Bowel. The ſame Author gives us another Example, where not only the Pericardium, but the very Subſtance of the Heart itſelf, tho' of ſo ſolid a Contexture was corróded by the Pus. And it is a general Complaint and Obſervation among Surgeons, that ſolid Bones have been corroded, and converted into a Caries in deep Suppurations. Hence we ſeethe Reaſon why *Hippoc. 7 Aph.* 47. ſays, that thoſe who are affected with an Empyema, and from an Operation of Cutting or Burning have a Diſcharge of white and pure Pus, recover; but if the Pus be bloody, feculent, or fetid, the Patient dies. And in the next Aphoriſm he tells us, that thoſe who labour under a Suppuration of the Liver, and being burnt for the ſame, have an Efflux of Pus reſembling Amurca, or Lees of Oil, die of the Diſeaſe; for ſuch a Pus indicates a Corroſion of the very Subſtance of the Viſcera, the Effects of which muſt, of Neceſſity, be fatal.

Beſides, ſince an Inflammation is generally ſeated in the *Panniculus Adipoſus* [See INFLAMMATIO.] the Suppuration of it muſt have the ſame Situation. But the extraordinary tender Contexture of this Membrane makes it very eaſy to be corroded by the Pus, when grown acrimonious; and even the very Weight and Bulk of the Pus, by long Settlement, in ſo eaſily dilatable a Subſtance, will diſtend it, and work out for itſelf new Ways and Sinuſes of a very dangerous Nature. It has been demonſtrated under the Articles CAPUT and THORAX, that the Ingreſs of the Air into the *Panniculus Adipoſus* has cauſed ſuch an Inflation of it, as to diſtend the whole Body, whence it appears that there is a Paſſage from every Part of this Membrane, through almoſt all its Circumference. And I have obſerved, that when the Parotid Gland has been ſuppurated, for want of procuring a Vent for the collected Pus, the ſame has made a Paſſage for itſelf in the *Panniculus Adipoſus*, deſcending by the Neck, Shoulder, and Arm to the Flexure of the Cubit, where it corrupted the Ligaments to ſuch a Degree, as to cauſe an incurable Ancyloſis. A deep Inflammation near the Joint of the Thigh was ſucceeded by an Abſceſs, and when the Pus, which lay latent under the large Muſcles, could not be diſcharged, it made its Way downwards, and formed a ſinuous Ulcer, which extended itſelf through the whole Length of the Thigh and Leg; and, in the End, by inducing a purulent Cacochymy, after trying in vain all manner of Remedies, proved mortal to a very hopeful young Gentleman. If it be, alſo, conſider'd, that the Pus, which is thus collected in the *Tunica Celluloſa*, being attenuated by Heat and long Settlement, is frequently incumbent on ſome of the ſtrongeſt Muſcles, we ſhall eaſily be convinced, that when it is preſſed by the Motion of theſe Muſcles, it may be propelled through all the neighbouring Places, and by that means be the Cauſe of deep Sinuſes, and very bad Fiſtulas, eſpecially when in creeping through the *Panniculus Adipoſus*, it inſinuates itſelf into the Interſtices of the Muſcles. And the greater the Thickneſs of the *Panniculus Adipoſus*, and the more numerous the Strata, or Lays, of the Muſcles, incumbent on one another, the worſe are the Sinuſes formed by the Retention of the Pus; for which reaſon, in the Abdomen, becauſe of its extraordinary Fatneſs, intermixed with the various Strata of the abdominal Muſcles, we meet with ſuch troubleſome Sinuſes and Fiſtulas.

But there are no worſe Sinuſes and Fiſtulas, from too long a Retention of Pus, in any Part of the Body, than about the Inteſtinum Rectum. For ſince that Part is appointed as a Paſſage for the very groſſeſt of the Fæces, it was neceſſary that it ſhould be eaſily diſtended all around its whole Compaſs, for which End it is ſurrounded with a very ſoft and copious Fat, whence it is that Pus, if long retained in an Abſceſs form'd in this Place, will be capable of producing very deep Sinuſes. "For the putrid Matter [σανίδωμα] corrodes "the ſoft Parts, ſays *Hippocrates, de Fiſtulis Cap.* 1. and as "the *Inteſtinum Rectum* is humid, and of a ſoft Fleſh, it "feeds in it till the Tubercle be broken, and the Parts be"neath towards the Anus appear putrefy'd." And if the *Inteſtinum Rectum* itſelf ſhould happen, alſo, to be corroded, the Pus will be capable of diffuſing itſelf through the cellular Membrane and mucilaginous Cavities of the *Inteſtinum Rectum*, and produce very tedious and troubleſome Diſorders, which are much increaſed by the Fæces defiling every thing in their Paſſage this Way with their Impurities. *Hippocrates*, in the Book before quoted, being apprehenſive of ſuch bad Conſequences, directs us not to wait till the Tubercles in thoſe Places be quite mature, but ſpeedily to open them while they are yet crude.

Or elſe the thinner Part being diſſipated, the reſt becomes indurated, and forms hard Tumors, eſpecially about the Glands.

This is ſometimes, tho' not often, the Conſequence of too long a Retention of Pus, eſpecially when the Abſceſs is treated with very hot Remedies, without a Mixture of Emollients and Moiſteners. Thus it is uſual for Women to expoſe their ſuppurated Breaſts to the Heat of burning Coals, to avoid the Opening of a mature Abſceſs by the Surgeon's Lancet. The thinneſt Part of the Matter is by this means evaporated, and the

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the inſpiſſated Remainder hardens into a Scirrhus, and the Patient lives for the future in continual Fear of a Cancer, which is often the Conſequence. The like Hardneſs often remains after opening venereal Buboes before their due Maturation, or when they have been treated with too heating Remedies. Very good in ſuch Caſes is the Advice of *Galen*, *M. M. Lib.* 14. *Cap.* 4. where treating of the Cure of an Eryſipelas and Phlegmon, when there was Reaſon to apprehend a Scirrhus conſequent upon theſe Diſorders, he ſays, "Whoever ſhould attempt to evacuate them by violent "drawing and diſcuſſive Remedies, inſtead of endeavouring "to ſoften and diſſolve them by moiſtening and heating Me"dicines, will flatter himſelf for the firſt Days, that the Pa"tient is in a very fair Way of Cure; but the Diſeaſe will "leave Reliques which are incurable, ſince the thinner Parts "of the morbific Matter being diſcuſſed, what remains turns "to a kind of ſtony Concretion."

Or, laſtly, being abſorbed by the lymphatic Veins and Blood-Veſſels, through their corroded Orifices, it is mixed with the Blood, &c. It is obſerved under the Article VULNUS, that Pus in Wounds is generated from an Effuſion of the Humours through the Extremities of the Veſſels, their Inſpiſſation by their Settlement, and the Reſorption or Diſſipation of their moſt fluid Parts. For if the Wound be deterged every Hour, you will find no Pus, but only a thin Humour, which in the Space of twelve Hours will be converted into Pus. The moſt fluid Part of the extravaſated Humours ſeem indeed to be rather reſorb'd by the Mouths of the Veins, than diſſipated outwards, becauſe good Pus is ſeldom generated, unleſs the Wound be well covered with Plaiſters or Ointments; and over all the Surface of the Wound are diſperſed the gaping Orifices of Veins, as well as Arteries, which abſorb the contiguous Humours with the ſame Force as the ſmalleſt Glaſs Tubes attract Liquors, convey them to the larger Veins, and ſo mix them with the Blood. By the like Method of Reaſoning, Pus long retained in an Abſceſs will be ſpontaneouſly attenuated, and being deprived of its mild and gentle Nature, will become acrimonious; and being reſorbed by the contiguous Orifices of the Veins, will infect the Blood with a purulent Cacochymy, productive of a hectic Fever and Phthiſis. That Pus collected in a Cavity of the Body is capable of a Reſorption by the Orifices of the Veins, and by that Means of being mixed with the Blood, we are convinced by Multitudes of Inſtances. A Perſon of Quality, in a Battle, was ſhot through the Elbow with a leaden Bullet, by which the Bone of the Elbow was fractured, and the Conſequence of the Wound was a continual Fever, attended with many very bad Symptoms, and a conſiderable Abſceſs, which occupied the Place of the Wound and the adjacent Parts. When it was agreed among the Surgeons to open the Abſceſs, which was now grown mature, the Patient was ſeized with a violent Diarrhæa, and immediately the Tumour of the wounded Part quite vaniſhed, and a vaſt Quantity of Pus was obſerved to be evacuated by Stool. And whenever afterwards the Wound happened to ſwell with an Acceſſion of new Pus, it was in like manner evacuated by a ſupervening Diarrhæa; and by this Means, the Wound, tho' dangerous enough, was cured. *Belloſte, Chirurg. d'Hopital.*

A Man who had received a Wound which perforated the Abdomen, was obſerved by *Scultetus*, *Armament. Chirurg. Obſerv.* 61. to have his Urine mixed with a great Quantity of Pus, the Excretion of which was ſucceeded by a Mitigation of all the Symptoms. *Galen*, *de loc. affect. lib.* 6. *cap.* 4. obſerved an Impoſthume of the Lungs cleanſed and purged off by Urine, and another in the Thorax which had its Expurgation through the Inteſtines by Way of Stool. A Vomica of the Lungs, with a Diſtortion of the Spine, was cured by a purulent Dyſentery, which laſted ſeveral Days, tho' the great Weakneſs of the Patient, and a Multitude of other very ill Symptoms, had defeated all Hopes of Recovery, in the Opinion of the moſt experienced Phyſicians; and, what is more ſurpriſing, the Patient, who was a young Woman, was by this Means not only reſcued from imminent Danger of Death, but had the Diſtorſion of her Spine ſpontaneouſly removed, *Memoires de l'Acad. des Sciences*, *An.* 1731. In the Small Pox, a Reſorption of the Pus is uſually obſerved to excite very bad Fevers; after which there is frequently a Congeſtion of that Pus in ſome Part or other of the Body, where it riſes into Tumours, which opened, diſcharge true Pus, and ſometimes degenerate into very bad Ulcers. We meet with a vaſt Number of Inſtances, in the moſt credible Authors, which aſſure us that Pus too long retained in a cloſe Place may be abſorb'd by the Veins, and mixed with the Blood, and afterwards be depoſited in various Places of the Body; and at the ſame time it appears that the Event is very doubtful in theſe Caſes, depending on an Uncertainty, whether this Congeſtion of Pus ſecreted from the Blood, happens to fall on this or that Part of the Body. For tho' in the Examples juſt related, the Pus was, very fortunately for the Patients, diſcharged by Stool and Urine, yet the Viſcera are always in great Danger of being corrupted by ſome pernicious Collection of the purulent Matter, or it is to be feared that the whole Maſs of Blood with which it is mixed, ſhould be ſo depraved by it, as to give Occaſion for the Production of incurable Diſeaſes. For the Collection of Pus in the cloſed Abſceſs will ſcarce be reſorbed, unleſs it be firſt reduced to a conſiderable Degree of Thinneſs and Acrimony; and after it is mixed with the Blood, and flows through the Veſſels, it acquires a ſtill greater Acrimony, the Conſequences of which may be very bad Fevers, Corruption of the Blood, and other Diſorders without Number. From this Cauſe it ſo often happens in the Small Pox, that when the Patient is judged to be out of Danger, a high Phrenzy is on a ſudden excited, and ſucceeded in a ſhort time by Death, the Pus being reſorbed into the Blood, and its Courſe turned upon the Brain. We have an Inſtance to this Purpoſe in *Hippocrates*, 7 *Epid. Ægr.* 30. where he deſcribes the Caſe of one who laboured under an internal Suppuration, and by the Signs, which were a Stertor of the Breaſt, and a Difficulty of Reſpiration, ſeemed to have a great Collection of Pus within. "About the ſixtieth Day, he tells us, the Left-Eye was "blinded by a Tumour, without Pain, and not long after "the Right-Eye, alſo, was in the ſame Condition, and the "Pupils of the Eyes became very white and dry, and in a "ſhort Time after this Blindneſs, not more than ſeven Days, "the Patient died in a Stertor, and a high Delirium." In this Caſe it ſeems very likely that the reſorbed Pus had by an unhappy Metaſtaſis, its Courſe firſt diverted upon the Eyes, and from thence upon the Brain, where it proved fatal. The Diſeaſes proceeding from theſe purulent Collections are various, according to the different Viſcera where they ſettle themſelves, while by preſſing on the Parts, and corroding them by a greater or leſſer Degree of Acrimony, they either diſturb, or wholly deſtroy their Functions. It appears, alſo, from the Premiſſes, that the higheſt Prudence is neceſſary in ſuch Caſes; for an Abſceſs opened to ſoon, before all Things have acquired their due Maturity, may be very detrimental to the Patient, as has been ſhewn before; and again, if a Vent be not given to the mature Pus, very dangerous Diſorders may poſſibly be the Conſequence. The Signs of perfect Maturation are already given under this Article.

It is this Reſorption of Pus, which proves ſo often fatal to thoſe, who by the Amputation of a Limb, or Exfection of an Ancuryſm, have received a large Wound, which generates every Day a great Quantity of Pus. For if the Pus, which is collected on the Surface of the Wound, be frequently deterged, the Body is deprived of almoſt all its Nutriment, which paſſes off this Way, and ſo the Patient waſtes away in a Maraſmus. On the other hand, if the Pus be left too long on the Surface of ſo large a Wound, it is reſorbed, and induces a purulent Cacochymy, with all the Miſchiefs which may proceed from it, unleſs by drinking Decoctions of detergent Vulneraries, great Part of the Pus mixed with the Blood be evacuated. Sometimes the Patient is too weak to bear the drinking a ſufficient Quantity of theſe Decoctions, but becomes hydropic from their Uſe, in which Circumſtance he very ſeldom recovers.

By the ſame Methods with which Maturation is procured, are the Integuments of the ſuppurated Place, both above and beneath, together with the adjacent Parts, mollified, attenuated, and relaxed.

When an Inflammation cannot be cured by a kindly Reſolution, Suppuration only is to be choſen, for obtaining which the ſix curatory Indications mentioned in the Beginning of this Article are required. For, in the firſt Place, the inflammatory crude Matter is to be reduced to perfect Maturation. Of this we have already treated, as alſo of the Signs by which we are aſſured that the Maturation is accompliſhed; and we have juſt now enumerated the bad Conſequences which are to be dreaded, when a mature Abſceſs, full of good Pus, is left too long cloſed. The ſecond curatory Indication was, that the Place which required Suppuration, together with the adjacent Parts, may be mollified.

An Inflammation generally affects the Membrane called *Panniculus Adipoſus*, or *Tunica Celluloſa*. [See INFLAMMATION.] The thick Skin, with the Epidermis, are incumbent on this Membrane, almoſt throughout the whole Surface of the Body; and they muſt either be perforated, or break of themſelves, to give a Vent to the mature Pus; hence it appears to be highly requiſite that theſe Integuments ſhould be relaxed and mollified. But the ſame Remedies which have been already recommended for the Maturation of an inflammatory crude Matter will at the ſame time have the Effect here required. For all thoſe emplaſtic and glutinous Subſtances, whoſe

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whose Use is directed above for Maturation, have also the Virtue of relaxing and mollifying the solid Parts of the Body. By the Application therefore of such Cataplasms or Fomentations to the suppurating Place, the Integuments are macerated, and as it were wasted away, and the Pus which acts on the internal Superficies of the Skin, at the same time soaks and macerates it on that Side, in which Effect it is also much assisted by that maturating Heat which resides in the Part under Suppuration. There seems to be nothing, then, further required, in order to answer the second curatory Indication.

The Resistance of the Integuments being diminished by the Remedies just now prescribed, the formed Pus is expelled or attracted forth by maturating Remedies.

The Pus now supposed to be formed, and lodged in a close Place, where it increases daily, and is pressed by the contiguous Parts, will, according to the common Law of all Fluids, tend to the Parts where is the least Resistance. If the Integuments then, by Application of emollient Medicines, are so debilitated, as easily to give Way to the distending Pus, this latter will elevate the Integuments, and bend its Force outwards, instead of working out for itself sinuous Ways in the Panniculus Adiposus. All those Remedies, therefore, which are employed in the Maturation of the inflammatory crude Matter, at the same time attract forth the formed Pus; for it is demonstrated under the Article OBSTRUCTIO, that the Nature of Drawers, or attractive Remedies, is to diminish the Resistance in the Place, whither the Derivation is designed to be made.

Then moderately acrimonious, emollient and subpinguious Medicines, mixed together, are to be applied, that the dead and wither'd Integuments may the more easily, and without Pain, be opened.

A Passage must be procured for the Discharge of the Pus collected under the Integuments, while they are entire. A Division, therefore, must be effected of these Parts, either spontaneously and by a gradual Dilaceration from the distending Pus, or by the Surgeon's Lancet. That this Division may be performed either way with as little Pain as possible, highly emollient and subpinguious Topics are to be applied, by which the Integuments are wasted and withered to such a degree, as to be in a manner dead and insensible. When, therefore, the mature Abscess begins to gather to a Head, or becomes mucronated, it is customary with the Surgeon to anoint the Top with a Feather dipt in Basilicon, or some other very emollient Ointment, by which the Integuments in this Place may be mollified to an extraordinary Degree, and the Fibres being by this means relaxed, the Pain is diminished, [See VULNUS.] which in this prominent Part is usually pretty sharp. And sometimes these Emollients are mixed with moderately acrimonious Medicines, such as Leaven of Bread, Venice Soap, Honey, and the like, which will produce a sort of Deadness in the macerated Integuments, and facilitate their Rupture. Thus Women employed in Washing, whose Hands are all the Day long macerated in soapy Lye, have the Skin of their Fingers white and almost dead, and very subject to Excoriation. Formulæ for this purpose, of rendering the Integuments thin and less sensible, occur under the Article ABSCESSUS; which see.

The Remedies before proposed having had their due Effect, in the next Place, the Surgeon, after dexterously pressing up the Pus into the most elevated Part of the Tumor, is to enter his Incision-knife into the inferior Part of the whitest, softest, and most eminent Place, till the Pus appearing, assures him, that he has penetrated far enough; then let him enlarge the Wound upwards, by elevating the Knife, or passing the Point thereof to the opposite Side, divide the intermediate Integuments, avoiding the Fibres and Vessels; this done, let the redundant Pus be gently and successively expressed, and the Place kept guarded from the Air, and unmolested with Tents.

When the whole Compass of the suppurated Part is found to be perfectly mollified, and we are assured by all the proper Signs, that Maturation is compleated; in this Circumstance, if the Integuments will not break spontaneously, a Discharge for the Pus is to be procured by Art, in order to avert those mischievous Consequences which have been mentioned. In glandulous Places, Abscesses are suffered to remain longer than in other Parts, because they are more in Danger of a Scirrhus, if any thing should perhaps remain unmaturated. *Celsus*, therefore, speaking of opening Abscesses, gives the following Directions, *Lib. 7. Cap. 2.* "If the Pus "be mature, and in the Groin, or under the Arm-pits, a "Section is seldom to be attempted; nor in any Place, where "the Abscess is but moderate; nor where it is but superficial, or even seated in the Flesh, unless the Weakness of "the Patient obliges us to hasten the Cure. In these Cases, "it is sufficient to procure a spontaneous Discharge of the "Pus by means of Cataplasms, for the Place which has "not felt the Surgeon's Instrument, may commonly be "healed without an Eschar." Here *Celsus* prefers a spontaneous to an artificial Opening of an Abscess, not only in glandulous, but also in other Parts, principally on account, it seems, of the Danger of Defœdation by a Cicatrix. But a Wound inflicted by a Lancet, will, however, admit of a more decent Consolidation than a larger Opening and Secession of the Skin effected by a Corrosion of the contained Pus. And the Reason why *Celsus* often observed a deforming Cicatrix resulting from the Operation of the Lancet, plainly appears from what we read in the same Place. For where the Pus happen'd to be deeply seated, he directs the Abscess to be open'd with a red-hot Iron; and in another Case, where the Skin is extenuated to a very great Degree, he orders it to be all cut off above the Pus; and he would have the same done, if the Skin be pale, for then, he says, it is dead, and will never be of any Service, and therefore is fitter to be cut off.

In giving vent to the Collection of Pus, in a mature Abscess, Regard is to be had, as much as may be, to the Ease of the Patient, and the Security of the subjacent Parts; for no more than the common Integuments, under which the Pus is lodged, and which are elevated and distended by it, are to be divided. It is usual for the Surgeon, in this Case, very gently to press the suppurated Tumor all around, to cause the Integuments to recede as much as possible from the subjacent Parts; and since it generally happens for some Part of the Tumor to be prominent, or gather'd to a Head, as was before observ'd, the same is especially to be enter'd by the Incision-Knife, for in this Place the Integuments being much extenuated, and in a manner mortify'd, may very easily, and almost without any Pain to the Patient, be divided; especially if the Head or mucronated Top be macerated before-hand, by the Application of subpinguious and acrid Medicines, as before prescribed. The Incision is to be made, as much as conveniently may be, in the lower Part of the Tumor, that the Pus may find a Vent through the Opening, by Virtue of its own Gravity, but yet so as to consider the Situation which the affected Part will have after the Aperture. "We are "to endeavour, says *Celsus*, in the Place before quoted, that "the very Bottom of the Sinus may discharge itself, that no "Humour may remain and settle within, and so corrode and "create Sinuses in the sound and neighbouring Parts." But if the Apex of the mature Abscess be in a superior Place, and the Integuments appear softest and whitest, in the same part, it is better to make the Incision there than in another, tho' inferior Place, where the highly sensible and inflamed Skin cannot be divided without extreme Pain, and oftentimes very troublesome Consequences. For after the Aperture is made, the Pus which is left in the Abscess may, by changing the Situation of the Part, or by a gentle Compression with Bolsters and a proper Bandage, be prevented from working out to itself, by its own Weight, sinuous and fistulous Passages in the *Panniculus Adiposus*.

As soon as the Knife has penetrated the Integuments, it plunges in the Midst of the Pus, which will immediately begin to vent itself by the Sides of the Instrument, especially if the Integuments are stretched by the subjacent Pus from a gentle Compression of the contiguous Parts. Where there is a considerable Quantity of Pus, it is best to plunge the Knife to a good Depth, that afterwards with elevating its Point by a neat and equable Section, the Wound may be enlarged: And for the same Reason, if it may be done with Safety, the Instrument is passed through the Middle of the mucronated Head of the Abscess to the opposite Side, and then, by elevating it, the incumbent Integuments are at once divided, and a very large Opening made, which can never be the worse for the Patient: For unless the Orifice be thus made very wide, it often happens that considerable Parts of the *Membrana Cellulosa*, almost gangrenous, will be protruded together with the Pus, and obstruct the Opening, so as to render a new Section necessary: Besides, when the Pus is evacuated, the Integuments, which were before in a State of Tenseness, become contracted by their own proper contractile Force, and very much diminish the Aperture. It may pass for a general Rule, therefore, when an Abscess is to be opened, to make the Wound as wide as may be done without danger of hurting the subjacent Parts. But when the Pus is lodged just under the Skin, every one sees that there is no Necessity of plunging the Knife to any considerable Depth.

Sometimes

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Sometimes the Pus happens to lie pretty deep, and then more Caution is required; for it would be a Disgrace to make a fruitless Incision into an Abscess, and it is often dangerous to thrust the Point of the Knife to a considerable Depth: On such Occasions, the Surgeon has a fair Opportunity of shewing his Skill and Dexterity; for unless he be well acquainted with the Situation of the Parts from Anatomy, he will always be either foolishly timorous, or rashly venture on Danger through Ignorance: For since an Inflammation has its Seat almost constantly in the *Panniculus Adiposus*, as was before observed, and there insinuates itself among the Muscles on every Side, it appears that the Pus may be very deeply lodged, though not the least Defect be observed in the Integuments. The antecedent Signs of an Inflammation, with the succeeding Indications of a Suppuration, the Fluctuation of the Pus, perceptible when the Part is pressed, will afford some Light in such obscure Cases. That celebrated Surgeon *De la Motte*, *Traité complet de Chirurg. Tom. I.* has a remarkable Instance to this Purpose: A Woman, after the Suppression of the Lochia, had for nine Months been confin'd to her Bed, and was forced to lie with her Body incurvated in a most miserable Manner, in order to alleviate, in some Measure, her racking Pains; for she lay with her Face to her Knees, and her Heels went back towards her Buttocks, and in that Posture she continued Night and Day. As the Pain lay chiefly in the Hypogastrium, half Way between the Navel and the Pubes, the Place was very carefully examined by this excellent Surgeon, who perceived some Kind of Undulation, tho' there were no Hardness nor Tumor, nor the least Change in the Colour of the Integuments. Confirmed by long Practice in the Diagnosis of the like Disorders, he concluded that a profoundly latent Abscess was the Cause of all this Disorder, and resolved, contrary to the Opinion of four other Surgeons who before had this miserable Patient under their Care, to make an Opening in the Part, and performed the Operation with the greatest Caution, penetrating into the very Cavity of the Abdomen: Not the least Quantity of Pus, however, was discharged, though the Abdomen was compressed, the Patient held her Breath, and the Posture of the Body was changed, in order to promote an Evacuation. The honest Operator being confounded at this unfortunate Event, took his Leave, being laugh'd at by the other Surgeons, and ingeniously confesses, that he passed that Night without Sleep. The next Morning, when he came to renew the Dressing, he observed, to his great Joy, a vast Quantity of Pus discharged in the Bandage, though he knew not whence it came. The Discharge of Pus continued every Day for the Space of about six Weeks, at the End of which the Woman was perfectly recovered from so desperate a Disease, and continued to bear Children, and could walk with Ease, only a little inclining to the right Side, where the Seat of the Disorder lay. The like Case has fallen under my own Observation, where a Surgeon open'd a deep Abscess in a Woman's Breast, without the immediate Discharge of a Drop of Pus, though he entered his Incision-Knife to the Depth of an Inch, and more; but in a few Hours there was a vast spontaneous Discharge of Pus through the Wound. This is enough to convince us, that we are not to alter our Judgment with respect to the Diagnosis in such Cases on a sudden, if after just Deliberation and weighing all Things, we should at last resolve upon an Operation, and to open the affected Part; for though the Point of the Knife might not, perhaps, penetrate to the Seat of the Pus, yet the Pus may soon after, as it frequently happens, be derived, of its own Accord, to the Wound, as the Place of least Resistance.

Avoiding the Fibres and Vessels. If the Collection of Pus be lodged immediately under the Integuments, and, as *Celsus*, *Lib. 7. Cap. 2.* expresses it, be contiguous to the Skin, it is plain that there can be no Fear of hurting the Vessels or Fibres, because the Pus elevates the Skin from the subjacent Parts; nor has it hitherto appeared that a true Suppuration ever affected the Substance of the Muscles, but took up its Seat only in the *Panniculus Adiposus*. For tho' *Paulus Ægineta*, *Lib. 4. Cap. 18.* defines an "Abscess to be a Cor-"ruption and Alteration of the Flesh, or fleshy Parts, as "the Muscles, Veins, and Arteries;" yet we know by daily Experience, that after the greatest Suppurations, and even Gangrenes, in which the *Panniculus Adiposus* has been consumed, the Muscles have been found very clean and intire. It is true, indeed, that surprizing Degeneracies and Alterations have been observed not only in the *Panniculus Adiposus*, but in the very Substance of the Muscles: But when the Tumors in such Cases have been open'd, there has been no Discharge of Pus, but of quite another Liquor, whence such Affections seem not properly to belong to the Class of Suppuration. We have a memorable Instance of such a Disorder in the *Medical Essays*, *Tom. 1.* A Woman had a Swelling, for some Months, on the Outside of her Leg; the Tumor was prominent in the Middle, and soft, with a manifest Fluctuation, when pressed with the Fingers. When the Skin came to grow red on the Part, the Patient was in violent Pain, and had a hectic Fever, attended with nocturnal Sweats, and a Diarrhœa, which returned every third Day, with other Symptoms. It was at last resolved to open the Place, and after the Application of maturating Cataplasms for two Days, when the Integuments were much attenuated, and the Fluctuation was very plainly perceptible, the Tumor was open'd; a pretty deep Incision being made, no less than an Inch and half, not a Drop of Pus flow'd, but two or three Ounces of Mucus; and the next Day a Fungus appeared in the Wound, which being remov'd, the like grew up again; and after vast Quantities of the like Substance had been thus removed, a Probe introduced into the Place penetrated through the whole Substance of the Leg, till it touched the Skin on the opposite Part. The Woman dy'd a few Days after, and the Skin of the affected Leg was found whole; but the *Panniculus Adiposus*, together with the Muscles, was degenerated into a fungous Substance, in such a Manner, that after diligent Examination, the Muscles could not be so much as distinguish'd, and the Periosteum had every where separated itself from the affected Bones. From this Case it appears indeed, that the Muscles may by the Force of a Disease be transformed into such a deformed Mass as before related, but there was no Pus here discover'd, which is the Thing principally to be regarded. It is a Question whether *Hippocrates*, *Lib. de Articulis*, is to be understood of such Abscesses, where he says, "But, in short, all the other [Tu-"mors] which are mucous, and discharge Mucus, as being "glutinous, when touched, slip away under the Fingers to "this or that Side; for which Reason the Surgeons find "them deeper than they expected." He was here treating of a Fracture of the Ear, and of a Suppuration succeeding it, and advises, if an Incision be necessary, not to cut superficially, because the Pus is more deeply lodged than is commonly imagined. He had told us a little before, that Cataplasms are hurtful in Fractures of the Ears, because they excite Abscesses, with Plenty of Mucosities, and troublesome Suppurations; and then subjoins the Words quoted.

There seems, then, not to be so much Danger of injuring the Fibres in opening mature Abscesses, and consequently no Necessity of all that Care and Circumspection so much insisted on by *Fabricius ab Aquapendente*, *de Chirurg. Operat. Cap. 107.* as necessary to be used in almost all Parts of the Body, that there may be no Incision but according to the Course of the subjacent muscular Fibres. And the same Author himself, afterwards, in the same Chapter, confesses, that Persons ignorant of Anatomy are every where found, who yet are successful enough in opening Abscesses, "on Account of "the Redundance of Pus, which elevates the Place, and "renders the subjacent Parts safe from the cutting Instru-"ment."

This done, let the redundant Pus be gently and successively expressed. In very large Abscesses, which contain a vast Quantity of Pus, it seems not always safe to evacuate the Pus all at one Time; for all the Parts which surround so large a Bag full of Pus, and were very much pressed before, being thus in a Moment freed from the Pressure, become very flaccid, and admit vast Quantities of Blood into their Vessels, whence less Remittances of the same are made to the Brain and Cerebellum, and Faintings, and perhaps Death itself are thence occasion'd. The same Danger attends a sudden Relief or Relaxation of the Parts from the Pressure of any other Collection of Humours. And this made *Hippocrates* say, 6 *Aph.* 27. "That Persons labouring under an Em-"pyema, or Dropsy, and burnt or cut for the same, die "away and expire under the copious and violent Effusion of "the Pus or Water." But if the Abscess be seated in such a Part of the Body, that when a proper Aperture is made for discharging the Pus, the Parts may be supported and compressed by swathing them with a Roller, the greatest Evacuations may safely be performed, as appears from the Success of that Method in evacuating the Waters of an Ascites, after the Operation of the *Paracentesis*. [See HYDROPS.] Nor will it injure the Patient to leave some part of the Pus unevacuated; for the Sides or Inclosure of this hollow Bag are cherished and depurated by a good Pus, and covered with the same, as with a natural Balsam, the best certainly that can be accommodated to it, the half-mortified Ends of the Vessels are separated, and all Things are disposed for an happy Consolidation, as appears more at large under the Article VULNUS, which see. It is only required, that so great a Quantity of Pus should not be left as might injure the Parts by not distending them, and create Sinuses in the *Panniculus Adi-*

posus,

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pesus, which Inconveniences are well enough avoided by leaving the Aperture over, and in such a Situation that the redundant Pus may find a Vent from its own Gravity. We are, therefore, to use due Care and Caution, that the open Abscess be

Kept guarded from the Air, and unmolested with Tents. When the Abscess is open'd, though all the Pus be evacuated, yet in the Space of twenty-four Hours, and sometimes sooner, will there be a new Collection of Pus, which must in like Manner be discharged. And this was the Reason why the Surgeons, being apprehensive that the Aperture would close too soon, used to introduce Tents into it, by way of Prevention: But such Tents, being made of dry Lint, absorb the contiguous Humours, which causes them to swell; and being of a conic Figure, they are soon after squeezed out; or, if retained by the Application of Plaisters or Bandages, are dilated, and stop up the Orifice like a Cork, so preventing all Discharge of the collected Pus, and leaving it to work out for itself sinuous Ways and Cavities in the *Panniculus Adiposus*, a Membrane very capable of Dilatation. Besides, these Tents, while swelling with the absorbed Humours, insensibly widen and dilacerate the Sides of the Orifice, whence a new Pain and Inflammation are often occasion'd. It is plain, then, that the Use of Tents in these Cases is either useless or prejudicial; and even while the Dressing is renewing, and the Tent extracted, after the Pus is discharged, a very free Access is admitted for the Air into the now empty Cavity, which cannot but be very prejudicial by its Appulse to the gaping Orifices of the extremely thin and tender Vessels, as is observed under the Articles VULNUS and CAPUT.

The best Way, therefore, will be to cover the Aperture with a simple Pledget only, that the Pus may have free Liberty to discharge itself, taking due Care, also, that neither the Bandage nor Plaisters press hard upon the Orifice; on the contrary, it will be rather adviseable to compress, though gently, the adjacent Parts, by a dextrous Application of Bolsters or Bandage, that the Pus may be derived towards the Orifice, which is to be kept open, and free from all Manner of Pressure. The Usefulness of Tents in open Abscesses, seems long ago called in Question by *Celsus*, *Lib.* 5. *Cap.* 28. where he says, "Then [after opening] if they be seated in the Groins "or Armpits, they are to be dressed without Tents. In "other Parts, also, if the Bottom of the Wound be but small, "the Suppuration but moderate, and has not penetrated to "a considerable Depth, if there be no Fever, and the Body "be strong, the Use of Tents is equally superfluous. In "other Cases they are to be used, though sparingly, and "not unless the Ulcer be large." See more concerning the noxious Use of Tents under the Article THORAX.

Then let it be treated with Cleansers, Suppuratives, Digestives, Balsamics, Detersives, and Dryers, vary'd as the present Exigence shall require, according to our Instructions under the Article VULNUS.

We are now to treat of those curatory Indications comprehended under the two last Numbers of the first Head of this Article, which are, to mundify the Ulcer, and reduce it to the State of a simple Wound: For the whole internal Superficies of the hollow Abscess having been macerated in the contained Pus, is generally, as was before observed, much injur'd by it. It ought, therefore, to be mundify'd, and a Separation to be made of all those Particles, both fluid and solid, which are corrupted to such a Degree as to prevent an Union of the separated Parts. But the Superficies of an Abscess is render'd most impure, when the Pus, by long Retention, has degenerated from its mild and friendly Quality; for in such a Case it frets and wastes both the incumbent Skin, and the adjacent Parts of the *Panniculus Adiposus*; and certainly, Cavities with so foul a Superficies can never be consolidated, unless they be first cleansed. This appears to be the Opinion of *Galen*, *M. M. ad Glaucon. Lib.* 2. *Cap.* 9. "When the Skin, he says, is so wasted by the Suppuration as to resemble Cloth worn to Rags [ὡς ῥακώδης γενέσθαι, *to look ragged*;] it is with Difficulty brought to a Coalition with the subjacent Bodies, and therefore the Ulcer "must of Necessity be cleansed by enlarging the Vent for "that Purpose." The Methods and Remedies for depurating a sordid Ulcer, and reducing it to the Condition of a pure fresh Wound, are largely describ'd under VULNUS.

If the Patient be shock'd at the Sight of the Instrument, and refuses the Operation, apply a Caustic to the Part; let the Eschar be separated, by mollifying it with Butter; and let the Cure be managed as directed under the two preceding Heads.

The safest Way of opening an Abscess, is by the Incision-knife; but sometimes the Surgeon has to do with Persons of so pusilanimous a Temper, that they are ready to faint away at the bare Mention of the Operation. In such a Circumstance, it is best to use Deceit, and dextrously to perforate the Abscess while the Patient has not the least Apprehension of it. Various Kinds of Instruments have been contrived for this Purpose: Some have concealed a small Lancet in a Ring which they wore on their Forefinger, or have cover'd the Top of a Lancet affix'd to a Plate of Metal, under a Cataplasm, or Ointment, which they have apply'd to the Part, and by gently pressing it, have effected what they design'd. More Artifices of this Kind are to be met with in *Paré*, *Livre* 7. *Chap.* 10. and others. If the necessary Aperture of a mature Abscess cannot be accomplish'd by any of these Contrivances, there remains no other Way than to apply to the mucronated Top of the Abscess what the Surgeons call a potential Cautery, of which there are several Sorts prepared in the Shops, and describ'd with their Use under the Article CAUSTICA. The *Lapis Infernalis*, or the common Corrosive of the Surgeons, prepared of Quick-lime and Potash, are mostly in Use. A Plaister is apply'd, which has a Perforation in the Middle answering to the Place on which the Caustic is to be laid; to this Perforation they apply the Caustic, and cover it with another Plaister, and let the Dressing remain for an Hour or two, till an Eschar of a sufficient Thickness be raised. This done, they attempt a Separation of the dead Eschar from the quick Parts, by Means of Basilicon, fresh Butter, or the like mollifying Topics; which being effected, the Pus is evacuated by the Aperture thus procured, and the Cure is performed by the Methods before prescribed. It is certain, however, that such pusilanimous Patients as require this Method of laying open an Abscess suffer much greater Pain; for the Division of a mature Abscess by the Incision-knife is performed in a Moment, but the Action of a Caustic requires an Hour, and often more; and when that is done, the Patient endures a good deal of Pain while the Eschar gradually separates from the quick Parts; and, besides, a greater Defœdation, and more unsightly Cicatrix, generally result from the Application of a Caustic. *Vansweiten*, *Comment. in Boerhaavii Aphorism.*

PREDICTIONS FROM A SUPPURATION OF THE LUNGS.

"Those who have a Collection of *Pus*, says *Galen*, *Com.* "2. *in Prognost.* whether within the Body, or in any Part "affected with an Inflammation, and even after an Erup"tion, we may properly enough call *Empyi*," that is, purulent or suppurated; "but Physicians usually give that Name "to those who have the Thorax or Lungs thus affected." In this Case, the *Pus*, after Eruption, is contained between the Thorax and Lungs; and if it be not speedily expectorated, the Patient dies of a Consumption, labouring all the Time he lives under a slow Fever, and a constant Exacerbation of the Heat and other Symptoms at Night.

The Ancients called a Collection of *Pus* in any Part of the Body *Empyema*; and hence suppurating Medicines were by some called *Empyemata*, by others *Diapyemata*. Some give the Name of *Empyi* to those who have *Pus* collected in any one of the Viscera: And others, as was said, will have that Name appropriated to such as have a Collection of *Pus* between the Thorax and Lungs; that is, in the Part affected with an Inflammation, and from an Effusion of the *Pus* within the Thorax, arises this Affection.

Pus of this Kind is generated when the Matter of the Phlegmon is not absterged, in which Case the Contents are, by the Heat, converted into *Pus*. And this we find expressed by *Hippocrates*, 7 *Aph.* 38. where he says, that Distillations "upon the upper Belly [εἰς τὴν ἄνω κοιλίην] come to a *Suppura*"*tion* in twenty Days;" and more clearly to the purpose, 5 *Aph.* 8. "They who labour under a Pleurisy, if there be "no Repurgation of the Matter in fourteen Days, become "affected with an Empyema." For where the Matter which causeth the Pain is not discharged by Expectoration, nor by Stool, nor Venesection, nor Diet, nor Medicine, it either turns to a *Suppuration*, or suffocates the Patient. And this is well expressed by *Galen* on the *Prognostics*, in the following Words: "Whoever, he says, are affected with Pains "in the Thorax near the Seat of the Lungs, which will not "yield to Remedies, and have no other Disorder, nor any "mortal Symptom, may expect a *Suppuration*." When an Inflammation, therefore, becomes suppurated, and the Humors are converted into *Pus*, these, if not evacuated by Spittle, are, by a Rupture of the Impostume, discharged into the Cavity of the Thorax and Lungs, in which Case the Patient may truly be said to be *Empyos*; and by this *Pus* is he suffocated, or thrown into a Consumption; or freed from it in the Space of forty Days, by the Help of a Cough, according to *Hippocrates*, 5 *Aph.* 5. where we read, "that "whoever are affected with an *Empyema* after a Pleurisy, and "are cleansed by Expectoration in forty Days after the Rup"ture,

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" ture, are freed from the Diſeaſe." But as *Galen* ſays in his Comment, " If all the Pus be not diſcharged by ſpitting " in that Space of Time, it putrifies, and being putrified, " corrodes the Lungs, and induces a Tabes;" which is an Extenuation of the whole Body, occaſioned by thoſe incurable Ulcers of the Lungs, in Conjunction with a ſlow Fever, which the *Greeks*, and particularly the *Athenians*, as *Galen* ſays, call by the proper Name of *Phthoe*, and *Hippocrates Phthiſis*. When the Patient in this Caſe is reduced to Extremities, and the Caſe deſperate, the Hair falls off by reaſon of Dryneſs, there is a Looſeneſs of the Belly, occaſioned by the Imbecillity of the retentive Faculty, as *Galen* expreſſes it, and the Spit is retained; for the Patients, however extenuated, live as long as they can clear their Lungs, by Coughing and Spitting; but when theſe ceaſe, and the Matter which ſhould be expectorated remains within, the Paſſages for Reſpiration are obſtructed, and the Patient is ſuffocated.

For the better underſtanding the Prognoſis to be formed from a *Suppuration*, we are to conſider, firſt, whether the Patient be ſubject to it from a Pleuriſy, Peripneumony, or Quinſey; then, from what Signs we ſuſpect a *Suppuration*; thirdly, when the Eruption is like to be made; and laſtly, of the Signs from which we may predict the Death or Recovery of the Patient.

From what Signs we may reaſonably expect a *Suppuration*, we are taught by *Hippocrates* in his *Prognoſtics*, where he ſays, " that Pains in thoſe Parts (about the Region of the Lungs) " which yield not to Expectoration, Purging, Phlebotomy, " Diet nor Medicines, terminate, you may be certain, in a " *Suppuration*." But becauſe the Pain and Fever are more urgent about the Time of the Generation of Pus, than when it is actually generated, according to *Hippocrates*, 2 *Aph.* 47. it is neceſſary that the Symptoms ſhould be increaſed in the Progreſs of the *Suppuration*. On this Subject we are directed by *Hippocrates*, in the *Prognoſtics*, " to conſider that " the Beginning of the *Suppuration* commences from the " Day in which the Patient began to be feveriſh, or was " ſeized with a Rigor, or the Time when he firſt ſaid " that he had a Weight inſtead of a Pain in the Place af- " fected; for from ſuch Times are we to date the *Suppura-* " *tion*." And *Galen*, in his Comment on the Place, ſays, that the Signs of a *Suppuration* are a Gravitation or Weight, inſtead of the Pain, a *Rigor* or *Horror*, and a Fever, which is more urgent on the Patient than before: He adds, that beſides the Senſe of a Weight, there is alſo a Pain in the Sides, or in one Side, if the *Suppuration* be only in one Side; which is agreeable to the Directions of *Hippocrates*, in the Book juſt quoted, where he ſays, " If the Suppuration be only in " one Side, it will be proper to turn the Patient, and learn " of him whether the Pain be in one Side, and whether it " be hotter than the other; and whether when he lies on the " ſound Side, there ſeems to be a Weight lying on the other; " for if this be the Caſe, the Suppuration is on that Side, which " ſoever it be, where the Weight is." By theſe Signs, then, may we diſcover a *Suppuration*, which is indicated by a *Rigor* or *Horror*, proceeding, as *Galen* ſays, from the Acrimony of the *Pus* inſeſting the Parts affected with the Inflammation, from the great Increaſe of the Fever, and the Weight in the Sides, or in one Side only, if the Collection of *Pus* be only in one Side; to which we may add a Senſe of Heat in both Sides, or only in one, if the *Pus*, as we ſaid, be collected only in one Side. And if this *Pus*, after its due Increaſe and Concoction by Nature, makes an Eruption, and is expectorated by Coughing, the *Empyos*, or Perſon affected with the *Pus*, recovers; but if the *Pus* can by no means be diſcharged, as it happens in great Weakneſs of the Parts, the Patient is either ſuffocated, or dies at laſt of a Conſumption. Hence it is obſerved by *Hippocrates*, in his *Prognoſtics*, that this Diſeaſe is " more fatal to the Aged than to young Perſons." And the Reaſon is, as *Galen* ſays, " becauſe old Perſons are weaker, and " great Strength is required in order to diſcharge the *Pus*, by " Coughing and Spitting; and it is neceſſary for Recovery, " that great Quantities of *Pus* ſhould be expectorated by " means of a Cough." *Galen*, *Lib.* 5. *de Loc. affect. Cap.* 3. ſpeaks of ſome *Empyi*, who ſpit out no leſs than fifteen Heminæ of *Pus*, and recovered. So that they who expectorate freely, and in large Quantities, eſcape, which is imported by what we read, 5 *Aph.* 15. before quoted. But when the *Pus* is not diſcharged, on account of the Groſſneſs and Viſcidity of its Subſtance, the Denſeneſs of the Membrane in which the Lungs are contained, or the Weakneſs of the Faculty, which Defects are known by Reſpiration in which the whole Thorax is elevated, without any Sign of Expectoration by Spitting. Thus we are told by *Galen*, *Lib.* 4. *de Loc. affect. Cap.* 3. " That the Elevation of the " whole Thorax in Reſpiration by thoſe who are affected " with a Suppuration, on account of a Collection of *Pus* be- " tween the Thorax and the Lungs, proceeds from the Im- " becillity of the Patient, who is too weak to diſcharge him- " ſelf from the offenſive Matter. And if he eſcapes Suffoca- " tion, he dies of a Tabes, under all the Symptoms deſcribed " in the Beginning of this Diſcourſe."

The Caſe of an *Empyos* under a Tabes, or Conſumption, is thus deſcribed by *Hippocrates*, *Lib. Prognoſt.* " All *Empyi*, " he ſays, are known by the following Characters; firſt, if " there be no Intermiſſion of the Fever, which is more " gentle by Day, and more violent by Night; if copious " Sweats ſupervenes, and the Patient has a Deſire to cough, " but expectorates nothing worth Notice; if there be a Hol- " lowneſs of the Eyes, a Redneſs of the Cheeks, a Crook- " edneſs of the Nails, a Heat eſpecially in the Tops of the " Fingers, a Tumor of the Feet, a Loſs of Appetite, and " an Eruption of Puſtules about the Body." *Galen*, in his Commentary on this Deſcription, tells us, " that the Fever " has no Intermiſſion, becauſe the very ſolid Parts of the " Body are heated, and retain a Heat ſomewhat like that of a " continual Fever, and, after the manner of Lime, gentle " to the Touch. And this Heat, which is eſteemed a proper " Sign of a Hectic Diſpoſition, is increaſed as often as the " Patient eats or drinks, as it is in Lime, by an Affuſion of " Water; ſo that the Parts feel much hotter to the outward " Touch. The conſtant Sweats are from Weakneſs, and a " Corruption and Diſſipation of the Aliment. There is a " Deſire of Coughing, but nothing expectorated that deſerves " Notice, on account, as we ſaid before, of the Groſſneſs " and Viſcidity of the Pus, the Tenſeneſs of the Membranes " of the Lungs, or the Weakneſs of the Faculty. Hollow- " neſs of the Eyes is from Dryneſs, and is common to all " long Fevers; Redneſs of the Cheeks is from Heat in the " Lungs, and alſo from the Cough, by which the Face is " heated. The Nails are incurvated, becauſe the Fleſh " which ſhould ſupport them is conſumed, and the interior " Parts of the Tops of the Fingers feel hotter than the " reſt, as being more fleſhy, and becauſe the hectic Heat, " which poſſeſſes the ſolid Parts, is more ſenſible in theſe " Parts which abound moſt with Moiſture. The Feet " ſwell, becauſe the Extinction of the natural Heat begins in " theſe Parts, as being at the fartheſt Diſtance from its " Principle or Original. The Appetite is loſt from an Ex- " tinction of the Faculty; and the Eruption of Puſtules is " occaſioned by an Effuſion of the corroding Sanies from " the interior Parts on the Surface of the Skin." Theſe, then, are the Signs by which the *Empyi* are known to be in a Conſumption; and though their Caſe be deſperate, they live as long as they can excrete Pus, as we have already obſerved from *Hippocrates*, 7 *Aph.* 16. One thing in relation to this Spit, worthy Obſervation, is what *Galen*, *in* 3 *Epid.* affirms, that in deſperate Conſumptions nothing of Concoction can be perceived in it; but Spitting at laſt ceaſes, and is ſuppreſſed, a Looſeneſs comes on, with a Swelling of the Feet, and other Symptoms, which ſhew the Caſe to be deſperate.

As to the Time of Rupture of the Impoſtume, or Vomica, it is to be conſidered, firſt, that the Humor, which is the Cauſe of the Pleuriſy or Peripneumony, not being evacuated or removed, putrifies, and is converted into *Pus*; in a ſhort time after, that makes an Eruption, and is expectorated by Coughing; but as to the determinate Time when this *Pus* is effuſed between the Thorax and the Lungs, it happens generally in the Space of twenty Days, ſometimes ſooner, ſometimes latter. The Thing itſelf, and the Signs by which it is known, are thus expreſſed by *Hippocrates*, *Lib. Progn.* " As to the quicker or ſlower Rupture of the Vomica, they " are known by the following Signs: If there be a Pain " from the Beginning, and the Difficulty of Reſpiration, to- " gether with the Cough and Screation, continue, the Rupture " may be expected on the twentieth Day, or even ſooner; " but if the Pain be more remiſs, and the other Symptoms " in proportion, the Rupture will happen later; but it is " neceſſary that a Pain, Difficulty of Reſpiration, and " Spitting, ſhould precede the Eruption of the *Pus*." From theſe Words *Galen* infers, that the Signs of a future Rupture, are a Pain, Difficulty of Reſpiration, Cough and Spitting, which, if they are continual and violent, preſage a quick Eruption; if they are not ſo violent nor continued, the Eruption will be the ſlower. There is neceſſarily a Pain from the Pus obvolving and corroding the Part by its Acrimony, and the Cough and Screation are neceſſary from the thinner part of the Sanies, a corrupt Matter which lies upon and penetrates into the Part affected; there muſt, alſo, of neceſſity, be a Difficulty of Reſpiration, on account of the Condition of the whole Body, but principally from the acceding Pain.

The Cauſe of the Eruption is referred to the moving Force of Nature, and to the Redundance of *Pus*, or its depraved Quality irritating the expulſive Quality to Excretion. The

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The Eruption happens before the Time, that is, before the Concoction of the *Pus*, from a Corrosion of the Bag which contains the *Pus*, by a pure Bile, which is unmix'd with the Spit, and not arrived at that Mediocrity of Temperament, which is due and convenient for Nature; hence a Pain, Cough, Difficulty of Respiration, and Spitting, precede an Eruption, either from the Plenty of *Pus*, or the Offensiveness of the Putrefaction irritating the expulsive Faculty. Such an Eruption before Maturity, is symptomatical, and not good, but that which is made by Nature, or when the *Pus* is concocted, is critical and good; and the *Pus* discharg'd appears white, pure, equal and smooth; whereas, in an Eruption which happens before due Time, and is symptomatical, the *Pus* is crude, parti-colour'd, fetid and yellow, or mix'd with Bile. Of such an Eruption the Author of the *Coac.* 392. speaks, where he says, "They who expectorate purulent "and bilious Spit, either separately, or mixed together, ge-"nerally die on the 14th Day."

These Things being premised concerning *Suppurations*, we are now to enquire into the Prognostics they will afford. And, first, as to the salutary Signs in those who recover, after the Eruption of the *Pus*, we are directed in our Judgment by *Hippocrates* in the *Prognostics*, where he describes the Symptoms which promise a good Event to the Disorder. "Good "Signs, he there says, are, to bear up well under the Di-"stemper, to breathe freely, to be free from Pain, to cough "up the Spit with Ease, for the Body to be soft and warm "in all Places alike; not to be afflicted with a Thirst; for "the Urine, Stools, Sleep, Sweat, to be regular, and all in "due Order as requir'd; in such Circumstances we may "venture to pronounce the Patient will not die." And a little after he says, "They who recover are generally those "who get rid of the Fever the same Day that the Eruption "is made; who soon recover their Appetite, and are freed "from their Thirst; whose Stools are small in Quantity, and "compacted; and when the *Pus* is white, smooth, of one "Colour, free from Phlegm, and expectorated without La-"bour or violent Coughing. The Patient in such Circum-"stances is very happily and speedily freed from his Malady; "and the nearer he comes up to this Character, the more "likely he is to recover." The Symptoms portending Death in a Suppuration, are enumerated by the same Author in the Book before quoted, as follows: "On the contrary, "(with respect to the good Signs before described) to bear "up ill under the Disease; to breathe short and thick; to "have no Remission of the Pain; to expectorate with Dif-"ficulty; to be very thirsty; for the Body to labour under "an anomalous Fever; to have an extraordinary Heat in the "Belly and Sides; for the Forehead, Hands and Feet to be "cold; for the Urine, Stools, Sleep and Sweat, to be all bad "and disorderly; the Patient will die under Expectoration, "before the fourteenth Day, either on the ninth, or eleventh "Day." And a little after the foregoing Passage, he says; "The Disease proves mortal, meaning after the Eruption, "when the Fever ceases not, or if it soon recurs after a "seeming Cessation; if the Patient be afflicted with a Thirst, "Loss of Appetite, or a Looseness; if the Pus expectorated "be of a greenish [χλωρὸς] Colour, a palish Green, livid, or pi-"tuitous and spumous; if these concur, the Patient will not re-"cover." For all these kinds of Spit are condemned, *Coac.* 390. And we have Instances of their Fatality, 4 *Epid. T.* 4. in the Wife of *Meander* the blind Man, who immediately expectorated a greenish and purulent Matter; and in the Son of *Amphiphrades*, 7 *Epid. T.* 24. who discharged first a purulent and pale, and soon after a greenish Spit; and in *Euryptolemus*, *ibid. T.* 16. whose Spit was of a pale Colour. To the same Purpose may be apply'd that of *Hippocrates*, 7 *Aph.* 44. "If those who are affected with an Empyema, and suffer "Burning or Cutting for the same, discharge a pure and "white Pus, they escape; but if the same be bloody, fecu-"lent and fetid, they die." And so much shall suffice concerning Predictions from an *Empyema*, the Perusal of which may be of Service to the Student in Medicine. *Prosper Alpinus de Præsag. Vit. et Mort. Ægrot.*

SUPRA COSTALES.

These Muscles are commonly called *Levatores Costarum*, which Name was first given them by *Steno*; but he did not pretend to have discovered them. They are irregularly triangular, and situated on the back Part of the Ribs near the Vertebræ.

Each of these Muscles is fix'd by one tendinous Extremity in the transverse Apophysis, which lies above the Articulation of each Rib, and to the neighbouring Ligament; the first being inserted in the transverse Apophysis of the last Vertebra of the Neck, and the last, in that of the eleventh Vertebra of the Back.

From thence the fleshy Fibres run down obliquely, increasing in Breadth as they descend, and are inserted in the back Part of the Outside of the following Rib. Some of the Fibres often pass beyond that Rib, and are fixed in one or more of the Ribs below it, by several Digitations, which lie at a greater Distance from the Vertebræ, in proportion as they run lower. In the inferior Ribs these Digitations are more considerable, than in the superior. *Winslow's Anat.*

For the Uses of these Muscles, see the Article INTERCOSTALES.

SUPRASCAPULARIS MUSCULUS. The same as SUPRASPINATUS.

SUPRASPINATUS MUSCULUS.

This is a thick narrow Muscle, in some measure penniform, filling all the supra-spinal Cavity of the Scapula.

It is fix'd to all the posterior half of the supra-spinal Fossa, and sometimes its Insertion reaches near the Neck of the Bone. There the Fibres leave the Surface of the Bone, and being as it were supported by the fat or cellulous Substance, pass between the Acromium and Neck of the Scapula, under the Arch formed by the Acromium and Extremity of the Clavicle, and under the Ligament between the Acromium and Apophysis Coracoides; being afterwards inserted in the superior Surface of the great Tuberosity of the Head of the Os Humeri, very near the bony Channel. This Muscle is cover'd by the *Trapezius*.

The *Supra-spinatus* is commonly supposed to join with the *Deltoides*, in lifting up the Arm; this Muscle beginning that Action, and the Deltoides continuing it. But besides that this Muscle is very small, it seems to be too near the Articulation of the Head of the Os Humeri, to be able to raise the whole upper Extremity, which is of a considerable Weight and Length. It has, however, two other very remarkable Uses, when the Arm is raised from the Thorax to the Head by the Action of the *Deltoides*.

To understand these Uses it must be remember'd, 1. That the cartilaginous convex Part of the Head of the Os Humeri is much larger than the glenoide Cavity of the Scapula. 2. That the most superior Part of this Convexity lies out of the Cavity, when the Arm is depressed or near the Ribs. 3. That the orbicular Ligament of the Joint is very broad, being proportion'd to the Distance between the Edges of the convex Part of the Head of the Os Humeri, and of the glenoide Cavity of the Scapula; and that therefore it cannot check the Os Humeri in any of its Motions.

From thence it is plain, that the strong deltoide Muscle, in the first Instant of its Action to raise the Arm, would thrust the Head of the Os Humeri upwards out of the Cavity, if something did not supply the Place either of a bony Fulcrum or ligamentary Frænum. The Arch of the Acromium is of no Use in this Case; for the Bone must be first luxated, before it can reach so far; and the neighbouring Parts must suffer a Friction, and even a Contusion, which would be very prejudicial.

It is, also, plain, that the broad orbicular Ligament would be very subject to be intangled and bruised between the Edges of the two articulated Bones, were not this Inconveniency prevented by some means or other; because it is not elastic enough to contract of itself in proportion as these two Edges approach each other.

The *Supra-spinatus* answers both these Ends. When it contracts its Tendon, which runs over the convex Part of the Head of the Os Humeri, to be inserted in the upper Surface of the great Tuberosity, it presses very strongly on the Head of the Bone, thereby supplying the Place of a Fulcrum, and hindering the Head to rise, during the Beginning of the Action of the *Deltoides*.

I find, also, in this Muscle, a singular Contrivance to prevent the second Inconveniency. Its Tendon is a kind of Band, which adheres closely to the Outside of the orbicular Ligament; and when we examine it narrowly, we observe that several of its Fibres do not go so far as the Head of the Os Humeri, but are gradually inserted in the outer Surface of the Ligament. These tendinous Fibres are continuous with those which lie nearest the Bone or Bottom of the supra-spinal Cavity of the Scapula.

This Portion may, therefore, be reckoned a distinct Muscle belonging to the orbicular Ligament, notwithstanding of its close Union with the other Part, which is inserted in the Os Humeri. And indeed we might very justly establish a new Species of Muscles, by the Name of Articular Muscles, which belong principally to the capsular Ligaments of those Joints which have large Degrees of Motion. The Mechanism of this kind of Muscles consists in this: The Extremities of the Tendons are inserted very obliquely in the Surface of the Ligament, and the Fibres take up a great deal more Space there, than in the Body of the Tendon; and they are commonly the innermost, or deepest and shortest Portions of the ordinary Muscles inserted near the Articulations.

The

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The Uſe of theſe Muſcles, or Portions of Muſcles, is to pull the orbicular Ligaments uniformly, and thereby to prevent their running into irregular Folds, and their being intangled between the two articulated Bones. *Winſlow's Anat.*

SURIANA.

The Characters are;

It hath roſe-ſhaped Flowers, conſiſting of ſeveral Petals, which are placed in a circular Order; from whoſe Empalement ariſes the Pointal, which afterwards becomes the Fruit, which generally conſiſts of four Capſules, in which are included four roundiſh Seeds.

We know but one Species of this Plant, which is,

Suriana foliis portulacæ anguſtis, Plum. Nov. Gen.

This Plant was ſo named by Father *Plumier*, who diſcovered it in the *French* Settlements in *America*, in honour to Dr. *Joſeph Surian* of *Marſeilles*, who was a very curious Botaniſt.

The Seeds of this Plant were brought from *Havanna*, by the late Dr. *William Houſtoun*, who found the Plants growing there in great Plenty on the Shore, in moiſt Places, where the Salt Water uſually flows. It alſo grows plentifully in ſome Parts of the Iſland of *Jamaica*. *Miller's Dict.*

SURRECTORIUM. An Inſtrument, mention'd by *Paré*, for keeping the Arm, when injur'd, in an erect Situation.

SUSINUM. See ÆGYPTIUM OLEUM.

SUSPENDICULUM. A Name for the CREMASTER MUSCLE.

SUSPENSOR TESTICULI. The ſame as CREMASTER.

SUSPENSUM. The ſame as ENÆOREMA.

SUSPIRIUM. An ASTHMA.

SUTORIUM ATRAMENTUM. Vitriol.

SUTRATAR, in *Paracelſus*, is a ſplenic Medicine; or one prepared of a Spleen.

SUTURA. A Suture, in Anatomy, is a particular Articulation of the Bones of the Head. See CAPUT. But

SUTURA, Suture, in Surgery, is the uniting the Lips of a Wound by Sewing.

But there are two Methods of cloſing Wounds by Suture; one with a Needle, called the true or bloody Suture; the other with adheſive Plaiſters, called the dry or falſe Suture. Sutures are not to be uſed in all Wounds indiſcriminately; but, 1. Principally where the Lips of the Wound cannot be brought into Contact by the Dreſſing; ſuch are tranſverſe, oblique, and angular Wounds, when they are recent and carefully cleared of the Blood and any foreign Subſtance which may be lodged in them. 2. In thoſe, alſo, where there is nothing contuſed, abraded, or cut away; unleſs perhaps the wounded Parts are greatly relaxed. Sutures are in ſuch Wounds of great Advantage, not only making them ſoon heal, but alſo inducing a ſmaller and neater Cicatrix. The adheſive Plaiſter, or dry Suture, is beneficial in thoſe Wounds which are neither very deep nor very broad, eſpecially in the Face, tho' ſome prefer the Needle; but the Judgment of the Surgeon may, in this Particular, be beſt directed by the Nature of the Wound. For when the Lips of the Wound may be held together by a Plaiſter and Bandage, the Needle becomes unneceſſary, which occaſions more Trouble, and alſo new Wounds and Cicatrices. But on the other hand, when the Wound is wide and deep, ſo that its Lips cannot be cloſely retained by Plaiſters and Bandages, or where the Part is nearly amputated, as in the Noſe, Ears, Cheeks, Forehead, Chin, or Fingers, immediate Recourſe muſt be had to the Needle.

It is proper to obſerve, 1. That when the Lips of the Wound are joined by adheſive Plaiſters, the Hair muſt firſt be carefully ſhaved from the Part. 2. Where one Plaiſter is not ſufficient, more may be uſed, or they may be applied croſs-ways, (as in Tab. 25. Fig. 4, 5, 6.) 3. The true or bloody Suture is of two Sorts, ſimple or compound. The ſimple Sort is done with a Needle and Thread, comprehending the knotted, glovers and circumvoluted Sutures, and the Suture of the Tendons. The knotted Suture is ſo called from the many Knots that are uſed in it; the Glovers Suture from its Reſemblance to the Glover's Stitch; and the circumvoluted Suture is ſo denominated, becauſe the Lips of the Wound being tranſfixed by the Needle, the Thread is wound about for conjoining the Lips of the Wound more firmly; as is uſed in curing the Hare-lip. (See Tab. 25. Fig. 21, 22.) The Suture of the Tendons is uſed when the Tendons are divided. Beſides, there are ſeveral other Sorts of Sutures uſed by ancient Surgeons, as the *Suteria*, *Sartoria*, *Celſiana*, (See Tab. 25. Fig. 19.) and the Clavata made with Quills or ſmall cylindrical Pieces of Wood; but theſe are long ago diſuſed, except the *Sutura Clavata*, which was lately revived by *Palfyn* and *Garengeot*, with little Variation, only inſtead of Quills or Pieces of Wood, they recommend waxed ſilken Cylinders. 4. It muſt be remember'd, that in Sutures of deep Wounds a ſmall Tent muſt be left in the lower Part of the Wound, till it be thoroughly cleanſed, that the Healing may begin at the Bottom.

The Plaiſters in the dry Suture muſt be of a ſufficient Length, and ſhaped according to the wounded Part, ſo as to encompaſs great part of the Wound, though not entirely, leſt they ſhould retard the Circulation of the Blood, and induce Tumors and other Miſchiefs. They muſt, alſo, adhere firmly, which Purpoſe is well anſwered by the Plaiſter of *Andreas a Cruce*, or the ſtyptic Plaiſter of *Crollius*, or the Plaiſter of *Diachylon*, or of *Diapalma*, mixed with Turpentine, and ſpread on a Piece of ſtrong Linen. The Diſcharge of Blood being ſtopt, and the Wound deterged, a vulnerary Balſam muſt be inſtilled into the Wound, ſuch as the Eſſence of Maſtich, Amber, of the Peruvian Balſam; or the *Balſamum Commendatoris*, or any balſamic Compoſition of the gummy kind, which ſoon form a kind of balſamic healing Cruſt, denying all Acceſs to the Air, and promoting the Agglutination. Then apply the Plaiſter of a ſufficient Length and Breadth, or two or more if neceſſary, either ſtrait or crooked, leaving Spaces between them; firſt lay it warm upon one Side of the Wound, preſſing it with the Palm of the Hand to make it adhere, and then preſs the diſunited Lips of the Wound gently and equably together; and being thus joined, let them be kept firm by fixing the other End of the Plaiſter on the other Side of the Wound, then apply pieces of Linnen dipped in any of the Balſams above ſpecify'd, and ſecure the whole with proper Compreſſes and Bandages.

According to *Petit*'s Method the agglutinating Plaiſters ſhould have one Hole in the middle, or more, according to the Size or Figure of the Wound, (See Tab. 23. Fig. 11. and Tab. 25. Fig. 7.) that by theſe it may not only be diſcover'd, as in the former Method by the Interſtices between the Plaiſters, whether the Lips were properly joined, but the Wound may be daily ſupplied with proper Remedies. Theſe Plaiſters are applied in the ſame manner as the others, and muſt be continued on the Wound till the Part be near healed. The dry Suture may be alſo made in the following manner. Make two Plaiſters of any of the Preſcriptions abovementioned, on ſtrong Linnen Cloth, anſwering to the Largeneſs, Depth and Width of the Wound; the deeper Wounds requiring longer, and the ſlighter ſhorter Plaiſters; faſten to the Border or Edge of each piece of Linnen, three or four Tape-ſtrings, according to the Length of the Wound, and after having warmed the Plaiſters, lay one on each Side of the Wound, at the Diſtance of a Finger's Breadth from it, ſo that the Remedies may be conveniently applied, as repreſented in Tab. 25. Fig. 8. Then the Lips of the Wound are to be joined, and dreſſed as before directed; and while an Aſſiſtant carefully keeps the Lips in Contact, let the Surgeon tie the Strings of the Plaiſters together, firſt in a ſingle Knot, and then a ſlip Knot, and thus will the Lips of the Wound be kept properly united. Over each Plaiſter ſhould be laid an oblong Compreſs, and over them a large ſquare one, ſecuring the whole with a proper Bandage. Next Day the Wound muſt be inſpected; and if the Strings appear to be relaxed, they muſt be drawn tighter. But if they are not looſened, they ought to be left untouch'd; then apply a piece of Linnen, moiſten'd with ſome Drops of a healing Balſam, and afterwards the Compreſſes and Bandage as before. Some, inſtead of Tape-ſtrings, uſe Iron or Braſs Hooks and Thongs, as is repreſented in Tab. 25. Fig. 9, 10. Theſe Plaiſters are fixed to the Lips of the Wound in the ſame manner as the former, and then with a Thread or Thong, paſſed through the oppoſite Hooks, they are drawn together, and the Lips of the Wound are brought into Contact. But as theſe latter kinds of dry Sutures require more Time and Trouble, they are, therefore, leſs uſed than the firſt Sort.

If the Wound be broad and deep, or tranſverſe, as frequently happens in the Thigh, (See Tab. 24. Fig. 1. Let. H.) or in the Abdomen, in the Nates or Arms; or where a Piece hangs down from the wounded Part, as in the Forehead, Cheeks, Noſe, Chin or Ears; or when the Wound is angular or crucial, as in Tab. 25. Fig. 12, 13, and 17. the true or bloody Suture is to be uſed. Sutures of this Kind, as we have already obſerved, are diſtinguiſhed by ſimple and compound. Of the ſimple true Sutures, the convoluted or twiſted Kind is ſeldom uſed, except in the Hare-lip; the Glovers Stitch is performed in Wounds of the Inteſtines; and the knotted Suture in all other Wounds, which require a true Suture. The compound Suture is ſo called becauſe other Things become neceſſary beſides a Needle and Thread.

The beſt Method of making the knotted or interrupted Suture (I think) is the following. Take a double Thread well waxed, or ſix ſmall Linnen Threads, and paſs them through a ſtrong crooked Needle. (See Tab. 22. Fig. 7.) With this Needle, pierce at once the two Lips of the Wound (which we now ſuppoſe two Inches long) about the Middle,

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proceeding from the exterior Part of the inferior Lip, towards the Bottom, to the interior Part of the ſuperior Lip, ſo that the external Perforations, through which the Thread appears, may be about the Breadth of a Finger from the Lips of the Wound, or more or leſs according to the Size of the Wound. Then removing the Needle, and compreſſing the Lips of the Wound, tie the Ends of the Thread, firſt in a ſingle Knot, and then in a ſlip Knot, ſo that the Lips of the Wound may be properly brought into Contact; then dreſs as in the dry Suture. If the Wound ſhould be longer, and one Suture is not ſufficient, two, three, or more may be made (See Tab. 25. Fig. 11, and 16.) in the ſame manner, but ſo as to be at the Diſtance of an Inch from one another. Beſides, that the Wound may not be hurt by the Knots, the Threads are to be ſo tied, that after the firſt Knot, a ſmall Compreſs (See Tab. 23. Fig. 22.) of Linnen or waxed Silk, may be laid on it, over which let the ſecond Knot be tied, which muſt be made to ſlip, that it may more eaſily be untied and relaxed, ſhould Pain or Inflammation happen.

In this Method we proceed, when the Wounds are oblique or tranſverſe; but when the Wound has Angles, or is triangular, (ſee Tab. 25. Fig. 13.) the Suture muſt be firſt made in the Angle A. Like Sutures muſt, alſo, be made about the middle of the Sides of the Wound, as at B and C. If the Wound has two Angles, like the Greek Letter Π, as in Tab. 25. Fig. 14. which frequently happens in the Face, eſpecially in the Forehead, then a Suture muſt be made at each of the Angles A A. If theſe are not ſufficient, becauſe of the Largeneſs of the Wound, two more will be neceſſary, about the middle of the Sides at B B, or perhaps more. When the Figure is crucial, or in the Form of the Let. X. as in Fig. 6. and 12. and its Lips cannot be brought into Contact by Plaiſters, the Needle (as in Fig. 12) muſt firſt be introduced at A, ſo as to come out at B; and it muſt again enter at C, and be brought out at D; then the Lips muſt be gently drawn together, and the Knot tied between A and D.

Inſtead of this ſimple Suture, ſome of the ancient Surgeons uſed the compound, or clavated Suture, called by the *French Suture enchevillée*, in large Wounds. This Suture they preferred to the others, becauſe by them the Lips of the Wound were ſometimes lacerated; which not only obſtructed the Agglutination, but induced great Inconveniencies. But though the clavated Suture has been diſuſed for ſeveral Years, and is expreſly ſaid by *Dionis* to be improper, yet ſome Moderns (eſpecially *Palfyn*, in *Chirurg. Cap. 6. de Suturis*, and *Garengeot*, in *Chirurg. Cap. de Sutur. et Gaſtroraph.*) have again introduced it into Practice, and in various Caſes preferred it to the knotted Suture; but with this Difference, that inſtead of two Pieces of Wood uſed by the Ancients, the Moderns take ſmall Pieces of waxed Linnen or Silk rolled up like Cylinders, as long as the Wound, and about the Thickneſs of a Gooſe-quill. (See Tab. 25. Fig. 17.) By theſe means, the Lips of the Wound are prevented from being lacerated by the Threads; nor are they ſo rudely preſſed as by the Pieces of Wood, which frequently excited Tumors, Pain and Inflammations. *Palfyn*'s Method of performing this Operation, in deep Wounds of the muſcular Parts, was thus: He took a large ſtrong crooked Needle, in which was a ſtrong double Thread well waxed, (as in Tab. 25. Fig. 15.) making a Nooſe; this Needle being paſſed through both Lips of the Wound, as before directed: And a ſecond or third Needle being threaded and paſſed in the ſame manner, (ſee Fig. 17.) he introduc'd one Cylinder or waxed Roll, through the Nooſes, as at B B; then having removed the Needles, he placed another Cylinder between the Ends of the Threads upon the other Side, and having brought the Lips of the Wound into Contact, drew the Ends of the Thread gently and equally, and tied them over the Cylinder, B B, firſt in a ſingle and then in a ſlip Knot, as at C C C. If there be three Threads, tie the middle Thread firſt, and then the others.

Garengeot perform'd this Suture nearly in the manner now deſcribed, but with this Difference, that inſtead of a double Thread, he uſed a peculiar Sort of Lace, made of ſix or eight clean white Threads, joined together and waxed, and more or leſs ſtrong, according to the Largeneſs and Depth of the Wound; obſerving always ſo to proportion the Size of the Lace to the Needle, that it may readily follow the Needle, otherwiſe great Pain may be produced. When in this manner he has introduced as many Laces as may be neceſſary, he ties a Knot on the Extremity of each Lace, which hangs out from the upper Lip of the Wound; then he ſeparates the Threads which compoſe the Lace, between the Knots and the Lip of the Wound, keeping an equal Number on each Side; and thus Nooſes are made, through which the wax'd cylindrical Roll may be introduced. Then placing two Fingers on the inferior Lip of the Wound, near the Punctures of the Needle, with the other Hand he gently draws the Laces, beginning with the Middle, if there are three, till the Lips of the Wound are exactly brought into Contact. Then ſeparating in two Parts the Threads of each Lace, in the lower Lip of the Wound, which ſerve for tying the other Roll, he firſt made a ſingle Knot on the middle Lace, after having carefully conjoined the Lips of the Wound; then having tied a ſingle Knot on each of the other Laces, carefully obſerve that they be not made too tight, which might excite an Inflammation, and then ſecure all with a Slip-Knot made over each of the ſingle Knots. Then let the Wound be treated with ſome vulnerary Balſam, eſpecially the *Commanders Balſam*, applied with ſcraped Lint, which ſoon produces a kind of balſamic Cruſt, and by theſe means the Acceſs of the Air to the Wound is prevented, and the Cure promoted. Apply alſo a Compreſs dipped in ſome warm, ſucculent, digeſtive Liquor, and a proper Bandage.

On the firſt Days, by whatever Method the Suture was performed, the Compreſs and Bandage muſt be removed with great Caution, and the State of the Wound examined. If all Circumſtances appear favourable, if there be no Pain, or at leaſt none violent, the Sutures are to be let alone for ſix or ſeven Days, or longer, and muſt be dreſſed as before, till the Wound appears to be conglutinated. If at the firſt Removal of the Dreſſings the Sutures appear too looſe, the Knots muſt be untied, and the Threads ſtraitened; but if the Sutures are too tight, they muſt be relaxed. When the Lips of the Wound appear ſwelled, and in ſome meaſure contuſed, a Suppuration muſt be excited with ſome digeſtive Ointment, or *Arcæus*'s Balſam; and theſe Remedies muſt be continued for ſome Days; and thus theſe Diſorders, or any other threatning Inconveniencies, are generally removed. But when the Inflammation appears violent, and a Fever is brought on, the Sutures ſhould be a little relaxed, and the Wound dreſſed with a digeſtive Ointment, or *Arcæus*'s Balſam; the Patient muſt alſo be blooded, the Body muſt be render'd ſoluble with Clyſters, and thin aqueous Drinks are to be recommended, with other Remedies proper in an Inflammation and Fever. Theſe Diſorders being removed, the Sutures muſt again be gradually tightened, and the Wound dreſſed as above directed. But if theſe Remedies prove ineffectual, and the bad Symptoms not only continue, but daily increaſe, ſo as to appear dangerous, the Sutures muſt be cut, and the Wound treated in the ſame manner as if there were a Loſs of Subſtance.

But if by theſe means the Wound is conglutinated, which may be known not only by the Concretion of the Lips, but alſo by the Laxity of the Threads, a grooved Probe muſt be introduced between the Lips of the Wound and the Sutures, if neceſſary; and the Sutures muſt be cut with Sciſſars near the Knots; then the inferior Lip of the Wound muſt be ſupported with one Hand, and taking hold of the Knot with the other, the Thread muſt be gently extracted. The ſmall Wounds, occaſioned by the Punctures of the Needle, may now be eaſily cured, by injecting into them ſome vulnerary Water, as the Aqua Sclopetaria, Lime-Water, or Spirit of Wine, and applying Compreſſes dipped in the like Liquors: But if the Wound be large, it is to be anointed with the Balſam of *Arcæus*, or another of the like Nature, and its Lips kept in Contact by an adheſive Plaiſter, till a firm Cicatrix be induced.

In large Wounds of the Abdomen, ſome Surgeons greatly prefer the quilled or clavated, to the knotted or interrupted Suture; becauſe the Muſcles of this Part are greatly agitated by Reſpiration, Riſing, Sneezing, Coughing, and the like; by which violent Motions the ſmall Threads have ſometimes torn the Lips of the Wound, and great Miſchiefs have enſued.

Garengeot recommends this Suture even in Wounds that penetrate the Cavity of the Abdomen, and directs the following Method of performing it. Having threaded the Needle, delineated at Fig. 6. Tab. 27. the Surgeon takes hold of it about the Eye in his Right Hand, and introducing the Thumb of his Left Hand into the Wound, he claps the Fingers of the ſame Hand on the external Part of the ſuperior Lip of the Wound, which he elevates; then he enters the Point of the Needle into the Abdomen, and paſſes it through the Peritonæum, Muſcles, Fat and Skin, about two Finger-breadths from the Lip of the Wound. He then removes the Needle, and fixes it to the other End of the Thread. Then introducing his fore and middle Fingers into the Wound, below the inferior Lip, and keeping his Thumb on the external Part, he raiſes this inferior Lip, and pierces it with the Needle in the ſame manner as before directed. If the Wound is about four Fingers breadth in Length, two Stitches are required, equally diſtant from one another, and from the Extremities of the Wound; and if the Wound be larger, more Stitches are neceſſary. The waxed cylindrical Rolls are to be introduced, as was already mentioned from the ſame Author, and the Wound dreſſed with *Ar-*

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cæus's Balſam. The Abdomen muſt then be fomented with warm Oil of Roſes, mixed with a little Spirit of Wine, eſpecially about the Navel, and the Parts near the Wound; then a large Compreſs dipped in the ſame Medicine muſt be applied to the Part, over which may be laid another moiſten'd with warm Oxycrate. Theſe muſt be covered with a Piece of Flannel, ſoaked in an emollient Decoction, and the whole ſecured with the Bandage called the Napkin, which is to be hindered from ſlipping down by the ſcapular Bandage, repreſented in *Tab.* 24. *Fig.* 1. *C.* which ought alſo to deſcend lower than the Napkin.

When the Lips of the Wound appear to be well agglutinated, the Stitches may be cut, one after another, with Sciſſars, either at the ſame time, or on different Days, as the Circumſtances indicate. Then the Threads being extracted, as we before directed, the Cure of the Wound may be compleated by a vulnerary Balſam and adheſive Plaiſters. But particular Care muſt be taken not to extract the Stitches too ſoon, which might occaſion the Lips of the Wound to burſt again, and induce many Miſchiefs.

See *Celſus*'s Method of performing the Suture of the Abdomen, under the Article ABDOMEN.

For the Suture of the Inteſtines, ſee ABDOMEN.

For the Suture of the Hare-lip, ſee LABIA LEPORINA.

See the Suture for a Trichoſis at the latter Part of the Article ALCALI.

THE METHOD OF PERFORMING THE SUTURE OF THE TENDONS.

This Operation is performed by modern Surgeons in the Tendons of the Hands, in order to join them when they are cut, by which the Fingers are prevented from becoming rigid or motionleſs. This Suture may be performed, if the Tendon be not deeply ſeated, but lies near the Skin; ſuch are the Tendons of the Thumb, and Extenſor-Tendons of the Fingers on the Back of the Hand; the Flexor-Tendons of the Fingers, and the Extenſors and Flexors of the Hand, ſituated near the Carpus: Of this kind, alſo, in the Leg, are, the Extenſors of the Tibia below the Knee, the Tendon of *Achilles* above the Heel, and the like. On the contrary, the Tendons of the Palm of the Hand are ſo deeply ſeated, and conſequently the Suture is ſo difficult to be performed, that I never heard of one Inſtance of this Operation in that Part. The ancient Phyſicians were great Enemies to this Method of Cure, becauſe *Hippocrates* ſays, "That a divided Nerve, by "which he meant Tendon, can never again grow or coaleſce." And indeed, the moſt violent Diſorders are ſometimes cauſed by a ſlight Puncture of a Tendon. We may conjecture that this Operation was performed in *Galen*'s Time, becauſe he adviſes againſt it; and his Opinion was followed by the Generality of Phyſicians; and particularly by *Ambroſe Paré*. However, *Avicenna*, *Guido de Cauliaco*, *Salicetus*, *Rogerius*, *Lanfrancus*, *Brunus*, *Chalmeteus*, *Andreas à Cruce*, and other ancient Surgeons, approved of this Operation; but their Succeſſors ſeem either to have been ignorant of this Practice, or thought it too dangerous; till in the laſt Age, *Veſlingius*, *Severinus*, *Felix Wurtzius*, and other celebrated Phyſicians, eſpecially *Maynart* and *Bienaiſius*, both of *Paris*, *Purman*, and others, revived, and ſucceſsfully performed this Suture; which ſucceeds beſt when the Wound is recent; though it may be beneficially undertaken the ſecond, third or fourth Day, or longer, after the Wound has been inflicted; and ſometimes, but with greater Trouble, even after the Wound has been healed up.

Before the Operation be undertaken, let it firſt be conſidered, whether the wounded Tendon requires a Suture. Sometimes it happens that the Suture is impoſſible to be performed, and ſometimes it is attended with great Danger. In ſome Caſes it may be practicable, but is unneceſſary, when the Cure may be compleated by proper Dreſſings. If a conſiderable Part of the Tendon be cut off, and the Extremities be loſt among the Muſcles, ſo as that they cannot be brought into Contact, then it will be in vain to attempt the Suture. If the divided Extremities of the Tendon are violently contuſed, by which great Inflammation and Pain are induced, and the Parts be thereby hindered from uniting and healing, the Suture would rather irritate and increaſe theſe malignant Symptoms. In this Caſe, therefore, as *Garengeot* well directs, it may be proper to promote a ſlight Suppuration, and the Inflammation being abated, the Suture, if neceſſary, may be attempted. The ſame Author, after *Solingius*, obſerves, that the Tendons of the Extenſors in the Back of the Hand, may generally be united without Suture; if the Hand be extended, and the Fingers turned backwards, that the divided Parts of the Tendon may be brought into Contact. This Method, ſays *Heiſter*, I have often ſucceſsfully tried, particularly in a Youth who had all the Tendons of the Extenſors of the Fingers, upon the Metacarpus divided. In this Caſe therefore, as well as when the Flexors of the Fingers and Hands, or the Extenſors of the Toes are wounded, the Suture appears to me ſuperfluous, if the Parts are ſo bound and retained, by Splints, Compreſs, and Bandage, that the divided Extremities may be kept in Contact: But when the Tendons are only punctured, or perforated by a ſmall Inſtrument, or when they are not thoroughly cut, or are violently contuſed, if violent Symptoms, ſuch as Convulſions, be occaſioned, and if theſe Symptoms will not yield to proper Remedies, ſuch as Oil of Turpentine, either alone, or mixed with a few Drops of the diſtilled Oil of Amber, or of Lavender, it will be neceſſary to divide the wounded Tendon entirely; and the Symptoms being mitigated, it may be again ſew'd up.

The Suture of the Tendons may be performed in the following Manner: The Member being firſt bent, or extended, as the Circumſtances require, the wounded Part muſt be carefully inſpected. If the ſuperior Part of the Tendon, as is often the Caſe, be drawn up by its Muſcle, and concealed under the Skin, ſo that it cannot be brought down to be penetrated by the Needle, an Inciſion muſt be made into the Skin, and other Integuments, ſufficient to diſcover the Tendon, which muſt be gently laid hold of with the Forceps, drawing it a little downwards, and then the Tendon may be united by Suture; or if the Tendon be diſcovered, *Garengeot*, as he thinks the Treatment with the Forceps too rough, adviſes to draw the Tendon down, by paſſing a Needle and waxed Thread thro' it; but the Uſe of the Forceps, in this Caſe, occaſions no bad Conſequences.

There are two Methods of performing this Operation; the firſt with one Needle, and the ſecond with two. With one Needle, the Operation may be thus performed: Thread a ſtrait, ſmall, common, round, or flat-pointed Needle, (ſee *Tab.* 57. *Fig.* 2. A A) with a ſlender double Silk or Linnen Thread, but ſtrong enough, and waxed, as at B B; make a thick Knot at the Ends of the Thread, as at C, and draw the Needle with the Thread through the Middle of a Piece of Leather, as at D, or ſuch as is particularly repreſented at *Fig.* 3. A. and B, ſo that the Knot may not eaſily ſlip thro' the Tendon; (ſee *Fig.* 4. A, or *Fig.* 7. D E) then the wounded Hand, the Back of which is in ſome Manner repreſented in *Fig.* 4. muſt be extended flat on a Table, or thin Board, or a Piece of thick Paſteboard, that the divided Parts of the Tendon may be more eaſily joined together; then oppoſing the Canula delineated in *Tab.* 29. *Fig.* 6. Let. c, or only the Point of the Forefinger to the Extremity of the Tendon which is divided, oppoſite to the Needle, we are to paſs this Needle through the Middle of the ſuperior Tendon about a Straw's Breadth, or two Lines, from the Extremity paſſing the Needle from the external to the internal Parts, as in *Tab.* 57. *Fig.* 4. A. After this, the Needle is, in like Manner, to be paſs'd through the inferior Part of the Tendon, repreſented by B; but it muſt be directed from the internal to the external Parts: Then, as in the knotted Suture, applying either a ſmall Compreſs, or Piece of Linnen Cloth, wrapt up, as in *Tab.* 23. *Fig.* 22. either with or without Wax, or a Piece of waxed Silk folded up in the ſame Manner, or a Piece of Leather, a ſimple Knot is exactly to be made above the ſmall Compreſs, and then another, though a ſlipping and eaſily loos'd Knot; all the Parts of which Apparatus are in the *Figure* repreſented by the Letter B. Then the Wound being carefully cleanſed, apply warm Oil of Turpentine, or Balſam of Capivi, or ſome other vulnerary Balſam, with Lint and Compreſſes, likewiſe uſing a Splint or Piece of ſtiff Paſteboard, ſhaped according to the Hand, (ſee *Tab.* 57. *Fig.* 5.) with Compreſſes for raiſing the Fingers backwards, and ſecure the whole with a proper Bandage. Inſtead of a ſtreight Needle, the Surgeon may conveniently uſe a ſmall crooked Needle, ſuch as that repreſented at *Fig.* 6. which is flat about the Point A. If the Needle cannot be eaſily paſſed through with the naked Fingers, a Needle with a Handle may be uſed, as in *Tab.* 27. *Fig.* 2, 3. If the Wound has been inflicted ſome Days before, and the wounded Extremities of the Tendon appear to be indurated, which would render their Conglutination difficult, before the Ends are conjoined by the Suture, very thin Pieces ſhould be cut off them with the Sciſſars; or if the Wound be moſtly or entirely healed, it ſhould again be opened by Inciſion, the Tendon muſt be carefully ſeparated from the Parts to which it adheres, and then proceed as before directed.

Garengeot imagined that he had greatly improved this Method; he ſtrictly prohibits the laying of the Tendon bare, or bringing its Extremities into Contact with the Forceps, leſt by both theſe Operations violent Symptoms ſhould be excited; while, on the other Hand, the Patients are treated in a much milder and ſafer Manner, if the external Skin, together with the ſubjacent Tendon, be ſew'd up, as we have already directed,

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rected, and the Hand be kept extended with a proper Dreſſing. But that all theſe Meaſures may be the more commodiouſly taken, *Garengeot* adviſes, that whilſt others only uſe the Hands alone for this Purpoſe, we ſhould employ the Inſtrument repreſented *Tab.* 29. *Fig.* 6. L. c. thro' which, after applying the Finger to the oppoſite Part of the Skin in order to ſecure it, we are to paſs a Needle and Thread; and having paſſed the Needle through theſe Parts, we are to remove the Inſtrument: Then taking the Needle, we are to draw the Thread as far as is neceſſary, after which we are again to apply the Inſtrument, in order to perforate and bring into Contact the inferior Part of the Tendon in like Manner. For performing this Operation, crooked Needles are preferable to ſuch as are ſtrait; and plain Needles with an Edge on the interior Curve, as in *Fig.* 6. are preferable to Needles with Edges on both Sides, like the common ones repreſented in *Tab.* 22. by the Letters S T U; becauſe, by the former, ſo many Fibres of the Tendon are not divided as by the latter. When the greateſt Part of the double Thread is paſſed through the Integuments and Tendons, a Compreſs of Silk, ſpread with Wax, and wrapped up in a cylindrical Form, is to be fixed in this Thread as in a Loop, that it may ſecure the Ligature on the Lips of the Wound, as in *Tab.* 57. *Fig.* 4. Let. C. When the Thread is in like Manner paſs'd through the inferior Part of the Tendon, and the two Parts are drawn ſo together as to have their Extremities laid one contiguous to the other, and a cylindrical Compreſs is placed between the Thread, as at D, the Whole is to be ſecured with two Knots, the one a ſingle, and the other a ſlipping Knot. But it ſeems ſurprizing that *Vaugion*, *Verduc*, *Charriere*, and *Dionis* formerly, and, alſo, *Garengeot*, ſhould direct the Extremities of the Tendon to be laid one upon another, without offering any Reaſon for ſuch Conduct, when it is evident, that the Agglutination muſt be impeded by this Method, as has been already remarked by the celebrated *Cowper*, who happily reunited the Tendon of *Achilles* without obſerving this Circumſtance. But if the divided Parts of the Tendon are become callous by the Wound being received a conſiderable Time before, the abovementioned eminent Surgeons adviſe the Tendon to be ſeparated from the contiguous Parts, and the indurated Extremities to be cut off; then proceeding in the Suture as before. This Suture may, alſo, be conveniently performed, by applying a ſquare Piece of Leather, as in *Fig.* 3. A B, both to the ſuperior and inferior Part of the Wound, as is ſhewn in *Fig.* 7. making a Knot, with a Compreſs under it. The moſt ſimple Method of performing this Operation is propoſed by *Dionis*: Paſs a proper Needle, with a ſingle waxed Thread, through one Extremity of the Tendon, from without inwards; then paſs it through the other Extremity from within outwards, at one Stitch, and then removing the Needle, tie the Thread with a round Compreſs under the Knot, ſo that the Extremities of the wounded Tendon may be conjoined. But to this, the former Methods are generally preferred.

The Suture of the Tendons with two Needles, was, as far as I know, firſt deſcribed by *Nuck* thus: Thread two ſmall common Needles with one waxed Silk Thread, ſufficiently ſtrong, but moderately thick; paſs both the Needles through the upper Part of the Tendon, *Fig.* 4. E. inwardly, and through the lower Part of the other End of the Tendon, as at F, outwardly, ſo that both the Perforations on each Part of the Tendon ſhould be made towards the Sides of the Tendon, and near to the divided Extremities; then, removing the Needles, tie the Ends of the Threads, putting a Piece of Leather or ſmall cylindrical Compreſs under the Knot, which are to be ſo drawn together, that the divided Extremities may be brought into Contact. By this Method, ſays *Nuck*, the Extremities of the Tendon are not ſo liable to be lacerated as in the preceding Operations, where only one Perforation is made in each Extremity of the Tendon, and the divided Lips are more firmly kept in Contact. The Suture being thus finiſhed, he ſprinkles on the Part the Powder of boiled Turpentine, and dreſſes it with *Arcæus*'s Balſam, or the common Digeſtive, taking Care ſo to diſpoſe the Compreſſes and Splints, that the Tendon may be ſecured from Motion. Others prefer the former Method with one Needle, eſpecially if the Suture is to be made in the Hand, becauſe it may be done with more Readineſs, and with leſs Pain and Trouble to the Patient: However, I think *Nuck*'s Method is not to be entirely rejected. When there are ſeveral Tendons divided, the Suture is to be made upon each of the Tendons ſeparately.

The Suture being finiſhed, the Dreſſing muſt next be carefully performed. Lay in the Wound ſcraped Lint dipped in Oil of Turpentine, or *Peruvian* Balſam, or Balſam of Capivi, over which apply a Compreſs dipped in warm Spirit of Wine, and expreſſed. The Hand muſt be extended on a Piece of thick, ſtiff Paſteboard, (ſee *Fig.* 5.) with Compreſſes placed under the Palm, to prevent the Hand or Fingers from bending inwards: This Piece of Paſteboard muſt be firmly fixed with a Bandage; the Arm muſt be wrapped up with Linnen Cloths moiſten'd in Spirit of Wine, or warm Oxycrate. Some anoint the Arm with Oil of Earth-Worms, which is not improper. Theſe Dreſſings muſt be repeated, till the divided Parts of the Tendon ſeem to coaleſce, which may be known from the Laxity of the retaining Threads which muſt thereupon be cut, and carefully extracted: If the Pieces of Leather, Lint, or wax'd Silk, do not fall off ſpontaneouſly, they muſt be removed very gently. The Wound muſt be treated with a vulnerary Balſam, and ſcraped Lint, and the Hand muſt be kept extended on the Paſteboard, by which Means the Agglutination will be promoted. *Garengeot* deſcribes a particular Machine for retaining the Hand and Arm in a convenient Poſture, with the Fingers extended, and a little reflected: But though this Inſtrument may not be improper, the ſame Intention may be anſwer'd by the Method above directed. If any Rigidity or Diſtenſion affect the conglutinated Tendon, it will be proper to rub the Part carefully every Day with the Ointment of Marſhmallows, the Oil of Worms, of *St. John*'s Wort, or of Almonds, till it recovers its natural Motion. But it is ſurprizing, that not only the Antients, but even ſome of the Moderns, as *Arcæus*, *Marchetti*, *Genga*, *Peecetius*, and other eminent *Italians*, ſhould reject this Method of Cure; and ſome ſcruple not to aſſert, that all Accounts of the Succeſs of theſe Sutures ought to be reckon'd fabulous, although there are Inſtances of the contrary given by Authors of undoubted Credit, among whom may be conſulted *Kiſnerus's Diſſertatio de Tendinum Læſionibus*, *Valentini's Surgery*, and *Goelicke de Tendinum Affectibus*.

The Tendons of the Legs are no leſs liable to be divided than thoſe of the Arms, eſpecially the *Tendo Achillis*, and the Tendon of the *Extenſors* of the *Tibia*, immediately below the Patella. By the Tendon of *Achilles*, we mean that broad, ſtrong Tendon which extends the Foot, and reaches from the Calf of the Leg to the Heel: Its Name is derived from the *Grecian* Hero *Achilles*, who, by a Wound of this Tendon, is ſaid to have loſt his Life. By a Diviſion of this Tendon, the natural Power of moving the Foot is loſt; and unleſs it be carefully re-united, the Lameneſs will continue during Life. I am not, indeed, ignorant, that *Garengeot* mentions a Surgeon of *Paris* who cured a Man of a Fracture of the *Os Calcis*, by dividing the *Tendo Achillis* with the Knife, leaving it without a Suture, and taking out the Fragment of the Bone, and the Patient afterwards had no Defect in the Limb. But I am ſo far from recommending the Imitation of this Method, that I rather adviſe againſt it; nor can I ſee any Reaſon why, in a Fracture of the *Os Calcis* only, the Surgeon ſhould cut the *Tendo Achillis*; neither does it appear from this Relation, whether the Author only diſapproves of the Suture of this Tendon, or intirely rejects it. I wiſh *Garengeot*, who often enlarges on Difficulties of much leſs Importance, had, alſo, explain'd this ſurprizing Caſe, if true, ſo as to have made it intelligible. *Borelli* relates, that a Surgeon extirpated a large Tendon of the Ankle, (I ſuppoſe the *Tendo Achillis*) corrupted with an Ulcer; and that after the Wound was healed, the Patient could walk without any Inconvenience, being ſupplied with a new Tendon, or ſome analagous Subſtance. The Wounds of this Tendon may be of different Kinds: If it be only punctured, perforated, or partially cut, the Patient is ſeized with very dangerous Symptoms, as was obſerved in the other Tendons; but here the Diſorder is more violent, as this Tendon is larger than the others. Probably on this Account the antient Phyſicians reckoned the Wounds of this Tendon, as it is the largeſt in the Body, mortal, or at leaſt extremely dangerous, eſpecially as they had heard and read that ſuch a Wound was the Occaſion of the Death of *Achilles*. The Symptoms accompanying a Tendon entirely divided, are much more mild and tolerable, and therefore, when a Puncture or partial Wound is attended with very violent Diſorders, which will not yield to proper Remedies, let the Tendon be cut through, and then will the Pain and Convulſions ceaſe; and in reuniting the Tendon by the Suture, none of theſe dreadful Symptoms appear. But why the accidental Puncture of a Tendon ſhould be attended with ſuch dangerous Conſequences, and yet the Perforations made by the Needle ſhould occaſion little or no Diſorder, is by no Means evident to me, though the Truth of this Fact is undoubtedly proved by Experience. For this Reaſon, it is not ſurprizing that *Paré*, who in many Caſes was not ſo timorous, and many eminent Phyſicians, ſhould be afraid to attempt this Operation: And *Veslingius*, when he had ſeen the Tendon of *Achilles* reunited by Suture, and that to the *Extenſors* of the *Tibia* under the *Patella* performed by an *African* Surgeon, owns, that he abhorred the Raſhneſs of ſuch Operators, although the Succeſs and Eaſe of the Cure ſufficiently demonſtrated the Unreaſonableneſs of his Timidity. However, that the

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the *Tendo Achillis* when divided may be united, like other wounded Tendons, without a Suture, is not impoſſible, if the Foot can be bound up in ſuch a Poſition, that the divided Extremities may be brought into Contact.

The Method of performing this Suture differs little from the Suture of the Tendons of the Hand, (ſee *Tab.* 57. *Fig.* 7. and 10.) except that the Needle ſhould be larger and ſtronger, but either ſtrait, as at *Fig.* 8. Let. A, or crooked and flat, as at *Fig.* 9. The Thread, alſo, is required to be ſtronger, as at *Fig.* 8. B B. The firſt Account of this Operation, ſo far as I know, was given us by *Veſlingius*. One Inſtance he relates of the Suture of the Tendon of *Achilles*, and the other, which he ſaw in *Africa*, of that of the *Extenſors* of the *Tibia*. It was afterwards performed by the eminent Mr. *Cowper*, of *London*, whoſe Deſcription of this Operation, being the moſt particular yet publiſhed, I ſhall here deliver, taking Care to ſupply his Defects, and illuſtrate his Obſcurities.

Mr. *Cowper*'s Patient was about thirty Years of Age, having the *Tendo Achillis* of his left Leg cut through, about the Breadth of three Fingers above the *Os Calcis*, the ſuperior Part being drawn up from the inferior about two Inches. (See *Fig.* 10. A B.) Mr. *Cowper* firſt open'd, by Inciſion, the Integuments *a b*, before he could have Acceſs to the Extremities of the Tendon. This Inciſion *Garengeot*, and ſome other Moderns, forbid, becauſe from it they apprehend various Inconveniencies. But that no bad Conſequences can ariſe from this Circumſtance, is evident from the happy Concluſion of this very Caſe, not to mention the ſame Sort of Inciſion already recommended in treating the Tendons of the Hands. And if the Ends of the Tendon recede ſo far from one another as is here related, the Suture cannot be performed without ſuch Inciſion. *Cowper* here uſed two ſtrait, ſmall Needles; but *Garengeot* directs two very large, crooked Needles: But this Inſtance ſhews, that the Operation may be well executed with the ſmall, ſtrait Needles, though, perhaps, thoſe which are crooked may be more convenient. We, alſo, learn from this Caſe, that the *Acutenaculum*, or Handle for the Needle, is not ſo extremely neceſſary as *Garengeot* has repreſented it; for *Cowper* makes no Mention of it, and therefore it is probable he did not uſe it. He paſſes the firſt Needle C with a waxed Thread of Silk through the ſuperior Part of the Tendon A, about half an Inch from the Extremity. By the *Figure* it appears that he entered the Needle on the Outſide of the Tendon, guiding it to the Inner-ſide, though he makes no Mention of it; but the Figure does not exactly ſhew what Part of each End of the Tendon was perforated by the Needle C; that is, neither where it enter'd, nor where it came out, both of the ſuperior and interior Part of the Tendon. With another Needle D, and a like ſilken Thread, he in the ſame Manner pierced the ſuperior Part of the Tendon, entering it a little lower than the firſt; then he paſſes both the Needles through the inferior Part of the Tendon B. The Foot was afterwards extended, and the Extremities of the divided Tendon were brought into Contact by drawing the Ends of the Threads together, which were tied ſo as to keep the Extremities of the Tendon in Conjunction, while the Foot was retain'd in this Poſition, and the Ends of the Threads were cut off. In what Manner the Ends of theſe Threads were tied, whether C with D, or C with C, and D with D, is not mentioned in the Relation, nor appears from the *Figure*. But from what is below obſerved, I am of Opinion, that C is tied with C, and D with D. The Wound was then dreſſed with Lint dipped in Balſam of Turpentine, and a Compreſs and Bandage was applied. Next, that the Foot might be retained in a proper Extenſion, and the Extremities of the Tendon exactly kept in Contact, a ſort of Arch was made of the thickeſt and firmeſt Paſteboard, which was ſo applied to the anterior Part of the Foot and Leg, as to keep the Foot extended and immovable, and prevent a Rupture of the Suture. He obſerves, that the Patient complained of ſevere Pain, when with the Needle he perforated the ſuperior Part of the Tendon; but felt none when he pierced the inferior Part. Then, in order to prevent various Miſchiefs, fourteen Ounces of Blood were extracted from the Arm of the Patient, who was next put to Bed, and in the Evening an Ounce of the *Syrupus e Meconio* was exhibited to him, to compoſe him to Reſt. Next Day the Patient was in a favourable Condition, ſlept well, and only complained, that in the Night he felt lancinating Pains in the Calf of his Leg when he happened to awake. The third Day, the Wound was dreſſed in the ſame Manner as the firſt, adding only a Fomentation of Wormwood, Sage, Roſemary, and Bay-Leaves. On the fourth Day, the Wound appeared very wet with a ſerous Humour called *Synovia*; on the 6th, this Matter was thicken'd, and on the 8th, ſtill more inſpiſſated, after which it diſappeared. All this Time the two Extremities of the divided Tendon had not at all receded, but between them appeared a white Subſtance, to which the Balſam of Turpentine and Tincture of Myrrh were applied. Soon after this white Subſtance caſt off, and the two Extremities appeared covered with a fungous fleſhy Subſtance. To the Wound were afterwards applied dry Dreſſings, ſometimes dry Lint, and ſometimes the Powder of Turpentine. On the tenth Day, one of the Threads appeared relaxed, which *Cowper* cut and extracted. Two or three Days after, the other Thread became looſen'd, which he alſo cut and extracted, the Foot being all the while kept extended with the Paſteboard Arch. Hence it appears, that the Ends of the Thread C C were tied together, and likewiſe thoſe at D D, as I above hinted, becauſe one of the Threads became relaxed, was cut, and extracted, while the other remained tight; for had they been tied in any other manner, if one of the Threads had been cut, the other would alſo have been looſened. In one Circumſtance *Cowper* widely differs from all others; for it does not appear by his Relation, that he uſed any Compreſſes of Leather, Cork, or of waxed Linen or Silk. He alſo directs how the Threads of the Suture ſhould be extracted, a Particular which is generally overlooked by other Writers; as is the Paſteboard Arch, which however is ſo neceſſary in this Caſe, that the Extenſion of the Foot cannot eaſily be preſerv'd without it. Nor does any other Author mention the frequent Application of corroſive Medicines, to remove or diminiſh the ſpungy or luxuriant Fleſh. In thirty Days the Patient was able to walk a little, though lamely. He gradually came to walk with greater Eaſe, and about the End of the ſecond Month, recovered the perfect Uſe of his Foot. But *Paré* gives an Inſtance of the Tendon of *Achilles* being cut with a Sword, which not being united by Suture, was not only tedious and difficult of Cure, but after a Cicatrix was induced, it again broke as the Patient was riſing out of Bed.

Veſlingius gives a very imperfect Account of the Sutures which he ſaw of this kind: *I ſaw*, ſays he, *the Tendon of* Achilles, *in my Father's Amanuenſis, which had been divided a little above the* Os Calcis, *united with ſome Sutures performed by Surgeons. I likewiſe ſaw the Tendon of the* Extenſors *Tibia, in an* Arabian, *which had been cut with a Scymetar, tranſverſely under the Patella, brought into Conjunction in the ſame manner by a Surgeon of* Tunis. From this Relation we can only learn, that more than one Suture was uſed, but no Mention is made of the Manner of Dreſſing, and Method of Cure. *Kiſner*, in his Diſſertation *de Tendinum Læſionibus*, has delineated another Method of performing the Suture of the Tendon of *Achilles*, which I have repreſented in *Tab.* 57. *Fig.* 7. which is ſo plain as to need no further Explication. But though the Generality of Authors direct to make the firſt Perforation in the upper Part of the Tendon, he begins with the lower at D E, and makes the ſlipping Knot on the ſuperior Part, which others make on the inferior. But though I do not deny, that this Method propoſed by *Kiſner* may ſucceed, yet I would prefer that followed by *Cowper* and others.

The Method of performing the Suture of the Tendon of the Extenſors of the Tibia, has not, I believe, been hitherto deſcribed by any Author; but I conceive it may be done in the ſame manner as that juſt deſcribed. But as this Tendon is larger than the Tendon of *Achilles*, one Puncture in each Part of the Tendon may not be ſufficient; it may therefore be proper, the Leg being firſt extended, to uſe a Thread with two Needles, and to make two Perforations in each Part of the Tendon, after the Manner propoſed by *Nuck*, [See *Tab.* 57. *Fig.* 4. *Lit.* E F.] which we have already given. The Wound may be afterwards treated, as we have directed in Tendons of the Hands, or according to the Method propoſed by *Cowper*. The Ham muſt afterwards be bound up with Splints of Wood, or thick Paſteboard, as in a Fracture of the Patella; ſo that the Knee cannot be bent, but retained in continual Extenſion. But by carefully obſerving to keep this Poſture of the Leg, and treating the Wound in a proper manner, I make no doubt but this Tendon may coaleſce without a Suture; becauſe the ſuperior Part of the divided Tendon will not ſhrink ſo much as in the Tendon of *Achilles*, on account of the Connexion of the Patella with the Tibia; and therefore the two Extremities may more eaſily be brought together, and retained in Contact by proper Bandages.

OF THE SUTURE OF THE LIGAMENTS.

As the Ligaments conſiſt of a ſimilar Subſtance with the Tendons, in all probability they may be ſucceſsfully united by the ſame Method, though I know no Inſtance of this Operation. But in this Suture the Thread with two Needles ſeems to be moſt proper, and the Method recommended by *Garengeot* for Sutures of the Tendons, which we have already given, ſhould be obſerved. The Dreſſings and other Treatment

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ment may be the same as in the preceding Cases. *Heister's Surgery.*

SYALITA. H. M. *Arbor Indica flore maximo, cui multæ innascuntur Siliquæ.* This is a tall Tree, forty or fifty Foot in Height, growing in *Malabar*, and bearing a most beautiful and sweet-scented Flower, succeeded by a very large Fruit resembling an Apple, and much like our subacid or vinous Apples both in Taste, Smell and Pulp, tho' somewhat too acid to be eaten as a Delicacy; it is, however, used by the Natives, especially in their Broths.

Of the Leaves of the Tree they prepare a Lixivium, which is of use in cleansing the Greasiness of the Hair, and detersing the Sordes of the Head, and also in smelting and depurating Silver. The expressed Juice of the Roots applied in Linen moistened therewith, resolves inflammatory and Oedematous Tumors. The expressed Juice of this tender Fruit, made into a Syrup with Sugar, cuts and expels Phlegm, and cures the Aphthæ and Inflammations of the Fauces. The mature Fruit loosens the Belly, and frequently excites a Diarrhæa. And the Bark of the Tree bruised with an Infusion of Rice, which the Natives call *Ambata-Conjja*, being rubbed on the affected Part, cures the Gout. *Raii Hist. Plant. p.* 1707.

SYCAMINOS. The Mulberry.

SYCE, συκη. The Fig.

SYCIA, by Corruption for SICYA, which see.

SYCION, συκιον. A Decoction of dry'd Figs.

SYCITES, συκιτης. An Epithet for Wine impregnated with Figs.

SYCOMA. See SYCOSIS.

SYCOMORUS, Offic. J. B. 1. 124. Ger. 1326. Emac. 1509. *Sycomorus sive Ficus Ægyptia*, Park. Theat. 1492. *Ficus folio Mori, fructum in caudice ferens*, C. B. P. 459. Raii Hist. 2. 1439. THE EGYPTIAN SYCOMORE.

It grows in *Egypt* and other Countries, and the *Fruit* and *Tear* are in Use. The *Fruit* is cooling and moistening, and relaxes the Stomach, and cures hard Tumors; the *Tear* resists Poisons and the Pestilence.

The Fruit of the Sycomore agrees with the Belly, but affords very little Nutriment, and is bad for the Stomach. It is supposed to be of a refrigerating and moistening Quality, and to loosen the Belly, whence it is proper to be applied with the Oil of Roses to the Stomach in feverish Disorders. *Galen* bestows very high Commendations on the Plaister διὰ συκομόρου, *Diasycomorum*, for the Cure of a Tumor proceeding from a gross and vaporous Spirit. The Tear of the Tree has the Virtue of mollifying, conglutinating Wounds, and discussing what is difficult to be maturated. It is also taken inwardly, and used outwardly in Inunctions against the Bites of Serpents, scirrhous Hardnesses of the Spleen, and Pains and Coldness of the Stomach. The Ancients prepared a Wine of the Fruit, which easily degenerated into a very sharp Vinegar. *Raii Hist. Plant.*

SYCOSIS, σύκωσις, in Latin *Marisca*, is a Tumor in the Anus, differing from the Thymus only in Bigness. Σύκωσις, in *Celsus*, *Lib.* 6. *Cap.* 3. is also an Ulcer, so called, he says, by the *Greeks*, from its Resemblance to the σῦκον, or *Ficus*, because the Flesh grows up in it. He proceeds to tell us, that it is of two Kinds, one hard and round, the other moist and unequal. From the hard Ulcer, or *Sycosis*, is discharged a glutinous Substance in small Quantities; from the humid Ulcer, a larger Quantity and of an ill Smell. They both arise in those Parts which are covered with Hair; but that which is round and callous, is generally seated in the Beard; the moist Kind, for the most part, among the Hair of the Head. Thus *Celsus*.

For the Cure of both these Kinds of *Sycosis*, the same Author advises the Application of the Elaterium, or Linseed bruised and made into a Mass with Water, or Figs boiled in Water, or the *Emplastrum Tetrapharmacum* made up with Vinegar, or to rub the Place with *Terra Eretria* dissolved in Vinegar.

Sycosis, σύκωσις, is also the same as *Sycoma*, σύκωμα, or *Sycon*, σῦκον, which is an Eminence and Tumor of the Eyelids with an Asperity, whence the Eyelid is called *Ficosa Palpebra*. *Paulus* gives this Name to a rough Excrescence of the inner Part of the Eyelid, which increases so as to have Incisures, by which it is distinguished from a *Trachoma*, τράχωμα. And the Author of the *Isagoge* defines a *Sycosis* to be something like Flesh growing in the interior Part of the Eyelid, and hanging out in such a manner as to incommode the Eye in its Motion. *Aetius*, *Tetrab.* 2. *Serm.* 3. *Cap.* 45. tells us, that what we call a *Sycosis*, has high Eminences, and, as it were, Incisures.

Galen, *Com.* 2. *in* 6 *Epid.* for exulcerated Tumors and Eminences in the Eyelid, directs, first to use exasperating Medicines, and then Corrosives, that their Virtue may penetrate the deeper; and tells us, that in such Cases he has made use of the rough Skin of a Whale, the Shell of a Sepia, and a Pumice-stone. The same Author, *Lib.* 11. *de Simpl. Med. Fac.* says, that they call great and considerable Asperities of the Eyelids *Sycoses*; and *Lib.* 4. *de C. M. S. L.* that small Asperities of the Eyelids are called *Trachomata*, but considerable ones *Sycoses*.

SYCOTA, συκωτα, from σῦκον, a Fig; are a delicate Sort of Food prepared of *Caryceæ*, which, as *Galen* says, *Com.* 3. *in Lib. de R. S. J. A.* on account of their Sweetness, are very grateful to the Viscera, particularly the Liver, but very hurtful in Fevers and internal Inflammations, because they are easily converted into Bile.

SYCOTON, συκωτὸν, we are told by *Aetius*, *Tetrab.* 2. *Serm.* 2. *Cap.* 127. is a Name for the Liver of a Pig fatten'd with *Caryceæ*.

SYDIA. Wool. *Rulandus.*

SYLETUM, is defined by *Paracelsus*, a Medicine compounded of three Salts. *De Tartaro*, *Tract.* 2. *C.* 5.

SYLO. The whole World. *Rulandus.*

SYMBOLISMUS. Means a Consent of Parts, in the Writings of some of the Chymists.

SYMBOLOGICE. That Part of Pathology, which treats of the Signs or Symptoms of Diseases.

SYMPARATAXIS, συμπαράταξις, from σὺν, importing Conjunction or Mixture, and παρατάττω (of τάττω, to order) to draw up an Army in Order of Battle, is properly a Conflict between two Armies, but is used by *Hippocrates*, *de Prisca Medicina*, to signify the Conflict or Contention between the Disease, Nature, and the Aliments.

SYMPASMA, σύμπασμα. The same as CATAPASMA, or DIAPASMA.

SYMPATHETICUS PULVIS. The Sympathetic Powder.

> Take good *English* Vitriol, such as we call Bow Copperas, purify it by two or three Dissolutions, Filtrations, and Crystallizations; set those Crystals in a clean Pan in the Sun, either in *June*, *July*, or *August*, till they are calcined to Whiteness. When one Side is calcined, turn the other, and in a few Days the Crystals will crumble into Powder; if they do not, they may be again beat and exposed to the Sun, and stirred three or four times every Day. At last beat them into a very fine Powder, and again set them in the Sun, stirring as before for two or three Days more, in which Time they will be very white; then take in the Matter while the Sun shines hot upon it, and keep it from the Air in Glasses well stopt, and in a dry Place.

It is a mild powerful Styptic, very successfully applied in the Stopping of Blood, either at the Nose or Wounds, and will incarnate and heal up, where the Bone is not unsound. We have a great many surprising, and even romantic Stories, of its Efficacy, by some Writers in that Way, by which it has obtained its Name, and particularly by Sir *Kenelme Digby*; but the present Practice owns no such Chimæras.

Powder of Sympathy, according to Sir *Kenelme Digby*, from whose Discourse on this Subject, made before a solemn Assembly of Persons of Quality and Learned Men at *Montpellier* in *France*, the following Account is taken, is a Powder which naturally, and without any Magic, cures Wounds without touching, and even without seeing the Patient.

The Method and primitive Manner how to make use of this sympathetic Remedy, was to take only some Vitriol, and that of the common Sort, as it came from the Druggist's, without any Preparation or Addition at all, and to dissolve it in Fountain-water, or rather Rain-water, in such a Proportion, that putting therein some polished Iron, it should come out changed into the Colour of Copper. And into this Water they put a Clout or Rag, embrued with the Blood of the Party hurt (the Rag being first dry); but if it was yet fresh, and moist with the reeking Blood, there was no Need but to powder it with the small Powder of the same Vitriol, in such sort that the Powder might incorporate itself, and imbibe the Blood remaining yet behind, and keep both the one and the other in a temperate Heat and Place, viz. the Powder in one's Pocket, and the Water (which admits not of this Commodity) in a Chamber where the Heat was temperate, and every time that one puts new Water of Vitriol, with fresh Powder and new Cloth, or other bloodied Stuff, the Patient should feel new Easement, as if the Wound had been then dressed with some sovereign Medicament; and for this Reason, they used to reiterate this Manner of Dressing both Evening and Morning.

But now the most part of those who make use of this Remedy of the Powder of Sympathy, do endeavour to have Vitriol of *Rome*, or of *Cyprus*, and calcine it white in the Sun.

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Sun. And besides, some use to add the Gum of Tragacanth, it being easy to add unto Things already invented.

The Virtue of this Powder is confirmed, as our Author says, by one of the cleerest, most perspicuous, and most averred Instances that can be, not only from the remarkable Circumstances thereof, but also for the Hands through which the whole Business passed. For all the Circumstances were examined and sounded to the Bottom by one of the greatest and most knowing Kings of his Time, King *James* [the First] of *England*, who had a particular Talent, and marvellous Sagacity, to discover natural Things; as also by his Son King *Charles*, and the Duke of *Buckingham*, their Prime Minister. And all was register'd among the Observations of the Great Chancellor *Bacon*, to add, by way of Appendix, to his *Natural History*. The Matter of Fact is as follows.

Mr. *James Howell*, well known for his publick Works, and particularly his *Dendrologies*, endeavouring to part two of his Friends engaged in a Duel, seized with his Left Hand the Hilt of the Sword of one of the Combatants, and with his Right Hand laid hold of the Blade of the other. They being transported with Fury one against the other, struggled to rid themselves of the Hindrance their Friend made, that they should not kill one another; and one of them roughly drawing the Blade of his Sword, cut to the very Bone the Nerves and Muscles of Mr. *Howell*'s Hand; and then the other disengaging his Hilt, gave a cross Blow on his Adversary's Head, which glanced towards his Friend, who heaving up his sore Hand to save the Blow, he was wounded on the Back of his Hand, as he had been before within. The two Combatants seeing Mr. *Howell*'s Face besmeared with Blood, by heaving up his wounded Hand, left fighting at once, and ran to embrace him, and having searched his Hurts, they bound up his Hand with one of his Garters, to close the Veins which were cut and bled abundantly. They brought him home, and sent for a Surgeon; but this being heard at Court, the King sent one of his own Surgeons; for his Majesty much affected the said Mr. *Howell*.

It was my Chance to be lodged hard by him, and four or five Days after, as I was making myself ready, he came to my House, and prayed me to view his Wounds; for I understand, said he, that you have extraordinary Remedies upon such Occasions, and my Surgeons are apprehensive that it might grow to a Gangrene, and so the Hand must be cut off. In effect, his Countenance discovered that he was in much Pain, which he said was insupportable, in regard of the extreme Inflammation. I told him I would willingly serve him, but if haply he knew the Manner how I would cure him, without touching or seeing him, it may be he would not expose himself to my Manner of Curing, because he would think it perhaps either ineffectual or superstitious. He replied that the wonderful Things which many have related unto me of your Way of Curing, make me nothing at all doubt of its Efficacy. I asked him then for any thing that had the Blood upon it; so he presently sent for his Garter, wherewith his Hand was first bound; and having called for a Bason of Water, as if I would wash my Hands, I took a Handful of Powder of Vitriol, which I had in my Study, and presently dissolved it. As soon as the bloody Garter was brought me, I put it within the Bason, observing in the mean while what Mr. *Howell* did, who stood talking with a Gentleman in a Corner of my Chamber, not regarding at all what I was doing; but he started suddenly, as if he had found some strange Alteration in himself. I asked him what he ailed. I know not what ails me, replied he; but I find that I feel no more Pain; methinks that a pleasing Kind of Freshness, as if a wet cold Napkin did spread over my Hand, has taken away the Inflammation that tormented me before. I answered, since you feel already so good an Effect of my Medicament, I advise you to cast away all your Plaisters, only keep the Wound clean, and in a moderate Temper betwixt Heat and Cold. This was presently reported to the Duke of *Buckingham*, and a little after to the King, who were both very curious to know the Circumstance of the Business, which was, that after Dinner I took the Garter out of the Water, and put it to dry before a great Fire. It was scarce dry, but Mr. *Howell*'s Servant came running, that his Master felt as much Burning as ever he had done, if not more, for the Heat was such, as if his Hand were betwixt Coals of Fire. I answered, that tho' that had happened at present, yet he should find Ease in a short time, for I knew the Reason of this Accident, and I would provide accordingly, for his Master should be free from that Inflammation, it may be, before he could possibly return unto him; but in case he found no Ease, I wished him to come presently back again; if not, he might forbear coming. Thereupon he went, and at the Instant I did put again the Garter into the Water, he found his Master without any Pain at all. To be brief, there was no Sense of Pain afterwards; but within five or six Days the Wounds were cicatrised and entirely healed.

King *James*, who had received a punctual Information of what had happen'd, would fain know how it was done. I readily told him what the Author, of whom I had the Secret, said to the Great Duke of *Tuscany* on the like Occasion. It was a religious *Carmelite*, who came from the *Indies* and *Persia* to *Florence*; he had, also, been in *China*, and having done many strange Cures with his Powder, after his Arrival in *Tuscany*, the Duke said he would be very glad to learn it of him. The *Carmelite* answer'd, that it was a Secret he had learnt in the Oriental Parts, and he thought there was not any Person in *Europe* who knew it but himself, and that it deserved not to be divulged, which could not be done if his Highness meddled with the Practice of it, because he was not likely to do it with his own Hand, but must trust a Surgeon, or some other Servant; so that, in a short Time, divers others would come to know it as well as himself. But a few Months after I had an Opportunity to do an important Curtesy to the said Friar, which induced him to discover unto me his Secret; and the same Year he returned to *Persia*, so that now there is no other knows this Secret in *Europe* but myself. The King replied, that I need not be apprehensive that he would discover any Thing, for he would not trust any Body in the World to make Experience of his Secret, but that he would do it with his own Hands, and therefore desired some of the Powder; which I deliver'd, instructing him in all the Circumstances. Whereupon his Majesty made sundry Proofs, whence he received singular Satisfaction.

In the Interim Dr. *Mayern*, his first Physician, wanted to discover what was done by this Secret; and at last he came to know that the King made use of Vitriol. Afterwards he accosted me, saying, he durst not demand of me the Secret, because I made some Difficulty of discovering it to the King himself; but having learnt with what Matter it was to be done, he hoped that I would communicate unto him all the Circumstances how it is to be used. I answered him, that if he had asked me before, I would have frankly told him all, for in his Hands there was no Fear that such a Secret should be prostituted. A little after the Doctor went to *France*, to see some fine Lands which he had purchased near *Geneva*, and in this Journey went to see the Duke of *Mayenne*, who had been his Friend and Protector, and taught him his Secret, whereof the Duke made many Experiments, which if any other than a Prince had done, that had perhaps passed for Effects of Magic and Enchantment.

After the Duke's Death, who was killed at the Siege of *Montauban*, his Surgeon, who waited upon him in doing Cures, sold this Secret to divers Person of Quality, who gave him considerable Sums for it, so that he became very rich thereby. The Thing being thus fallen into many Hands, remained not long a Secret, but by Degrees came to be so divulged, that now there is scarce any Country Barber but knows it.

The Author proceeds from Matter of Fact to assign Reasons, or, as he says, to make good convincing Proofs, that this *Sympathetical* Cure may be done naturally. Here, tho' indeed he manages his Argument very ingeniously, and shews a great Insight into Nature for those Times, and enlivens his Discourse with many remarkable and surprising Relations; yet what he says, I doubt, will not appear demonstrative to one whose physical Notions are built upon modern Principles and Discoveries. The Powder itself, and its Effects, how well soever they seem attested, are left intirely to the Judgment of the Reader.

SYMPEPSIS. Concoction, or Digestion.

SYMPHONOS. συμφωνος. An Epithet for a Medicine against a Cough and Fever, recommended by *Galen*, *L. 7. de Comp. M. S. L. Cap.* 2.

SYMPHORANEUROS. A Term peculiar to *Forestus*, importing a severe Tremor in acute Fevers, accompanied with an Hebitation of the Senses.

SYMPHYSIS. σύμφυσις, from σύν, with, or together, and φύω, to grow, in Anatomy, is a Species of Articulation. In Surgery, *Symphysis* is a Coalescence of the natural Passages, as the *Anus*, *Vagina*, Nostrils, or any other Part.

SYMPHYTUM.

The Characters are;

The Calyx is cut, even to the Base, into five long slender Segments. The Flower is monopetalous, pendulous, cylindrical, in the lower Part, and in its upper Part, which has its Margin quinquefid, resembling a Pitcher. From the interior, lower, fistulous Part of the Flowers, where it begins to be explicated, proceed five Stamina, and as many sharp, nodding Pales, placed alternately. The Seeds are smooth, shining, and resembling those of the *Lithospermum*.

Boerhaave

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Boerhaave mentions six Sorts of *Symphytum*, which are;

1. Symphytum; Consolida major; mas; flore purpureo. *Boerh. Ind. A.* 195. *C. B. P.* 259. *Symphytum, Consolida major.* Offic. Tourn. Inst. 138. *Symphytum magnum*, J. B. 3. 593. Raii Synop. 3. 230. *Symphytus majus vulgare*, Park. Theat. 523. *Consolida major*, Ger. 660. Emac. 806. Raii Hist. 1. 505. COMFREY.

Comfrey has a large Root, divided into many Branches, which are black, on the Outside, but white within, full of a slimy tenacious Juice. The lower Leaves are pretty large, long, narrow, and sharp-pointed, hairy and rough. The corner'd Stalks grow to be two or three Foot high, cloathed with smaller Leaves, and bearing on their Tops reflected Spikes of white Flowers, opening by Degrees; each Flower being hollow and cup-fashion, cut into five blunt Segments on the Top, and set in a very hairy Calyx; in which, after the Flower is fallen, grow four rough Seeds. It grows by River Sides and watery Places, and flowers in *June*.

There is one Sort of great *Comfrey*, that bears purple Flowers; but it is not so frequently met with as that with white.

The Roots, Leaves and Flowers are used.

Comfrey is a good vulnerary Plant, having the Name of *Consolida* given it, because it consolidates Wounds. It is likewise good against inward Bruises, Spitting of Blood, and is useful against sharp corroding Humours, that cause Erosions in the Bowels. The Roots beaten to a Cataplasm, ease Pains of the Gout.

The only officinal Preparation from *Comfrey*, is the *Syrupus de Symphyto*. *Miller's Bot. Off.*

The Leaves of *Comfrey* are insipid, glutinous, and give a very faint Tincture of red to the blue Paper; the Roots give it a little deeper, and abound with a viscid Juice. This Plant contains a Salt very much resembling the Salt of Coral, dissolved in a very glutinous Phlegm, in which there is a little Sulphur, and a very little Sal Ammoniac: For

By the Chymical Analysis it yields several acid Liquors, a great deal of Earth, very little Sulphur, no volatile concrete Salt, but a little urinous Spirit. There is but a very small Quantity of the fix'd Salt; so that it may probably act principally by its viscid Juice, which the Fire destroys.

Dioscorides says its Roots are vulnerary; that being bruised with the Leaves of Groundsel, they assuage the Inflammation of the Piles; that their Juice is good for spitting Blood; and lastly, that being boiled with Meat, they join the Pieces together again. The Moderns agree that its Roots incrassate and lenify; they are good in Hæmorrhages and spitting of Blood, caused by acrid Salts, which render it too fluid; and, in Desluxions of the Breast, caused by saltish and corrosive Serosities. The Roots are candy'd, and Lozenges are also made of them. *Fernelius*'s Syrup of *Comfrey* is very compound; so is likewise that of *Dodonæus*, but it is more lenifying.

Take two Ounces of *Comfrey* Roots; of Liquorice, one Ounce; two Handfuls of the Leaves and Roots of Colts-foot; an Ounce and an half of the Kernels of Pine-Apples; twenty Jujubes; two Drams of Mallow Seeds; two Drams of the Heads of white Poppy: Boil all this in a Pound and a half of Water; strain the Decoction thro' a Sieve; make it into a Syrup with six Ounces of Sugar, and as much *Narbonne* Honey.

The Roots of *Comfrey* bruised and applied as a Cataplasm, very much assuage the pricking of the Tendons, the Pains of the Gout, and stop spreading Ulcers. *Simon Paulli* advises not to use them alone for the Gout, for fear they should repel the Humour. He prescribes the following Cataplasm, which he had from *Sennertus*, as an incomparable Remedy.

Take three Ounces of *Comfrey* Roots; two Ounces of Marsh-mallow Roots; one Ounce and a half of those of Dwarf Elder; one Handful of the Leaves of Southern Wood; two Handfuls of St. John's Wort; three Handfuls of Chamomile Flowers; four Handfuls of those of Elder; two Ounces of Fœnugreek Seed; three Ounces of Linseed; boil all together in Elder-Water, to make a Cataplasm. This Medicine is very compound. I mix some Drops of fetid Oil with the Root of *Comfrey* well bruised, and apply it to the Parts affected with the Gout. *Martyn's Tournefort.*

Symphytum is principally used in all Sorts of Fluxes, especially of the Belly, in an Erosion of the Lungs, and a Phthisis. But I, says *Bauhine*, (with whom agrees *C. Hoffman*) would not use the Root of *Comfrey* in all Kinds of Disorders of the Thorax, but only in such as proceed from a thin, subtile and hot Humour. The Flowers boiled in Red Wine, and taken twice a Day, are an excellent Remedy, according to *Camerarius*, for bloody Urine. *Parkinson* commends the Roots cut small, then pounded and apply'd, in Pains of the Gout, and for restraining phagedenic Ulcers, and even Gangrenes. Take of the Roots of *Comfrey*, as much as you think fit, beat them in a Mortar to a Mass, which spread upon Leather, and apply to the Part affected; this Cataplasm is not only effectual for mitigating the Pain of the Gout and Sciatica, but, also, Pains of the Arms, attended with a Privation of Motion, and for some Kinds of venereal Pains, in which it has been successful, after many Embrocations used to no Purpose. Pulverise the dry'd Root of *Comfrey*, and mix the Powder with warm Spring-Water, stirring it about till you observe the Water to become ropy with the Glue or Slime of the *Comfrey*. This very simple Medicine is prefer'd by the most skilful Surgeons, as well in Hæmorrhages, as Fractures and Luxations, before many others which are more compounded. A certain Person labour'd under a malignant Ulcer, which the Surgeons pronounced a Cancer, but could not cure it. A Mountebank was consulted; he took the Root of the greater *Comfrey*, and scraping off the black outer Bark, he bruised the rest, and spreading it on a Linnen Cloth, applied the same twice every Day to the Part affected, and the Patient was cured; the Cancer, however, was but recent, and of no more than eight or ten Weeks standing. *Raii Hist. Plant.*

2. Symphytum; Consolida major; fœmina; flore albo, vel pallidè luteo. *C. B. P.* 259.

This agrees in Virtues with the former.

3. Symphytum; Consolida major; mas; flore purpureo cæruleo. *C. B. P.* 259.

4. Symphytum; Consolida major; mas; flore coccineo.

5. Symphytum; majus; tuberosâ radice. *C. B. P.* 259.

6. Symphytum; Echii folio angustiore; radice rubrâ; flore luteo. *T.* 138. *Anchusa, lutea, minor.* C. B. P. 255. *Boerh. Ind. Alt. Plant.*

It is called *Symphytum* from συμφύω (*Symphyo*) to conglutinate, to cause a Coalition, from its well known conglutinating Quality.

The first Species has a viscous and glutinous Juice, and is of excellent Service in Wounds and malignant Ulcers, attended with Hæmorrhages, in Spitting of Blood, bloody Urine, and a Phthisis. The Root is insipid, but very demulcent, and the Juice is very good in an Hæmoptoe from an excessive Tenacity, and in Hernias. The *Syrupus de Symphyto* of *Fernelius* is good in Asperities of the Lungs, but not proper for a Cough in old Persons, for it increases it. A Cataplasm of the Roots is effectual in Punctures of the Tendons. The Herb is good in a Dysentery, and an Exulceration of the Kidneys and Bladder from Cantharides; it is exhibited like the *Althæa*, but in a smaller Dose, because of its grosser Mucosness. The Flowers bruised and boiled, with an Addition of Syrup of *Althæa*, make an excellent Cataplasm for consolidating recent Wounds. *Hist. Plant. Ascript. Boerh.*

SYMPHYTUM is also a Name for several Sorts of *Pulmonaria*.

SYMPHYTUM MINIMUM. See BELLIS MINOR. It is also a Name, in *Boerhaave*, for the *Omphaledes*; *pumila*; *verna*; *Symphyti folio*.

Besides the foregoing Sorts of *Symphytum*, *Dale* mentions the following Species;

SYMPHYTUM PETRÆUM. Offic. *Symphytum petræum foliis Thymi.* C. B. P. 280. *Coris cærulea maritima*, Ejusd. Raii Hist. 1. 882. Tourn. Inst. 652. *Coris cærulea Monspeliaca*, Ger. Emac. 544. *Coris Monspelliensium*, Park. Theat. 571. *Coris Monspessulana purpurea*, J. B. 3. 434. HEATH-PINE.

It grows in maritime Places, and flowers in *May*. The Herb, which is used, is drying, astringent and conglutinant; the Plant is a Vulnerary. There are a Multitude of Plants which pass under the Name of *Symphytum Petræum*, as *Prunella*, *Sanicula*, *Virga aurea*, *Coris Monspessulana*, *Hyssopus vulgaris*, *Polium vulgare montanum*, *Trachelii et Consolidæ Species aquosæ*, and some others. *Dioscorides* describes the *Symphytum Petræum* in the following manner: "It grows on "the Rocks, and has Branches like Origanum, but small "Heads, and thin Leaves like *Thymus*. The whole Plant is "ligneous, sweet-scented, of a sweet Taste, and provokes "Spittle. The Root is long, reddish, and about the Thick-"ness of a Finger." After throughly considering this Description, I cannot persuade myself, that those Authors are in the right, who, with *Thalius*, take the *Symphytum Petræum* to be the same as the *Caryophyllus Saxatilis*; or, with *Lobel*, to be a Species of *Prunella*; or, with *Tabernamontanus*, the same as *Virga aurea*. *Dale.*

Dioscorides says, that the Root boiled in Hydromel and drank, clears the Lungs of excrementitious Particles, and given in Water cures Vomiting of Blood, and nephritic Disorders. Boiled in Wine it cures the Dysentery, and the *Fluor Uteri* in Women; and taken in Oxymel, it is effectual

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in Ruptures (*Ecclymoſes*) and Convulſions. Chewed in the Mouth, it allays Thirſt, and cures Aſperities of the Fauces. Made into a Cataplaſm, it conglutinates recent Wounds, and cures an *Enterocele*. *Dioſcorides*, *Lib.* 4. *Cap.* 9.

SYMPLESIASMOS. συμπλησιασμὸς. In *Latin* expreſſible nearly by *Conjunctio* or *Appropinquatio*; a modeſt Term by which the Antients expreſſed the Act of Coition, or Duty of Procreation. *Caſtellus*.

SYMPTOMA, συμπτωμα, from σὺν, importing Conjunction, and πίπτω, to fall or happen; a Symptom or Accident. *Symptom* is a very noted Term in Medicine; and, according to *Galen*, *Lib. de Diſt. Sympt. Cap.* 1, 2. is taken in a large or ſtrict Senſe. In a large Acceptation, it ſignifies whatever preternaturally befals a Perſon, whether it be a Diſeaſe, a morbific Cauſe, or ſupervening preternatural Accident. In a ſtrict Senſe, it means no more than the third or laſt Species; that is, the Conſequences of Diſeaſes, and of their Cauſes, excluſive of the Diſeaſes and Cauſes themſelves, and ſo is no other than a preternatural Affection, which follows the Diſeaſe, as the Shadow follows the Body. *Galen*.

Whatever preternatural Incident, proceeding from the Diſeaſe, as its Cauſe, befals a ſick Body, yet ſo as that it may be diſtinguiſhed from the Diſeaſe itſelf and its proximate Cauſe, is called συμπτωμα, "the Symptom" of that Diſeaſe; when it proceeds from a prior Symptom as its Cauſe, it is called σύμπτωμα συμπτώματος, "a Symptom of a Symptom." But whatever happens over and above in a Diſeaſe, and owes its Riſe to a different Origin from the beforementioned, is rather called ἐπιγίνημα, (*Epigenema*) ἐπιγινόμενον, (*Epiginomenon*) and συμβεβηκὸς, (*Symbebecos.*)

Hence it follows, that thoſe very Symptoms firſt mentioned, are really Diſeaſes in their Turn, and very different in Number, Variety, and Effects. We may, however, in Compliance with the Sentiments of the Ancients, conveniently enough reduce them, as they do, under three Heads, and make them to be either *Injuries of the natural Functions*, *Defaults in Retention and Excretion*, *or Alterations in the Qualities of the Body*. The natural Functions may be ſaid to be injured, when they are diminiſhed, aboliſhed, increaſed beyond due Meaſure, or depraved; for example, the Symptoms, or Injuries of the Function which regard Appetite, are a δυσορεξία (*Diſorexia*) "a Diminution of the Appetite to "Food;" an ἀνορεξία (*Anorexia*) "an Abolition of the Ap"petite;" a βουλιμος (*Bulymos*) "an immoderate Appetite;" and a κίσσα, μαλακία (*Ciſſa*, or *Malacia*) a "depraved Appe"tite, or a Deſire after improper Food." The Default, or Diſorders which fall under the Head of *Retention* and *Excretion*, are treated of in their proper Places, when they come to be conſider'd as Cauſes of Diſeaſes. And as to the third Head, a Quality of the Body is ſaid to be alter'd or vitiated, when it is offenſive to the outward Senſes; and this is conſider'd chiefly with reſpect to Colour and Smell; ſuch, for Inſtance, as a fetid Scent, and a pale, yellow, green, livid, red or black Colour of the Skin. *Boerh. Inſtitut.*

SYMPTOSIS, σύμπτωσις, of the ſame Original with the preceding, is a Subſidence and Contraction of the Veſſels, as it happens under Evacuations, and is oppoſed to DIONCOSIS, which ſee; and ſuch a *Symptoſis* appears not only in Evacuations and a ῥῦσις (*Rhyſis*) or Flux, but, alſo, in a στέγνωσις (*Stegnoſis*, a Conſtriction or Conſtipation) and a Suppreſſion of the Menſes; as, on the contrary, a *Dioncoſis* may proceed not only from a Suppreſſion of the Excrements, but, alſo, from Fluxes and Excretions. *Symptoſis* ſignifies, alſo, a ſinking and Contraction of the Body and its Limbs, when oppreſſed with a Laſſitude and Faintneſs; which is an Indication, according to *Hippocrates*, *Lib.* περὶ χυμῶν, of the Violence and Malignity of the Diſeaſe. The Word, alſo, means a Sinking of the Limbs, and is joined with a *Dialyſis*, a Reſolution, and *Pareſis*, a Remiſſion. *Lib.* 4. *Epid T.* 37. Again, by *Symptoſies*, συμπτώσεσι, we are to underſtand the Subſidence and Compreſſion of the Veſſels, expreſſed, 1 *Aph.* 2. by κατάγχη, *Cenеangia*. It is applied, alſo, to a ſinking, or falling away of the Face, Eyes, and other Parts. *Foeſius*.

SYNACTICOS, συναϰτιϰὸς, from συνάγω, to contract, endu'd with a contracting Quality. *Caſtellus*.

SYNÆSTHESIS, συναισθησις, from σὺν, and αἴσθησις, is uſed for the Senſe which the Patient himſelf has of his Diſtemper; for Inſtance, of the Tenſion of an inflamed Part. *Galen de M. M. Lib.* 13. *Cap.* 1. The Brain, alſo, is ſaid to have not only an *Æſthesis*, but a *Synæſthesis*. *Caſtellus*.

SYNÆTION, συναίτιον, from σὺν, and αἴτιον, a Cauſe, is the ſame as CONCAUSA, which ſee.

SYNAGELASTICOS, συναγελαστιϰὸς, from σὺν and ἀγελάζω, to congregate, is an Epithet of ſuch Fiſh as ſwim together in Shoals.

SYNAGMA, σύναγμα, from συνάγω, to bring together, a Concretion, Coition, Coagmentation. Thus, 6 *Epid. Sect.* 3. *Aph.* 11. τὸ μὲν ἔφοσιν σύναγμα παιδίοισι, μάλιστα, "a Concre"tion after making Water, is incident moſtly in Children." That is, Concretion of ſuch calculous Matter as produces the Stone in the Bladder. *Galen* here expounds, τὸ σύναγμα by τὴν σύτασιν καὶ πῆξιν, a Compoſition, and Concretion; and in his *Exegeſis* he ſays, that "*Synagma* is either a Concretion, or an "Enæorema, or an Hypoſtaſis, or a Tophus, which laſt is "probably the Meaning of the Word in 6 *Epid.*"

SYNANASTOMOSIS, συναναστόμωσις, a Connection of different Blood-Veſſels.

SYNANCHE, συνάγχη. See ANGINA.

SYNARTHROSIS, συνάρθρωσις. See ARTICULATIO.

SYNCAMPE, συγϰαμπὴ, from ϰάμπτω, to bend, in *Hippocrates*, is the Joint or Flexure where the upper Part of the Arm is joined to the lower. *Caſtellus*.

SYNCAUSIS, σύγϰαυσις, from σὺν, and ϰαίω, to burn; *Lat. Combuſtio*, in *Hippocrates de R. V. J. A.* is apply'd to a Torrefaction of the Excrements by an internal, febrile Heat.

SYNCHONDROSIS, συγχόνδρωσις, from χόνδρος, a Cartilage, is a Connexion of Bones by the Intervention of a Cartilage; thus the Ribs are connected to the Sternum, the Bodies of the Vertebræ to each other; as are, alſo, the Oſſa Pubis.

SYNCHRISMATA, συγχρίσματα, from χρίω, to anoint, are Ointments of the Claſs of *Acopa*, ſo called by *Paulus Ægineta*, *Lib.* 7. *Cap.* 15. *Galen*, alſo, *de Antid. Lib.* 11. *Cap.* 6. among other Antidotes, mentions ſome Ointments, which *Aſclepiades* called *Synchryſmata*.

SYNCHYSIS, σύγχυσις, from συγχύω, to confound, a Confuſion, Σύγχυσις ὅλων, in 6 *Epid. Sect.* 3. *Aph.* 1. is a Confuſion and Perturbation of all the Humours in Concoction, from the Imbecillity of the Stomach. *Syncliſis*, alſo, in particular ſignifies a Diſeaſe of the Eye, conſiſting in a Confuſion of the Humours, generally proceeding from a violent Blow, ſometimes from an Inflammation of the Uvea, occaſioning a Rupture of the Veſſels, and an Eruption of the Humours. *Caſtellus*.

SYNCIPUT, corruptly for SINCIPUT.

SYNCLEISIS, σύγϰλεισις, from σὺν, and ϰλείω, to ſhut, a Concluſion, or Cloſe, and apply'd to the Veins in the following Paſſage of *Hippocrates*, *Lib. de Morbo Sacro*, φλεβὸς αὐλὴν συλλύσασι, ϰὴ συγϰλείσας ἔχει, ὥσθ' αἰσθάνεσθαι ἤν τις πόῳ ἢ σύρασι γίνηται τῷ ἀνθρώπῳ: "The Veins have their Courſe towards it, "[the Heart] and there conclude, or are cloſed up, ſo as "that it is ſenſible of any Pain or Contraction happening "to the Patient." But perhaps, as *Foeſius* well obſerves, and the Conſtruction ſeems beſt to warrant, the Meaning is that the Heart, of which he was ſpeaking, ἔχει συγϰλείσεις, "has "the *Syncleiſes*," or contains in itſelf Concluſions; that is, the Extremities of theſe Veſſels by which the Humours and Spirits are convey'd to that Part, which, by that Means, is immediately ſenſible of any Pain or Uneaſineſs incident to the whole Body.

SYNCOMISTOS, συγϰομιστὸς, from σὺν, implying Mixture, and ϰομίζω, ſignifying, among other Senſes, to have, or contain; mixed all the Parts together. Thus (*Lib.* 2. περὶ διαίτης) συγϰομισὰ, in Foods are thoſe which are taken intire with all their Juices, in Oppoſition to ξηρὰ (*zera*) dry; and συγϰομιστὸς ἄρτος, is Bread made of the whole Corn. See ARTOS.

SYNCOPE, συγϰοπὴ, from σὺν, and ϰόπτω, to cut, or ſtrike. Swooning.

If there be any Part of medicinal Knowledge which deſerves, in a more than ordinary Meaſure, to be clearly explain'd and underſtood, it is certainly that which treats of the Forces of the human Body, and their Cauſes; ſince the whole Strength and Energy of Nature, which conſtitute the the Soundneſs and Perfection of Life, with regard to the Mind as well as Body, by which Diſeaſes are both prevented and cured, and by which Death itſelf is averted and delay'd, are obſerv'd to conſiſt only in theſe Forces, which exert themſelves in a certain, determinate, and efficacious Motion: For as a Perſon may be ſaid to be of a robuſt Nature and firm Body, when, being in his perfect Health and Strength, he is not eaſily injur'd and incommoded by external Cauſes; or when he ſuffers Detriment from them, recovers, and is reſtor'd by meer Strength of Nature, without any conſiderable Aſſiſtance of Medicine; ſo, on the contrary, it is a Sign of Weakneſs of Nature, when any one, from a Decay, or languid State of thoſe Forces, be render'd ſubject to various Diſorders, and ſeldom emerges and recovers from them without the Help of the Phyſician: And, indeed, if we take a View of Diſeaſes in their ſeveral Stages, we ſhall find, that all Hopes of Recovery appear to be founded only on the Strength of the Patient: for if this ſhould happen to fail on a ſudden, and for any conſiderable Time, it is very

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very certain that Life is in Danger. Even that Malignity, which often attends Diſeaſes, will be found to conſiſt, for the moſt Part, in this Decay of the Forces; ſo that from this weak State there lies an eaſy Paſſage to Death, which itſelf is nothing but a full Ceſſation of the Strength on which the vital Motions depend.

Since, then, we ſtand in ſuch abſolute Neceſſity of thoſe Forces, that without them the Phyſician can do nothing, either for preſerving or reſtoring Health, I have often wondered how it comes to paſs, that among ſo great a Multitude of good Authors, and under ſuch Improvements in Medicine, which every Day receives new Lights, ſo few have attempted to ſet this moſt uſeful Point in Medicine in a juſt Light. There are, indeed, ſeveral Opinions ſcatter'd up and down in the Writings of Phyſicians concerning the Cauſes of the Forces, which ſome, who refer all the vital and mechanic Motions of the Body, both voluntary and involuntary, to ſome higher Principle, conſider as the Effect of the Soul; others, who deduce the Strength and motive Force of the Solids, by which the Fluids are directed, from a highly moveable Matter, of an aereo-æthereo elaſtic Nature, contained in the Blood, endeavour to eſtabliſh their Opinion by quite contrary Arguments. As the Subject is not yet exhauſted, nor, as we imagine, well explained as it deſerves by bare Authorities, and theſe too of oppoſite Sentiments, we ſhall crave Leave, in this preſent Diſcourſe, where we ſhall treat of a *Syncope* and *Lypothymy*, to interpoſe our own Judgment, which we take to be juſt and right, in this Affair.

But before we enter upon a more particular Explication of this Subject, we think it proper firſt of all to examine what Condition of the Forces is requir'd to conſtitute a ſtrong or a weak Nature. In attempting this, is to be remark'd, that though all the Functions of our Body, animal, vital, and natural, are perform'd ſolely by the Motion of the Solids and Fluids, we are by no Means to argue from hence, as in other corporeal Matter, or conclude from the Efficacy of the ſame, and the great Power of Moving, the extraordinary Firmneſs of the Strength, and, what depends upon it, the Soundneſs of the Health: For ſince the Structure of the human Body is, by the infinitely wiſe Creator contrived in ſuch a Manner, that only a determinate Number and Meaſure of Motions are ſubſervient to the Forces neceſſary for Health, it amply follows, that we are only to call that Nature robuſt and ſound, in which we perceive no exceſſive nor deficient, but a moderate and equable Proportion of Motions; as, on the contrary, thoſe Bodies are to be accounted weak which are eaſily excited to diſorderly Motions from ſome ſlight external Cauſe. The Truth of this Aſſertion is illuſtrated by only conſidering the diſorderly, and exalted even to the Degree of convulſive Agitations of the Heart, Arteries, and the reſt of the Members, which, tho' they indicate an extraordinary Efficacy of Motion, can yet by no Means be taken for a ſalutary Meaſure of Strength, or ſuch as is accommodated to the Confirmation of Health, but are rather Prognoſtics of an extreme Decay of the vital Forces, and oftentimes Death itſelf.

This premiſed, we proceed to conſider the ſudden Decay or Failure of the natural Forces, of which there are three principal Degrees: The firſt Degree conſiſts in a remarkable Diminution of the Strength of the Body, and is known principally by theſe Signs, an extraordinary and unuſual Laſſitude of the Body, with an Inertneſs and Indiſpoſition of the Limbs to voluntary Motions, a Torpor, or Numbneſs of the Senſes, Loſs of Appetite, Reſtleſſneſs, Anxiety about the Præcordia, a weak and ſlow Pulſe, with a Refrigeration and Heavineſs of the Extremities. The next Gradation, on Account of its being a greater Defect or Failure of the Strength of the Body and Spirits, is called a *Lipothymy*, which begins with a Paleneſs of the Face, Lips, and Cheeks, and a Stupor of all the Senſes, ſo that the Patient is quite inſenſible of what is done to him; a Sort of Dimneſs of Sight, alſo, ſeizes him, his Pulſe beats very ſmall, he falls to the Ground, and his extreme Parts are deprived of their natural Heat, and refrigerated. The third and laſt, as well as worſt Degree, conſtitutes a *Syncope*, in which the Patient is deprived of all Manner of Strength, both of Body and Mind, and ſeems to be dead; for he falls to the Ground quite ſpeechleſs, as if oppreſſed with a profound Sleep, and lies immoveable, without the Appearance of Convulſions or Tremblings; the Pulſe and Reſpiration are intercepted, the Limbs are refrigerated, and collapſed, he has the *Facies Hippocratica*, and a copious Eruption of cold Sweat about his Temples.

After a Fit of the Lipothymy, or Syncope, has ſpent its Force, the Patient by Degrees recovers his Senſes, fetching deep Sighs, the Motion of the Heart is reſtor'd, and conſequently the Pulſe, which before was very weak or quite inſenſible, beats higher and briſker; the Anxieties ceaſe; the Heat returns into the extreme Parts; the Face, which was contracted and pale, becomes more explicated and red; all the ſuppreſſed Functions by little and little reſume their Office; and the Patient, who but the Day before was taken for dead, now ſeems to enjoy perfect Health; only he ſtill complains of an extraordinary Laſſitude and Imbecility of the Limbs, and of the whole Body.

Though theſe terrible Diſorders come ſuddenly and unexpectedly, there are, however, ſome Symptoms which give Warning of their Approach: The principal of theſe are, a Languor of the whole Body, with an unuſual Weakneſs, Vertigo, a Ringing in the Ears, and a ſudden Change of Colour in the Face. In ſome the preceding Signs are Oſcitations, Pandiculations, and Anxieties about the Præcordia, with an unequal Pulſe, and a Senſe of Horripilation, attended ſometimes with a Diſtenſion and Rumbling of the Abdomen from Flatulences.

From the Premiſſes, it will not be difficult to know how to diſtinguiſh a *Syncope* and *Lipothymy* from other Diſorders, and how they may and ought to be known by Phyſicians. For, firſt of all, they differ from an Epilepſy, which indeed is preceded by ſome ſlight Kinds of Faintings, which attack the Patient before his Body is agitated with convulſive Motions and Contractions, but yet fall ſhort of a *Lipothymy*. They differ, alſo, from an Apoplexy, in which Diſeaſe, though under the Abolition of both the internal as well as external Senſes, there ſtill remains a pretty ſtrong Pulſe of the Arteries, with a Reſpiration, though very difficult, and attended with a Stertor; which are Phenomena not obſervable in a ſimple *Lipothymy*. And they are diſtinguiſh'd, in the laſt Place, from an hyſteric Suffocation; for in this latter you may obſerve, indeed, an extraordinary Perturbation of the Senſes, but the Fauces are at the ſame Time extremely ſtraiten'd, and under a Strangulation, as it were, by a Cord; the Arteries are agitated with violent Motions; and the Face appears of a lively red; the contrary to which Symptoms happens in Lipothymies, as it appears when a *Syncope*, as it often happens, joins itſelf with an hyſteric Fit; for in that Caſe, there is a ſudden Alteration of the foremention'd Symptoms.

As to the Subjects moſt obnoxious to theſe Affections, we are taught by Experience that ſuch Diſorders are moſt incident to Perſons of a phlegmatic and torpid Nature; or thoſe who, on Account of a tender Contexture of the Veſſels and Fibres, are of a ſpongy Habit of Body, full of Blood and Juices; ſuch, alſo, as being tenderly educated in Idleneſs, are incapable of bearing Hardſhips, and are eaſily diſorder'd by any ſlight external Cauſe, as by a Temperature of the Air hotter or colder than ordinary, or by Medicines, or even by Aliments, or, what is more, by an ungrateful Smell alone. And ſince there have been obſerv'd by the beſt of Phyſicians, a ſurprizing Harmony and Conſent between the Functions of the Body and thoſe of the Mind, we may reckon among the Number of thoſe who are obnoxious to ſuch Diſeaſes, ſuch as are prone to ſudden and violent Commotions of the Mind, as Anger, Impatience, Fear, and Variety of confus'd Imaginations. Hence we ſee the Reaſon why, in reſpect of Age, Children and old Perſons, and of Sexes, Women more than Men, are expoſed to Syncopes and Fainting-Fits; and moſt of all, Women with Child, or when waken'd with Hæmorrhages, through an immoderate Flux of the Menſes, or Lochia, or much fatigu'd in Childbirth.

If we now proceed to examine into the Cauſes of theſe Diſorders, there is no Perſon of competent Knowledge in Medicine, but will aſcribe them to a vitious and diſorder'd Motion and Contexture of the Blood; for as a free and equable Influx of a ſufficient Quantity of well temper'd Blood into each particular Part, and by that Means a due Diſtribution of the ſpirituous Liquid throughout the Nerves, conſtitutes all the Strength and Forces on which the Vigour of the Functions, whether animal or natural, intirely depend, ſo, on the contrary, when there is a remarkable Decay of the Strength, which manifeſts itſelf by a Diminution of all the Functions, we may very juſtly conclude that there is ſome Diſorder in the arterial and nervous Fluids. We have fully demonſtrated elſewhere that the Progreſs of all the Fluids through the Body, and their Influx into the ſeveral Parts and Organs, wholly depend on the Heart, which is the *Primum Movens*, and *Ultimum Moriens*, or moves and lives firſt, and dies laſt, as being the principal Machine, which with its Motions animates all the other Parts. There can be no Doubt, then, but that the Cauſe of a Proſtration of the Body, and a Fainting, is to be deduced from a Diminution or total Suſpenſion of the Motions of the Heart. And we are the more confirm'd in this Perſuaſion, by conſidering that the eſſential and characteriſtic Sign of a *Syncope* and *Lipothymy*, is a very ſmall, or no Pulſe,

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Pulſe, which is a true Indicator of the Motion of the Heart.

Since, therefore, we are oblig'd in ſo many Reſpects, if not for all Things that paſs within ourſelves, to the Motion of the Heart, it will be of very great Uſe, briefly, though accurately, to explain this Motion from its natural Cauſes: That the Subſtance of the Heart is muſcular, is an Aſſertion not only of *Hippocrates*, who lived ſo many Ages ago, but of all the famous Anatomiſts of our Times; for if we rightly examine all the Properties which any Way belong to the Texture of a Muſcle, we ſhall find them all in the ſame Manner exiſting in the Structure of the Heart; we may obſerve herein a pretty ſtrong Tendon, which ſurrounds the Veſſels in the Baſis of the Heart, and is here, as it is in all other Muſcles, the Beginning and End of Motion, and is very juſtly ſuppoſed to produce the *Vena Cava*, and, in an eſpecial Manner, the Great Artery. Into this Tendon are inſerted two Kinds of Fibres, diſpos'd in ſuch admirable Order, as very fitly to conſtitute a *Biventer* Muſcle; for the exterior Fibres, which wind about the Cone in the Manner of a Screw, are inſerted into the Tendon of the oppoſite Side; but the interior Fibres are inſerted in an inverted Order. Beſides theſe common Fibres, there are others proper to each Ventricle, of which the internal proceed in like Manner in a contrary Direction, and in the left Ventricle are more numerous and robuſt, for the Sake of a ſtronger Propulſion of the Blood over the whole Body, and to its remoteſt Parts; but in the right Ventricle they are fewer and more flaccid, as ſerving only to propel the Blood into the adjacent Lungs. The Motion of theſe Fibres is, alſo, the ſame with that of the Fibres of other Muſcles; as is, alſo, their Contraction, which conſiſts in an Abbreviation, that they may acquire as much in Breadth as they loſe in Length, by which Means the Cone may always approach nearer the Baſe, whence a Tumor is obſerved not only externally, but principally in the internal Parts. Hence, when the Auricles of the Ventricles are contracted, the Sides touch one another, and ſo expel the contained Fluid. The Nerves, which impart Life and Vigour to all theſe Muſcles are implanted in the Baſis of the Heart, and the Roots of the Veſſels, which were before obſerved to be Tendons of the Heart, and are Branches of the eighth and intercoſtal Pair; to ſay nothing of the coronary Veins and Arteries, which are diſpers'd in great Numbers over the muſcular Structure of the Heart, and greatly aſſiſt its Motion.

That the Heart moves then, we are convinc'd from its Fabric, as well as the Evidence of Senſe; but there is a double Motion which belongs to it; one of Dilatation, called by the *Greeks*, *Diaſtole*, by which the Ventricles of the Heart are dilated, and its Fibres lengthen'd towards the Sides, to admit the Influx of the Blood from the Auricles; and the other of Conſtriction, or *Syſtole*, by which the Fibres are contracted, and the Blood, as by an hydraulic Machine, is forced into the Canals of the Arteries, and from thence into thoſe of the Veins, and from thoſe again into the right Auricle, by which Means Circulation is performed.

In contemplating theſe Subjects, there ariſes a Doubt of no ſmall Moment, which is, whether the Diaſtole of the Heart be promoted by the plentiful Influx of the Blood diſtending the ſame. And here we are not of Opinion, that this ſimple and ſpontaneous Reſtitution depends only on the Blood, ſince it reſiſts a ſtrong Preſſure of the Hand as much as the Syſtole, which we cannot imagine to be owing to the Force of the Blood, eſpecially when we obſerve, that the Hearts of Fiſhes, after they are pulled out of their Bodies, and are empty of all Manner of Liquor, retain their Diaſtole, as well as Syſtole, for a conſiderable Time. It is much more probable, that the Diaſtole proceeds as well from the different Series of Fibres of this wonderful Muſcle, as from the Influx of a very ſubtile, elaſtic Fluid, convey'd by the Nerves, and of a ſpirituous Blood. The Influx of a nervous Fluid into the Fibres of the Heart, is proved by that well-known Experiment of *Willis* and *Lower*, in which the Nerves in the Neck belonging to the eighth Pair being divided, and thoſe which proceed from the intercoſtal Plexus, ty'd, and the Influx of the Blood into the muſculous Subſtance of the Heart intercepted, the Heart is deprived of all Motion. So that it is very certain, that the Blood, as it is endu'd with a hot, inteſtine Motion, and impregnated with aereo-æthereo-elaſtic Particles, as well as the nervous Liquid, are greatly inſtrumental in promoting the Act of Dilatation. And the ſame will be further illuſtrated by this Experiment, that the Pulſe of the Heart in an Animal, after it has ceaſed, may be reſtored for ſome Moments by Means of Heat, or fomenting the Heart with hot Water.

But though what we have advanced appears ſo clear and evident, as not to be queſtion'd, there are ſtill ſome ſo incredulous as to object againſt our Doctrine of the Motion of the Heart, in which we ſuppoſe it be the *firſt Mover*, being of Opinion, that there is in an *Embrio*, a certain *Punctum Saliens*, which is, as it were, a Rudiment of a Heart, before the Structure of the Heart is finiſhed. But, in my Judgment we are to have very different Notions of an Animal, while yet imperfect, and under Formation, and one actually formed, and compleat in all its Parts, and produced into the World; for which Reaſon it can hardly be allow'd to draw Inferences from one State to another quite different; for in this little Bubble, as in a Compendium, is included that architectonic Spirit, which is of itſelf ſufficient to communicate Motion without the Help of many Organs, and extends its Workmanſhip by ſtill framing Parts without Parts on all Sides; which Actions, in a perfect Animal, are not performed without the Help of Organs.

Having thus explain'd the Structure and natural Conſtitution of the Heart, and inquir'd into its genuine Uſe and Function, it will be eaſy for us to attain to the Knowledge of its preternatural State, and to give clear and diſtinct Definitions as well of a *Syncope* as *Lipothymy*, which, by the Conſent of Phyſicians of all Ages, depend on a depraved Motion of the Heart. A *Syncope* is a ſudden Check or Stop put to the Motion of the Heart, attended with a vaſt Loſs of Strength and Suſpenſion of the Functions both of Body and Mind, proceeding from a vital Obſtruction, or great Impediment of the Influx of a ſpirituous Liquid by the Nerves, and of a well-temper'd Blood through the coronary Veſſels into the muſcular Subſtance of the Heart. Nor does the Definition of that other Species of a Privation of Senſe, call'd *Lipothymy*, require much Alteration from the former, as differing only in Degree from a *Syncope*, and conſiſting not in a total Suſpenſion of the Motion of the Heart, but in a very weak and low Degree of the ſame.

Theſe Things being premiſed, let us now proceed to inquire into the remote Cauſes which contribute towards the Production of theſe ſevere and formidable Diſorders. And ſince the proximate Cauſes either of a total Interruption, or great Deficiency of the Motion of the Heart, conſiſts in a ſuſpended, or ſparing and irregular Influx of a nervous Fluid, and laudable Blood, as ſufficiently appears from what has been ſaid, it follows, that theſe are the two main Points which deſerve our Conſideration. For, firſt, it is certain from general Experience, that Perſons labouring under a Weakneſs of the Head and nervous Syſtem, and are frequently afflicted with preſſive Pains, Vertigo, and Ringing in the Ears, cold Rheum, Stuffings of the Head, Dimneſs of Sight, and troubleſome Sleep, are very ſubject not only to extreme Lowneſs of Spirits, and Loſs of Strength, but, alſo, to Faintings and Swoonings.

But nothing in the whole Series of Cauſes will ſooner, or in a more violent Degree induce the Diſtempers treated of, than vehement Perturbations of the Mind, particularly panic Terrors, Fear, and Sorrow. For tho' the vital and mechanic Motions, of which Nature are thoſe of the Heart and Arteries, and other Canals appointed for the Secretion and Excretion of the Humours, as well as thoſe of the Stomach and Inteſtines, do not directly and immediately depend on that thinking and intelligent Principle within us, which we call the *Soul*, whoſe Office it is rather to direct and regulate, after a Manner unknown to us, thoſe Motions which are voluntary; yet we are convinced by the cloſeſt Obſervation and Experience, that from the admirable and intimate Harmony which ſubſiſts between the voluntary and involuntary Functions, that the Affections or Paſſions of the Mind have a ſurprizing Force and Efficacy in diſturbing and interrupting the vital Motions in our Bodies. Hence if we curiouſly examine the Manner of Action of a Terror, or Fright, which among all the Paſſions is the moſt deſtructive of the Oeconomy of the vital Motions, we ſhall find it to be of ſuch a Nature, that by cauſing a Conſtriction of the external Parts, it procures an exceſſive Congeſtion of the Blood at the Heart and Veſſels connected with it, the plain Conſequences of which are Coldneſs of the extreme Parts, a prodigious Languor and Numbneſs of the Limbs, Anxieties of the Præcordia, Palpitation of the Heart, with a great Difficulty of Breathing, and a ſmall and low Pulſe; all which Symptoms are more certainly conſequent if there be an immoderate Redundance of the Blood. Nor are the Effects of Fear, or Dread, on the Apprehenſion of ſome imminent Danger, leſs ſurprizing, ſince, by diminiſhing the Influx of the nervous Liquid into the ſeveral Organs of Motion, they greatly retard the equable Progreſs of the Blood, and diſturb the due Circulation and Diſtribution of its moſt ſpirituous Part, ſo that it is no Wonder if the Conſequences are a vaſt Loſs of Strength and ſudden Failure of the vital and animal Forces; which is the more formidable in weak Subjects, or ſuch as are already debilitated by a Diſeaſe, or ſome other Cauſe.

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There are alſo many Circumſtances belonging to what we call the *Non-Naturals*, which are aſſiſtant in promoting theſe Diſorders. Among thoſe, what deſerves our firſt Notice is a bad Regimen of Diet; for as Aliments abounding with good Juices, when taken in proper Quantities, are diſpoſed for the Generation of good and lymphatic Blood, which is the Support of the Strength; ſo, on the contrary, Foods, which are crude, and afford but ſmall Nouriſhment, if ſubſiſted upon for a conſiderable Time, by mere Want of Nutriment, highly contribute to Faintings and Lipothymies. And not only Diet, but the Temperature of the Air, is alſo a procatarctic Cauſe of theſe Diſorders; for if the Air be too cold and humid, or too hot and ſultry, and impregnated with Multitudes of impure Exhalations, it becomes very detrimental to the Strength and Vigor of the Body. With theſe Cauſes may be ranked immoderate Watchings and Labour, which, by keeping the Solids and Fluids in continual Action, cauſe a Diſſipation of the ſpirituous and ſubtile Parts, by which means the Maſs of Blood is altered from its due Temperature, and all our Functions, as we find, by daily Experience, begin to languiſh.

A *Lipothymy* is alſo frequently occaſioned by a ſphacelous Corruption, either internal or external, and of all things the moſt prejudicial to the Oeconomy of the vital Motions. The Truth of this Poſition will appear not only from the Conſideration of malignant and contagious Diſeaſes, as the Petechiæ, Dyſentery, and peſtilential Fevers, but of chronical Diſeaſes, particularly the Scurvy, Cachexy and Dropſy, where, as the Corruption and Putrefaction increaſe, all the Forces of Nature, together with the Motions of the Heart, languiſh and decay. Not unlike are the Effects of Opiates and Narcotics imprudently exhibited, whoſe Way of Operation conſiſts principally in mixing their ſulphureous and noxious Effluvia with the Subſtance of the Fluids, and ſo contaminating thoſe highly moveable Parts, as to render them incapable of performing their Functions according to the Laws of Nature. Beſides the forementioned Cauſes, there is one, which is ſomewhat ſurpriſing; I mean, fragrant and ſweet Smells. Theſe, tho' otherwiſe very grateful to Nature, are yet found to be offenſive and prejudicial to Women ſubject to Hyſterics, or thoſe whoſe Bodies are weakened by any other Diſeaſe to ſuch a Degree, that all the Symptoms are exaſperated by them, and the Patient falls down in a Syncope, and lies for dead. The Reaſon of ſo remarkable an Effect, as we imagine, conſiſts in that ſuch ſtrong odoriferous Subſtances, by their vaporous Quality, ſuppreſs more and more the elaſtic Force of the nervous Fluid, which was before much diminiſhed by the Violence of the preceding Diſtemper, in the ſame manner as Preparations of Caſtor have ſometimes good, ſometimes bad Effects, according to the vaſtly different Conſtitution of the nervous Juice and Fibres.

Among other Cauſes of theſe Diſorders, we are not to omit Poiſons with Cathartics and Emetics of a violent and cauſtic Quality, which, by exciting ſtrong Spaſms in the univerſal Syſtem of the nervous Parts, with Criſpations and Contorſions in the highly ſenſible Tube of the Inteſtines, intercept the equable Influx of the Blood and highly ſubtile Fluid into the ſeveral Parts, and thus occaſion a violent and ſometimes mortal Syncope. From the ſame immediate Cauſe it happens, that we may obſerve that a violent *Lipothymy*, and ſuch as falls little ſhort of a *Syncope*, uſually ſucceeds ſuch Diſeaſes as were attended with very ſharp Pains; and the ſame has been often known to proceed from a violent Fit of Anger; whence the ancient Phyſicians uſed to call this Species of *Syncope* by the particular Name of *Cardia*. For tho' it be the Nature of this Diſorder to exert its deſtructive Force principally upon the biliary Ducts, it cannot be avoided, but that, on account of that remarkable Conſent of Parts, which ſubſiſt between theſe Parts and the Stomach, Lungs and Heart, by means of the eight Pair of Nerves, and the common Par Vagum, all theſe ſenſible Parts will at the ſame time be Fellow-Sufferers, and labour under ſevere Spaſms.

A *Lipothomy* is no leſs incident to Perſons whoſe Strength has been much exhauſted by immoderate Hæmorrhages, or any other exceſſive Excretions. On this Occaſion I cannot but obſerve, that I have ſeveral times known Perſons who have indulged themſelves in the immoderate Uſe of venereal Pleaſures, contract by Degrees *Lipothymies*, and even *Syncopes*. And nothing is more frequent than, after copious Evacuations by Sweat and Stool, Phlebotomy unſeaſonably adminiſter'd, Blood loſt by Wounds, or any other exceſſive Profuſions of the ſame, for the Patient to fall into Faintings-Fits, eſpecially if proper Preſervatives be not at hand. And the Reaſon is obvious; for ſince by ſuch Accidents not only the more ſubtile Part of the Blood, which is the Foundation of the Strength, is exhauſted, but the Quantity itſelf of the Fluids is diminiſhed, it is no wonder if the Dilatation of the Heart and its Veſſels, which ought to keep pace alternately with the Syſtole, is by the ſame means prevented, and conſequently, the Motion of the Heart itſelf ſuſpended, in which conſiſts the very Nature of a *Lipothymy*; which Diſorder is, in ſuch Caſes, more frequent and incident to Perſons of a tender Conſtitution, or who have long continued in an erect Poſture, by which the Courſe of the Blood to the Head is much more obſtructed than in other Situations.

Again, the Motion of the Heart may be weakened, and a vaſt Loſs of Strength occaſioned, by an exceſſive Repletion, owing to a thick and viſcid Blood, which being incapable of making its Progreſs through the narrow Channels of the coronary Veſſels, is there congeſted, and ſo diminiſhes the Syſtole of the Heart and its Veſſels. And nothing more diſpoſes to mortal *Syncopes* than a polypous Concretion of Humours adhering to the Cavities of the Heart, and the contiguous Veſſel, as is confirmed by Multitudes of Inſtances. For Concretions in thoſe Places, by their Bulk intercepting the Circulation of the Blood through the whole Body, muſt at laſt of neceſſity, if not removed, deſtroy all vital Motion.

Having thus aſſigned the Cauſes of theſe Diſorders, we proceed to the Prognoſis, and to examine the Signs from which we may be enabled to predict a good or bad Event to them. And here I would have it moſt carefully obſerved, that the Danger in ſuch Caſes is to be eſtimated with regard to the Diverſity of the Nature, and Cauſes. Thus we are told by *Hippocrates*, 2 *Aph.* 41, "that they who often fall into violent "Faintings without a manifeſt Cauſe, die ſuddenly." For in this Caſe, there generally is a polypous Coagulum firmly impacted in the Veſſels of the Heart and Lungs, which diſcovers itſelf upon Diſſection. A *Syncope*, alſo, is generally obſerved to be mortal, when it happens after a difficult Childbirth, in which the Patient has been extremely fatigued by the Unſkilfulneſs of the Midwife, in exciting her to unſeaſonable Efforts for Delivery, and has ſuffered an immoderate Profuſion of Blood from the *Uterus*. The Patient, in a *Syncope* thus contracted, lies in a copious and cold Sweat, with a Refrigeration of the extreme Parts, the Breath expired is cold, the Countenance pale, and ſhe can by no Remedies be recalled to Life. Nor is that Species of *Syncope*, which ſeizes the Patient under Hyſterics void of Danger; and we have often known Women, in ſuch Caſes, taken for dead, and committed to Burial.

An extraordinary Loſs of Strength in malignant Diſtempers, as in high Fevers, and a Proneneſs in the very Beginning to Faintings, eſpecially in an erect Poſture, is a moſt certain Sign that Life is in danger. Nor is it of good Prognoſtication to be dejected in Mind, contrary to Cuſtom, utterly to deſpond, and to give over all Hopes of Life, tho' the Spirits, in other reſpects, are calm and compoſed; eſpecially if theſe Symptoms, in an acute Fever, are attended with a Delirium and a languid Reſpiration, with a remarkable Smallneſs, or tremulous Palpitation of the Pulſe. In the confluent Small-Pox, alſo, if the Patient, as it frequently happens, through the intolerable Pain and Heat at the Time of Suppuration, be ſeized with a *Lipothymy*, and particularly in an erect Poſture, he is in imminent Danger of Death; for ſoon after ſucceed Refrigerations of the whole Body, a Conſtriction of the Skin, a Diſappearance of the Puſtules, and then mortal Convulſions. A *Syncope* ſeizing a Perſon already weakened by other Cauſes, on occaſion of a vehment Fit of Anger, or the Exhibition of a ſtrong Cathartic or Emetic, becomes mortal, unleſs proper Remedies be inſtantly adminiſtred. The ſame Diſorder in Children, excited by Worms lancinating the nervous Coats of the Stomach, is generally mortal; and we have ſeen the dead Worms crawling out of the Mouth a little before the Death of the Patient.

A *Lipothymy*, or *Syncope*, attendant on hyſteric and hypochondriac Caſes, occaſioned by a Regurgitation of the Blood to the Heart and Lungs, through an extraordinary Diſtenſion of the Stomach by Flatulences, leaves room for a Cure. And a ſudden Fit of Fainting or Swooning, proceeding from ſome external Cauſe, as the immoderate Heat of a Stove or Bagnio, or Veneſection too freely adminiſtred, and eſpecially when Women or Children are the Subjects, is not ſo much to be dreaded. In general, it is to be obſerved, that the ſlighter the Cauſe of ſuch Diſorders is, the leſs is the Danger from them.

The Cure principally conſiſts in anſwering the two following Indications: The firſt of theſe requires, that in the very Paroxyſm the Motion of the Heart, which is the Fountain of all the vital Heat and Forces, may, by proper and effectual Remedies, with all poſſible Speed be reſtored.

The other directs us to make uſe of the firſt Opportunity, when the Paroxyſm is paſt, to provide ourſelves with proper Medicines for removing the Cauſes, and ſo preventing the Return of ſo dangerous a Diſorder.

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In order to anſwer the firſt Indication, let the Patient, at the Time of the Fit, be kept in a convenient Poſture, not too much inclining nor erect, and in a ſerene, temperate, and ſpacious Place; and in order to provoke and recall the Influx of the Spirits, it will be proper to irritate and animate the ſenſible Parts with external Remedies, which are of a penetrating Quality. For this End, let there be a Superfuſion of cold Water over the whole Face, let the Lips be rubbed with common Salt, and apply to the Noſtrils ſtrong Vinegar, with Balſam of Life, or Engliſh volatile Salt, which is nothing but the volatile Salt of Sal Ammoniac, impregnated with the cephalic Oils of Rue, Mint, and Lavender. It may, alſo, be of ſervice to rub the Eyelids with a few Drops of ſome ſpirituous Water, particularly the Balſam of Life, and to uſe ſtrong Frictions of the whole Region of the Breaſt, and the extreme Parts with hot Cloths, impregnated with ſome corroborative Water.

When the Patient, by the Uſe of theſe Remedies, begins to come to himſelf, it will be proper to adminiſter ſome internal Medicines, in order to revive the Strength. For this purpoſe Wine is of excellent Service, and eſpecially old *Rheniſh*, which far exceeds all other Wines. Much Good, alſo, may be expected from the Uſe of ſpirituous and aromatic Waters, particularly thoſe of Cinnamon, Lillies of the Valley, Roſes, Baum, and Orange and Lemon-Peel, prepared with or without Wine.

A Phyſician, who intends a perfect Cure of theſe Diſorders, and to prevent all Relapſes, muſt firſt acquire a competent Knowledge of the Cauſes, and accommodate his Remedies to them. Thus, if a *Syncope* owes its Riſe to ſevere Pains, or a violent Fit of Anger, in this Caſe mild Anodynes afford preſent Relief, and the more effectually, if mix'd with analeptic Waters, not too ſpirituous, but endued alſo with ſomewhat of an anodyne Virtue. A ſovereign Remedy of this Nature is the mineral anodyne Liquor, impregnated with ſome Drops of Oil of Mace, or mixed with double the Quantity of Eſſence of Caſtor. Accommodated to the ſame Purpoſe, are *Sydenham*'s Laudanum, and analeptic Powders, ſuch as the *Pulvis Marchionis*, mixed with one or two Grains of Caſtor or *Theriaca Cæleſtis*, which I have found by Experience to be very ſafe Remedies. If a Cardiac *Syncope* proceed from an acido-bilious Humor ſettled in the *Primæ Viæ*, and corroding the nervous Parts, as it frequently happens in hypochondriac Caſes, there will be occaſion for abſorbent Powders, ſuch as thoſe prepared of Shells, Mother of Pearl, Coral, Crabs-Eyes, foſſile Unicorn, and Mountain Cryſtal, with an Addition of a few Drops of the Oil of Cedar; and, if the preternatural Heat require it, of ſome purified Grains of Nitre for each Doſe. In an hyſteric and hypochondriac *Syncope*, Clyſters, and Medicines compounded of Galbanum, Caſtor, Aſa fœtida, Sagapenum and Myrrh, prudently adminiſter'd, are all the Remedies neceſſary for a perfect Cure.

If a *Lipothymy* ſeizes the Patient under immoderate Evacuations from too potent Cathartics or Emetics, in this Caſe, beſides Theriacals, Anodynes, and Analeptics, warm Milk, or Barley-water with Almonds, the Yolk of an Egg, and Saffron, taken in a ſufficient Quantity, are of ſurpriſing Efficacy by their demulcent Virtue. And when there is reaſon to be apprehenſive of more than ordinary Danger from a cauſtic Poiſon, the ſame Remedies are the moſt likely to afford Relief, eſpecially if mixed with a good Quantity of expreſſed Oil of Almonds or Olives. In malignant Diſtempers, where a Lipothymy, and the like Symptoms, are the Effects of an occult Putrefaction, Mixtures endued with an analeptic and bezoardic Quality are moſt proper. Such are thoſe compounded of the Waters of Carduus Benedictus, Scordium, Cinnamon without Wine, Roſes, and common Baum; the *Mixtura Simplex*, Wine-Vinegar, and Syrup of Citron-Juice, with which may be mixed a due Proportion of the bezoardic Powder of *Sennertus*. If the Strength be exhauſted by an exceſſive Profuſion of Blood, then, beſides the Uſe of the more temperate Analeptics, the Patient is to be comforted and refreſhed with nouriſhing Food, which is accommodated to the ſupplying and reſtoring of the loſt Juices. Such Meats as are moſt recommended for this purpoſe, are Jelly-Broths made with Veal, Beef, or an old Cock, prepared by Decoction with Shavings of Hartſhorn, Slices of Lemons, a little Mace, and a ſmall Quantity of Wine, in a covered Pot. Chocolate is alſo of good Service in ſuch Caſes; and, to mention no more, old and generous Wine, ſparingly exhibited, will of itſelf contribute more than all other Remedies towards the Reſtoration of the Patient.

It is certainly of the greateſt Importance towards a ſafe Management and Conduct in the Caſes before us, juſtly to diſtinguiſh between a gravative or oppreſſive Laſſitude, proceeding from a Fulneſs and Expanſion of the Humours, and a defective Weakneſs, occaſioned by a Want of good Blood and nervous Juice; theſe two Circumſtances are widely different with reſpect to their Cauſes, and require as different Remedies. Phlebotomy, for inſtance, which in the Caſe of a Repletion, which was firſt ſuppoſed, is moſt ſalutary; in the latter Circumſtance, where the Blood is deficient, and therefore wants to be reſtored, it cannot but be highly pernicious. A juſt Diſtinction, alſo, is to be made between a Weakneſs and Loſs of Strength, which owes its Origin to ſome Paſſion of the Mind, as long Sorrow, or long concealed Anger, which commonly goes by the Name of *Chagrin*, and what proceeds from ſome material Cauſe. To the firſt Caſe, moral Remedies, with every thing that contributes to render the Mind eaſy and chearful, are beſt accommodated.

As to Veneſection, in particular, by way of Caution, we ought to know that when the Motion of the Heart is ſuppreſſed by an exceſſive Congeſtion of Blood, which is very often occaſioned by violent Spaſms of the Inteſtines, and there is a Turgeſcence of Humors in the Veſſels of the ſuperior Parts, tho' a Diſcharge this Way is by all means proper to be made, yet Phlebotomy is never to be adminiſtred during the Time of the Fit; for the Languor would be increaſed, and the Diſeaſe protracted by ſo doing. It is no leſs fruitleſs, as well as dangerous, under a Lipothymy, to pour into the Mouth ſpirituous Liquors, becauſe they eaſily fall into the *Aſpera Arteria*, and endanger Suffocation.

If a *Lipothymy* proceeds from a Suppreſſion and Diminution of the Menſes, we are not, but with the greateſt Caution, to adminiſter Emmenagogues, eſpecially ſuch as are qualified to raiſe impetuous Commotions, as Baths impregnated with Salt or Saffron, and other Things of that kind; for by cauſing a greater Rarefaction of the Humors, they increaſe the Diſeaſe.

A Loſs of Strength from ſevere Diſtempers, when the Patient is naturally weak and infirm, generally portends a bad Event; and therefore we cannot be too ſpeedy with our Aſſiſtance, which the ſooner it comes the more ſeaſonable it proves, according to that elegant old Proverb;

Principiis obſta, ſero Medicina paratur.

"Prevent the Miſchief, Phyſic comes too late."

Much more Reaſon have we in ſuch acute Diſorders, and eſpecially at their Height, to avoid the Uſe of ſuch Medicines as by ſtimulating and provoking to Stool, or other Excretions, may any way diſturb or irritate Nature. For by ſuch means the Strength, which is neceſſary for ſubduing the Diſeaſe, is ſtill more exhauſted; and if this be conſumed and reduced to nothing, all the Art and Skill of the Phyſician are vain and inſignificant. I am, therefore, mightily pleaſed with that Golden Rule of *Fernelius*, *Lib.* II. *Cap.* 10. which it were to be wiſhed were univerſally obſerved: "While the *Strength*, "he ſays, continues firm, and on a good Foundation, we "may boldly evacuate as much as the Diſeaſe requires; but "if the *Strength* be quite gone, or much diminiſhed, no "thing is to be attempted of that Nature."

The Principal of thoſe boaſted Remedies which have for ſo many Ages been extolled even to Superſtition as the higheſt Cordials, and ſpecific Analeptics in all *Syncopes* and Faintings, as Pearls, Oriental Bezoar Stones, Bone of a Stag's Heart, the fine precious Stones, and others, are ſo far from exceeding in Virtue ſome other fix'd Diaphoretics and Abſorbents, that they are rather to be eſteemed much inferior to them. The ſame Judgment is to be paſſed on Medicines prepared of Gold; for the cordial and analeptic Quality aſcribed to that Metal, is, in our Opinion, a mere Chimera, and a very remarkable Inſtance of the fond Credulity of the common Herd of Phyſicians and Patients; not to mention how incredible a Thing it is, that Gold ſhould be reduced to mild Eſſences, and Quinteſſences by any Arts of Chymiſtry.

Wine, eſpecially old Rheniſh, which, on account of its ſpirituous Acid, is far preferable to other Wines, beſides its internal Uſe before preſcribed, being applied to the Noſtrils, and the Region of the Præcordia, gives preſent Relief under a *Syncope*. Thoſe Faintings, alſo, which are incident to tender and ſenſible Subjects, under the Adminiſtration of Phlebotomy, are prevented by taking a moderate Draught of Wine before the Operation.

There is even in ſimple cold Water ſeaſonably exhibited a highly analeptic Virtue, eſpecially when the Fainting, or Lipothomy, is occaſioned by an immoderate internal or external Heat, and Rarefaction of the Blood. Of this *Celſus*, ſo long ago, was very ſenſible; and therefore, *Lib.* 4 *Cap.* 5. very ſtrongly recommends cold Water for correcting the Diſorders of the Stomach. And *Pliny the Younger*, who had by Nature a weak Stomach, and was much ſubject to inward Diſtur-

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ations, assures us, *Lib.* 6. *Epist.* 17. that he had often received great Benefit from cold Water. *Frederic Hoffman.*

SYNCRIMATA. συγκρίματα, from συγκρίνω, to collect together, a Word used by *Galen*, *de S. F. Lib.* 5. *Cap.* 25. to signify the Mixtures and Concretions of simple Bodies, and the Confusion of Elements. He applies the same Word, *Lib. de diff. Morb. Cap.* 5. to the Bodies of Animals, as consisting of a Mixture of Atoms.

SYNCRISIS. σύγκρισις, a Concretion, Conformation, from συγκρίνομαι, which Verb is used by *Hippocrates*, 6 *Epid. Sect.* 2. *Aph.* 35. to express the Coalition or Conformation of the Male; and by *Galen*, *M. M. Lib.* 4. *Cap.* 4. where it is opposed to διακρίνεσθαι, "to be dissolved." *Syncrisis*, with the Chymists, is a Concretion or Coagulation, effected by a spontaneous or violent Reduction of a liquid Substance to a solid one, by a Privation of the Humid. *Castellus.*

SYNCRITICA. συγκριτικὰ, *Syncritics*, a Name given by the Methodics to such Medicines as were of a coercive or astringent Nature (not to Relaxants, as *Blancard* will have it) *Galen de Anat. Adm. Lib.* 3. *Cap.* 2. The same Author, *de M. M. Lib.* 1. *Cap.* 2. observes, that *Thessalus* wrote a whole Volume on *Syncritics*. See the preceding Word.

SYNCYRIA. συγκυρία, from σὺν, and κύρω, to be, is a Chance, or casual Event; and the same as συγκύρημα (*Syncyrema*) *Hippocrates de Prisc. Med. et Lib. de Hum.*

SYNDESIS. σύνδεσις, from σὺν, and δέω, to bind, a Binding or Straitening. Thus, 6 *Epid. Sect.* 3. *Aph.* 1. ἡ διῤῥαλὸς ἀραιότης ἡ κοιλίης συκιότης, ἡ δὲ διῤῥαλὸς ξυνδεσις ἡ σαρκῶν αὔξησις, "the "Rareness of the Skin causes a Constipation of the Belly; but "a Straitness (Astriction of the Pores) of the Skin causes an "Increase of the Flesh."

SYNDESMO-PHARYNGÆUS (*Musculus*) a Muscle of the Pharynx. See PHARYNX.

SYNDESMOS. σύνδεσμος, from σὺν, and δέω, to bind, a Ligament. See LIGAMENTUM.

SYNDESMOSIS. συνδέσμωσις, a Sort of Connexion of the Bones, otherwise called SYNNEUROSIS, which see.

SYNDIACRISIS. A Name given to that Chymical Operation used in preparing of the diaphoretic Precipitate from the Cinnabar of *Hartman*, by a Separation of the Principles of the Cinnabar, and a new Composition. *Castellus.* See *Schroder*, *L.* 3. *C.* 16.

SYNDROME. συνδρομὴ, from σὺν, and δρέμω, to run, *Lat. Concursus*, a Concourse. This is a Word introduced into Medicine by the Sect of the Empirics, who mean by it a Concourse of Symptoms. Thus under a Plethora, an Empiric judges Venesection necessary from a *Syndrome* of Symptoms, such as a Distention of the Vessels; a Redness and Gravity of the whole Body; an Indisposition to Motion; Tensions of the Limbs; and a Sense of an ulcerous Lassitude; besides a Life spent in Idleness, high and full Feeding, and a Suppression of wonted Excretions. This is the *plethoric Syndrome* of an Empiric; and after the same manner he forms a *Syndrome*, or Concourse of Symptoms, in a Peripneumony, Quinsey, Epilepsy, and other Diseases. *Galen* ridicules these *Syndromes*, because, he says, they happen very rarely, and also very slowly; so that should a Physician wait for a *Syndrome* of all the Symptoms he expects, he might administer his Remedies too late. *Galen*, *Com.* 2. *in* 1 *Prorrhet. et Com.* 2. *in R. V. J. A. et Lib.* 6. *de M. M. Cap.* 4. and in other Places.

SYNDYASMOS. συνδυασμὸς, from σὺν, and δύω, two, is a Word used by *Hippocrates*, *Lib.* 2. *de Morb. Mul.* to express the Commerce between the Sexes.

SYNECHES. συνοχὴς, from συνέχω, to connect, hold together, continual, is an Epithet of a Sort of Fever. See SYNOCHOS.

SYNECTICON. συνεκτικὸν, from the same Original as the preceding, continent, an Epithet applied to the proximate Cause of a Disease usually called *Causa continens*, also *conjuncta*, and *contentiva*; and always remains closely united with the Disease. *Castellus.* See CAUSA.

SYNEDREUONTA. συνεδρεύοντα, from σὺν, and ἕδρα, a Seat, *Lat. Assidentia*, assisting, attending, an Epithet bestow'd on such Signs or Symptoms as accompany a Disease. See ASSIDENS.

SYNEILEMMENOS. συνειλημμένος, straiten'd, one who is costive or bound in his Belly. *Castellus.*

SYNENDEICNYMENA. συνενδεικνύμενα, from σὺν, and ἐνδείκνυμι, to shew or indicate, co-indicating, are Signs so called, which conspire with those that are proper to a Disease; for instance, the Age and Strength of the Patient, the Country, Season, Custom, and the like. *Galen*, *Lib.* 13. *de M. M. Cap.* 16.

SYNENOMENA. συνημμένα, from σὺν and ἕνω, to unite, become one, are expounded in *Galen's Exegesis* by συνόντα (*Synonta*) co-existing; but there is a Variation in the Copies,

and many of them have it σύνομα (*Synnoma*) conversant together, or feeding together. *Foesius.*

SYNEREPHES, συνερεφὴς, in *Galen's Exegesis*, is expounded by ἐπικεκαλυμμένον, συνεσκιασμένον, envelop'd, covered, shady, opake.

SYNERGASMA. συνέργασμα, from σὺν and ἐργάζομαι, to work, operate, Co-operation. *Libavius* divides the *Synergasmata Chymica*, or chymical Co-operations into ἐνεργητικὰ, energetic, or such as are endued with an efficacious Virtue; and σκευαστικὰ, preparatory.

SYNERXIS. σύνερξις, from σὺν and ἴεργω, to restrain, confine, is explained in *Galen's Exegesis* by σύγκλεισις, SYNCLEISIS, which see.

SYNESTECOS, συνεστηκὼς, ξυνεστηὼς, from σὺν and ἵστημι, to stand; consistent, is applied by *Hippocrates*, in *Prognost.* 1 *Prorrhet.* and *Coac.* to the Fæces, when firm, coherent, and figur'd, in Opposition to diffluent, liquid, humid, and aqueous.

SYNIDROSIS. συνίδρωσις, from σὺν and ἵδρωσις, Sweating; is a Sweat in Conjunction with some other Affection, for Instance with a Fœtor of the *Alæ*. *Castellus from Nonius.*

SYNISTAMENOS. συνιστάμενος, consistent, the same with SYNESTECOS, which see.

SYNIZESIS. συνίζησις, from σὺν and ἵζομαι, to sit, *Lat. Considentia*, is the same as APOCATASTASIS, which see.

SYNNEUROSIS. συννεύρωσις, from συν and νεῦρον, a Nerve, is a Species of Articulation of the Bones by the Intervention of Ligaments. *Cowper.*

SYNNOMA. σύννομα, from σὺν and νέμω, to feed. See SYNENOMENA.

SYNOCHA, the same with SYNECHES, or *Febris continua. Blancard.* See the following Word.

SYNOCHOS. σύνοχος, *Lat* FEBRIS CONTINENS.

Συνοχὰς πυρετοὺς (*Synechees Puretoi*) continual Fevers, in *Hippocrates*, are such as continually molest the Patient without Remission, as we often find in the *Epidemics*, to which he sometimes adds τὸ μὲν ὅλον ὑ διαλείποντας, "Upon the whole not "intermitting," That he might more clearly distinguish between them and intermittent Fevers. And this he does in express Words, 1 *Epid. Sect.* 3. where he says, συνοχοὶ, οἱ μὲν ξυνοχέες, οἱ δὲ ἡμιτριαῖοι ἴσχυσι, νύκτα διαλείποντα, νύκτα ἴσχυσι, ἡμέρην διαλείποντα. "There were Fevers, some continual; others mo- "lested the Patient by Day, and intermitted by Night; and "others again were urgent in the Night, and intermittent "in the Day." On this Place *Galen* thus comments: καὶ τὸ τὰ συνεχῆ ὄνομα, καὶ τὸ τὰ διαλείποντας οἱ παλαιοὶ διττῶς φασθαι χρῆσθαι, &c. "The Ancients seem to have used the Words "*Syneches* (continual) and *Dialipon* (intermittent) in a double "Sense. Sometimes they gave the Name of *Syneches* to all "those Fevers which never came to an Apyrexy [perfect "Cessation]; and at other times they bestow not that Ap- "pellation on all which never come to an Apyrexy, but on "those especially which undergo no Mutation till a Crisis. "Thus, also, sometimes they apply the Epithet of *intermit- "tent* to those Fevers which have a perfect Cessation, at "other times to those which have no such total Cessation, "but undergo considerable Mutations, in the different Parts "of the Paroxysms, as in the Beginning, Increase, Height, "and Remission of the same. But some of the more mo- "dern Physicians call those Fevers which undergo no re- "markable Alteration, not by the Name of *Synoches*, but "*Synochus*; bestowing the former Appellation only on those "which never come to an Apyrexy, or perfect Cessation, "but intermit after each Paroxysm, which Kind the An- "cients sometimes call *Synoches* (continual), sometimes *Dia- "lipon* (intermittent). And these are really a middle Sort "between the *Synoches*, and those which have a perfect Ces- "sation, or Apyrexy; when compared, therefore, with the "*Synochus*, they may very well be called *intermittent*, but in "comparison of those which have a total Cessation, they "deserve the Name of *Synoches*." The same Author, *de Crif. Lib.* 2. *Cap.* 2. gives the Name of *Synoche* to a Fever, "which, as he says, never comes to an Apyrexy before a "total Solution, tho' it has a sensible Remission."

From the Premises it appears very plainly, that *Hippocrates* and the Ancients comprehended the *Synochus* under the *Synoches*.

A Fever consisting of one Paroxysm from the Beginning to the End, and lengthened out for many Days, is by some called a *Synochus*, not indeed by a proper *Greek* Word, but they rather chose to commit a Solecism in Terms, than want a Name for their Idea. But the Nature of these Fevers is by no means so simple as the Idea they have formed of them, from whence they give them the Name of *Synochus*; for some of them are attended with a manifest Putrefaction; others are wholly free from it; as, for Instance, the Diary Fever. *Galen, Meth. Med. Lib.* 4. *Cap.* 2.

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The Fever, which some of the *Greeks* call *Synochus*, σύνοχος, and the *Latins Febris continens*, " a continent Fever," is either attended with a Putrefaction or not; the latter is called *Febris continens non putrida*, " the continent and not putrid Fever," and has the same Signs as a putrid *Synochus*, but somewhat less evident. These are a Pain or Heaviness of the Head, with an immoderate Heat and Redness of the whole Body, and especially of the Face, accompanied with a profound Sleep; a great Pulsation of the temporal Arteries; a great, full, frequent and swift Pulse, with a Sluggishness, and a kind of Lassitude of the whole Body.

The putrid *Synochus* is known by the same Signs as the other, but these Signs are more manifest in this putrid Kind; the Heat, for instance, is more acrimonious; the Throat and Parts adjacent swell, and burn with Heat, so as to be an Impediment to the Patient's Speech; the Eyes are full of hot Tears, and sometimes the Belly swells, and sounds, when struck, like a Drum. The Pulse is great, strong, swift and frequent, as in the other *Synochus*; but in this it is also unequal, in the former not so. The Urine is thick, red, turbid, and void of Sediment. There are often exanthematous Eruptions on the Superficies of the Body, which are most commonly livid or black, and sometimes of other Colours. This Disorder generally ends on the fourth Day, and if it continually increases, may endanger Life, particularly if the Tongue be rough and black, if the Eyes avoid the Light, and if the Urine appear like black Wine. Where these Symptoms are not seen, but the Fever decreases more and more, the Patient seems to be in a safe Condition. When the Disease maintains itself in one constant State, it is safer than when it increases, tho' less favourable than when it declines; which Observation is to be made, also, in the non-putrid *Synochus*. It is to be observed, that the *Synochus* usually happens only to Persons of a temperate Constitution, of a fleshy Habit, and abounding with no bad Blood; and that the Transition is easy from a non-putrid to a putrid *Synochus*, and from this to a continual Tertian.

What the *Greeks* call *Syneches*, and we *Febris continua*, " a continual Fever," is a kind of putrid Fever resembling the putrid *Synochus* in the Continuation of the Paroxysms, but different from it in that it proceeds either from Bile or Phlegm, and has its Periods according to the Nature and Motion of these Humors, in which, tho' it does not totally cease, it yet remits, and gives the Patient Time for Refreshment; but the *Synochos* owes its Original to a putrefy'd Blood, and affords no Remission till the Time of the Crisis. To proceed, a continual Fever, is not preceeded by a Rigor, Horror, or Coldness, but suddenly seizes the Patient all at once with a Heat, tho' perhaps the corrupted Humor about the Præcordia may sometimes excite a Rigor or Horror, for a short time, till it be overcome and subdued by the Fever. The Heat is always of a rough and acrimonious Quality, and especially at the Increase and Heat of the Paroxysm. The Respiration and Pulse are unequal, and in this latter the Systole is perceived to be quick, and the Diastole slow. The Pulse, also, is sometimes quick, sometimes slow, sometimes strong, at other times weak; particularly in the Beginning of the Fit, or Paroxysm, it is quick and small; in the Height thereof it is not only quick, but remarkably great. The Urine in the Beginning is thick, red and turbid, and has neither Cloud, Enæorema or Hypostasis; sometimes it is thin, but red, and not at all transparent; and all the Excretions, whether Stool, Urine or Sweat, have generally a rank and offensive Smell.

A *continual Quotidian* and *Quartan* are commonly very irregular, so as in one Day to have two or three Exacerbations, on another but one, or perhaps none at all; a *continual Quartan* is very rare, a *continual Quotidian* more frequent than the other; but the most frequent is a *continual Tertian*, by the *Greeks* called καῦσος, *(Causus)* by us *ardens Febris*, " a burning Fever." *Lommii Med. Obs.* See PYRETOS.

SYNOCOCHE. συνοκωχή, is expounded in *Erotian* on *Hippocrates*, by συνοχὴ ἡ σύνδεσις, " a continued Coherence and " Concourse." The Word occurs in *Lib. de Ossium Natura*, where σῶμα συνοκωχὴ is the Frame or Compages of the Breast.

SYNOVIA, a Term in *Paracelsus*, which he uses sometimes in a physical Sense for the nutritious Juice appropriated to the Nourishment of any Part: Thus the nutritious Liquor in the Joints, or rather in the Nerves which supply the Joints, is called by him *Synovia*, the white Glue of the Joints, otherwise *Hydarthros*, *Melicerta*, the Ichor of the Nerves. *Synovia*, in the same Author, is used in a pathological Sense for the Gout, or the Diseases of any Part where a Corruption of the proper nutritious Juice is the Cause of the Disorder. *Helmont*, *Dornæus* and *Rulandus* describe the *Synovia* to be a pellucid Sort of Mucilage, like Sperm, or like the Liquor which distils from the Legs of a Calf, when his Feet are cut off. *Castellus*.

SYNTASIS. σύντασις, from σὺν and τείνω, to distend or stretch, a Distention; it is opposed to *Chalasis*, χάλασις, a Relaxation, as συντάλικὰ, *Syntatica (Medicamenta)* Medicines inducing a Tenseness are opposed to χαλακτικὰ, *Chalactica*, relaxing Medicines. See CHALAXIS and CHALACTICON.

SYNTAXIS. σύνταξις, from τάττω, to order, or regulate, in *Galen*, *Lib. de Ossibus*, signifies any Order or Composition of the Bones in general, and is there divided into *Arthron* and *Symphysis*. It is otherwise, as we are told, called *Synthesis*, σύνθεσις, and *Homilia*, ὁμιλία.

SYNTENOSIS. A Species of *Synneurosis*, in *Spigelius*, when two Bones are connected by a Tendon, as the *Ossa Sesamoidea* to the Bones of the Toes, and the *Patella* to the *Os Femoris* and *Tibia*. *Castellus*.

SYNTEXIS. σύντηξις, from σὺν and τήκω, to liquefy, a Colliquation. See COLLIQUATIO.

SYNTHENA. So *Paracelsus* calls a kind of Epilepsy, or apoplectic Disorder, attended with Gripes, and a Pain of the Stomach, which is generally mortal. *Castell.*

SYNTHESIS, σύνθεσις, from σὺν, together, and τίθημι, to put; Composition, in Anatomy, is the same as *Syntaxis*, which see. It is also one of the six Parts into which some divide the Art of Surgery, as we are told by *Heister*, the other five being *Diæresis*, *Exæresis*, *Aphæresis*, *Prosthesis*, and *Diorthosis*; which see in their proper Places. *Synthesis* is also the Name of a Disease much like a Phthisis, *in Plinius Secundus de Re Medica*, *Lib.* 2.

SYNTHETISMUS, a Term used by some in Surgery to comprehend the four Operations in the Restitution of Fractures, which are *Extension*, *Co-aptation*, *Repesition*, and *Deligation*, or Bandage.

SYNTHETOS, σύνθετος, from σὺν and τίθημι, to put or place; compact, is an Epithet applied by *Hippocrates*, *Coac.* 110. to Fæces of a hard Consistence.

SYNTOMOS, σύντομος, from σὺν and τέμνω, to cut; concise, short, quick, is sometimes, if the Word be not corrupted, put for vehement and intense. Thus πόνος σύντομος, *Coac.* 160. signifies violent Pain; but *Fœsius* thinks we should read σύντονος, and observes that σύντομος is often read corruptly for σύντονος, which signifies intense. The Adverb σύντομως signifies soon, speedily, shortly, for instance, 3 *Aph.* 12. καλῶς σὺν τάχει ἀπολλύμενοι, are " Defluxions which soon prove mortal."

SYNTONIA, συντονία, from σὺν and τείνω, to stretch, signifies Strength and Firmness of Tone. *Galen*, *Com.* 4. *in Lib. de R. V. J. A.* explains συντονίην καλὰ τὰς φλέβας, " a Syntonia of the Veins," by πύκνωσις, a Denseness, or a Thickness of the Coats of the Veins, which he makes the Cause of the Stillation or Falling of Blood by Drops from the Nose; σύντονος πόνος, *Coac.* 160. is intense or vehement Pain.

SYNTROPHOS, σύντροφος, from σὺν and τρέφω, to nourish; nourished together, is expounded by *Galen*, *Com.* 2. *in Lib.* καθ' ὑπέκθεσιν, by οἰκεῖος, familiar, accommodated, convenient. Σύντροφος νοῦσος is a Disease which is nourished and grows up with the Patient; thus, *Lib. de Morbo Sacro*, the Epilepsy is said to be ἡ νοῦσος ἐκ παιδὸς σύντροφος, " a Disease nourished and " growing with a Person from a Child.

SYNULOTICON, συνουλωτικὸν, is the same as *Epuloticum*. *Galen de M. M. Lib.* 13. *Cap.* 5. See EPULOTICA.

SYNYMENSIS, in *Spigelius*, is a Species of Conjunction of two Bones by means of a Membrane; as, for instance, in new-born Children, the Bones of the Sinciput are connected to the Os Frontis.

SYPHAR. The same as EXUVIÆ, which see.

SYPHILIS. See SIPHILIS.

SYRIACON. An Epithet of an Ointment, called also *Commagenum*, or *Comagenum*. See COMMAGENUM. The *Lapis Judaicus* is also called *Syriacus*; for *Ulcus Syriacum*, see TONSILLÆ.

SYRICON, according to *Paulus Ægineta* and *Aetius*, is the same as *Sandyx*; but *Pliny* makes it a Composition of equal Parts of *Sandyx* and *Sinopis*. It is also the Name of a Collyrium described in *Aetius*, *Tetrab.* 2. *Lib.* 3.

SYRINGA.

The Characters are;

The Calyx is monophyllous, and divided into four large and expanded Segments. The Flower is rosaceous and pentapetalous, or tetrapetalous, and furnished with Stamina to the Number of Sixteen. The Ovary in the Bottom of the Calyx is adorned with four erect, apiculated Tubes, and becomes a turbinated, quadricapsular Fruit, growing to the Calyx, gaping into four Parts, and pregnant with small Seeds.

Boerhaave mentions two Sorts of *Syringa*, which are;

1. Syringa; alba; five Philadelphus Athenæi. *C. B. P.* 398. *Frutex Coronarius*, Clus. H. 55.

2. Syringa; flore albo, pleno. *C. B. P.* 398. *Bauh. Pin. Alt. Plant.*

It is called *Syrinx*, from σύριγξ, *(Syrinx)* a Pipe, because the Branches, when the Pith is taken out, may serve for Pipes

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Pipes in Syringes; but I find no medicinal Virtues aſcribed to it. *Hiſt. Plant. aſcript. Boerh.*

SYRINGOTOMIA, *συριγγοτομία*, from *σύριγξ*, a Fiſtula, and *τέμνω*, to cut; Syringotomy, or cutting for a Fiſtula.

SYRINGOTOMUM, *συριγγότομον*, of the ſame Original with the preceding, is a Surgeon's Inſtrument for cutting a Fiſtula.

SYRINGOTOMUS. The ſame with SYRINGOTOMUM.

SYRINX. See FISTULA.

SYRIUS. A Name for a ſtrong cathartic Powder prepared of Scammony, being no other than an Extract, Refine, or Magiſtery of that Drug.

SYRMA, *σύρμα*. The ſame as APOSYRMA, or ABRASUM, which ſee.

SYRMÆA, *συρμαία ἢ συρμαΐα*, as ſome ſay, is a Species of *Raphanus*, ſo called [from *σύρω*, *ſyro*, to draw] becauſe it was proper to provoke Vomiting; *συρμαία* was alſo a ſort of Sweetmeat prepared of Honey and Fat, which was the Prize of a certain Game or Exerciſe among the *Spartans*; alſo a Purgative Potion compoſed of Salt and Water. The Scholiaſt on *Ariſtophanes*, *ἐν ἐκκλ.* ſays, that the *Syrmæa* was the Juice of a certain Herb with which the *Egyptians* uſed to purge themſelves; and it ſeems to be the Juice of the *Raphanus*, which, mixed with Salt, was a common Purge among that People. *Varinus* ſays, that the *Syrmæa* works both by Stool and Vomit, whence comes the Word *Syrmæſmus*, which ſignifies a moderate Purging, whether upward or downward; and *Galen* alſo tells us, *Com. 2. in Lib. de Artic.* that a moderate Evacuation whether by Stool or Urine, was called by the Antients *Syrmæſmus*. *Erotian* on *Hippocrates* ſays, that the *Syrmæa* is a long ſort of *Raphanus*, which with Brine was uſed in Food, in order to excite a kind of Purging, which they call *Syrmæſmus*, by which he means Vomiting. *Paulus*, *Lib.* 1. *Cap.* 100. informs us from *Dioeles*, that *Syrmæſmus* with the Ancients ſignified *νῆστις ἐμέσεις*, "faſting Vomits;" that is, provoked by ſome Medicine taken faſting, and the Verb *Syrmæzo* expreſſed the Action of uſing that kind of Evacuation; for which purpoſe he preſcribes ſmall Radiſhes, Naſturtium, Eruca, Muſtard and Purſlain, to be taken in warm Water. Some commenting on this Place obſerve, that *Syrmæa* ſignifies a Drink prepared of Water and Barley; and in *Diodorus Siculus*, Proviſions for Food. Thus, *Syrmæam facere*, "to make the "*Syrmæa*," is to provide Victuals. The *Syrmæa*, in *Hippocrates*, ſeems to be ſome Potion or Juice, in which he orders his Medicines to be taken; particularly, *Lib.* 1ι *περὶ γυν.* he orders the *Conyza Odorata* to be made into a Maſs with Honey and Roſin, and taken in *Vinum odoratum* or *Syrmæa*, in order to expel the Fœtus and Secundines; and in the ſame Book he adviſes Ærugo with Honey to be taken in *Syrmæa*. *Herodotus in Euterpe*, ſpeaking of the Manners of the *Egyptians*, ſays, "As to their Way of Living, every "Month, for three Days together, they provoke Evacuation "with *Syrmæa*, *συρμαΐζουσι*, taking care, by Vomiting and "gentle Purges, to preſerve their Health;" and deſcribing their Manner of preſerving dead Bodies, he ſays, "that "the third Way of preparing the Bodies, and which was "uſed by thoſe of meaner Fortunes, was, firſt, to cleanſe "out the Belly with Percolations of *Syrmæa*, and after-"wards to let it lie in Salt for ſeventy Days." Where by *Syrmæa*, *Hermolaus Barbarus* aſſures us, is meant a Species of *Raphanus*. *Foeſius*.

SYRMÆSMUS. See the preceding Word.

SYRONES. See SIRENES.

SYRRHŒA, *σύῤῥοια*, *ἢ ξυῤῥοια*, from *σὺν* and *ῥέω*, to flow, a Conflux. *Hippocrates*, *Lib. de Aliment.*

SYRUPUS. A Syrup.

As various Simples, ſuch as Herbs, Roots, Seeds, Fruits and Flowers, together with their Juices, cannot always be had, eſpecially in the Winter and Autumn, in order to prepare Decoctions, Infuſions, and other Medicines, ſuited to particular Intentions; as the Virtues of theſe Simples cannot be long preſerved; and as ſome Diſorders are ſo violent and acute as not to afford Time ſufficient for reducing them into various Forms, in order to extract their Qualities; ſo Syrups became neceſſary, ſince by means of this Formula the various Virtues of Roots and Plants might ſpeedily, and without Delay, be uſed for anſwering different Intentions, according to the different Qualities of theſe Roots or Plants.

The Word *Syrup*, as is ſhewn under the Article SILPHIUM, is derived from the *Chaldean*, *Sirpi*.

Syrups were firſt invented by the *Arabian* Phyſicians, and were unknown to the ancient *Greeks*; ſince *Hippocrates* and *Galen* only make mention of *Oxymel* and *Mulſum*. But the *Moors*, in Imitation of the *Arabians*, enriched the pharmaceutic Part of their Medicine with various Kinds of Syrups.

A Syrup is a liquid Form of Medicine, prepared of Decoctions, Juices, or Infuſions, preſerved by means of Honey or Sugar, and reduced to ſuch a Conſiſtence, that a Drop let fall on a Marble does not ſpread.

Syrups, like all other Officinal Preparations, may be made to anſwer various Intentions; and conſequently may be either of a cooling, heating, drying, inciding, expectorating, incraſſating, diuretic, ſudorific, lithontriptic, alexiterial or corroborating Quality, according to the different Virtues of the ſeveral Ingredients of which they are prepared.

Syrups are uſed either alone, and without any Admixture of any other Subſtance; or they are diſſolved and diluted in ſome proper Liquor.

Unmix'd Syrups, or ſuch as are not diluted with any Liquor, cannot (before their Virtues are in a great meaſure loſt) penetrate ſo far, nor act ſo quickly and eaſily on the Parts affected, or the Humours to be alter'd, as Syrups diluted to the Conſiſtence of a Julap, which, in conſequence of their deſtroyed Viſcidity, penetrate more expeditiouſly, arrive at the Parts affected, and mix with the noxious Humours before their Virtues are conſiderably loſt. Hence 'tis obvious, that either unmix'd Syrups, or ſuch as are diluted, are to be exhibited according to the different Parts affected, the Diverſity of Diſeaſes, and the Variety of their productive Cauſes.

Thus undiluted Syrups are univerſally preſcribed;

1*mo.* For preventing and checking, by their tenacious Conſiſtence, Defluxions on the Fauces, Lungs, and Stomach; for which Purpoſe they are to be long retained in the Mouth.

2*do.* For removing Hoarſeneſs, and the Aſperity or Roughneſs of the *Aſpera Arteria*, which Intentions they excellently anſwer by their tenacious Lentor. For theſe Purpoſes they are to be gradually ſwallowed or lick'd out of a Spoon, like a *Linctus*.

3*tio.* For Expectoration, and the Elimination of any ſordid Matter collected and infarcted in the Lungs; for which Purpoſes they are to be licked out of a Spoon, or taken with a Piece of Stick-liquorice.

4*to.* For alleviating Coughs; for which Purpoſe they are to be taken in the ſame Manner.

5*to.* For Diſorders of the Stomach, and Parts adjacent, to which they eaſily penetrate without a Vehicle.

Diluted Syrups, on the contrary, or ſuch as are reduced to the Form of a Julap, are preſcrib'd;

1*mo.* For Diſorders of the Liver, Spleen and Meſentery.

2*do.* For various other Diſorders, eſpecially of the Head, Heart, Lungs, Kidneys, Bladder, Uterus and Limbs, to which the Virtues of Syrups alone can hardly, if at all, be convey'd, unleſs they are diluted.

Syrups are generally order'd to be diluted in ſome proper Liquor, adapted alſo to remove the particular Grievance for which the Syrup is preſcribed. But the Liquors moſt commonly uſed for this Purpoſe, are diſtilled Waters, or Decoctions, which are more efficacious than Water; as alſo Broths prepar'd of Fowls, either alone or boiled with proper Roots and Flowers.

In determining the Doſes of Syrups, we are to have a due Regard,

1*mo.* To the Situation and Condition of the Parts affected; for if the Virtue and Efficacy of the Syrup are to be convey'd to remote and diſtant Parts, a proportionably large Doſe is to be exhibited, otherwiſe little or no Effect will be perceived; becauſe by the Length of the Paſſage, the Virtues of the Syrup will be greatly impair'd.

2*do.* To the Virulence of the Diſorder, and the Strength of the morbific Cauſe.

3*tio.* To the Age and Habit of the Patient.

4*to.* To the Virtue and Efficacy of the Syrup itſelf.

5*to.* To the Manner in which the Syrup is taken; for as large Quantities of Syrups cannot be taken at once, in order to remove ſeveral Diſorders of the *Aſpera Arteria* and Lungs, ſo the Doſes are to be frequently repeated. The ſame Rule is, alſo, to be obſerved in the Uſe of ſuch Syrups as are exhibited for extinguiſhing Thirſt.

As for the Quantity of Liquor uſed in diluting Syrups, it is the ſame as in Julaps; only the Quantity is to be augmented when the Intention is to allay Thirſt excited by Fevers and other acute Diſorders, eſpecially in the Summer Time.

The Time moſt proper for exhibiting Syrups, is to be eſtimated from the Intention of their Exhibition: Thus Syrups deſign'd to prepare and digeſt the Humours, are to be exhibited in the Morning, four or five Hours before Eating, that their Virtues may not be obtunded by Aliments lately taken, or as yet not digeſted.

Theſe Directions principally belong to the Syrups of the alterant Kind; and as for thoſe of a purgative Quality, they are to be exhibited at the ſame time, and with the ſame Precautions, as other Purges; only 'tis to be obſerved in general, that Syrups are better adapted to chronical than to acute Diſorders. *Petr. Morell. de Formul. Remed.*

In making the Officinal Syrups to the beſt Advantage, ſome

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ſome principal Qualities in the Things themſelves, before ſuch a Proceſs is entered upon, ought to be particularly regarded. The moſt ſimple Treatment in this Form, is the diſſolving Sugar enough in the Juice, or Infuſion of ſome Things, to give it a Conſiſtence for keeping; the Proportion required for this purpoſe is generally double the Quantity of Sugar to that of the Liquor; and where it is ordered with leſs Sugar, Boiling is required to bring it to a due Conſiſtence.

Among the Materials thus ordered, all Acids ought to have their due Quantity of Sugar to bring them to a Conſiſtence without Boiling; becauſe the very Action of much Heat upon them deſtroys their Acidity, and makes them liable to candy; and this more particularly holds good, where a Juice hath any Fragrancy in Flavor, as that of Oranges, Lemons, Citrons, and the like; becauſe Boiling alſo exhales and deſtroys that Fragrancy. Such Infuſions, alſo, as give to a Syrup a deſirable Colour, ought at once to be ſo charged with Sugar as not to require Boiling; becauſe their Colours, by ſuch Procedure, would be ſpoiled; as with the Violets, red Poppies, Cloves, and the like; none of which can bear the Fire without Detriment.

The alterant Syrups, either ſimple or compound, which are made from Decoctions, and take not in Sugar enough to give them a due Conſiſtence without boiling, require Clarification moſt, which is commonly done with the Whites of Eggs; but this Addition to their Beauty, is an Injury to their Virtues, where any thing mucilaginous or viſcid is required. But among this whole Tribe, this Caution is no where ſo neceſſary as in the *Syrupus de Meconio*. What is taken from the Poppy, and which ſolely gives the Virtue to this Syrup, will make a Decoction thick; and if that be taken out by Clarification, the Medicine becomes of little or no Effect; ſo that a certain Way to know when this may be truſted to is, by making a Draught thick and foul, and depoſiting a light Sediment upon Standing.

There are ſo many under this Title of Syrups yet retained in the Diſpenſatory, which are hardly ever made or preſcribed, that the particular Examination of them would be a needleſs Trouble; and therefore it may be ſufficient to obſerve, that theſe are the *Syrupus de Abſinthio ſimplex*, juſtly neglected for its Nauſeouſneſs; the compound Syrup under the ſame Title; the *Syrupus de Artemiſia*, *de Eryſimo*, *Myrtinus*, *de Pomis alterans*, *de Pæonia compoſitus*, *de Praſſio*, *de Stœchade*, *de Symphyto*; and, among the Purging Syrups, the *Syrupus de Cichoreo cum Rhabarbaro*, *de Pomis purgans*, and *Roſaceus ſolutivus cum Sena*.

Of thoſe which are frequently in Uſe, the *Syrupus de Althæa* is the moſt conſiderable Compound; but if we examine the Efficacies or Fitneſs of the ſeveral Ingredients for this Form, we ſhall ſoon diſcover the Reaſon why it is now frequently ordered in its Decoction, to be uſed like a common Apozem, in large Draughts at a time; by which way it is certainly a good Emollient, and ſerviceable in nephritic Diſorders, by lubricating the Paſſages; but if a Quart or two of this may ſafely be drank in a Day, little Conſequence can be expected from what Syrup can be taken in the ſame time.

The ſame holds good in the *Syrupus Capillorum Veneris*, *Syrupus de Glycyrrhiza*, and the *Syrupus è quinque Radicibus*; for their Decoctions may be drank in large Quantities with Safety, and require to be ſo taken, when any thing is expected from them; ſo that all theſe Things are of uſe in Syrups only to ſweeten Decoctions, or Juleps of like Intention; or elſe to make up Boluſes and Electuaries into a due Conſiſtence.

The *Syrupus de Mentha* is a Compoſition of ſome Efficacy, being a grateful Aſtringent. But even this ought to be truſted to only as a weak Auxiliary. The ſame is obſervable of the *Syrupus de Roſis ſiccis*.

The *Syrupus de Cinnamomo* may anſwer the Intention of a Reſtringent; but its ſpicy and cordial Quality muſt neceſſarily be loſt in the long Boiling that is required, to give it Conſiſtence, with half a Pound of Sugar to one Pint of Water. The other Spices and Seeds directed to be made into Syrups after the ſame manner, are liable to the ſame Inconveniences; as are, alſo, the Syrups from the Citron, Orange, and Lemon-Peels. But all the Flavour from theſe Ingredients, which can be retained in a Syrup, as this Form is commonly kept in the Shops in open Pots, or thoſe looſely covered, is ſoon loſt by ſtanding; ſo that ſuch Things are to great Diſadvantage ordered this Way. The *Syrupus Balſamicus* is liable to the ſame Loſs, but is directed with the utmoſt Care, to preſerve its more fragrant and volatile Parts. This laſt mentioned Syrup is frequently, for Cheapneſs, made with Storax or Benjamin, or both; the Difference being hardly diſcoverable, and the Fraud of no very ill Conſequence.

The firſt Way directed to make the *Syrupus Chalybeatus* is hardly practicable, becauſe the *Sal Martis* does not ſeem diſſolvable in the compound Gentian Water; and as the *Syrupus de Pomis alterans* is ſcarce ever made, this Way I believe has never been tried. That with only Steel, Wine, and Sugar, is the old and common Way of making it, but it is very ſubject to run into Candy; as is alſo the *Syrupus Croci*, and any other of this Form made with a vinous Liquor, becauſe the Sugar is not ſo naturally ſuſpended in them, as in Water and the thicker Fluids; and therefore they are more ready to ſhoot into Cryſtals.

Amongſt the purging Syrups, the firſt from Succory with Rhubarb has been formerly much eſteem'd; but the whole Croud of Ingredients in it, which have been thought either Correctors or Purgers of Bile, are now known to be of ſo little Efficacy as to any ſuch Purpoſes, that they are grown into Neglect; and that ſhorter Compoſition, which bears the Title of *Syrupus de Rhabarbaro*, is now much more valued, though the Violet Flowers, the Succory and Fennel Waters ſeem but very inſignificant Ingredients.

The *Syrupus e Floribus malorum Perſicorum*, which orders the Infuſion to be five times repeated with freſh Flowers, is commonly made with one Infuſion only, with juſt Water enough to cover and ſcald the Flowers; and that proves a good gentle Emetic or Purge to young Children; the other Way would certainly render it ſtronger; but ſo very few care for the Trouble, that I never yet met with any who would vouch for its being thus made. The *Syrupus roſaceus ſolutivus* is directed ſomewhat in the ſame manner, but a ſtronger Infuſion of the dried Damaſk Roſes, or the Reſiduum after Diſtillation, will make it with leſs Trouble and full as good, if not better, than is here ordered by frequent Infuſions, or from the expreſſed Juice.

The Syrup of Buckthorn is of Strength ſufficient to require not above two Ounces for its largeſt Doſe, which may conveniently enough be given; but the cuſtomary Way of putting in the Spices hath been in a thin Bag, during its boiling to a Conſiſtence; and the leſs time they are expoſed to ſuch Treatment the better. *Quincy's Prelections.*

The Syrups directed by the College are the following.

SYRUPUS DE ABSINTHIO SIMPLEX.

The ſimple Syrup of Wormwood.

Take of the clarified Juice of common Wormwood, and of clarified Sugar, of each four Pounds; and boil them together into the Conſiſtency of a Syrup.

After the ſame Manner are prepared the ſimple Syrups of the Juice of Succory, of Ground Ivy, of Raſpberries, of the outer Peel of Walnuts, of Coltsfoot; and alſo of other Juices that are not acid.

SYRUPUS DE ABSINTHIO COMPOSITUS.

Compound Syrup of Wormwood.

Take of common Wormwood moderately dried half a Pound, of red Roſe Leaves, two Ounces; of Spikenard, three Drams; of old ſtrong white Wine, and Juice of Quinces, of each two Pounds and a half. Let them infuſe together warm in an earthern Veſſel for a whole Day, then gently boil in a Bath Heat, and ſtrain out the Liquor; and with two Pounds of white Sugar, boil it up to the Conſiſtence of a Syrup.

SYRUPUS ACETOSUS.

Syrup of Vinegar.

This is made by diſſolving with a gentle Fire, five Pounds of Sugar in one Quart of the beſt White Wine Vinegar.

This is reckoned good to expectorate and cut Phlegm, and in ſuch Intentions any other Syrup may be helpful; becauſe the Sugar itſelf has a Tendency that Way.

SYRUPUS DE ALTHÆA. See ALTHÆA.

SYRUPUS DE ARTEMISIA.

Syrup of Mugwort.

Take of Mugwort, two Handfuls; of Penny-royal, Calamint, Origany, Baum, Dittany of Crete, Savine, Marjoram, the leſſer Centory and Rue, of each one Handful; of Fennel, Smallage, and Parſley Roots, of each one Ounce; of Juniper Berries, of the Seeds of Ivy-

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vage, Parſley, Smallage, Cubebs, and the Roots of Aſarum, of each half an Ounce. Let theſe be cleanſed, cut and bruiſed, as they require, and boil then in ſix Quarts of Water to four Quarts. To the expreſſed Liquor, add of Cinnamon and Spikenard, of each three Drams; of white Sugar, ſix Pounds; and boil up to a Syrup. *S. A.*

SYRUPUS BALSAMICUS. See BALSAMUM TOLUTANUM.

SYRUPUS DE BERBERIS.

Syrup of Barberries.

Take two Pints of the fine Juice of Barberries, and one Pound and a half of very fine Sugar: Boil them in an earthern glaſed Veſſel to the Conſiſtence of a Syrup.

SYRUPUS CAPILLORUM VENERIS.

Syrup of Maiden Hair.

Take of Maiden Hair, five Ounces; of Liquorice Root, two Ounces: Infuſe them for twenty four Hours in ſix Pints of hot Water; then after a gentle Boiling in a Bath Heat, preſs out the Liquor; and to four Pints of it clarified, put of Sugar three Pounds, and boil up to a Syrup.

SYRUPUS INFUSIONIS FLORUM CARYOPHYLLORUM. See CARYOPHYLLUS.

SYRUPUS CHALYBEATUS.

Syrup of Steel.

Take of the Salt of Steel, two Drams; diſſolve it in one Ounce of compound Gentian Water; and add to it nine Ounces of the alterant Syrup of Apples. Or otherwiſe,

Take equal Quantities of Steel Wine and Sugar, and boil them into the Conſiſtence of a Syrup.

SYRUPUS CICHOREI CUM RHABARBARO. See RHABARBARUM.

SYRUPUS DE CINNAMOMO.

Syrup of Cinnamon.

Take of the beſt Cinnamon a little bruiſed, three Ounces; infuſe it for three ays in a ſufficient Quantity of hot Spring Water, to ſtrain off one Pound, and put to it half a Pound of the fineſt Sugar; and with a gentle Heat boil it up to a Syrup.

SYRUPUS E SUCCO CITRIORUM. See CITREUM.
SYRUPUS CORTICORUM CITRIORUM. See CITREUM.
SYRUPUS CROCI. See CROCUS.
SYRUPUS CYDONIORUM. See CYDONIA.
SYRUPUS DE ERYSIMO. See ERYSIMUM.

SYRUPUS DE GLYCYRRHIZA.

Syrup of Liquorice.

Take of freſh Liquorice, cleanſed and bruiſed, two Ounces; of white Maiden Hair, one Ounce, of Hyſſop, half an Ounce. Pour upon theſe three Pints of boiling Spring Water; and after twenty four Hours Infuſion in a Bath Heat, ſtrain out the Liquor and clarify it; and with the beſt Honey and fine Sugar, of each ten Ounces, boil it up to a Syrup in a Bath Heat. *S. A.*

SYRUPUS GRANATORUM.

Syrup of Pomegranates.

Take of white Sugar, one Pound and a half; of the Juice of Pomegranates made fine, one Pound. Let it be brought into a Syrup with a Bath Heat.

SYRUPUS DE MECONIO, SIVE DIACODION. See DIACODION.

SYRUPUS DE MENTHA.

Syrup of Mint.

Take of the Juices of ſweet and ſub-acid Quinces, and of the Juice of ſweet and acid Pomegranates, of each one Pound and an half; of dried Mint half a Pound; of red Roſes two Ounces. Let them ſtand in Maceration one whole Day; then boil in a Bath Heat to a Conſumption of half, ſtrain the Liquor, and with four Pounds of Sugar make it into a Syrup.

SYRUPUS MYRTINUS.

Syrup of Myrtles.

Take of Myrtle Berries, two Ounces and an half; of the white and red Sanders, of Sumach, of Balauſtines, Barberries, and red Roſes, each one Ounce and a half; of Medlars ſliced, one Pound, bruiſe as required, boil in eight Pints of Water to four Pints; and to that, when ſtrain'd, add of the acid Juice of Quinces and Pomegranates, each ſix Ounces. Then with four Pounds of Sugar boil into a Syrup, adding the Juice towards the latter End.

SYRUPUS DE PÆONIA COMPOSITUS.

Compound Syrup of Peiony.

Take of freſh Piony-Roots, both the Kinds, cut into Slices, and infuſed a whole Day in white Wine, of each one Ounce and an half; of Contra-yerva Root, half an Ounce; of common Hartwort, ſix Drams; of Roſemary with its Flowers, one Handful; of Betony, Hyſſop, Origany, Ground-Pine, and Rue, of each three Drams; of Aloes Wood, Cloves, and the leſſer Cardamoms, of each two Drams; of Ginger and Spikenard, of each one Dram; of Stæchas and Nutmegs, of each two Drams and a half. After one Day's Infuſion in ſix Pints of warm Spring-water, boil in a Bath-Heat to the Conſumption of a third Part; and to the Liquor afterwards ſtrained through a Flannel Bag, put four Pounds and a half of the fineſt Sugar, and boil up into a Syrup with a moderate Heat.

SYRUPUS DE PAPAVERE ERRATICO.

Syrup of wild Poppies.

Take of the freſh Flowers of wild Poppies two Pounds, and pour upon them two Quarts of Spring-water; the next Day preſs it out, and repeat the Infuſion with freſh Flowers, and then make it into a Syrup in a Bath-Heat, with as much Sugar as there is of the ſtrained Liquor.

SYRUPUS E FLORIBUS MALORUM PERSICORUM.

Syrup of Peach-Flowers.

Take Flowers of Peaches, one Pound, and pour upon them three Pints of boiling Water; after twenty four Hours ſteeping, preſs out the Liquor, and repeat the Infuſion with a freſh Quantity of Flowers five times; then in the laſt Straining diſſolve two Pounds and a half of Sugar, and boil it up to a due Conſiſtence.

It is a pretty Puke for Children, and opens a little downwards; for which purpoſe it is much in Uſe. The Doſe is from two Drams to one Ounce.

SYRUPUS DE PETO.

Syrup of Tobacco.

Take of the Juice of Engliſh Tobacco three Pounds; of ſimple Oxymel four Ounces; of Mead one Pint. Digeſt them together for four Days; then to the clear ſtrained Liquor put two Pounds of Sugar, and make into a Syrup.

This is deſigned for an Emetic.

SYRUPUS DE POMIS ALTERANS.

The Alterant Syrup of Apples.

Take of the Juice of fragrant Apples four Pints; of the Leaves of Garden and wild Buglaſs, and of Violet Flowers, each one Pound: Boil in a Bath-Heat, and to the clear-ſtrained Liquor put ſeven Pound of the fineſt Sugar, with one Pint of Damaſk Roſe-water, and make into a Syrup.

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SYRUPUS DE POMIS PURGANS.

Purging Syrup of Apples.

Take two Pints of the Juice of fragrant Apples; of the Juices of Borrage and Bugloſs, of each one Pint and a half; of the Leaves of Sena picked from the Stalks and Duſt, two Ounces; of Aniſeeds half an Ounce; of Saffron tied into a little Knot, one Dram. Let the Sena and Aniſeeds ſteep in the Juices; and after that is continued twenty four Hours, and they have been juſt boiled together, ſtrain out the Liquor; to which add two Pounds of white Sugar, and ſqueezing the Knot of Saffron frequently between whiles, let it be boiled into a Syrup.

SYRUPUS DE PRASSIO.

Syrup of Hore-hound.

Take of the Leaves of freſh white Hore-hound two Ounces; of Liquorice, Polypody of the Oak, Smallage, and ſweet Fennel Roots, of each an Ounce; of the Leaves of white Maiden-Hair, Origanum, Hyſſop, Calamint, Thyme, Scabious, Savory, and Coltsfoot, of each ſix Drams; of the Seeds of Aniſe and Quinces, of each three Drams; of ſtoned Raiſins two Ounces; of fat Figs, No. 10. Let theſe ſtand in a warm Digeſtion for a whole Day, in one Gallon of thin Mead; then boil in a Bath Heat, and to five Pints of the Liquor ſtrongly preſſed out, and ſettled clear, put two Pounds of clarified Honey and as much Sugar, and boil up to a Syrup; which may be flavoured with one Ounce of Florentine Orrice-Root.

SYRUPUS DE QUINQUE RADICIBUS.

Syrup of the five aperient Roots.

Take of the Roots of Butchers-Broom, ſweet Fennel, Aſparagus, Parſley, and Smallage, of each two Ounces; of Spring-water three Quarts. Digeſt them together warm, and boil them in a Bath-Heat. To two Quarts of the Liquor ſtrongly preſſed out and clarified, put five Pounds and a half of fine Sugar, and make into a Syrup in the ſame Heat; adding to it at the latter End eight Ounces of Vinegar.

SYRUPUS DE RHABARBARO.

Syrup of Rhubarb.

Take of the beſt Rhubarb, and of Sena Leaves, of each two Ounces and a half; of Violet Flowers one Handful; of Cinnamon one Dram and a half; of Ginger, half a Dram, of Succory, and Fennel Waters, of each four Pints. Let them ſteep a whole Night warm, and then boil the ſtrained Liquor up into a Syrup with two Pounds of white Sugar towards the latter End, mixing with it two Ounces of the ſolutive Syrup of Roſes.

SYRUPUS ROSACEUS SOLUTIVUS. See ROSA
SYRUPUS E SUCCO ROSARUM. See ROSA.
SYRUPUS DE ROSIS SICCIS. See ROSA.

SYRUPUS DE SPINA CERVINA.

Syrup of Buckthorn.

Take of the Juice of ripe and freſh Buckthorn Berries gathered in the Month of *September*, two Pints; let the Fæces ſubſide, and to the clear Liquor add of Cinnamon and Nutmegs, each three Drams; and let them ſtand in Maceration for the ſpace of one whole Day; then ſtrongly preſs it out, and put to it one Pound and a half of white Sugar, to be boiled up to the Conſiſtence of a Syrup in a Bath-Heat.

SYRUPUS DE STŒCHAIDE.

Syrup of Stœchas, or French Lavender.

Take of Stœchas Flowers four Ounces; of Roſemary Flowers half an Ounce; of the Herbs of Thyme, Calamint, and Origany, each one Ounce and an half; of the Seeds of Rue, Peiony, and ſweet Fennel, each three Drams. Digeſt theſe for one or two Days in a ſufficient Quantity of hot Spring-water, to preſs out five Pints clear; to which add of the fineſt Sugar five Pounds and an half, and make into a Syrup by a Bath-Heat, according to Art. It may be aromatized with ſome Drops of the diſtilled Oil of Cinnamon.

SYRUPUS DE SYMPHYTO.

Syrup of Comfrey.

Take of the Roots and Leaves of the Greater and Leſſer Comfrey, each three Handfuls; of freſh red Roſes, Leaves of Betony, Plantain, Pimpernel, Knot-Graſs, Scabious, and Coltsfoot, each two Handfuls; bruiſe them, and preſs out their Juice; to each Pound of which put one Pound of Sugar; in the Boiling take off what Scum riſes, until it is of a due Conſiſtence for a Syrup.

SYRUPUS VIOLARUM.

Syrup of Violets.

Take of freſh Violet Flowers clean picked one Pound, and pour upon them two Pints and an half of hot Water; cover them down cloſe in a new earthen glazed Pot for a whole Day, and then ſqueeze out the Liquor with a Preſs; and to every Pint of it put two Pounds of fine Sugar, which diſſolve in a Bath-Heat, and take off what Scum ariſes during its Continuance over the Fire.

SYRUPUS E SUCCO VIOLARUM.

Syrup of the Juice of Violets.

This is made with the expreſſed Juice and double the Quantity, at leaſt, of Sugar melted in a gentle Bath-Heat, as directed in the preceding.

Beſides theſe there are a great many other Syrups, perhaps not inferior in Virtues, and conſequently not leſs uſeful. The following are taken from *Lemery*'s *Pharmacopée univerſelle.*

SYRUPUS ANTIASTHMATICUS ANT. DAQUIN.

The antiaſthmatic Syrup of Anthony Daquin.

Take of well-cleaned Barley, two Ounces; of the Roots of Butterbur, Elecampane, Smallage, Fennel, Liquorice, and of well-cleaned Damaſcus Raiſins, each an Ounce and an half; of enucleated Dates, twelve; of Jujubes and Sebeſtens, each thirty; of the Leaves of Coltsfoot and Lungwort, of the Tops of Hyſſop and white Horehound, and of true Maidenhair, each one Handful; of the Seeds of Aniſe and the Cotton Buſh, each half an Ounce; and of the Flowers of Coltsfoot and Catsfoot, each half an Handful; make into a Syrup.

For this Purpoſe, the Barley is firſt to be boiled in nine Pints of Water for about half an Hour, then we are to add the Roots cut into ſmall Pieces, then the Fruits opened and cleanſed, and then the Leaves, Seeds, Flowers and Liquorice bruiſed. When the Decoction is boiled to about a third Part, permit it to become half cool, ſtrain it and mix the Sugar with it. Clarify the Mixture with the White of an Egg, and boil it to the Conſiſtence of a Syrup; which, when cold, is to be rendered of an aromatic Flavour, by an Elæoſaccharum prepared of ſix Drops of the diſtilled Oil of Aniſe, two Drops of the Oil of Cinnamon, and a ſufficient Quantity of the Powder of Sugar-candy.

This Syrup incides and diſengages thick Phlegm, aſſiſts Reſpiration, removes Obſtructions of the Lungs and Diaphragm, and is beneficial againſt Aſthmas and inveterate Coughs.

The Doſe is from half an Ounce to an Ounce.

SYRUPUS ANTI-EPILEPTICUS ANT. DAQUIN.

Take of Birdlime, and the Roots and Seeds of male Peony, each two Ounces; of the Roots of the greater Valerian, Angelica, Maſter-wort, Illyrian Orris, and white Dittany, each one Ounce; of the Leaves of Betony and Rue, and of the Flowers of Lilly of the Valley, the Lime-tree and Lavender, each one Handful; and of the white Tartar of *Montpelier*, one Ounce and an half, for make into a Syrup.

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For which Purpoſe we are to chooſe all the Ingredients good, and cutting them in Pieces and bruiſing them, we are to put them into a large Matraſs; then we are to pour upon them of the Waters of black Cherries and Lime-tree Flowers, each three Pints; then ſtopping the Matraſs cloſe, we are to put it in a tepid *Balneum Mariæ*, where the Ingredients are to digeſt for twenty-four Hours: Then the Water of the Bath is to be ſet a boiling for two or three Hours, after which the Infuſion is to be ſtrained and expreſſed; then four Pounds of Sugar are to be mixed with it, after which it is to be clarified with the white of an Egg, and boiled over a ſlow Fire, to the Conſiſtence of a Syrup, which, when cold, is to be rendered of an aromatic Flavour, with an Elæoſaccharum, prepared of the diſtilled Oils of Lavender and Cinnamon, together with a ſufficient Quantity of the Powder of Sugar-candy.

This Syrup is good againſt Epilepſies, Apoplexies, Palſeys, and other Diſorders of the Brain.

The Doſe is from half an Ounce to an Ounce and an half.

SYRUPUS ANTINEPHRITICUS ANT. DAQUIN.

The antinephritic Syrup of Anthony Daquin.

Take of the Roots of Marſh-mallows, Reſt-harrow, Strawberries, Burdock, Water Lily, and the five aperient Roots, each one Ounce and an half; of Winter-cherries and Dog-hips, each three Ounces; of the Seeds of Burdock, Gromwel, Mountain Hartwort, the four cold Seeds well cleanſed, and the Kernels of Medlars and Peaches, each one Ounce; of the Leaves of Saſſafras, Burnet, Chervil, Golden-rod, Saint John's-wort, and true Maidenhair, each one Handful; and of white Tartar reduced to Powder, two Ounces; make into a Syrup in the following Manner:

Cleanſe the Roots and cut them into ſmall Pieces, reduce the white Tartar to a groſs Powder; boil all together in ten Pints of the diſtilled Water of Pellitory of the Wall, over a gentle Fire, for about an Hour; then add the Fruits opened, then the Kernels and Seeds bruiſed, and laſt of all the Leaves cut ſmall. The Decoction is to be boiled into about an half; after which four Pounds of Sugar are to be added; then the Mixture is to be clarified with the white of an Egg, and boiled to the Conſiſtence of a Syrup, which is to be rendered of an aromatic Flavour with ſix Drops of the Eſſence of Aniſe reduced to an Elæoſaccharum, with about half an Ounce of the Powder of Sugar-candy.

This Syrup reſolves the Stone, attenuates and climinates the Phlegm lodged in the Kidneys, Ureters and Bladder, provokes Urine, and is good for the green Sickneſs.

Its Doſe is from half an Ounce to two Ounces.

SYRUPUS ANTISCORBUTICUS ANT. DAQUIN.

The antiſcorbutic Syrup of Anthony Daquin.

Take of the Roots of male Fern, Angelica, Eringo, and Horſe Radiſh, each three Ounces; of Citron and Orange Peel, each two Ounces; of the Leaves of Baum, Fumitory, Spleen-wort, Scurvy-graſs, Brooklime, Water-creſſes, Money-wort, and Mint, each three Handfuls; of the Seeds of Garden-creſſes, *Carduus Benedictus*, and Citrons, each one Ounce; of the Flowers of Broom and Clove July-Flower, each one Handful; and of white Tartar, two Ounces; make into a Syrup in the following Manner.

Boil the Roots cut into ſmall Pieces, and the Tartar reduced to a groſs Powder in nine Pints of chalybeate Water; then add, whilſt the Water is ſtill boiling, the Barks and Seeds bruiſed, then the Herbs cut down, and laſt of all the Flowers. When the Decoction is boiled in about a third Part, permit it to become half cool, then ſtrain and expreſs it; add ſix Pounds of the beſt Sugar, clarify the Mixture with the white of an Egg, and boil it to the Conſiſtence of a Syrup, which, when cold, is to be rendered of an aromatic Flavour, with an Elæoſaccharum prepared of the Oils of Cinnamon and Cloves, each three Drops, and a ſufficient Quantity of the Powder of Sugar candy.

This Syrup purifies the Blood, reſiſts the Malignity of the Humours, provokes Urine, excites the Menſes, and is of excellent Service in the Scurvy, malignant Fevers, and other Diſorders, where it is neceſſary to accelerate the Circulation of the Humours.

Its Doſe is from half an Ounce to an Ounce and a half.

SYRUPUS LIENTERICUS ANT. DAQUIN.

Anthony Daquin's Syrup againſt the Lientery.

Take of the Tops of the greater Wormwood, and red Roſe Leaves exungulated, each three Handfuls; of the Filings of Steel incloſ'd in a Bag, two Ounces; of the beſt Rhubarb and Bark of Citrin Myrobalans, each an Ounce and an half; of the Powder of white Tartar one Dram, and bruiſed red Sanders, half a Dram; make into a Syrup in the following Manner.

Put all the Ingredients into a glaſed earthen Veſſel; pour upon them of the Juices of Plantain and red Roſes, each two Pints; cover the Veſſel, ſet it on warm Aſhes for twenty four Hours, then boil the Infuſion gently for a Quarter of an Hour; ſtrain and expreſs it, add four Pounds of Sugar, clarify with the white of an Egg, and boil to the Conſiſtence of a Syrup.

This Syrup ſtops Fluxes, and eſpecially Lienteries, corroborates the Stomach and the other Viſcera, corrects the Acrimony of the Humours, and is good againſt Hemmorhagies.

Its Doſe is from half an Ounce to an Ounce and an half.

As the primary Cauſe of a Lientery conſiſts in a Weakneſs and Relaxation of the Fibres of the Stomach, ſo that it is not ſufficient for concocting the Aliments, ſo the Ingredients of this Syrup are very proper, ſince after having gently evacuated the Humour producing ſuch a Relaxation, they brace up and corroborate the Fibres of the Stomach.

SYRUPUS MAGISTRALIS ASTRINGENS, *ſeu* DYSENTERICUS.

The aſtringent or antidyſenteric magiſterial Syrup.

Take of the beſt Rhubarb one Ounce, of Citrine Myrobalans, half an Ounce; of Pomegranate Peel and red Roſe Leaves, each three Drams; make into a Syrup in the following Manner.

Cut the Rhubarb into ſmall Pieces, bruiſe the Myrobalns and Pomegranate Peel. Let the whole infuſe together warm for twenty four Hours, in three Pints of diſtilled Plantain Water. Then boil the Infuſion, gently ſtrain and expreſs it. Mix with it four Ounces of the clarified Juice of Barberries, and two Pounds of white Sugar. Clarify the Mixture with the White of an Egg; ſtrain it, and boil to the Conſiſtence of a Syrup.

This Syrup was ſome time ago look'd on as a great Secret, but is now inſerted in ſeveral Diſpenſatories, and eſteem'd one of the beſt of all the Syrups: For it gently evacuates bilious Humours by Stool, corroborates the Inteſtines, ſtops Dyſenteries and other Fluxes, and ſtrengthens the Stomach.

The Doſe is from one to three Ounces. Three Spoonfuls, or an Ounce and a half, are generally taken in the Morning faſting for eight or nine Mornings.

SYRUPUS MORORUM SIMPLEX.

Simple Syrup of Mulberries.

Take of the Juice of Garden Mulberries, and of white Sugar, each two Pounds. Make into a Syrup in the following Manner. Bruiſe the Mulberries in a Marble Mortar, let them digeſt cold for ſeven or eight Hours; then expreſs the Juice through a Linen Cloth, and mix it with an equal Weight of fine Sugar; after which boil to the Conſiſtence of a Syrup. This Preparation is in the Shops called *Diamorum cum Saccharo.*

It is good for Diſorders of the Mouth and Throat, and an excellent Ingredient in Gargariſms. A Spoonful of it is ſometimes taken with Succeſs againſt Colds.

SYRUPUS MORORUM COMPOSITUS.

Compound Syrup of Mulberries.

Take of the Juice of Garden Mulberries, and of white Sugar, each two Pounds; of the Juice of unripe Grapes, ſix Drams; of Myrrh and Saffron, each two Drams: Make into a Syrup in the following Manner. Boil the Juice of the Mulberries, the Juice of unripe Grapes, and the Sugar together. When the Syrup is half boil'd, put into it a ſmall Bag with the Myrrh bruiſed, and the Saffron. Boil to a due Conſiſtence, and when the Syrup

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rup is cold, pour it into a Veſſel, permitting the Bag ſtill to remain in it.

This Syrup is good againſt the Quinſey, cures Ulcers of the Palate and Throat, is of a very deterſive Nature, and an excellent Ingredient in Gargariſms.

The Mulberries ſhould not be entirely ripe, becauſe they are then of a more deterſive Quality, than when arrived at perfect Maturity.

SYRUPUS PANCHYMAGOGUS SIVE CATHOLICUS VERNUS MEYSS.

The univerſal de-obſtruent Syrup.

Take of the Roots of Aſparagus, and recent Polipody, each two Ounces; of the Leaves of Mallows, Mercury, Monks Rhubarb, and Fumitory, each three Handfuls; of the Leaves of Lettices and Succory, each three Handfuls; of Bugloſs and Borrage, each an Handful and an half; of Sorrel and Mint, of the Tops of Fennel, Thyme, and Hyſſop, each one Handful; of the Tops of Roſemary, half an Handful; of the Leaves of Marigold, three Pugils; of pale Roſes, thirty; and of the Leaves of Broom and Elder, each fifteen Pugils. Make into a Syrup in the following Manner. Cut and bruiſe all the Ingredients, put them into a glaſed earthern Veſſel, and pour upon them of the depurated Juices of Mercury, Fumitory, Pale Roſes, and Succory, a ſufficient Quantity. Boil to the Conſumption of the half over a gentle Fire; ſo that after Expreſſion, two Pints may remain; to which add two Pounds of Hony, then clarify the Mixture, and boil to the Conſiſtence of a Syrup.

This Syrup is highly efficacious in removing all Obſtructions, and purges effectually without producing Gripes. The Doſe is from two to four Ounces.

SYRUPUS PLANTAGINIS.

Syrup of Plantain.

Take of recent Plantain Roots, four Ounces; of Plantain Seeds, one Ounce. Bruiſe and boil in two Pints of diſtilled Plantain Water, to the Conſumption of about a third Part; and with the expreſſed Liquor, mix of the Juice of Plantain two Pounds; and of white Sugar, two Pounds and a half: Clarify the Mixture with the White of an Egg, and boil to the Conſiſtence of a Syrup.

This Syrup is proper to ſtop Fluxes, Hæmorrhages, and Gonorrheas. The Doſe is from half an Ounce to two Ounces.

This Syrup includes the Qualities of all the Parts of the Plantain, and is conſequently the beſt that can poſſibly be prepared.

SYRUPUS RESUMPTIVUS, SIVE DE TESTUDINIBUS, MESUES.

Meſues Reſtorative Syrup.

Take of the Fleſh of Wood Tortoiſes, one Pound, of River Crabs, eight Ounces; of clean Barley, Pulp of Dates, and Damaſcus Raiſins, each two Ounces; of Jujubes and Sebeſtens, each twelve; of bruiſed Liquorice Root, one Ounce; of the Kernels of Pine and Piſtachio Nuts, of the Flowers of Violets and Water Lilly, of the Seeds of the Cotton Buſh, Melons, Cucumbers and Citrulls, each half an Ounce; of the Seeds of Lettuce and white Poppy, each two Drams. Boil in a ſufficient Quantity of common Water, ſtrain and expreſs. To the ſtrained Liquor add three Pounds of Sugar. Clarify with the White of an Egg, and boil to the Conſiſtence of a Syrup, which, when cold, is to be render'd of an aromatic Flavour, by an Elæoſaccharum, prepared of

ſix Drops of the diſtilled Oil of Aniſe, and about an Ounce of powder'd Sugar.

This celebrated Syrup is called Reſtorative, becauſe it ſurpriſingly recruits Perſons waſted and extenuated by chronical Diſtempers. It is good againſt a Phthiſis, is of a moiſtening Nature, and corrects the Acrimony of the Humours.

The Doſe is from half an Ounce to an Ounce and an half.

This Syrup cannot be long preſerved, on account of the Juices of the Fleſh, which are ſoon corrupted, tho' boiled with Sugar; for which Reaſon it ought not to be prepared, till it is to be uſed.

SYRUPUS ROBORANS.

The corroborating Syrup.

Take of the beſt Rhubarb cut ſmall, four Ounces; of bruis'd Myrtle Berries, and the exungulated Leaves of red Roſes, each three Ounces; and of the Powder of white Tartar, one Dram.

Infuſe all warm for twenty-four Hours in ſix Pints of Chalybeate Water. Then boil gently, ſtrain and expreſs the Decoction; add four Pounds of Sugar; clarify the Mixture with the White of an Egg; and boil to the Conſiſtence of a Syrup.

This Preparation corroborates the Stomach and the other Viſcera, ſtops Fluxes and Hemorrhages.

The Doſe is from half an Ounce to two Ounces. See CLARIFICATIO.

SYSIRINCHIUM. See SISZYRRINCHIUM.

SYSSARCOSIS, συσσάρκωσις, from σύν, and σάρξ, Fleſh, is a Species of Articulation of the Bones by the Intervention of the Fleſh; or, as *Monro* expreſſes it, when Muſcles are ſtretched from one Bone to another. *Syſſarcoſis* is, alſo, a Method of curing Wounds, particularly thoſe of the Head, where the Cranium is laid bare, and the Interſtice between the Lips of the Wound too wide for a Contraction, by promoting a Growth of new Fleſh, which they call a Granulation. *Paulus*, *Lib.* 6. *Cap.* 63. uſes the Word to expreſs a preternatural Generation of Fleſh about the Veſſels and Coats of the Teſtes, whence proceeds a *Sarcocele*.

SYSTASIS, σύστασις, of συνίστημι, to conſiſt, Conſiſtence. See CONSISTENTIA. In *Hippocrates* it ſignifies a Collection or Concretion. Thus, *Coac.* 238. σύστασις ὑγρῆς περὶ τὸν ὑπερῶα, "a Collection of Humor about the Palate." It is alſo uſed by the ſame Author, to expreſs a kind of Contraction of the Body, occaſioned by ſome uneaſy Senſation, as *in Lib. de Morb. Sacr.* ἤν τις πόνος ἢ σύστασις γίνηται τῷ ἀνθρώπῳ, "if the Patient be affected with ſome Pain, or a *Syſtaſis*, (a dolorific "Contraction.")

SYSTATHMOS, σύσταθμος, from σὺν and σταθμὸς, a Weight, is expounded in *Galen*'s Exegeſis by ἰσοσταθμὸς, equiponderous.

SYSTEMA, σύστημα, from συνίστημι, to conſiſt, in *7 Epid.* ſignifies the concrete Matter, or Sediment at the Bottom of the Urinal; tho' *Galen*, for σύστασις, reads σύλαγμα, (*Synagma*) as we find in his Comment on 6 *Epid. Sect.* 3. *Aph.* 11.

SYSTOLE, συστολὴ, from συστέλλω, to contract, a Contraction or Conſtriction; in Anatomy it is the Motion of the Heart and Arteries by Contraction, which is alternate and contrary to the *Diaſtole*. See COR.

SYSTREMMA, σύστρεμμα ἢ ξύστρεμμα, from συστρέφω, to be collected, hardened, condenſated, or concreted; in *Hippocrates* ſignifies a Collection of Humors, hardened Concretions, Tubercles, and Tumors. Thus in the following Paſſage, 2 *Prorrhet.* ξύστρεμματα σκέπτεσθαι μὴ ἔστιν ἐν τῇ ἰσχίῳ, "you "are to examine whether there be any Concretions of Mat"ter in the Iſchium." ξυστρέματα ſignifies the ſame as συστροφαὶ, (*Syſtrophæ*) which *Galen* expounds by φύματα ἢ σκληρίαι, "Tu"bercles and Hardneſſes," or hard Collections and Concretions of Humors, by *Celſus* called *Humoris Coitus*. And to give but one more Inſtance, 7 *Epid.* we read κατὰ σπλῆνα ξύστρεμμα ἀνώδυνον, "near the Spleen was an indolent Hardneſs."

SYSTROPHE, συστροφὴ, is of the ſame Original and Signification with the preceding Word; which ſee.

T.

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T.

T. For the Signification of this Letter in the Chymical Alphabet. See ALPHABETUM CHYMICUM.

TABACUM. Tobacco. See NICOTIANA.

TABAISIR. The *Arabic* Word for *Spodium*.

TABANUS, TABE, or ASILUS. The Gad-fly. This is a kind of an oblong, ſlender blackiſh Fly, with a Trunk of the Figure of a ſmall Hunting-horn, and ſharp-pointed, with which it pricks or ſtings Aſſes, Horſes, and other Beaſts, in order to extract their Blood, with which it is nouriſhed; it has ſix black Feet, and flies about Roads, Foreſts, and Woods. There is another Species of greeniſh *Tabanus*, which is called *Tabanides*.

Theſe kinds of Flies are reſolutive, and proper to make the Hair grow, being bruiſed, or pulveriz'd, and applied to the Head. *Lemery des Drogues*.

TABARZET. An Epithet for double-refin'd Sugar.

TABELLA. A Lozenge.

TABERNÆMONTANA. The Characters are;

It hath a tubulous Flower, conſiſting of one Leaf, which is ſpread open toward the Top, and divided into ſeveral Parts; from the Bottom of the Flower ariſes the Pointal, which afterwards becomes the Fruit, compoſed of two Capſules, which open lengthways, and are filled with oblong Seeds, ſurrounded with a thin Pulp.

Miller mentions two Species;

1. *Tabernæmontana lacteſcens, citrii foliis undulatis. Plum. Nov. Gen.* Milky Tabernæmontana, with a waved Citron-leaf.

2. *Tabernæmontana lacteſcens, Lauri folio, flore albo, ſiliquis rotundioribus.* Houſt. Milky Tabernæmontana, with a Bay-leaf, a white Flower, and rounder Pods.

The firſt of theſe Sorts is common in the Iſland of *Jamaica*, and in ſeveral other Places in the warm Parts of *America*, where it riſes to the Height of fifteen or ſixteen Feet, having a ſmooth ſtrait Trunk, covered with a whitiſh Bark; at the Top of the Trunk come out the Branches, which are irregular, and beſet with ſhining green Leaves; from the Foot-ſtalks of theſe Leaves are produced the Flowers, which are yellow, and extremely ſweet-ſcented; theſe Flowers are ſucceeded by two forked Pods, in which the Seeds are contained. This Genus of Plants is nearly related to the Nerium or Oleander, and has been, by ſome botanical Writers, ranged under that Head; but the Seeds of this Genus have no Down adhering to them, as have thoſe of the Oleander, being included in a ſoft, pulpy Subſtance. Father *Plumier* has conſtituted this Genus, in Honour of Dr. *James Theodore*, who was called *Tabernæmontanus*, from a Village in *Germany*, where he was born. He was one of the moſt knowing Botaniſts of his Age, and publiſhed, at *Francfort*, a Folio in a long Form, in the Year 1590, in which are the Figures of two thouſand two hundred and fifty Plants.

The ſecond Sort was diſcovered at *La Vera Cruz*, by the late Dr. *William Houſtoun*, who ſent the Seeds into *England*, from whence ſeveral of the Plants have been raiſed. *Miller's Dictionary*.

TABES DORSALIS.

Hippocrates, in *Lib. 2. de Morbis*, mentions this Diſorder in the following manner. "The *Tabes Dorſalis* ariſes from a Diſorder "of the Spinal Marrow, and is principally incident to Perſons "of a ſalacious Diſpoſition, or ſuch as are newly married. The "Patients are free from a Fever, eat and digeſt well. The "Perſon, labouring under this Diſorder, when interrogated with "reſpect to his State, affirms, that he perceives, as it were, Ants "falling from the ſuperior Parts of his Body, his Head, for "inſtance, into the Spine of the Back; and, when he diſcharges "his Urine or Excrements, there is, at the ſame time, a copious "Evacuation of liquid Semen, in conſequence of which he is "incapable of propagating his Species, anſwering the Purpoſes "of Marriage, or being amus'd with Venereal Dreams; he is "generally ſhort-breath'd, and weak; eſpecially after running, or "walking up a ſteep Place; he perceives a Senſe of Weight in "his Head, and is afflicted with a ringing of his Ears. The "Patient is, in Proceſs of Time, ſeiz'd with various Species of "violent Fevers, and at laſt dies of that kind of Fever call'd "*Lipyria*."

According to *Salius Diverſus*, *Hippocrates* conſtitutes four different Kinds of *Tabes Dorſalis*: The firſt of which proceeds from exceſſive Venery, the ſecond from a too copious Influx of the Blood into the Spinal Marrow; the third from a Dryneſs of the Spinal Marrow; and the fourth from a Defluxion of peccant Humours upon it.

As for the firſt Species; in *Lib 6. Epidem. Sect. 8. Text. 52.* we have an Inſtance of it, in the Caſe of *Cryſolaus*, a Man of twenty-five Years of Age; who not only diſcharg'd his Semen during Sleep, but, alſo, frequently in the Day-time; but, when this Patient was in the thirtieth Year of his Age, he died of a Conſumption.

Hippocrates, as is obvious from his Books *de Aere, Aquis, & Locis, & de Genitura & Natura Pueri*, aſſerts that the Cauſe of this Diſorder is, that the Semen is convey'd from the Brain, through the Spinal Marrow, to the Genitals. But, without any Diſpute with reſpect to the Juſtneſs of this Doctrine, we can from Experience affirm, that the whole Body is waſted, and the Brain, together with the Spinal Marrow, which is only, as it were, an Elongation of it, conſiderably injur'd by an exceſſive Diſcharge of the Semen. Hence the Patient is render'd ſo weak, that a Difficulty of breathing is produc'd by any violent Exerciſe, ſuch as running or walking up a ſteep Place. Tho', in the Beginning, this Diſorder is not accompanied with a Fever, yet in Proceſs of Time, when the vital Powers are weaken'd, a putrid Fever is brought on, which is generally of the malignant Kind, and in which the internal Parts are burnt with Heat, whilſt the external Parts are exceſſively cold. In this Caſe, after the Uſe of univerſal Remedies, *Hippocrates* orders Aſſes Milk, and then that of Cows, for forty Days; after which he feeds the Patient with ſoft Aliments.

The ſecond Species of *Tabes Dorſalis* is, when the Heat of the Spinal Marrow is impair'd, and almoſt extinguiſh'd, by a ſuperfluous Quantity of Blood.

The third Species of *Tabes Dorſalis* is, when the Spinal Marrow becomes dry, in conſequence of an Obſtruction of the Veſſels, thro' which the Nouriſhment is convey'd to it.

The fourth Species of *Tabes Dorſalis* is, when there is a Defluxion of peccant Humours upon the Spinal Marrow; an Inſtance of which is found in *Gulielmus Fabricius*, *Cent.* 1. *Obſ* 45.

Baldwinus Roſſeus in *Tract. de Scorbut. Epiſt.* 4. ſpeaks of the *Tabes Dorſalis* in the following manner. "The Diſeaſe "which the *Greeks* call Ὀσφυαγία, and the *Latins Lumbago*, is "familiar, and almoſt epidemical, to the *Hollanders*, both on "account of their Aliments, and the moiſt and cloudy Na-"ture of their Country; tho', in other Parts, it, alſo, ſeizes "thoſe who uſe immoderate Venery; for, as we are inform'd "by *Hippocrates* in *Lib. 2. de Morb.* it is principally incident to "married Perſons, and thoſe addicted to Venery: Whilſt a large "Quantity of liquid Semen is diſcharg'd, the Conception does "not remain in the Uterus of Women, and in Men there is a "copious Diſcharge of Semen during Sleep, whether they lie "with their Wives, or not. But, in my Opinion, this Species "of *Tabes Dorſalis* is not much to be dreaded, ſince 'tis "probable, that the Diſorder draws its Origin from a pituitous "Matter, or Flatulencies, or a melancholic Humour, mixed "with the Blood, and falling from the Head, thro' the Veſſels, "by way of Catarrh, upon the Spinal Marrow. For ſince, "according to *Hippocrates*, in his Book *de Glandulis*, "there are ſeven Kinds of Defluxions, by means of which "the Brain generally frees itſelf from what is offenſive to it, "that is, by the Noſtrils, the Ears, the Eyes, the Palate, and "the others, thro' the Veſſels, into the Spinal Marrow and "Blood, 'tis neceſſary, the Part in which the Defluxion is, "ſhould be variouſly affected, according to the Quantity and "Quality of the peccant Matter; for, if the excrementitious "Sordes, falling from the Brain to any other Part, are but "ſmall in Quantity, and not abſolutely malignant, the Diſorder, "and its concomitant Pain may be eaſily ſurmounted and "diſcuſs'd by Nature; but if the excrementitious Matter is "peccant both in Quantity and Quality, it lays a Foundation "for very terrible Symptoms. But becauſe, omitting ſix "Species of theſe Defluxions, we only treat of that which "comes from the Head, thro' the Veſſels, to the Spinal Mar-"row, 'tis to be obſerv'd, that where there is a Defluxion of "cold and tough Humours upon the Spine, theſe Humours "firſt ſeize and affect the adjacent Parts, which, unleſs they "are ſtrong enough to ſubdue and diſſipate the received "Matter, forthwith tranſmit it to the ſubjacent, and eſpecially "the moſt contiguous Parts; and, as this Matter diſtends the "whole nervous Syſtem, ſo it affects the whole Body with "violent Pains, beginning at the Scapulæ, and gradually pro-"ceeding to the Loins, and ſometimes to the Os Coccendicis. "The Patient afflicted with this Diſorder, which is properly "the Ὀσφυαγία of the *Greeks*, and the *Lumbago* of the *Latins*, "can hardly walk or move from one Place to another. But "if, with the Moderns, we rather chuſe to call it *Gutta*, be-"cauſe the Humours drop, as it were, from the Brain, we are "more in the right, than thoſe who apply the word *Gutta* to "all

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" all Disorders of the Joints. The *Tabes Dorsalis* has this Circumstance in common with a Quartan Fever, that it seizes at all Seasons of the Year, tho' 'tis shorter in the Summer, longer in the Autumn, and longest of all in Winter. If an acrid and tenacious Humour falls with an Impetus from the Brain, it produces a Defluxion, not only on the Spinal Marrow, but also, on the Acetabula of the Os Coccendicis, and at last a *Tabes Dorsalis*, or a *Tabes Ossis Sacri*, as *Hippocrates* calls it, a Disorder, in which Death proves the only Blessing; because the Pain is continually more and more increased; for, as *Hippocrates*, in *Lib. de Glandulis*, informs us, this Disorder arises from a Defluxion from the Head, thro' the Vessels, upon the Spinal Marrow; after which it affects the Os Sacrum, to which the Marrow itself promotes a Defluxion, which is deposited on the Acetabula or Junctures of the Hips; and, if it produces a Tabes, the Patient is wasted and reduc'd to a State so miserable, that he is no longer fond of Life; for the Scapulæ, and both Legs, become painful; and the Patient dies at last, after long, but fruitless Attempts for a Cure. Such Patients have, also, this in common with other consumptive Persons, that the Autumn is generally most fatal to them, whereas the Spring is the most commodious Season for taking Medicines: Besides, the Driness and Extenuation of the Spinal Marrow is owing to an Obstruction of the Vessels, which convey the Blood and Spirits from the Brain to the Spinal Marrow; for which Reason the Method of Cure consists in opening the Obstructions of the Vessels, and evacuating the peccant Matter. But, if the Patient is plethoric, the Humerary Vein of the Right Arm, or the Median Vein of the Left, or, if Necessity requires, the *Saphæna*, is to be previously open'd; and, if the hæmorrhoidal Veins are tumid, 'tis expedient to open them, either by the Application of Leeches, or in any other manner; for, as we have before observed, the Cause of a Lumbago is generally a melancholic Humour, which, tho' apparently thicker, than that it should seem to be commodiously transmitted to the Spine, yet certainly is so, since we daily observe, that Persons labouring under Disorders of the Spleen easily fall into a Lumbago: And *Galen*, in *Comment.* 3. in *Lib.* 1. *Prorrhet. Hippocrat.* confirms this Doctrine, whilst he says, that in Pains of the Loins we are to expect an Evacuation from the hæmorrhoidal Veins, because such Pains are frequently produc'd by a Retention of the Hæmorrhoids; especially in Persons of melancholic Constitutions, or when the Remains of the Disease convey'd to these Veins cannot be discharg'd.

" After Venesection, such Decoctions as render the peccant Matter fluid, are to be us'd, and then Purgatives according to the peccant Matter; beginning with such as are mild, and always remembring, that the Head is a Part primarily affected. Then, if Necessity requires it, we are to use stronger Purgatives; for which Purpose *Hippocrates* greatly recommends his Elaterium. But I should rather approve of small Pills of Agaric, macerated in a due Quantity of Turpeth, and exhibited in a Decoction of Sena-leaves, with the Addition of a few Fennel-seeds, or in any other Decoction, as the Condition of the Patient shall require: After Purging 'tis expedient to use Fomentations, Frictions, and Unctions, both in order to eliminate the peccant Matter, mitigate the Pain, and corroborate the Parts affected. For the same Purpose, if Time, Place, and the Custom of the Patient, admit, Baths of sweet Water are to be used; or artificial Baths prepared of Vervain, Roses, Sage, Fennel-herb-frankincense, Chamomile, and Melilot. If the Patient's Body is not sufficiently soluble, *Hippocrates* orders that Effect to be produc'd by a Clyster; but when the Humour is viscid, deep-impacted, or of a flatulent Quality, we are not only to use these Measures, but, also, apply Cupping-glasses, in order to attract the Matter; carefully observing that the Matter be not too copious to be evacuated by their means; for otherwise there is Danger of supplying a new Fomes to the Disease: An inciding, attenuating, and not absolutely weak Diet is to be us'd. This Disorder, like others of the articular Kind, is protracted till the twentieth, generally the fortieth Year, and sometimes beyond that Period. Let the Drink be small Wine, or Ale well boil'd. The Sleep ought to be temperate, and sufficient for the Concoction of the Aliments; for too much Sleep renders the Brain subject to Catarrhs. The Exercise ought to be moderate, and proportion'd to the Strength; but never so violent, as to create Fatigue." *Sennert. Vol.* 2.

This is a violent Disorder, little treated of by Physicians, tho' fully describ'd by *Hippocrates*, and frequently observ'd by me in the Course of my Practice. The Head of the Patient is afflicted with a violent and acute Pain, after which, in some Patients, as it were, Ants seem to descend from the superior Parts. The Neck and Loins, together with their Muscles, and the Articulations of the Legs, are so painful, that they cannot sometimes be bended. The Patient is costive, and the Urine with Difficulty discharg'd. But when he either goes to Stool, or discharges his Urine, a large Quantity of liquid Semen is evacuated; which, also, happens during Sleep, whether the Person lies with a Woman, or not. In Women the Conception is not retain'd in the Uterus; by hard walking, especially up steep Places, the Body is greatly weaken'd, the Breathing becomes difficult, the Head is afflicted with a Sense of Weight, and a Ringing of the Ears is produc'd. The Patient labouring under a *Tabes Dorsalis* is free from a Fever; and, tho' he is not afflicted with the Loathing of his Food, yet he reaps no Advantage from it; but is totally consum'd. In the Beginning of the Disease, the Patient is pretty quiet and easy; but, as the Disorder proceeds, all the Symptoms are increas'd, the Legs swell, as in dropsical Cases; in some, Ulcers arise on the Loins, some of which are heal'd, whilst others rise in their stead. At last, a violent Cataract arising, the Patient is render'd totally blind. This Disorder is principally incident to ewmarried Persons, and those who indulge themselves in excessive Venery. A *Tabes Dorsalis* has, also, by some been observ'd to intermit, and again to recur. This is observ'd to have happen'd to many Persons, by a Physician, whose own Fate I knew it to be, and who was render'd blind by the Disorder, after an Intermission for seven Years. *Lommius Medicinal. Observat.* See GONORRHOEA and FLUOR ALBUS.

OF A CONSUMPTION, FROM A GONORRHOEA, AND FLUOR ALBUS.

This Consumption seems to have been known, even to the Antients, under the Name of a *Tabes Dorsalis*, when it proceeds from a Gonorrhœa. *Galen*, also, gives the History of the Wife of *Boethius*, a certain Nobleman of *Rome*, who fell into a consumptive Dropsy, from the empirical Suppression of a Fluor Albus, that had flowed in too great a Quantity, and a long time.

It is very true indeed, that a Gonorrhœa, and a Fluor Albus, that are of an ill Nature, and Venereal, (when the Impurity proceeding from that Venom has once infected the Humours) often terminate in a Consumption of the Lungs, unless they are perfectly and timely cured. I affirm, from a long Experience and Observation, that a Consumption often arises from a simple or benign Gonorrhœa, and Fluor Albus; and, therefore, this Sort, arising from the continual Subtraction of the nutritious Juice by the Seminal Glands, must be reckoned under the Head of an originary Consumption: For in a Gonorrhœa, and Fluor Albus, sometimes the Flux is so extraordinary, and continues so long, that the Mass is thereby plainly despirited, and render'd unfit for Nourishment: Whereupon the Blood, being loaded with heterogeneous and disagreeable Particles, grows hot; and at length an hectic Disposition is, by degrees, brought upon the solid Parts, and the Habit of the Body; which is the same Sort of Consumption, that we are now treating of.

The Symptoms which presage this Consumption, I have, for the most part, observed to be these: An hypochondriacal Oppression, Melancholy, and too much Thoughtfulness, with a Decay of Strength, and Loss of Appetite, in Men that are affected with a plentiful *Gonorrhœa*: But in Women, that have been long afflicted with a Fluor Albus, flowing in a great Quantity, a soft and bloated Habit of the Body, a squalid and pale Countenance, together with hysterical Fits, a remarkable Weariness, and Decay of Strength; all which Symptoms proceed from the same Cause, as from the poor dispirited Nature of the Blood, caused by a want of new Chyle, whereby not only the Spirits are weakened and oppressed, but, also, the Habit of the Body is render'd œdematous from the watery Disposition of the Blood, as it is full of old and despirited Chyle. And, therefore, the Signs which presage this Consumption, are, hypochondriacal Oppressions, hysterical Affections, a Decay and Want of Strength, a bloated Habit of the Body, and a Want of Appetite: Which Symptoms, in Progress of Time, that is, when the Distemper comes to be confirm'd, are followed, also, by some others, as a Thirst, an hectical Disposition, Atrophy, and Wasting of the Flesh, till, at length, the Body is brought to the highest Degree of a Consumption; and that, very often, without any Cough, or any other remarkable Sign of a Consumption of the Lungs.

This Distemper is easily cured, if the antecedent Cause of it can be removed, that is, if the Gonorrhœa and Fluor Albus can be cured. But, when it comes once to be confirmed, it is evidently incurable.

If a Physician be sent for in time, he ought to do all he can, by all proper Means, and a convenient Method, to stop the Gonorrhœa, or Fluor Albus, which are the Cause of this Consumption. This Efflux of the nutritious Juice being once stopt by Art, we must endeavour, with all our Power, to replenish the despirited and impoverished Blood, as soon as may be, with new, oily, and benign Chyle; and, therefore, such Food as is delicious, and affords a good Juice, and is most grateful to a Patient's Palate and Stomach, must be given often in a Day, though in a little Quantity at a time. And, that this Appetite may be the more excited, let him be advised to be chearful. For there is nothing that destroys the Appetite, and confirms a Consumption more

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more than Grief and Sadneſs. Let him, alſo, enjoy the Advantage of an open and benign Air, which is very beneficial to the Nerves, and, conſequently, to the Appetite and Stomach: Let him, alſo, uſe Exerciſe every Day, and rubbing of his Body, even to the procuring of moderate Sweats, (if his Strength will bear it) that the Load of old, deſpirited, and unprofitable Chyle, with which the Blood-veſſels, and Habit of the Body, are ſtuft, may be ſweated out, to make more room for new and uſeful Chyle, and, conſequently, for the Improvement of the Appetite in the Stomach: But he muſt religiouſly abſtain from the liberal Uſe of Wine, and ſpirituous Liquors, which are ſubject to put the Blood, which is before become too hot, into a greater Flame. Let the Phyſician, alſo, take heed he does not preſcribe any Purges, or any Medicine whatſoever, to procure any other conſiderable Evacuation, which may create farther Expences to Nature, when ſhe is already weak: But if an hectical Heat, even in the leaſt Degree, be kindled in the ſolid Parts, he muſt preſently endeavour, with all his Induſtry, to quench this Flame by the Uſe of Aſſes Milk, a Milk Diet, and of ſuch mineral Waters as are chalybeate. *Morton's Phthiſiologia, Cap.* 4.

TABULA. A Lozenge.

TABULATUM. The ſame as TABULA.

TABUM. Gore; a thin, ſanious, and putrid Humour, flowing from malignant Ulcers, or mortify'd Parts, when the vital Powers are inſufficient to form good Pus, or Matter.

TACAMAHACA. Offic. C. B. P. 503. Park. Theat. 1608. Raii Hiſt. 2. 1846. *Tacamahaca Populo ſimilis, fructu colore Pæoniæ ſimili.* J. B. 1. 346. *Tacamahaca foliis crenatis, Sadelhouts Lignum ad ephippia conficiendum aptum.* Parad. Bat. Prod. 379. *Tecomahaca.* Hern. 55. TACAMAHAC-TREE.

Tacamahac flows from a large Tree as big as a Poplar, bearing Leaves like thoſe of a Roſe-tree, crenated about the Edges, conſiſting of ſometimes five on a Stalk; the Flowers are ſmall, growing in Cluſters, of a white Colour, which are followed by triangular Seed. It grows in the *Spaniſh Weſt-Indies*; there are two Sorts of Gum, one in Lumps, which is dry and reſinous, crumbling at firſt between the Teeth, but, when chewed awhile, ſticking together, made up of little yellow-reddiſh Grains, clinging together, of a pleaſant ſtrong Smell, ſomewhat like Maſtich; the other Sort is called *Tacamahac* in the Shell, being of one Texture, ſmooth, and in Colour like ſtrained Galbanum, but lighter, of a pleaſant Smell like the former.

Tacamahac is heating and drying, diſſolving and ripening, though it is ſeldom uſed inwardly; it is good for the Head and Nerves, and is ſometimes applied to the Temples for the Head-ach; is frequently mixed with *Galbanum*, and is applied to the Navel in Diſorders of the Womb. *Miller's Bot. Off.*

This is a reſinous Subſtance, of which there are two Kinds, one in Shells, and one in Lumps. The firſt is moſt eſteemed, and is ſometimes named *Tacamahaca Sublimis.* It is of a very agreeable Smell, like that of Lavender and Angelica; and is brought from *Madagaſcar* and *New Spain*, being the Product of a Tree named *Tacamahaca Populo ſimilis fructu* and *colore Pæoniæ.* J. B. *Tecomahoica. Hernand.* It is uſed externally in the ſame Intentions with the Gum Caranna, and likewiſe reſolves Tumors, ſtrengthens the Nerves, and cures the Head-ach, when applied in a Plaiſter to the Scalp. *Geoffroy.*

It is very much uſed by the *Indians*, in all ſorts of Diſtempers, eſpecially in Tumors of all kinds; for it is highly diſſolvent, maturating, and diſcuſſing; it, alſo, removes all Pains from cold and flatulent Humors; thrown upon the Coals, or held to the Noſtrils, it gives immediate Relief in Hyſterics. A Plaiſter of it, applied to the Navel, retains the Uterus in its Place, as is known by common Experience; the more delicate ſort mix it with Amber and Muſk; ſpread upon Linen, and apply'd behind one or both Ears, or the Fumes of it attracted, it repreſſes all manner of Defluxions from the Head. Apply'd to the Temples by way of Cerate, it reſtrains all ſorts of Rheums or Defluxions upon the Eyes, or other Parts of the Face; and, put into an hollow putrid Tooth, it eaſes the Pain thereof.

A Plaiſter prepared of *Tacamahac*, with a third Part of Styrax, and a ſmall Quantity of Amber, is an excellent Topic for the Stomach; for it ſtrengthens that Part, provokes an Appetite, helps Concoction, and diſcuſſes Flatulencies; apply'd to the Head, it ſtrengthens the Brain. It is of great Efficacy in the Sciatica, and all Diſeaſes proceeding from cold or mix'd Humors. Being apply'd alone to Wounds of the Joints or Nerves, it cures them effectually; for it cauſes an immediate Suppuration, and prevents Spaſms. I, ſays *Monardes*, mix it with a third Part of Wax, for the more convenient ſpreading. Thus far *Monardes*; to which we may add, that a Plaiſter of *Tacamahac*, apply'd to the Belly, is ſaid to mitigate the Head-ach; it is, alſo, effectual in diſcuſſing Tumors and Hardneſſes of the Spleen. *Raii Hiſt. Plant.*

TACEROS, *ταχερὸς*, imports colliquated; or lean and thin, from too great a Colliquation. *Moſchion.*

TACHY, TACHEOS, *ταχὺ, ταχέως.* Beſides its common Signification, importing Speed and Celerity, it is ſometimes uſed inſtead of *πυκνὸς*, often, frequently, with quick Repetitions. Thus *Lib. de R. V. I. A. ἐπαναλήψεις ταχεῖαι* are frequently or quickly repeated Perfuſions; where *Galen* on the Place ſays, that the Antients confounded the Uſe of thoſe two Words *πυκνὸς* [*pycnos*] and *ταχὺς* [*tachys*]; and that ſometimes frequent Actions [*πυκναὶ ἐνέργειαι*] are called quick [*ταχεῖαι*] Actions.

TACTUS. The Touch, in Midwifry, is the Exploration of the State of the *Vagina*, and Uterus, and of the Situation of the Fœtus, and whatever elſe is contain'd therein. *Hippocrates*, in his Treatiſes concerning the Diſeaſes of Women, has been very full and exact in his Directions upon this Subject. See OBSTETRICATIO.

But *Tactus* is the Senſe of Touch, in the common Acceptation of the Word. Now, in order to account for this, it muſt be obſerv'd, that ſoft, pulpous, medullary, nervous, and pyramidal Papillæ ariſe from hard ſubcutaneous Nerves, which, however, become ſoft, when ſtript of their exterior Membrane: Hence theſe Papillæ are highly ſenſible; they are, alſo, moiſten'd by the perpetual Afflux of a very fine Liquor, and defended with a very ſlender, but ſolid Epidermis; and, that their Senſibility may be the better preſerv'd, they lie conceal'd in Sinuſes and Depreſſions under the Cuticula or Scarf-skin. In the Parts moſt immediately deſtined to the Purpoſes of Touch, ſuch as the Tongue, the Points of the Fingers and Toes, they are contractile, and capable of being ſent out again. Theſe Papillæ are the corporeal Organ or Inſtrument, by the Mediation or Intervention of which, Objects handled are ſaid to be *touch'd.*

'Tis remarkable, that tho', in the Surface of other Parts of the Body, theſe Papillæ are perpendicular, yet in the Fingers and Toes they run out longitudinally. Hence acquiring an Epidermis in theſe Parts, being wrapt up, as it were, in a Sheath, and depriv'd of Juice, they are condens'd into Nails, which are render'd thick by the Acceſſion of the conſolidated cutaneous Veſſels, and are fit for defending the Papillæ, and preventing their Calloſity.

The Senſation of Touch is, therefore, produc'd, when, applying the Point of the Finger to any Object, theſe Papillæ are, by the Determination of the Mind, emitted, and gently rub'd on its Surface; for by this means a certain Motion is impreſs'd on theſe Papillæ, the Effect of which, being convey'd to the Common Senſory, excites in the Mind the various Ideas of hot and cold, moiſt and dry, ſoft and hard, ſmooth and rough, as, alſo, of Figure, Motion, Reſt, Diſtance, Titillation, Itching and Pain.

Hence we underſtand, why, when the Epidermis is remov'd, macerated, waſh'd off, or burn'd, a Senſe of Pain is excited by touching any Object: Why, when the Epidermis is thick, hard, callous, or ſpoil'd with a Cicatrix, the Senſe of Touch is loſt: What is the Cauſe of that diſagreeable Motion excited by a Tremor, or by the Cramp-fiſh, and which gradually degenerates into a Stupor: Why the internal Surface of the Nails is affixed to the ſubjacent Skin, and at their Roots ſo intenſe a Pain is produc'd by the Application of any Object. Hence, alſo, we underſtand why the Senſe of Touch is moſt intenſe and acute, where the Nails, and ſpiral Lines, or ſmall Furrows, of the Epidermis are found. *Boerhaave Inſtitut.*

TÆDÆ. See DAIS. Certain Pharmaceutical Compoſitions, intended for Suffumigations, or Peſſaries, and made in the Shape of Torches, are, alſo, thus call'd.

TÆNIÆ. Flat-worms. See VERMES. Many ſorts of flat Fiſh, of the Sole-kind, are alſo call'd TÆNIÆ.

TAGENITIS, *ταγηνῖτις*, or TEGANITIS, *τηγανῖτις.* A kind of Pancake made of Oil and Wheat-meal only.

TAGERA. H. M. *Sena ſpuria Malabarica* is a Plant of the *Eaſt Indies*, growing in ſandy Places to the Height of three or four Feet. The Root is fibrous, woody, and blackiſh; the Stalks round, woody, and green: The Leaves ſtand on ſhort Pedicles in two Series, by Pairs, and are of a roundiſh, oblong and broad Figure, with a round Edge on the fore Part, and ſtriated towards the Pedicle, ſmooth, and of a dull Green; and the Flowers, in Shape and Colour, reſemble thoſe of the *Sophera.*

The Leaves, bruiſed, cure the Stings of Bees, being rubbed on the Part affected. The Seeds, bruiſed, and mixed with Saffron, are effectual for Puſtules and Ulcers; and, with the Juice of the Plant *Vetla-caitu*, heal a Paronychia. *Raii Hiſt. Plant.*

Wellia TAGERA. See WELLIA.

TAGETES, *African* or *French* Marigold.

The Characters are,

The Root is fibrous and annual; the Leaves reſemble thoſe of Tanſey; are fetid, and cut home to the Rib; the Calyx is monophyllous and tubulated. The Beards of the Flowers are plain or fiſtuious, and the Seed is angulated, and furniſhed with a foliated Head.

Boerhaave mentions ten ſorts of *Tagetes*; which are,

1. Tagetes, maximus; rectus, flore ſimplici, ex luteo pallido. *J. B.* 3. 100. *Tanacetum, Africanum, majus, ſimplici flore, pallente.* C. B P. 133. *Caryophylli Hiſpanici dicti, vel Caryophylli Mexicani Planta.* Hernand. 154. *Chryſanthemum Africanum, erectum, Tanaceti folio, flore ſimplici majore.* M. H. 3. 16.

2. Tagetes;

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2. Tagetes; maximus; rectus; flore maximo, multiplicato. *J. B.* 3. 100. *Tanacetum, sive flos Africanus, major, flore pleno, aureo.* C. B. P. 132. *Chrysanthemum, Africanum, erectum, Tanaceti folio, flore pleno majore.* M. H. 3. 16. *Caryophyllus, Mexicanus, primus.* Col. 2. 47. *Cempoal xochitl, vel Giuhna xochitl. Tzneycepohual. Caryophyllus Mexicanus.* J. Hernand. 154.

3. Tagetes; Indicus; medius; flore simplici, luteo pallido. *J. B.* 3. 99. *Oquichitli, Cocazochitl, Caryophyllus Mexicanus,* II. Hernand. 155.

4. Tagetes; Indicus; medius; flore luteo, multiplicato. *H. L.* 587. *Tlapalte, Cacayatl, Caryophyllus Mexicanus,* III. Hernand. 155.

5. Tagetes; Indicus; minor; simplici flore; sive Caryophyllus, Indicus; sive flos Africanus. See AFRICANUS FLOS.

6. Tagetes; Indicus; minor; multiplicato flore. *J. B.* 3. 99. *Macuil xochitl, seu Maon, Caryophyllus Mexicanus,* IV. Hernand. 155.

7. Tagetes; Indicus; flore simplici, fistuloso. *H. L.* 588. *Chrysanthemum Africanum, erectum Tanaceti folio, petalis florum fistulosis, flore simplici.* M. H. 3. 16. *Caryophyllus Mexicanus, flore fistuloso, simplex.* Col. 2. 46. *Tanacetum, sive flos Mexicanus, flore fistuloso, simplici.* C. B. P. 133.

8. Tagetes; Indicus; flore fistuloso, duplicato. *H. L.* 588. *Caryophyllus Mexicanus, flore fistuloso, alter Polyanthos.* Col. 2. 46. *Tanacetum sive flos Mexicanus, flore fistuloso pleno.* C. B. P. 133. *Chrysanthemum Africanum, erectum, folio Tanaceti, petalis florum fistulosis, flore pleno.* M. H. 3. 16.

9. Tagetes; Indicus; flore aureo, simplici, minor. *Caryophyllus, Indicus, flore aureo, simplici, minor.* H. Æyst. Æst. 0. 14. T. 1. F. 3.

10. Tagetes; Indicus; minimus; flore fericeâ hirsutie obsito. *H. L.* 587. *Tanacetum Africanum, minimum, fericea hirsutie obsitum.* C. B. P. 133. *Tlapalcocathli, Coaxochitl, Caryophyllus Mexicanus,* V. Hernand. 156. *Caryophylli Hispani dicti varietas septima & octava.* Col. 2. 47. Descr. *Boerh. Ind. alt. Plant. Vol.* 1.

The *Tagetes* was first brought not out of *India*, but from *Catalonia*. The first eight Species are commended by some as very salutary Herbs, and are said to have an attenuating and aperitive Virtue. The expressed Juice of the Leaves, mixed with Wine, is recommended for a cold Stomach, and Obstructions of the Menses, and for an intermittent Fever, a Cachexy and Dropsy; others, on the contrary, say, they are poisonous Plants. In *Mauritania* (*Barbary*) the *Tagetes* is a very good Plant against many Distempers; but *Boerhaave* often observs, the same Plant may be poisonous in one Country, and salutary in another. It is certain, however, that the ninth and tenth Species are mortal, if eaten; for, if Children happen only to hold the Flowers, which are, indeed, beautiful, in their Mouths, an Inflammation is excited therein, which, if communicated to the Stomach, proves mortal. For this Reason, tho' many things are said of the Virtues of the former Species, we suspend our Assent; and, indeed, there is so great a Copiousness and Variety in Botany, that we may very well be without the Use of this Plant, which *Dodonæus* asserts, and proves by a Multitude of Experiments, to be poisonous. *Hist. Plant. adscript. Boerhaav.*

TAL. The Dung of Peacocks; or *Alcali. Rulandus.*

TALAGAS. See PALMA.

TALC. Boil'd Wine. *Rulandus.*

TALCUM. Offic. Boet. 394. Geoff. Præelect. 67. Schrod. 357. De Laet. 128. Aldrov. 685. *Talcum, alias Stella Terræ.* Charlt. Foss. 24. Worm. 57. *Talcus fossilis.* Calc. Mus. 458. *Stella Terræ quibusdam.* TALC.

Talc is a shining, fissile Stone, easily divisible into very thin pellucid Laminæ, a little flexible. In the Fire it does not melt, is not calcined, nor does it lose its Colour. Some Talc is of a Silver Colour, called by the Chymists *Argyrolithos*; some yellow, called solar Talc; some greenish, and some black. That which is brought from *Venice* is reputed the best, and is of a light-green Colour. This Stone is seldom used in Physic; but is very much in Vogue as a Cosmetic, the Ladies being of Opinion that it cleanses and whitens the Skin.

It is, first of all, prepared by being reduced to an impalpable Powder; which can be done no way so readily, as by heating it red-hot several times in the Fire, and as often quenching it in cold Water; for, by this means, it may easily be levigated on a Porphyry-stone, to any Degree of Fineness, the Powder being of a shining Silver Colour, and very smooth to the Touch. Of this Powder the Women make Ointments, or Pomatums, which they use as a Wash. Some Chymists have endeavoured, by the Oil of Talc, to fix Quicksilver, and afterwards convert it into Silver; but they never considered, that what they called Oil of Talc was entirely the Product of the other Substances mixed with it. *Geoffroy.*

TALENTUM. A Talent, the greatest Weight among the *Greeks*. See PONDUS. It was equal to fifty-six Pounds, eleven Ounces, seventeen Grains, and ½, Troy Weight.

TALIR KARA. H. M. *Arbor Indica, spinosa, Flore & Fructu viduæ.*

This is a tall Tree, with a thick whitish Trunk, and a dusky Ash-colour'd smooth Bark, and furnished with a Multitude of small Branches, which extend themselves to a wide Compass, and are arm'd with oblong, hard, and rigid Spines. The Root is whitish, cover'd with a dusky Bark, of a strong Smell, and an astringent Taste. The Leaves are green above, and greenish underneath, of an oblong Round, acuminated, slightly crenated in the Edges, thick, dense, shining, of a strong Smell, and of a rough and astringent Taste; but the tender Leaves, which come forth from the Top, are, for the most part, of a purple-red Colour. The Tree was never observ'd to bear either Flowers or Fruit; it grows in *Malabar*, is an Evergreen, and lives a long time.

Of the Root, boiled in Water, they prepare a Drink, which potently evacuates acid and salt Humours by Diaphoresis; and, of the Leaves fry'd in Oil with green Turmeric, they prepare a Liniment, which is much commended for removing the Scabies.

TALPA. Offic. Schrod. 5. 308. Mer. Pin 168. Schw. Quad. 128. Aldrov. de Quad. digit. 451. Charlt. Exer. 25. Gesn. de Quad. Digit. 931. Jonst. de Quad. 118. Raii Synop. A. 236. THE MOLE.

It lies in Burrows under the Earth; and the Animal itself, the Heart, and the Blood, are used in Medicine. The Ashes of the burnt *Mole* is good for the Leprosy, strumous Swellings, and Fistulas. Taken inwardly in Beer or Wine, it cures the wandring Gout and Scrophula. The *Heart* cures an Hernia, and the recent Blood cures an Alopecia, being rubbed on the Part. *Dale* from *Schroder.*

TALPA is, also, a Species of Tumor affecting the Head, of the atheromatous Kind. It is, according to *Blancard*, call'd sometimes TALPARIA.

TALUS. The same as ASTRAGALUS. The Ankle-bone. *Dioscorides, L.* 2. *C.* 62. recommends this Bone in a Swine, calcin'd, powder'd, and taken internally, for Inflations of the *Colon*, and chronical griping Pains.

TAMANDUA. The Name of an *American* Beast, somewhat like a Fox; call'd, also, *Myrmecophagus.* The Fat is esteem'd resolvent and nervous.

TAMARATONGA. The same as CARAMBOLAS; which see.

TAMARINDI. *Tamarinds.*

The Characters are;

The Leaves are pinnated, without an odd Lobe at the End. The Flower is tripetalous, furnished with three Stamina, and seated in a carnous Calyx, which runs out into four long small Leaves. The Ovary, arising from the Centre of the Calyx, becomes a long, broad Pod, divided into Cells, and full of an acid Pulp, containing oval Seeds.

Boerhaave mentions but one Sort of Tamarind; which is, Tamarindi. *J. B.* 422. *Boerh. Ind. alt.* 2. 59. *Tamarindus.* Offic. Ger. Emac. 1607. Park. Thear. 217. Raii Hist. 2 1748. Tourn. Inst. 660. *Tamarindus, Oxyphœnicon.* Mont. Exot. *Tamarindi; Lusitanis Tamaræazeela.* Marcg. 107. *Tamarindus Derelside appellata.* Alpin. Ægypt. 2. 19. 170. *Il Tamarindo, o Derelside de gli Egittii.* Pon. Ital. Bald. 23. *Siliqua Arabica, quæ Tamarindus.* C. B. P. 403. *Hijabila, Tamarindus.* Herm. Mus. Zeyl. 27. *Iutra sive Tamarindus.* Pis. (Ed. 1658.) 157. *Balam pulli sive Maderam pulli.* Hort. Mal. 1. 39. Tab. 23. THE TAMARIND-TREE.

This grows to be a large Tree, whose Branches are cloathed with many winged or pinnated Leaves, made of several opposite oval Pinnæ, with never a single one at the End. The Flowers grow on the young Shoots in Clusters, eight or ten together, each of seven Leaves, four yellow, and three white, in purple Veins, in form of Orange-flowers, having three crooked Stamina, or Horns. The Fruit is of a yellowish-brown Colour, of a flatish-round Shape, three or four Inches long, having two or three swelling Knots, or Protuberances, containing an acid Pulp, full of stringy Fibres, and hard flat Stones, or Seed, of a Chestnut-colour; and these are the Tamarinds of the Shops. This Tree grows both in the *East* and *West Indies*, and in *Egypt*. The Tamarinds brought from *East India* are darker and drier, but contain more Pulp, being preserved without Sugar, and fitter to be put into Medicines: Those from the *West Indies* are redder, and have less Pulp, and are preserved with Sugar, and so pleasanter to be eaten as they are.

They are cooling and opening, good to purge choleric Humours, and correct the bilious Heat in the Stomach and Bowels; they allay Thirst, provoke Urine, and help the Jaundice. *Miller's Bot. Off.*

This is the blackish Pulp of a Pod, something like common Beans: The Pulp lies between two Husks, or Shells, one of which is woody, the other tough and membranous. The Tree which bears the Fruit grows in *Egypt*, and in both *Indies*; and is described by *Tournefort*, in the *Memoirs of the Royal Academy* for 1699. We owe the Knowledge of this Purgative to the *Arabians*; for neither *Greeks* nor *Romans* knew any thing of it. The Dose, in Substance, is from an Ounce to an Ounce and an half; and three or four Ounces in Decoction. Some Physicians order a Tamarind-whey, *Serum Lactis Tamarindinatum*, as a gentle Purge,

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Purge, in inflammatory Diſpoſitions, Colics, &c. and Tamarinds are very properly mixed with Caſſia: They may, likewiſe, be given as an Alterative, in the Quantity of half an Ounce; and they are very proper to be mixed with Ptiſans, and other Liquors, given to quench Thirſt in acute Diſtempers. *Geoffroy.*

Tamarinds correct the Acrimony of Humours; purge Bile, and allay its Heat, and that of the Blood; cure acute Fevers, and the Jaundice; extinguiſh Thirſt, and all unnatural Heat of the Liver and Stomach; and reſtrain Vomiting.

The *Turks* and *Arabians*, as we are told by *Bellonius*, when about to undertake a long Journey, provide themſelves with Tamarinds: The *Turks* make great Uſe of them, not in Medicine, but to allay their Thirſt. The *Indian* Phyſicians, as we are informed by *Garcias* and *Acoſta*, apply the Leaves to an Erylipelas.

The *Arabians* preſerve the ſmall and green Pods with Sugar, or the Honey they call *Carob*; and when they are larger, and grown mature, preſerve their Pulp with Sugar, and carry it with them in their Journeys through the deſert Places of *Africa*; and find it of extraordinary Uſe in quenching their Thirſt, and refreſhing them when inflamed, and almoſt ſpent with Heat, and the Journey, in evacuating great Quantities of hot Humours by Stool.

In peſtilential Fevers, and all other putrid burning Fevers, they drink Water, in which great Plenty of Tamarinds have been infuſed with Sugar, finding it a moſt pleaſant as well as refreſhing Liquor, under their burning Heat, and intenſe Thirſt. They frequently uſe Tamarinds, alſo, in a Gonorrhœa; and *Fallopius* commends them in a Gonorrhœa of a bilious Kind.

In a Redundance of Bile, a Fervor and Ebullition of the Blood, a preternatural Thirſt, cutaneous Diſeaſes, and particularly the Jaundice, the *Indians* preſcribe a ſimple Medicine, compoſed of Caſſia Fiſtula, with Tamarinds, and the Sugar commonly called *Jagra de Canna*, which Preparation gently works by Stool. The Fruit of the Tamarind is not brought to us entire, but bruiſed, that, being by this means well compacted, it might keep out the external Air. Tamarinds are preſerved three Years in a Glaſs Veſſel with a narrow Mouth, and well ſtopped, and ſepoſited in a clean Place, which is pervious to the Air and Winds, unleſs ſome external Heat or Moiſture corrupts it. *Raii Hiſt. Plant.*

The Tamarind, which the *Egyptians* call *Derelſide*, is a Tree of the Bigneſs of a Plum-tree, and full of Branches; the Leaves much reſemble thoſe of the Myrtle called *Sesban*: It bears white Flowers, very like thoſe of the Orange-tree, from the Midſt of which proceed four white and very ſlender Threads, which become thick Pods; firſt green, but, when ripe, of an Aſh-colour, and containing thick, uneven, and hard Seeds, involved in a black and acid Pulp.

The Tamarind-tree is not very plentiful in *Egypt*, which is not its native Soil; for it is brought thither from *Arabia* and *Ethiopia*, and kept in Green-houſes. There grows a Tamarind-tree in the Deſert of St. *Macharius*, near the Monaſtery of the *Aſſyrians*, in a Place where no other Plant lives, which is looked upon as a Miracle: This Plant is to be admired for one Property, which is, that its Leaves always follow the Sun, and are called *Sunflowers*; for, when the Sun ſetteth, they all cloſe up, and open again at Sun-riſing; and this Motion of the Leaves is ſo remarkable, that while the Pods are on, the Leaves, at Sun-ſet, cloſe in upon them, and embrace them very ſtrictly; and, when the Sun riſes, open, and diſcharge themſelves from the Pods, till the Return of Sun-ſet. This Converſion of the Leaves is obſerved in ſeveral other Plants of *Egypt*, as in the *Acacia*, *Abrus*, *Abſus*, and *Sesban*.

The Leaves of the Tamarind-tree are uſed to kill Worms in Children, and an Infuſion or Decoction of the ſame is a gentle Purge; the Leaves are acid, and not unpleaſant to the Taſte. *Proſper Alpinus, de Plant. Ægypt. Vol.* 2.

The *Arabians*, who are the preſent Inhabitants of *Egypt*, call this Tree, together with its Pod, *Tamarhendi*, that is, *the Indian Fruit*, becauſe it was brought out of *Eaſt-India* into *Arabia Felix*, or out of *Ethiopia*, as *Alpinus* rightly obſerves, into *Egypt*, and the bordering *Arabia*; for that *Ethiopia* had the Name of *India*, among the Antients, is undoubtedly certain, from *Servius* and others. This noble Plant, therefore, was not tranſported from *Arabia* to the *Indians*, as ſome have written; but from *India* to the *Arabians*. But they are wider from the Truth, who derive the Name from Dates: For *Tamar* not only ſignifies a Date, but, as it is known to thoſe who are but little ſkilled in *Arabic*, all Fruit whatever, ſo as, in its largeſt Signification, to comprehend the Fœtus of Trees and Animals. They who call the Tamarind the *Arabian Pod*, are pretty bold Nomenclators, and are obliged to find Diſtinctions for ſo many other Pod-bearing Plants among the *Arabians*. The Fruit of the Tamarind-tree is ſhorter than the Pod of the Acacia, but thicker and broader; and, for the grateful Acidity of its Pulp, is of principal Eſtimation among gentle Cathartics, though it has but little Effect, if gather'd while too green, or left to hang till it be grown too dry. *Veſlingii Obſerv. in Proſp. Alpin. de Plant. Ægypt.*

Tamarinds are gently laxative, and are proper in febrile Heats, where not only Coolers, but Laxatives, are required: They are of Service in continual Fevers and Diarrhœas, ſtrengthen the Stomach, and are commended in a Flux of the Hæmorrhoids, from a bilious and acrimonious Blood. The Leaves quench Thirſt, and are uſeful in burning Fevers. *Hiſt. Plant. adſcript. Boerhaav.*

TAMARISCUS.

The Characters are;

The Leaves are very thin, the Calyx ſmall, the Flower ſmall, roſaceous and pentapetalous; the Ovary is an oblong, membranaceous, bivalve Capſule, full of downy Seeds.

Boerhaave mentions two Sorts of Tamariſcus; which are,

1. Tamariſcus; Germanica. *Offic. Tourn. Inſt.* 66. *Boerh. Ind alt.* 2. 257. *Ger.* 1194. *Emac.* 1378. *Tamariſcus folio latiore.* Park. Theat. 1479. Raii Hiſt. 2. 1705. *Tamarix fruticoſa folio craſſiore, ſive Germanica.* C. B. P. 485. *Tamarix Germanica ſive minor fruticoſa.* J. B. 1. 351. *Tamarix minor, ſive fruticoſa.* Chab. 75. GERMAN TAMARISK.

It is cultivated in Gardens, flowers in *June*; and the Parts in Uſe, with their Virtues, are the ſame with thoſe of the common Tamarisk.

2. Tamariſcus; Narbonenſis. *Ger.* 1194. *Emac.* 1378. *Tourn. Inſt.* 661. *Boerh. Ind. alt.* 2. 257. *Tamariſcus.* Offic. *Tamariſcus folio tenuiore.* Park. Theat. 1479. *Tamarix altera folio tenuiore, ſive Gallica.* C. B. P. 485. *Tamarix major ſive Arborea Narbonenſis.* J. B. 1. 351. Raii Hiſt. 2. 1704. *Myrica ſive Tamarix.* Chab. 75. TAMARISK.

The Tamarisk never grows to be a Tree of any great Bigneſs in *England*, though beyond the Seas it will; having a rough dark-brown Bark. The younger Branches are of a Cheſtnut-colour, clothed with very fine tender green Leaves, ſomewhat like thoſe of Cypreſs, but thinner and finer, and not at all hard or rough: The Flowers grow in round Spikes, at the Ends of the younger Shoots, an Inch or more in Length, ſeveral Spikes growing together, each conſiſting of a great many ſmall, five-leaved, pale-red Flowers, which are ſucceeded by very ſmall Seeds, included in a downy Subſtance. It is only planted in Gardens in *England*; its native Place being *Spain*, and the Southern Parts of *France*. The Wood, Bark, and Leaves, are uſed.

They are accounted ſpecific for all Diſorders of the Spleen, as being believed to leſſen it much; and they uſed to drink out of Cups made of this Wood, to cure thoſe Illneſſes: And the Antients believed, that Swine, that fed out of a Trough made of this Wood, would have no Milt. The Bark is ſometimes uſed for the Rickets in Children. *Miller's Bot. Off.*

It is cultivated in Gardens, flowers in *May* and *June*; and the Bark, Wood, Tops of the Branches, and the Flowers, are uſed.

Tamarisk is heating, drying, attenuant, aperitive, abſtergent, ſubaſtringent, diuretic, and ſplenic. Its principal Uſe is in Obſtructions and Tumors of the Spleen, and in Diſeaſes proceeding from black Bile, and Serum; as the Itch, Itchings, black Jaundice, and the Fluor albus. Outwardly applied, it cures the Tinea of the Head.

The Tamarisk was firſt tranſplanted into *England*, by the Care of *Edmund Grindall*, Archbiſhop of *Canterbury*, who had experienced its Virtue in the Cure of an Hardneſs of the Spleen. *Camden*, in *the Life of Queen Elizabeth.*

TAMARIX. See TAMARISCUS.

TAMISON, *τάμισον*. The ſame as COAGULUM.

TAMNUS. See BRYONIA.

TAMOATA, by the *Portugueſe* called *Soldido*, is an *American* freſh-water Fiſh, about a Foot and an half long, three Inches in Circumference, and of an obſcure ferruginous Colour: It is eſteemed good Food, and ſaid to be of an aperient Nature, and proper for the Cure of a Gravel. *Lemery des Drogues.*

TAMOATARANA. The Name of a *Braſilian* bulbous Plant, the Bulb of which is eaten like Potatoes, and is ſaid to have an agreeable Taſte. *Raii Hiſt. Plant.*

TANACETUM.

The Characters are;

The Root is fibrous; the Leaves alternate, and divided into pinnated and crenated Segments. The larger Flowers are cloſely compacted into a thick Umbella, and the Calyx is ſquamous and hemiſpherical.

Boerhaave mentions ſix Sorts of Tanacetum; which are,

1. Tanacetum; vulgare; luteum; maximum.

2. Tanacetum; vulgare; luteum. *C. B. P.* 132. *Tourn. Inſt.* 461. *Boerh. Ind. alt.* 124. *Tanacetum.* Offic. Ger. 525. Emac. 650. Raii Hiſt. 1. 365. Synop. 93. *Tanacetum vulgare.* Park. 80. Parad. 482. *Tanacetum vulgare flore luteo.* J. B. 3. 131. TANSIE.

The Root of Tanſie is large, ſtringy, and full of Fibres, ſending forth many pretty large, yelloviſh-green, winged Leaves, divided into ſeveral deeply ſerrated Segments, ſet oppoſite to one another, with one cut into three Parts at the End, of a pleaſant grateful Scent. The Stalks ariſe to the Height of about two Feet, having ſeveral ſimilar, but ſmaller, Leaves growing on them, and, on their Tops, pretty large Umbels of yellow naked Flowers,

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Flowers, compoſed only of fiſtular Thrums, without any Petala. It is found wild by Road-ſides, and the Borders of Fields; and flowers in *July*.

The Leaves are uſed; being warming and aperitive, opening Obſtructions of the Liver and Spleen, and helping the Jaundice: They likewiſe provoke Urine, and the Catamenia, though the good Women give a Syrup of the Juice to prevent Miſcarriage. The Flowers are accounted good to deſtroy Worms in Children. *Miller's Bot. Off.*

This Plant is acrid, aromatic, bitter, and gives no Tincture of Red to blue Paper: The Roots are firſt inſipid, afterwards aſtringent, but without Bitterneſs.

Tanſie contains an aromatic, oily, volatile Salt, loaded with a great deal of Sulphur: For,

By the chymical Analyſis, it yields a great deal of Oil, a pretty deal of Earth, a little urinous Spirit, and no volatile concrete Salt: Thus it is ſtomachic, febrifugous, ſudorific, vulnerary, and aperitive. *Cæſalpinus* ſays, its Leaves, infuſed in Wine, provoke the Terms; and that two Drams of their Juice, drank with Plantain-water, cure intermitting Fevers. *Saxonia* uſed this Juice with Succeſs for chapt Hands: It is highly eſteemed for the Tetters and Scurf. For the Rheumatiſm, macerate the young Shoots of Tanſie ſome Days in Brandy, and then diſtil it: The Spirit is very penetrating. Bathe frequently the afflicted Parts, and cover them with warm Cloths. Let the Patient drink two or three Spoonfuls of it every Day. It is very good for hydropic Caſes; and the Decoction of Tanſie with Wine is excellent to make Fomentations upon their Legs. For the Cachexy, Dropſy, or Green Sickneſs, drink three or four Ounces of the Juice; or elſe make a Tea of its Leaves, Flowers, and Seeds; cover the Pot, and, when cool, give it by Glaſs-fulls, in a malignant Fever, and the Diſeaſes of the lower Belly: It cleanſes the urinary Paſſages, purifies the Blood, removes Obſtructions, and kills Worms. The Conſerve of the Flowers of Tanſie is eſteemed for the Epilepſy and Vertigo. *Martyn's Tournfort.*

It is uſual, in time of *Eaſter*, to make a ſort of Cakes of Eggs and Flour, mixed with the tender Leaves of Tanſie, when it begins to ſhoot: Theſe Cakes are not unpleaſant to the Taſte, and good for the Stomach, on account of diſcuſſing the Flatulencies, generated by eating Puls and Fiſh, during *Lent*: The Tufts and Seed are often exhibited by Mountebanks, with ſurpriſing Succeſs, for the Worms. A Conſerve of the Leaves, and tender Tops, reſiſts Putrefaction, opens Obſtructions, comforts the Spleen, and invigorates the Senſes. The Juice, uſed with any Kind of Oil, is ſaid to give Relief in Pains and Contractions of the Nerves.

A Soldier of *Montpelier*, labouring under a ſtubborn Dropſy, was reſtored to perfect Health, by a Decoction only of Tanſie. *Raii Hiſt. Plant.*

Tanſie, in Temperature and Virtues, agrees with Feverfew: It is vulnerary, uterine, and nephritic; and is principally uſed againſt Worms, the Gripes, Stone in the Kidneys and Bladder, Obſtructions of the Menſes, Flatulencies, and the Dropſy. The diſtilled Water kills Worms. *Dale.*

3. Tanacetum; Foliis criſpis. *C. B. P.* 432.

4. Tanacetum; Africanum; arboreſcens; Foliis Lavendulæ, multifido Folio. *H. A.* 2. 201.

5. Tanacetum; Africanum; fruteſcens; Foliis Lavendulæ multifidæ longe minoribus, graveolens.

6. Tanacetum; Africanum; fruticans; multiflorum; Foliis Tanaceti vulgaris decuplo minoribus. *H. A.* 2. 199.

Tanſie is conſiderably aromatic, very penetrating, comforting, aperitive, and heating: The firſt, ſecond, and third Species afford the *Semen Santtonicum Europæum*, as good againſt Worms as the *Santtonicum Ægyptiacum*. An Infuſion of the Leaves drank, or a Cataplaſm of the Flowers applied to the Navel, the diſtilled Water of the Flowers, or the Seed taken in Wine faſting, or three Ounces of the Decoction of the Leaves ſweeten'd with Syrup or Honey, and ſo taken, are effectual for the ſame Purpoſe. Theſe Herbs are balſamic, and extremely bitter, and may ſupply the Places of Nutmegs and Cinnamon: For I believe *Aſia* does not afford a Plant of greater Fragrancy than thoſe Species of Tanſie: They are, alſo, taken for the *Parthenium* of the Antients. The Leaves applied to a dead Body, and intruded into the Mouth and Noſtrils, preſerve it from Putrefaction and Inſects; whence the Plant is called *Athanaſia*, that is, the immortal Plant. The Juice performs the Effects of thoſe of Wormwood and Feverfew in Conjunction. The latter Species are of a ſtrong Smell, and proper in all cold Diſeaſes. *Cæſalpinus* tells us, that the Leaves of this Herb, infuſed in Wine, provoke the Menſes; that the Juice, drank with Plantain-water, cures all intermitting Fevers, with the Itch, Rheumatiſm, and Dropſy. Fomentations, prepared of the Leaves, are of great Uſe, and the Juice of the Plant relieves thoſe who labour under a Chloroſis and Cachexy. The Conſerve hereof is good for the Epilepſy, Colic, and hyſteric Paſſion, and cleanſes the Kidneys from Sand and Gravel. Tanſie agrees in Virtue with Savine, Feverfew, and Southernwood; and is now uſed in Baths for the Uterus. The Flowers, dreſſed in a Cake, are of excellent Service in corroborating the Stomach. *Hiſt. Plant. adſcript. Boerhaav.*

TANACETUM is, alſo, a Name for ſeveral Sorts of TAGETES; which ſee.

TANACETUM HORTENSE. A Name for the BALSAMITA MAS; which ſee.

TANACETUM INODORUM. A Name for the *Leucanthemum Tanaceti; folio; flore majore.*

TANACETUM MINUS. A Name for the *Millefolium, nobile, Tragi.*

TANACETUM MONTANUM. A Name for the *Millefolium; Tanaceti foliis; flore albo.*

TANGARACA. Marcgr. *Tangar.* 2. Piſon. *Erva de Rato Luſitanis, Frutex baccifer Braſilienſis, Flore ſtaminoſo, Fructu deleterio.* A *Braſilian* baccilerous Shrub, whoſe Fruit is preſent Poiſon. *Raii Hiſt. Plant.*

TANGE, ταγγὴ, in *Hippocrates*, is a preternatural Tumor; and, *Lib.* 2. *Epid.* is a putrefying Tumor. Some underſtand by the Word a ſtrumous Swelling. *Cornarius* renders ταγεῖαι (*Tangai*) putrefying Tumors, becauſe the Verb ταγγίζω (*tangizo*) ſignifies to become putrid or rancid; whence ἔλαιον ταγγὲς, a putrid or rancid Oil. *Foeſius.*

TANI. H. M. *Prunus Indica racemoſa, Fructu pyriformi.* A kind of Plum-tree, growing in the *Eaſt-Indies*, and bearing a Pear-ſhaped Fruit, of the Size of a large Plum, conſiſting of a green, ſucculent, and inſipid Pulp, ſurrounded with a ſmooth, ſhining, and red Skin, and containing an oblong-round Stone, which incloſes a white Kernel, of a grateful Taſte, and much reſembling that of a Filberd.

The Kernels of the Fruit are eatable, and, being pulverized, cure that epidemic Cachexy, which the *Portugueſe* call *Pstuo*, and correct Diſorders of the Eyes: The expreſſed Oil thereof, the Head being anointed therewith, ſtrengthens the Hair: The Bark of the Tree is accounted an Antidote againſt the Poiſon of the Tree *Katou Tsjerou*, and its Fruit, however communicated: It is exhibited, finely triturated with a ſmall Quantity of Aſa-fetida. The Juice of the Bark and Root, boiled with Rice and Milk, mitigates the Pain of the Colic. *Raii Hiſt. Plant.*

TANTALUS, among the Alchymiſts, in the Affair of the Philoſophers Stone, is an enigmatical Term for Mercury or Quickſilver. *Theat. Chym. Vol.* 4.

TAPHIUSIUS (*Lapis*) a fourth Species of *Ætites*, in Pliny, *Lib.* 36. *Cap.* 11. ſo called from the Place where it is found, *Taphiuſa*, near *Leucadia*, now the Iſland of *St. Maura*. At preſent, ſays *Schroder*, it is unknown.

TAPHNEUS, a Term in *Paracelſus*, for a Species of Earth, whence are produced ſuch Things as change not their Nature by Reverberation, or Calcination. *L. Grad. et Comp.* Or, *Taphneus* is a Medicine mundify'd, *Schol. in Lib.* 7. *L. Grad. et Comp. Cap.* 9.

TAPIA. *Braſil.* Marcgrav. Piſon. *Pomifera triſolia Braſilienſis Fructu corticoſo multis Oſſiculis Pericarpio incluſis pleno.* This is a Tree of *Braſil*, which grows to the Height of a Beech, or Oak, and bears a Fruit of the Size of a moderate Apple, which, when ripe, becomes yellow, like an Orange, and has a Rind equal to it; within which it is full of hard little Stones, of the Size of Cherry-ſtones, oblong, yellow, and containing a white Kernel; about the Stones is a white ſoft Pulp, of a ſweet Taſte, and a nauſeous Smell; the Fruit is eatable.

The Leaves, bruis'd, are an excellent Remedy againſt a Diſorder very common in *Braſil*, and which they call *Richos de Ca*, being externally applied, and intruded into the Anus, like a Suppoſitory. They are, alſo, cooling, and extinguiſh all manner of preternatural Heats, and mitigate Pains: Beſides, being introduced into the Ears, they mitigate Pains of the Head, proceeding from Heat.

There are two Species of this Tree; the Wood of the firſt is eſteem'd the hardeſt, and is the moſt ponderous, of all the Woods which grow in this Country; this Tree is accounted barren.

The other Species, which was known to *Piſo*, has a ſmooth large Leaf, and bears a Fruit bigger than an Orange, with an hard, thick, yelloviſh Rind, variegated with aſh-colour Spots, and containing an Honey-like Liquor, as ſweet as Sugar, in which are intermixed a Multitude of little Stones, which, when the Liquor is dry'd up, make a rattling Noiſe, like Poppy-heads.

This Plant is uſed in Medicine, for Diſeaſes of the Breaſt. *Raii Hiſt. Plant.*

TAPIRA *pecis.* A Species of ſmooth *Sonchus*, in *Piſo*. It grows with a ſingle Stalk, above the Height of a Man's Leg, and has narrow, oblong, dentated, lanuginous Leaves, and white Flowers towards the Top of the Stalk, laden with Down. This Plant is an excellent Vulnerary. *Raii Hiſt. Plant. Index.*

TAPSIMEL. HONEY OF MULLEN.

Take of the Juice of Celandine, and bearded Mullen, each one Pint; of deſpumated Honey, three Parts; boil gradually till the Juices are evaporated; adding, if the Operator pleaſes, calcined Vitriol and Alum, with Copperas, and again boil to an Ointment.

The firſt College Diſpenſatory adds from the Author, that, if Occaſion requires, this ſhould be, at leaſt, boil'd up to a pretty thick Con-

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Consistence; and says, that it certainly will cure Itchings in any Part of the Body, and is a most noble Ointment. But, it seems, the present Practice has no Regard for it, as neither this, nor the following, are ever prescribed, or made. However, it has been thought fit to continue such Discoveries upon Record, for the sake of those who may think proper to make Trial of them.

TAPSI VALENTIA. The Powers of Mullen.

Take of the Juice of bearded Mullen, and of Hog's-lard, each as much as you please; let the Lard be cleansed of its Membranes and Fibres, and broke into small Parcels; then beat it with the expressed Juice; press out, and strain. Let it, afterwards, be put into a proper Vessel, for nine or ten Days; and then be twice more impregnated with fresh Juice, until it be quite green. Lastly, after all the Humidity, that will separate, is pour'd off, beat it again briskly, and put it by, in a proper Manner, for Use.

We are told by the first Compilers of the College Dispensatory, that this, and the preceding Process, were the Contrivance of *John Arden* an experienced Surgeon, at *Newark* in *Nottinghamshire*, who lived in the Reign of *Edward* the Third; and, about three hundred Years ago, were in great Esteem among the Surgeons of our own Country. The Contriver directs the Medicines, thus made, to be fresh beat once in a Month.

TAPSUS BARBATUS. See Verbascum.

TAPYRA-COAYNANA, *Brasilien sibus*. Marcgr. et Pison. *Cassia fistula Brasiliana*. C. B. *Solutiva Brasiliana*. Park. *Cassia Siliqua Brasiliana purgatrix compressa*. Lob. in Pharmac. Rond. *Cassia fistula Brasiliana Flore incarnato*. Breyn.

It is a great, tall, and very spreading Tree, outwardly of a whitish Ash-colour; the Leaves stand in opposite Order, upon very short Pellicles, like the Leaves of Sena; the Flowers are disposed in Spikes, without Branches, and consist of five Petals, with three little semilunar Horns, which stand erect, in Conjunction with the Stamina; the Whole of a very fine carnation Colour, and visible at a great Distance. These Flowers are succeeded by Pods, green while immature, but black, or dusky-colour'd, when ripe, propending downwards, about two Feet long, and five Digits in Compass, and somewhat incurved. These Pods have a very hard ligneous Bark, which requires an Hammer to break it; and consist of a Multitude of Cells, of the Capacity of a Goose-quill, separated by Partitions, and containing every one a Kernel, of the Size and Figure of an Almond, of a white Colour, inclining to yellow, shining, smooth; of a white Medulla on the Inside, of an horny Substance, and immersed in a glutinous, blackish Pulp, like Cassia Solutiva, but of a bitter and ungrateful Taste; of a binding Quality before Maturity, but laxative, or solutive, afterwards.

The Tops of the Leaves cure Wounds and Pustules; and one Ounce of the Pulp, as *Lobel* observes, purges more than two Ounces of the other, or *Egyptian* Cassia. *Ray Hist. Plant.*

TARACHE, ταραχή. The same as Taraxis.

TARANTISMUS. The Disorder which is said to be produced by the Bite of a *Tarantula*.

TARANTULA. The *Tarantula* (of which the Figure may be seen in *Baglivi*'s Dissertation) is a Spider of *Apulia*, of the octonocular Kind; that is, of that Species that has eight Eyes, and spins Webs; it has eight Legs, four on each Side, and in each Leg three Joints; from the Mouth proceed two Darts, in Shape just like to a hooked Forceps, or Crab's Claw; these are solid, and very sharp, so that they can easily pierce the Skin; and between these and the fore Legs, there are two little Horns, which, I suppose, answer to those Bodies, call'd, from their Use in Flies, the Feelers; because as they do, so this Creature is observed to move them very briskly, when it approaches to its Prey.

This, as other Spiders do, propagates its Species by laying Eggs, which are very numerous; so that there are found sometimes, in the Female, when dissected, an hundred, or more; and these are hatched, partly by the Heat of the Mother, and partly by that of the Sun, in about twenty or thirty Days time.

There is, also, a Spider, of the like Nature with the *Tarantula*, in the *West-Indies*, which *Francis Hernandez* describes by the Name of *Hoitztocatl*, or the Pricking Spider; and says, that its Bite induces Madness.

In the Summer Months, especially when the Heats are greatest, as in the Dog-days, the *Tarantula*, creeping among the Corn in the Fields, bites the Mowers and Passengers; in the Winter it larks in Holes, and is scarcely seen; and, if it bites then, it is not venomous, neither does it induce any ill Symptoms.

But in the hot Weather, altho' the Pain of its Bite is, at first, no greater than what is caused by the Sting of a Bee, yet the Part, quickly after, is discoloured with a livid, black, or yellowish Circles, and raised to an inflamed Swelling; the Patient, within a few Hours, is seized with a violent Sickness, Difficulty of Breathing, universal Faintness, and sometimes Trembling, with a Weakness of the Head: Being ask'd, what the Ail is, makes no Reply; or, with a querulous Voice, and melancholy Look, points to his Breast, as if the Heart was most affected.

During this mournful Scene, all the usual alexipharmic and cordial Medicines are of no Service; for, notwithstanding their repeated Use, the Patient growing, by degrees, more melancholy, stupid, and strangely timorous, in a short time expires; unless Music be call'd to his Assistance, which alone, without the Help of Medicine, performs the Cure.

For, at the first Sound of the musical Instrument, altho' the Sick lie, as it were, in an apoplectic Fit, they begin, by degrees, to move their Hands and Feet, till, at last, they get up, and fall to Dancing with wonderful Vigour, at first, for three or four Hours; then they are put to Bed, refreshed from their Sweating for a short time, and repeat the Exercise with the same Vehemence, perceiving no Weariness or Weakness from it, but professing they grow stronger and nimbler, the more they dance.

At this Sport they usually spend twelve Hours a Day, and it continues three or four Days; by which time they are generally freed from all their Symptoms, which, nevertheless, attack them again, about the same time, the next Year; and, if they do not take care to prevent this Relapse by Music, they fall into a Jaundice, want of Appetite, universal Weakness, and such-like Diseases, which are every Year increased, if Dancing be neglected, till at last they prove incurable.

As Music is the common Cure, so they who are bitten, are pleased, some with one Sort of it, some with another; one is raised with a Pipe, another with a Timbrel; one with an Harp, another with a Fiddle; so that the Musicians make, sometimes, several Essays, before they can accommodate their Art to the Venom. But this is constant and certain, notwithstanding this Variety, that they all require the quickest and briskest Tunes, and are never moved by a slow, dull Harmony.

While the *Tarantati*, or Affected, are dancing, they lose, in a manner, the Use of all their Senses, like so many Drunkards; do many ridiculous and foolish Tricks; talk and act obscenely and rudely; take great Pleasure in playing with Vine-leaves, with naked Swords, red Cloths, and the like; and, on the other hand, can't bear the Sight of any thing black; so that if any By-stander happen to appear in that Colour, he must immediately withdraw; otherwise, they relapse into their Symptoms with as much Violence as ever.

It may afford some Light towards understanding the Nature of this Poison, to observe, that *Apulia* is the hottest Part of all *Italy*, lying Eastward, and having, all the Summer long, but very little Rain to temper the Heats; so that the Inhabitants, as one of that Country observes, breathe an Air, as it were, out of a fiery Furnace: Hence their Temperament is dry and adust, as appears by their being generally lean, passionate, impatient, ready to Action, quick-witted, very subject to inflammatory Distempers, Phrensies, Melancholy, and the like; upon which Account, there are more mad People in this, than in all the other Parts of *Italy*: And what in other Countries is but a light Melancholy, arises here to a great Height; for Women in a Chlorosis suffer almost the same Symptoms as Persons poison'd by the *Tarantula*, and are cured the same Way; and, in like manner, the Venom of the Scorpion, does here, in Effects and Cure, agree very much with that of this Spider.

From all this History, it sufficiently appears, that those that are bitten by a *Tarantula*, thereupon, become delirious; and that, in order to account for their surprising Symptoms, the Nature of a Delirium, from which many of them proceed, ought to be understood.

Such is the Constitution of the human Oeconomy, that as, upon the Impression of outward Objects made upon the Organs, and by the Fluid of the Nerves, convey'd to the common Sensory, different Species are excited there, and represented to the Mind; so, also, upon this Representation, at the Command and Pleasure of the Soul, Part of the same Fluid is determined into the Muscles, and, mixing with the arterial Blood there, performs all the Variety of voluntary Motions and Actions.

This Order has been always so constant in us, that, at length, by a kind of natural Habitude, without the Intervention of the reasoning Faculty, Representations made to the Mind immediately, and necessarily, produce suitable Motions in the bodily Organs. When, therefore, these Representations are irregular, the Actions consequent to them must necessarily be so too.

This being premised, it may, perhaps, be probably said, that a Delirium is the Representation, and various Composition, of several Species to the Mind, without any Order, or Coherence; together, at least most commonly, with irregular, or, as it were, undesign'd Motions of the Body; that is, such a wandring and irregular Motion of the nervous Fluid, whereby several Objects are represented to the Mind, and, upon this Representation, divers Operations perform'd by the Body, tho' those Objects are not impress'd upon the Organs, nor those Operations or Motions deliberately commanded by the Soul.

The Mind, indeed, is the first Principle of all muscular Motion; but, in such Cases as these, its Promptitude to Action, or Habit, being so great, it is, in a manner, surprised, and cannot recover itself, after the Spirits are, with violent Force, determin'd, pursuant to the Representation of the Species. For, as, in the former State of Things, a Man is said to act rationally, so

this

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this latter Case is called a Perturbation of Mind, that is, a Delirium; tho' it is very manifest, that, in Reality, the Defect is not in the rational, but corporeal Part; such Species being really presented to the Mind, upon which, by the Order of our Constitution, such Motions ought to follow in the Body.

Thus, for Instance, if the Liquor of the Nerves is, without the Presence of any thing hurtful, put into a Motion, like that which a painful Impression makes in it, the same bodily Actions must ensue, as proceed from Fear, Anger, or the like Passion, determining the Spirits towards the muscular Parts; and a By-stander, who sees no Reason for such a Representation made to the Mind, will presently conclude, that the Person thus acting acts without, or besides, his Reason, that is, is delirious; especially if the Hurry and Confusion of the Spirits be such, that not only one, but several different Species, be, at the same time, presented to the Mind; for a Man, in this Case, may act the Part of one joyful, angry, timorous, or the like, without any appearing Reason, and all this, almost, in the same Moment of Time.

In one Word; *Deliria* are the Dreams of those who are awake: And as these in us sleeping are infinitely various, and wonderfully compounded, and all from the same common Cause, diversely pressing the Orifices of the Nerves, and thus making different Repercussions of their Fluid; and as we all know, that this Confusion making the Representation of several Species to the Mind, there hereupon follow, tho' the Body seem now at Rest, and in perfect Repose, such Motions in the Organs, as are, usually, the Effect of the arbitrary Determination of the Spirits thither; we are now to inquire, what Alteration of the Body, made by this Venom, can be the Occasion of this Disorder and Tumult in the nervous Fluid, which excites, in the Party infected, such surprising, and almost contradictory, Representations.

Most of the Symptoms of those who are bitten by the *Tarantula*, are, at the first, that is, before they rise to a Delirium, plainly the same with those which the Bite of a Viper induces. Without Doubt, therefore, as we have before observed [under ARANEA] of the common Spider, that it pierces the Flesh with its hooked Forceps, and, at the same time, instils, from the Proboscis in the Mouth, a liquid Venom into the Wound; so the like Claws, in this, serve to make way for an active and penetrating Juice, emitted from the same Part.

Of the Nature of which we may probably conjecture, that it is, when mix'd with the Blood, being exalted by the Heat of the Climate, of so great Force and Energy, that it immediately raises an extraordinary Fermentation in the whole arterial Fluid, by which its Texture and Crasis are very considerably alter'd; the Consequence of which Alteration, when the Ebullition is over, must necessarily be a Change in the Cohesion of its Parts, by which the Globules, which before, with equal Force, pressed each other, have now a very differing and irregular Nisus, or Action, so that some of them so firmly cohere together, as to compose Moleculæ, or small Clusters; upon which account, there being now a greater Number of Globules contained in the same Space than before, and, besides, the Impulse of many of these, when united together, differing according to the Conditions of their Cohesion, as to Magnitude, Figure, and other Qualities, not only will the Impetus, with which this Fluid is drove towards the Parts, beat some Strokes at least greater than ordinary; but the Pressure upon the Blood-vessels must be very unequal and irregular; and this, more especially, will be felt in them which are most easily distended; such as those of the Brain. And, hereupon, the Fluid of the Nerves must necessarily be put into various undulatory Motions, some of which will be like unto those which different Objects, acting upon the Organs or Passions of the Mind, naturally excite in it; whereupon such Actions must follow in the Body, as are usually the Consequents of the several Species of Sadness, Joy, Despair, or the like Determinations of the Thoughts; and we shall readily pronounce one in this Condition, sad, joyful, or timorous, and all without any apparent Reason or Cause; that is, in one Word, we shall say, he is delirious.

This is, in some Degree, a Coagulation of the Blood, which will the more certainly, when attended with an extraordinary Heat, as in the present Case, produce such-like Effects as these, because the Spirits separated from the Blood thus inflamed, and compounded of hard, fixt, and dry Particles, must unavoidably share in this Alteration; that is, whereas their Fluid consists of two Parts, one more active and volatile, the other viscid and glutinous, which is a kind of Vehicle to the former, their active Part will bear too great a Proportion to the viscid; and thus they must necessarily be of more than ordinary Volatility and Force, and will, therefore, upon the least Occasion imaginable, be irregularly determined to every Part; and hereupon will follow Tremblings of the Body; Anger, or Fear, upon a light, or no Cause; extreme Pleasure at what is but a trivial Entertainment, as red, green Colours, or the like; and, on the other hand, wonderful Sadness at any thing not agreeable to the Eyes, as dark and black Things; nay, ridiculous Laughter, obscene Talk and Actions, and such-like Symptoms; because, in this Constitution of the nervous Fluid, the most light Occasion will make as real a Reflux and Undulation of it to the Brain, that is, will present as lively and vivid Species there, as the strongest Cause and Impression can produce in its natural State and Condition; and, in such a Confusion, the Spirits cannot but sometimes, without any manifest Cause at all, be hurried towards those Organs, to which, at other times, they have been most frequently determined; and every one knows which they are in hot Countries and Constitutions.

It must, however, be remember'd, that the nervous Fluid is immediately alter'd by the venomous Juice. It will, perhaps, make this Theory more than probable, that *Baglivi*, in the Dissection of a Rabbet kill'd by a *Tarantula*, found the Blood-vessels of the Brain very turgid, and the Substance of the Brain itself, that is, the Beginning of the Nerves, lightly inflamed, and with livid Spots here-and-there; the Lungs, and other Viscera, distended with concrete clotted Blood, and large Grumes of Blood, with polypous Branches in the Heart; a large Quantity of extravasated Serum upon the Brain, which is (as he takes Notice) mostly observed in those Subjects which died by a Coagulation of the Blood.

Neither is it amiss to remark, that in a Chlorosis there is nothing preternatural, but an Infarction of the Arteries; and hence a retarded Circulation, from an Evacuation suppress'd; and, in this Country, too much Heat; that is, a beginning Coagulation, together with an inflammatory Disposition.

In short, *Bellini* has, at large, demonstrated, how Deliria, as well melancholic as maniacal, proceed from a State of the Blood and Spirits, not unlike to that I have here described.

But no less a Confirmation of these Notions may we have from the Cure; as to which, it is observable, that the *Tarantati* have no Inclination to dance, before they hear the Music; for, being ask'd to do it, they answer, 'Tis impossible, they have no Strength.

As for the Reason, therefore, of their starting up at the first Noise of the Instrument, we must reflect upon what we have just now been saying, concerning the Cause of the Motions of the Body in a Delirium; and consider withal, that muscular Motion is no other than a Contraction of the Fibres from the arterial Fluid, making an Effervescence with the nervous Juice, which, by the light Vibration and Tremor of the Nerve, is derived into the Muscles.

And thus we have a twofold Effect and Operation of Music; that is, both upon the Mind and Body.

To conclude with this Poison, we may take notice, that, as to the Return of the Symptoms the next Year, that is owing to the same excessive Heat in those Months acting again upon the small Remains of the venomous Ferment: Thus *Bartholine* relates a Story of a melancholy Physician at *Venice*, who suffered the Attacks of this Disease only during the Dog-days, which yearly ended and returned with them. A convincing Proof, how great a Share Heat has in all these Cases. *Mead on Poisons.*

Baglivi, who resided in *Italy*, and probably had good Opportunities of informing himself with respect to this Insect, has written a Treatise expressly upon this Subject; and most medicinal Writers mention the Distempers arising from the Bite thereof, as a Thing certain, and not to be disputed. But, notwithstanding all these great Authorities, there is good Reason to believe, that the whole Story is fabulous, and a vulgar Error; for it is treated as such by an *Italian* Physician in the *Philosophical Transactions*; and the late Mr. *Stanhope*, Brother to the Earl of *Harrington*, who resided at *Taranto* many Months, and during the Season, in which the Bite of a Tarantula is said to be most pernicious, assured me, that there was not a Physician in the Country, who believed there ever was such a Distemper, from such a Cause; that, amongst the Vulgar, there was a Tradition, that Distempers, attended with very extraordinary Circumstances, had been excited by the Bite of the Tarantula, but that nobody ever remembered a single Instance; and that he hired People to search in the Fields for this Insect, but could never procure one; nor ever learn, that any Sort of Spiders were to be found, different from those, which are common in most warm Countries. This was confirmed to me by a Gentleman of Honour and Fortune, now alive, who, likewise, resided for a considerable time at *Taranto*, and who, upon the strictest Inquiry, met with much the same Information. This last Gentleman told me, that the most eminent Physicians at *Taranto* told him, that what gave Rise to the vulgar Error, relative to the Bite of the *Tarantula*, was an epidemical Fever, which frequently affected the Country-people during Harvest, and which was usually attended with a few petechial Eruptions, and some very odd nervous Symptoms; and this Disorder the unthinking Vulgar, always fond of the Marvellous, had sometimes idly attributed to the Bite of a Tarantula. And his Opinion is, I think, confirmed by the Accounts we have, of the Disorders incident to the People of *Apulia*. Thus *Frederic Hoffman*, speaking of the Diseases to which the *Italians* are subject, says, that the Inhabitants of *Apulia* are highly subject to burning Fevers, Pleurisies, and other inflammatory Disorders, which, in a great measure, draw their Origin from that Redundance of Blood, which is generated by the high Living of the Inhabitants; for here the Soil is incredibly fertile; and large Quantities of Flesh are eaten by the Natives. Here, also, the Wines are black, fragrant, and rich, and the

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the Air so intensely hot, as not only to render the Inhabitants highly impatient and uneasy, but very frequently delirious.

TARAXACUM. A Name for the *Dens Leonis latiore folio.*

TARAXIS, ταραξις, from ταρασσω, to disturb, a Disturbance, is frequently used by *Hippocrates*, as well as the Verb, from whence it is derived, to signify such a Disturbance, or Perturbation, of the Belly and Intestines, as is excited by some Cathartic, or other Means, irritating them to Excretion. The Verb ταρασσω, according to *Galen*, *Com.* 3. *in Lib. de R. V. I. A.* indicates, in that Place, not a moderate, but a profuse Evacuation by Stool. In this Sense we are told, by *Hippocrates*, in the same Book, that Hydromel, drank by itself, is more effectual than Water, εἰ μὴ ταράσσει τὴν κοιλίην, "if it does not disturb the Belly," that is, waste the Strength by immoderate Irritations of the Belly. In *Coac.* 342 ἐκλάξις (*Ectaraxis*) κοιλίης imports a critical Excretion, or such a Disturbance, or Perturbation, excited in the Belly, as issues in a sudden, violent, and profuse Discharge of its Contents. *Hippocrates* often uses ταραχώδεες κοιλίαι to express the Belly under Irritations to Excretion, and actually discharging its Contents, particularly *Coac.* 10. And in the same Sense is the Word ἐκλάξις used, 2 *Prorrhet.* where we read, αἱ κοιλίαι ἰχῶρας ὑγρὰς ἔχουσαι ἄνευ ἐκλαξίων, "the Belly labouring under violent Pains, "without Perturbations" (in order to Evacuation); agreeably to which Sense, *Celsus*, *Cap.* 8. *Lib.* 2. renders ἐκλαραχθεῖσαν κοιλίην, 4 *Aph.* 60. *Ventrem resolutum*, "a loosen'd Belly."

The Adjective *tarachodes*, ταραχώδης, frequently signifies, also, turbulent, and is applied to those, who are disturbed and disordered for little or no Reason, which is an Indication of a delirious and disordered Mind. The same is applied to Diseases, Fevers, and Sleep attended with irregular Perturbations, and mental Disorders.

Τάραξις, *Taraxis*, is, also, a Disease of the Eye, consisting in a Perturbation of that Part, when it is offended by some Compression, Attrition, Smoke, or the like. The Author of the *Isagoge* reckons, among ophthalmic Disorders, the *Taraxis*, which is, he says, when the Eye appears redder than ordinary, on occasion of some slight and superficial Commotion. But *Galen*, in 6 *Epid. Com.* 5. makes a *Taraxis* to be a morbid Disposition of the Eye, preceding an Inflammation, and the Beginning of an Inflammation; and *Paulus*, *Lib.* 3. *Cap.* 22. defines it to be an Heat and Humidity of the Eye, attended with a preternatural Redness, proceeding, not from the Body, but some external Cause, as the Sun, Smoke, Dust, and Wind; whence the Disorder is very speedily remedied, by removing the Cause.

TARBASON, or LARBASON. Antimony.

TARCHON. The same as DRACO HERBA.

TARDA. The Bustard; the same as OTIS.

TARERIAYA. The Name of a *Brasilian* siliquous Sort of Cinquefoil, of no Use in Medicine.

TARIROQUI. The Name of a *Brasilian* Vetch, called, by the *Portuguese*, *Metapasto*, of no Use in Medicine.

TARFATI, or TARFE. A barbarous Word, importing an Ecchymosis, or Sugillation.

TARGAR. Oil of Juniper, *Rulandus.*

TARICHOS, τάριχος, *Lat. Salsamentum*, Salt-meats, properly Fish seasoned and kept in Salt, and especially the Thynnus, of which Kind are also the *Cybia*, as appears from the fifth Book of *Galen*, *de C. M. S. L.* at the End, and from *Athenæus*, *Lib.* 3. at the End; and also from *Pliny*, who assures us, that the *Pelamis*, (a large Fish, see the Article CYBIUM) cut into Pieces, belonged to the *Cybia*, *Lib.* 32. *Cap.* 11. and *Lib.* 9. *Cap.* 15. *Suidas* expounds τάριχος by τὸ κρέας ἁλσὶ πεπασμένον, "Flesh "sprinkled with Salt;" and τάριχος signifies not only what is seasoned, and kept in Salt, but what is dried, and preserved without Salt. Τάριχος Γαδειρικὸν, "such Salt-meats, as come from "*Gades*," are recommended by *Hippocrates*, *Lib. de intern. Affect.* in more than one Place, to be eaten in an Anasarca. The same Author, *Lib. de Cap. Vuln.* in describing an Ulcer of fatal Prognostication, and drying up a little before Death, says, καὶ φαίνεται ὅσπερ τάριχος· "It looks, also, like Flesh macerated and "dried in Salt." And, *Lib.* 2. *de Morbis*, he advises eating the best and fattest *Tarichos* (Salt-meats). Περιλαιχνεῖν τοὺς ἀνθρώπους, *Lib. de R. V. I. A.* is, to dry up, emaciate, and extenuate Patients with Hunger and Fasting, which was the Practice of some Physicians in the Time of *Hippocrates*, who, in the Beginning of Diseases, tormented the Sick with three or more Days total Abstinence. The Word is used in the same Sense by *Galen*, *Lib.* 8. *M. M.* and applied to the *Diatritarii* of his Time. See DIATRITOS.

TARITH. Mercury. *Rulandus.*

TARSI. A Name for the *Cyperus*; *rotundus*; *esculentus*; *angustifolius.*

TARSO is a kind of hard, and most white Marble, found in *Tuscany*, at the Foot of the *Verucola* of *Pisa* at *Seraveza*, and at the *Massa* of *Carara*, and in the River *Arnus*, above and below *Florence*; and it is, also, well known in other Places. It is used in making Glass. *Ant. Neri.*

TARSUS, ταρσὸς. The Space between the Bones of the Leg and the Metatarsus. It consists of seven Bones; the *Astragalus*, or *Talus*, *Calcaneum*, *Naviculare*, three *Ossa Cuneiformia*, and the *Cubiforme.*

The cartilaginous Edges of the Eye-lids, out of which the Eye-lashes grow, are, also, called *Tarsi.*

TARTARHAN. A barbarous Name for the Spirit of Tartar.

TARTARUS. Tartar.

The Generation of Tartar from Wine.

Wines, especially those prepared from Grapes, or of an acid and austere Taste, usually afford a copious Tartar, but not in Perfection, till they are once thoroughly fermented; and they afford the purest, when put up into a clean Vessel. It is more plentifully obtained from the Wine, when this has rested some time upon the Lee, and, in some measure, gently consumed it. The Tartar of fine White-wine is white; whence *Rhenish* Wine affords the best, which is white; and collected in thick Pieces, for Medicinal Use; and the whiter, heavier, more shining, and thick, the Pieces are, the better. That of Red-wine is red, more impure, less firm, and the Pieces less solid, and more unctuous: This stony Salt of Wine is difficultly dissolved in Water, or Wine itself, but remains almost like a Stone therein. If boiled in a large Proportion of Water, it dissolves in some measure, and makes a turbid Liquor, wherein numerous shining Corpuscles are observed to float; and thus, in the Boiling, it constantly throws up a Skim to the Surface; which, if taken off with a Skimmer, and put into a wide Vessel to be dried, is called by the Name of *Cream of Tartar*: And thus, by degrees, the whole Quantity of Tartar may be converted into a kind of white acid Powder, excepting only a few feculent Parts, remaining at the Bottom.

If pure white Tartar be boiled with twenty times its Quantity, or more, of Water, till the Whole is perfectly dissolved therein, and the boiling Liquor be now immmediately put into a Cask, without admitting any Fæces, a Crust will presently begin to form in all the internal Parts of the Vessel touched by the Liquor; and this Crust increases, till, in a short time, nearly all the Tartar shoots into little shining figured Lumps, called *Crystals of Tartar*; which, being collected, and gently dried, are thus to be preserved separate. The remaining Water, when cold, retains but little of the Tartar.

These Operations shew, that the Nature of the Salt, which is produced by vinous Fermentation, entirely differs, in these Properties, from any other known Salt. A new Solution, also, of the Cream or Crystal of Tartar, may be made in fresh boiling Water, so as to obtain them each time more pure and white; but the Virtue of them both scarce appears greater for any chymical or medicinal Uses, than that of Tartar itself.

REMARKS.

A Knowledge of this Process greatly conduces to the understanding the Nature of Fermentation, and the Tartar produced thereby. And thus we procure this wonderful Salt suited to so many Uses. Dyers, Silversmiths, Chymists, and Physicians, require it on many Occasions. The Chymists prepare many Things from it, and some of them capital ones. In Medicine it is highly serviceable for gently cleansing the first Passages, in a small Dose, or for purging strongly in a larger Quantity. And upon this Subject that candid Chymist *Angelus Sala* has written excellently.

The Resolution of Tartar into Water, an acid Spirit, Oil, and fixed alcaline Salt, by Distillation.

Fill Two-thirds of a glass Retort with choice Pieces of the best white Tartar, and place it in a Sand-furnace; apply a large Glass Receiver, or one that is of the greatest Size; and lute the Juncture with a common Mixture of Linseed-meal: Apply a gentle Fire for some considerable time, scarce exceeding a hundred Degrees; there will come over a small Quantity of a limpid, thin, tartish, somewhat spirituous, bitterish, and lightly-odorous Liquor, which is so penetrating, as easily to sweat through the Luting. Let this be kept separate; then the Fire being raised to the Heat of boiling Water, a white Vapour comes over, and along with it an highly penetrating Spirit, which is wonderfully flatulent, and will pass through almost any Luting; and, if we endeavour to confine it by that called the *Lutum Sapientiæ*, it bursts the Glass by its Elasticity; and it usually breaks out with Force, or perspires, at Intervals, through the Luting; and, along with this wild flatulent Spirit, there comes over a thin and extremely subtile Oil, of a yellow Colour, a somewhat aromatic Taste, bitter, heating, and of no ungrateful Odour. This surprising Oil I have found so incredibly penetrating, that when the Neck of the Retort entered five Inches into the Mouth of the Receiver, and the Juncture was closely luted, yet this volatile Oil always returned back, and passed through the Body of the Luting, so as partly to distil in Drops, into a Cup set underneath, and in part to run down the external Surface of the Receiver: Nor could I hitherto, by any means, prevent this Effect; for, if a Luting be applied, that the Oil cannot pass through, the Vessel

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ſel flies to Pieces. I did not therefore wonder to find *Paracelſus* and *Helmont* ſo highly recommend this Oil in Diſeaſes of the Ligaments, Membranes, and Tendons, which they, upon Experience, have declared, may be cured by it, even though contracted.

The former Matters being collected ſeparate, let the Remainder be urged gradually to the utmoſt Degree of Heat that Sand will give; and thus again a Spirit will come over, and an Oil, as before; but at the ſame time a groſs, black, fetid, ponderous, glutinous, and bitter Oil, leaving the remaining Tartar black, ſharp, and, in every reſpect, truly alcaline. If this Maſs be urged with the ſtrongeſt Fire of Suppreſſion, it will ſtill yield a very thick, black, and pitchy Oil, along with a certain Smoke; and theſe will continue to riſe, how violent ſoever the Fire be made, and how long ſoever the Operation is continued; and there will ſtill remain an extremely black, ſharp, alcaline, and dry Maſs, at the Bottom; which, being expoſed to the open Air, by breaking the Glaſs, grows hot, upon Contact therewith, and readily diſſolves into a Liquor; nor can it be kept dry, without great Caution; whereas the Tartar, from whence it was produced, would ſcarce diſſolve in Water.

When this black dry Maſs is expoſed to a naked Fire, in the open Air, it takes Flame; and, after burning, leaves a copious white alcaline Salt behind, as ſtrong, fiery, and pure, as can any way be prepared. It affords but little Earth, and readily diſſolves of itſelf: If long detained in a ſtrong Fire, it grows blue, of a marble Colour, and ſometimes brown; and thus always becomes ſtronger.

REMARKS.

From hence we learn many Particulars; and, firſt, how wonderful a Thing Fermentation is, which ſeparates all the groſs Parts, and leaves a tranſparent, ſubtile, fluid Wine, which generates an almoſt ſtony Body, that does not diſſolve in cold Water, whilſt the Principles of this Body lie concealed in ſo thin a Liquor. This ſtony Maſs, alſo, contains Water, a Spirit, and different Kinds of Oil, thick and copious. It is hard to conceive, how this Oil could lie concealed in the Wine, which ſeems to contain Alcohol indeed, but no ſuch Oil: But, what is more ſurpriſing, the entire Maſs of Tartar is merely acid, and makes an Effervescence with Alcalies, as we ſhall clearly ſee in the Preparation of tartariſed Tartar; and yet, by the bare Action of no violent Fire, in a cloſe Veſſel, without any conſiderable Separation of an Acid, the greateſt Part of its whole Bulk is changed from Acid to true Alcali; and this, perhaps, is the only Example, where a fixed alcaline Salt is produced in a cloſe Veſſel, by a moderate Fire, without the free Admiſſion of the Air; whilſt, in other Caſes, only a black inſipid Coal is thus produced. Who would have ſuſpected, that a manifeſt Acid could, by this means, have changed to an Alcali? And if the acid Water, the Spirit, and the Oil, be poured back upon this alcaline Maſs, from whence they were before extracted, and the Diſtillation be performed, as before, ſcarce any Acid will come over, and little Oil, but nearly the whole Maſs will be turned into Alcali. Whence we ſee, that a large Quantity of a very acid Matter may be eaſily changed to an alcaline Subſtance; but, on the contrary, I am acquainted with no Inſtance in Chymiſtry, of ſuch a manifeſt Change of a ſtrong Alcali into an Acid: Whence I cannot ſufficiently admire the particular Nature of this Tartar, as knowing nothing like it. The firſt diſtilled and highly penetrating Oil of Tartar is recommended for diſcuſſing cold Tumors, and for reſtoring Motion to the dried tendinous Parts in contracted Limbs, together with the Aſſiſtance of proper Baths, Fomentations, and Frictions. If theſe Oils be rectified, and rendered more ſubtile and penetrating, they are recommended by Chymiſts, even for reſolving gouty Knots and Concretions. It is ſaid by many, that rich Perfumes may be exalted by this Oil; but they, alſo, ſay, that decayed Muſk and Civet may have their Scent invigorated, by being ſuſpended in a Jakes. Salt of Tartar may be thus prepared in a greater Proportion to the Tartar employed, than by any other known Method; and in greater Plenty, the ſlower the Diſtillation was performed. This, alſo, is the beſt, ſharpeſt, moſt penetrating and pure, of all the fixed Alcalies; nor is there any other known Body in Nature, that affords more of ſuch a ſaline alcaline Matter, than Tartar. And if the black alcaline Matter, remaining after the moſt violent Diſtillation, be ſet by in the Retort, ſlightly covered with Paper, it wholly reſolves into a Liquor, which, filtred, affords an admirable Oil of Tartar per Deliquium, extremely fit for numerous chymical Uſes, and particular Operations. If the ſame Salt be firſt ſtrongly calcined in an open Fire, it thus, alſo, reſolves in the Air, and affords an Oil of Tartar per Deliquium, but of a more ſharp and alcaline Nature, than the former.

The native Salt, or Tartar of Vegetables, from their fermeneed Juice.

1. The expreſſed Juices of ripe Summer-fruits, being perfectly fermented, and ſo become Wine, depoſit their Fæces, or Lees, barely by ſtanding, and thus become bright. If, now, this Wine be drawn into a clean Veſſel, and ſuffered to reſt for a long time, it produces in its Body little, ſhining, ſharp Corpuſcles, moving about therein. Theſe Corpuſcles, diſperſing themſelves from the Wine's Centre of Gravity to every Point of the Surface, at length touch, and fix themſelves to the Sides of the Cask, and thus cruſt them all over, where-ever the Wine reaches. By degrees the Liquor depoſits more of this Matter, which eaſily ſticks to the former, whereto it ſeems to be attracted, till at length the whole Body of the Wine contains no more of it: After this, if the Wine, thus grown milder, be drawn off into another Cask, and freſh Wine, fined down as before, be put into the Cask that was emptied, but ſtill remains lined with its Cruſt, the ſame Kind of Matter will be ſooner generated, and grow to the former Cruſt, which more powerfully attracts it.

2. This appears to be the true Generation of that ſtrange Production, which is the genuine ſaline Cryſtals of the Wine, tho' not, like other ſaline Cryſtals, found only in the Bottom, but equally all round the Sides of the containing Veſſel. This Subſtance is, in many reſpects, different from the Lees of Wine, though it ſeems nearly of the ſame Nature; but it is more ſubtile, more pure, leſs earthy, leſs feculent, leſs unctuous, more difficultly ſoluble in Water, and of a more acid Taſte. The *Germans* call it by a very proper Name, *Wine-ſtone*, but the Chymiſts, leſs properly, *Tartar*. There is a great Difference in it, according to the Nature of the Wine; the acid, auſtere Kinds whereof afford more; but the ſweet and oleaginous, leſs. The Wines, that have their Fermentation ſtopped, before it was completed, afford a leſs Quantity; and thoſe perfectly fermented, and become thin, a greater, as *Rheniſh* Wine, for Example. The Tartar of Red-wine is red; and of White-wine, white.

REMARKS.

1. This is a Way of obtaining the natural Salt of Vegetables; which Salt is always acid and oily. It is eaſily changed into an Alcali; it diſſolves neither in Water, Wine, nor Vinegar, without Heat, but remains like a Stone therein; and, like a ſtrong Veſſel, contains within its Cruſt the Wine from whence it is ſhot. It requires a boiling Heat, before it will perfectly diſſolve in Water; and then again, as ſoon as the Water begins to cool, it immediately begins to become ſolid in the Water, and is there called *Cream*, or *Cryſtal of Tartar*. It requires twenty times its Quantity of Water, to diſſolve it perfectly. It generates more elaſtic Air in Burning, than any other known Body, and yields a Vapour that can no way be confined. It is a great Corrector in thoſe Bodies, which abound with a ſharp bilious putrid Matter; and hence becomes an approved Remedy in acute Diſeaſes. It cleanſes the firſt Paſſages, without much diſturbing the more internal Parts. With a corrupt acrimonious Matter, it loſes its Acidity, changes into a very ſoluble Subſtance, and hence becomes a good aperitive Remedy.

2. We may hence underſtand, what Salt that is, which reſides in the natural or fermented Juices of Vegetables; but we ſhall ſhew, that theſe Salts, ſo generated, are eaſily reſolved, by Art, into highly elaſtic Air, a tartiſh Water, a tartiſh and ſtrong-ſmelling Spirit, an Oil the moſt volatile of any hitherto known, a groſs and fixed Oil, a black alcaline Coal, an excellent Alcali, and an Earth. Salts, therefore, do not exiſt pure in Plants, but are always mixed with other Matters. And hence we may begin to underſtand the Nature of the chymical Analyſis of Vegetables.

The Preparation of tartarised Tartar.

Reduce the pureſt white Tartar to fine Powder, and boil a ſufficient Quantity thereof with ten times its Weight of Water, in a large copper Veſſel, till the Tartar appears ſufficiently diſſolved; let the Veſſel remain over the Fire, that the Water and the Tartar may continue conſtantly boiling; the Liquor, being now taſted, proves acid, and is almoſt tranſparent, and tolerably pure. Then let fall, from an Height, a Quantity of Oil of Tartar, Drop by Drop, into the boiling Liquor, which is ſtill to be kept boiling, whilſt the Oil of Tartar is dropped in. Upon the falling of each Drop, there ariſes a great Ebullition in the Liquor, proceeding from the Meeting of the Acid and the Alcali; as appears from hence, that the Ebullition, ſoon after, ſpontaneouſly ceaſes, and is raiſed again by dropping in more of the alcaline Liquor; and, becauſe this is performed in a ſtrong boiling Heat, large ſpherical Bubbles are generated on the Surface of the boiling Liquor, that preſently crack, burſt, and appear again. In theſe Bubbles Chymiſts have found, or rather imagined they found, the Figure of Grapes. The Operation is thus to be patiently continued, till at length no more Effervescence ariſes from dropping the alcaline Liquor into the boiling Liquor. And now the Acidity of the Tartar will be ſo ſaturated with ſuch a Quantity of its own Alcali, as neither to appear acid, nor alcaline, but a third new Salt: But this Point of Saturation muſt be exactly hit; otherwiſe the Salt will be acid, if too little Alcali were added; or alcaline, if too much: Great Caution muſt therefore, be uſed at the End. This Liquor is to be ſtrained hot and quick through Flannel, till it becomes clear; it will be of a blackiſh-

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blackish-brown Colour, of a particular bitterish, saline, unctuous Taste, but scentless; if inspissated by Heat, till a Skin appears on its Surface, and then set, for some time, in a cold Place, it deposits, to the Bottom and Sides of the Vessel, certain saline Grains, which, when collected, are a Tartar easily soluble in Water, even in the Cold; whereas before it could scarce be dissolved therein, without a boiling Heat: Whence this Preparation may properly be called *soluble Tartar*.

REMARKS.

Tartar comes so near to a strong Hardness, as to remain insoluble in its own Wine, which is thus contained, as it were, in an earthen Vessel; whence the *Germans* appositely call it Wine-stone. It has a manifest Acidity; by the prevailing Force thereof it acts kindly upon the first Passages; and this Acidity is the Cause, that it makes so strong an Effervescence with its own fixed Alcali, which is so easily produced from it: For, after this Acidity is overcome by the Alcali, the Tartar becomes easily soluble, and a new Kind of Salt, which has a considerable Virtue in the Body, when taken upon an empty Stomach, dissolved in Water; for thus it deterges, and gently purges, and helps to cure many inveterate Diseases. Externally used, it cleanses foul Ulcers, and disposes them to heal: But whether this be the boasted Remedy of *Paracelsus*, by means whereof he declares he cured all fresh Wounds in a few Hours without Suppuration, I cannot tell. That Medicine he called *Samech*, which seems derived from a *German* Word, which signifies, *to conglutinate*. Thus much I can say, that a Solution of this Salt in Water is one of the best Menstruums hitherto known in Chymistry; as any one may learn, by boiling Gum Lac, Myrrh, and the like, therein. Whence he will find it can scarcely sufficiently be commended; and hence it is plain, that, used as a Medicine, it will dissolve viscous Matters in the first Passages; and it is even supposed to dissolve the tartarous Matter of the human Stone, generated in the Receptacles and Passages of the Bile and Urine, provided it be used plentifully every Day, the Dose being gradually increased. It is useful in the Stone, Jaundice, and hypochondriac Disorders. Lastly, the Examination of this Process shews, how proper Cream of Tartar is in all those Distempers, where the Bile in particular, and other Humours, putrefy in the Intestines, from a burning Fever, or other Causes, and thus become alcaline; for this Disposition is then corrected by the latent Acidity of the Tartar, and, at the same time, converted, in the Body, into a mild, aperitive, and soluble Salt, which opens the Passages, without greatly stimulating them, and removes Obstructions.

REGENERATED TARTAR.

To a Quantity of sharp, pure, and dried, fixed Alcali, contained in a large Glass, with a narrow Neck, pour strong distilled Vinegar, till it almost covers the Salt; scarcely any sensible Effervescence will appear, which seems strange, because so strong an Alcali might be expected to make an Effervescence with the Acid; but it seems, on the other hand, as if so weak an Acid would not make an Ebullition with so strong an Alcali: Shake them strongly together, and then some small short-lived Ebullition appears. Pour on more distilled Vinegar, and then a greater Ebullition will arise, and appear sufficiently manifest; after shaking the Glass, add a third Quantity, and then a violent Ebullition, frothing and hissing, will be found, and prove the stronger, the more the Glass was shook; and this continues a long while, so that the Vinegar poured on makes the stronger Effervescence, the nearer the Operation approaches to the Point of Saturation with the Alcali; which Point is generally obtained, when about fourteen times the Weight of strong distilled Vinegar is added to the Alcali. Now, towards the End, let the Mixture be well heated, and long and strongly stirred, that no more Acid may be poured on, than is exactly required, to obtain the Point of Saturation; which will, at length, be hit, by continuing to add a little of the distilled Vinegar by degrees, and well agitating the Mixture, till the Addition, and shaking in of a little more, no longer causes an Effervescence, even in the Heat. Then let the Mixture stand warm, for twenty-four Hours; and if, upon shaking, it makes no Ebullition, again drop in a little Vinegar, and shake the Vessel; and, if now no Effervescence arises, then the exact Point of Saturation is hit. During the Experiment, the violent Effervescence throws off a very elastic Vapour, which bursts out of the Glass with an hissing Noise, after having been confined by pressing the Hand against the Mouth of the Glass, whilst it was shook, and then suddenly taking it away; and if the Orifice should be closely and strongly shut up, during the Effervescence, the Glass would be burst to pieces. The Liquor thus prepared is transparent, of a particular Odour, not acid, and of a Taste neither acid nor alcaline, but particularly Saline, and almost without Acrimony. It has a mild and innocent Virtue, though powerfully attenuating and resolving, being purgative, diuretic, and sudorific; whence it proves an admirable Remedy in chronical Diseases, attended with a tenacious Matter, being given in a proper Dose, at proper Seasons.

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The Liquor, being decanted clear from its Fæces, and distilled in a glass Alembic, affords a pure simple Water; whilst the Liquor remaining behind becomes of a brown or blackish Colour, and at length perfectly black, fat, thick, of an extremely penetrating, or, as it were, melting Taste, which discovers it to be of a saponaceous, penetrating, and resolving Virtue. Take a little of this Liquor, and mix it with a little Vinegar; when, if it yields an Effervescence, this shews, that the Alcali still predominates; and therefore the Whole must be again saturated, by the careful Addition of distilled Vinegar; and, as this usually happens to be the Case, the Point of Saturation is to be carefully and anxiously secured.

When at length this is happily obtained, let the Liquor be separated, by Rest, from its Fæces, and then all the Water be drawn off by a gentle Fire, till a saline Mass remains at the Bottom, of a black-reddish Colour, and an highly penetrating, but very particular saponaceous Taste. This Mass will have attracted and retained all the Acid of the Vinegar, and given out all the Water. Mr. *Homberg* has laboriously shewn, that the Weight of the fixed Alcali is here increased Nine-twentieths in respect of the Alcali, by the Acid of the Vinegar so attracted; and that this Acid, in respect of the Vinegar, was in the Vinegar about a thirty-seventh Part of the Whole; the other thirty-six Parts being pure Water. And thus the Salt is procured, which the Chymists call regenerated Tartar.

If the Salt, thus laboriously prepared, be urged with a strong Fire, it becomes volatile, and flies off into the Air. When carefully dried with a very gentle Fire, it appears like a Mass, that had strangely concreted, in the Cold, by the Apposition of little thin Plates, like Talc. It presently runs with Heat into a kind of a thick Oil, but again appears leafy in the Cold; and hence it has been called *Terra foliata*; and *Tachenius*, pretending it to be dissolved Talc, is reproved for it by *Zwelfer*, in his apologetic Discourse against *Tachenius*.

REMARKS.

There is not in all Chymistry a more instructing Experiment, than this; it shews us a new, unexpected, and particular Appearance of Alcali and Acid in the making an Effervescence. We here see all the Degrees of Colour from the transparent Whiteness of Water, up to Blackness; we see, that a fat, inflammable Oil is regenerated from Alcali, calcined by a violent Fire, and a thin, hungry Spirit of Vinegar; for this dry Salt takes Flame in the Fire, and, when distilled with a strong Heat, affords a true Oil. Hence we learn, that Salts, produced by a Mixture of Acid and Alcali, are not barely made up of the Acid and Alcali, as they are again separable, but that a new Thing is produced, of which no Sign appeared before. We are taught what Proportion of Acid, and what Proportion of Water, is contained in an acid Liquor; what Proportion of Acid is required exactly to saturate an Alcali; and the true Manner of converting fiery fixed Alcali into a mild, compound, volatile, saponaceous, oily Salt. This Salt, when properly prepared, is a most admirable Menstruum, converting its Subject, by Mixture and Digestion, into an uniform, soluble Mass, that will readily pass through the Body, and remain rich in its own Virtues. It is the greatest Resolvent in the Body hitherto known, and therefore highly valuable, as it is not hurtful in hot Cases, yet serviceable in cold ones, and almost suited to every Patient. Upon carefully considering all these Particulars, I have often doubted, whether this were not *Helmont*'s volatile Salt of Tartar, which he so highly commends, and substitutes for the Alcahest itself, especially since it flows like Wax in the Fire. It seems certainly to be the *Acetum radicatum* of the antient Chymists, as in its Preparations Vinegar returns, and is joined with its own Matrix of calcined Tartar. But whoever shall over-carefully endeavour to dissolve, purify, filtre, inspissate, or calcine this Salt, in order to make it white, he will find it fly off into the Air, and be lost; and may thus indeed be convinced of its Volatility with the Loss of his Labour and Cost. And this Admonition I give, principally because *Sennertus* recommends a scrupulous Diligence in purifying this Salt; which is not only a Loss, but an impoverishing Labour.

TINCTURE OF TARTARISED TARTAR.

Reduce dry tartarised Tartar to fine Powder; put it into a tall Bolt-head, and pour pure Alcohol thereon, till it rises four Inches above it. Stop the Glass with Paper, and boil with a gentle Heat, for twenty-four Hours; by which means the Alcohol will become of a gold Colour, and of an aromatic, hot, penetrating Taste. If the Operation be repeated with fresh Alcohol, a white Salt will remain at the Bottom. Let the Tinctures be inspissated with a gentle Fire, till a tenth Part remains condensed behind.

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REMARKS.

The Tincture thus prepared is aromatic, heating, cleanſes Ulcers, and heals up Wounds; the remaining Salt is purer, and more ſimple, than before; which ſhews that Salts may be whitened, by drawing a Tincture from them with Alcohol.

The Diſſolution of regenerated Tartar in Alcohol.

Put regenerated Tartar prepared as above, and made as dry as it can be with Safety, into a tall Bolt-head; pour thereto ſix times its Quantity of pure Alcohol, and boil them carefully with a gentle Fire; they will thus be united into an uniform compound Liquor, that depoſits ſome Fæces at the Bottom; which being ſubſided, let the Liquor be poured off pure. And, if any Salt remain undiſſolved behind, add freſh Alcohol, and proceed as before. Laſtly, diſtil the Liquors with a gentle Fire to one half; and thus the Tincture or Solution of regenerated Tartar will be obtained.

REMARKS.

We have here the Alcali, the oily Acid, and the oily Spirit, of vegetable Subjects united together; whereby the moſt active Principles of Plants are freed from their indolent Earth, and yet remain ſafe, or not dangerous on account of their Acrimony. This Mixture, alſo, ſeems to be the leſſer Elixir of the Philoſophers; which the antient Chymiſts commended for reſtoring Health. Certainly, it diſſolves almoſt all Obſtructions, penetrates the Veſſels, agreeably ſtimulates the viral Faculties, and cures by Sweat. It is, alſo, a moſt excellent Solvent in Chymiſtry, whereby Bodies are diſſolved into their ſmalleſt and moſt active Parts, without impairing their ſeminal Virtue; ſo as to gain them Entrance into the innermoſt Receſſes of the Body, in order for conquering the moſt obſtinate Diſtempers. It is no leſs ſerviceable, when externally uſed in Wounds, Tumors, and Ulcers. And, that the Poor may not want ſo excellent a Remedy, it may be directly prepared by mixing Pot-aſhes with fifteen times their Weight of ſtrong Vinegar; then ſtraining and inſpiſſating the Solution; and thus without leſs Labour, or great Expence, a Medicine may be eaſily prepared for Uſe. This Medicine was known to the antient *Romans*, and is mention'd by *Pliny* in his Preface, where he ſays, *The Aſhes of Vine-twigs, being diſſolved in Vinegar, are drank in Diſeaſes of the Spleen.*

Harvey's Tincture of Salt of Tartar.

Take the black alcaline Salt, remaining in the Retort after the ſtrongeſt Diſtillation of Tartar; reduce it to Powder, in an hot iron Mortar, with an hot Peſtle; and immediately put it into a tall Balt-head; pour the beſt common Spirit thereon, ſo as to riſe four Inches above it; boil with a gentle Fire for twenty Hours; and thus a black, thin, bitter, aromatic, lixivious Liquor will be obtained; which, being decanted pure, may long be preſerved perfect in a cloſe Glaſs for Uſe, under the Title of *Harvey*'s Tincture of Salt of Tartar.

REMARKS.

The common Spirit conſiſting of Water, Acid, and Alcohol united, coming to boil with the Alcali of Tartar, that ſtill remains oily, makes a mild and ſafe Lixivium; the Alcali being here tempered by the Acid, Oil, and Alcohol: Whence we have a noble kind of Medicine and Menſtruum; wherein if Vegetables be boil'd or digeſted, it diſſolves them to good Advantage. In Surgery it is an exceilent Remedy for cleanſing, deterging, drying and healing all weeping, purulent, putrid, ſanious, and virulent Ulcers, as well the fiſtulous, as the ſinuous, and burrowing; and, alſo, for conſuming proud Fleſh; eſpecially if artificially mixed with a little Oil. It has ſimilar Effects, when uſed internally, in Diſtempers where acid, auſtere, aqueous, mucous, or terreſtrial Matters and Coagulations abound, provided they be not attended with a putrid Diſſolution of the Humours: And hence it is commended in old Obſtructions of the Viſcera, Collections of Water, dropſical Diſpoſitions, the Green-ſickneſs, Jaundice, and cold Gout. It acts ſtrongly as a Diuretic, a Diaphoretic, and ſometimes, as a Purgative; and may be ſafely given in a large Doſe. Two or three Drams thereof, being mollified with an Ounce of the Syrup of the Five opening Roots, and diluted with Fennel-water, will have a very good Effect, being taken in a Morning faſting, and repeated three or four times at due Intervals, or a better than moſt other Remedies. Hence the famous Dr. *Harvey* deſervedly recommends it; though the antient Phyſicians, alſo, were not unacquainted with the like for the ſame Purpoſes, as may appear from *Dioſcorides*.

Helmont's Tincture of Salt of Tartar.

Take the black Salt of Tartar, remaining upon the Diſtillation of Tartar; put it into a large and ſtrong Crucible; burn and calcine it well in the Fire, with Care to prevent the Coals, or other Matters, falling into it, till it becomes white, and all its oily Matter be conſumed. Or, to make more Diſpatch, take a Parcel of the beſt Tartar, and tie it up in Cap-paper, firſt made a little moiſt; then put it into the Fire, and ſurround it every-where with live Coals, and let the Fire at laſt go out of itſelf; then removing the hot Aſhes, an alcaline ſaline Maſs will be found run together at the Bottom; this is called common Salt of Tartar. Let either of theſe Preparations be diſſolved in Water, filtred and exhaled away in a clean iron Pot; and let the Salt be afterwards calcined, and reduced to fine Powder, the finer the better; this will be excellent Salt of Tartar. Then have ready at Hand a tall and dry chymical Glaſs, with a wide Mouth, One-third full of pure and warm Alcohol; let, alſo, the whole Neck of the Glaſs be well heated all round, leſt it ſhould burſt by the Heat of the Salt of Tartar, to be now preſently poured in; fit a Paper Funnel to the Mouth of the Glaſs; and through this pour the Powder of the Salt of Tartar now extremely hot, as it comes from the Fire, and therefore dry, into the Alcohol. If all theſe Particulars are rightly obſerved, the Salt will fall into the Alcohol, with a great Hiſſing and Noiſe, and immediately cauſe an Ebullition. When a ſufficient Quantity of Salt is put in, ſtop the Glaſs ſlightly with a Cork; and, when all is cold, pour in more Alcohol, till the Glaſs be Three-fourths full; ſhake them together, ſo that no Salt may hang on the Sides of the Neck of the Glaſs; but all of it remain entirely under the Alcohol: Otherwiſe theſe adhering Particles of Salt would diſſolve by the Moiſture of the Air, then mix themſelves with the Alcohol, and fruſtrate the whole laborious Operation. Let the Glaſs now be ſet in an Heat of an hundred Degrees, and be often ſhaked, and lightly ſtopped, to exclude the Moiſture of the Air, which is here ſo prejudicial. The Liquor will thus ſoon become of a deep and beautiful red Colour, and contain the manifeſt Virtue of the alcaline Salt, as appears by the Smell and Taſte, though ſcarce by any Effervescence; but eſpecially if it be very cautiouſly inſpiſſated by Diſtillation; for, being afterwards examined, it is found manifeſtly ſaponaceous, and ſomewhat ſaline. If the leaſt Particle of Water be mixed with either Ingredient, no Tincture will be obtained; but the Alcohol remain colourleſs, and tranſparent upon the Alcali, how long ſoever they ſtand together. And thus even the lighteſt Sign of Moiſture will, alſo, appear: Whence I do not wonder to find, that ſome eminent chymical Authors have wrote, that this Tincture was impoſſible; for it cannot be made, if any one, even of the ſlighteſt Circumſtances here required, be omitted. And as to what other Profeſſors of the Art have wrote, that the Colour, by our Method communicated to the Alcohol, ſhould be owing to a ſpontaneous Change thereof in time; this is confuted by the Experiment, and the Marks above deſcribed: But it is eaſy to miſtake in ſo laborious and difficult an Experiment. I have not found the Tincture alcaline; but rather of a compound, ſaponaceous Nature.

REMARKS.

This Experiment, again, ſhews, that pure fixed Alcali has an Apperite of attracting almoſt all Liquids to itſelf, whenever it exiſts by itſelf. Thus it greedily drinks in Water, Acids, and Oils, and Alcohol, alſo, though not ſo ſtrongly, or ſo cloſely, as the former. Hence we have a new Method of making an extremely ſubtile Soap of Alcali and Alcohol; for this Tincture is truly ſaponaceous, as appears by rubbing it between the Fingers, where it has a manifeſt detergent Property, in an high Degree; while pure Alcohol, thus treated, would manifeſt itſelf only by Drineſs. It ſhews itſelf to be ſaline and fiery by its Taſte; it does not, indeed, make a manifeſt Effervescence with Acids, or readily precipitate Bodies diſſolved therein. If the pure Tincture be inſpiſſated by Diſtillation, it leaves a ſaline, ſaponaceous, ſcarcely alcaline, but ſharp, coagulated Subſtance at the Bottom, of a deep-red, or almoſt black Colour. As a Menſtruum, it incomparably diſſolves all diſtilled Oils with great Expedition and Perfection; it, likewiſe, extracts excellent Tinctures from Gum Lac, Myrrh, and Amber: It is recommended by the Chymiſts for internal Uſe, againſt Diſtempers ariſing from a ſtubborn tartarous Matter; but, to ſay the Truth, it cannot be given, unleſs diluted with Water, Wine, or the like mild Liquor otherwiſe; it inſtantly burns the Parts it touches; and, when weakened, as it requires, to what Purpoſe was all the Pains taken to purify the Alcohol, and unite it with the Alcali?

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Alcali? I judge, therefore, that *Harvey's* Tincture of Salt of Tartar affords a more excellent Medicine, with much leſs Trouble. The preſent Operation, however, is by no means uſeleſs; for it teaches many Particulars, ſome whereof are mention'd above.

I have long conſidered upon that caſual Saying of the great *Helmont*, that, if Spirit of Wine be diſtil'd from thoroughly calcined Salt of Tartar, one half of it will be turned to Water. This I underſtood of Spirit only once rectified; eſpecially, becauſe, in another Place, he ſays, the ſame thing happens with Vinegar. But, becauſe the principal Followers of *Helmont* declare, that we are to underſtand this Saying of pure Alcohol, one half whereof is joined to Salt of Tartar, whilſt the other is turned to Water, and, therefore, that true Alcohol conſiſts of theſe two ſeparable Parts; and, alſo, that the Salt of Tartar is thus, alſo, converted into that noble Balſam, or *Samech*, of *Paracelſus*, which miraculouſly heals Wounds, without any Inconvenience; I judge proper here to declare, what I have myſelf found with great Labour. I made a perfect Tincture of the Salt of Tartar, in the manner above deſcribed; it was extremely ſtrong, red, and fragrant, and of a ſharp, fiery, and almoſt alcaline Taſte: I digeſted it upon its Alcali for many Months, then ſet it by four Years; the Salt continued extremely dry at the Bottom, and the Tincture exceeding red above it: I then poured out all this Salt, and the Tincture, into a perfectly dry and clean glaſs Body; they were extremely fragrant. I diſtilled off all the Alcohol with a gentle Fire, having exactly luted the Junctures; the Alcohol was perfectly limpid, ſubtile, and fragrant; the Salt at the Bottom was now of a purple Colour, tho' it was white before; I poured the Alcohol upon its Salt, and diſtilled as before; the Alcohol now roſe with more Difficulty, and a ſaline red Maſs remained behind; the Alcohol was of a fiery Taſte: I thus continued to cohobate it for one-and-twenty times, after which a black ſaline Maſs remained at the Bottom, and the Alcohol came over exceeding ſharp; in the laſt, I urged this black alcaline ſtrong-ſmelling Maſs with the greateſt Heat that Sand could give; upon which there came over, not Alcohol, but Water, tho' I had with the utmoſt Care prevented any Water from getting in. And thus I found, that Water might be obtained from this Salt and Alcohol, but, not half the Quantity in reſpect of the Alcohol; and ſtill I have ſome Doubt, whether this Water did not proceed from the Air, or was not ſecretly taken up upon returning, and diſtilling the Alcohol ſo many times over: This I am certain of, that the Alcohol thus firſt put to digeſt with the Salt of Tartar, for ſo many Months, and afterwards left for ſome Years therewith, then drawn off from it two-and-twenty times, did not make this Salt volatile, but left it fixed, and perfectly black. Having now broke the Veſſel, and taken out all the Salt, I expoſed it, in a hollow Glaſs, in a Cellar, where it ran into a brown Liquor of a ſharp alcaline Taſte, which I reſerved by itſelf. This Labour I undertook, that I might at length be certain of the Nature of Salt of Tartar, and of the Converſion of Alcohol into Water by its means; the Union of Alcohol with Salt of Tartar, by diſtilling it therefrom; and the volatilizing of Salt of Tartar, by means of Alcohol: And hence we ſee what the great Promiſes made about theſe Matters end in. The Alcohol, ſo many times cohobated, was extremely clear, fragrant, of a fiery Taſte, would burn away without leaving any Fæces, and made no kind of Effervеſcence upon the Addition of Acids; and this was the Reward of my Labour.

Tartarum Vitriolatum.

Vitriolated Tartar.

1. Take three Ounces of pure Oil of Vitriol; dilute it with thrice the Quantity of warm Water, in a tall capacious glaſs Body, with a narrow Neck; add to it, Drop by Drop, a Quantity of Oil of Tartar *per Deliquium*, till the Point of Saturation is perfectly obtained; otherwiſe a pernicious Acrimony, either acid or alcaline, remains. In this Experiment a violent Effervеſcence will ariſe; and a white Salt begin to appear at the Bottom, long before the Saturation is completed. After this Point is found, ſhake the Veſſel for a conſiderable time, and taſte the Liquor: If it taſtes neither acid nor alcaline, take a little thereof, and heat it; divide it into two Parts; and to one add a Drop of Oil of Vitriol, and to the other a Drop of Oil of Tartar *per Deliquium*; and, if no Effervеſcence appears in either, the Point of Saturation, here ſo requiſite for medicinal Uſe, is exactly hit. If any Effervеſcence ariſe upon the Addition of the Acid, the Alcali prevails; and, if the Alcali cauſes any Effervеſcence, the Acid prevails; but, when the Equilibrium is obtained, let the Liquor be entirely diſſolved by the Addition of hot Water, ſo that all the Salt may be taken up. Let the Liquor be ſtrained while it is hot, evaporated to a Pellicule, and cryſtallized. A white Salt will be obtained, of a neutral Taſte, that requires a large

Proportion of Water to diſſolve it: What remains cannot be cryſtallized; as happens in the Caſe of Nitre, Sea-ſalt, and almoſt every other Salt.

2. Some eminent Chymiſts, among whom we reckon *Tachenius*, imagine that the Oil of Vitriol, after having ſuffered ſo great a Fire, carries up with it ſome volatilized metallic Part, that gives a noxious Quality to this Salt, not to be eaſily deſtroyed: Hence they endeavoured to obtain this Acid native and ſimple, without Fire, and join it with fixed Alcali of Tartar. They, therefore, diſſolved Vitriol in Water, ſo as to make a dilute and pure Liquor, to which, when filtred, they added Oil of Tartar *per Deliquium*, Drop by Drop; upon which the Liquor grows turbid, and the Iron, in form of yellow Oker, falls to the Bottom: They carefully proceed thus, till no more Precipitate is obtained, upon Addition of the Alcali. This Point they carefully obſerve, and ſet by the Mixture, till all the metallic Fæces are precipitated; then filtre the pure Liquor, inſpiſſate and cryſtallize as before. Thus a *Tartarum Vitriolatum* is obtained without Fire; and, as they ſeem to imagine, without any Suſpicion of a ſharp corroſive Virtue; and if there be no blue, or green Colour remaining in the Liquor, or the Salt prepared from it, the Preparation will be good; but otherwiſe it will retain ſomething of Copper, and prove malignant.

3. When, by the like means, a Salt is prepared with any pure volatile Alcali, and Oil of Vitriol, either alone, or diluted with Water, a like, but a ſemi-volatile and more penetrating Salt is obtained; whereas the former is wonderfully fixed. This Salt, in whatever manner prepared, appears conſiderably ponderous and ſolid; and, yet at the ſame time, is mild and opening.

Remarks.

The Virtue of this Salt is eſteemed highly opening, if taken upon an empty Stomach, diluted with Broth or Whey, and aſſiſted with the Exerciſe of the Body; for thus, by attenuating, reſiſting Putrefaction, and ſtimulating, it opens the obſtructed Viſcera, ſo as to have acquired the Name of the univerſal Digeſtive; but *Tachenius* calls it an unmetallic Vitriol. It appears from various Chymical Proceſſes, that the moſt corroſive Alcalies and Acids grow perfectly mild upon mixing together. Whence we learn, that two Poiſons, as they would prove, if taken ſeparate, may be render'd innocent, if drank mixed together; or even that one may be corrected by taking the other ſoon after. Hence, alſo, we ſee, that Water may lie wonderfully concealed in Salts, and at length be ſet free from them; for the acid Spirit of Nitre contains ſixty Parts of Water, to nineteen of true Acid: Spirit of Salt holds fifty-two Parts of Water, to thirteen of Acid; and Oil of Vitriol ſixty of Water, to thirty-ſeven of Acid; even ſuppoſing all theſe Liquors highly rectified: So large a Quantity, therefore, lay concealed in decrepitated Sea Salt. And hence we learn, that there are but very few ſimple foſſil Acids; as the Acid of Alum, Vitriol, and Sulphur, is the ſame; Aqua-fortis, and Spirit of Nitre, have no Difference; and the Spirit of Sea-ſalt, ſalt Springs, and Sal Gem, are all the ſame. *Boerhaave's Chymiſtry.*

TARTON RAIRE. The ſame as the *Sanamunda*. See Thymelæa.

TATAIIBA *Braſilienſibus*, Marg. & Piſon. *Sive Arbor baccifera Braſilienſis, fructu Tuberculis inæquali, Mori æmulo.*

A Tree growing in *Braſil*, of an aſh-colour'd Bark, and a croceous or reddiſh Wood; the Leaves are acuminated and ſerrated, reſembling, in ſome meaſure, the Leaves of Birch. The Fruit is of the Size of a moderate Mulberry, round, and compoſed of Tubercles of a pale Colour, with many Filaments on the Outſide, which are of a dark-brown Colour, and not very long: This Fruit is eaten, as Mulberries are, either alone, or with Sugar and Wine; it contains within it ſmall whitiſh Grains diſperſed through the Pulp.

The Wood of the Tree is extremely hard, and laſts a very long time, as well in Earth, or Water, as without them, being always green. It is the beſt of all Woods, and excels that of the *Maſarandiba*, in what manner ſoever it be uſed. Of the old Wood they prepare a Tincture of a very fine yellow Colour. The Tree grows every-where in the Woods, eſpecially in maritime Places; and the Fruit is ripe in *May*. *Raii H. P.* 1639.

TATARIA, *Hungarica edulis, Panacis Heraclei folio, ſemine Libanotidis Cachryophoræ*. J. B. *Panaci Heracleo ſimilis Ungarica*. C. B. *Panaci Heracleo ſimilis Tataria Ungarica dicta*. Park.

This is no common Plant, but has a very long and thick Root; for *Cluſius* tells us, that he was preſented with ſome of the Roots, which were as thick as a Man's Arm, and a Cubit or more in Length, by the noble *Balthaſar de Bathyan*, who had order'd them to be brought from *Hungary* beyond the *Danube*, on his Account, that he might plant them in his Garden at *Vienna*. They produced Leaves not much unlike thoſe of Turneps in their Jags and Inciſures; but ſhorter, and in Shape more reſem-

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reſembling thoſe of the Panax, cover'd with a rough lanuginous Subſtance, and of a paliſh-green Colour; after theſe were produced other Leaves with ſmaller Jags, but no leſs rough, from the Middle of which aroſe a ſtriated, concave, and nodous Stalk to the Height of a Cubit, or more, as thick as a Man's Thumb, and as rough as the Leaves, and ſet with leſſer multifid Leaves on broad Pedicles, and cover'd, alſo, with a rough woolly Subſtance; the Top of the Stalk expanded into an Umbrella, reſembling that of the *Panax Heracleus*, on which are the Flowers equal in Shape and Colour, and ſucceeded by a few ſcattering Seeds (for all the Flowers are not fruitful) very thick, and not much unlike the large ſtriated Seed of the *Libanotis Cachryophora*. *Cluſius* had the Root two Years in his Garden, before ever a one of them produced a Stalk and Seed; after which they putrefy'd, and exhaled ſo noiſome a Smell, that he was obliged to throw them away.

The *Hungarians* who live about *Agria*, and alſo, thoſe who border upon *Walachia* and *Moldavia*, in a time of Dearth, make uſe of the Roots for want of better Bread; as *Cluſius* was aſſured by the aforeſaid Nobleman, and other Perſons of Quality, who lived in that Country. *Raii Hiſt. Plant.* 424.

TATÍ. The Name of an extremely minute *American* Bird; I ſuppoſe the ſame as that call'd the Humming Bird. I don't know that it is of any Uſe in Medicine.

TATURA. The ſame as DATURA.

TAUROCOLLA. Glue made of the Ears and Genitals of Bulls. This Sort of Glue was eſteem'd the beſt.

TAURUS. The Bull. See Bos.

TAXUS.

The Characters are;

The Leaves are broader, thicker, and blunter than thoſe of Juniper, and diſpoſed like the Teeth of a Comb. The Flower is amentaceous, conſiſting of a ſquamous Calyx, from whoſe Centre ariſes one Style, furniſhed with a Multitude of Teſticuli or Apices ſhaped like a Muſhroom. The Fruit grows on the ſame Plant with the Flower, but in a different Place, and is pulpous, bellied, and hollow like a Pot, or ſhaped like an Acorn, and containing one Seed.

Boerhaave mentions three Sorts of *Taxus*; which are,

1. Taxus. *Offic. Ger.* 1187. *Emac.* 1370. *Raii Hiſt.* 2. 1416. *Synop.* 3 445. *J. B.* 1. 241. *C. B. P.* 505. *Tourn. Inſt.* 589. *Boerh. Ind. A.* 2. 208. THE YEW-TREE.

This Tree grows in mountainous and rocky Places, and is commonly found in the Weſtern and Southern Parts of *England* in hilly Woods and Hedges. Our Anceſtors planted Yew-trees in Church-yards, on account, it is ſuppoſed, of the everlaſting Greenneſs of its Leaves, which was a Symbol of that Immortality and eternal Life, to which they expected the dead Bodies there depoſited would ariſe, at the general Reſurrection. The Antients, and many of the Moderns, have affirmed, that the Fruit of this Tree is deſtructive and deadly. *Dioſcorides* writes, that thoſe who eat the Berries are ſeized with a Flux of the Belly; and elſewhere he ſays, that the Taxus, taken inwardly, induces a Coldneſs of the whole Body, Suffocation, and ſpeedy Death. *Caſar.*, *Lib. 6. de Bell. Gall.* writes, that *Cativulcus*, King of the *Eburones*, killed himſelf with drinking the Juice of the Taxus. Some there are, ſays *Pliny*, who tell us, that from this Tree the poiſonous Juices, with which the barbarous People tinged their Arrows, were called *Taxica*, though now *Toxica*. But *Voſſius* and *Jo. Bodæus* ſhew, that the Toxicum was another Kind of Poiſon, with which they anointed their Arrows, that Wounds from them might prove mortal: Toxicum, therefore, is ſo called from *Τόξον*, *τόξον*, a Bow. *Matthiolus* affirms, that, in the Mountains of *Trent*, not only Horſes, and other Beaſts of Burden, but ruminating Animals, have died with eating of the Taxus; and that Shepherds, and Cutters of Wood, have been ſeized with burning Fevers, and a Flux, from eating the Berries, to the great Hazard of their Lives. *J. Bauhine*, alſo, tells us, that he has been aſſured by Perſons of good Credit, that, in the Mountains of *Burgundy*, Oxen and Cows have died with eating the Leaves and Bark of this Tree. And *J. Lutz*, an Apothecary of *Kircheuheim*, told him, that a white Turtle-dove, with a black Collar, which he kept in his Houſe, died with eating the Berries; and that, in the Village of *Oberentzingen*, an Aſs died ſuddenly, after eating of the Taxus.

On the contrary, we are of Opinion, that the Taxus is unjuſtly blamed, ſince *Lobel* aſſures us, that Children in *England* uſe to feed on the Berries, without any ill Effects; and that he had taſted them himſelf, towards the End of the Autumn; and that they had no diſagreeable Taſte, only maukiſh and bitteriſh; and that the Swine there fed upon them as freely as on Acorns. Our Countryman *Gerard* relates, that both he himſelf, and great Numbers of his Schoolfellows, had often eaten of the Berries to Satiety, and had ſlept not only under the Shade, but on the Branches of the Yew-tree, without the leaſt Inconvenience. *Camerarius* holds the Taxus to be harmleſs; that its red Berries are greedily coveted by the Birds, who are ſtupefied by them, in ſuch a manner as to be eaſily taken. Either, therefore, the Antients are miſtaken in the Accounts they give us of the Taxus; or the Conſtitution of the Air, or Condition of the Soil, have occaſion'd this Difference in its Quality. The Tree, I confeſs, is of a ſad Green, and its melancholy Aſpect, if I may ſo ſay, ſeems to indicate ſome malignant Quality belonging to it; and at the time it is in Flower, and moſt pregnant with Juice, it may, poſſibly, be noxious to Cattle: However, I affirm nothing; for the Antients themſelves do not talk very conſiſtently, about the noxious and deadly Qualities of this Tree. *Theophraſtus* writes, that ſome Perſons eat the Fruit without Harm; and that the Leaves are mortal to labouring Beaſts, but not to ruminating ones. *Plutarch* ſays, it is hurtful only when it begins to be in Flower. And *Dioſcorides* gives a Hint, that it is not every-where deadly and poiſonous, when he ſays, that the Taxus in *Italy*, and the Southern Parts of *France*, is mortal; that of *Italy*, with its Berries; and the other, with its very Shade. It is ſtrange, that Birds, which eat of the Fruit of the Taxus, ſhould turn black: And we learn from *Virgil*, that this Tree is prejudicial to Bees. Of old the beſt Bows were made of the Wood of the Taxus, which is ſtill highly valued by Joiners, Turners, and other Artificers in wooden Work.

Evelyn ſpeaks of another Species of Taxus, in the Garden at *Piſa*, whoſe Leaves are more like thoſe of the Fir-tree, and the Tree thicker of Leaves and Branches; being clothed with Leaves from the very Root upwards, and ſo thick-ſet with Boughs, and ſmall Branches, as to appear rather like an Hedge than a Tree, though it be, alſo, very tall. This Tree is ſuppoſed, by *Evelyn*, to be the deadly Taxus of the Antients, becauſe *Bellucci*, the Keeper of the Garden, affirms, that the Gardeners, who ſometimes clip the Tree, are not able to continue at their Work above half an Hour at a time, by reaſon of a very ſevere Pain in the Head, excited by the noxious and poiſonous Smell, emitted from it while under Cutting. *Raii Hiſt. Plant.*

2. Taxus; Folio latiori, magiſque ſplendente.

3. Taxus; Foliis variegatis. *H. R. Par. App.*

The Wood is very elegantly coloured, and uſed to make Walking-ſtaves. The Berries eaten induce a Dyſentery and Fever. This was a very noted Tree among the Antients, for its deleterious Quality, which proved mortal, as it was pretended, to all who took it. But though it was formerly accounted a poiſonous Plant, we are now-a-days better informed, and cultivate it everywhere, for the ſake of Ornament, in Gardens. *Hiſt. Plant. adſcript. Boerhaav.*

TAXUS is, alſo, a Name for the Badger; which is thus diſtinguiſh'd by Authors:

TAXUS. Offic. Schrod. 5. 308. Schw. Quad. 130. Ind. Med. 115. Aldrov. de Quad. Digit. 264. Jonſ. de Quad. 101. *Taxus etiam Daxus.* Charlt. Exer. 18. *Taxus ſuillus*, *Meles.* Mer. Pin. 168. *Taxus ſive Meles.* Raii Synop. A. 185. *Meles.* Geſn. de Quad. Digit. 686. THE BADGER.

The whole Animal incinerated, its Blood, and its Fat, are applied to medicinal Uſes. The Aſhes of the burnt Animal are exhibited with Succeſs in pulmonic Diſorders, and an Hæmoptoe. The Blood, pulverized, is ſaid to be good for the Leproſy; and the ſame, diſtilled, to be effectual againſt the Peſtilence. The Fat, as it is a little thicker, ſo it is ſomewhat hotter, and more efficacious, than the Fat of Swine: It gives Relief under Pains of the Kidneys proceeding from the Stone, mitigates the Heat of Fevers, and reſtores Contractions and Weakneſſes of the Joints and Nerves. *Schroder.*

TEAPHIN. This Word occurs in *Nicolaus Myrepſus*, *Sect.* 12. *Cap.* 27. It is mentioned as an Ingredient for a Fumigation, in Diſorders of the Anus. The Word is utterly barbarous; and *Fuchſius*, his Commentator, confeſſes, he don't underſtand what the Author means.

TECMARSIS, *τεκμαρσις*, from *τεκμαίρω*, to indicate, of *τέκμαρ*, a Sign, is a Word uſed by *Hippocrates*, in the Beginning of his Book *de R. V. I. A.* importing a judicial Knowledge, or a Judgment founded upon determinate and neceſſary Signs. This Way of judging is ſyllogiſtic, or rational, and much in Uſe among Philoſophers as well as Phyſicians. It comprehends the *γνῶσις*, *διάγνωσις*, *πρόγνωσις*, and *θεραπεία*, and, conſequently, almoſt the whole Art of Medicine, which depends on artificial Conjectures, or Judgment formed according to the Rules of Art; as ſufficiently appears from thoſe Words of *Hippocrates*, in the Book before-mentioned, *ἐκέτων δ' ἐς τεκμαρσιν λόγιας δε χρὴ* [Judgment formed upon Indications] *for the Management of particular Caſes*, &c. And juſt before, *ἢ ἐπίκαιρα ἐπὶ ἐκάστῃ τεκμαρσιν*, *And ſome Things well accommodated to a Tecmarſis.* Here *Galen* explains *τέκμαρσις* by *ἡ διὰ τεκμηρίων γνῶσις*, *Knowledge acquired from a Sign*, that is, from the proper Signs, or diſtinguiſhing Characters, of Things, or from neceſſary and perpetual Signs, which are called *ſyllogiſtic*. *Erotian*, on *Hippocrates*, expounds *τέκμαρσις* by *σημείωσις*, *A Knowledge acquired by Signs*, with an Eye to the above-quoted Places: He, alſo, ſays, that *τέκμαρ* and *τεκμήριον*, in *Hippocrates*, are *ἴσιαι φωναὶ*, *properly a Sign.*

Tecmar, *τέκμαρ*, though expounded, in *Heſychius*, by *τὸ πέρας ἢ τέλος*, *A Limit and End*, and though *Ariſtotle*, *Lib. 1. Rhetor.* ſays, that *τέκμαρ* and *πέρας* (*Peras*) are the ſame thing in the antient Language, yet it ſeems to mean a Sign in *Hippocr. Lib.*

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Lib. 2. περὶ γυναικ. where it is ſaid, ἄλλῃσι δ' ἄλλη πῃ τέκμαρ ἐχεῖ, *In others the Sign is contained in ſome other Part:* For he ſeems to intend, that the Signs of the Diſeaſe are various in different Subjects. Some, however, underſtand by τέκμαρ the End, and then the Senſe of the Quotation will be, *In ſome Women the End* (of the Diſorder) *is obſervable in a different Part.* For as he had before told us, that a Fit of the Hyſterics induced, at leaſt, a great Heavineſs and Oppreſſion of the Head, ſo here he intends to ſay, that ſometimes the Diſorder ends with ſome ill Effects on a different Part.

TECMERION, τεκμήριον. How it differs from σημεῖον (*Semeion*), we are taught by *Galen*, *Com.* 3. *in Prognoſt.* where he ſays, that Συλλογιστικὸν Σημεῖον, *A Syllogiſtic* (rational, or ſuch as gave Room for Ratiocination) *Sign* was by the Antients called τεκμήριον.

TECOLITHOS, τηκόλιθος. A Name for the *Lapis Judaicus.*

TECOMAXOCHITL. The *Mexican* Name for a Sort of Baſtard *Apocynum*, called *Geſſeminum Hederaceum Indicum* Cornuti. *Geſſeminum Indicum maximum flore phœniceo.* Ferrar. *Pſeudo-Apocynum Virginianum, alias Geſſeminum maximum Americanum flore phœniceo.* Park. It is not uſed in Medicine. *Raii Hiſt. Plant.*

TEGANITES, τηγανίτης, from τήγανον, a Frying-pan. An Epithet for Bread, importing its being tried in a Pan.

TEGULA HIBERNICA. *Iriſh* Slate. It is thus diſtinguiſhed:

Lapis Hibernicus. Offic. Mer. Pin. 213. Dougl. Ind. 50. *Lapis ſiſſilis Hibernicus.* Charlt. Foſſ. 16. *Tegula Hibernica.* Full. Pharm. Ext. 281. *Ardeſia Hibernica, Tegula Hibernica.* Ind. Med. 57. IRISH SLATE.

It is a foſſile Stone, of a black Colour, ſomewhat inclining to an Azure, and of an earthy Taſte; and found in Mines, as well in *England* as *Ireland.*

This Stone is frequently uſed in Contuſions; for it reſolves coagulated Blood: Some ſay it is effectual in Quartan Fevers; but it is of excellent Uſe in all Kinds of Hæmorrhages, uterine Fluxes, and Spitting of Blood. *Dale.*

TELA ARANEI. A Spider's Web. See ARANEUS.

TELAMONES, τελαμῶνες. Lint, applied to Wounds; or the Fillets with which Bandages are made.

TELEPHIOIDES. Baſtard Orpine.

The Characters are;

It hath a Roſe-ſhaped Flower, conſiſting of ſeveral Petals, which are conſtantly placed in a circular Order; from whoſe Empalement riſes the Pointal, which afterwards becomes a roundiſh Fruit, divided into ſix Cells, each containing a ſingle Seed, of the ſame Form with the Cell.

Miller mentions five Species:

1. *Telephioides Græcum, humiſuſum, flore albo. Tourn. Cor.* Low trailing *Greek* baſtard Orpine, with a white Flower.

2. *Telephioides Americanum, erectum, folio ovali ſubtus glauco, flore herbaceo.* Upright *American* baſtard Orpine, with an oval Leaf, which is of a Sea-green underneath, and an herbaceous Flower.

3. *Telephioides Americanum, arboreſcens, fructu parvo, foliis acuminatis. Houſt.* Tree-like *American* baſtard Orpine, with a ſmall Fruit, and pointed Leaves.

4. *Telephioides Americanum, arboreſcens, foliis latis, ſubrotundis, & ſubtus incanis, fructu maximo. Houſt.* Tree-like *American* baſtard Orpine, with broad roundiſh Leaves, which are hoary underneath, and the largeſt Fruit.

5. *Telephioides Americanum, arboreſcens, foliis latioribus ſubrotundis, fructu majore ex longo pediculo pendulo. Houſt.* *American* Tree-like baſtard Orpine, with broader roundiſh Leaves, and a larger Fruit hanging on long Foot-ſtalks.

The firſt Sort was diſcover'd by *Tournefort*, in *Greece*; who conſtituted this Genus, giving it this Name from the Similitude there is between this Plant and the true Orpine of *Imperatus*: This is a low trailing Plant, which ſeldom continues more than two Years.

The ſecond Sort grows in *Barbadoes, Jamaica*, and ſeveral other Places in the *Weſt-Indies.*

The third Sort was diſcover'd by the late Dr. *Houſtoun*, at *La Vera Cruz*; from whence he ſent the Seeds into *England.* This Sort riſes to the Height of eight or ten Feet, having a woody Stem; the Leaves are branched into many Wings, and the Flowers, which are ſmall, and of a whitiſh-green Colour, grow on the under Side of the Leaves, and are ſucceeded by ſmall Fruit, which hath not as yet ripened in *England.*

The fourth and fifth Sorts were diſcovered by the late Dr. *Houſtoun*, at *Campechy*; where they grow to the Height of twelve or fourteen Feet: The Leaves of theſe Kinds are broad, and come out alternately on the Branches. The Fruit of the fifth Sort is about the Size of a ſmall Nut, and is produced on the under Side of the Leaves, hanging on very long Foot-ſtalks. The Fruit of the fourth Sort is as large as Walnuts, and hath hard woody Coverings, or Shells. *Miller's Dictionary.*

TELEPHIUM.

The Characters are;

The Leaves are alternate, the Calyx is polyphyllous, and the Flower reſembling that of the Helianthemum: The Fruit is triangular, unicapſular, and full of roundiſh Seeds.

Boerhaave mentions but one Sort of Telephium; which is the Telephium; Dioſcoridis. *Imperat.* 665. *Polygonum, perenne, procumbens, folio brevione, floribus in capitulum congeſtis* M. H. 2. 592. *Sedum, procumbens, rotundifolium, glaucum, purpuraſcentibus floribus.* M. H. 3. 474. *Boerh. Ind alt. Plant.*

This Plant is emollient, conſolidating, reſolvent, and vulnerary. The Leaves, bruiſed, reſolve Tumors, and accelerate Suppuration; and the bruiſed Root is effectual in Inflammations of the hæmorrhoidal Veins.

TELEPHIUM is, alſo, a Name for the ANACAMPSEROS; which ſee.

TELESPHORUS. See ACESIUS, and ÆSCULAPIUS.

TELLINA. Offic. Jonſ. Exang. 48. *Tellina ſecunda.* Rondel. de Aquat. 2. 7. Aldrov. de Exang. 518. Geſn. Aquat. 940. *Tellina.* Charlt. Exang. 67. Bellon. de Aquat. 403. *Maris Italici.* Bonan. 104. n. 57. *Tellina intus ex Viola purpuraſcens, in ambitu ſerrata.* Liſt. Hiſt. A. A. 190. *Subfuſca anguſtior intus purpuraſcens.* Ejuſd. Hiſt. Conch. 3. n. 217. THE LIMPIN.

Freſh Limpins are good for the Belly, eſpecially the Liquor of them: Salted and burnt, then triturated, and inſtilled with Reſin, they prevent the Hairs of the Eye-lids, which have been pulled out, from ever growing again. *Dioſcorides, Lib.* 2. *Cap.* 8.

TELMA, τέλμα, is ὁ τύπος πηλώδης ὕδωρ ἔχων, *A clayey or muddy Place holding Water.* And τελματώδεα, *telmatodea*, in *Hippocrates, Lib.* περὶ ἀδένων, are the ouſy, moiſt, and ſpongy Parts of the Body, which receive the ſuperfluous Humours, as where he ſays, ὅσα ὧν τελματώδεα ἐκεῖ αἱ ἀδένες, *So that where the moiſt and ſpongy Parts of the Body are, there you meet with Glands:* The Term being tranſlated, by a Metaphor, from ſignifying ouſy, boggy, and marſhy Places of the Earth, as appears from the following Expreſſion a little after; οὔ γὰρ ἐν τοῖσι τέλμασι τῆς γῆς οὐ καθύσεσιν, οὐ φύεται τὸ σπέρμα, *For neither does Seed grow in Bogs, and warry Soils.*

TELON. Fire. *Rulandus.*

TELUM. A Dart. Tho' the modern way of making War has render'd a Detail of the Method of curing Wounds inflicted by Arrows and Darts of leſs Importance, it is neceſſary to take notice of the Artifices employ'd by the Antients for the Extraction of Darts, and curing the Wounds thereby inflicted.

Darts, and other miſſile Weapons, which have penetrated into the Body, and there remain, are oftentimes extracted with great Difficulty; which proceeds ſometimes from the Kind of Weapon, with which the Wound is inflicted, ſometimes from the Place in which it is lodged. All Darts, or other like Weapons, are extracted the Way, by which they enter'd; or by that to which they tended: In the firſt Caſe, the Weapon makes a Way for itſelf, by which it may return; in the other, a Paſſage is prepared for it by the Knife in cutting the Fleſh againſt the Point of the Weapon. If the Dart, or the like, has not deeply penetrated, but is lodged in the outer Fleſh, or, at leaſt has not paſſed through the larger Veins, and nervous Parts, the beſt Method is to extract it the Way by which it enter'd; but, if the Paſſage, by which it muſt return, be longer than what remains to break through, and it has already made its Way through the Veins and Nerves, it will be moſt convenient to open a thorough Paſſage for it, and extract it the oppoſite Way, as being the neareſt, as well as ſafeſt. And in one of the larger Members, if the Point be paſſed through, the Wound is the eaſier to be healed, as giving an Opportunity for the Application of Medicines to both Orifices; but, if the Weapon is to be retracted, the Wound is to be enlarged, that the Extraction may be the eaſier, and the Inflammation the leſs, which is always increaſed from a Laceration of the Parts by the Weapon in its Return. If a Wound be opened on the other Side, it is to be ſufficiently large, ſo as not to be ſubject to Enlargement, from the Tranſition of the Weapon; and, in ſhort, care is to be taken in both reſpects of wounding a Nerve, or Artery, or one of the larger Veins; but, if any ſuch Misfortunes ſhould happen, the Part, as ſoon as diſcover'd, is to be taken up with the blunt Hook, and cut off with the Knife. When the Inciſion is large enough, the Weapon is to be extracted, the ſame Care being taken, that none of the Parts, whoſe Security was before recommended, be injur'd by its Extraction.

OF EXTRACTION OF ARROWS.

Thus much has been ſaid of Extraction of miſſile Weapons in general; but there are, beſides, ſome particular Methods of Extraction properly belonging to the ſeveral Weapons. Nothing penetrates ſo eaſily, and lodges ſo deeply in the Body, as an Arrow, not only becauſe it comes with great Violence, but, alſo, on account of its narrow and ſlender Make: For theſe Reaſons, it oftener requires to be extracted at the adverſe Part, than retracted the Way by which it enter'd; and the rather, becauſe it is generally armed with Barbs, which cauſe a greater Laceration of the Parts in Retraction, than in Propulſion. For extracting

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an Arrow, then, a Paſſage being opened, the Fleſh is to be drawn aſunder with a Steel Inſtrument, of the Figure of the *Greek* Letter *v*; and if the Point, or Head, appears with the Shaft faſtened to it, the Arrow is to be propelled, or thruſt forwards, till it may be taken hold of on the other Side, and pulled out. If the Shaft be fallen out, and only the Iron Head remains within the Body, it is to be taken by the Point, with the Fingers, or with the Forceps, and ſo extracted. Nor is there any other Method of extracting an Arrow, when it is thought moſt convenient to do it, the Way by which it enter'd; for the Wound muſt be enlarged; and the Shaft, if there be any, if not, the Iron alone, muſt be drawn out. If there appear any Spicula, or Barbs, and they are but ſhort and ſlight, they are to be broken with the Forceps, and the Arrow is to be extracted without them: If they are thick and ſtrong, they are to be ſheathed in ſlit Reeds, to prevent their lacerating the Parts, and ſo pulled out.

Of extracting broad Darts.

If a broad Dart be lodged in the Fleſh, it cannot conveniently be extracted on the other Side, becauſe that would be to add one large Wound to another: It is to be pulled out, therefore, with an Inſtrument which the *Greeks* call Διοκλέους γραφικον, *The Graphiſcus of Diocles*; who was one of the greateſt Phyſicians among the Antients. This Inſtrument conſiſts of an iron, or a copper Plate, which at one End is furniſhed with an Hook on each Side, bent downwards; at the other End it is doubled in on the Sides, with an eaſy Slope from the Extremity to the folded Part; and a Slope, alſo, in the Part which is perforated. This Inſtrument is introduced athwart the Weapon, till it reaches its Bottom, when they turn it a little, that it may receive the Point within its Perforation; which done, the Operator, with two Fingers under the Hooks, at the other End of the Inſtrument, extracts both that and the Weapon together.

Of extracting some other Kinds of Weapons.

A third Kind of Weapons, which ſometimes require to be extracted, are leaden Balls, Stones, and the like, which have their whole Subſtance buried within the Skin. In all theſe Caſes the Wound muſt be enlarged, and the offenſive Body extracted with the Forceps by the Way it entered.

But there is, beſides, an additional Difficulty in all Wounds, if the Weapon ſticks or lodges in a Bone, or in a Joint between two Bones. If it be fixed in a Bone, it is to be moved, and gently agitated, till it be looſen'd from the Place in which it lodged, as the manner is in drawing Teeth; and the Weapon ſeldom or never fails to follow, upon drawing; but, if it ſtays, ſome Inſtrument muſt be uſed to diſlodge it. The laſt Method, where other means of Extraction fail, is to make a Perforation near the Place, with an Inſtrument for that Purpoſe, and from that Perforation to cut the Bone, towards the Seat of the Weapon, in the Figure of the Letter V; which done, the Weapon muſt of Neceſſity be looſened, and may eaſily be ſeparated.

If the Dart, or other miſſile Inſtrument of War, have made its Way through the Joints, and lodged itſelf between two Bones, the two Limbs, near the Wound, are to be ſwathed, and then pulled and drawn this Way and that Way, that the Tendons may be diſtended; by which means more Space will be left between the Bones, and ſo the Weapon may be extracted without much Difficulty, Care being taken, as before adviſed, that no Nerve, Vein, or Artery, be wounded by it in the Extraction.

Of extracting poisoned Darts, or other Weapons.

Poiſoned Weapons are to be extracted by the ſame Methods, if poſſible, as the others, only greater Speed is required; and, moreover, the ſame means are to be uſed as for drinking of Poiſon, or the Bites of Serpents. The Method of Cure, after Extraction of the Weapon, is the ſame here, and in all other Caſes, as it would have been, if the Weapon had never lodged in the Wound. *Celſus, Lib. 7. Cap. 5.*

Darts, and other Kinds of miſſile Weapons, differ in Subſtance, Figure, Magnitude, Number, Structure, and Effects. With reſpect to Subſtance; as to the Shaft, it may be of Wood or Cane; and for the Head, it may be made of Iron, Braſs, Tin, Lead, Horn, Glaſs, Bone, or even of Wood or Cane, as well as the Shaft; ſo many Differences are to be found, eſpecially among the *Egyptians*. As to Figure, ſome are round, others angulous, as are thoſe which are triangular; ſome cuſpidated or hamated, as they are called, ſuch are thoſe with three Points; ſome are barbed, others not; and of thoſe which are barbed, ſome have their Barbs inflected backwards, that they may wound and enter the Parts in Extraction; others have them directed forwards, that they may do the ſame in Impulſion; ſome, again, have their Barbs oppoſitely diſpoſed in ſuch a manner, after the Figure of a Thunderbolt, that, whether they are retracted or impelled, they wound alike; others, which move on an Hinge, have their Barbs contracted, but expanded by drawing, and by that means impede the Extraction of the Dart. With reſpect to Magnitude; ſome are three Digits in Length, others but one, which the *Egyptians* call *Mitta*; others are of a middle Length. With regard to Number; ſome are ſimple, others compound, being furniſhed with ſlender Spikes of Iron, which, in Extractions remain behind in the Body. With reſpect to their Make or Structure; ſome have the End of the Shaft firſt ſharpened, and then inſerted into the Head; others have a Tube, into which the Head is inſerted; ſome have the Shaft firmly faſtened to the Head; others but ſlightly, to the end that in Extraction they may be ſeparated, and the Head remain behind. As to their Effects, ſome are medicated, or poiſoned, others not.

We have given you the Characters by which Darts differ from each other, and are now to ſhew the Methods of their Extraction from the Bodies of thoſe who are either wounded in War, or otherwiſe, whether voluntarily or involuntarily, whatever may be the Occaſion, or whatever the Subſtance of the Dart, by which the Wound is inflicted. Darts may be extracted from the Body, either by Attraction or Impulſion; Where the Wound is but ſhallow, the Extraction is performed by the firſt Method; as it is, alſo, in deep Wounds, when it is dangerous to open a Paſſage on the oppoſite Side, on account of an Hæmorrhage, or Conſent of Parts [Συμπαθείας]. The Method by Impulſion is to be preferred, when the Weapon has deeply penetrated, and the Remainder of the Paſſage to the oppoſite Parts is but ſhort, and not incommoded by Nerve, Bone, or any other thing which may forbid a Section: But when the Weapon is fixed in the Bone, there is no other Method but Attraction to be uſed.

If, then, the Weapon appears in Sight, we immediately ſet about extracting it: If it be remote and latent, the Patient, ſays *Hippocrates*, is, if poſſible, to be placed in the ſame Poſture in which he was wounded, and the Wound explored: If this cannot be done, he muſt, at leaſt, lie in a Poſition the moſt conformable that may be to that Poſture, and the Wound is to be probed. And if the Weapon be fixed in the Fleſh, we are to pull it out with the Hands, by the Shaft, or the Part which is principally of Wood, if not fallen out; but if this Part be fallen out, or ſeparated from the Head, the Extraction muſt be performed with the Forceps contrived for the pulling out of Teeth, or Roots, or Weapons of this Kind; and the Fleſh muſt be cut, if the Wound be not large enough to admit the Inſtrument. If the Dart, or the like, has penetrated to the oppoſite Parts, ſo as to render it impoſſible to extract it the Way by which it entered, we are to open it a Paſſage by dividing thoſe Parts, and bring it out through the Section, either extracting it in the Manner above directed, or impelling it, either by the Shaft, or, if that be fallen out, by introducing ſome impulſory Inſtrument, taking due Care, that no Nerve, Tendon, Artery, or any other neceſſary Part, be divided; for it would be a Shame, in extracting the Weapon, to make a worſe Diſorder than that cauſed by the Dart. And here, if the End of the Weapon inſerted in the Shaft be ſharp, which may be known by probing, it is to be propelled, or thruſt forward, by the Help of a female Inſtrument, adapted and introduced for that Purpoſe: If the End of the Weapon be hollow, or tubulous, the Propulſion is effected by a male Inſtrument. If the extracted Head appears with Indentments, ſo as to give Occaſion for ſuſpecting Spikes inſerted in it, the Wound is again to be ſearched, and the Spikes extracted: When the Head is barbed both Ways, and, therefore, cannot be propelled or retracted, Inciſions are to be made in the adjacent Parts, that the Weapon, being laid bare, may be extracted without Moleſtation: Some ſheath the Barbs in a Reed; and by that means ſecure the Fleſh from Laceration, in the Extraction. If the Wound be free from an Inflammation, after convenient Sutures, we heal it by the common Method of treating green Wounds; if the Part be inflamed, we uſe Embrocations, Cataplaſms, and other Topics proper for an Inflammation. If the Weapon be poiſoned, we cut away, if it be poſſible, all the infected Fleſh, which is known to be ſo by its Difference from what is ſound, in appearing pale, livid, and, as it were, mortified. The *Dacians* and *Dalmatians* are reported to anoint the Barbs of their Arrows with *Helenium*, called, alſo, *Ninus*, which, if it mixes with the Blood of the wounded Perſon, proves mortal, though, if it be eaten by them, it does them no manner of Harm. If the Weapon be fixed in the Bone, we make a new Search with the Probe; and, if the Fleſh be an Impediment, we cut it away, or lay it open: If the Head be deeply lodged in the Bone, which is known by its Firmneſs, in not being ſubject to Concuſſion, though Violence be offered, the Bone is to be cut round about, or, if it be thick, perforated, in order to diſlodge the Weapon.

If the Dart, Arrow, or the like, be fixed in ſome principal Part, as the Brain, Throat, Heart, Lungs, Liver, Stomach, Inteſtines, Kidneys, Uterus, and mortal Symptoms already appear, and the Extraction cannot be made without much Trouble and Difficulty, we decline the Operation, not only on account of the Impoſſibility of Succeſs, but leſt we ſhould expoſe ourſelves to the Reproach of the Ignorant. If the Event be dubious, the Extraction is to be undertaken, Warning being firſt given of the Danger: For many have recovered of a Wound in ſome principal Part, beyond all Hope, a Suppuration ariſing therein, and even a Lobe of the Liver, a Part of the Omentum, and of the Peritonæum, and even the entire Uterus, have been often known to be removed; and yet the Conſequence has not been Death;

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and we frequently use Bronchotomy in a Quinsey. In such Cases, to leave the Weapon in the Part induces inevitable Death, besides an Imputation of Cruelty and Inhumanity upon the Art; whereas the Extraction of it has been the means of saving many Lives.

It is not difficult to know whether some principal Part be wounded; for it may be discovered by peculiar Symptoms, as well as from the Excretions, and the Situation of the Parts. A Wound in the Membranes of the Brain is succeeded by a violent Pain all round the Head, a Fervor of the Eyes, a Redness of the Tongue, and a Disorder of the Reason. If the Wound reaches the Brain, the Patient falls down, loses his Voice, vomits Bile, distorts his Face, bleeds at the Nose, and discharges a white and pultaceous Humour at the Ears, if there be an Evacuation of Sanies from the Part affected. If the Weapon be fixed in the Cavity of the Thorax, so as that a Space be left for it, the Breath passes through the Perforation. If the Heart be wounded, the Weapon appears about the Left Breast, not as if it had penetrated into a Cavity, but, as it were, fixed in another Part, and sometimes seems to have a pulsatory Motion; there is, also, an Excretion of black Blood, if there be a Passage for it, with an universal Coldness, Sweat, Fainting, and Death speedily follows. A Wound of the Lungs is succeeded by a Discharge of spumous Blood, through the Perforation, if there be Room for it, if not, it is discharged mostly by Vomiting, the Vessels about the Neck are elevated, the Tongue changes Colour, there is a great Respiration, and a Desire of cold Water. In a Wound of the Diaphragm, the Weapon at the spurious Ribs appears fixed, there is a great Inspiration, with a Pain, and an universal Anguistation of the Parts about the Shoulders. A Wound in the Abdomen is manifest from the Excrements, if there be room for it; or else from the Weapon, when extracted, or the Shaft broken within; there is a Vomiting of Chyle, and a Discharge of the Excrements. When the Bladder is wounded, there is an Effusion of the Urine.

As for Extractions in these Cases, when the Brain, or its Meninges, are wounded, we extract the Weapon through the Perforation of the Cranium. In the Thorax, if the Weapon resists, we make a moderate Incision between the Ribs, or even cut out a Rib, placing a Meningophylax [an Instrument to guard the Membrane]. We take the same Method in Wounds of the Abdomen, Bladder, and other deeply seated Parts; that is, if the Weapon readily follows, we extract it without Hesitation; otherwise we enlarge the Perforation, and treat it as other recent Wounds are treated; only, for the Abdomen, a Suture, also, may be necessary.

If the Weapon be fixed in some large Vessel, as the internal Jugulars, the Carotides, or the large Arteries about the Groin, or Armpits, and a larger Hæmorrhage is to be feared from the Extraction, a Bandage is to be applied, above and below the Place, before you make the Extraction.

If, by the Weapon, one Part be fixed to another; as, for Instance, the Arm to the Thorax; or the Cubit to other Parts of the Body; or the Feet to one another; if both Parts are not throughly perforated, we take hold of the external Part of the Weapon, and extract it, as in a single Perforation: But, if it has penetrated through both Parts, we cut the Shaft in the Middle, and extract the Pieces.

It often happens, that Stones, ragged Flints, Pieces of Lead, and the like, discharged from Slings, by the Violence of their Motion, and the Angulosity of their Figure, penetrate into the Body: These discover themselves by a rough and unequal Tumor; and in that the Division they make has no direct Course; it is, also, larger, the Flesh appears contused and livid, and the Pain is attended with a kind of Heaviness. In such a Case, the offending Masses are to be dislodged, and extracted by a concave or vulnerary Probe, or some other fit Instrument; or, if the Wound will admit of it, may be taken out with the Forceps contriv'd for drawing Teeth; or that for pulling up Roots [ἐξαιρέσεως ἢ ῥιζαίσεως.] There are many Instances in which the Weapon has lain concealed within the Body, a long time after the Wound has been cicatrized, and has at last discharged itself through an Abscess, arising and breaking in the same Place. P. *Ægineta, Lib. 6. Cap.* 88.

TEMACHOS, τέμαχος, from τέμνω, to cut, is a Piece separated from the Whole by Section. *Lat. Tomaculum.* It is the same as τόμος, *Tomos*; but is chiefly spoken of Pieces or Fragments of Fishes, as is observed by the Scholiast on *Aristophanes's Plutus*, where he says, that *Temachos* is spoken of a Piece or Fragment of a Fish, or a Cake, but not of Flesh. The same Scholiast, on the Comedy of *the Frogs*, expounds τεμάχη by κόμματα τῶν ἰχθύων, *Slices of Fishes*. The Word, as well as its Diminutive, *Temachion*, τεμάχιον, is used in the same Sense, that is, for a Piece, Cut, or Slice of a Fish, in several Places of *Hippocrates, de Morbis & de intern. Affect.*

TEMPERAMENTUM. A Temperament, or Constitution. The antient Division of Constitutions was into hot, cold, moist, dry, bilious, sanguine, phlegmatic, and atrabilarious.

The Characteristics of an hot Constitution were said to be, a large Quantity of yellow gross Hairs all over the Body; a reddish Colour of the White of the Eye; a very red Colour of the Carunculæ Lachrymales, Face, Lips, and Mouth; a slender, agile, robust, and hot Body; a large and frequent Pulse; a Propensity to Anger; which, however, is soon over: Such Persons seem to have robust and contracted Vessels, strong Viscera, and very dense and acrid Humours, in a brisk Motion. Moistening, diluting, and temperating Substances are beneficial; whilst, on the contrary, all heating things are highly prejudicial to such Persons.

The Signs of a cold Temperament are directly opposite to the former; such as a Smoothness of the Skin; small Hairs; a pale Colour; a gross, slow, weak, cold, and easily swelling Body; a small and slow Pulse; Insensibility; and Fearfulness. The Humours of such Persons are mild, aqueous, pituitous, and languid in their Motion, whilst their Solids are lax and flaccid: Corroborative and heating Substances are beneficial, whilst cold, moist, and relaxing Things, are injurious to such Persons.

A dry Temperament is discover'd, almost, by the same Signs with those of the hot Kind, if there is, at the same time, a Leanness of the Habit. The Vessels of such Persons are contracted, and their Fluids small in Quantity, and almost acrid. Moistening, diluting, and temperate Substances are beneficial, but all heating Things injurious, to such Persons.

A moist Temperament approaches greatly to that of the cold Kind; for, if in the former there is a Swelling of the Body, they are, in other respects, the same.

A bilious Temperament is known from the great Quantity of black and curl'd Hairs; an Hardness, Extenuation, and Leanness of the Body; a dark-brown Colour; large Veins; a quick and large Pulse; Obstinacy, and a Propensity to Anger. In such Persons, the solid seem to exceed the fluid Parts. This Temperament approaches to those of the dry and hot Kinds. Hot and drying Substances are prejudicial, but moistening and refrigerating Things beneficial, to Persons of bilious Temperaments.

A sanguineous Temperament is discover'd by a small Quantity of Hairs, of a dark-brown, or whitish-yellow Colour; a large Quantity of soft Flesh; large blue Veins, distended with Blood; a rediish Colour; a Propensity to Anger; and a flexile Mobility of Body. Evacuating and temperating Substances are beneficial, whereas heating, and drastic stimulating Things are pernicious to such Persons.

A phlegmatic Temperament is known from the great Smoothness of the Skin; white, slender, and slow-growing Hairs; a Whiteness, Swelling, Softness, and Fatness of the Body; narrow and latent, or deep-seated Veins. Such Persons seem to have narrow Blood-vessels, but somewhat larger lateral Vessels. This approaches to the cold Temperament; for which Reason, moist and cold Things are prejudicial, whereas heating, corroborating, and drying Substances are beneficial, to Persons of phlegmatic Temperaments.

The Signs of a melancholic Temperament are, Smoothness; highly black Hairs; extreme Leanness; great Drines of the Skin; and the blackish Colour which is observed in all the Parts of such Persons Bodies; Slowness; Constancy; long Retention of Anger; and great Penetration of Understanding: For this Reason, such Persons seem to have constricted, robust, and lean Vessels, and dense tenacious Humours, so thoroughly mix'd, that their Parts cannot be easily separated or changed. Such Persons are greatly injur'd by hot, drying, and acrid Substances; whereas moistening, refrigerating, relaxing, emollient Substances, and such as gently dissolve without any Acrimony, are beneficial to them.

This Doctrine is of great Advantage in investigating the Natures of those Diseases, which may be foreseen to arise from, and be most incident to, each particular Temperament. Upon this Doctrine, also, depends a great Part of the predisposing Causes of Diseases. *Boerhaav. Institut.*

TEMPERANTIA. Temperating Medicines.

Among the various Alteratives, we may justly reckon temperating Medicines, which not only check the hot intestine Motion of the sulphureous Particles in the Blood, but, also, contemperate, subdue, and consequently refrigerate, the excessively hot bilious Humours in the Intestines. Among Vegetables, the most considerable of this Kind are, the Root and Herb of Sorrel, Wood-sorrel, Citrons, China Oranges, Pomegranates, Currants, Strawberries, Barberries, Raspberries, Cherries, and their prepared Juices; Syrups and Waters distil'd from these, when recent; the Four greater cold Seeds, and Decoctions of Barley. Among Animal Substances, the most considerable, of a temperating Kind, are Whey, Butter-milk, Juice of River-crabs, Decoctions of Tortoises, weak Decoctions of the Shavings of Hartshorn and Vipers-grass, with or without Barley; Gellies of Hartshorn, and the Water distil'd from Shavings of Hartshorn. Among mineral Substances, the most efficacious of this Class is well purified Nitre; or, which is still better, Nitre regenerated from Aquafortis, by the Addition of Salt of Tartar. And, among Chymical and Pharmaceutical Preparations, the most considerable are, the essential Salt of Wood-sorrel; Cream of Tartar; Phlegm of Vitriol; sulphurated Clyssus of Antimony; and the Tinctures of Roses, Daisie-flowers, and Violets, prepared with Spirit of Vitriol.

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Temperating Medicines act in three Manners; for, by means of their acid Salt, they bridle the volatile sulphureous Particles; and, by fixing their hot, internal, vertical Motion, and coagulating them, they, in some measure, lessen them: Or they operate by a certain expansive aereo-elastic Quality, such as that of which Nitre is possessed, which, being composed of an acid and alcaline Salt, contains not only a large Quantity of sulphureous Particles, but, also, of an aereo-ethereal Fluid, by which it dispels the hot Matter in a violent, preternatural and vortical Motion, and produces, as it were, an Explosion of it from the Centre to the Periphery; whilst, at the same time, by the neutral Salt it contains, it resolves, attenuates, and separates the thick Matter, which is the Matrix of the Heat and Sulphur, the quick Motion of whose Parts it stops by its subtile Acid: Or they exert their Operation, by diluting and disjoining the adhering Parts, and restoring the Moisture consumed by the Heat, whilst, at the same time, they relax the too great Elasticity of the Vessels on which the Heat depends; as is principally observed in aqueous Liquors, such as Whey, Decoctions of Hartshorn, and of Barley.

These temperating Medicines are certainly of great Use in Medicine, where a greater natural Heat is to be extinguished; for which Reason, the Physician can by no means be without them in Fevers of all Kinds; as, also, in Inflammations, Spasms, and Pains, which are always attended with an hot and excessive Commotion of the Blood. But nitrous Preparations are justly preferable to Acids, which act by fixing and coagulating the Fluids; for Nitre is not only refrigerating, but, also, relaxes the rigid and spasmodically constricted Parts, whilst, at the same time, it promotes a Discharge of the Urine and Excrements. As other refrigerating and acid Substances rather condense and coagulate the Fluids, so Nitre rather colliquates, rarefies, and attenuates, the thick and viscid Humours. Hence Nitre reduced to a Powder, or previously dissolved in Water, when mix'd with black coagulated Blood, renders it more fluid and florid: For this Reason, it is not only far more proper than other Acids, in Inflammations, and inflammatory Fevers, arising from black, coagulated, and incarcerated Blood; but, also, highly beneficial in defending the Body against Inflammations, because it effectually fuses and dissolves the tenacious and thick Matter of the Serum, a large Quantity of which appears in the Blood of Persons subject to inflammations.

In chronical Fevers, such as those of the slow and hectic Kind, which generally draw their Origin from some Fault or Corruption of the Viscera, and especially when they are attended with a Cough, or a Spitting of Blood, or when the Lungs are anyway affected, we are not to exhibit Acids, but nitrous and diluting Substances, especially those furnished from the Animal Kingdom, such as Whey, together with the Waters, Decoctions and Gellies of Hartshorn. Where a febrile Heat accompanies Diarrhœas, Dysenteries, or a Cholera, we are, also, to abstain from acid and refrigerating Medicines, and rather to use diluting, gelatinous, and mucilaginous Substances, with an Addition of the temperating and absorbent Powders, and a Grain or two of Nitre. *Frederic Hoffman.*

TEMPERIES. The same as TEMPERAMENTUM.

TEMPLUM SOSTRATI. The Name of a Bandage described by *Galen*, in his Treatise of Bandages.

TEMPLUM PARVUM APOLLONII TYRII. The Name of another Sort of Bandage, described by the same Author, in the above-quoted Treatise.

TEMPORA. The Temples. *Tempora Morborum* are the Times of Diseases, that is, their Beginning, Increase, State, and Decline.

TEMPORALIS MUSCULUS. The Temporal Muscle. See CAPUT.

TENACULA. A Chirurgical Instrument, contrived for laying hold of any thing, of which there are many described by Chirurgical Authors.

TENCHA. The Tench. See TINCA.

TENDO. A Tendon. See MUSCULUS.

For Sutures of the Tendons, see SUTURA.

For Wounds of the Tendons, see VULNUS.

For the Method of treating a Tendon prick'd in Bleeding, see PHLEBOTOMIA.

TENESMUS. A Tenesmus is a too frequent, and almost continual, tho' ineffectual, Desire of going to Stool; since either nothing at all, or only a small Quantity, of mucous, viscid, bloody, or purulent Matter is discharged. This Disorder may be produced by a Dysentery; a Diarrhœa; the Hæmorrhoids; that Species of Worms call'd *Ascarides*; the Stone in the Bladder; a Weakness, or Ulceration, of the Sphincter Ani; or an irritating Humour in the Intestinum Rectum. In a Tenesmus, the Inclination returns more frequently than in a Dysentery, and the Pain is principally confined to the Intestinum Rectum. A Tenesmus is generally less dangerous than a Dysentery, except when it is accompanied with an Ulcer of the Intestinum Rectum, a Fistula in Ano, or a falling down of the Rectum. The Regimen, and Method of Cure, proper in a Tenesmus, are the same with those prescribed in a Dysentery. In this Disorder, great Relief is afforded by a Fomentation of warm Milk, in which Elder-flowers have been boil'd; as, also, by a Clyster of Mutton-broth, or an emollient Clyster, in which Earth-worms have been boil'd. The Medicines, at present most generally used, for the Cure of a Tenesmus, are these following.

Take of the Pulvis Sanctus, and Rhubarb, each one Scruple, of the Oil of Cinnamon, one Drop; of *London* Laudanum, half a Grain; and of the Syrup of Violets, a sufficient Quantity, for making into a Bolus, to be taken in the Morning, and repeated, as the Situation of the Patient requires.

At Night, a Paregoric may be exhibited, and Clysters afterwards used; for which Purpose,

Take of Whey, or Mutton-broth, four Ounces; of Canary Wine, two Ounces; of Gum Arabic, half an Ounce; of Gum Tragacanth, one Dram; and of crude Opium, two Grains. Make into a Clyster, to be injected twice or thrice a Day.

Or,

Take of the Decoction of Mallow-leaves, and Canary Wine, each three Ounces; of Suet, impregnated with the Juice of Melilot, an Ounce and an half; of Sperma Ceti, and the Confection of *Fracastorius* without Honey, each one Dram and an half; one Yolk of an Egg; and of *London* Laudanum, four Grains. Make up into a Clyster.

Or,

Take of the Roots of Tormentil, Bistort, and Pomegranate-peel, each one Dram; and of the Leaves of red Roses and Balaustines, each half an Handful. Boil in a sufficient Quantity of Spring-water; and to three Ounces of the Liquor, when strain'd, add three Ounces of red Wine, two Yolks of Eggs, and of *London* Laudanum, five Grains. Make all into a Clyster.

Afterwards, continue the following Medicine for some time.

Take of the Confection of *Fracastorius* without Honey, one Scruple; of Sperma Ceti, fifteen Grains; of the Species Hyacinthæ, *Japan* Earth, red Coral, and *Armenian* Bole, each eight Grains; of the Oil of Nutmegs, one Drop; and Syrup of red Roses, a sufficient Quantity for making a Bolus, to be taken twice a Day, in a small Quantity of the Tincture of red Roses.

In a Tenesmus, the last Refuge is to Opiates.

The Disorder which the *Greeks* call τενεσμὸς and the *Latins Tenesmus*, bears a great Affinity to what we commonly call Gripes, which it often precedes and follows. In a Tenesmus, as well as in Gripes, there is a Pain of the Anus, and a frequent Desire of going to Stool; whilst a mucous Substance, full of Phlegm, and somewhat bloody, is discharged. And as the Ulcer of the Intestinum Rectum increases, a purulent Matter is eliminated. In this Disorder, it sometimes happens, that the Excrements resemble undigested Aliments. When pregnant Women are seized with a Tenesmus, it frequently causes a Miscarriage. This Disorder is easily cured, and, of itself, rarely proves mortal, especially when the Patient is free from a Fever, and retains his natural Appetite for Food. A Tenesmus happening in the Autumn is generally contagious, and, for the most part, terminates in Gripes. And as this Case is generally dangerous in Adults, so it proves mortal to Children. An inveterate and long-standing Tenesmus sometimes terminates in the Iliac Passion; or, when it proceeds from Phlegm, in a Pain of the Colon: But, if it proceeds from Bile, it is generally succeeded by Gripes. A neglected Tenesmus often leaves behind it a foraid and purulent Ulcer, which degenerates into a Fistula, nor to be cured without the greatest Difficulty. *Lommii Medicinal. Observat.*

TENGA. See *Palma*; *Indica*; *coccigera*; *anguilsa*.

TENON, τένων, a Tendon. See TENDO.

TENONTAGRA, τενοντάγρα, from τένων, a Tendon; and ἄγρα, a Seizure. A Species of Arthritis, seated in the larger Tendons; for Instance, in the tendinous Ligaments of the Nucha. The Word occurs in *Cœlius Aurelianus*, *Lib.* 5. *Chronic. Cap.* 2. near the Beginning.

TENONTOTROTI, τενοντότρωτοι, from τένων, a Tendon, and τρωτὸς, of τιτρώσκω, to wound. Such as are wounded in the Tendons. *Galen de C. M. P. G. Lib.* 3. *Cap.* 2.

TENOR, τόνος. See TONOS.

TENSIO, τάσις, the same as DISTENSIO, or DISTENTIO; which see.

TENSIVUS, τανώδης, tensive. An Epithet of a Pain accompany'd with a Tension, and proceeding, as *Galen* says, *de Loc. affect. Lib.* 3. *Cap.* 9. from a Flatus, or Spirits.

TENSOR

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TENSOR *Digitorum*. See EXTENSOR DIGITORUM COMMUNIS.

TENTA, in Surgery. A barbarous Word for a Tent.

TENTHRENIODES, τενθρηνιώδης, in *Hippoc.* περὶ ἀνατ. Is an Epithet apply'd to the Lungs, and ſignifies, full of ſmall Perforations, or, of a very rare Contexture. The Word comes from τενθρήνη, an Inſect furniſh'd with a Sting, and like a Waſp, by *Ariſtotle* call'd τενθρηδών, and render'd, by *Gaza*, *Teredo*, "a "Perforator." Hence τενθρήνιον, in the ſame Author, is an Hive, or Neſt, of theſe Animals, and very properly render'd by *Gaza*, a Perſon univerſally eſteem'd for his Learning, *Teredinarium*. The Lungs, then, are ſaid to be *Tenthreniodes*, that is, tenedinous, as it were, and full of Pertuſions, or of a rare Subſtance by Nature; or, as *Galen*, *de Uſu Part. Lib.* 7. *Cap.* 9. deſcribes it, a ſoft, porous, and ſpirituous Fleſh, made for Concoction of the external Air, the proper Aliment for the Spirit.

TENTIGO. See PRIAPISMUS.

TENTIO. The ſame as TENSIO before.

TENTIPELLUM, from *tendo*, to ſtretch, and *Pellis*, the Skin. A coſmetic Medicine for ſmoothing the Skin from Wrinkles.

TENUANS, the ſame as *Attenuans*, attenuating. See ATTENUANTIA.

TENXIS, τέγξις, from τέγγω, to moiſten, dip, or tinge, in ſome Liquid, is expounded in *Erotian* by διάβρεξις, an Humectation, or Moiſtening. The Word is read, *6 Epid. Sect.* 8. *Aph.* 15. and is oppoſed to ξηρότης, *Xerotes*, Drineſs.

TEPHRICON, τεφρικὸν, from τέφρα, Aſhes, is the ſame as SPODICUM; which ſee.

TEPHRION, τέφριον. The Name of a Collyrium, ſo call'd from τέφρα, Aſhes, becauſe it was of an Aſh-colour. It was otherwiſe call'd CYTHION, κύθιον, and is deſcribed by *Aetius*, *Lib* 7. and, after a different Manner, by *Celſus*, *Lib.* 6. *Cap.* 6.

TEPIDARIUM, a Part of the Bath in which they ſat awhile, and ſweated gently, during the Time they put off their Cloaths, and made themſelves ready for entering the *Caldarium*, *Celſus*, *Lib.* 1. *Cap.* 4. It was much the ſame with the APODYTERION; which ſee.

TEPIDUS, χλιαρός. See CHLIAROS.

TERAGOLINICA, prepared, or made up with the Hand. *Rulandus.*

TEREBELLA. A Name for any Chirurgical Inſtrument, with which Bones are perforated.

TEREBINTHINA. Turpentine. See BALSAMUM, and TEREBINTHUS.

TEREBINTHUS.

The Characters are;

The Leaves are pinnated to a common Rib, ending in an odd Leaf. The Flower on the male Plant is apetalous, and conſiſts of apiculated Stamina. The Fruit on the female Plant is an unicapſular, or bicapſular Shell, full of oblong Seed.

Boerhaave mentions three Sorts of *Terebinthus*; which are,

1. Terebinthus; vulgaris. *C. B. P.* 400. *Tourn. Inſt.* 579. *Boerh. Ind. A.* 2. 173. *Terebinthus*. Offic. Ger. 1245. Emac. 1433. J. B. 1. 278. Raii Hiſt. 2. 1577. *Terebinthus anguſtiore folio vulgatior*. Park. Theat. 1526. THE TURPENTINE-TREE.

This grows to be a pretty large Tree in the Eaſtern Countries; but in the Weſtern Parts of the World it grows only to be a large Shrub: The Leaves are large, conſiſting of ſeveral oval, round-pointed Pinnæ, ſet oppoſite, with an odd one at the End; the Flowers appear early in the Spring, before the Leaves, in large Cluſters of purple Stamina only; after which, come long-iſh hard Nuts, whoſe Kernels are of a viſcous and reſinous Taſte. The true Turpentine is the Reſin of this Tree, the beſt of which comes from the Iſland of *Chio*, and is of a whitiſh Colour, clear, and almoſt tranſparent; thicker, and more tenacious, than *Venice* Turpentine; of a pleaſant Smell: That which comes from *Cyprus* is browner, and fuller of Droſs. *Miller's Bot. Off.*

This Turpentine is of the Conſiſtence of Honey, of a very pleaſant reſinous Smell, and the beſt of all Turpentines for internal Uſe. It gives a violet Smell to the Urine, even when given in a Clyſter. It is an excellent Diuretic, and very proper in Ulcers of the Kidneys, Bladder, and Uterus. In Gonorrhœas, it is commonly made into a Bolus with prepared Crabs-eyes, or any other Abſorbent. It may, likewiſe, be taken in the Yolk of an Egg, from half a Dram to a Dram. All theſe Precautions are neceſſary only to ſhun the diſagreeable Taſte; and Sugar, and powder'd Liquorice, may be uſed for the ſame Purpoſe. It is, likewiſe, often given in Clyſters; being firſt diſſolved in the Yolk of an Egg, and then mix'd with the Decoctions. It is thus adminiſter'd in Stone Colics; but the Inteſtines ought previouſly to be unloaded by purgative Clyſters. The Doſe, in this manner, is from an Ounce to an Ounce and an half. Turpentine, like all other Balſams, is to be avoided in inflammatory Diſpoſitions of all Kinds. *Geoffroy.*

The Compilers of the *Adverſaria*, following, I ſuppoſe, *Theophraſtus*, have made the *Terebinthus* an Evergreen; but we are well aſſured by *Bellonius*, *Rauwolfius*, *Caſalpinus*, and *Cluſius*, Perſons of Veracity, and Eye-witneſſes, that the Leaves are caducous. The *Terebinthus* delights, as *Matthiolus* ſays, in dry and ſtony Places, which are expoſed to the Sun. *Dioſcorides* ſays, it grows in *Judea*, *Syria*, *Cyprus*, *Africa*, and the Iſlands of the *Cyclades*; and we are told by *Cluſius*, that it grows ſpontaneouſly in many Parts of *Spain*, *Portugal*, and *Languedoc* and *Provence* in *France*, where, ſometimes, it ſhoots up to the Bigneſs and Perfection of a Tree, but can generally be reckon'd no other than a Shrub. He might have mention'd *Italy*, ſays *Ray*, among the Places where it grows; for I have obſerved it in that Country myſelf. *Cluſius*, for his Part, never knew that Reſin was extracted from the *Terebinthus*, in the before-mention'd Places; but *Lobel* aſſures us, that the Turpentine-trees in the Wood of *Valena*, near *Montpelier*, will ſometimes diſcharge a good Quantity of Turpentine from ſmall Wounds made in the Tree. *Bellonius* ſays, that it grows plentifully in *Syria* and *Cilicia*, and that they gather a Gum from it, which is carried to *Damaſcus*, and ſold there; but what is ſold at *Cairo*, is brought thither from the Country which the *Turks* call *Aſamia*, that is, *Meſopotamia* and *Aſſyria*. The Tree flowers at *Montpelier* in *April*, and *J. Bauhine* gather'd the Fruit in *September*.

The Leaves, Fruit, and Bark of the *Terebinthus* are, according to *Dioſcorides*, of an aſtringent Quality; and are effectual for the ſame Purpoſes as thoſe of the Lentiſcus, being prepared and taken after the ſame Manner. The Fruit is eſculent, but hurtful to the Stomach, is heating, and provokes Urine. It is, alſo, well adapted to excite to Venery. Taken in Wine, it is good againſt the Bite of the Phalangium; and the Seed, as *Pliny* ſays, is taken inwardly for a Pain of the Head.

Bellonius ſays, that the antient Cuſtom of eating the Seeds of the *Terebinthus* ſtill remains in *Syria* and *Cilicia*; and that he once met an *Arabian* Peaſant, leading a Camel laden with the Seeds of the *Terebinthus*, that he might ſell them at *Damaſcus*.

There are a Kind of Galls, of the Size of Filberds, hollow within, and produced from Excreſcences of the Leaves of the male *Terebinthus*. Theſe, about the End of *June*, are gather'd by the Peaſants of *Thrace* and *Macedonia*, and ſold, at a dear Rate, to the Silk-dyers of *Pruſa* in *Bithynia*. They take care to gather them, as ſoon as they are grown to the Size of Galls; otherwiſe, if let alone, they would run out to the Length of half a Foot, in the Shape of an Horn. Six thouſand Weight of them are, every Year, conſumed only by the Dyers aforeſaid.

What we call Turpentine, as *Cordus* deſcribes it, is the Reſin of the *Terebinthus*, white, yelloviſh, vitreous, or white inclining to ceruleous, and ſometimes pellucid; and, being rub'd, falls abroad into a Multitude of ſmall Grains, and, ſoon after, becomes viſcid and glutinous. It has an acrid, pleaſant, tho' ſomewhat ſtrong Smell, and not unlike the Reſin of the Larix, eſpecially when handled, or thrown upon the Coals; it is of a bitteriſh Taſte, and becomes ſlimy under the Teeth, and ſticks to them. It diſtils, at firſt, liquid, and grows dry by degrees. Impoſtors call the dry Sort, *Thus*, *Frankincenſe*, or *Incenſe*, and ſell it for *Thus*; but the true *Thus* they call *Olibanum*, not knowing that this *Greek* Word, and the *Latin* Word *Thus*, are Names for the ſame Thing.

Turpentine, in the Opinion of *Dioſcorides*, exceeds all other Reſins; and, next to Turpentine, is Maſtich, which *Galen* prefers before it.

All Reſins, ſays *Dioſcorides*, are mollifying, heating, diſcuſſing, diſſipating, and cleanſing. In an Eclegma, whether alone, or with Honey, they are proper in Coughs and Conſumptions, and promote Expectoration. They, alſo, provoke Urine, concoct Crudities, and render the Body ſoluble. They are of Service in agglutinating the Hairs of the Eye-lids; and, with Verdegriſe, Virriol, and Nitre, cure the Lepra; and, with Honey and Oil, are effectual in cleanſing the Ears, when overflowing with Sanies; and remove an Itching of the Pudenda. They are Ingredients in Plaiſters, Malagmas, and Acopa; and are good for Pains of the Sides, being uſed alone, by way of Application, or Inunction.

Turpentine, according to *Galen*, has a kind of Bitterneſs, in Conjunction with a moderate Aſtringence; on which Account, it is more digeſtive than Maſtich; and the ſame Quality renders it abſterſive to ſuch a Degree, as to cure the Piora; and, for the like Reaſon, it looſens the Belly.

The Moderns aſcribe to it the Virtues of cleanſing the Thorax, Liver, Spleen, Kidneys, and Bladder, from all Impurities. It is of Service, alſo, in inveterate Coughs, Difficulty of Breathing, a purulent Spitting of Blood, Vertigo, Stone, and peculiarly for the Sciatica, and the Gout in the Feet and Hands; it opens, cleanſes, warms, and ſtrengthens the Nerves.

In particular, Turpentine is very uſeful in the Stone, and other Diſorders of the Kidneys. Hence it is uſual in Practice for the Cure of the Gravel, after mitigating the Symptoms, by way of Precaution, to uſe Turpentine, but boil'd, as they call it, to render it leſs heating, and more aſtringent. The ſame is practiſed in the Sciatica, Paſſy, and Gout; in which Caſes, it is exhibited twice in a Week, either unwaſh'd, or waſh'd in Water of Succory. The Quantity of an Hazle-nut, taken every Morning faſting, is highly commended, as we are told by *Avicenna*, in the Arthritis, and all other Diſeaſes of the Joints; and no wonder it ſhould help the Gout, ſince it is good for the Stone;

and

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and these Diseases are near akin, so as to have the same continent Cause, or Matter, and often to pass, by Metathesis, one into the other.

Turpentine may be exhibited, 1. By itself, which they call *Oblates*. 2. In some aqueous Liquor, with a very small Quantity of the Yolk of an Egg, by which Addition it will represent a milky Liquor. 3. It may be a little inspissated, and reduced into Pills; but the two former Ways are best, because of the Evaporation of the Spirit. *Schroder*.

Observe here, first, that the true Turpentine is unknown in the Shops; and that the officinal Turpentine is either the Resin of the Larix, or the Resin of Fir, gather'd from the Tubercles of young Fir-trees.

Secondly, that the Smell of the true Turpentine remains in the Urine of those who take it; and is, in some manner, like the Smell of Violets. I have heard, says *C. Hoffman*, a Person affirm, that it was an Anodyne, of immediate Efficacy in Pains of the Pudenda.

In the Spring-time, the tender budding Shoots of the small Branches of the *Terebinthus* being broken off, as it is the Custom about *Montpelier*, and other Parts of *Languedoc*, as well as in other Countries, there distils from them a Milk, like that of the Fig-tree, which, being received and preserved in proper Vessels, becomes a most limpid, tenacious, and resinous Liquor; which, while it is new, or, to use *Pliny*'s Expression, in Must, if spilt upon a woollen Garment, makes no Stain, and, when wash'd off, leaves no Mark or Spot behind it; but it grows thick with Time, and cannot be wash'd off, without an Addition of the Yolk of an Egg. *Lob. de Balsamo*.

Turpentine distil'd, or Oil of Turpentine, is next to Oil of Balsam, or a little hotter; and is of Service in all cold Diseases, especially of the Nerves.

The distil'd Oil of Turpentine, taken inwardly, is of singular Efficacy in nephritic Pains. It is of extraordinary Service, also, in Contractions, Tensions, and Relaxations of the Nerves, being apply'd by way of Unction, and rub'd on the Parts affected, for a good while together, with an hot Hand; especially if it be mix'd and shaken together with some highly rectify'd Spirit of Wine.

Some there are, as *Schroder* tells us, who put Turpentine in their Beer, and let them ferment together, for their ordinary Drink, under Afflictions from the Stone, or Obstructions of the Viscera.

Dioscorides teaches a Method of preparing a Wine of Turpentine, from the bacciferous Branches of the *Terebinthus* being bruised and boil'd in Must, which, being grown out of Use, is, therefore, omitted. The Antients, also, had so great a Value for the Asparagi, or young Shoots of the *Terebinthus*, as to reserve them for Use in Winter. *Raii Hist. Plant.*

The Bark and Leaves of the *Terebinthus* are very astringent, and useful in a Diarrhœa, provoke Urine, and stimulate to Venery. From this Tree distils that most laudable Kind of Resin, call'd *Turpentine*, being a resinous, transparent, softish Substance, thicker than the Resin of the Larix, and brought from *Cyprus*, and *Chios*, or *Scio*. The common Turpentine is gather'd in *Germany* and *Norway*, from the wounded Trunks of young Pines and Firs, and is depurated by frequent Washings with Water.

The Turpentine of *Cyprus*, or *Chios*, is but seldom used, having its Place supply'd by what they call

Terebinthina Veneta, or Venice Turpentine, which is extracted from the Larch-tree. See LARIX. This Kind of Turpentine is a liquid Substance, of the Consistence of new Honey, of a yellowish Colour, an acrid and bitterish Taste, and a grateful and fragrant Smell.

Venice Turpentine is of Efficacy in the nephritic Colic, a Cough, Asthma, Ulcers of the Bladder and Kidneys, the Strangury, Gonorrhœa, Fluor Albus, and Wounds internal and external; taken in a larger Quantity than ordinary, it frequently gives a Stool. Externally, it is of Service in Diseases of the Nerves, and for discussing Tumors. It is, also, an Ingredient in Clysters vulnerary, anticolic, and antinephritic, to be injected into the Bladder, Uterus, or Intestines; and enters the Composition of most Plaisters; for it promotes Suppuration; maturates and cures the Scabies, and other cutaneous Defedations. *Hist. Plant. adscript. Boerhaav. Schroder.*

2. Terebinthus; peregrina; fructu majore; Pistachiis simili, eduli. *C. B. P.* 400.

3. Terebinthus; Indica; Theophrasti; Pistachia Dioscoridis. *Tourn. Inst.* 380. *Boerh. Ind. a.* 2. 173. *Nux Pistacia.* Offic. Park. Theat. 1417. *Pistacia.* Ger. 1248. Emac. 1436. J. B. 1. 275. Raii Hist. 2. 1682. *Pistacia peregrina fructu racemoso sive Terebinthus Indica Theophrasti.* C. B. P. 401. THE PISTACHIO, or FISTIC NUT-TREE.

This is the Fruit of a large Tree, with winged Leaves, like an Ash tree, but rounder-pointed. It bears Bunches of small white Flowers, to which succeed long-pointed Nuts, cover'd with a brown wrinkled Bark; under which is a white brittle Shell, including, in a reddish Skin, a greenish Kernel, of a pleasant sweet Taste. It grows in the Eastern Countries of *Persia* and *Turky*.

The Fruit is accounted nourishing and restorative, and good for weakly consumptive People; it opens Obstructions of the Liver and Spleen, and is said to be a Provocative to Venery. *Miller's Bot. Off.*

Pistaches are grateful to the Stomach. *Dioscorides* and *Pliny* both affirm, that whether they are eaten, or bruised and taken in Wine, they are effectual against the Bites of venomous Reptiles; in other respects, their Virtues, they say, are the same with those of Pine-kernels.

Galen says, that Pistaches are of fine Parts, with something bitterish and scented; whence they open Obstructions, chiefly of the Liver, but, in some measure, of the Thorax, also, and Lungs; and that they afford but little Nourishment. But the Generality of the Moderns will have them to be highly nutritive, and stimulant to Venery; on account of which, they are recommended by the *Spanish*, *French*, and *Italian* Physicians, to be mix'd in Desserts, with other Things, of a comforting and restorative Nature: And so much is attributed to them, that there is scarce an analeptic Medicine without Pistaches.

The Oil of Pistaches, taken inwardly, is said, by *Matthiolus*, to ease internal Pains, proceeding from viscid Phlegm and Flatulencies. The same Author tells us, that it is effectual against Convulsions and the Palsy; and, taken inwardly, improves the generative Faculty. *Raii Hist. Plant.*

Pistaches are heating, moistening, attenuant, and aperitive. They are principally used in mucilaginous Infarctions of the Lungs, and Obstructions of the Liver; they strengthen the Stomach, repress a Nausea and Vomiting, excite an Appetite, and afford good Nutriment. *Dale* from *Schroder*.

Miller takes Notice of eight Species of the *Terebinthus*.

TEREBOTIN. By this Word, *Paracelsus*, probably, means Turpentine.

TEREBRA. A Chirurgical Instrument for perforating Bones, or for extracting extraneous hard Bodies, as Bullets, out of Wounds.

TEREDO. Offic. Schrod. 5. 347. THE WOOD-EATER.

There is a great Dispute among Authors about the *Teredo*, some making it one thing, some another. *Aldrovandus* makes four Kinds of *Teredo*; one Kind is found in Wood, another is called *Vermiculus*, a third *Thris*, and a fourth *Cossus*; to these, *Johnson*, from *Agricola*, adds a fifth, which, from its copper Colour, is call'd *Kupfferworm*. But we suppose that Worm with six Legs, from which is produced the *Scarabæus minor arborum*, commonly found in Trees, to be the *Teredo* of the Shops.

The Parts of this Insect in Use are the farinaceous Excrements, call'd POWDER OF POST. This Powder is drying, whence it is sprinkled, with good Success, on humid and watry Ulcers; and, for the same Reason, is in much Request among the good Women, for drying up the Excoriations of Infants. *Dale* from *Schroder*.

TEREDO is, also, a *Caries* of a Bone.

TEREGAM. H. M. The Name of a Fig-tree, which grows in *Malabar*, call'd *Ficus Malabarica foliis rigidis, fructu rotundo, lanuginoso, flavescente, Ceraſi Magnitudine.* D. Comelin.

It is a large Tree, thirty Feet high, the Root of which, contused with Vinegar, prepared of the Coco-nut, and taken in a Morning fasting, is said to cool the Viscera. The Fruit is, also, extremely refrigerating.

TERENGIBIL, or TERENIABIN. The *Arabic* Name for *Manna*.

TERES MUSCULUS. There are two Muscles of the Os Humeri, which are call'd by this Name; the first is the

TERES MAJOR.

This is a long, thick, flat Muscle, situated a little obliquely between the inferior Angle of the Scapula, and the upper Part of the Arm. This Muscle, and the *Teres Minor*, are call'd round, though they are considerably broader than they are thick; because they come much nearer to that Figure, than any other Muscle which moves the Os Humeri on the Scapula.

It is fixed by its posterior fleshy Extremity in all the large angular Surface, on the Outside of the Scapula, in the inferior Costa of that Bone, and near the Angle. From thence it advances, with longitudinal Fibres, toward the upper Quarter of the Os Humeri, terminating in a broad flat Tendon, intermixed with some fleshy Fibres, which, at the upper Edge, are continued all the Way to the Insertion, lying in the same Place with the Tendon.

It is inserted, by its anterior Extremity, at the lower Part of the bony Ridge of the small Tuberosity, along the Edge of the Channel, almost opposite to, and sometimes a little lower than, the Insertion of the *Pectoralis major*. It lines the Cavity of the Channel by a tendinous Elongation, which joins that from the *Pectoralis*, and seems to be continued with it. This Insertion is below that of the Latissimus Dorsi, with which it communicates by a small Aponeurosis.

The Tendons of these two Muscles, the *Teres major* and *Latissimus Dorsi*, lie almost in the same Plane, as has been already observed; the upper Edge of the first running up a little Way on one Side the lower Edge of the latter, and the two Edges crossing each other in a small Degree. The Tendon of the Latissimus Dorsi lies behind, and covers that of the *Teres Major*.

These

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These two Tendons, near their Insertions, have a ligamentary Frænum belonging to them, which runs down from the Insertion of the *Subscapularis*, and is inserted below that of the *Teres major*. It covers the two Tendons, and keeps them close to the Bone.

The *Teres major*, by being inserted in the Os Humeri, in a Direction parallel to the *Latissimus Dorsi*, becomes a Congener to the superior and posterior Portion of that Muscle; and, accordingly, moves the Os Humeri in the same manner with it. It turns the Bone round its Axis, when the fore Arm is carried behind the Back.

It, also, pulls the Arm directly backward, without moving it round its Axis. But neither this Muscle, nor the *Latissimus Dorsi*, can perform this simple Motion, because of the incurvated Direction of their Tendons, without the Assistance of other Muscles, which, like Antagonists, prevent the Rotation already mention'd; and of this Number is the *Teres minor*.

The Nearness of the Tendon of this Muscle to that of the *Latissimus Dorsi* deserves our Attention. They are both inserted, according to their Breadth, in the same Line, along the Edge of the bony Chanel of the Os Humeri, opposite to the Insertion of the *Pectoralis major*, in the other Edge of the same Chanel. These two Tendons cross each other in the same Plane; that of the *Teres major* running obliquely from above downward; and that of the *Latissimus Dorsi*, obliquely from below upward.

By this Disposition, these two Tendons resemble, in a great measure, the Duplicature, or Fold, of the Tendon of the *Pectoralis Major*; and, therefore, the *Teres Major* may become a particular Antagonist to the superior Portion of the *Pectoralis Major*, and the *Latissimus Dorsi* to the inferior Portion; and both these Muscles, taken together, may be a common Antagonist to the *Pectoralis major*, when that whole Muscle acts at the same time.

I before observed, that these two Tendons were bound down by a ligamentary Frænum, which, from the Insertion of the *Subscapularis*, runs down below that of the *Teres major*; and that this *Frænum* covers the two Tendons, and braces them down close to the Bone. The Use of this *Frænum* seems to be, to prevent the Separation of the two Tendons from the Edge of the Groove, in violent Rotations of the Arm.

The *Teres major* may, also, move the *Scapula* on the Os Humeri, by drawing the inferior Angle downward, and bringing it nearer the Arm; but, in order to this, the Arm must be kept immoveable, by some considerable Force or Resistance; as when, in standing with the whole Arm hanging down, the Hand supports a great Weight. By this Action, the *Teres major* may, also, assist in raising the Shoulder, or in hindering it from sinking.

The second is the

Teres minor.

This is a very fleshy Muscle, resembling the *Teres major*, but narrow and shorter. It lies above the last-named Muscle, between the Costa inferior of the Scapula, and the Head of the Os Humeri.

It is fixed by one End to all the middle Part of the inferior Costa of the Scapula, and to the long particular Surface immediately above that Costa, reaching from the great angular Surface near the Neck of the Bone. From thence it runs wholly fleshy, till it changes into a flat Tendon, which is inserted in the posterior or inferior Surface of the great Tuberosity of the Head of the Bone, and, also, a little lower down.

It adheres very closely to the lower Edge of the *Infra-spinatus*, and the Tendons of these two Muscles are united; for which Reason the Antients confounded them together, and did not look upon this as a particular Muscle. It is covered by the *Deltoides*.

The Teres minor may turn the Arm, when depressed round its Axis, from before outward, as it happens, when the fore Arm, being bent, and applied to the lower Part of the Breast, is removed from thence, without moving the Elbow from the Side: This Rotation is in a contrary Direction to that performed by the Subscapularis and Teres major.

This Muscle may, also, pull the Arm directly backward, whether raised or depressed; but, in order to this, the Subscapularis must act at the same time as a Moderator, to prevent the Rotation. *Winslow's Anatomy.*

TERETRON, τέρετρον. The same as Terebra, or Terebella.

TERFEZ. A Sort of white Truffle found in the *Numidian* Sands. It is said to be very nourishing, if roasted in the Embers, or boiled in Milk; to be good for the Stomach; to restore decay'd Strength; and to increase the seminal Juices.

TERMINTHI, τέρμινθοι, are expounded in *Galen's Exegesis*, ὅτι τῷ τῆς τερμίνθου καρπῷ παραπλήσιοι καλὰ τὸ δέρμα συνίστανται φύματα ἔχοντες, "preternatural Tumors seated in the Skin, and nearly resembling the Fruit of the Turpentine-tree." In these Words *Galen* seems to have an Eye to 2 *Epid.* where it is said κατείλε ἐν κνήμῃ τέρμινθοι ἐγένοντο, "and afterwards Terminthi arose in his Legs." *Hippocrates* uses the Word, also, *Lib.* περὶ χυμῶν, where he says, ὑπὸ τερμίνθοισιν ἁλίσκονται, "nor are seized with Terminthi;" which Words are repeated 6 *Epid. Sect.* 3. *Aph.* 28. where *Galen*, on the Place, says, καὶ τὸ τῶν τερμίνθων δ' ὄνομα μελάνων τινῶν ἐκφυμάτων, &c. "By the Name *Terminthi*, we are to understand a kind of black Tubercles arising chiefly in the Legs, in Colour and Size like the Fruit of the *Terebinthus*. The *Comment. in Lib.* 3. *de Humor.* ascribed to *Galen*, says, *Terminthi* are round Eminences seated in the Skin, of a black Colour inclining to green, and like the Fruit of the Turpentine-tree; which Definition seems to be taken from *Dioscorides Alexandrinus*, as quoted by *Paulus*, *Lib.* 4. *Cap.* 24. when he calls these Tumors *Terebinthi*, τερέβινθοι. The *Terminthus* is, by some, described as follows; τέρμινθός ἐστιν ἀπόσημα περὶ τὴν ἐπιφάνειαν γινόμενον, μετὰ φλυκταινώσεως, ἧς ῥαγείσης ἰχώρ τις ἀπορρεῖ, καὶ ἡ ὑποκειμένη σὰρξ καταλελειμμένη φαίνεται. "A *Terminthus* is an Abscess formed in the Skin with a Pustule, which Pustule breaking, an Ichor is discharged, and the subjacent Flesh appears perforated." This Description is taken from a Scholium annexed to a manuscript Copy of *Hippocrates*, in the King's Library at *Paris*; and comes very near to that of *Oribasius*, *Synops. Lib.* 7. *Cap.* 36. transcribed by *Paulus*, in the Beginning of his Chapter before-quoted: "*Oribasius*, he there says, makes the *Terminthus* a kind of Tubercle with a black Phlyctæna (Pustule), which breaking, the subjacent Part appears as if abraded." Τέρμινθος is defined by *Pollux*, *Lib.* 4. *Cap.* 25. φῦμα φλύκταιναν ἔχον, "a Tubercle with a Pustule." The Cure of a *Terminthus* is directed by *Aetius* to be managed in the same manner as that of the Epinyctides. See Epinyctis.

There are two Sorts of painful Tubercles, says *Wiseman*, which I have met with in my Practice; they are taken notice of by the Antients, under the Names of *Epinyctis* and *Terminthus*, a Couple of angry Pustules, affecting the Skin in the Arms, Hands, and Thighs. They do not differ much one from another; so may well be joined together.

The Epinyctis is of the Bigness of a Lupin, of a dusky red, and sometimes of a livid pale Colour, with a great Inflammation and Pain. It discharges, first, a Sanies, then a bloody Matter. The Terminthus is somewhat less, of a blackish Colour; it breaks and gleets, and within a Day or two the Pustule separates, and comes away in a Slough, and from that time it digests and heals.

They both proceed from an excessive Heat in the Blood; but are without Malignity and Danger, and cure with little Difficulty, if there be no Error committed in Surgery.

The Cure consists in Evacuation by Bleeding, Purging, and Regulation of Diet, as in a Phlegmon.

The external Applications, commended to us by the Antients, are Leaves of Hemlock, Nightshade, and Plantain, with fine Flour; or apply Raisins cleaned and bruised; they may, also, be washed with Salt-water, to dry up the Matter, and prevent Erosion; afterwards dress them with a Mixture of equal Parts of native Sulphur, and Litharge of Silver with Wine. I never was consulted in these, till they were arrived at their Height; and then found Anodynes of most Use, and afterwards healed them with Ointment of Tutty.

A Maid came recommended to me with an Epinyctis, on the Inside of her Arm, of the Bigness of the greater Sort of Lupins, of a livid Colour, with a small acute Pustule rising up in the Middle. It was accompanied with great Inflammation, affecting the Tendons with Hardness in the Joint. I prescribed her a Cataplasm of the Mucilage of Psyllium, Marshmallows, and Linseed; and embrocated the Parts with Oil of Roses and Chamomile. By this the Tubercle was brought near Suppuration, the Pustule first broke, and discharged a thin Sanies. I dressed it with the Yolk of an Egg, and, about two Days after, the Tubercle itself thrust out a bloody Matter. I dressed it with Basilicon, added to the Yolk of an Egg, and applied Cerate of Marshmallows, and continued the Embrocation. The Matter, from that time, was daily better digested, and the Pain diminished; it was healed with Unguentum Diapompholygos, and the Plaister of Bole.

A young Gentleman, having such another on the Outside of his Wrist, was recommended to somebody who opened it by Incision; but from that time it became exceedingly painful. He came to me with it hard and dry, and it had communicated its Anguish all along the Tendons and Nerves, to the Arm-pit, with several Glands. I embrocated the Arm from the Arm-pit, to the Knuckles of that Hand, with Oil of Roses and Vinegar, and applied Plaister of Bole upon those Glands. To the Tubercle I applied Basilicon, with Oil of Roses, spread indifferent thick in the Form of a Plaister, and dressed it to twice a Day. I proposed the next Morning, to have let him Blood; but he was easier; and the same Night I felt the Tubercle softer, and saw a bloody Matter thrust out. From that time it digested better, and the Accidents diminished; in four or five Days, the Glands resolved, and the Ulcer was cured by the Application of Ointment of Tutty, &c.

A Gentlewoman, about forty Years of Age, had a Terminthus on the Knuckle leading to the fore Finger, which I was called to see. It was a small Tubercle inflamed round its Basis, having a black Head, and a long inflamed Streak passing from it to a Fontanel, which she had on that Arm. Whether it ran upward from the Pustule to the Fontanel, and affected it, or descended from

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it to the Puſtule, I know not: However it was, there were Marks of Communication from one to the other, and both were painful, and the Patient was indiſpoſed with a Fever. In the Fontanel there was a ſmall Orange-pea, which I caſt out, and put in a common one, and dreſſed it with Liniments, and a Plaiſter to retain them on. I dreſſed the Puſtule with Baſilicon with the Yolk of Egg, and applied the Cerate of Deer's Suet. It ſuppurated the next Day, and the Head of it caſt off in a Slough. I clipped off the looſe Skin from it, and dreſſed it with Ointment of Tutty, and in five or ſix Days cicatrized it. During the Cure, the Patient was afflicted with a Diarrhœa, which was purged off: After which ſhe was hot and feveriſh, and troubled with a Rheumatiſm; for which ſhe was let Blood, and cured. *Wiſeman's Surgery.*

TERNA. The ſame as IMPETIGO, or MENTAGRA. *Caſtellus* from *Fallopius*.

TERNATEA.

The Characters are,

It hath a papilionaceous (or Pea-bloom) Flower, whoſe Standard almoſt hides the Keel, and the Wings; the Pointal afterwards becomes a Pod, which opens two Ways, and is filled with Kidney-ſhaped Seeds. To theſe Notes ſhould be added, that the Leaves are winged, and are terminated by an odd Lobe.

Miller mentions four Sorts of *Ternatea*; which are,

1. Ternatea flore ſimplici, cœruleo. *Acad. Reg. Scien.*
2. Ternatea flore pleno, cœruleo. *Acad. Reg. Scien.*
3. Ternatea flore ſimplici albido. *Acad. Reg. Scien.*
4. Ternatea Americana, perennis, flore cœruleo. *Houſt.*

The Name which Dr. *Tournefort* has given to this Genus of Plants is, from the Place whence theſe Plants were firſt brought, which is one of the *Molucca* Iſlands, called *Ternate*.

The Flowers of the firſt and ſecond Sorts are of a very deep-blue Colour; and if put in Water, and macerated, will dye the Water almoſt as blue as Indigo.

The third Sort differs from the firſt, only in the Colour of the Flower.

The fourth Sort was diſcovered by the late Dr. *William Houſtoun*, in *Jamaica*, from whence he ſent the Seeds to *England*. *Miller's Dictionary.*

TERNIABIN. The ſame as TERENGIBIL.

TERRA, γῆ. Earth. See ANALYSIS.

Γῆ κεραμικὴ, *Ge ceramice*, from κεραμεὺς, a Potter, in *Hippocrates*, *Lib. de intern. Affect.* is *Terra figularis*, or *figulina*, Potters Clay. *Lib.* 1. *de Morb.* he calls it γῆ κεραμίτις, and in the Beginning of *Lib.* 3. reckons it among Refrigerants. *Galen*, in his *Exegeſis*, expounds it by ἀργίλη, ARGILLA, Clay.

Γῆ σμηκτὶς ἢ σμηκτικὴ, *Ge Smectis, ſive Smectica*, from σμήχω, to abſterge, is expounded in *Galen's Exegeſis*, and, alſo, in *Erotian*, by κιμωλία, *Cimolia* (*Terra*). The Words occur, *Lib.* 2. περὶ γυναικ. and *Lib. de Fiſtulis*, where he adviſes anointing the Arms with this Earth.

Γῆ μέλαινα ἡ Σαμία, *Ge melæna he Samie*, black Earth of *Samos*, is adviſed by *Hippocrates*, *Lib.* περὶ γυναικ. φυσ. to be taken inwardly for cleanſing of the Uterus.

Γῆ χαλκῖτις, *Ge Chalcitis*, according to *Galen*, in his *Exegeſis*, means no more than ſimply CHALCITIS. He ſeems to have regard to that Place, *Lib. de Fiſtulis*, where we read συμμίξας τῇ [for γῆ] χαλκίτιδι ἴσον, "mixing with it an equal Quantity of *Chalcitis*."

Γῆ ἐρετρὶς ἢ ἐρετρίας, *Ge Eretris ſeu Eretrias*, *Terra Eretria*, *Eretris*, *Eretrias*, is directed by *Hippocrates*, *Lib.* 3. *de Morb.* to be rubbed on the Breaſt, in order to diſcover in what Part of the Thorax the Pus is ſeated.

Γῆ ψιλὴ, *Ge pſile*, *Lib. de Aer. Loc. & Aq.* is a bare Soil, oppoſed to γῆ δασεῖα, a Soil overgrown with Trees and Buſhes.

Γῆ ἐν κοίλῳ καὶ πνιγηρὴ, *Ge en cœlo et pnigere*, an hollow, depreſſed, and ſcorched Soil, as oppoſed to γῆ μετεώρος καὶ ψυχρὴ, *Ge meteoros et pſychre*, an high, or elevated, and cold Soil.

Of the Differences of Earth.

By *Terra*, or *Earth*, is univerſally underſtood that Subſtance alone, which, being worked or kneaded with Liquor, becomes a Clay. For what *Earth* is found among Metals, will not admit of *Liqueſaction*; by which Term I mean a Diſſolution of the whole Subſtance into a Liquor; as, by *Madefaction*, an Irrigation only of the Superficies, the Humour not penetrating to the Depth of the Body.

All *Earth* is of a drying Quality, becauſe the Subſtance of it is naturally hard; and where it is wholly free from any Mixture of igneous Particles, it dries in a very gentle manner, without the leaſt Corroſion. To render it thus qualify'd, Waſhing is conducive; but ſome *Earths* need no Waſhing; others, on the contrary, require two or three Waſhings. Now, if you are acute and well-skilled in the Senſe of Taſting, you may judge yourſelf, whether an *Earth* requires Waſhing, or not, from its Degree of Acrimony, or Aſtringency. But, ſince it is impoſſible to find a Subſtance abſolutely ſimple and unmixed, we are to conſider this compounded Matter, with regard to its Qualities, ſuch as various Degrees of Lightneſs or Ponderoſity, and, alſo, the Differences of Taſtes. If, for Example, it appears to be aſtringent, the more it participates of Aſtringency, the more it has of Coldneſs; if it betrays an acrimonious Quality, its Degree of Heat will be found, in proportion to its Acrimony. An *Earth* is *light*, when, through all its Contexture, it participates much of an aereal Subſtance; on the contrary, it is found to be *ponderous*, more or leſs in proportion to its conſiſting more or leſs of mere *Earth*. An *Earth* of an hot Quality has an heating Effect; a cold and aſtringent *Earth* refrigerates and repels; what is endued with an abſterſive Virtue, without any manifeſt Heat, dries in a gentle manner. An *Earth* poſſeſſed of a conſiderable Degree of Glutinouſneſs is not abſtergent, but is the better qualify'd by its Glutinoſity for an Emplaſtic, tho' by no means for an Abſtergent; without an Addition of Acrimony to correct its Viſcidneſs, as we ſee in an Egg.

Theſe are neceſſary Obſervations, and ſuch as will take place throughout the whole Materia Medica; for many imagine, that all burnt Things become colder than they were before; and ſome, on the other hand, think the Heat in burnt Things to be increaſed; whereas both are in an Error. All acrimonious Things, indeed, loſe much of their Heat by Burning; but all which are not acrimonious, acquire a Heat by Burning. But nothing, after Burning, becomes perfectly cold; for there ſtill remain ſome igneous and very fine Particles; and theſe Particles are what are depoſited by burnt Subſtances in Waſhing; for what remains afterwards is a cold earthy Subſtance, which has a Virtue of drying without Corroſiveneſs; but the Water in which the Drug is waſhed, acquires the heating Quality of thoſe igneous and fine Particles.

The Method of waſhing all Kinds of Earth is firſt to work it in Water, in which is no manifeſt medicinal Quality; and, when the Mud is ſubſided, to pour off the Water; and, after that, to cleanſe it from the Gravel and Sand, which ſink to the Bottom. *Aetius*, *Tetrab.* 1. *Serm.* 2. *Cap.* 1.

Of the Medicinal Uſes of the Earth of Fields.

The *Earth* of all cultivated Fields, which are of a fat Soil, is effectual for the Cure of all Parts which require Drying, for which Purpoſe they uſe it in *Alexandria* and *Egypt*; and I have ſeen, in *Alexandria*, Perſons labouring under the Dropſy, and Diſorders of the Spleen, making uſe of the Mud of the *Egyptian* Soil. Many, by applying Cataplaſms of this Mud to the Calves of their Legs, to their Thighs, Elbows, Arms, Back, Sides, and Breaſt, have found Relief. The ſame cures inveterate Inflammations, and lax Tumors; and I know ſome, who, from an immoderate Evacuation by the Hæmorrhoids, were become aqueous and hydropical in the whole Habit of their Body, manifeſtly and greatly benefited thereby. Some, by the ſame means, have been perfectly cured of inveterate Pains, which have been fixed in one Place. Thus far *Galen*: What follows, is from *Strato*.

For an inveterate Pain of the Head: Take the Sordes of Baths, or of hot Water, and mix them with black Earth waſhed; or work the Earth in a Decoction of Heads of Roſes; or add to the Earth a Shard or Fragment of a Vinegar-pot, triturated with a Decoction of Bay; or mix the Earth with the Tile of a Clibanus (ſee CLIBANUS); and pour thereto a Decoction of Sampſuchus.

For an Eruption of Puſtules from the Scabies and Impetigo: Take black Earth, and work it with a Decoction of Almonds, or bitter Lupines; or waſh out a Vinegar-pot with a Decoction of Rue, and with the ſame work the Earth; or pound the Globules of Salt, which are found in the Bottom of Veſſels which hold Garum, and mix them with the Earth, and uſe it as an effectual Remedy; or mix the Dung of Pigeons with the Earth, and work them with a Decoction of the Halicacabus.

For an inveterate Cough, with a vitiated Habit of Body: Take Earth, and work it with a Decoction of Calves Bones, and therewith anoint the Breaſt; or waſh out an Honey-pot with the ſame Liquor, and with it work the Earth: You may, alſo, work it with a Decoction of Cumin, Nigella, and Sampſuchus; and ſo uſe it.

For Diſorders of the Spleen: Take Aſhes of Vine-branches, and the grumous Lees of Wine, and work them with Earth; or work the Earth with a Decoction of Leaves of the Capparis; or mix the Recrements, or Droſs, of Silver, with Clay; and ſo uſe it: Or work the Clay with a Decoction of the Serapias Triteſticularis.

For the Dropſy: Pound the old Shards or Fragments of a Veſſel which holds Brine, and mix them with Earth; or mix the Earth with Garum of Pork or Veal; or boil Sampſuchus in Sea-water, and work the Earth with it; or beat Salt-meats in a Decoction of bitter Lupines, and mix them with the Earth; or mix burnt Alum, and the Aſhes of Penyroyal, with Clay, and work them in Oxymel: Or take dry'd Cow-dung; triturate it, and mix it with the Earth, and work them in like manner in Oxymel.

For the Sciatica, and all Coldneſſes of the nervous Parts: Boil Sampſuchus in a Decoction of Calves Bones; then work in it white Earth, and ſo uſe it; or boil an Eel in Salt and Nitre, and mix the Earth with the Decoction; or mix it with ſtrigmentitious Sordes, (ſee STRIGMENTUM) and Quick-lime; or work the Earth in a Decoction of Garlick or Leeks, and then uſe it; or take Coſtus, Caſia, Juncus odoratus, Aſpalathus, Xylobalſamum, and Sampſuchus; bruiſe them, and boil them in Water and Oil, and then mix them with Clay, and ſo uſe them; or pound

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pound Goats-dung and Cow-dung, with the Sordes of Ceratum Rhaphaninum, and mix them with the Earth.

For the Gout: Let the Patient be covered from the Head to the Groin, with the forementioned Compositions; and from the Groin to the very Nails of the Toes, with what follows: Burn the hinder Feet of a Calf, together with the Hoofs; triturate them, and mix them with Earth; or bruise the Stone *Leucographis* in Water in which red-hot Iron has been often quench'd; add thereto an Ounce of Alum, and work them with Earth; or work the Earth in a Decoction of the Leaves of *Cyprus*; or boil Galls till they are dry, and work the Earth with the Decoction. Another Prescription, for the same Purpose, is as follows: Take of liquid Alum, one Ounce; scissile Alum, one Ounce; six Ounces of Gum Arabic; nine Ounces of Ceruss; five Ounces of Melanteria; six Ounces of Misy; twenty-four Ounces of Oil of Myrtles, or Oleum Sicinum; bruise them together; then work them with Earth, and so use them: Or take of Acacia, Coperas, each two Drams; bruise them in Vinegar, then dry them, and mix them with Earth: Or take of Alum, Spuma Argenti, Misy roasted, each four Drams; mix them with liquid Cerate of Myrtle, and work the Whole with Earth: Or take of Ceruss, Spuma Argenti, of each twenty-four Drams; Oil of Myrtle, thirty-four Drams; Water, a sufficient Quantity: Work the Whole with Earth, and so use it. Another Prescription by which the Governor *Philinus* was cured, is as follows: Take of Juice of Mulberries, scissile Alum, Eastern Privet, the Vitex, Galls, Saffron, the Fruit of the Tamarisk, Frankincense, of each six Ounces: Reduce them all to a very fine Powder, and, when it is necessary to use it, dilute the same in Water, and work it with Earth. All that is to be said farther of this Kind of Earth is, that it requires not to be washed, but only to be watered and cherished with the Decoction of unripe Peaches. *Aetius, Tetrab.* 1. *Serm.* 2. *Cap.* 3.

TERRA { AMPELITES. ARGILLACEA. CHIA. CREPOLA. ERETRIA. FABRILIS. GLANDES. GOLTBERGENSIS. } See { AMPELITES TERRA. ARGILLA. CHIA. SONCHUS; LÆVIS; ANGUSTIFOLIUS. ERETRIA. RUBRICA FABRILIS. LATHYRUS; ARVENSIS; REPENS; TUBEROSUS. BOLUS CANDIDUS. }

TERRA JAPONICA.

Cachou, or *Terra Japonica*, according to Mr. *Caen*, Doctor of Physic, of the Faculty of *Paris*, suitably to what was communicated to him by one of his Friends, is an Earth that is found in the *Levant*, where it is called *Masquiqui*, which is usually met withal upon the highest Mountains, where the Cedars grow, under the Roots of which this Earth is found; which of itself is very hard, and in a Lump. To lose nothing of this Earth, the Natives, call'd *Algonquains*, gather it up, Sand and all together, and wet it with River-water, and make it into a Paste, drying it in the Sun to the Hardness we see it of. The Natives always carry it about them, and use it for the Pain of the Stomach: They, also, apply it outwardly like an Ointment upon the Region of the Stomach.

Tho' this Description of *Cachou* appears not very conformable to Truth, because there is no Probability of its being an Earth; yet, as the Person, who gave this Description to Mr. *Caen*, assured him that it was so, and forasmuch as 'tis called in *Latin*, *Terra Iaponica*, I was oblig'd to rank this in the Class of Earths, and leave it to those to determine what it is, who understood more of it than I do: All I shall say is, that you ought to chuse *Cachou* of a tawny Red without, and of a clear Red within, the brightest and least burnt that can be.

Cachou is a very bitter Drug, and of an unpleasant Taste when taken in the Mouth. It is usual to reduce it to a fine Powder, and to mix it with Ambergrise, which, with the Mucilage of Gum Tragacanth, is made up into a Paste, and formed into little Pellets, in Colour and Figure having the Resemblance of Mouse's Dung; and the smaller these Troches are made, the more valuable are they.

The Use of *Cachou*, whole or prepared, is to strengthen the Stomach, and to make the Breath sweet; and, in short, it is one of the best Drugs we have, and yet at this time the least used; which proceeds from the great Use of Tea and Coffee, tho *Cachou* is of much greater Virtues than either of them.

As *Cachou* is very unpleasant to the Palate, especially when first put into the Mouth; therefore some People, besides the Ambergrise, mix Sugar with it. *Pomet.*

Terra Japonica, according to another Account, is the inspissated Juice of the *Areca* or *Faufel* [See ARECA]; and is, also, called *Catechu* in the Shops. This is a gummy, indurated Substance, of a reddish Colour, inclining to black; of an astringent and austere Taste at first, but afterwards sweet and grateful, and void of Smell. There are two Sorts of it; one purer, which, slightly tasted, melts, as it were, on the Tongue; the other harder, and less pure, and consequently of but little Use; and this perhaps led *Schroder* into an Error to mistake it for an Earth.

It is astringent; corroborates the Stomach; removes a Nausea; excites an Appetite; represses Vomiting; and stops Fluxes of the Belly, of the Menses, and Hæmorrhages.

The Learned are not agreed about the exotic Drug, called *Terra Japonica*, and *Catechu*, or *Caetchu*: Some, who take it for a true and genuine Species of Earth, as its Name imports, rank it among Minerals; others will have it to be a compound Substance, participating of a vitriolic Nature; and others there are, who, and indeed rightly, reckon it in the Class of vegetable Substances, and take it for an inspissated Juice.

This *Catechu* is easily dissolved in Water, incorporates with it, and communicates to it a red Tincture, as do many other vegetable inspissated Juices and Extracts: Besides, it is not separated by Filtration, as Earths usually are; but passes the Filtre with the Water; and is, moreover, by Calcination, perfectly converted into Ashes, which Earths are not. That it participates not of a vitriolic Nature, will abundantly appear from the following Experiments: The first is, that no vitriolic Salt can be separated from it. Secondly, The Mixture of an Alcali with it excites or produces not the least Effervescence or Precipitation. And, lastly, a Solution of the same, with the Addition of any kind of vitriolic Substance, becomes an Ink.

Garcias, and others after him, will have the *Catechu* to be the *Lycium* of *Dioscorides*; but are contradicted by *Clusius* and *Vestingius*, because the Trees which yield the *Lycium*, and the *Catechu*, are different in the Shape and Size of their Leaves and Fruits. Some assert it to be the inspissated Juice or Extract of the Fruit called *Anacardium Occidentalium*, or *occidental Anacardium*, because of the seeming Affinity of the Names, that Fruit being called *Cajou*, and *Catzu*. *Cleyer* affirms it to be the Extract of the oriental Acacia, a Plant much like the Tamarind. *Paulus Ammannus* says, it is an artificial Composition, prepared of an Extract of *Indian* Liquorice, *Indian* Calamus Aromaticus, and the Juice of the Areca, which gives it its purple Colour. And, lastly, *J. Otho Helbigius*, a Person very well-skilled in *East Indian* Simples, informs us, that it is extracted from a kind of small, hard, resinous, astringent Fruit, which hangs in a sort of Clusters. This Fruit, he says, with the Leaves of Betel, and Lime, are used over all *India*, in Chewing, for cleansing the Mouth; and is no other than what the Inhabitants of *Java* call *Faufel*, and those of *Malaya Pynang*. *Dale* declares himself of this last Opinion. The Fruit of this Tree is, also, of singular Use in curing the Scrophula, correcting the Blood, and altering noxious Humours; it rectifies a disordered Liver and Spleen, restores the digestive Faculty, and changes the whole Habit of the Body for the better.

It is to be observed, first, that the immature Fruit induces a Vertigo, like an Ebriety contracted from Wine. Secondly, that our *London* Druggists, by the Name of *Terra Japonica*, understand the Extract by itself, as it is imported among us; but, by *Catechu*, they mean a Composition of this Extract, Musk, Ambergrise, and other Ingredients.

TERRA { LEMNIA. LIVONICA. MELITÆA. MERITA. } See { LEMNIA TERRA. TERRA SIGILLATA LIVONICA. CRETA. CURCUMA. }

TERRA NOCERIANA. Mont. Exot. 14. *Terra Bezoartia de Nocera, Species de Terra Lemniæ.* Boccon. Mus. di Fisic. p. 61.

EARTH OF NOCERA.

It is a white Kind of Earth found about *Nocera*, of an alexipharmic Quality, and of great Efficacy in malignant Fevers, and Heat of Urine. *Bocconi.* It is an Astringent, and an Edulcorant, or Sweetener. *Mont.*

TERRA PNIGITES. See PNIGITES.

TERRA PORTUGALLICA. EARTH of PORTUGAL.

It is a reddish Earth, inclining to a Rose-colour, and of a styptic and astringent Quality, so as to adhere to the Tongue; it is made up into little Cakes, with the Figure of a Rose stamp'd upon them. This Earth is highly styptic and astringent, and of Efficacy in Fluxes of the Belly.

TERRA { RUBRICA. SAMIA. SICULA. SELINUSIA. } See { RUBRICA FABRILIS. SAMIA TERRA. BEZOAR MINERALE. CRETA SELINUSIA. }

TERRA SIGILLATA. There are a great Number of sealed Earths mentioned by Pharmaceutical Writers.

1. *Terra Silesiaca.* Offic. *Terra Sigillata vulgo, sive Terra Strigensis. Terra Sigillata Germanica lutea Strigensis dicta.* Schrod. 3. 317. *Sigillata Strigoniana.* Charit. Foss. 5. *Terra Silesiaca sigillata qui Chymicis Axungia Solis dicitur.* Ejusd 6. *Terra Sigillata Silesiaca, sive Terra Sigillata Germanica, Sigillum Strigoniense, Axungia Solis Chymicorum.* Worm. 12. *Terra Sigillata Silesiaca.* Hoffm. Patal. Offic. 664. *Terra Sigillata Silesiana.* Imp. Hist. Nat. 128. *Terra Sigillata Strigoniensis.* Schwenck. Fossil. 395. *Bolus Silesianus.* Calc. Mus. 110. SEALED EARTH OF STRIGA.

It is of a luteous, inclining to a bright-yellow Colour, fat, viscous; and runs abroad like Butter in Water, or in the Mouth. It is generated in the Gold Mines of *Mons Acutus*, or *St. George*, near *Strigonium*, a Town in the Duchy of *Swiduitz*, among very hard

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Rocks. Hence it is digged, and prepared with the greateſt Care, by Direction of the Magiſtrates; and reduced into little orbicular Maſſes, which are impreſſed with a Seal, having the Figure of the different Prominences of the Mountain, two croſs Keys, a Buckler, and on the Right a Star. Under the Mountain are the Words, *Terra Sigillata Montis Acuti*. *Wormius* mentions this Earth under the Diſtinction of red-coloured Earth.

It is effectual in an Hæmoptoe, Phthiſis, Ulcers of the Lungs, and Hæmorrhages of all Kinds; and repreſſes a Dyſentery, and all other Fluxes of the Belly. *Schwenckfeld*. It is highly commended by *Sennertus*, *Lib. de Peſte*.

2. *Terra Sigillata alba & rubra magni Ducis*. Mont. Exot. 13. WHITE AND RED SEALED EARTH OF TUSCANY.

It is ſaid to be an Aſtringent, and an Edulcorant, or Sweetener. *Monti*.

3. *Terra Vitriolata ſigillanda*. M. Hoffm. Flor. Altdorff.

This Earth is taken out of a ſubterraneous Place, called DAK SEIKLOCK, in the Territory of *Welden*. It is like the Terra Sileſiaca, and has been found by a Multitude of Experiments to be of the ſame Virtue in malignant Fevers, as we are aſſured by *C. Hoffman*.

4. *Terra Turcica*. Offic. *Terra Sigillata Turcica*. Schrod. 317. *Paſtilli Turcicis Characteriſticis inſigniti*. Worm. 9. TURKEY EARTH.

The Inſide of the Maſs is all of an Aſh-colour, the Outſide red, anſwering in no reſpect to the *Terra Lemnia*, tho' it is ſuppoſed to have the ſame Virtues; and is commonly ſold for *Terra Lemnia*.

5. *Terra Sigillata Livonica*. Offic. Worm. 12. Charlt. Foſſ. 6. SEALED EARTH OF LIVONIA.

It is redder than the *Sileſian Earth*, and is very aſtringent, whence it is recommended in Dyſenteries, Diarrhœas, and other Kinds of Fluxes.

In the *German* Shops, ſome other ſealed Earths are to be met with; of which the *Terra Strigonienſis*, and *Lignitzenſis*, are the principal. The former, termed by the *German* Writers, *Axungia*, and *Medulla Solis*, is of a yellow Colour, fat like Soap, and melts in Water, or when held in the Mouth. It is dug in the Clefts of hard Rocks, in the Hill of *St. George*, among the Gold Mines near *Strigonium*, in *Hungary*. The Magiſtrates take a great deal of Care, that it be duly prepared; and, being formed into little Balls, it is marked with the Seal of the Town, and believed to be impregnated with the Sulphur of Gold. The *Terra Lignitzenſis*, or *Goldabenſis*, called *Axungia*, and *Medulla Lunæ*, is of a whitiſh Aſh-colour, and imagined to ariſe from Silver. Both theſe Earths are ſaid to be uſeful in malignant Fevers, the Plague, Dyſentery, Diarrhœa, and the Bites of venomous Animals. They operate by Sweat; and the Doſe is between half a Dram, and two Drams. *Geoffroy*.

TERRA { Sileſiaca. / Strigensis. / Tripolitana. / Turcica. / Vitriolata. } See { Terra Sigillata. / Terra Sigillata. / Alana Terra. / Terra Sigillata. / Terra Sigillata. }

TERRIFICATIO. A Coalition of the earthy Particles, in Fermentation.

TERROR. A Fright. This is the Cauſe of many Diſtempers, as Faintings, Epilepſies, Convulſions, Palpitations, and ſometimes of Death. And it is eſteem'd a Remedy for ſome Diſorders, as the Hiccup, and Chin-cough; and *Horace* mentions a Fright as a Remedy for a Lethargy.

TERTHRON, τέρθρον. *Hippocrates*, who was an Iſlander, travel'd much by Sea, and was, in all Probability, well acquainted with Shipping, ſometimes makes uſe of naval Terms, and takes Metaphors from the Terms of Seamen. Of this we have an Inſtance in the Word which is the Subject of this Article.

Terthron, τέρθρον, "properly ſignifies, as *Galen* ſays in his *Exe-*
"*geſis*, the extreme Part of the Sail-yard; whence the Ropes
"which reach to the Extremities of the Sail, are call'd *Terthrioi*
"τέρθριοι. But *Hippocrates*, in his ſecond Book *de Morb. Mu-*
"*lieb.* where he ſays, ἐπὶν ἐνθάδε τὸ τέρθριον ᾖ τὰ πάθεα, ſince
"here is the *Terthron* of the Diſeaſe, means as if he ſhould ſay,
"Here is the utmoſt Pitch and Extremity of the Diſeaſe, and
"what requires all our Care." In the Place here indicated by *Galen*, all the Copies moſt corruptly read τὸ στερεὸν (*ſtereon*),
"the Solidity;" for tho' the Strength and confirmed State of the Diſeaſe may be included in the Expreſſion, yet the Elegance of the Expreſſion is eluded. *Erotian*, alſo, hints at this Place, when he ſays, that, "the *Terthron* of a Diſeaſe is put ἀντὶ τοῦ τὸ τέλος,
"inſtead of the End;" and he adds, that the Antients called the End or Extremity of a thing *Terthron*, and confirms it by the Authority of *Euripides* and *Apollodorus*. According to *Heſychius*, *Terthron* is a Name for the Mainſail; but ſome, he ſays, ſo call the End of the Sail-yard [*Virgil* calls the Ends *Antennæ Cornua*], and the Roof of an Houſe: And with ſome it ſignifies the Extremity and Height; and this laſt Senſe agrees with *Galen*'s Explication.

TERTIANA FEBRIS. A Tertian Fever.

No Fever ſo exactly manifeſts the Nature and Genius of that general febrile Commotion, which preys upon the Veſſels, and nervous Parts, and is, by way of Eminence, called τριταῖος by *Hippocrates*, and the *Greeks*, as that commonly called a Tertian Fever; which rages ſo frequently, ſpares no Sex, Age, nor Conſtitution, and ſeizes the Patient, every other Day, with a kind of Rigor and Horror, which are ſucceeded by a quick Pulſe, which is known from its Frequency, as, alſo, by an uneaſy and burning Heat.

A Tertian Fever, when of the regular and legitimate Kind, is accompanied with theſe Symptoms: The Head is firſt ſeized with Pain; the Joints become languid; about the firſt Vertebræ of the Back, a Pain of the Loins is perceiv'd, which aſcends along the Back, to the Epigaſtrium, and is accompanied with Coſtiveneſs, and a painful Senſe of Tenſion in the Hypochondria. To theſe Symptoms are added a Refrigeration of the external Parts, eſpecially of the Noſtrils and Ears; a Pandiculation, Oſcitation, and Horror, which often produces a Trembling of the Limbs; a ſmall, contracted, weak Pulſe, and ſometimes an inſatiable Thirſt. Theſe Symptoms are ſucceeded by a Nauſea, attended with a fruitleſs Deſire of vomiting, or a real Vomiting of bilious, pe-tuitous, and ſometimes greeniſh Matter, frequently accompanied with a troubleſome Cough, with a Diſcharge of Phlegm, ariſing from acid and viſcid Crudities of the Stomach; then an uneaſy burning and dry Heat ſeizes the whole Body, and the Face, before collapſed and pale, the Skin contracted and rigid, and the Veſſels in the Hands and Feet emptied, riſe, and begin to become red and tumid: The Pulſe, is alſo, larger, fuller, and quicker; the Reſtleſſneſs of the Patient is increaſed; his Reſpiration becomes more difficult; and his Eyes being hardly clos'd, he ſpeaks many improper and incoherent Things. Afterwards theſe Symptoms gradually decreaſe; the Heat is allayed; the Skin is relaxed and moiſtened; high-coloured Urine is diſcharged, reſembling the Liquor obtained in the Diſtillation of Spirit of Nitre, or Aqua-fortis, though without a Sediment. The Pulſe, in the mean time, becomes ſofter; and a Sweat breaking out, the Paroxyſm is removed, though at the ſame time its Duration varies according to the Difference of Conſtitutions, and morbific Cauſes; ſo that in ſome Patients it is protracted to ten or eleven, and in ſome to twenty Hours. On the ſubſequent Day of Intermiſſion, the Body is languid, ſomewhat cold, and eaſily ſeized with an Horror; and the Pulſe, though quick and vehement under the Paroxyſm, is now ſlow, weak, and undulating; the Urine is, alſo, thicker, and depoſits a Sediment, or at leaſt contains a Cloud, which diſcovers a Diſpoſition to a Sediment.

Thus the Courſe of the febrile Paroxyſm, from the very Nature of the Symptoms, may juſtly be claſs'd among thoſe ſpaſmodic and convulſive Motions, which affect almoſt the whole nervous Parts of the Body. Hence it happens, that all thoſe Things, which irritate the nervous Parts to anomalous Motions, ſuch as the Paſſions of the Mind, ſtrong Cathartics, acrid, cauſtic, and poiſonous Subſtances, received into the Body with Aliments, or the Air, Subſtances of a Nature aſtringent, cold, and unfriendly to the Nerves, and acrid Clyſters, with draſtic Purgatives for their Ingredients, greatly contribute not only to the Generation, but alſo to a Relapſe, or at leaſt an Exacerbation, of Tertian Fevers.

The Antients imagined the Cauſe of theſe febrile Commotions in Tertian Fevers, to be an intemperate Bile, ſeparated from the other Humours, extravaſated and lodged in the lower Belly. But the Cauſe which excites and ſuſtains theſe Commotions, is rather an excrementitious Matter, of a ſaline, ſulphureous and active Nature, which, in my Opinion, is principally lodged in the Primæ-Viæ, partly in the biliary Ducts of the Liver, and partly in the Duodenum; for in this Cavity the bilious and ſaliva Humours, eſpecially the pancreatic Juice, being vitiated by their mutual Fermentation with the Crudities ariſing from bad Digeſtion, by their Continuance and Stagnation generate a virulent Matter of this Kind, which, being ſucceſſively convey'd hence, through the lacteal Veſſels, to the Blood, and with it in a ſufficient Quantity to the nervous Coats of the Head, ſpinal Marrow, Stomach, Inteſtines, and other ſecretory and excretory Ducts, excites ſuch an univerſal Spaſm; during which the Blood is firſt forced to the interior and larger Veſſels, and afterwards, when the ſyſtaltic Motion of the Heart and Arteries is increaſed, the Circulation of the whole Maſs of Blood and Humours is accelerated, the Obſtructions in the minute Veſſels of the nervous Parts are remov'd; and when the Spaſm remits, and the excretory Ducts are relaxed, the febrile Matter is eliminated either by Sweat or Perſpiration, after which the Paroxyſm ceaſes, till a ſufficient Quantity, of the like excrementitious Matter, being again convey'd from the Primæ Viæ to the Blood, and nervous Coats, excites and brings on a freſh Paroxyſm.

The Generation of this Matter, and conſequently of a Tertian Fever, is very eaſy, in Perſons of delicate and choleric Conſtitutions, and in thoſe diſpoſed to Spaſms or Commotions of Mind; it is, alſo, more quickly generated in Perſons far advanced in Flower of their Age, than in Infants, and Perſons far advanced in Years: It is, moreover, ſpeedily generated in hot Summers, when Southerly or Eaſterly Winds blow, eſpecially, when cold Liquors are largely drank, or the Body long expoſed to a nocturnal Cold, or moiſt Air, or an Atmoſphere impregnated with minute Inſects, about

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about Lakes and Ponds; but much more, when the Stomach is full of Crudities, or when heavy or aſtringent Aliments are taken, eſpecially with a Nauſea.

'Tis, alſo, certain from Experience, that in the Spring, after copious Veneſection, Perſons of ſpongious Habits eaſily fall into ſpurious Tertian, or Catarrhous Fevers, eſpecially when, at the very Time Fevers are already raging, they are expoſed to a moiſt and rainy Air, and the Stomach is loaded with Aliments of hard Digeſtion. I have, alſo, known a Tertian Fever, ſometimes of the continual, and ſometimes of the double and anomalous Kind, produced by the Repulſion of the Purples by external Cold, by the Itch prepoſterouſly and unſeaſonably cur'd by means of mercurial and ſulphureous Liniments; by an unskilful Drinking of medicinal and mineral Waters, neglecting at the ſame time a proper Regimen; as, alſo, by the hot *Caroline* Waters, which are of an aſtringent Quality, eſpecially in Habits which are plethoric, impure, and full of Crudities.

Tertian Fevers, ariſing from theſe Cauſes, do not always proceed in the ſame manner, but widely differ: For which Reaſon Phyſicians have diſtinguiſhed them into various Species. Thus a Tertian Fever is either of the legitimate or ſpurious Kind: the former principally attacks Perſons of a bilious Habit, and thoſe of delicate Conſtitutions, eſpecially in the Heat of the Summer; and is accompanied with violent Symptoms, ſuch as an Horror, Heat, Head-ach, Thirſt, Vomiting and Uneaſineſs, and an intenſely high-coloured Urine, but it is ſoon terminated and removed. *Hippocrates* indeed aſſerts, that this violent Diſorder, laſts for twelve Hours, and is remov'd by the ſeventh Paroxyſm; but theſe exact periodical Fevers are not found in our Northerly moiſt and cold Climates. Hence *Hieronymus Mercurialis*, in *Prælect. Bonon.* uſes theſe Words: "The Tertian Fever of *Hippocrates* very rarely occurs; and I have hardly ſeen it, tho' "I have practiſed Medicine for forty Years." This I can alſo affirm from my own Experience. But in a ſpurious Tertian Fever, the Symptoms are indeed milder, the Heat not ſo burning, the Vomiting not ſo frequent, the Urine not of ſo high a Colour, and on the Day of Intermiſſion, a Languor of the Strength, a Wearineſs of the Joints, and a Want of Appetite, remain with the Patient. This Species of Tertian is moſt incident to Perſons of languid Habits, Women, and thoſe of ſpongious Conſtitutions, eſpecially in the Autumn.

A Tertian Fever may be, alſo, either regular or irregular, or anomalous, or confuſed. The former preſerves an equal Type, both with reſpect to the Time of its Invaſion and Termination, the Length and Shortneſs of the Paroxyſm, and is accompanied with the uſual Symptoms; whereas, in the latter, the Time of the Acceſſion is irregular, ſometimes in the Fore, and ſome times in the Afternoon, ſometimes in the Evening and ſometimes in the Middle of the Night; the Paroxyſm is ſometimes ſhorter and ſometimes longer; the Urine, at the time of Remiſſion or Intermiſſion, depoſits no Sediment; the Sweat is either too ſmall, or too profuſe, and afflicts the Patient on the Day of Intermiſſion. It is, alſo, accompanied with different Symptoms, according to the Diverſity of Conſtitutions; ſuch as Fluxes, Hæmorrhages of the Noſe, violent Subverſions of the Stomach, intolerable Head-achs, Alienations of Mind, exceſſive Cardialgias, Pains of the Joints, and Gripes of the Inteſtines. And theſe irregular Fevers, which preſerve no Type, are generally epidemical, ariſe from a præter-natural and unuſual Conſtitution of the Summer and Autumn; and are generally of the continual Kind. In the Year 1727, Fevers, of this Kind, were epidemical almoſt all over *Germany*, after an intenſe Dryneſs, and Heat of the Atmoſphere for ſeveral Months.

Tertian Fevers are alſo ſometimes ſimple and ſometimes double. In the former, the Paroxyſms recur every other Day; but in the latter daily, and ſometimes twice a Day, with one Day of Intermiſſion. A double Tertian is however to be diſtinguiſh'd from a Quotidian, which daily keeps equal Times of Acceſſion; but in the former, the Return of the Paroxyſm correſponds to the alternate Days.

There is alſo a Tertian of the continual Kind, which may be known by theſe Signs, It attacks the Patient with Horror, Anxiety, Vomiting, Heat and exceſſive Languor: Nor on the following Day do theſe Symptoms totally intermit, but only remit; the Frequency of Pulſe alſo remains, and is accompanied with Heat, Languor, and Weakneſs; but on the Day of the Paroxyſm, after a previous but gentle Refrigeration of the external Parts, all the Symptoms are again increaſed and augmented. Such Fevers when epidemical, ſometimes continue for two or three Weeks, before they terminate in a legitimate Intermittent. But it frequently happens, that a Tertian is for ſome Days of the continual Kind, and afterwards paſſes into an Intermittent, which is a good Sign; whereas 'tis a bad Sign, when from an Intermittent it changes to a Continual.

Generally ſimple and regular, as well as double and anomalous Tertians are epidemical, and ariſe from a preternatural Conſtitution of the Weather, eſpecially in Summer. Epidemical Tertians are familiar, and, as it were, peculiar to certain Places; thoſe, for Inſtance, which are ſituated low, cloudy, ſurrounded with Lakes, and Ponds, and infeſted with Gnats or Inſects, ſo that the Inhabitants of ſuch Places rarely eſcape a Tertian every Year, and Strangers are oftener afflicted with ſuch a Misfortune, and with Difficulty totally freed from it.

All theſe Species of Tertians are at firſt mild, but are increaſed as the Paroxyſms are repeated; a ſure Proof, that under the Impetus of the Diſorder, by the inordinate Motions of the Solids and the Fluids, the Juices of the Body are more and more contaminated, and rendered intemperate; and theſe Juices, on the Days of Intermiſſion, when Perſpiration and Excretion is diminiſhed, gradually acquire a ſtill worſe Quality.

Every Paroxyſm, is terminated by a Relaxation of the Compages of the Skin, by Moiſture, or Sweat. The Urine on the Day of Intermiſſion is thicker, contains a Cloud, or depoſits a Sediment, which is the more copious, the more the Body abounds in Blood and Juices. But if in the Decline, the Sweat does not break forth, if the Urine is, alſo, thin and aqueous on the Day of Intermiſſion, and the Patient intenſely coſtive, as is very uſual with hypochondriac Patients, theſe Signs are ſtrong Proofs that the nervous Syſtem is greatly affected by Spaſms, ariſing from an obſtinate and rebellious febrile Matter.

Generally about the third or fourth Paroxyſm, ſmall Ulcers ariſe about the Lips, and the Urine is diſcharged with a kind of Heat, after which the Symptoms are remarkably mitigated. But this Species of Fever is beſt, moſt ſecurely, and totally terminated, when effected by Nature alone, or the Aſſiſtance of Art, a copious bilious Flux is procured, and Perſpiration increaſed, on the Day of Intermiſſion; which may be known from the Largeneſs and Vigour of the Pulſe, and the Increaſe of the Strength. But thoſe who labour under epidemical and anomalous Tertians, after the Termination of the Fever, recover Health and Strength in a ſlow and difficult manner, for which Reaſon they require an accurate and proper Regimen.

No Fever by its Heat and intenſe internal Motion under the Paroxyſm, ſo quickly dries a ſucculent, or emaciates a corpulent Habit, and generates ſo large a Quanity of bilious Recrements, which are voided by Vomit, Urine and Stool, as a Tertian, accompanied with an intenſe and long protracted Heat. And this was certainly the Reaſon, why the Antients derived this Fever from an intemperate and redundant Bile, tho' this Redundance is rather the Effect, than the Cauſe of the Diſorder.

Tertians are longer and more obſtinate in Autumn and Winter, than at other Seaſons, eſpecially when the Viſcera are in a bad Condition, the *Primæ Viæ* ſpaſmodically conſtricted, and infarcted with Flatulencies, the Patient coſtive, or voracious; or when he has eaten too much, eſpecially before the Paroxyſm, as, alſo, when, in conſequence of the Neglect of a proper Regimen, under, and after the Paroxyſm, the Sweat is ſuppreſſed, or when the Cure is prepoſterouſly inſtituted, which generally happens in poor Perſons, and thoſe who labour for their Bread. This Doctrine is confirm'd by *Hippocrates*, in *Sect.* 1. *Aph* 9. But Tertians are ſhorter, and leſs dubious when they happen in the Summer, when the *Primæ Viæ* and Viſcera are diſpoſed to a ſound State, and a proper dietetic and diaphoretic Regimen, are skilfully uſed, during the Times of Intermiſſion.

Tho' every Intermittent is not of a very dangerous Nature, yet hardly any Fever requires a ſtricter Regimen, and a more cautious Method of Cure, than thoſe of the Tertian and Quartan Kind; ſince theſe, if proper Meaſures are not taken, bring on violent and incurable Diſeaſes, ſuch as ſlow and hectic Fevers, ſudden Swellings of the Feet, Dropſies, Contractions and violent Pains of the Limbs, flatulent and hypochondriacal Diſorders, and various ſpaſmodic and convulſive Diſeaſes; and in Children Epilepſies; all which Diſorders ſucceed the prepoſterous and too liberal Uſe of Aſtringents, before a due Correction and Evacuation of the excrementitious Matter. Hence *Alexander Tralian*, in *Lib.* 12. *Cap.* 6. juſtly obſerves, "that a Tertian is eaſily cured, "but when it is treated by thoſe Phyſicians who have not Judg"ment enough to take proper Meaſures, it is not only cured "with Difficulty, but alſo ſometimes rendered incurable."

A Tertian in conſequence of ſome Error, either of the Patient or Phyſician, may eaſily change into ſome other Diſorder, a ſimple Tertian, for Inſtance, into one of the double, and ſometimes of the triple Kind; or into a quotidian, and ſlow, or even into a continual or choleric Fever.

Tertian and Quartan Fevers return more frequently and eaſily than other Diſorders, eſpecially when they are prepoſterouſly ſuppreſſed. For when a Patient, lately recovered from ſuch Fevers, is expoſed to a moiſt and cold Air, or a penetrating North-Wind; when his Stomach is over-loaded with too great a Quantity of Food, or full of Aliments of an unſalutary Quality; when his Mind is diſcompoſed by any Paſſion, eſpecially Anger, or a Fright; or when any acrid Purgative is exhibited, forthwith the febrile Spaſms, the Head-ach, the Refrigeration of the external Parts, ſuch as the Ears and Noſtrils, the Oſcitation, Pandiculation, the Pain about the firſt Vertebra of the Loins, the Languor of the Limbs, the uneaſy Stricture and Tenſion of the Hypochondria and Inteſtines, the Horripilation and Refrigeration together with the concomitant Heat return; tho in the firſt Paroxyſm of the returning Diſorder juſt as in the Beginning of all Intermittents, all theſe Symptoms are mild, but increaſed and augmented in the ſubſequent Paroxyſms.

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The Method of preventing Tertians.

Since Tertian Fevers are generally epidemical, and their antecedent productive Cauſe principally conſiſts in ſome Fault, or long Intemperature, of the Air, a Suppreſſion of Perſpiration, and a Load of Crudities in the Primæ Viæ, 'tis ſufficiently obvious, that, when ſuch Fevers rage, an intemperate, impure, and vapid Air is to be avoided; but, above all, a nocturnal and moiſt Air: Nor is the Patient to overload his Stomach with too large a Quantity of Aliments, or thoſe of hard Digeſtion: Neither is he to drink large Quantities of Liquor, eſpecially of the ſpirituous or aceſcent kind; nor to indulge himſelf in the Gratification of his Paſſions.

Among the Medicines proper for preventing Tertians in an exceſſively hot Summer, the moſt conſiderable are, gently nitrous, abſorbent, and diaphoretic Powders; temperate and diluting Decoctions, prepar'd of the Roots of Succory and Vipers-graſs, the Shavings of Hartſhorn, and clean Barley, and us'd for ordinary Drink; as, alſo, the cold *Selteran* Waters, or thoſe of *Wildungen*, which at the ſame time render the Body ſufficiently ſoluble. It is, alſo, expedient every Morning after Sleep, to promote Perſpiration by Infuſions of ſuch Herbs as purify the Blood, ſuch as Scordium and Paul's Betony: For a Tertian Fever does not readily ſeize the Perſon, whoſe Body is ſufficiently ſoluble, and whoſe Perſpiration is free: On the contrary, when he is preternaturally coſtive, and his Body languid, and ſomewhat cold, 'tis a pretty infallible Sign, that a Tertian is not far off.

Intentions of Cure in a Tertian.

In the Cure of all Diſorders, the principal Intention of the Phyſician is to be directed to the Removal of the proximate Cauſes. Since, therefore, Tertians principally ariſe from a thin, acrid, moveable, and bilious Humour, ſtimulating the whole nervous Syſtem, and Coats of the Veſſels, to Spaſms and Strictures, hence 'tis obvious, that the great Intentions to be purſued in their Cure are,

1. To temperate and correct that ſubtile and cauſtic Acrimony.

2. Gently to diſſipate and evacuate, eſpecially by Perſpiration, the corrected and prepar'd peccant Matter, generated and left in the Body in conſequence of an obſtructed Perſpiration.

3. To to mitigate the violence of the Spaſms, which eſpecially under the Cold and Horror excite terrible Symptoms.

4. Seaſonably to diſlodge and evacuate the acid, viſcid, and bilious Crudities, which are principally lodg'd in the Duodenum, and afford a *Nidus* for the febrile Matter.

5. After the Paroxyſm to reſtore Strength to the Body, and preſerve the Excretions in due Order, leſt, as is uſual, after every violent Shock of any Diſorder, and Spaſms of the muſcular and nervous Parts, a want of due Tone in the Parts, and Languor of the Motions, ſhould ſucceed, in conſequence of which the Circulation of the Blood and Humours, together with the Secretions and Excretions, would become languid, and, by this means, the febrile Matter be afreſh generated, cheriſh'd, and accumulated. And

6. When ſuch a Fever is remov'd, ſince it eaſily recurs, carefully to hinder and prevent the Generation of freſh Matter fit for producing a Relapſe.

In order, then, to anſwer the firſt Intention, which is to correct the bilious Acrimony, which, in conſequence of the intenſe Heat, gradually contaminates all the Juices, nothing is more efficacious than common Nitre duly depurated, ſince by fixing the volatile Sulphur, by which the inteſtine Motion is excited, it extinguiſhes the Heat, and produces a far better Effect than Acids, which indeed allay the Heat, but at the ſame time inſpiſſate the Humours; whereas Nitre rather preſerves them fluid and thin. The ſulphureous and bilious Acrimony is, alſo, excellently obtunded by drinking Liquors of a diluting and moiſtening Nature, ſuch as Ptiſans prepared of Barley-roots, of Vipers-graſs, Shavings of Hartſhorn, Juice and Peel of Citron duly boil'd in pure Water; as, alſo, Water-gruel, ſweet Whey, the *Salteran* Waters, or Small-beer well boil'd, and of a diuretic Quality: And theſe are principally beneficial under the Paroxyſm.

The ſecond Intention, which is, after the Paroxyſm, gently to eliminate, eſpecially by Perſpiration, the thin excrementitious bilious Humours now prepared and corrected, is principally anſwer'd by gentle Diaphoretics, ſuch as Ceruſs of Antimony, burnt and Philoſophically prepar'd Hartſhorn, Infuſions prepar'd of Scordium, or Carduus Benedictus, and Citron-peel; as, alſo, the Eſſence of Scordium, or Carduus Benedictus, ſufficiently ſaturated, tho' not very ſpirituous, and mix'd with the anodyne mineral Liquor.

The third Intention of Cure is, to mitigate the Violence of the Spaſms, under the Paroxyſm. This Purpoſe is excellently anſwer'd by the Uſe of nitrous, refrigerating, gently diaphoretic, and diluting Subſtances, together with ſuch things as excite a moderate breathing Sweat: But, among all other Medicines, this Intention is beſt anſwer'd by the anodyne mineral Liquor, or, which may be uſed as a Succedaneum for it, by the dulcify'd Spirit of Nitre well prepar'd; ſince by its mild anodyne Sulphur, which is friendly to Nature, it checks the exorbitant Commotions, not only of the nervous Fluid, but, alſo, of the ſolid, nervous, and muſcular Parts, eſpecially when it is mix'd with fix'd Powders, or diaphoretic Eſſences, and exhibited with Waters of a ſedative Virtue, ſuch as thoſe obtain'd from the Flowers of Elder, the Lime-tree, Primroſes, Lilies of the Valley, common Chamomile, Roſes, the *Egyptian* Thorn, Meadow-ſweet, and that obtain'd from black Cherries.

In order to anſwer the fourth Intention, which is to diſlodge and evacuate the acid, viſcid, and bilious Sordes lodg'd in the *Primæ Viæ*, the Phyſician is carefully to endeavour to correct and eliminate the peccant and intemperate Juices, convey'd thither from the whole Body. Hence, in Caſes where there is a Redundance of acid Crudities, the Cure is perform'd by Abſorbents alone, whether alcaline or ſaline earthy Subſtances. The ſafeſt and moſt efficacious of theſe are the Eyes and Claws of Crabs, and the Shells of Eggs, which, as they are tender, and eaſily diſſolv'd, are for that Reaſon juſtly preferable to Sea-ſhells, which are hard, cannot be eaſily diſſolv'd, and which with an Acid acquire an aſtringent Quality.

We have already mention'd, that nothing is ſuperior to Nitre, in Caſes where there is a bilious Acrimony; but where the Juices are thick, viſcid, and tenacious, no Medicines are more efficacious than neutral Salts, ſuch as vitriolated Tartar, the digeſtive Salt of *Sylvius*, prepar'd of the Caput Mortuum of Spirit of Sal Ammoniac, made of equal Parts of Salt of Tartar, and Sal Ammoniac, as, alſo, depurated Sal Ammoniac itſelf: Theſe Medicines are certainly highly beneficial and efficacious in robuſt Perſons, accuſtom'd to a coarſe heavy, Food and Aliments obtain'd from the Sea, ſuch as the *Swedes*, the *Dutch*, and the *Weſtphalians*, with whom theſe Fevers generally laſt very long. But theſe Salts muſt be diluted in a ſufficient Quantity of ſome aqueous Vehicle; for theſe Medicines, when duly repeated, or exhibited in a large Doſe, beſides their inciding Quality, alſo, prove purgative, and effectually eliminate the Sordes. For this Reaſon, in our Days, the Salts prepar'd of medicinal Waters have acquir'd a juſt Reputation for their Salubrity, ſuch as the Salts obtain'd from the Waters of *Sedlitz* and *Egra*; and, in Imitation of them, *Epſom* Salts; half an Ounce or more of which, diſſolv'd in a Pint of Water, by deterging and evacuating the viſcid and excrementitious Sordes of the *Primæ Viæ*, is of excellent Service againſt Intermittents, and the Diſorders ariſing from the Stomach. The ſame Effect is produc'd by the bitter *Sedlitz* Waters, which I diſcover'd; for I have known Tertians cured only by drinking half a Pint of them three or four times on the Days of Intermiſſion. But ſometimes the Weakneſs of the Stomach, and the Frequency of Spaſms in it, together with acid, ſaline Juices, which are uſual in Infants, old Perſons, hypochondriac Patients, and thoſe labouring under Cardialgias, contra-indicate the Uſe of Salts: For which, Reaſon in ſuch Caſes, it is rather expedient to exhibit an Ounce or two of Manna, with or without Rhubarb, with the Addition of a Dram, or half a Dram, of the *Terra foliata Tartari*, and a few Drops of the Oil of Cedar.

When the *Duodenum* is full of a bilious Humour, or the biliary Ducts infarcted with tough and contaminated Juices, it is expedient to make an Evacuation, by means of Emetics. For this Purpoſe we may, to weak Patients, exhibit Ipecacuanha-root, but, to more robuſt Perſons, this Root mixed with a Grain or two of Emetic Tartar, Emetic Tartar by itſelf, alſo, or, which is ſtill better, the emetic Julap prepar'd of ſpirituous Citron-peel-water, Julap of Roſes, and diſſolv'd Emetic Tartar; but if 'tis neceſſary, not only to purge the ſuperior, but, alſo, the inferior Viſcera from recrementitious Sordes, in Perſons who indulge themſelves in Gluttony, both thoſe Ends may be commodiouſly obtain'd by an Infuſion of Manna, prepar'd of an Ounce or an Ounce and an half of Manna, a Dram of the Terra foliata Tartari, and one or two Grains of emetic Tartar.

The peccant Humours being thus corrected, and evacuated thro' the ſeveral Emunctories of the Body, the Phyſician is next to purſue the fifth Intention of Cure, which conſiſts in reſtoring the Strength of all the ſolid Parts, eſpecially of the Stomach and Inteſtines, which are weaken'd by the long continued Spaſms and Paroxyſms. This is a Circumſtance of ſuch Importance in the Cure of Intermittents, that tho' alterative, aperient, bitter, and evacuating Medicines are ever ſo long us'd; yet the Paroxyſms are not remov'd, whereas it remits, and at laſt ceaſes, by the due Uſe of proper Corroboratives; for when the Strength of the nervous vaſcular and muſcular Parts is reſtor'd, they are not ſubject to Stagnations of the Humours, which are the Cauſes of the ſpaſmodic Paroxyſms; but the Circulation of the Blood, and all the Juices, rather becomes more free, the Pulſe quicker, and the Reſpiration, together with the Secretions and Excretions, ſtronger; ſo that the Paroxyſms not only ceaſe, but, alſo, the freſh Fomes of the febrile Spaſms is diſpel'd, which otherwiſe gains Strength, when, on the Day of Intermiſſion, the Patient's Reſpiration is languid, and his Pulſe ſmall.

But, among all the antifebrile Specifics of an aſtringent Quality hitherto known, ſuch as the aſtringent Barks and Roots,

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Perſpiration of Steel or Alum, or even the ſomewhat hotter Medicines, none is more temperate, ſafe, or better accommodated to Perſons of all Ages, Temperaments, and Sexes, or anſwers more Intentions of Cure, than the Peruvian Bark, as is evinc'd by numberleſs Experiments; for when this Medicine is us'd at a proper Seaſon, and in Conjunction with a due Regimen, ſo as not to ſuppreſs, but rather to promote, the natural Excretions, it, on account of its mild earthy aſtringent Principle, and balſamic Bitterneſs, ſurpaſſes all other Medicines; and, when a few Doſes of it are only exhibited, miraculouſly allays febrile Paroxyſms: But 'tis far more efficacious in Powder and Subſtance, than in Decoctions, Infuſions, Eſſences, or Extracts; and, if all other Circumſtances are alike, if it is exhibited in the time of Intermiſſion, the Pulſe becomes more brisk, the Heat and Perſpiration greater, and the Body, eſpecially in choleric Patients, more ſoluble; all which are certain Proofs of its happy and ſucceſsful Operation. I often preſcribe an Electuary, by which I have ſeen a great Number of Patients labouring under Tertian Fevers cur'd, and which is prepar'd in the following manner.

Take of Elder-rob, half an Ounce; of *Peruvian* Bark, ſix Drams; of the Powder of common Chamomile-flowers, two Drams; of the Extract of the leſſer Centaury, and Powder of Cloves, each half a Dram; and of the Syrup of Citron-juice, an Ounce and an half: Make into an Electuary.

I ſometimes, alſo, in order to facilitate Perſpiration, mix with it half a Dram of diaphoretic Antimony, old Theriaca, or Sal Ammoniac; and, after the Paroxyſm is over, every two Hours I exhibit half a Dram of this Electuary. But for thoſe who have tender Conſtitutions, and weak Stomachs, the Bark is to be reduc'd to a liquid Form in the following manner.

Take of *Peruvian* Bark, an Ounce; of Caſcarilla, Cinnamon, and Salt of Tartar, each one Dram; of the Water of Chamomile-flowers, one Pint and of Wine, the like Quantity: Digeſt in a gentle Heat, and to the Liquor, when ſtrain'd, add half an Ounce of the Syrup of Orange-peel: Mix for an antifebrile Potion, an Ounce or two of which are to be taken every two Hours.

In order to prevent, which is the Deſign of the ſixth Intention, the frequent Relapſes of Intermittent, and eſpecially of Tertian Fevers, there is no more effectual Method, than to avoid all ſuch Things, as have a Tendency to generate ſuch Fevers, carefully obſerving the Cautions before inculcated in the Method of Prevention: And ſince, when the Body is exhauſted by the Fever, the Appetite, on its Departure, is generally very keen, whilſt the Stomach and Nature are as yet but weak and languid, it frequently happens, that new Crudities are regenerated in the *Primæ Viæ*, which lay a Foundation either for a ſlow Fever, or a Relapſe into the former, which was before remov'd. Hence 'tis abſolutely expedient, that thoſe who are juſt recover'd from a Fever, ſhould eat light Suppers, and Aliments of eaſy Digeſtion, and uſe proper Meaſures to ſupport the Strength of their Stomachs, eliminate the Sordes from the *Primæ Viæ*, and deterge the Remains of the Diſorder, if there are any. For this Purpoſe I recommend the moderate, tho' frequent, Uſe of the *Balſamic Cordial Pills*, nine or eleven of which may be ſwallowed every other Day, either at Morning or Night; for by their means the whole Body acquires Strength, the Flatulences are eaſily diſcuſs'd, the Body render'd gently ſoluble, the Pulſe increas'd, and the Perſpiration render'd brisker. In this Caſe, excellent Effects are, alſo, produc'd by Stomachic corroborative Elixirs, of which thirty or forty Drops are to be taken before Dinner. This Intention is, alſo, excellently anſwer'd by the Balſamic Elixir, the Stomachic Elixir of *Michaeli* to be found in the *Theſaurus Pharmaceuticus* ſubjoin'd to the *Clavis Schræderiana*, or the Stomachic Eſſence prepar'd in my manner; or the Eſſence of red Gentian, mix'd with Sal Volatile Oleoſum, as, alſo, my viſceral Elixir.

The Methods of Cure in particular Caſes.

When a Load of peccant Humours in the Stomach and Duodenam calls for an effectual Depletion, which may be conjectur'd from a previous Courſe of Gluttony, an Anxiety of the Præcordia, Nauſea, Eructations, and Bitterneſs of the Mouth, we are, immediately after the firſt or ſecond Paroxyſm, to exhibit, on the Day of Intermiſſion, ſuch an Emetic as we have above recommended; or, if the Stomach is ſtrong, and peccant Matter to be evacuated by Vomit and Stool, the following Formula may be preſcrib'd.

Take of *Sedlitz* or *Epſom* Salts, half an Ounce; and of emetic Tartar, two or three Grains: Reduce to a Powder, to be diſſolv'd in half a Pint of pure tepid Water, to be drank two Hours after the Paroxyſm is ended; afterwards facilitating the Evacuation by large Draughts of thin Water-gruel, with a large Quantity of Butter in it.

But as ſoon as the Strength is, in ſome meaſure recover'd, after the Evacuation, ſome Doſes of the above deſcrib'd antifebrile Electuary are forthwith to be exhibited; by which means it has often happen'd, that the Fever has been remov'd in its very Beginning, and by the Uſe of a proper and moderate Regimen never return'd.

On the contrary, if any thing hinders the ſalutary Excretions, and many ſerous and crude Juices remain within, which require a ſufficient Evacuation, the Cure is to be begun by purging with deterſive Salts: For which Purpoſe,

Take of *Sedlitz* Salts, half an Ounce; of Sal Ammoniac, or the digeſtive Salt of *Sylvius*, and of Crabs-eyes, each two Drams; and of purified Nitre, one Dram: Make into a Powder, of which half a Dram is to be taken every two Hours, in an Ounce of pure Water, or common Chamomile-water or Piſan, drinking, immediately after, a Cup of Tea.

With this, after I have, for ſome of the intermittent Days, mildly and gradually purged the whole Inteſtines, and the Fever yet remains, or is not diminiſh'd with reſpect to its Vehemence, I either order equal Quantities of the *Peruvian* Bark and Salts, or my Electuary alone, to be interpos'd; and by this Method I have ſoon and happily cur'd epidemical and autumnal Tertians.

But if the Patient is ſubject to the hypochondriac Diſorder, is of a delicate Conſtitution, is coſtive, or afflicted with Inflations of the Stomach, is impatient, and readily diſpos'd to Commotions of Mind, we are neither to uſe Emetics, nor purgative Salts; but the moſt happy Effects are produc'd by Clyſters prepar'd of temperate, carminative, and emollient Subſtances, as, alſo, the balſamic Pills exhibited in a ſmall Doſe, nine, for Inſtance, or eleven, at the time of Intermiſſion, giving ſome Hours, either before or after, a digeſtive Powder, prepar'd of Crabs-eyes, the *Terra foliata Tartari*, vitriolated Tartar, and depurated Nitre.

In the Acceſſion of the Fever, and under the Paroxyſm, eſpecially during the Rigor, nothing is to be attempted by the Phyſician: The Patient is at that time, alſo, to abſtain from drinking, eſpecially cold Liquors, even tho', under the cold Fit, he ſhould be rack'd with Drought. But as the Heat gradually increaſes, and arrives at its Height, a ſufficient Quantity of Drink is to be allow'd, tho' not in large Draughts, but ſmall Quantities frequently exhibited, taking care, at the ſame time, that it be not ungrateful to the Palate. For this Purpoſe, we may uſe the Decoctions and Infuſions already recommended, and eſpecially Piſans, or Water-gruel, with Vipers-graſs, adding the Syrup of Lemons, or Raſpberries, as, alſo, the dulcify'd Spirit of Nitre, and Oil of Cedar. In order to extinguiſh the Heat, nothing is more proper than a temperating Powder, conſiſting of two Parts of Crabs-eyes, and one Part of Nitre, frequently exhibited with Piſan.

When the Heat remits, and the Paroxyſm is terminated, the appearing Moiſture or Sweat on the Skin is to be gently promoted, not only by the Heat of the Bed and Stoves, but, alſo, by internal Medicines: For which Purpoſe, beſides the Things already mentioned, Infuſions of the Roots of Vipers-graſs, Scordium, and Citron-peel, are excellent. But, after the Fever is totally remov'd, the Body is to be carefully defended againſt all Refrigeration internal or external, whilſt we are rather to keep it in a perpetual Perſpiration; which may be obtain'd by proper Exerciſe, and the frequent Drinking of warm Liquors.

Practical Cautions and Obſervations.

In order to the skilful Cure of Tertians, whether ſimple, double, or continued, the Beginning and End of the Paroxyſm are, above all things, to be obſerv'd by the Phyſician, who may judge of it from the Refrigeration of the Extremities, the Pandiculation, the Oſcitation, the Horror, and a Change of the Pulſe into one of a more quick and contracted Kind. But he is to judge of the Termination of the Paroxyſm from the increas'd Softneſs of the Pulſe, the Remiſſion of the Heat, and the Moiſture or Sweat on the Body; for, either before or during the Paroxyſm, 'tis not expedient either to let Blood, or exhibit a Vomit, a Purgative, *Peruvian* Bark, or any other corroborating and aſtringent Medicine. But, when the Paroxyſm is over, the Sweat, when 'tis expedient, is to be commodiouſly promoted; and in the Time of the total Intermiſſion, it is proper to exhibit Diaphoretics, Evacuants, or Specifics, accommodated to the peculiar Circumſtances of the Patient.

As a Tertian in the Beginning, eſpecially in hot Conſtitutions, often reſembles a continual and burning Fever, we are only at that time to uſe temperating, diluting, gently ſaline, digeſtive and nitrous Preparations, abſtaining from Emetics, and acrid, hot Sudorifics, till it has aſſum'd the Type of a Tertian.

If

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If a Tertian is obstinate, as in the Autumn, or passes into a Quotidian, the antifebrile Potion, described by *Crollius*, from him recommended by *Riverius*, and consisting of the distilled Water of Carduus Benedictus, Salt of Wormwood, and Spirit of Vitriol, drank twice or thrice a Day, afford great Relief, especially when the balsamic Pills are interposed. But 'tis to be observed, that the Spirit of Vitriol is not to be immediately mixed with the Salt of Wormwood, but the Mixture is to be made in the Water. I, also, generally substitute *Oil of Tartar per Deliquium* in the room of the Salt of Wormwood, observing, in the Mixture, exactly to hit upon the Point of Saturation. And such a Potion is possessed of a similar, or even a superior, aperient Virtue, to the medicinal and mineral Waters above-mentioned.

The same Potion is highly beneficial in a too bilious Tertian, or one produced, in choleric Patients, by Anger. We are, in such Cases, carefully to abstain from bitter, sudorific, alexipharmic, acrid, aromatic Medicines, and much more from volatile Salts; but we are rather to use highly temperate, saline, nitrous, and precipitating Medicines.

Peruvian Bark is certainly an excellent Antifebrile, and I have found it both safe and efficacious in epidemical Fevers. But it is always more safe in Patients of delicate hot and brisk Constitutions, as, also, when the Urine deposits a Sediment, and the Perspiration is freely carried on, than in languid, melancholic, and phlegmatic Patients, Women who labour under a Suppression of the Menses, and those in whom the Excretions are defective, or the Urine crude. Hence, after the Exhibition of the Bark, Motion of the Body is carefully to be injoined; and not cold, but hot, Liquors prescribed for Drink.

'Tis sometimes necessary, by means of the *Peruvian* Bark, and other Specifics, to check the Paroxysms, before the morbific Matter is corrected, and sufficiciently evacuated, that the Physician may afterwards more successfully correct and eliminate the Fomes of the Fever by proper Remedies.

When the Heat, and other Symptoms are so violent as to exhaust the Strength, I have found from many Instances, that happy Effects are produced by *Peruvian* Bark mixed with Nitre, and exhibited in the Form of an Electuary; by the Use of which, I have seen the Symptoms immediately mitigated, and the Patient's Strength increased: Only 'tis to be observed, that, even after this, the febrile Matter is to be corrected and evacuated by proper Medicines.

As acrid Purgatives increase the Spasms, they are never to be exhibited in a Tertian, much less when by the *Peruvian* Bark, or other Medicines, the Paroxysms are removed, because they easily produce a Relapse. But if the Patient is costive, his Body is to be rendered soluble by Clysters, or the balsamic Pills, interposing the Use of the Salts.

Emetics, when indicated, are, in the very Beginning, to be used without Delay; nor are we to wait, till the Matter is concocted; but rather eliminate it by the nearest Way, before it diffuses its hurtful Influences farther. But, if the Patient has already laboured under a Tertian for some time, the preternatural Heat disposes the Stomach to an Inflammation, which is afterwards easily brought on by an Emetic. However, when the Paroxysm returns frequently, tho' mildly, and when the Fever, thro' a Neglect of a proper Regimen, or a bad Method of Cure, continues for some Months, a Vomit is often exhibited with Success: Only 'tis to be observed, that at this time a smaller Dose is to be exhibited, than at the Beginning; and that, by means of such an Emetic, so large a Quantity of bilious Humours is evacuated from the *Duodenum*, that tho' the Fever does not totally cease, yet 'tis afterwards easily cured by antifebrile Specifics, especially the *Peruvian* Bark, with the Addition of a due and proper Regimen.

In Tertian Fevers, Venesection is not to be used without the greatest Caution. In the Beginning of the Fever, when it resembles one of the continual Kind, when the Heat is intense, and accompanied with a Delirium, when the Disorder happens in the Summer, when the Patient is in the Flower of his Age, of a bilious Constitution, easily provok'd to Anger, and addicted to luxurious and high Living, opening a Vein is of great Service; only the *Primæ Viæ* are to be previously cleansed, and the Time of Intermission chosen for that Purpose. A few Hours before or after the Venesection, the Patient may drink a few Cups of an Infusion of common Chamomile-flowers, which is of singular Efficacy against Fevers; partly because the Blood, being by it attenuated, circulates more freely; and, partly, because the spasmodic Motions, which constitute the very Nature of these Fevers, are, by its means, in some measure allay'd: On the contrary, when the *Primæ Viæ* are full of Crudities and Sordes, the Patient not plethoric, and other Symptoms not present, Venesection is injurious, because the salutary Excretions, especially Perspiration, are, by its means, suppressed; and the Fever, as we find from Experience, increased and protracted.

In Intermittent Fevers, we are absolutely to abstain from Opiates and Anodynes, among which are, the *Pilulæ de Cynoglosso*; for tho' they mitigate, and sometimes suspend, the Paroxysm, they yet impair the Strength, and disturb the whole Progress and salutary Crisis of the Fever; so that the Cause of the Disorder becomes stronger, and the Paroxysms far more violent. But the *Pilulæ Wildeganſii*, or the *Theriaca Cœlestis*, are far more proper and expedient in this Disorder.

Preparations of Alum and Vitriol, also, stop the Paroxysms of Fevers. But, if these vulgar Medicines are exhibited, 'tis necessary, after they are used, to promote Sweat by Exercise, or by warm Decoctions and Infusions, that their noxious Qualities may be, in some measure, prevented; for, after the preposterous Use of these and other more powerful Astringents, I have observed many Misfortunes, especially a total Suppression of salutary Discharges of Blood, in those accustomed to them.

Cascarilla-Bark is, also, an excellent Medicine in Intermittent Fevers, on account of its balsamic, sulphureous, anodyne, earthy, and astringent Principle. But, because it generally throws the Blood into preternatural Commotions, and excites a violent Heat, it is not much used in bilious Patients, and those subject to impetuous Motions of their Fluids; and, if it is prescribed for such, a very small Dose of it must only be used. But for languid and phlegmatic Patients, as, also, for Women, it is more prescribed; upon which Occasions, it is most commodiously mixed with *Peruvian* Bark.

Tho' Absorbents are of singular Efficacy in the Cure of Fevers, yet they ought to be used moderately, and chosen judiciously; for when large Quantities of them are exhibited, they are not subdued by the Solvent or Menstruum of the Stomach; but, remaining entire, overload it, or which is worse, by uniting into a kind of Paste, create Anxieties, and a Nausea. The coarse Absorbents, principally obtained from Sea-substances, are not only with Difficulty dissolved, but, also, afterwards, acquire an astringent Quality.

It frequently happens, that in the Paroxysm, especially its Beginning, in consequence of a Congestion of Blood to the Head, particularly in plethoric Patients, there arises a violent Head-ach, accompanied with a Perturbation of the Senses and Imagination. But this Head-ach is not to be promiscuously removed by Topics; for, I have observed, that the common Family Epithems, prepared with Wormwood, Rue, Cumin, Juniper-berries, common Salt and bruised Bread, do more Harm than Good, in consequence of the Vapour with which they fill the Head. Much less are we to use cephalic and nervous Substances, such as, my *Balsam of Life*; which are, on other Occasions, highly beneficial in Head-achs.

In the Paroxysm, hot Liquors, such as Tea and Coffee, are highly improper, because they too much exagitate the acrid and bilious Humours of the Blood, and surprisingly increase both the Heat and Anxieties; for *Hippocrates*, in *Lib. 3. de Morb.* informs us, "that hot Liquors are not expedient in Tertians, but rather "such as are cold." But out of the Paroxysm, these warm Potions are of singular Service, especially when the Body is sufficiently soluble.

When a Tertian Fever is removed by means of Specifics, the proper Methods of preserving Health, are not to be neglected; but Refrigeration of the Body is to be carefully avoided, Moderation in Eating and Drinking observed, and the Use not only of the balsamic Pills, but, also, of the Stomachic Elixirs, for some time persisted in.

But if, in consequence of drinking large Draughts of cold Liquor, or the preposterous Use of Astringents in Tertians, œdematous Tumors succeed, we are, by no means to use acrid Purgatives, Chalybeates, or volatile Salts, but the Cure is rather to be attempted by absterfive Salts, balsamic Pills, and temperate Decoctions of the Woods. When the Patient labours under an *Anasarca*, great Relief is, also, afforded by an Emetic, mixed with a due Quantity of the Extractum Parchymagogum Crollii, since by this means a large Quantity of Water is evacuated.

I have often observed, that plethoric old Persons, and those accustomed to Venesection, by Refrigeration, have fallen into a violent Colic, succeeded by a continual epidemic Tertian, and in these, Venesection proves highly beneficial; but the *Peruvian* Bark, too soon exhibited, generally proves so prejudicial, as to induce a Quotidian, resembling an Hectic.

To Children of eight or ten Years of Age, labouring under Tertians, I have with Success exhibited an emetic Potion, and afterwards, ordered Clysters of antifebrile Ingredients, such as the lesser Centaury, and *Peruvian* Bark to be injected, by which means the Fever ceases totally, and never returns.

Women become Cachectic from a Suppression of the Menses, when seized with a tertian Fever, are to be treated very cautiously, rejecting all drastic Medicines, Evacuants, Corroboratives, and even Emmenagogues; which, however, if temperate, may be successfully used, when the Fever is wearing off. But great Relief is afforded by Clysters of gently laxative, bitter, and carminative Ingredients; as, also, by gently laxative Infusions, which contain bitter Ingredients, *Peruvian* Bark, and Filings of Steel.

Childbed Women, labouring under intermittent Fevers, suffer very much, and are afflicted with hysteric Symptoms, unless their *Lochia* are duly attended to, especially when this Evacuation, together with the Fever, is too soon suppressed, by Absorbents obtained from Sea-substances, or precipitating Substances of a gross Texture, such as Shells and Coral, with or without an Acid. In this Case, great Relief is afforded by the *Pilulæ Balsamicæ*

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famicæ tonicæ, which are highly beneficial in Diſeaſes ariſing from any Fault of the Uterus. *Frederic Hoffman.*

TERTIANARIA. A Name for the *Scutellaria*. See CASSIDA.

TERTIAS.

The *Latin* Phraſe *ad tertias*, though frequently uſed in Medicine, is capable of a double Interpretation, for it may either ſignify two Thirds, or one Third; that is, when applied to Decoctions: For Example, it may either ſignify, that the Boiling ſhould be continued till only one Third of the original Liquor remains behind; or till only one Third of the Whole is waſted, and two Thirds are left: But the latter ſeems to be the more common and approved Acceptation; and ſo, likewiſe, *ad tertias implere*, or *ad duas tertias*, is not to fill one Third, but two Thirds of a Veſſel. *Edinburgh Diſpenſatory.*

TERTIUM SAL. A neutral Salt.

TESSELLÆ. The ſame as ROTULÆ, or TABELLÆ, Lozenges, or Troches.

TESSERÆ OS. The *Os Cuboides*.

TESTA. The Shell of a Fiſh, or Snail; or an earthen Veſſel.

TESTES. The Teſticles.

TESTICULI. The Teſticles. See GENERATIO.

THE METHOD OF TREATING A CANCER, OR SPHACELUS, IN THE TESTICLES.

If a Scirrhoſity of the Teſticle ſhould degenerate into a Cancer, or an Inflammation into a Sphacelus, or if from any other Cauſe the whole Teſticle ſhould be affected with Putrefaction, one, and that a miſerable Remedy only remains, by extirpating the Teſticle, in order to prevent the Diſorder from extending itſelf to the Groin, and the interior Part of the Abdomen, and at laſt, killing the Patient. The Method of performing this Operation is explained under the Article CASTRATIO.

But when the Teſticle is only in part corrupted by an Abſceſs, there is no Neceſſity of extirpating it entirely, but only of opening the Abſceſs, and afterwards cleanſing and healing the Ulcer. *Garengeot* obſerves, that it is extremely neceſſary in every Caſtration, that an Inciſion ſhould be made at the Ring of the Abdomen, and that the ſpermatic Veſſels ſhould be divided from the Parts to which they adhere, and a Ligature be made about them, at the Ring, or even above it, before the Teſticle be touched; which Method, he ſays, will not only be milder to the Patient, but even promote the Cure: But for what Reaſon, he does not ſay. On the contrary, it is rather to be feared, that ſuch an Inciſion would weaken this Part of the Abdomen, and make it liable to be affected with a Rupture; not to mention the Pain, which the Patient muſt undergo, in ſuffering this Inciſion, which appears, at leaſt to me, unneceſſary; beſides the Danger of an Inflammation being produced by the Ligature, which might proceed to the internal Parts. But if the Corruption lies in the ſpermatic Veſſels to the Ring, or above it, Caſtration ought rather not to be attempted.

OF AN INFLAMMATION OF THE TESTICLES.

Sometimes one, or both the Teſticles are attacked with an Inflammation, which is attended with excruciating Pains, eſpecially if the Diſorder comes to any conſiderable Height.

This Diſorder may proceed from two Cauſes: 1. From external Violence, as a Fall, Bruiſe, or Contuſion, which may readily happen from mounting an Horſe haſtily, or careleſsly. 2. From a Venereal Cauſe, by the too early or imprudent Checking of a Gonorrhœa.

An Inflammation of the Teſticles may be diſtinguiſhed from any other Diſorder, particularly a Rupture of the Scrotum, when the Patient, after any of the above-mentioned Cauſes, complains of a Swelling, Heat, Redneſs, and Pain in the Teſticles, and when the Tumor and Inflammation are apparent on Inſpection. Beſides, upon feeling the affected Teſticle, it will be found preternaturally enlarged, and ſometimes equal to the Size of a Fiſt.

This Diſorder is far from being trivial; for frequently an Abſceſs or Sphacelus is induced, and the Patient is either deprived of his Virility, or his Life; or it degenerates into a Scirrhus, or a Cancer, the conſequence of which, alſo, is generally Death; or laſtly, it is ſucceeded by a Sarcocele, or Hydrocele, not without extreme Uneaſineſs to the Patient.

The ſame Medicines are required for reſolving an Inflammation of the Teſticles, which are uſed for the ſame Intention in Inflammations of the Breaſts (ſee MAMMA); particularly Vinegar of Litharge, and Lime-water, mixed with camphorated Spirit of Wine, Ceruſs, Tutty, and Lapis Calaminaris: But in the Night-time, when Fomentations are inconvenient, apply the Plaiſter of Frogs, with a double Quantity of Mercury, or the Diachylon-plaiſter. Nor are internal digerent Medicines to be neglected: If the Tumor proceeds from external Violence, or an Inſpiſſation of the Blood, the Powders of prepared Crabs-eyes, Oyſter-ſhells, Mother of Pearl, Cinnabar, and *Arcanum Duplicatum*, are to be frequently exhibited; Sorbitions, alſo, of Tea, and Decoctions of digeſtive Roots, Woods, and Herbs; every thing which heats the Blood, and all Foods difficult of Digeſtion, or taken plentifully, are to be carefully avoided. When the Heat is very violent, it may not be improper to mix a little Nitre with the above-mentioned Powders, and ſome Drops of the Spirit of Vitriol, or of Sulphur, with the Patient's Drink; and if he be plethoric, Blood may be taken from the Arm.

If the Diſorder ariſes from a Venereal Infection, Purgatives, mixed with *Mercurius Dulcis*, ſeem neceſſary, and all thoſe Remedies which are proper againſt the Venereal Diſeaſe. Nor are warm Drinks of Tea, or Piſans made of Barley, Liquorice, and Aniſe boiled in Water, to be omitted, which not only ſerve to temper and attenuate the Blood, but, alſo, to diſſipate the Inflammation.

If the Surgeon be called too late, or if the Inflammation be too violent to yield to the above diſcutient Remedies, a Suppuration, or Gangrene is generally the Conſequence. Therefore, the Application of the ſame ſuppurative Medicines, which are directed under the Article MAMMA, become neceſſary. When the Pus is ripened, and the Abſceſs does not quickly burſt ſpontaneouſly, it muſt be carefully opened with the Knife, and the Matter being diſcharged, let the Wound be deterged with ſome digeſtive Ointment, and ſome ſpirituous Injections which reſiſt Putrefaction; then heal the Wound with ſome vulnerary Balſam. But in digeſting the Matter, and diminiſhing the Pains, the Plaiſter of Henbane, and, alſo, of Diachylon, with the Gums, are very efficacious; and, in the mean time, particular Care muſt be taken to remove the Venereal Taint. Altho', in theſe Caſes, the *Scrotum* is often ſo conſumed, that the Teſticle is expoſed to View, yet, if digeſtive and balſamic Medicines be properly apply'd, the loſt Subſtance of the Scrotum may be reſtored, as I have often obſerved. *Heiſter's Surgery.*

See the Method of removing Tubercles of the Teſticles, and that of Caſtration, under the Article HERNIA.

TESTICULUS MORIONUS. A Name for the *Orchis*; *morio*; *mas*; *foliis maculatis*; and for the *Orchis*; *morio-fœmina*.

TESTUACEUS, or TESTUACEUS PANIS. Bread bak'd on a Tile, or in an earthen Veſſel.

TESTUDO TERRESTRIS. Offic. Schrod. 5. 333. Ind. Med. 116. Bellon. de Aquat. 52. Aldrov. de Quad. Ovip. 705. Geſn. de Quad. Ovip. 107. Charlt. Exer. 30. Jonſ. de Quad. 141. *Teſtudo terreſtris vulgaris*. Raii Synop. 3. 243. THE LAND TORTOISE.

The recent and crude Blood is preſcribed in an hectic Fever; and the ſame, dry'd, is recommended for the Epilepſy.

TESTUDO MARINA. Offic. Schrod. 5. 333. Bellon. de Aquat. 50. Schonef. Ichth. 74. Geſn. de Quad. Ovip. 113. Aldr. de Quad. Ovip. 712. Charlt. Exer. 30. Jonſ. de Quad. 147. *Teſtudo marina vulgaris*. Raii Synop. A. 254. THE SEA TORTOISE, or TURTLE.

The Parts in Uſe are the *Legs*, the *Penis*, and the *Gall*. The Legs are worn as a moſt approved Amulet againſt the Gout; and the Gall is good for the Eyes. *Schroder. Ligon. de Inſula Barb.* commends the Penis in nephritic Diſorders.

TESTUDO PALUSTRIS. Offic. *Teſtudo nigra paluſtris*. Ind. Med. 116. *Teſtudo lutaria paluſtris*. Schw. Rept. 164. *Teſtudo aquarum dulcium & lutaria*. Raii Synop. A. 254. Jonſ. Quad. 146. *Teſtudo aquatica*. Charlt. Exer. 30. *Teſtudo lutaria*. Rondel. de Aquat. 2. 229. *Teſtudo Aquæ dulcis, & lutaria*. Aldrov. de Quad. Ovip. 710. *Teſtudo quæ in Aqua dulci vivit*. Geſn. de Quad. Ovip. 110. THE WATER TORTOISE.

The Blood and Gall agree in Virtues with the other Tortoiſes. The Tortoiſe is ſo named from *Teſta*, a Shell; this Animal being covered with an hollow Shell of a peculiar Kind, and remarkable for the Largeneſs of its Size, Solidity, and Beauty, which is ſhaped like a Shield, and diverſified with Variety of Colours. Its Head and Tail reſemble thoſe of a Serpent, and its Feet are like the Feet of a Lizard.

Tortoiſes are of four Sorts. 1. Land Tortoiſes. 2. Sea Tortoiſes. 3. Freſh-water Tortoiſes. 4. Mud Tortoiſes, which live in muddy Places. They are moſtly amphibious; but ſome Authors except the Land Tortoiſes.

The Land Tortoiſe is found in Mountains, Foreſts, Woods, Fields, and Gardens. It lives upon Fruits and Herbs, Worms, Snails, and other Inſects; and may be fed in Houſes, with Bran and Flour. In Winter they conceal themſelves in Holes, like Serpents and Lizards, where they continue without any Food, as ſeveral other Animals do. They live long, move very ſlowly, and are ſaid to have a natural Averſion to the Eagle, which ſometimes ſeizes them, and carries them off, in order to devour them. *Ariſtotle* ſays, they fight with Serpents and Vipers, and that they are always provided with the Plant called *Cunila*, or Satory, for curing the Stinging of thoſe Animals. *Pliny* ſays, that this kind of Turtle is very plentiful in *Africa*, and is much uſed for Food. Some Authors recommend the eating of it in *Auguſt* and *September*, when it is fatteſt.

The Sea Tortoiſes ſometimes go aſhore, where they fall aſleep; and, if they continue long there, they die. In the Sea they feed upon Shell-fiſh, and, when upon Land, they eat Herbs. It is ſaid, that, when their Heads are cut off, they will live ſome time, and they will bite very hard.

Pliny ſays, there are Sea Tortoiſes in the *Indies* ſo large, that the Shells of each of them are big enough to cover ſmall Houſes, and

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and the Inhabitants make some of them into Barks, with which they sail into the Islands of the *Red Sea*.

There is but little Difference between the Fresh-water Tortoises, and those which live in muddy Places; they feed upon Herbs, and watery Insects; they live more by Water than Land; and, it is said, a long time without Food.

The Flesh of the Tortoise is very good, and like Veal. It is strange, that *Galen*, and others, who have treated of Food, should never mention this Animal; for it is much used.

The Flesh of Tortoises is very nourishing, and is solid and durable Food; for it contains an oily, balsamic, and saltish Juice. Upon account of this Juice, also, it is restorative and pectoral; and, for phthisical and hectic Patients, a Syrup is made of the Flesh, which is excellent for qualifying the sharp Humours of the Breast. In the mean time, it is hard and viscous, and not easily digested, breeding viscous and gross Humours, and producing Dulness and Laziness; therefore, it ought to be well boiled, and seasoned with such Things as help Digestion.

Cardan, in his ninth Book, assures us, that the Flesh of the *African* Tortoises, being eaten with Bread for several Days together, is an excellent Remedy against the Leprosy. The Blood of the Tortoise, being dried, is reckoned good for curing the Falling Sickness, giving a Dram of it for a Dose.

In some Countries, an Oil proper for burning is extracted from the Tortoise. *Lemery on Foods.*

TETANUS.

The Neck is subject to some very violent Disorders, than which none are more troublesome and acute, than that in which, by reason of a certain Rigor of the Nerves, the Head is immoveably reclined to the Scapulæ; that in which the Chin is fixed to the Breast; and that in which the Neck is streight, but yet immoveable. The first was, by the *Greeks*, called *Opisthotonos*, the second *Emprosthotonos*, and the third *Tetanus*; tho' some, without any regard to Accuracy, confound these Words together. These Disorders prove mortal within the fourth Day; and, if they continue beyond it, they are without Danger.

'Tis universally agreed upon, that all these Disorders are to be cured in the same manner; and, for this Purpose, *Asclepiades* ordered Venesection, which, according to others, was not to be used, because, under these Disorders, the Body was destitute of a due Degree of Heat, which, residing in the Blood, would, of course, be lessened by a Diminution of that Fluid. This Doctrine is absolutely false, since the Blood is not naturally hot, but quickly becomes either hot or cold, in consequence of what happen in the Animal Oeconomy. But whether Venesection is expedient, may be collected from the Circumstances and Situation of the Patient. In these Disorders it is proper to exhibit Castor in Conjunction with Pepper or Laser. Dry and moist Fomentations are, also, necessary; for which Purpose many, now-and-then, pour large Quantities of warm Water on the Necks of Patients afflicted with these Disorders. But though this Practice affords immediate Relief, it is not to be used, because it renders the Nerves more susceptible of the Injuries of the Cold.

It is, therefore, more expedient, first, to anoint the Neck with a liquid Cerate, and then to apply Oxens Bladders, or small Phials full of warm Oil, or a Cataplasm of warm Meal, or of Figs and Pepper beat up together. But, among all the Measures taken for the Cure of these Disorders, none is more effectual, than to hold the Patient's Neck over a Vessel full of warm Water, in which a considerable Quantity of Salt is included in a Linen Bag. When these Steps have been taken, we must place the Patient before the Fire; or, if it is Summer, expose him to the Influence of the Sun, and carefully rub his Neck, *Scapulæ*, and Spine, with old Oil, and if that cannot be had, with *Syriac* Oil; or, if that is, also, wanting, with the oldest Fat that can be had.

As Friction is serviceable to all the Vertebræ; so 'tis, in a particular manner, beneficial to those of the Neck; for which Reason this Practice is to be used both in the Day and Night, only allowing some Intervals, during which we are to apply a Malagma, consisting of heating Ingredients. The Patient is, also, to be carefully preserved from Cold, for which reason his Room ought always to have a Fire kept in it, especially about the Twilight, when the Coldness of the Air is generally augmented. It is, also, expedient to shave the Head, which being anointed with the *Oleum Irinum*, or the *Oleum Cyprinum*, is to be covered with a warm Cap. It is, also, sometimes proper to bathe the whole Body, either in Oil by itself, or in warm Water, in which Fenugreek has been boiled, adding a third Part of Oil. By rendering the Body soluble, the Strictures of the superior Parts are, also, frequently relaxed.

But if the Pain becomes very intense, Cupping with Scarification, is to be apply'd to the Neck; and the Incisions made in the Skin are to be burnt either by Synopisms, or proper Instruments. When the Pain is alleviated, and the Head begins to move, we are sure that the Disorder yields to the Influence of the Remedies. But the Patient is long to abstain from all Kinds of high Food, and only use Sorbitions, poach'd Eggs, and Broths prepared of young Fowls, and other soft and light Fleshes. If these Measures succeed happily, and the Patient's Neck begins to seem totally restored to its natural State, he is first to use, only, Pap, or thin Spoon-meat; but he may much sooner eat Bread than drink Wine, which, being highly dangerous, is therefore to be the longer abstained from. *Celsus, Lib. 4. Cap. 3.*

Various Disorders arise from Contractions and Convulsions, of which there are various Species, such as the *Emprosthotonus* and *Opisthotonus*; the former of which is a convulsive Inclination of the Head forwards, and the latter an Inclination of it backwards. The antecedent Causes of these Disorders are Blows and Contusions of the large Tendons, lying long upon them in one Posture, lying with them applied to hard Substances, laying any weighty Thing upon the Neck, drinking strong Liquors, excessive Cold, or, which frequently happens, Wounds of the Nerves and Muscles, and the Drinking Wine before such Wounds are cured. These Disorders, also, most frequently happen by the Use of cold Water, especially at that Time, when such Wounds, being free from Sordes, seem to be deterged, and coming to a Cicatrix; they, also, sometimes happen sooner, and when the Wounds are as yet tumid, or in their worst State. That Species of Contraction, which the *Greeks* call Spasmus, is an involuntary Tension and Contraction of the Parts, accompanied with violent and acute Pain, in consequence of the excessive Stricture. But that Species of Convulsion, which they call *Tetanus*, is, by the Followers of *Asclepiades*, defined an Extension of the whole Body, or of some of its Parts. But, in giving this Definition, they seem to have forgot that some Parts may be extended by the Influence of the Will; and Persons afflicted with a *Satyriasis*, or Gout, have in the former an Extension of the Penis, and in the latter of the Feet, without being afflicted with that Species of Convulsion which the *Greeks* call *Tetanus*. Others define a *Tetanus*, A Convulsion of those Muscles of the Neck and Cheeks, called *Stagonitæ*, in consequence of their violent Tension and Pain. Other Authors of the Methodic Sect, in defining this Disorder, have, instead of Convulsion, used the Word *Concluso*; but this is only giving different Names to one and the same Thing, for these Writers imagined, that this was the Cause of the Disorder. But in general we may answer all these Writers, by telling them, that there is a great Difference betwixt a Disorder, and its Cause: We must, therefore, ascertain, not what the Cause of Convulsions is, but what Convulsions are; for as the Cause is latent and occult, it must vary according to Opinion and Apprehension. But the Phenomena peculiar to Convulsions or Contractions are obvious, manifest, and perceptible by every one; and it is but reasonable, that, as far as is possible, we should found our Doctrine upon consistent Principles. According to our Sect therefore, that Species of Distension or Extension, which the *Greeks* call *Tetanus*, is an involuntary, rigid, and inflexible Tension of the Neck, in an erect Position, occasioned by a violent Stricture or Tumor of the Parts. An Opisthotonos is an involuntary spasmodic Retraction of the Neck, also produced by the Stricture or Tumor of the Parts; and an Emprosthotonos, an involuntary Inclination of the Head forewards, produced by the same Causes. Those Disorders are called involuntary, in Opposition to those Motions of the Head, by which, in consequence of the Concurrence of the Will it is held in these Positions. They are also said to proceed from the Stricture or Tumor of the Parts, in Contradistinction to those Positions and Directions of the Head, produced in such as are hanged. Persons about to fall into these Disorders, are generally seized with the following Symptoms; a difficult Motion of the Neck, a continual Oscitation, especially, in the Parts about to be affected: This State is suceeded by an uneasy and painful Posture of Lying; a slight Tension and Hardness of the large Tendons; an uneasy and troublesome Punction between the Spine and the Occiput; a small Difficulty in Drinking; a Pain of the Temples, which is particularly exasperated when the Patients yawn, or open their Mouths; a Dulness of Hearing, a Stammering of the Tongue, and Slowness of Speech; a continual Discharge of the Saliva; a painful Sensation in the Calves of the Legs, and Soles of the Feet. The Countenance is, also, seemingly smiling, without any apparent Cause, and there is a kind of Palpitation in its Parts. When the Disorder seizes, there is a violent Convulsion and Hardness of the Parts of the Neck, and Muscles of the Cheeks, accompanied with excessive Pain; there is a Redness of the Countenance and violent Contraction of the abovementioned Muscles; the Teeth, also, are strongly clos'd, the Patient is thrown into a profuse Sweat, whilst there is a cold Torpor of the Joints, an obscure Pulse, an Extension of the Neck, and a difficulty of Breathing, a Contraction of the Legs and Arms, and a Regurgitation of any Liquor put into the Mouth through the Nostrils; some are, also, afflicted with an Alienation of Mind, a quick Respiration, and a Rattling of the Throat and Breast. In a Tetanus, the Neck is strait, rigid, and inflexible. In an Opisthotonos, there is a Reclination of the Head to the posterior Parts, accompanied with an excessive Pain and Tension of the Back and Buttocks; such Patients, also, have their Legs contracted, tho' their Arms are not seized with convulsive Motions; their Fingers are contracted and folded, as *Hippocrates* affirms, and it often happens that they keep their Thumb clenched in the rest of their Fingers; neither can they retain themselves in one

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one Posture, but shift about with a kind of Palpitation, when the Pain seizes them. An Opisthoronos is more dangerous than a Tetanus; and all these Disorders are dangerous, when they are accompanied with Wounds of the more noble Parts, and such as are more immediately subservient to Life. In an Emprosthotonos, the Head is spasmodically inclined forwards, and the Chin fixed to the Breast, the Hypochondria and Præcordia are distended, there is a frequent Inclination to discharge the Urine, and the Patient cannot without Difficulty bend his Fingers. These Disorders are not cured without great Difficulty, if the Spasms should be produced by Wounds, or if there should be a natural Hardness of the Spine; but if the Spasms should happen without a Fever, the Patient is more easily cured. A Fever, according to *Hippocrates*, suceeding the Spasm is salutary; but a Spasm succeeding a Fever, dangerous. This Opinion is, however, rejected by some, who tell us, that according to *Hippocrates* himself, a Fever gives a violent Shock to the Constitution, and produces violent Symptoms accompanied with excessive Pain; for, say they, a natural and moderate Heat relaxes the Tumor of the Parts, whereas the Heat of a Fever, being intense, preternatural, and immoderate, increases and augments it. Hence a Diminution of the concomitant Symptoms of the Disorder, lays a Foundation for the Hopes of future Recovery. *Cœlius Aurel. Lib.* 3. *Acut. Morb. Cap.* 6.

The *Emprosthotonos*, *Opisthotonos*, and *Tetanus*, may be produced by various Causes; for they generally happen after Wounds, when either the Membranes, Muscles, or Nerves are punctured, in which Cases they generally prove mortal; for by Wounds of the Nerves, mortal Convulsions are excited. Women in consequence of Abortion, are also sometimes seized with Convulsions, which frequently prove fatal to them. Others have these Disorders brought on by violent Blows of the Neck; excessive Cold may, also, prove the Cause of them, for which Reason they rage more in the Winter, than in the Spring and Autumn; but very rarely in the Summer, unless a Wound is previously inflicted, or when foreign Diseases rage epidemically. Women are more subject to Convulsions of the Nerves than Men, because the former are of a colder Nature, but they are also more frequently freed from them, because they are of moister Constitutions. As for Persons of different Ages, Children are most infested and afflicted with these Disorders; but they are not generally destroyed by them, because they are in a manner peculiar and familiar to them. Young Persons are less subject to these Disorders than Children, but then they are more frequently taken off by them. Those arrived at the Years of Maturity, are by no means subject to these Disorders, tho' old Persons are greatly infested with them, and are frequently taken off by them; the Reason of which is to be ascribed to the Coldness and Dryness of Old-age, in Consequence of which, they in some measure approach to the State and Condition of a dead Body; for in cold and moist Habits, Convulsions are far less violent and dangerous.

All these Disorders are accompany'd with a Pain and Tension of the Tendons, Spin,eand Muscles of the Jaws and Breast; for these Muscles so fix the superior to the inferior Jaw-bone, that they cannot be easily separated even by Wedges; and when they are violently separated, if any Liquor is poured into their Mouth, they cannot swallow it, but either retain it in their Mouths, suffer it to flow out, or it regurgitates thro' the Nostrils; because the Fauces being compressed, and the Tonsils hard and tense, cannot admit of the Protrusion and Deglutition of Aliments. The Face is red and variegated by Spots of various Colours. The Eyes are almost immoveable, and their smallest Motions accompanied with Pain; there is a great Suffocation and Difficulty of Breathing; the Arms and Legs are seized with Convulsions, and the Muscles palpitate; the Face is distorted in various Manners; there is a Tremor of the Jaw-bones and Lips; a shaking of the Chin, and a Grinding of the Teeth. In one Patient, I, also, had an Opportunity of observing, with Admiration, a Concussion or Shaking of the Ears, accompanied with a Noise. The Urine is either suppressed, or flows spontaneously, in consequence of the Compression of the Bladder. These Symptoms occur in Convulsions of all Kinds; but the Symptoms, peculiar to each Species, are these: In a Tetanus, the whole Body is streight, immoveable and inflexible, the Arms and Legs are, also, streight.

In an Opisthotonos the Patient is reclined backwards; his Head is drawn back between his Shoulders; his Throat starts out; his Jaws are generally open, and they are rarely united; he snorts in Respiration; his Belly and Breast are prominent; his Urine is generally discharged spontaneously; and his Abdomen, being tense, resounds, when struck; his Arms are spasmodically drawn backwards; the Legs are, also, distorted and incurvated in a Direction opposite to the Hams.

In an Emprosthotonos, the Back is gibbous; the Hips become prominent, so as to lie in a streight Line with the Back; the Spine is strait; the Head is inclined to the Breast, to which the Chin is fixed; the Hands are clenched, and the Legs extended. All Patients labouring under this Disorder, are afflicted with violent Pains; a mournful Voice, resembling that of a Person weeping, Sighs, and deep Groans. If the Disorder affects the Breast and Respiration, Death is not far off, and it is a great Happiness to the Patient to be delivered from his Pains, his Distortions, and the deplorable State he was in; so that the nearest Relations can, with a kind of Pleasure, see their Friends exchange their Condition for Death. If Life should still remain, and Respiration continue to be carried on, though in a deplorable manner, the Patient is so incurvated forwards, as to resemble not only a Bow, but a Sphere; so that he has his Head fixed to his Knees; and his Back and Legs so drawn forwards, that the Joint at the Knee seems thrust into the Ham. This Disorder is not only intolerable to the Patient, and moving in the Eyes of Spectators, but, also, incurable; so that those labouring under it, are, on account of their Distortion, disowned by their Friends; and though it would have formerly been Impiety, yet it is now Charity and Compassion, to wish for their Death, even though it should be of the most cruel Kind. Nor can the Physician, when present, either restore Health, mitigate his Pain, or rectify his distorted Figure; and since he might cut him to Pieces, before he could render his Limbs strait, all he can do is to be grieved at this deplorable State. *Aretæus, de Causis & Signis Acut. Morb. Lib.* 1. *Cap.* 6.

The Cure.

In order to cure a Tetanus, the Bed of the Patient is to be soft, grateful, smooth, commodious, and warm; for this Disorder renders the Nerves rigid, hard, and tense; the Skin, also, being every-where dry and rough, becomes tense; the Eye-lids, naturally moveable, wink with Difficulty; the Eyes are fixed, and as it were turned inwards; the Limbs are, also, rendered immoveable, on account of the Tension of the Parts. The Patient's Room, also, even in the Summer-time, is to be kept warm by Fire, though not to such a Degree as to excite Sweats or Languor, because a Tetanus inclines to a Syncope. Other Remedies must, also, be used without any Delay. Whether, therefore, a Tetanus is produced without any manifest Cause, or whether it arises from excessive Cold, Wounds, or Abortion in Women; Venesection is to be instituted in the Arm; but the Ligature must not be too tight, and the Incision must be made gently and expeditiously, otherwise Convulsions of the Nerves will be produced. Let moderate Venesection be only once used, though not to such a Degree as to produce *Deliquiums*, and a Refrigeration of the whole Body. The Patient is not to be harassed by Hunger, which dries and refrigerates the Body. Let him, therefore, drink coarse, strong Mulsa, and Cream of Ptisan mixed with Honey; for when these are protruded by the Tonsils, they create but little Pain, are easily swallowed, fit for rendering the Body soluble, and effectual for restoring the Strength. The whole Body is, also, to be wrapt up in woolen Cloths, wet in the Oleum Gleucinum, or the Oleum Crocinum, in which Rosemary, Flea-bane, or Mugwort, have been boiled; let every thing be used hot, not only in its Quality, but, also, to the Touch. The Patient is, also, to be anointed with an Ointment prepared of the Limnestides, Euphorbium, Nitre, and Pellitory of *Spain*, to which a large Quantity of Castor is to be added. The Tendons are, also, to be well covered with woollen Cloths, and the Parts about the Ears and Chin well anointed, since these are most affected, and excessively tense. The Tendons and Region of the Bladder are, also, to be cherished with gently warm Substances; such as Bags full of toasted Millet, or Oxens Bladders half full of warm Oil, applied to the Parts affected. 'Tis sometimes necessary to foment the Head; and, though this Practice is somewhat prejudicial to the Senses, 'tis nevertheless salutary to the Nerves; for though by the Elevation of the Vapours it, in some measure, clouds the Senses, yet it fills the Nerves. The Patients are to be fomented in the softest manner, with a Matter that is not fetid, and which is to be used alone. This Matter may be either inodorous Oil boiled in a double Vessel, and put in Bladders, or fine Salt contained in a Bag: For, though Millet and Linseed are grateful to the Touch, yet fetid Vapours are exhaled from them. The Method of fomenting is this; Laying the Patient on his Back, the Fomentations are to be placed under him, as far as the Crown of the Head, and no farther; but their Influence is not to be permitted to act on the Forehead, which, being the common Sensory, is, therefore the Source of all the favourable, and unlucky Turns of Disorders. If Cataplasms are applied to the Tendons, let the back Part of the Head be elevated; for, if these Cataplasms are applied to the superior Parts, they will fill the Head with the Vapours of the Linseed and the Fenugreek. After the Use of the Cataplasms it will be expedient to apply Cupping-glasses to the Occiput, on each Side of the Spine; but very little Fire is to be used; for the strong Impression of the Lips of the Cupping-glass excites Pains and Convulsions: We must, therefore, make rather a slow and gentle than a sudden and violent Exhaustion of the Air; for by this means the Skin will without Pain be raised into a convex Tumor; and may afterwards have proper Incisions made in it. The Quantity of Blood to be taken from such Patients is to be estimated from their Strength. These are the Measures to be taken in a Tetanus not attended with Wounds.

But if a Convulsion of the Nerves is produced by a Wound, the State of the Patient is deplorable, and almost desperate; the

Cure

CCO, Gurukul Kangri Collection, Haridwar, Digitized by eGangotri

Care ought, however, to be attempted, since some by the Use of proper Remedies have been recovered. Besides the other Measures, therefore, the Ulcers are to be cured by anointing them with warm and proper Substances, by Fomentations, Cataplasms, and Medicines which easily excite Heat, and form Pus copiously; for in a Tetanus the Ulcers are dry. For this Purpose take a sufficient Quantity of the Manna of Frankincense, of the Tops of Poley-mountain, of the Resins both of the Pitch and Turpentine-tree, of Marshmallow-roots, and of the Herbs Rue and Henbane; make all into a Cataplasm by melting such as are susceptible of it, adding the Powders of such as are capable of being pulverized; but some of the Ingredients must be macerated in Oil, and the Marshmallows must be previously boiled in Mulsa. Let Castor be, also, sprinkled on the Ulcers, since that Medicine is very efficacious in exciting Heat in all the Parts of the Body; for Horrors arising from Ulcers are of a very malignant Nature. Let the Nostrils be, also, anointed with Castor, or the Oleum Crocinum. Three Oboli, also, of Castor-oil may be daily exhibited; and if the Stomach loaths it, we must interpose the same Weight of the Root of Laserpitium, or half the Weight of Myrrh; and all these are to be exhibited in Hydromel. But if *Cyrenaic* Laserpitium can be had, the Bulk of a bitter Vetch of it may be exhibited wrapt up in boiled Honey, by which means it is rendered more palatable; for it is of an acrid Taste, and produces disagreeable and fetid Eructations. But if the Patient cannot take it in this Form, let it be dissolved in Hydromel; for it is of all other Medicines the most efficacious. These Medicines are fit for heating, moistening, relaxing Convulsions, and softening the Nerves. But if the Patient can swallow nothing, inject a Clyster, prepared with Castor and Oil, with which, also, mixed with some proper Ointment, or with Honey, the Anus is to be anointed. With the same Clyster, also, mixed to a due Consistence, with melted Wax, the Region of the Bladder is to be anointed. If there is a Necessity for procuring an Evacuation of the Fæces and Flatulences, a Clyster prepared of two Drams of Hiera, with a sufficient Quantity of Hydromel and Oil, is to be injected, which not only procures the designed Evacuation, but, also, cherishes the lower Belly; for Hiera is an heating Medicine suited to various Intentions. *Aretæus de Curat. Acut. Morb. Lib.* 1. *Cap.* 6.

TETARTÆUS, τεταρταῖος. The same as QUARTANA.

TETHALASSOMENOS, τεθαλασσόμενος. An Epithet for Wine, importing its being mix'd with Sea-water.

TETHYIA, or TETHÆA. This is a Shell-fish, sometimes found adhering to Oysters. Its Shell is of a spherical Figure, rough, unequal, and less hard than the Shells of other Fishes. There are various Species of this Animal, which are found either adhering to the Rocks, in the Wrack, or on the Shore. Its Flesh is fungous, carminative, proper to cure the windy Colic, Pains of the Kidneys, and the Sciatic Pain. It is, also, proper to excite a Discharge of the Urine, and to eliminate the Stone of the Kidneys and Bladder. *Lemery, Traité des Drogues.*

TETLATIAM, *seu Arbor Urens*. Nieremberg. An *Indian* Tree, which agrees in Qualities with the *Manchineel*.

TETRABIT. A Name for the *Sideritis*; *hirsuta*; *procumbens*.

TETRADRACHMON. The Weight of four Drams.

TETRAGNATHUS, τετράγναθος, from τέσσαρες, four, and γνάθος, a Jaw, is a Species of *Phalangium*, of a whitish Colour, with scabrous Legs, and near the Head two Eminences, one strait, the other broad, so that you would think it had two Mouths; it has four Jaws, (whence the Name *Tetragnathos*) and an even Line through its Mouth.

They who are stung by this Spider, labour under the same Symptoms in general, as they who are stung by the Scorpion; and besides, are affected with a tensive Pain in the wounded Part, which becomes whitish. The Head and Face, also, swell; and the wounded Parts, as far as the Joints, become extenuated; the Members, also, receive no sensible Nourishment, and the Patient, even after Recovery, is molested with obstinate Watchings.

Remedies in this Case are Calamint, Trefoil, Rue, Panax, Polium, taken in Wine, and all such Medicines as are proper for those who are stung by the *Phalangium*. *Aetius, Tetrab.* 4. *Serm.* 1. *Cap.* 17.

TETRAGONIA. A Name for the *Euonymus*; *vulgaris*; *granis rubentibus*.

TETRAGONOCARPOS.

The Characters are;

The Leaves are disposed in a scattering manner: The End of the Pedicle becomes an Ovary, on whose Apex grows a Flower or Calyx, which is quadrifid, rarely quinquefid, expanded, and furnished with a Multitude of Stamina, that is to say, eighteen or twenty. The Ovary is furnished with four erect Tubes, and becomes a quadricapsular Fruit, with a single Seed in each Capsule. In some Plants the Calyx is seated under the Ovary and Flower.

Boerhaave mentions three Sorts of *Tetragonocarpos*; which are,

1. Tetragonocarpos; Africana; fruticans; foliis longis, & angustis. *H. A.* 2. 205.

2. Tetragonocarpos; præcedenti similis; fructu rotundo, tetragono, umbilicato.

3. Tatragonocarpos, Afra; folio Portulacæ longo; flore herbaceo. *Boerh. Ind. alt. Plant. Vol.* 2.

I find no Virtues ascribed to any one of these.

TETRAGONON, τετράγωνον, from τέσσαρες, four, and γωνία, an Angle, in *Hippocrates de intern. Affect.* seems to be a Medicine for purging the Head; as where he says, ᾧ τὴν κεφαλὴν καθαίρειν τῷ τελεγώνῳ, "and purge the Head with *Tetragonum*;" and directs the same in another Place of that Treatise. *Galen* seems to expound this in his *Exegesis* as follows: Τετράγωνόν τινες μὲν ταῖς ἐυρισκομέναις καλὰ τὸ στίμμι πλαῖσι τινὶς αὐτὸ τὸ στίμμι. "Some by *Tetragonum* understand the Crusts "which are found about Antimony, some Antimony itself". The same Author expounds τέλεγωνα βέλη, "quadrangular "Arrows," by τὰ τέσσαρας ἔχοντα γλωχῖνας, (Arrows) "having "four Points, or Edges." *Foesius.*

Tetragonon in *Hippocrates*, is a very obscure Word; for we are not certain whether he means by it a Medicine or Instrument; the Meaning thereof was unknown even in the Time of *Galen*, as appears above; and it is still a Question whether Antimony were known to *Hippocrates*. *Schultzius.*

TETRAMYRON, τετράμυρον. The Name of an *Acopon*, describ'd by *Galen*, *L.* 7. *de Comp. M. P. G. Cap.* 12.

TETRAO. The Name of a large Bird of the Bustard-kind. *Aldrovandus.*

TETRAPHARMACON. A Name for any Medicine compounded of four Ingredients. Thus the *Emplastrum Basilicon*, and the *Diatesseron*, are both call'd by this Name.

TETRESARIUS. Half an Ounce. *Marcellus Empiricus.*

TETROBOLON. The Weight of four *Oboli*.

TETROROS, τέτρωρος. The same as QUATRIO.

TETY-POTE-IBA, *Vitis arbustiva* Pisonis, is said to be produced from the Dung of the Birds called *Tetyns* deposited by Orange-trees, with which it closely unites, and in time overspreads and kills.

Of the Roots and Branches bruised together, and then fry'd in common Oil, is prepared an excellent Medicine for Inflations of the Belly and Feet, contracted from Cold. *Raii Hist. Plant. Index.*

TEUCHOS, τεῦχος. *Hippocrates* uses this to express the whole Body.

TEUCRIUM.

The Characters are;

The Calyx is tubulated, quinquefid, or Bell-shaped, and inclosing in its Bottom roundish Seeds. The Flower, which has nothing of a Galea, is unfolded from a very short Tube into five large Segments. In the Place of a Galea arise Stamina; the Beard is quinquefid, the middle Segment being excavated, and the other seated opposite to one another in the Neck of the Flower; the Flowers proceed from the Wings of the Leaves.

Boerhaave mentions eight Sorts of *Teucrium*; which are,

1. Teucrium; calyce tubulato; flore pallidè lureolo. *Boerh. Ind. A.* 181. *Teucrium.* Offic. C. B. P. 247. Raii Hist. 1. 526. *Teucrium latifolium.* Ger. 532. *Teucrium multis.* J. B. 3. 290. *Teucrium majus vulgare.* Park. Theat. 103. *Chamædrys fruteſcens; Teucrium vulgo.* Tourn. Inst. 205. TREE-GERMANDER.

It grows in *Italy* and *Sicily*, and flowers in Summer, and the Leaves are in Use.

Teucrium heats and dries, cures Disorders of the Liver and Spleen, and is effectual against the Bites of Serpents. As it has the outward Appearance of the Chamædrys, so it resembles it in Virtues. *Dale.*

2. Teucrium; calyce tubulato; flore purpureo. *Chamædrys, erecta Teucrii Folio, purpureo.* Flor. 2. 83.

3. Teucrium; Bœticum; calyce campanulato. *Chamædrys, fruticosior, flore violaceo, foliis subtus incanis.* M. H. 3. 422.

4. Teucrium; Bœticum; calyce companulato, folio elegantèr variegato.

5. Teucrium; calyce campanulato; Stœchados facie. *Boerh. Ind. A.* 181. *Polium Creticum.* Offic. *Polium angustifolium Creticum.* C. B. P. 221. Park. 25. Raii Hist. 1. 523. Cor. 14. *Teucrium fruteſcens, Stœchadis Arabicæ folio & facie.* Tourn. Cor. 14. *Rosmarinum Stœchados facie.* Alp. Exot. 103. POLEY OF CANDIA.

This Species of *Polium* is very rarely to be met with in the Shops: It is a smaller tenderer Plant, having lesser and narrower Leaves, not at all indented about the Edges, but as woolly as the *Polium montanum*, and having the like Heads of Flowers, of a finer and more agreeable Smell. It grows in the Island of *Crete* or *Candy*.

It is much of the Nature of the *Polium montanum*, but is rather stronger; and if it could be procured, is what ought to be used when *Polium Creticum* is prescrib'd; but, as it is hardly to be met with, the other may be used without much Detriment to any Composition. *Miller's Bot. Off.* 6. Teucrium

6. Teucrium; calyce campanulato; laciniatum; flore magno subcœruleo.

7. Teucrium; calice campanulato; laciniatum; flore parvo subcœruleo.

8. Teucrium; calyce tubulato; Creticum, purpureum. *Chamædrys fruticosa, Cretica, purpureo flore.* T. 205. *Boerh. Ind. alt. Plant.*

TEUTHROBANON. A Name for the *Polygonum*, in *Oribasius, Collect. Medicinal.*

TEUTLON, τεῦτλον, σεῦλον. A Name for the BETA. *Blancard.*

TEUTLOPHACE, τευτλοφακὴ, from τεῦτλον, a Beet, and φάκη, a Lentil. A Sort of Food consisting of Beets and Lentils, and prescribed by *Heraclides Tarentinus*, as *Galen*, L. 1. *de Al. Fac.* C. 18. says, not only to sound, but sick Persons.

TEXOCTLIFERA *Mexicana* Nieremberg. Is a Tree of a moderate Bigness, growing spontaneously in hilly Places, very thick set with Thorns, and with Leaves like those of our Apple-trees, but rougher, and serrated. It bears Apples resembling ours, but small, and no bigger than Walnuts, of a yellow Colour, and very hard before they are ripe; but afterwards soft, in a manner, like Fat, of an unpleasant Taste, tho' grateful to many Palates. The Seeds, of which there are three in each Apple, are lunated, large, and distinguish'd by two Angles, and a Ridge, and as hard as a Stone. The *Mexicans* first suffer them to putrefy, and then bring them to Market. To preserve them them the longer from Corruption, they sprinkle them with Water of Nitre. The Buds, bruised, and apply'd with Water, cure Exanthemata. *Raii Hist. Plant.*

TEXTURA, Texture, is properly spoken with respect to the *Ars textoria*, or *Art of Weaving*; but is apply'd by Metaphor to the organical Structure of the Body, in which Sense we, also, use the Word *Contexture.*

Θ, the first Letter of the Word θάνατος, "Death," and used by *Hippocrates* in the *Epidemics*, as a Sign or Mark of Death; as Υ, the first Letter of the Word ὑγίεια, Health, was a Mark to signify Recovery. *Galen. Com.* 1. *in* 3 *Epid.*

THACOS, θᾶκος, the same as θῶκος, *Thocos*, a Seat, a Place to sit on. *Hippocr.* 7 *Epid.*

THAIS, θαὶς, a Name for a cosmetic Cerate, to give a beautiful Red to the Face, described by *Ægineta, Lib.* 3. *Cap.* 25. Also, a Bandage for the Head, of which *Galen de Fasciis* reckons three Kinds.

THALAME, θαλάμη. A Bed, or Hole, where Fish lie; θαλάμαι in *Erotian* are expounded κατασύσεις, Dens, Nests, Burrows. The Word occurs in *Hippocrates, Lib.* περὶ τέχνης, where you read, ᾗ τύλων ἐδὲν ὅτι οὐχ ὑπαρρόν ἐστι, ᾗ ἔχειν περὶ αὐτὴ θαλάμας. "And of these (Joints) there is none but what "is somewhat spumeous, and furnished with Cells." He is here speaking of the internal Cavities about the Joints, which are full of a sort of Spume or Mucus. Some Copies, however, for ὑπαρρον read ὑπόφορον· and *Erotian* reads ὕποφορον, which signify, with not much Variation of the Sense, occult, cavernous, or full of Cells and Perforations; but ὕπαρρον seems to be the true Reading.

THALAMUS, θάλαμος. A Bed, in Anatomy, is the Place from which the Optic Nerves proceed; so called by *Galen de Usu Part. Lib.* 16. *Cap.* 3.

THALASSERON, θαλασσηρὸν. The Collyrium of *Hermophilus* so called; a Remedy adapted to Catarrhs, and Dimness of Sight; and described by *Galen, de C. M. S. L. Lib.* 4. *Cap.* 7. and *Æginet. Lib.* 7. *Cap.* 16.

THALASSITES, θαλασσίτης. The same as TETHALASSOMENOS; which see.

THALASSOMELI, θαλασσόμελι, from θάλασσα, the Sea, and μέλι, Honey, is, as *Dioscorides* says, supposed to be a potent Cathartic. It is composed, he tells us, of equal Portions of Rain-water, Sea-water, and Honey, strained, and exposed to the Sun in a pitch'd Vessel, during the Heat of the Dog-days. Some take two Parts of Sea-water, and one Part of Honey, and put them in a Vessel; and this Composition is milder, and more gentle in Operation, than Sea-water alone. *Dioscorides, Lib.* 5. *Cap.* 20.

THALEROS, θαλερὸς, from θάλλω, to bud, or blossom; florid, as apply'd to πνεῦμα, Respiration, can mean nothing, as *Galen* says, *Com.* 2. in 1 *Prorrhet.* 39. but σφόδρα μέγα, "vastly "great." The same Author, *ibid. Text.* 92. tells us, that the Interpreters of *Hippocrates*, who read θαλερὸν, (for he himself, with the Generality, reads θολερὸν with an o, in both the Places mention'd) expound it by θάλλον, ᾗ ἀκμάζον, ᾗ μέγα, "flourishing, vigorous, and great". See THOLERON. Θαλερὸν πνεῦμα, in *Galen's Exegesis*, is however, expounded, by θερμὸν ὡς ἀπὸ ἥλιε, παρὰ γὰρ τὸ θέρεσθαι γίγνα τοῦνομα, "heated as by "the Sun; for the Name is derived from θέρομαι, *theromai*," (signifying to be heated). But some Copies read the Place θαλερὸν πνεῦμα, μέγα ᾗ δεδιωγμένον, "a florid Respiration, "that is, a great and heighten'd Spirit or Respiration." Thus θαλερὸν δακρυ, *Hom. Il.* B. *v.* 266. when we read θαλερὸν δὲ οἱ ἔκπεσε δακρυ, is expounded by the Scholiast θερμὸν ᾗ ἀκμαῖον, "hot and vigorous," importing that the hot Tears gushed out in a violent and plentiful manner, as from a Source that would never dry. In this Sense θαλερὸν δακρυ, in *Hesychius*, is expounded by τὸ πολὺ, ᾗμὴ ξηραινόμενον, ἀλλ' ἐπὶ τῶν ὀφθαλμῶν ἀεὶ θάλλον, "plentiful, and never dry'd, but always springing up "in the Eyes." Θαλερὸς is, also, expounded in *Hesychius* by ταχὺς, quick, and ἰσχυρὸς, strong; but θαλερὸν πρόσωπον, "a "florid Countenance," is explain'd in *Galen, Com.* 2. in *Prorrhet.* τὸ ὅσον εὐεκλινὲν ᾗ εὐχρων, "such as is of a good Habit and "Colour."

THALICTRUM.

The Characters are;

The Root is fibrous, except in the last Species; the Leaves are lobated, tripartite, and resemble those of umbelliferous Plants. The Flower is naked, tetrapetalous, or pentapetalous; rosaceous, with caducous Petals, furnished with Multitudes of Stamina, dispos'd round the Basis of the Ovary in form of an Umbella. The Ovary consists of a Multitude of small Capsules, winged or not winged, furnished with a long Tube, and containing each a single Seed, which is generally of an oblong Figure.

Boerhaave mentions fifteen Sorts of *Thalictrum*; which are,

1. Thalictrum; Canadense. *Coru.* 186.

2. Thalictrum; Canadense; majus; caulibus viridantibus. *Flor.* 2. 9.

3. Thalictrum; Canadense; caule virescente & purpurascente; staminibus saturatius purpurascentibus.

4. Thalictrum; majus, florum staminibus purpurascentibus. *C. B. P.* 327.

5. Thalictrum; foliis amplissimis; rugosis; florum staminibus albis.

6. Thalictrum; majus; siliquâ angulosâ, aut striatâ. *C. B. P.* 336. *Boerh. Ind. A.* 44. *Tourn. Inst.* 270. *Thalictrum.* Offic. *Thalictrum seu Thalictrum majus.* Ger. 1060. Emac. 1251: Raii Hist. 1. 403. Synop. 3. 203. *Thalictrum majus vulgare.* Park. Theat. 263. *Thalictrum nigrius caule & semine striato.* J. B. 3. 486. MEADOW-RUE.

It delights in watry Places, and is commonly found on the Banks of running Streams, and flowers in *June*.

The Leaves, mixed with other Greens, are somewhat laxative, according to *Dodonæus*; but a Decoction of the Root is more so. It may very well be substituted for Rhubarb. *D. Palmer.*

In some Parts of *Italy*, as we are assur'd by *Camerarius*, they use the Thalictrums against the Plague; in *Saxony*, for the Jaundice. *Raii Hist. Plant.*

It cicatrizes old Ulcers, *Dioscorides*. It is aperitive, inciding, and provokes Evacuation by Stool and Urine. An Ounce or two purge like Rhubarb, whence it is called in *Germany* the *Poors Rhubarb*, and *Tartary Rhubarb. Dale.*

7. Thalictrum; montanum; album; altius. *C. B. P.* 337.

8. Thalictrum; majus; flavum; staminibus luteis vel glauco folio. *C. B. P.* 336. *Boerh. Ind. A.* 244. *Tourn. Inst.* 270. *Pseudo-Rhabarbarum.* Offic. *Thalictrum speciosissimum glaucum semine & caule striato.* J. B. 3. 486. Raii Hist. 1. 403. *Thalictrum majus album Hispanicum.* Park. Theat. 264. *Thalictrum majus Hispanicum.* Ger. Emac. 1252. SPANISH MEADOW-RUE.

It grows in Meadows, and is cultivated in the Gardens of the Curious, and flowers in Summer; the Part in Use is the yellow bitter Root, which agrees in Virtues with the former, and is sold in the Herb-shops for Rhubarb. *Ruppius.*

9. Thalictrum; pratense; angustifolium. *C. B. P.* 337. *Ruta; pratensis, major, angustifolia.* Tab. Germ. 121.

10. Thalictrum; pratense; angustissimo folio. *C. B. P.* 337.

11. Thalictrum; minus. *C. B. P.* 337.

12. Thalictrum; minimum; fœtidissimum. *C. B. P.* 337.

13. Thalictrum; minimum; montanum; atrorubens; foliis splendentibus. *Raii Syn.* 100.

14. Thalictrum; Canadense; minus.

15. Thalictrum; minus; grumosâ radice; floribus majoribus. *Flor.* 29. *Ranunculus, Thalictri folio, Asphodeli radice.* M. H. 2. 438. *Oenanthe foliis Hederæ.* C. B. P. 163. *Boerh. Ind. alt. Plant. Vol.* 1.

The Name is antient, and is found in the Copies written two ways, δάλιγθρον (*Daligthron*) and θάλιχθρον, (*Thalichthron*); but now the Name *Thalictrum*, universally obtains, being deriv'd of θάλλω, (*thallo*) to be green, and flourishing; whence it was used at Weddings, and regarded as an Ornament to Gardens. It was, also, called πήγανον (*Peganon*), Rue, because some Botanists have reckon'd it a Species of Rue.

I do not remember any medicinal Uses of this Plant, except of the sixth Species, whose Root, which is very large, being taken up in Season, and given to the Quantity of one or two Ounces, purges like Rhubarb, penetrating through all the Passages with its salutary Juice. Hence it communicates both Colour and Smell to the Urine, which it renders of a golden Colour, tinging, also, the Fæces and *Saliva*. This Plant therefore, is an excellent Aperitive, corroborating and strengthening the Intestines like Rhubarb; but then the Dose ought to be triple that of Rhubarb. It is commonly said to purge Bile. The Flowers are effectual in Spitting of Blood, the *Fluor Albus*, and other female Disorders; externally they are of Service, in the Scabies, all cutaneous Diseases, Wounds, and Ulcers. The

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Flower of the thirteenth Species is invisible to the naked Eye, but appears through a Microscope tetrapetalous. *Hist. Plant. adscript. Boerhaav.*

THALLIA, *Thallos*, θαλλία, θαλλὸς, a Bud of any Vegetable, but especially of an Olive-tree. *Æginet. Lib.* 5. *Cap.* 66. *Rhod. in Scribon.* N° 142. expounds it by an Olive-branch, of which they composed Garlands on Festivals.

THALPOS, θάλπος, from θάλπω, to cherish, foment. The same as θερμότης, *Thermotes*, Heat. The Word occurs 3 *Aph.* 1. and 5.

THALPSIS, θάλψις, of the same Original with the preceding. A Fomentation. *Moschion de Morb. Mul. Cap.* 126.

THAMAR, an *Arabic* Word for *Dactylus*, a Date; whence the Name of a Confection, *Diathamaron*, corruptly *Diacamaron. Blancard.*

THAMARINDUS. The same as TAMARINDUS.

THAMATICA. See THAUMA.

THAMES, THAMINOS, θαμὲς, θαμινὸς, and the Adverbs, θαμὲως, θαμινὰ, *Thameos*, *Thamina*, import Frequency, and often occur in *Hippocrates.*

THAMNA. The same as LORA; which see.

THAPHNEUS, a Medicine cleansed and purify'd. *Rulandus.*

THAPSIA.

The Characters are;

The Root is generally thick and milky, but in some Plants is fibrous; the Leaves are, for the most part, finely cut. The Seed is long, striated, and surrounded with a very large foliaceous Wing, emarginated on both Sides.

Boerhaave mentions nine Sorts of *Thapsia*; which are,

1. Thapsia; latifolia; villosa. *C. B. B.* 148.

2. Thapsia; foliis Libanotidis; fœtidissima. *C. B. P.* 148.

3. Thapsia; foliis Apii; Lusitanica; fœtidissima; flore albo. *T.* 322.

4. Thapsia; foliis Apii; fœtidissima; flore luteo.

5. Thapsia; tenuiori folio; Appula. *T.* 322. *Panax Asclepium, semine folioso.* C. B. P. 158.

6. Thapsia; Orientalis; Anethi folio; semine eleganter crenato. *Tourn. Cor.* 22. *Boerh. Ind. A.* 60. *Gingidium.* Offic. *Gingidium Fœniculi folio.* C. B. P. 151. *Gingidium verum Syriacum.* Park. Theat. 890. *Anetho similis planta semine lato laciniato.* J. B. 3 7. Raii Hist. 1. 416. ORIENTAL PICKTOOTH.

It grows in the Eastern Countries, and flowers in Summer, and the Leaves are in Use.

The *Thapsia* provokes Urine; and the Decoction of it taken, with Wine, is good for the Bladder; and, eaten as other Greens, whether raw, boiled or pickled, is very beneficial to the Stomach. *Dale* from *Dioscorides.*

7. Thapsia; Alpina; lucida; Thalictri aut Carotæ folio; flore albo. *Bocc. Mus. p.* 2. 84. *Tab.* 77.

8. Thapsia; sive Turbith Garganicum; semine latissimo. *J. B.* 3. 2. 50. *Tourn. Inst.* 322. *Boerh. Ind. A.* 60. *Raii Hist.* 1. 418. *Thapsia* Offic. *Turpethum Garganicum.* Schrod. 4. 250. DEADLY CARROTS.

The Roots of this Plant are long, but not very thick, with many large winged Leaves, not much unlike common Carrot, but having the Segments each set opposite to one another, somewhat rough and hairy; the Flowers are small, yellow, and five-leav'd, growing in Umbels at the Top of the Stalks; and are succeeded by flat broad Seeds, having a thin scaly Skin on each Side, of an hot Taste. It grows in *Italy* and *Spain*, and flowers in *July.*

The Root only is used, and that very rarely, being accounted of a poisonous Nature, working upwards and downwards with great Violence, and has been formerly sold in the Shops for the *Radix Turpethi Miller's Bot. Off.*

This Plant is sometimes cultivated in the Gardens of the Curious; and the Part used is the long and acrimonious Root, which is black without, and white within. *Mesue* calls it black *Turbith*, and employ'd it to evacuate thin Humours. The old Women of *Salamanca* in *Spain* used the Root to provoke the Menses, and with Emollients to promote other Evacuations, as we are assur'd by *Clusius.*

9. Thapsia; maxima; folio latissimo. *C. B. P.* 148. *Boerh. Ind. alt. Plant. Vol.* 1.

Thapsia takes its Name from the Island *Thapsos*, where it was remarkably plentiful.

The Antients expressed a Juice from this Plant, which they made use of when they thought violent Purging necessary; for the Juice of the Root, inspissated, and given to the Quantity of an Ounce, purges upwards and downwards, so as sometimes to produce an Inflammation of the Stomach and Intestines; whence a Dysentery is occasion'd. The same is so highly acrimonious as to cause Convulsions, succeeded by very bad Symptoms, as *Clusius* very well observed; which are not to be removed but by a Draught of Vinegar, Oil and Water, for which Reason I would not have this Plant used inwardly. The Root has been sold for the *Turbith* of the Antients, but with very mischievous Consequences; for the Roots of the first, third, fourth, and ninth Species, are no less caustic than that of the eighth. Externally they are of Use in Ointments for the Itch, and the like Diseases. *Hist. Plant. adscript. Boerhaav.*

THAPSIA is, also, a Name for the *Seseli*; *quæ Ferulæ facie, Thapsia, sive Turbith Gallorum.*

THAPSUS. The same as TAPSUS BARBATUS; which see.

THARRAS. The Name of an Inventor of a digestive Malagma for a Dropsy of the Uterus, which is to be apply'd under a triple Cloth, and secur'd with a Bandage, but not too tight. This was pretty much in Use in *Celsus*'s Time, as he observes, *Lib.* 3. *Cap.* 21. but he no-where describes it.

THAUMA, θαῦμα, properly a Miracle; but it is taken in a special Sense for an automatous Machine used in Plays and Representations; whence *Ars Thaumaticus*, corruptly *Thamatica*, is the Art of constructing or managing these Machines; and *Thaumaturgus* or *Thaumatopœus*, the Contriver or Manager of the same.

THEA. Offic. *The Sinensium sive Tsia Japonensibus.* Bregn. Cent. 1. cap. 52. 111. *The Sinensium sive Tsia Japonensibus. Breynii.* Raii. Hist. 2. 1619. *Euonymo affinis Arbor Orientalis nucifera flore roseo.* Pluk. Phytog. Tab. 88. Fig. 6. Almag. 139. *The Chinensium, sive Tschia Japonensium.* Hort. Amst. 236. *Chaa Herba in Japonia.* C. B. P. 247. *Styraci & Euonymo media affinis.* THE THEE or TEA PLANT.

Tea, so much in Use of late Years, is a shrubby Bush, seldom growing above four or five Feet high, full of Branches cloathed with dark-green serrated Leaves, set on the Branches without any Order, somewhat of an oval Shape, but sharp-pointed at the End: Among these come forth several pretty large Flowers, made of five round white, or pale-yellow Leaves, with several Stamina in the middle; and in their Places come the Fruit, containing, for the most part, three round Berries or Seeds, though sometimes only two, and sometimes but one, covered with a brownish Husk; they seldom gather the Leaves from the Shrubs, till the Plants are three Years old, and always in dry Sunshiny Weather. The Leaves, thus gathered, are put into a *Chinese* Pan, made of cast Iron, clean, and red-hot, but placed obliquely, wherein they are stirred about, and shaken together, till they shrivel up, and are crisp; and then they are laid on Mats, and fan'd with Fans to cool them; and so put into Tubs or Canisters.

We have three Sorts of Tea; the Green, the Bohea, and the Imperial Tea; but all gathered from the same Kind of Plant, and only differing in the Age of the Leaves, the Time of gathering, or Way of curing.

The Liquor made of this Plant by Infusion in warm Water, though so much in Use at present, was hardly known an hundred Years ago, and hath not half so long been in much Use in *Europe.* It is extolled by some Persons as a Purifier of the Blood, promoting Digestion, strengthening the Head, provoking Urine, and preventing the Stone and Gout: The Bohea Tea is reckoned balsamic, analeptic, and accounted nourishing, and good for Consumptions; but either of them, drank in too great Quantity, are subject to bring on Tremblings, and hurt the Stomach. *Miller's Bot. Off.*

Tea is a Leaf brought from *China* and *Japan*, an excellent Account of which is given by *Kæmpfer*, in his *Amœnitates Exoticæ.* The fresh Leaf is said to affect the Head, and to intoxicate, but it loses these Qualities when dried and prepared. The *Japanese* first bruise the dried Leaves in stone Mortars, and then throw a sufficient Quantity into boiling Water, and suffer it to infuse but a very little while. The greatest Advantage of Tea, considering the Quantity of it that is drank, seems to be, that it prevents the hot Water from relaxing the Stomach to too great a Degree, because it is a little astringent: All the other Effects of this fashionable Liquor seem to proceed from the hot Water. Tea boiled in Milk, in the Quantity of two Drams to a Pint, has been found to stop a Looseness, the Dose being repeated two or three times. Green Tea, being drank too freely, is prejudicial to weak Lungs. They who are subject to this Disease, ought therefore to chuse Bohea, and to mix Milk with it, in order to make it more laxative. *Geoffroy.*

There are six Sorts of Tea used in *England*: The first is called *Bohea*, which is a small blackish Leaf, which tinges the Water with a brown or reddish Colour, and renders it of a Taste like an Infusion of *Sena*; the second Sort is called *Congo*; the third *Peco*; and the fourth *Green Tea*, and, by some, *Singlo.* This last is of two Kinds; one consists of an oblong narrow Leaf, the other has lesser Leaves, but both are equally good, and of a bluish-green Colour, seem very crisp when chewed, and tinge the Water with a Pale-green. The fifth Sort is called *Imperial Tea*; this has a large loose Leaf, whereas that of the other two last-mentioned is convolved, or shrivelled up; this Species is also, most sightly to the Eye, of a green Colour, crisp in the Mouth, and of a pleasant Smell. The sixth Sort is call'd *Hyson Tea.*

All these Sorts of Tea are brought from *China*, and are supposed to be Leaves of the same Tree, and distinguished only by the Time of Gathering, and the Method of Preparation, or, as they call it, *Curing. Dale.*

The following Account is from M *Wilhelm ten Rhyne*, The Physician to the Emperor of *Japan*:

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The Virtues which the *Chineſe* aſcribe to Tea, are: That it purifies the Blood, prevents frightful Dreams, and defends the Brain from malignant Vapours; cures a Vertigo, and Pain of the Head, eſpecially when it proceeds from a Crapula; is good for hydropic Perſons, for it is a potent Diuretic; dries up Rheums of the Head; corrects the Acrimony of Humours; removes Obſtructions of the Viſcera; and reſtores a decayed Sight; for the *Japoneſe*, I believe, make uſe of a Decoction of Tea, which they call *Tebia*, as their principal Antidote againſt a Weakneſs of the Eyes, contracted chiefly from the frequent and conſtant Uſe of hot Rice, and drinking their Liquor *Sarqui*. It tempers aduſt Humours, corrects an hot Liver, mollifies an Hardneſs of the Spleen, and prevents Sleep, eſpecially in thoſe who are not accuſtomed to it. Moreover, it renders the Body brisk and lively, quickens the Senſes, prevents a Torpor and Drowſineſs, exhilarates the Heart, repels Fear, cures Gripes and Flatulences, diſcuſſes Wind in the Uterus, comforts and ſtrengthen the Viſcera, revives the Memory, ſharpens the Wit, and tempers Bile. It is a noble Lithontriptic, at leaſt I think I have Reaſon to ſay ſo, ſince I never found among the *Japoneſe* the leaſt Sign, or hear the leaſt Complaint, of any Stone or Gravel in the Kidneys or Bladder, though I was diligent enough in my Inquiries about it; and, to ſay no more, it renders the nuptial Embraces more acceptable and endearing.

Ettmuller ſays, that Tea is a Specific for the Stomach, and not only corroborates that Part, but is a Preſervative from the Stone and Gout, and is eſpecially beneficial to the Head. It preſerves from Drunkenneſs, prevents Drowſineſs, and is particularly adapted to the Stomach.

That the Drinking of Tea is not ſo effectual in curing or preventing ſome Diſtempers in our *European* Countries, as in *China* and *Japan*, may reaſonably be imputed to the conſtant Uſe of this Liquor, and the temperate Way of living in thoſe Eaſtern Parts.

That a Tincture is extracted from the Leaves of Tea by means of hot Water, every body knows. That the drinking of this Liquor may be uſeful in ſome Caſes, I ſhall not deny; but, that it is good for all, I cannot be perſuaded to grant, ſince ſome of the good Effects, which are thought to proceed from Tea, are rather to be aſcribed to the hot Water. That this Liquor has been pernicious in ſome Caſes, has been often proved by Experience, of which the following is an Inſtance: A Woman of a ſound and vigorous Conſtitution, but addicted to the Uſe of Tea, complain'd of a Concuſſion of her internal Parts from a kind of acrimonious Coldneſs, which moleſted her chiefly by Night, and which ſhe thought was owing to Tea, becauſe ſhe was principally ſeized with this Diſorder after a free Uſe of that Liquor. And I remember, that ſome Years ago a robuſt Man complained of the like acrimonious Coldneſs in the Abdomen, which he alſo imputed to the daily Uſe of Tea. D. *Hulſe*, from *Muy's Podalirius redivivus, de Potu Theæ et Coffee.*

But what ſhall we judge of the Drinking of Tea and Coffee? When I was a Student at *Leyden* in *Holland*, I was miſerably afflicted for a whole Year with the Headach; but after I began to drink freely of Tea, and eſpecially of *Coffee*, every Day, I lived free not only from the Headach, but from all other Diſorders; though before that time I had a lingering Life, more like Death, having conflicted with a long Series of Diſtempers for five Years paſt. *Ibid.*

I know ſome of my Acquaintance, who laboured under no ſmall Inconvenience from the Stone and Gravel in the Kidneys, wholly freed from all painful Senſations of that kind by drinking plentifully of Coffee. *Ibid.*

Some who have travelled into thoſe Eaſtern Parts, aſſure us, that Perſons of Quality in *China* and *Japan*, boil the Buds and and Flowers of the Tea, aſcribing more Virtues to them, than to the Leaves. *Raii Hiſt. Plant.* See PURPURA.

THECA, θήκη, from τίθημι, to place; in general, is a Receptacle in which any thing is lodged; but is frequently appropriated to a Surgeon's Cheſt, wherein he keeps his *Apparatus* of Inſtruments, and other Neceſſaries. *Rhodius* attempts to prove from *Martial*, that *Theca* ſignifies, alſo, a Kind of *Fibula*, contrived not only for the ſake of Chaſtity, but Modeſty. *Caſtellus.*

THEE, the ſame as THEA.

THEATRICOS, θεατρικὸς, from θεάω, to behold, ſightly, entertaining to the Eye, is an Epithet applied by *Hippocrates*, περὶ ἄρθρ. to ſuch Bandages, as are contrived more for Shew and Oſtentation, than real Uſe and Service.

THEION, θεῖον. The Divinity, or Divine Nature, the principal Cauſe, and prime Agent, in human Affairs, according to *Hippocrates*, in the Beginning of his Book *de Natura Muliebri*, μάλιστα τὸ θεῖον ἐν τούτων ἀνθρωπίνων ἔργων εἶναι, "the "Divinity is the chief Cauſe in Men [in human Affairs]". And, a little after δεῖ δὲ τὸν ὀρθῶς ταῦτα χειρίζοντα πρῶτον μὲν ἐκ τῶν θείων ἄρχεσθαι, "He who intends to manage theſe things aright, muſt take his Beginning from divine Things." Τὸ θεῖον ſignifies, alſo, any thing divine, which proceeds from God, or is incomprehenſible, as God is, and the Cauſe of it beyond the Reach of Senſe or Thought. This is the Meaning of τὸ θεῖον in the Beginning of the Book *de Morbo Sacro*, and in many other Places. In the ſame Senſe ſome underſtand the following Expreſſion in the *Prognoſtics*, ἤν τι θεῖον ἔνεστι ἐν τῇσι νούσοισι, "Whether there be any thing divine in Diſeaſes;" but *Galen*, on the Place, after rejecting ſome other Interpretations, confidently aſſerts, that it means τὴν τὸ περιέχοντος ἡμᾶς ἀέρος κρᾶσιν, "the "Conſtitution of the Air which ſurrounds us," which is the Cauſe of epidemic Diſeaſes; or the Knowledge of the Stars, which conduces much to the Prediction of Diſeaſes, and the Conſtitution of the Seaſons throughout the Year. This Part of Phyſiology *Hippocrates* would have a Phyſician to be acquainted with, as we learn from the Books of the *Epidemics*, and the Book of *Air, Water, and Situations*. *Gorræus* and *Fernelius* underſtand by τὸ θεῖον ſuch a Conſtitution of the Air, as offends more in Subſtance, than Qualities, which *Hippocrates*, *Lib. de Nat. Humana*, calls νοσερὴν κατάκρισιν, "a morbific Secretion;" or, according to *Galen's* Expoſition of κατάκρισις, by ἀναθυμίασις, a morbific Evaporation, or Exhalation. *Gorræus. Foeſius.*

THEKA, H. M. *Kyati ſeu Quercus Indica* Bontii, is a very tall and beautiful Tree of *Malabar*, with a very thick Trunk, covered with a thick, ſcabrous, and aſh-coloured Bark, furniſhed with very numerous, green, geniculated, and quadrangular ſmall Branches. The Wood is whitiſh, hard, ſmooth, ſtriated, and not unlike that of the Oak. The Root is reddiſh, of an aſtringent and bitteriſh Taſte, and has ſomewhat of an acid Smell. The Leaves adhere by Pairs to the Branches in parallel Order, and are oblong, round, acuminated, denſe, thick, ſhining above, but not beneath, two Spans or more in Length, and a Span abroad, of an acid, and oftentimes auſtere Smell; rubbed together in the Hands, they yield a Gum, which immediately becomes of a black-purple Colour like Blood. The Flowers are ſmall and ſweet-ſcented, and are diſpoſed about the tender Branches, at the Origin of the Leaves, in long, quadrangular, and ſulcated Pedicles; and, gradually extending their Columns, are expanded in form of an Umbella. They conſiſt of five or ſix roundiſh, white, and outwardly reflexed Petals, and are ſeated in a ſmall and acuminated Calyx. Between the Petals ſtand a like Number of ſmall white Stamina, with yellow Apices, the Middle being occupied by a greeniſh acuminated Pointal. At length appear large green Veſicles, open above, in which are lodged, though ſeparated from one another by a ligneous Partition, three or four roundiſh, green, lanuginous, and hairy Fruits, of a greeniſh Pulp, without Smell, and of a bitter and aſtringent Taſte, incloſing a ſquare Stone, of a white Colour inclining to red, and containing a ſmall whitiſh Kernel.

Whole Woods of theſe large evergreen Trees are found in *Malabar*. The Pagans, from ſome unaccountable Superſtition, uſe no Wood but this in building and repairing their Temples; of the tender Leaves they prepare a purple Colour, with which they dip their Silks and Cottons; they are, alſo, eaten as a Delicacy, and they boil them with Sugar into a Syrup, which cures the *Aphthæ*. Of the Flowers boiled with Honey they prepare a Medicine, which evacuates the Bodies of hydropic Perſons of the Water: The Root dried, then pulverized, and exhibited, diſſolves concreted Blood where-ever ſeated; and of the tender Fruits bruiſed is prepared an Ointment, which is very ſerviceable in curing an Herpes. *Raii Hiſt. Plant.*

THELE, θήλη. The Nipple of the Breaſt; or Breaſt.

THELYGONOS. A female Plant.

THELYPTERIS. Female Fern.

THENAR, θέναρ. The Palm of the Hand, or Sole of the Foot. But *Thenar* is the Name of a Muſcle of the Hand, and another of the Foot.

The *Thenar* of the Hand is a very thick, fleſhy Muſcle, in ſome meaſure pyriform, lying on the firſt Phalanx of the Thumb, toward the Palm of the Hand, the large Eminence in which is principally formed by it. Its Name is taken from a *Greek* Word, which ſignifies *to ſtrike*.

It is fixed to the Bone which ſupports the Thumb, and to the neighbouring Part of the great internal, annular, or tranſverſe Ligament of the Carpus. It is, in ſome meaſure, bicipital, two diſtinct Portions anſwering to the two Inſertions already mentioned. As it runs along the firſt Phalanx, theſe two Portions unite, and, diminiſhing in Thickneſs, are both inſerted by one Tendon in the lateral internal Part of the Head of the firſt Phalanx, in the lateral Part of the Baſis of the ſecond, and in the lateral Ligament of that Joint.

The void Space between the two Portions of this Muſcle gives Paſſage to the Tendon of the *Flexor Pollicis Longus*. That Portion, which lies neareſt the Hollow of the Hand, is the largeſt; and its tendinous Extremity is inſerted in the firſt ſeſamoide Bone, ſituated at the Baſis of the ſecond Phalanx.

The Thenar, by its Inſertion in the firſt Phalanx of the Thumb, ſerves to draw it from the firſt Bone of the Metacarpus, more or leſs directly, as one of its Portions acts more than the other, or as they both act equally.

By the Inſertion of the large Portion in the Baſis of the ſecond Phalanx, by the Intervention of the ſeſamoide Bone of the ſame Side, it may bend this Phalanx laterally on the firſt, and thereby bring the Thumb to a greater Diſtance from the Index.

Neither

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Neither does this Distance hinder it from sometimes bending, and sometimes extending the Thumb, in the ordinary manner.

When the small Portion acts alone, it may give the second Phalanx a small Degree of Rotation on the first, these two Bones not being articulated by a Ginglymus.

Near this is another Muscle, called, by *Winslow*, the *Mesothenar*, which is a flat and nearly triangular Muscle lying between the first Phalanx of the Thumb, and the Bottom of the Palm of the Hand.

It is inserted by a very broad Basis in the Ligament which connects the Os Magnum of the Carpus to that which supports the Thumb: It is, also, inserted along the internal or angular Part of that Bone of the Metacarpus, which supports the middle Finger, and in the small Extremity of that which answers to the Index.

From thence the Fibres contracting to an Angle, terminate in a flat Tendon of different Breadths, which is inserted in that Side of the Head of the first Phalanx of the Thumb, which is turned to the Hollow of the Hand, and in the neighbouring Part of the Basis of the second Phalanx, by means of the second sesamoide Bone belonging to that Joint.

The Mesothenar moves the first Phalanx of the Thumb towards the Hollow of the Hand, more or less obliquely, as it acts either alone, or with the large Portion of the Thenar, or even with the Antithenar. By its Insertion in the sesamoide Bone of the second Phalanx, it, likewise, moves that Phalanx on the first, and thereby assists the *Flexor Longus*.

The Thenar of the Foot is a Muscle made up of several Portions, and lies on the inner Edge of the Sole of the Foot.

It is fixed, by three or four fleshy Fasciculi, to the lower and inner Part of the Os Calcis, Os Scaphoides, and Os Cuneiforme majus. It is, also, fixed a little in the annular Ligament under the inner Ankle, which belongs to the Tendon of the *Flexor Longus*.

From all these different Insertions the fleshy Fasciculi approach each other, as they advance forwards under the first Bone of the Metatarsus; and are fixed partly in the internal sesamoide Bone, and partly in the Inside of the first Phalanx near its Basis.

There is another Fasciculus fixed by one End to the Os Scaphoides and Os Cuneiforme majus, and by the other to the external sesamoide Bone, and Outside of the first Phalanx of the great Toe.

The *Thenar* bends the first Phalanx of the great Toe. When the Portion nearest the inner Edge of the Foot either acts alone, or acts more than the rest, the great Toe is separated from the other Toes, especially if it be at the same time extended. This Separation may be greater or less, according to the Degrees of Action of the other Portions of the *Thenar*. *Winslow's Anatomy*.

THEODORETOS, θεοδώρητος. The Name of an Antidote described by *Paulus Ægineta*, *L.* 7. *C.* 11. and by many other medicinal Authors. The principal Ingredient is *Anacardiums*; and it is intended for strengthening the Memory. The Word imports *divine*.

THEODORICON. This Word, like the preceding, imports *divine*; and is used as an Epithet for many Compositions, two of which occur in *Mesue*.

THEODOTIA, θεοδότια. The Name of several *Collyria* described by *Galen*, *Aetius*, and *Paulus Ægineta*.

THEOPEMPTOS. Sent from God. This is a pompuos Title for an Antidote, or Tincture of Antimony, made with Antimony and Gold, and described by *Schroder*, *L.* 3. *C.* 17.

THEOPHILION, θεοφίλιον. The Name of a *Collyrium* described by *Aetius*.

THEOPHRASTICI. A Name for the Disciples or Followers of *Theophrastus Paracelsus*.

THEORIA, from θεάομαι, to contemplate. The contemplative, or speculative Part of Medicine. See the PREFACE. The wild Imaginations of the Whimsical and Conceited have in all Ages suggested, and still continue to suggest, innumerable Theories of Physic, highly detrimental to the Art of Healing, of which a thousand Instances might be given. Thus *Hippocrates* directs Bleeding under the Tongue in a Quinsey; but *Cœlius Aurelianus* condemns this Practice, without consulting Experience, the only Test; because it is not consistent with his favourite Theory.

THEOXENI MALAGMA. The Name of a *Malagma* against Pains of the Feet, described by *Celsus*, *L.* 5. *C.* 18.

THERÆUS, θηραῖος. An Epithet for a Species of *Cretan* Wine, mentioned by *Galen*, which was sweet, black, and thick, but not astringent.

THERAPEIA, θεραπεία, from θεραπεύω, to heal, or cure, according to *Galen's* Definition, *Com.* 1. *in R. V. I. A.* is ἡ τῶν νοσημάτων ἀναίρεσις ἤδη γεγενημένη, ἢ γινομένη ἐστί, that is to say a Removal of Diseases already done, or completed, not what is still in its Progress. It is usually distinguished into perfect and palliative; the first is when the Disease is totally subdued; the other, when the Symptoms are only mitigated.

THERAPEUTICE, θεραπευτική, is that Part of Medicine, which is particularly concerned in the Cure of Diseases.

THERENIABIN, *Tereniabin*. Oriental Manna, called also by the *Greek* Names *Drosomeli* and *Abromeli*.

THERIACA, θηριακὴ, from θήρ, a wild Beast, are properly such Medicines as cure the Bites of venomous Animals; and are supposed to differ from *Alexipharmics*, in that these latter are a Remedy for Poisons, which are taken inwardly; the other for such as affect the internal Parts from the Bites of Animals, as appears from *Nicander*, who has very elegantly treated of both, in two Books in heroic Verse. But he seems to make two Sorts of *Theriaca*; one by which the Bites of Animals are prevented, either by way of Suffumigation, or by rubbing or covering the Parts exposed; the other, by which the Bite itself is cured, and rendered of no ill Consequence. These Remedies are called θηριακὰ ἀπὸ τῶν θηρίων, from wild and venomous Animals, and not from any particular Species of them; tho' the Viper, which is properly called ἔχιδνα, (*Echidna*), or ἔχις, (*Echis*), is by the *Greeks* called θηρίον, (*Therion*) by Way of Eminence; as the Lion, also, is sometimes called θήρ, (*Ther*).

THERIACE, θηριακὴ, is an Antidote effectual against all Sorts of Poisons; and tho' every thing endued with this Property may be called by this Name, since *Galen* calls *Garlick* the Countryman's *Theriace*, yet it is principally given to that most celebrated Medicine, composed of a Multitude of Simples with the Flesh of Vipers, and of Efficacy against all Manner of Poison convey'd into the Body, whether from a Bite, or through the Mouth. For the Antients often meeting with Poisons, and finding it no easy Matter to avoid either the Bites of Serpents, or a treacherous and poisonous Draught; and also considering that the Natures of Men were so different from one another, that what was good for one Man was oftentimes of no Use to another, they set themselves to invent some manifold and exquisitely compounded Medicine, which should be an universal and present Remedy in all Cases where Poison was concerned, and such was what we commonly call *Theriace*. The Invention of this Medicine is not very antient; but about the Time of *Nero*, when *Andromachus*, a very celebrated Physician, while the Professors of Medicine were consulting with one another, how to render this Antidote the most speedy as well as effectual, first thought upon adding Viper's Flesh. The Composition of the *Theriace*, therefore, which bears the Name of *Andromachus*, is very antient, and in *Galen's* Opinion very good. This *Theriaca* is described by *Andromachus* himself, in some Verses dedicated to *Nero*, and inserted by *Galen*, in his Treatise *de Theriaca ad Pisonem*. [See the Description under the Article ANDROMACHUS]. To this Antidote *Andromachus* did not give the Name of θηριακὴ but γαλήνη, (*Galene*), that is, *Sereneness*; he also called ἱλαρὴ, (*Hilare*), and εὔδιος, (*Eudios*), Words importing Chearfulness and Serenity of Mind; but *Crito*, and others after him, gave it the Name θηριακὴ, on account of the Viper's Flesh which entered its Composition. In Imitation hereof several other Physicians composed Antidotes against Poisons, which they, also, called θηριακαὶ, an Account of which you have, as here follows, under the Names of their Authors, or some noble and illustrious Persons.

Θηριακὴ Αἰλίε Γάλλε, "the *Theriaca* of *Ælius Gallus*", which he is said, after his Return from *Arabia*, to have presented to *Cæsar* with this Recommendation, that it had saved the Lives of many Persons under him. It is as follows: Take of the Root of the white Vine, sixteen Drams; Seeds of Trefoil, Opopanax, each eight Drams, Aristolochia Tenuis twelve Drams; Root of Libanotis, Iris Illyrica, Ginger, Opium, each eight Drams; Seeds of wild Rue, twelve Drams; of *Ethiopian* Cumin, sixteen Drams; of Myrrh, Casia, Castor, Seseli, Eringo-root, Serpyllum, Succus Cyrenaicus, each six Drams; of Medica, twelve Drams; Sagapenum, six Drams; Saffron, five Drams; Meal of Ervum, twenty-four Drams: Make them with Water into Troches of the Weight of three Oboli, and exhibit them in Wine.

Θηριακὴ Ἀντίοχε Φιλομήτορος, "the *Theriaca* of *Antiochus Philometor*," is thus prepared: Take of the Roots of Meum, Serpyllum, Opopanax, each two Drams; Seeds of Trefoil, one Dram; Seeds of Anise, Fennel, Ammi, Apium, each one Acetabulum; very fine Flower of Ervum, two Acetabula; old Wine, as much as is sufficient to mix them together, in order to make Troches to be dry'd in the Shade. The Dose is three Oboli in three Cyathi of Wine. *Eudemus* gives us the Composition in Verse, as we have it in *Galen*, *Lib.* 2. *de Antidotis*.

Θηριακὴ Δημοκράτους, "the *Theriaca* of *Democrates*," who was an excellent Physician, and described his *Theriaca* in Iambic Verses, recorded by *Galen*, *Lib.* 1. *de Antid.* It contains the same Simples as the *Theriaca Andromachi*, but differs in the Weights; for of these, where *Andromachus* takes two Drams, he orders but two; and where *Andromachus* takes four Drams, he directs four; as may be observ'd in many of the Simples which enter that Composition. You have this *Theriaca* in *Aetius*, *Tetrabib.* 4. *Serm.* 3.

Θηριακὴ Δημητρίου, "the *Theriaca* of *Demetrius*." This Author was chief Physician to the Emperor in the Time of *Galen*; and in the Composition of his *Theriaca* agreed with *Andromachus*, except in the Weight of the Troches of Squils, which has but an inconsiderable Difference; for whereas *Andromachus* prescribes forty-eight Drams of those Troches, he directs but forty-six in the Composition of the *Theriaca*.

Θηριακὴ Εὐκλείδου, "the *Theriaca* of *Euclid*," surnamed *Patianus*, which was thus prepared: Take of Castor, six Drams; Opo-

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Opopanax, Sagapenum, Seseli, Cachrys, Chamædrys, Chamæpitys, Marrubium, each sixteen Drams; Styrax, Bitumen Judaicum, Myrrh, each seven Drams; Juice of Poppy, eight Drams; Honey, one Pound. It is given in the Juice of the Fraxinus, or in Wine, to the Quantity of a Dram, or more, at Discretion; it is good, also, in Quartan Fevers.

Θηριακὴ Ζήνωνος, "the *Theriaca* of *Zenon*" of *Laodicea*: It contains of Cardamoms husked, Serpyllum, Seeds of Apium, Root of the white Vine, the Seeds of Trefoil, Anise, Parsley, the Root and Seeds of Fennel, Ammi, Aristolochia tenuis, Meal of Ervum, Opopanax, of each an equal Weight: Bruise each of them separately; then mix them together, and work them up in Wine into Troches, to be dry'd in the Shade.

Θηριακὴ Μιθριδάτις, "the *Theriaca* of *Mithridates*." This Antidote is otherwise called Μιθριδάτιος, "*Mithridate*," because King *Mithridates* always used it, to preserve himself against Poison; and that so effectually, that when he was besieged by the *Romans*, and had twice attempted in vain to poison himself, he was obliged to fall upon his Sword, and thus dispatch'd himself. It consists of a great Number of Simples, and is describ'd by *Galen*, *Lib.* 2. *de Antid.* [See the Preparation under MITHRIDATIUM]. This *Theriaca* is the same which *Aetius* unaccountably describes for the *Theriaca Andromachi*.

Θηριακοὶ ἅλες, *Theriaci Sales*, Theriacal Salts, are prepared of Vipers in the following manner: They put four Vipers alive into an earthen Pot, which has its Outside well cover'd with Clay, and upon them they cast an *Italic* Modius, that is, twenty Pounds of Sal Ammoniac, or common Salt, to which they add Troches prepared in the following manner: Take of Gentian-root, one Pound; Tops of the lesser Centaury, Marrubium, each six Ounces; Mountain Scordium, Apium, Chamædrys, Seeds of Garden-rue, each one Pound: Bruise them, and make them up with *Attic* Honey into Troches, half a Pound of which is to be put into the Pot with the Viper, and the rest is to be mixed with the Salt, together with five tender and fresh Squils cut very small. This done, they put Fire under the Pot, which is to have four or five Perforations in the Cover, through which the exhaling Vapour, when it appears no longer gross and foul, but like a thin and pure Flame, shews the Burning is completed. *Martianus*, besides the Pastils, adds another *Italic* Modius of Salt. The Pot, being taken from the Fire, is suffer'd to cool for a Day and a Night; then they open it, and, taking out the burnt Contents, carefully triturate them, and put them into a Sieve with the following Mixture: Take of Seeds of wild Rue, Hyssop, each nine Ounces; Fennel-Seeds, *Gallic* Nard, Stachys, each six Ounces; *Macedonian* Parsley, four Ounces; the Tops of Origanum and Thyme, each nine Ounces; the Berries of Amomum, and the Seeds of Horminum roasted, each three Ounces; Juniper-berries, black and white Pepper, each two Pounds; the Root of Laserpitium, ten Ounces; the Seed of Coriander, Ginger, the Seed or Root of Satyrion, Penyroyal, Seseli, Mountain Tordyllium, Mint, each six Ounces; Cassia Fistula, two Ounces, Cinamon, one Ounce: Bruise them, and mix them all together with the rest; and, having passed them through a Sieve, set them aside in glass Vessels in a dry Place, and use them not till the End of forty Days. I, says *Galen*. *Lib. ad Pisonem*, burn not the Vipers, but take as many Theatrical Troches, as contain four Vipers; that is, says *Martianus*, about two Ounces and an half of dry Troches; and mix with those Things which are burnt with the Vipers, that they may lose the Bitterness, with which they are endu'd, in the Burning; and by this Method prepare the best of Theriacal Salts. These Salts are highly efficacious in cutaneous Diseases, as the Leuce, Lepra, Impetigo, and Phthiriasis, provoking a copious Sweat, by which means the excrementious and morbific Juices latent under the Skin are expelled,

These Theriacal Salts are described by *Galen*. *Lib. de Theriaca ad Pisonem*; but the Reader is to take notice, that the Copy of *Galen* is very much corrupted in this Place; but, may however, be corrected from *Aetius*. *Tetrab.* 4. *Serm.* 1. *Cap.* 97. by Help of which we may, also, restore *Paulus*, who describes these Salts at the End of his seventh Book.

Θηριακοὶ ἀρτίσκοι ἢ τροχίσκοι, "Theriacal Pastils, or Troches". These are Troches prepared of the Flesh of Vipers for the Composition of the *Theriaca*, and are made in the following manner: They take female Vipers caught in the End of the Spring, take off their Skins, and carefully cleanse them; then, after giving the Flesh two or three Washings in Water, they put it in a clean Pot with a sufficient Quantity of Water, and boil it over a Fire made of the Wood of the Vine, till the Flesh be wholly separated from the Spine. Afterwards they carefully press the Flesh with their Hands, and pound it very well in a Mortar, instilling every now-and-then some of the Broth. This done, they take of the finest Bread, new, dry, pounded, and sifted, three Parts for one-fourth, or at least four Parts for one-fifth of the Flesh; and pound them very carefully together, instilling at proper Intervals some of the Bread, till they are exactly united. Of this Mass they form fine Troches of a moderate Size, adding a little Opobalsamum in the Formation, and dry them in the Shade. They are then rubbed over with the best

Opobalsamum, and kept in a glass-Vessel; and if at any time there appear about them any Dustiness, or Whiteness, on account of Mouldiness, it is carefully wiped off with a Linen Cloth.

Θηριακὴ, *Theriaca*, is, also, the Name of a Plaister of Centaury commended by *Oribasius* for Wounds and Punctures of the Nerves and Muscles; and for the Bites of wild Beasts, and a mad Dog: It is described by *Aetius*, *Tetrabib.* 4. *Serm.* 3.

THERIACA ANDROMACHI.

THE TREACLE OF ANDROMACHUS, commonly called VENICE TREACLE. See ANDROMACHUS.

THERIACA COELESTIS.

Take of the *Theriaca Benedicta* of *Quercetan*, a Preparation not much different from *Venice* Treacle, a Pound and an half. Extract with Treacle-water; pour the Whole into another Vessel; and abstract to the Consistence of Honey. Then, keeping the Essence separate, pour the abstracted Spirit to what before remain'd in the Vessel. Then extract and pour off a second time. To what remains pour a sufficient Quantity of rectified Spirit of Wine, and extract its remaining Essence, then decant again, and mix this Essence with the former. Then extract what still remains in Treacle-water, and at last in distil'd Vinegar, fortified with Spirit of Nitre: With these last Extracts precipitate the former, and coagulate the former to the Consistence of Honey. Then mix with the Whole, of the Magisteries of Coral and Pearls, each one Ounce; of the Magisteries of Iacinth, Rubies and Emeralds, each six Drams; of Animal and Mineral Bezoar, and Salts of Coral and Pearls, each half an Ounce; of oriental Bezoar, Seal'd Earth, true Unicorn, and of the Bone of a Stag's Hart, each three Drams; of Ambergrise, two Drams; inspissated in a double Vessel to the Consistence of an Extract, or a Mass fit for Pills. *Schroder.*

THERIACA DIATESSERON:

An Electuary of four Ingredients.

See DIATESSERON. The THERIACA PAUPERUM is the same.

THERIACA EDINENSIS:

The Edinburgh *Treacle.*

Take the Roots of Angelica, Contrayerva, Masterwort, *Virginian* Snakeroot, wild Valerian, Zedoary, and Bayberries, of each two Ounces; the Leaves of Rue, and Scordium, of each an Ounce and an half; of the Powder of Diambra, three Ounces; Camphire, Saffron, Rosin of Guaiacum, Myrrh, and Opium, each an Ounce; clarified Honey, thrice the Weight of the Powders; and as much Canary-wine as will serve to dissolve the Opium: Mix all together, and make it into an Electuary, according to the Rules of Art. *Edinburgh Dispensatory.*

THERIACA GERMANORUM.

The Rob made of the expressed Juice of green Juniper-berries is so called.

THERIACA LONDINENSIS:

London *Treacle.*

Take of the Four greater and lesser hot Seeds, each an Ounce; of the Roots of Angelica, *Virginian* Snakeroot, Tormentil, Elecampane, Zedoary, Contrayerva, Calamus Aromaticus, and Gentian, each two Drams; the Leaves of *Cretic* Dittany, Scordium, Rue, Laurel, and Juniper-berries, each half an Ounce; Nutmegs, Mace, Saffron, Myrrh, and Cloves, each three Drams; Ginger and Opium, each two Drams; Syrup of white Poppies, boiled to an higher Consistence than ordinary, three times as much as the Weight of the rest; and of Canary a sufficient Quantity to make the Whole into an Electuary.

This is much altered from what has been in all the preceding Dispensatories; and as an Alexipharmic, which is plainly its main Intention, much for the better; for many Ingredients, very weakly conducive to such an End, are now rejected; and one of the most efficacious we have in the Shops, of that Class, added, which is the Contrayerva; but, as this has hitherto been mostly used by the Surgeons, where warm Cataplasms are required, how far it is improved for such Purposes, and especially by the Exchange of Honey for *Syrupus de Meconio*, I will not pretend to be a Judge.

Quercetan ascribes surprising Virtues to this Preparation, in subduing Poisons, and contagious Disorders; in allaying Commotions of the Spirits and Humours; in mitigating Catarrhs,

Pains,

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Pains, and Watchings; in corroborating the natural Balsam, and preventing Putrefaction. *Schrod. Pharmacop.*

THERINOS, Θήρινος, is an Epithet apply'd to a sort of Wine, which was moderately thick and black, and of the Growth of *Asia*. *Galen*, *Lib.* περὶ εὐχυμίας. Θήρινον is an Epithet of a Collyrium in the same Author, *Lib.* 4. *de C. M. S. L. Cap.* 7.

THERIODES, Θηριώδης, from Θήρ, *Fera*, a wild Beast; wild, savage, is applied to Things of a ferine or malignant Nature, and particularly to Diseases which take their Names from wild Beasts, as the *Elephas*, and *Cancer*, or under which Animals, as large Worms, or Ascarides, are generated; or even to a Phthisis, under which the Nails are incurvated, like the Talons of wild Beasts. *Hippocrates* applies it, also, to the Autumn, as being the Season of the Year, in which malignant and destructive Distempers are most predominant. Thus *Galen*, commenting on τὸ θηριῶδες φθινοπώρου, *6 Epid. Sect.* 1. *Aph.* 13. says, that whether the Author, by τὸ θηριῶδες of the Autumn, means the large Worms or Ascarides; or the Elephas or Cancer, or, as some will have it, a Phthisis, all those Disorders are chiefly generated in the Autumn. Θηριῶδες may be apply'd to the Autumn on account, also, of those ferine and melancholy Disorders proceeding from black and highly adust and torrefy'd Bile, under which the Patients fall upon every one they meet, and attempt to worry them after the manner of wild Beasts. *Galen*, in his *Exegesis*, expounds the τὸ θηριῶδες, of Animals, such as the arge Worms, or Ascarides, in the Intestines; or by τὸ φθινῶδες, "tabific," because the Autumn is a Season disposed, from the Corruption of the Humours, for the Generation of many severe and dangerous Disorders, which often terminate in Consumptions; which are, also, very mortal in Autumn. *Aretæus*, also, who almost equal'd *Hippocrates*, in Grandeur of Style, bestows the same Epithet θηριῶδες on the Autumn. And *Erotian*, expounding the τὸ θηριῶδες, *6 Epid.* before-mention'd, tells us that some understand by it malignant Ulcers, called θηριώματα (*Theriomata*) which are most rife in Autumn, because of the Inequality of the Air; others refer it to small Worms, which are then principally generated; and others will have it meant of a Phthisis.

Θηριώδης βὴξ, *6 Epid. Sect.* 2. *Aph.* 11. a ferine and malignant Cough, is explained by some Interpreters, as *Galen* tells us, by a dry Cough excited by Worms creeping upwards to the Mouth of the Stomach, and lancinating the same; others, he says, accommodate the Expression to the Cough of those in a Phthisis, because their Nails are incurvated, as was said before. Others, again, expound θηριώδης by κακοήθης (*Cacothes*) malignant, which is the Opinion of *Galen* himself; so that θηριώδης βὴξ is a malignant and pernicious Cough, which is no Indication of an Abscess, nor gives any Hopes of a Concoction. The same Author, in his Comment on *6 Epid. Sect.* 2. *Aph.* 16. where *Hippocrates* speaks of such dry Coughs in a burning Fever, as are not very troublesome, nor excite a Thirst, nor dry the Tongue, because they are owing, he says, ἐ τῷ θηριώδει, ἀλλὰ τῷ πνεύματι, "not to any (thing expressed by) *Theriodes*, but "to the Wind (or Air)," as appears in that the Patient never coughs, but when he speaks, or his Mouth is open, explains the τὸ θηριῶδες as follows: γινομένων δὲ βηχῶν ξηρῶν ἢ διά τινα κακοήθειαν τὸ νοσήματος, &c. "Since dry Coughs proceed, "also, from some Malignity of the Disease, in order to distinguish them from those of which he is now speaking, he "says, that these latter are not excited by any thing signify'd "by *Theriodes*, but by the Air. Some will have it, that by "θηριώδες here *Hippocrates* does not mean simply all Malignity in general, but, as some of them interpret it, a Phthisis, "because the Patients under that Disease resemble Beasts in "respect of the Crookedness of their Nails; others understand "it of a *Therioma*, which is properly an Ulcer of the Lungs; "others, again, will have it spoken with respect to Worms, "ascending into the Mouth of the Stomach, and by Irritation "of that Part provoking a Cough; though they can neither "prove this by Reason nor Experience. The best way, therefore, is to understand *Theriodes* of some Malignancy, whether "the Cough, arises from some Defluxion from the Head, or an "Ulcer in any of the Organs of Respiration, or an Abscess "in those Parts, or what they call an Empyema. Now there "are other kinds of Coughs besides this, which are not malignant, and are owing to a Distemperature of the Organs of "Respiration, or of the Fauces, or of the Aspera Arteria, or "to exasperating Meats and Drinks, and even sometimes to "the ambient Air." In the like Sense, by θηριώδεα τὰ ἐμέματα (*Theriodea ta Emumena*) *Coac.* 623. we are to understand malignant Vomitings, by which the great Corruption and Malignancy of the Humours are indicated; or by which, perhaps, Worms are, also, ejected.

Θηριώδεις παραφρόσυνες (*Theriodeis Paracrusies*) in *Hippocrates*, *1 Prorrhet.* 26. and *Coac.* 85. 55. are Disorders of the Brain from Deliriousness, or Loss of Reason; wherein the Patients behave like wild Beasts, or, as *Galen* says, *Com.* 1. *in Prorrhet.* kick, bite, and rage at those who come near them, as if they were their mortal Enemies. Also, θηριώδεα παραφρόνια, (*Theriodea Paracruonta*) *1 Prorrhet.* 123. import a ferine and savage Madness, more vehement than Melancholy, and very malignant [see DELIRIUM]: Or, as *Galen* explains it, "by this Expression "is to be understood an Epitasis (Intenseness) of the melancholy "Disorder; for as they who are melancholy, and highly delirious, are prone to do those who stand near them a Mischief, so, when they are mischievous and raging beyond measure, he gives the Disorder the Name of *Theriodes*."

Θηριώδης διαίτη (*Theriodes Diæta*) is such Diet as is common to Men with Brutes, and such as was used in the first Ages. *Lib.* περὶ ἀρχαίης ἰητρικῆς.

Θηριῶδες (*Theriodes*) are Patients molested with Worms; or such Fevers as by a peculiar Malignity and Depravation of the Humours, which naturally happens in Autumn, afford Matter for the Generation of Worms. Thus, *4 Epid.* θηριώδεες ἐν τῇσι κρίσεσι are those who conflict with Worms about the Time of a Crisis; or those who, labouring under a Fever, towards the time of its Decline and Solution, discharged Worms or Ascarides by Stool or Vomit, by the Benefit of Nature, making Efforts to free itself from whatever offended or opposed it.

THERIOMA, θηρίωμα. See the preceding Word.

THERION, Θηρίον, in *Hesychius*, is pounded πάθος τι σώματος, a kind of bodily Disease; which is, as *Galen* in his *Exegesis* expounds it, either Worms, or a ferine (ἄγριον) Ulcer; as it signifies, he says, in the Book *de Locis ad Hom.* where you read, θηρίον ἐπὶ τὸ σῶμα ἐπέρχεται, "a ferine (or malignant) Ulcer "arises on the Body." It has the same Signification. *Coac.* 467.

THERIOTOME, from Θηρίον, a wild Beast, and τέμνω, to cut, or dissect. The Anatomy of Brutes.

THERMÆ. Natural warm Springs, of which the celebrated *Frederic Hoffman*, in his Dissertation on the *Caroline* Waters, has given us the following Account.

Nothing has more perplex'd the Minds of Men, and laid a more effectual Foundation for different Opinions among Physicians, than that actual and continual Heat, which in some Medicinal Springs is obvious to the Senses. We shall not enumerate all these Opinions, but only specify some of the most considerable: Many, therefore, especially among the Antients, accounted for the continual Heat of these Waters from the *Platonic Barathrum* and Centre of the Earth, where they suppos'd a perpetual Fire lodg'd, and thence diffus'd thro' Chinks and Apertures to particular Parts. But this Notion is rather the Creature of a wanton Fancy, than a Theory capable of being supported by solid Arguments. Others have accounted for the Heat of such Springs, from that of the Sun. But the Rays of the Sun do not penetrate into the Bowels of the Earth; and these Waters always retain the same Heat, when the Sun has retir'd from our Hemisphere, where he shines faintly in the Winter, and when the Earth is constricted and harden'd by Frost. Nor, if the Heat of these Waters was produc'd by the Influence of the Sun, could any Reason be assign'd, why other Springs, equally expos'd to the Solar Rays, should not be, also, hot.

Some Chymists derive the Origin of the Heat in these Waters, from the Effervescence of an Acid and an Alcali, as, also, from a Congress of Quick-lime with the Water. But if the Heat of these Waters was produc'd by the Conflict of an Acid and an Alcali, a neutral Salt, which is always produc'd by a Mixture of these, must necessarily be found in the hot Springs; which, however, does not happen. And there are Limestone Mountains in the Earth, yet the Matter of them conveys no Heat to the Waters, till it is previously burn'd; but Quick-lime is rarely found in the Bowels of the Earth. Others think they embrace a more rational Opinion, when they assert, that in the Production of the Universe, these Waters were furnish'd with their Heat: But this Notion seems to be as repugnant to Truth as the others; for, if this Heat was innate, I do not see why it should be so soon lost: So that we may conclude, that this Heat depends upon the Communication and Access of an igneous Substance, in the same manner as Water is heated by the Fire, and becomes cold when remov'd from it.

'Tis not, therefore, to be doubted, but that these Waters, naturally cold, contract their Heat in the Bowels of the Earth thro' which they pass; so far is the Earth from being render'd warm by the Heat of the Waters. As Water out of the Earth is render'd hot by Fire, so in the Bowels of the Earth a latent Fire renders the Waters flowing by it tepid or hot. That the Existence of such Fire is not precariously asserted, but that it is really lodg'd in the Meanders of the Earth, is sufficiently certain, from the burning Mountains found in different Countries, the violent subterraneous Commotions and Thunders, the Eruptions of Flames, and the burning of Rocks and Mountains. We must, therefore, inquire, by what means this subterraneous Fire is generated in the Bowels of the Earth; and how it is so long, and so constantly supported and maintain'd.

In order, therefore, to explain this difficult Phenomenon, we must, from the Principles of Natural Philosophy and Chymistry, account for the Origin of Fire, and the Production of Flames. We, therefore, affirm, that the Matter, Matrix, or Food of Fire is supplied by pinguious and sulphureous Substances. These not only give Origin to Flames, but are, also, quickly carried into

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into an igneous Motion. Sulphurs are converted into Fire, by their highly accelerated and quick inteſtine Motion; ſo that Fire is only a Species of brisk inteſtine Motion, which deſtroys the Union and Mixture of Bodies. Hence, the Perſon who from cold Bodies attempts to produce Fire and Flame, muſt take ſulphureous Subſtances, and by a violent Attrition and Colliſion put them into a brisk igneous Commotion.

Thus, for Inſtance, Iron is a very ſulphureous Metal; and for that Reaſon, of all other Metals, the moſt ſuſceptible of Heat. Hence, when it ſtands in Fuſion, it throws off numberleſs Sparks; and its Filings, when blown into the Flame of a Candle, forth with diffuſe lucid Sparkles. This Sulphur of Iron, by Colliſion, put into an accelerated Motion, produces manifeſt and viſible Fire. Hence it is that a Piece of Iron, by a quick and repeated Percuſſion with a Hammer, appears igneous, and is rendered ſo hot, as to burn and kindle Sulphur. This Origin of Heat and Fire is ſufficiently proved by that curious Experiment, in which, the moſt lucid Flame is in a Moment produced, by duly mixing highly concentrated fuming Spirit of Nitre with Oil of Cloves; for this Oil, which is replete with a large Quantity of thick Sulphur, is, by an Admixture of this Spirit, thrown into a brisk inteſtine Agitation and Motion, which is Fire.

When, therefore, it is asked, What is the firſt Origin of ſubterraneous Fire, and by what it is ſupported? I think we may aſſert, that theſe Things happen, becauſe the ſulphureous Subſtances, lodged in the Bowels of the Earth, being by their mutual Action put into a violent Motion, firſt produce Fire, which afterwards eaſily diffuſes and propagates itſelf, by means of the adjacent ſulphureous, and, eſpecially, the bituminous and eaſily inflammable Materials. We muſt, alſo, inquire, what Subſtances, hid in the Boſom of the Earth, are fit for taking Fire; and theſe, in my Opinion, are principally iron and ſulphureous Ores. For that large Tracts of Ground are full of iron Ore, is ſufficiently certain; nor is it leſs true, that profound ſubterraneous Caverns abound with ſulphureous and vitriolic Ores; as is obvious from the digging Sulphur and Vitriol, almoſt for a thouſand Years paſt, from mount *Ramelſburgh* near *Goſlar*.

Some Parts of *Italy*, alſo, abound with Sulphur; which is the principal Cauſe of the burning Mountains, and frequent Earthquakes in that Country. Hence, *Tſchirnhauſen*, in *Lib. de Medicament*, tells us, that in Mount *Ætna* in *Sicily*, and Mount *Veſuvius* in *Campania*, he principally obſerved four Things: Firſt, common inflammable Sulphur: Secondly, a porous Earth: Thirdly, Air: And fourthly, Sea-Water; for the Sulphur kindled in theſe Mountains, not only produces theſe terrible Eruptions, but alſo by heating the Earth intenſely, renders the Waters, which flow throrough them, warm.

This is, alſo, the Reaſon, why in *Italy*, where the Sulphur burns in the ſubterraneous Spaces, hot Springs are ſo numerous. Thus, *Laurentius Grullus*, *in Orat. de Peregrinat. Studii Medicinal. ergo ſuſcepta*, tells us, that in *Siena* there are above fifteen medicinal Springs; and, a little after, he ſpeaks in the following manner: "Afterwards, at *Puzzolo*, I ſaw whole Mountains of native Sul- "phur, which is much eſteemed in the Shops; theſe were for- "merly called the *Phlegræan* Mountains. Near *Baiæ*, I, alſo, "ſaw various Mixtures of hot mineral Waters; and in the Bay "of *Naples*, near the Lake *Avernus*, the Vapours ariſing from "the Earth almoſt ſurpaſs the Virtues of the hot Springs." There is, alſo, found a Sulphur of the ſame Kind, in ſome of the hot Springs of *Germany*, eſpecially thoſe of *Aix la Chapelle*, which not only tinge Silver with a browniſh Colour, but, alſo, in the *Cæſarean* Bath produce a pure Sulphur in the Form of Flowers.

We have already ſhewn that Sulphur is the Matter, as of all Fire, ſo, alſo, of that which is lodged in the Bowels of the Earth. But in what manner this Sulphur ſhould be ſpontaneouſly kindled, and take Fire, is not as yet explained. In my Opinion, therefore, this happens by the mutual Congreſs, and violent inteſtine Motions, of the ſulphureous Bodies, when the diſengaged Sulphur acts upon chalybeate Earths and Subſtances, or upon a bituminous Earth. We may, therefore, conceive the Thing to happen in the following manner: When, in the Bowels of the Earth, Sulphur is mixed with Bitumen, or a Foſſile abounding with an acid Salt, as, alſo, with chalybeate and ſulphureous vitriolic Marcaſites, when theſe are collected in large Quantities, and when the Water approaches them, then the Acid of the Vitriol contained in the Sulphur is diſſolv'd, and by its Action on the bituminous Earth, and the ſulphureous chalybeate Ores, not only excites an intenſe Heat, but, alſo, if the Earth is porous, and a free Acceſs afforded to the Air, produces a bright Flame

This Doctrine will be further illuſtrated by the following chymical Experiment: When one Pound of native Sulphur, reduced to a Powder, is mixed with an equal Quantity of the fine Filings of Iron, and put into a Glaſs, ſprinkling as much Water as will render the Mixture moiſt, like a Poultice; this Maſs after twelve Hours, is raiſed in a Froth, and ſuch an hot internal Conflict is produced, that the Glaſs is broken by the Heat, whilſt the Colour of the Maſs, which was before yellow, degenerates into black; this Magma, when taken out of the Glaſs, broken into ſmall Pieces, laid in a Heap, and for a ſhort time expoſed to the free Air, not only becomes more intenſely hot than before, but, alſo, produces a manifeſt Flame, attended with a ſulphureous Smoak.

The Origin of ſubterraneous Fire, may be farther illuſtrated by a common Experiment, by which it is ſhewn, that the Marcaſites, and ſulphureous Portions of Earth, of which Vitriol is made, when expoſed to a moiſt and rainy Air, ſoon conceive an intenſe Heat. The ſame happens when the Fragments of the black Caput Mortuum, remaining after the Sublimation of Sulphur, from ſulphureous Marcaſites, are laid in a Heap, and expoſed to a moiſt Air; for on this Occaſion, they contract ſo violent an Heat, that the Hand cannot be put near them, without the Danger of being burnt. This is ſufficiently obvious to the Senſes, at *Alt-Sattel*, a Town in *Bohemia*, a Mile diſtant from the *Caroline* Springs, where Allum, Sulphur, and Vitriol, are prepared.

The Origin, and true Cauſe, of ſubterraneous Fires, is ſtill further illuſtrated by a remarkable Phenomenon, daily obſervable in thoſe Places, where Alum is prepared; ſuch as *Dieben* in the Marquiſate of *Meiſſen*, and *Commoden* in *Bohemia*. For we know that in the Preparation of Alum, a Sort of foſſile Coals is dug out of the Bowels of the Earth, or a black, inflammable, bituminous Earth, in which the ſulphureous and aluminous Salt is lodged: This Earth is afterwards laid in an Heap, and being moiſtened by the Rain it not only becomes violently Hot, but alſo ſends up a Smoke, and ſometimes an open Flame; from no other Cauſe but that the ſulphureous Acid of the Alum, being diſſolved, attacks the ſulphureous and bituminous Earth; Thus by the mutual Action and Reaction of their Parts, the Sulphur is not only rendered warm, but alſo upon a Commotion from the Air, is plainly converted into Fire. Our Doctrine is alſo confirmed by a curious Experiment, in which, if burnt Alum is mixed with any ſulphureous inflammable Subſtance, a Maſs is obtained, which when expoſed to the free Air, ſpontaneouſly becomes hot, takes Fire, and burns.

After an Enumeration of theſe Obſervations and Experiments, relating to the Origin of Fire, it will be no hard Task to aſcertain the Origin, and genuine Cauſes, of that ſubterraneous Fire, which is the Cauſe and Source of the Heat in hot Springs, of Earthquakes, and of burning Mountains; for when the Sulphur, by the mutual Action of the various bituminous, chalybeate, vitriolic and ſulphureous Minerals, is agitated by a violent internal Motion, and the Air contained in the Caverns of the Earth, by blowing upon it, increaſes the Heat, and excites a greater inteſtine Colliſion and Motion, a violent Fire may be produced, which ſpreading further through the ſubterraneous Paſſages, often ſhakes large Tracts of Land, excites ſubterraneous Lightnings and Thunders, and ſometimes raiſes into the Air large Quantities of Earth and Rocks. Theſe Phenomena are moſt frequent in Places waſhed by the Sea, and in which the Sea-water, by ſecret Conveyances, ruſhing into the ſubterraneous Cavities, forces the Air, contained in them, into a ſmaller Space, and thus excites a Wind. Thus 'tis known, that Waters, by their Fall into Caverns, may excite a Diſcharge of Winds, through certain Paſſages, which in many Parts correſpond to Bellows. On the contrary, where a ſtrong Gale is wanting, and the Places are remote from the Sea, as the middle Parts of *Germany* are, a great Heat is, indeed, produced, but the Fire pent up, never breaks out into an open Flame. It nevertheleſs diffuſes far and near hot Exhalations, which paſſing through the Pores and Chinks of the Earth, render the Waters, which flow along them, hot.

It may poſſibly at firſt ſeem hard to explain, by what means the continual Heat, for ſo many Ages, communicating the ſame Degree of Warmth to theſe Waters, can ſubſiſt in the ſubterraneous Cavities. But this is not ſo hard to be accounted for as ſome imagine; ſince we are not to ſuppoſe that there is a ſcanty penurious Store of theſe Minerals in the Bowels of the Earth; but rather an inexhauſtible Fund of Sulphur, Bitumen, and vitriolic Marcaſites. A memorable Inſtance of this, is found at *Alt-Sattel* in *Bohemia*, where for above two Centuries, Sulphur, Bitumen, and Vitriol have been obtained from the Earth; as alſo at *Puzzolo* in *Italy*, where for many Centuries, Alum and Sulphur, have been prepared; and yet there ſtill remain large Quantities of theſe Ores. Beſides, when in the ſubterraneous Paſſages by the Acceſs of the Water, producing the mutual Action, and Reaction of theſe Minerals, the Sulphur is once put into a violent igneous Motion, this inteſtine Motion readily finds ſimilar Materials to act upon; and thus it eaſily propagates itſelf, and communicates the like Motion, to the pinguious inflammable Subſtances, the moſt conſiderable of which is the bituminous, inflammable Earth of foſſile Coals.

'Tis alſo certain, from frequent Obſervation, that all Fire pent up, and preſerved from the free Acceſs of the Air, is not eaſily diſſipated, but burns for a long time, without any conſiderable Waſte of its *Pabulum*. They, who have been preſent at the Burning of Houſes, know that in the Joiſts, buried under the Rubbiſh, the Fire has remained very long, even many Days after the Burning has been begun. The ſame happens to foſſile Coals, which, if once ſet on Fire, it retains it for a long time under the Aſhes. It is alſo curious to obſerve, that in *Papin's* Machine, which is ſo cloſely ſhut up, that neither the Air, nor the Steam of warm Water can get out, the hardeſt Flethes may be boiled by the Help of

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of a very few live Coals, over which when this brazen Machine is placed, it not only conceives the Heat soon, but retains it long. And, to draw an Instance from the human Body, this noble Structure, when the Pores are closed up, and Perspiration obstructed, is, in Fevers, far more afflicted with intense Heat, than when the hot Vapours are freely dissipated and eliminated thro' the cutaneous Pores. In like manner the hot subterraneous Exhalations, when not dissipated in the free Air, but, as it were, resorbed by themselves, in consequence of a repeated Gyration, last long, and are not soon consumed.

We are furnished with a memorable Instance of long-concealed Fire in the Coals of a Mountain near *Zwickavia*, in the Marquisate of *Meissen*; for the People of the Neighbourhood inform us, that, above a Century ago, this Mountain was set on Fire by the *Swedes*, and burned so long, that there was a Necessity for filling up its gaping Chinks and Cavities with Earth, and by that means suffocating the Fire. But about fifteen Years ago, when these Cavities were again opened, their internal Parts were found burning, and there was a second Necessity for filling up the Chinks. Above an hundred Years ago, *George Agricola*, in his Treatise *de Ortu & Causs. Subterran.* mentions this Mountain, and in his Treatise *de Natura eorum quæ effluunt ex Terra, Lib.* 4. *Cap.* 17. he speaks in the following manner: "There is a Mountain near "*Zwickavia*, in the Marquisate of *Meissen*, which burns con- "tinually, whilst Cavities are gradually formed on its Surface, at "which if any one looks, they resemble burning Furnaces; and "any combustible Substance which comes within four Feet of "them, is set on Fire." He, also, informs us, "that in many "Parts of *Germany*, burning Vapours are emitted in the Night, "especially in *Meissen*, near the River *Muldah*, through all the "Fields between *Zwickham* and *Glauca*." *Laurentius Gryllus*, also, mentions this Mountain in the following manner: "Near "*Zwickavia*, is a Mountain which burns perpetually, just as "Mount *Vesuvius* did in the Days of *Trajan*, and discharges a "sulphureous Substance useful in Medicine."

Neither is it to be doubted, but in the Place where the *Caroline* Springs appear, there were formerly apparent Fires, which, being now latent and concealed, by dissipating and dispersing their hot Vapours thro' the Surface of the Earth, render the Waters descending from the high Hills warm. *Agricola*, in his Treatise *de Re Metall.* confirms this in the following manner: "These "Places seem scorched, because Fires once burned in them, "and the Remains of these Fires are generally found in the "Bowels of the Earth, as is observable in the Fields of *Elbog*, "between *Lessau* and *Culma*; for in these Fields, testaceous "Earths, somewhat burn'd, are dug up: Nor is this to be won- "dered at, since in these Parts the Earth is sulphureous, and a "Bitumen is dug up near *Sattel*, and the *Caroline* Springs are "only eight Miles distant from that Town, which receives its "Denomination from the *Plain of Falcons* [*Planities Falconum*], "in that Part which is called the *Burning Hill*."

But there is a still more memorable Proof of this in *Bogisl. Balbini Histor. Regni Bohem. Cap.* 32. where the Author speaks in the following manner: "The District of *Elbog* abounds with "fossile Coals; but they are not used by the Inhabitants, who "are provided with large Quantities of Wood. At *Falkenaw*, "near the River *Egra*, hard by *Konigswher*, where *St. Cuni- "gund*'s Church stands, is a Mountain, or rather a Cavity, or "large Hollow, which formerly did much Harm to the Neigh- "bourhood. The subterraneous Fires prey upon the Bowels of "the Mountain, and if a Person applies his Ear to the Ground, "which I did, he hears within such a Noise of Winds, or Flames, "that Fear represents to the Mind a Picture of a lesser *Vesu- "vius*. This Mountain burns in the Night, and even in the "Day-time, when there is any considerable Change of the At- "mosphere; and the People of the Neighbourhood have fre- "quently perceived a kind of Earthquake, and a Roaring in the "Bowels of the Earth. The Persons who live near this Part, "tells us, that formerly there were iron Mines in it. There are, "also, mix'd fossile Coals, but black, and already, as it were, "consumed by the Flames; such as *Boetius* informs us, are some- "times found in the other Parts of *Bohemia*." This Passage sufficiently evinces, that there were formerly subterraneous Fires in these Parts.

'Tis, also, to be observed, that the Earth near the *Caroline* Springs is found warm. This is, also, the Reason why, at *Carlesbad*, on account of the subterraneous Heat, Cellars cannot be dug under Ground, but must be made in the adjacent Mountains. Hence the Reason is obvious, why, in the Town of *Carlesbad*, the Snow is melted as soon it falls, and all around is soon dissolved; so that 'tis plain, that there is a subterraneous Fire under all the Ground on which *Carlesbad* is built, which, when near the Waters, warms them; and when farther distant from them, diffuses its Exhalations, which, mixing with the Waters, impregnate them with an excellent medicinal Virtue; for that these Waters receive their Heat from the Earth thro' which they pass, is sufficiently proved from this, that there are many sweet warm Waters impregnated with no mineral Substance, but exquisitely pure and light, such as St. *John*'s Bath at *Lucca*, the Bath at *Pisa*, that of *Siena*, and that of *Cornello*. Of the same Nature are the celebrated *Piperan* Springs in the Country of the *Grisons*, the Waters of which consist of Snow melted on the Tops of the Hills by the Sun, which passing thro' hot subterraneous Places break out warm.

As the constituent Principles of cold and hot medicinal Waters are the same, so they must of course produce the same Effects in the human Body. Now as the various Intentions of Medicine are to remove Obstructions, correct peccant Humours, restore the Strength of the weakened Fibres, and eliminate whatever is noxious and prejudicial to the Constitution, so all these Intentions are excellently answered by warm Springs; for they incide, resolve, colliquate, and carry off the stagnant Humours, and by that means remove old Obstructions; they obtund and correct the acid and saline Humours lodged in the *Primæ Viæ*, and resolve the viscid Mucus of the Blood; they dilute crude and ill concocted Juices, and imbibe, sheath up, and disperse the saline Spiculæ with which they are mixed; they restore the Tone of the weakened Solids, and by that means promote the Circulation of the Blood; they, also, promote Excretions of all Kinds, by Stool, Urine, Perspiration, a Discharge of the Saliva, and Vomit, and all this without any considerable Irritation, or Loss of Strength; they have, also, a Tendency to remove Plethoras, Cacochymies, and preternatural Commotions of the Humours, the fruitful Sources of Diseases; they are excellently adapted to Disorders of the Stomach, such as an uneasy Inflation of it producing an Anxiety of the Præcordia; they extinguish Thirst, excite the Appetite, remove a Sense of Weight in the Stomach, and check the Vomiting of a viscid Matter in the Morning; they remove a Lubricity and Falling down of the Anus, and cure a Tenesmus, by restoring Strength to the Fibres; they are, also, of singular Efficacy in Cachexies, Scurvies, a Jaundice, Melancholy, hypochondriac Disorders, Dropsies, obstinate Quartans, and other intermittent Fevers; they are, also, proper for checking all immoderate Hæmorrhages, whether from the Stomach, Uterus, or Veins of the Anus; though in such Cases they are to be used with great Caution, and when the Menses or Hæmorrhoids, either are not duly discharged, or totally suppressed, nothing is more effectual for restoring them to their natural State, than hot mineral Waters. These Springs, by cleansing the urinary Passages, prevent Gravel and Dysuries; they free the pulmonary Vessels from Infarctions, and by that means render Respiration freer in a moist Asthma; nor are they prejudicial to phthisical Patients, especially if their Disorder proceeds from Obstructions of the Viscera; for which Reason, *Morton*, in *Phthisiol. Lib.* 2. *Cap.* 2. recommends the *Islington* Waters in a Phthisis. They, also, produce happy Effects in arthritic, rheumatic, and gouty Patients. When used externally in Bathing, they soften hard Tumors, open the Pores of the Skin, strengthen the nervous and muscular Parts, whose Tone is weakened by Defluxions of Humours, and relax Parts affected with Spasms or Rigors; for which Reason they are highly beneficial to paralytic Patients, and those afflicted with Contractions, Imbecillity, Languor, Pains, or Tumors; they, also, remove Defedations of the Skin, and cure the Itch, Impetigo, and Leprosy. But as the most salutaiy Remedies are not proper on all Occasions, so the Use of hot Springs is dangerous in Cases where the Viscera are indurated and scirrhous; where the Humours are extravasated in the Cavities of the Head, Thorax, or Abdomen; where the Stomach, Lungs, Mesentery, and Intestines, are exulcerated, or affected with an Empyema, or Abscess. The Use of these Waters is, also, prejudicial to those who are disposed to an Apoplexy, an Epilepsy, an inveterate Hemicrania, and a Privation of Memory, or of the internal or external Senses. Nor are these Waters proper for those afflicted with a convulsive Asthma, a Polypus of the Heart, a Dropsy of the Breast, a confirmed Phthisis, Cancers, spreading Venereal Ulcers, or a Gleet. These Waters are, also, to be cautiously used in all Kinds of Inflammations, whether external or internal, till the Force of the Disorder is allay'd.

Before any Cure is attempted by the Use of hot Springs, if the Body is full of Blood and Juices, a Vein is previously to be opened, that the Waters to be drank, may meet with no Resistance. Then the *Primæ Viæ* are to be cleansed from the Sordes, lest the Waters passing quickly thro' those Parts, should carry the recrementitious Matter along with them; or lest that Matter should prevent the medicinal and salutary Operation of the Water. Purging is by no means to be attempted by drastic Remedies, which destroy the Tone of the Stomach and Intestines, but rather by mild Preparations of Manna, Rhubarb, and proper Salts, which operate without impairing the Strength. And this Evacuation is to be used not only in the Beginning of the Cure, but, also, during its Progress, and after it is over. Nor is the Stomach to be loaded with too large a Quantity of these Waters, but they are at first to be drank sparingly, and afterwards, more liberally. A proper Regimen and Exercise are, also, necessary, always avoiding tumultuous Commotions of Mind, and the Occasions of Sorrow and Sadness, lest by neglecting these, the salutary Effects of the Waters should be prevented. In drinking all medicinal Waters, the Stomach ought to be fortified with Corroboratives and Balsamics, by which means salutary and laudable Fluids are generated and distributed thro' all the Parts of the Body.

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Body. As the *Thermæ* are actually hot, and the *Acidulæ* actually cold, so they are to be duly distinguished, and judiciously prescribed, both with respect to the particular Disease, and the Constitution of the Patient. They differ, also, in this, that the *Acidulæ* contain a volatile, and the *Thermæ* a fixed Salt. There is, also, more of a subtile Vitriol in the cold, than in the hot Springs; tho' some of the latter, such as those of *Aix la Chapelle*, contain common Sulphur in Substance. Cold Springs, also, contain a larger Quantity of mineral Spirit, than the hot Springs, which, by reason of their Heat, are easily deprived of it.

From a Knowledge of these Differences, arise some very useful Rules in Practice. Thus, for those who have small Vessels, tender and delicate Fibres, and weak nervous Systems, subject to frequent Spasms, the hot Springs are more beneficial and proper, than such as are cold. But Persons of more robust Constitutions, in whom the Texture of the Fibres is more firm, and the Obstructions and Disorder obstinate, require stronger Waters, both of the cold and hot Kind, since they can bear them better than Persons of tender, delicate, spongious and lax Habits, to whom the fine, light, and subtile Waters are more beneficial. As for the external Use of hot Springs, those which have an heavy hard Water, strongly repel, and for that Reason easily excite Fevers, Head-achs, and Thirst, by forcing the peccant Matter inwards from the Surface of the Body; for which Reason they are to be cautiously used: Whereas those hot Springs, whose Waters are mild and soft, soften the hard Parts, open the Pores, promote the Excretions, and draw the peccant Matter from the Centre to the Circumference of the Body.

With respect to the Nature, Difference, and Use of these Waters, 'tis to be observed, that the cold Springs are possessed of a more noble and efficacious Quality, than the hot, on account of the large Quantity of mineral Spirit it contains. Cold Waters are, also, lighter, and more subtile, than those of the hot Kind, which, by their Heat, dissolve and carry off many coarse Substances lodged in the Bowels of the Earth. 'Tis, however, certain, that more Harm is done by cold, than by hot Springs. But this, in my Opinion, is owing to their being drank cold, especially upon an empty Stomach in the Morning. Hence I would advise all *Acidulæ* used in the Morning, to be drank not cold, as they come from the Fountain, but tepid. But as by the Heat, the subtile Spirit with which they abound, may be evaporated, I would advise them to be put in close-stopt Vessels, which are to be immersed in boiling Water.

With respect to the external Use of hot Springs, a great Error is very frequently committed in using the Bath too hot; for by the external Heat, the Blood and Humours are thrown into a violent intestine Motion, and preternatural Expansion, by which means a Palpitation of the Heart, Anxiety of the Præcordia, Head-achs, Inquietudes, and Loss of Strength, are produced. And the Injury is the greater, the more the Body abounds with impure Blood and Juices, since by this means the redundant Blood acts more forcibly upon the Parts, and vitiates them; and the Sordes are, by the Heat, rendered more subtile and acrid. *Frederic Hoffman.*

THERMANTERION, from θερμαίνω, to render hot. A Chafing-dish.

THERMASMA, θέρμασμα, from θερμαίνω, to render hot. A warm Fomentation, recommended by *Hippocrates*, for easing Pains in a Pleurisy: Or, as *Galen* explains it, any thing which warms the Body.

THERMEMERIA, θερμημερία, from θερμὸς, warm, and ἡμέρα, a Day; in *Hippocrates*, *Lib. de Natura humana*, is the kindly Warmth of a vernal Day.

THERMINTHUS. The same as TERMINTHUS.

THERMOCOELIOS, θερμοκοίλιος. A Person who has an hot Stomach. *Hippocrates*, *Epidem. L. 6.*

THERMOLE, θερμωλὴ, the same same as θερμότης (*Thermotes*) or θερμὴ (*Therme*), Heat, Warmth; in the *Ionic* Dialect, signifies the same as πυρετὸς (*Pyretos*), a Fever, as is observed from *Corinthus*. *Erotian*, also, expounds θερμωλὴ by πυρετὸς, but observes, at the same time, that the Word, in *Hippocrates*, signifies all manner of Heat. The Word occurs several times, in *Lib. de Locis in Homine*, where, indeed, it signifies Heat, but such as is immoderate and preternatural.

THERMOLITHUS. Offic. *Lapis Schistos.* Charlt. 17. *Lapis Schistus Cornubiensis diu Calorem retinens.* Mer. Pin. 214. THE WARMING STONE.

It is found in the County of *Cornwall.* I meet with this Stone, says *Dale*, in the Catalogue of Officinal Simples, at the End of *Shipton*'s Pharmacopœia, but nothing of its medicinal Use occurs in Authors.

THERMOMETRUM, from θερμὸς, hot, and μέτρον, a Measure. An Instrument contrived for measuring the Degrees of Heat in any Body; of these there are many Sorts. See IGNIS.

THERMOPOLIUM, θερμοπώλιον, from θερμὸς, hot, and πωλέω, to sell. A publick House, where warm Liquors were sold among the Antients, as they are at the modern Coffee-houses.

THERMOPOSIA, θερμοποσία, from θερμὸς, hot, and πίνω, to drink. The drinking of warm Liquors.

THERMOS, θερμὸς, from θέρω, to heat. Hot, warm. Θερμὸν, *Thermon*, in the Neuter Gender, is sometimes spoken of a Quality, sometimes of a Substance, as *Galen* observes, *Com. ad 1 Aph. 14. Thermon*, in the latter Signification, Heat, in *Hippocrates*, is, also, of two Sorts; one ἔμφυτον (*emphyton*) native, or natural; the other igneous, mordaceous, and preternatural, according to *Galen*, *Com. in 6 Epid. Sect. 4. Aph. 23.* The θερμὸν ἔμφυτον, or natural and innate Heat, was deny'd by *Asclepiades*, *Praxagoras*, *Philotimus*, and *Erasistratus*, who asserted it to be acquired, and not innate. It is defined, A Substance in its Nature always moveable the first in an Animal, as being generated, and innate from the Beginning; for Nature itself, and the Soul, are nothing but innate Heat. The Motion of the natural Heat, both internal and external, is perpetual; and is, therefore, always moveable while it is moderately kindled, and while it is moderately extinguished, as *Heraclitus* said. The natural Heat is compounded of Heat and Cold, otherwise it would not be perpetually moveable; for since it is the Nature of Heat to be always expanding and mounting, it would soon be dissipated, were it not restrain'd, and repelled inwards, by the Cold, and so prevented from destroying itself by Extension. Thus *Galen*, *Lib. de Tremor. Palpit.* &c.

THERMOSCOPIUM. The same as THERMOMETRUM.

THERMOSPODIA, θερμοσποδία. Hot Ashes. *Dioscorides.*

THEROS, θέρος. The Summer.

THESIS, θέσις. The Position, Situation, or Connection of the Parts of the Body.

THESPIANA, or THESPESIANA, θεσπιανὴ, or θεσπεσιανή. The Name of an Antidote, or Confection described by *Galen*, *L. 7. de Comp. M. S. L. Cap. 3.* and by *Aetius*, *Tetrab. 2. Serm. 4. C. 65.* It is intended for Suppurations in the *Thorax*, and internal Abscesses.

THESSALICUS. A Physician of the Sect of *Thessalus*; that is, the *Methodic.*

THESSALICUM SEDILE, the *Thessalian* Chair, so called from *Thessaly*, the Country where Chairs of this Figure were most in Use, is recommended by *Hippocrates*, *Lib. de Artic.* in place of a Machine for reducing a recent Luxation of the Shoulder-bone. The Back of this Chair is perpendicular to the Seat, as *Galen* tells us; by which Construction it is distinguished, and accommodated to the Operation; which see described from *Hippocrates*, under the Article AMBE.

THEOU CHEIR. Θεοῦ χεῖρ. The Hand of God. The Name of an Antidote prepared of Goats Blood, and recommended in the Stone and Gravel by *Aetius*, *Tetrabib. 3. Serm. 3. Cap. 12.* from *Philagrius.*

THEXIS, θῆξις, from θήγω, to pierce with a Needle, or the like Instrument, or, as *Hesychius* expounds the Verb, to whet, or sharpen; is a Puncture with a Needle. Hence κατὰ θῆξιν θεραπεία, is the *Greek* Phrase for the Treatment of Wounds by Suture, or the Operation of the Needle, mentioned by *Archigenes* in *Galen*, *Lib. 2. κατὰ τόπ.* There are two other Ways of uniting the Lips of Wounds there mentioned, one by ἀγκυλητασμὸς (*Ancteriasmos*), or by Help of the *Ancter* [see ANCTER]; the other by a SYSSARCOSIS, that is, by filling up the Interval with new Flesh.

THISMA. Beds, and subterraneous Veins of Minerals.

THLASIAS, θλασίας. An Eunuch made by the Compression or Contusion of the Testicles.

THLASIS, THLASMA, θλάσις, θλάσμα, from θλάω, to contuse. A Contusion, or Collision, a Wound in the Flesh, or Muscles, from a blunt, or heavy Weapon. *Thlasma* is defined by the Author of the *Definit. Medicæ*, "A Recess of the Cranium inwards, without a Fracture, and principally incident to Children; it may be the more clearly conceived by observing what happens to tin Vessels." The same is called *Thlasis* in *Galen*, *Lib. 2. de Caus. Morb.* The same Author, in his *Exegesis*, expounds θλάσιν, by τὸν ἐμβρυοθλάσην, ὅπερ καὶ πίεσρον καλεῖται, "an *Embryothlastes* [an Instrument contrived for the Contusion of the dead Fœtus] which, *Lib. 1. περὶ γυναικ.* is, also, called *Piestron.*" See PIESTRON.

THLASPI.

The Characters are;

The Fruit is roundish, flat, generally surrounded with a foliaceous Border, and, for the most part, cloven on the upper Side, and divided into two Capsules full of flat Seeds; the Leaves are not divided, but entire.

Boerhaave mentions thirteen Sorts of *Thlaspi*; which are,

1. Thlaspi; arvense; siliquis latis. *C. B. P.* 105. *Tourn. Inst.* 212. *Boerh. Ind. A.* 2. 7. *Thlaspi.* Offic. *Thlaspi Dioscoridis.* Ger. 204. Emac. 262. Raii Hist. 1. 831. Synop. 3. 305. *Thlaspi Drabæ folio.* Park. Theat. 835. *Thlaspi cum siliculis latis.* J. B. 2. 923. TREACLE MUSTARD.

This Kind of Thlaspi has a small, white, fibrous Root, sending forth firm Stalks about a Foot high, beset with smooth, jagged Leaves from a broad Base, ending in a sharp Point. On the Tops of the Stalks grow small, four-leaved, white Flowers, succeeded by large, broad, flat, and round Seed-vessels, having foliaceous Borders divided into two Cells, with a Slit on the Top, containing small, round, reddish-brown Seed, of an hot biting Taste. It grows

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grows in Corn-fields in some Parts of *Essex*, and flowers in *May*. The Seed is used.

It is hot and dry, and somewhat diuretic, provoking Urine, and helping the Dropsy, Gout, Sciatica, and forwarding the menstrual Evacuations.

The Seed of this Plant is what ought to be used in the Theriaca and Mithridate; but, being very scarce, the Seed of the next may be used as a Succedaneum for it. *Miller's Bot. Off.*

It is found in Corn-fields, tho' rarely, and flowers in *June*: The Parts used are the small, black, oblong, acrimonious Seeds, which are drying and abstergent; and principally used in breaking internal Abscesses, provoking the Menses, and curing Ischiadical Affections, and the like. *Dale.*

2. Thlaspi; arvense; Vaccariæ folio incano; majus. *C. B. P.* 206. *Boerh. Ind. A.* 2. 7. *Thlaspi vulgare.* Offic. *Thlaspi vulgatissimum.* Ger. 204. Emac. 262. *Thlaspi vulgatius.* J. B. 2 261. Raii Hist. 1. 830. Synop. 3. 305. Tourn. Inst. 212. *Thlaspi Mithridaticum seu vulgatissimum, Baccariæ folio.* Park. Theat. 835. MITHRIDATE MUSTARD.

The Root of this *Thlaspi* is small and woody, from which arise Stalks scarce a Foot high, single, or but little branched, thick set with long, narrow, soft, and hairy green Leaves, broad at Bottom, with two sharp Ears, and sharp-pointed at the End; the Flowers are small and numerous, growing in little Spikes on the Tops of the Stalks, four-leaved, and white; and are succeeded by little round Seed-vessels, much less than the former, containing dark-brown Seed. It grows frequently in Corn-fields, and flowers in *May*.

The Seed of this Thlaspi, as was before observed, is generally used instead of the former, being, like that, heating and drying, and supposed to have the same Virtues. *Miller's Bot. Off.*

The Seed enters the Composition of the Theriaca; and, externally used, cleanses all Sorts of running Ulcers; and is, also, a Ptarmic, but not very common. It is reckoned an Enemy to pregnant Women, because it kills the Fœtus. *Schroder.*

3. Thlaspi; spicatum; Persicum; perfoliatum; marinum; foliis inferioribus tenuiter incisis; superioribus à caule Perfoliatæ modo penetratis. *M. H.* 2. 294. *Nasturtium Orientale, foliis inferioribus Millefolium, superioribus Perfoliatum referentibus.* T. 214.

4. Thlaspi; capitulis hirsutis. *J. B.* 2. 922.

5. Thlaspi; capsulâ cordatâ; peregrinum. *J. B.* 2. 927.

6. Thlaspi; parvum; saxatile; flore rubente. *C. B. P.* 107. *Lithothlaspi quartum, carnoso, rotundo folio.* Col. 1. 279.

7. Thlaspi; montanum; sempervirens. *C. B. P.* 106.

8. Thlaspi; Creticum; quibusdam; flore rubente & albo. *J. B.* 2. 924. *Draba, sive Arabis, sive Thlaspi Candiæ.* Dod. *p.* 713.

9. Thlaspi; Cappadocicum; flore albo. *H. Eyst. Æst.* o. 7. *F.* 11. *Fig.* 3.

10. Thlaspi; umbellatum; arvense; amarum. *J. B.* 2 925.

11. Thlaspi; Virginianum; foliis Iberidis amplioribus & serratis. *T.* 213. *Iberis, humilior, annua, Virginiana, ramosior.* M. H. 2. 311.

12. Thlaspi; arvense; perfoliatum; majus. *C. B. P.* 106. *Bursa Pastoria, foliis Perfoliatæ.* J. B. 2. 938.

13. Thlaspi; Rosa de Hiericho dictum. *M. H.* 2. 328. *Rosa Hierichuntina vulgo dicta.* C. B. P. 484. *Boerh. Ind. alt. Plant. Vol.* 2.

The *Thlaspi* has the highly penetrating Taste of Garlick, diffusing itself over all the Mouth.

The first and second Species, in particular, have the Savour of the strongest and most penetrating Garlick, nor are the rest destitute of it; whence the Seeds of this Plant are an Ingredient in alexipharmic and theriacal Medicines, in which they so promote Perspiration, as by their aromatic Virtue to expel any Poison by Sweat or Diaphoresis; for the same Reason it is commended against the Pestilence; it is, also, an Antiscorbutic, Diuretic, and stimulates to Venery.

The third has the Appearance of the *Millefolium*, with the Leaves of the *Perfoliata*; and would justly be prefer'd by M. *Tournefort* to *Nasturtium*, were it not for its Taste.

The tenth Species is extremely bitter, and of a most penetrating Quality; for, if chewed, it provokes Plenty of Spittle; and all Plants which have this Effect, are very good Aperients; for they act after the same manner on the Stomach.

The eleventh, also, is highly penetrating; two Ounces of the Seed of the *Thlaspi*, bruised, are a noble Diaphoretic in Case of Poison, being taken in *Rhenish* Wine; or in the Plague, being exhibited in Vinegar. It is a very good Remedy in cold Diseases, and the Seeds are used in breaking internal Abscesses, and provoking Urine, and the Menses; but they are to be given with great Caution to Women with Child, lest, by exciting too great a Commotion in the Uterus, they should cause Abortion. Externally used by way of Inspersion, they cleanse and abstergе Ulcers; they are applied, also, in Pains of the Sciatica, and are Ingredients in the *Theriaca.*

All tetrapetalous siliquous Plants, from the *Crambe* to the *Cakile*, if chewed, affect the Mouth with a kind of biting Acrimony, have something of Heat, and a fetid Smell, that is, not the Smell of an Herb, but the Fetidness of an Onion, and always putrefy in the same manner. Hence these Plants abound with an alcaline volatile Salt, of which others are not so full; and hence, also, they are all Antiscorbutics, and of Service in a Coldness and Viscidity of the Humours. Since, therefore, these Plants stimulate to Venery, and provoke Lust, they appear to be heating, succorific, and diaphoretic; by which Qualities they act in Opposition to an Acid. But then these Plants are not to be used in hot Diseases; whence it is that they grow in cold Countries, a few excepted. If the aromatic Particles in them excel in Subtility, they shew a diaphoretic Quality; if in Acrimony, the Plant is succorific. None of them are poisonous, but all equally good, and of Service, where an inert Phlegm, or Acid, are very predominant. *Hist. Plant. adscript. Boerh.*

THLASPI is, also, a Name for several Sorts of ALYSSON, and THLASPIDIUM; which see.

THLASPI CLYPEATUM. A Name for the *Ionthlaspi*; *minimum*; *spicatum*; *lunatum.*

THLASPI FATUUM. See BURSA PASTORIS.

THLASPI SAXATILE. A Name for the *Ionthlaspi*; *luteo flore*; *incanum*; *montanum*; *Διτκοειδές.*

THLASPI UMBELLATUM. A Name for the *Nasturtium*; *sylvestre*; *Dalechampii.*

THLASPIDIUM. Bastard Mithridate Mustard.

The Characters are;

The Fruit is, in a manner, double, smooth, consisting of two Parts, separated by an Interclosure, and containing each a single Seed, which is generally of an oblong and flatish Figure.

Boerhaave mentions seven Sorts of *Thlaspidium*; which are,

1. Thlaspidium; fruticosum; folio Leucoii; semper florens. *T.* 214. *Thlaspi, latifolium, platycarpon, Leucoii folio.* Rar. 55.

2. Thlaspidium; fruticosum; Leucoii folio variegato; semperviren. *T.* 215.

3. Thlaspidium; hirsutum; calyce floris auriculato. *T.* 214. *Thlaspi bifurcatum, villosum, flore calcari donato.* C. B. P. 107. Prodr. 49. *Leucoium montanum, flore pedato.* Col. p. 2. 61.

4. Thlaspidium; Raphani folio. *T.* 214. *Thlaspi, lisicatum, Raphani aut Irionis, folio.* Bocc. Rar. 45.

5. Thlaspidium; Monspelliense; Hieraci folio hirsuto. *T.* 214. *Thlaspi biscutatum, asperum, Hieracifolium, & majus.* C. B. P. 107. *Lunaria biscutata.* J. B. 2. 935. *Leucoium biscutatum, asperum, Hieracifolium, majus.* M. H. 2. 249.

6. Thlaspidium; Apulum; spicatum. *T.* 215. *Thlaspi biscutatum, asperum, minus.* C. B. P. 107. *Jondraba Apula, absinthoides, spicata.* Col. p. 1. 285. *Leucoium, biscutatum, asperum, minus.* M. H. 2. 249.

7. Thlaspidium; annuum; flore pallide luteo. *T* 214. *Thlaspi biscutatum, annuum, asperum.* H. R. Par. *Boerh. Ind. alt. Plant. Vol.* 2.

It is called *Thlaspidium*, from the *Thlaspi*, which, in some measure, it resembles; and is an oleraceous Plant, without any medicinal Use. *Hist. Plant. adscript. Boerhaav.*

THLIBIÆ, from θλίβω, to compress. Persons whose Testicles are contused.

THLIPSIS, θλῖψις, from θλίβω, to compress, a Compression. Θλῖψις στομάχου, in *Galen's Isagoge Pulsuum*, is a Compression of the Stomach from Food, which is offensive only by its Quantity, and not endued with any remarkable Quality, or from a Conflux of Humours void of Acrimony into the Part.

THOCOS, θῶκος. See THACOS.

THOLEROS, θολερὸς, from θόλος, Mud; turbid, foul, muddy. Θολερὸν πνεῦμα, "a turbid Respiration," is expounded in *Galen's Exegesis*, by μέγα καὶ διεσιγμένον, "a great and raised (or quickened) Respiration." The Expression occurs, *Lib. de Humoribus*, and in several Places in 1 *Prorrhet.* and *Coac.* As to its Meaning, we find *Galen, Com.* 2. *in Prorrhet.* thus discoursing, τὸ δ' θολερὸν πνεῦμα τί ποτε δηλοῖ τῶν ἀσαφῶν ἐστι, &c. "As for the θολερὸν πνεῦμα, what it imports, remains an Obscurity; and the more, because it no-where occurs in the *Prognostics*, nor in the *Aphorisms*, nor in any genuine Book. If it be said, that *Hippocrates* used θολερὸν πνεῦμα, in the same Sense as θολερὸν ἔρον, 'turbid Urine,' we understand the Meaning of the latter very well from those who use the Expression of *turbid*, or *foul* Water, every Day, and from *Hippocrates* himself, who says, it is like that whose Sediment is disturbed, or like the Urine of Dray-horses. But what we are to understand by a *turbid*, or *foul* Spirit, (Respiration) is by no means obvious, since no Person calls the Air turbid (θολερὸν) in the same Sense as he calls the Water so, unless he be told, that it is filled with Vapours; which, indeed, is the Sense in which some take the Expression, telling us, that, as we observe an Effusion of Sweat under a Syncope, so, in a Resolution of the internal Parts, there is an Effiux of the Humours within; and for that Reason a Multitude of Vapours is discharged in Expiration; and this is the θολερὸν πνεῦμα, 'the turbid Respiration.' He says the same in another Place, and endeavours to prove, that θολερὸν πνεῦμα was not written by *Hippocrates*. Again, at the End of his second Comment, (on *Prorrhet. T.* 92.) he says, that this θολερὸν πνεῦμα, as he observed before, was of ambiguous Signification; but in that Place it seems reasonable to be understood of Expiration; but here some will have it meant of Eructations, others of Flatuosities. We said before, that θολερὸν

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" Θολερὸν was, by ſome, expounded δυσῶδες, fetid; by others, " ἀτμῶδες, vaporous" [See THALEROS]. The ſame Author, *Lib. de Trem. Palpit.* &c. calls by the Name of Θολερὸν πνεῦμα, a groſs, thick, dark, and cloudy Spirit or Wind contained in the Muſcles, or within the Skin, and proceeding from ſome refrigerating, condenſing and emplaſtic Cauſes: To this groſs Spirit is oppoſed what is thin, pure, and limpid.

Tholeros, Θολερὸς, " turbid," is often apply'd by *Hippocrates* to the Urine, as, alſo, to the Stools, Menſes, and Spit; in which latter Caſe it ſignifies ſordid, muddy, feculent.

THOLOS, Mud. But in *Galen* it is a Name for a Species of Bandage for the Head.

THORA. A Name for the *Ranunculus, Cyclaminis folio, Aſphodeli Radice ; major.*

THORACICA. Medicines for Diſorders of the *Thorax*, or Breaſt.

THORAX. The Breaſt.

By the Thorax we commonly underſtand all that Part of the Body, which anſwers to the Extent of the Sternum, Ribs, and Vertebræ of the Back, both outwardly and inwardly.

The Thorax is divided into the anterior Part, called commonly the Breaſt; the poſterior Part, called the Back; and the lateral Parts, called the Right and Left Sides.

The external Parts of the Thorax, beſides the Skin and Membrana Adipoſa, are principally the Mammæ, and the Muſcles which cover the Ribs, and fill the Spaces between them. In the Mammæ we ſee the Papillæ, or Nipples, and a ſmall cóloured Circle which ſurrounds them. The Muſcles are the Pectorales majores and minores, Subclavii, Serrati majores, Serrati ſuperiores poſtici, Latiſſimi Dorſi, and Vertebrales; and to theſe we may add the Muſcles which cover the Scapula.

The internal Parts of the Thorax are contained in the large Cavity of that Portion of the Trunk, which the Antients called the middle Venter; but the Moderns name it ſimply the Cavity of the Breaſt. This Cavity is lined by a Membrane named Pleura, and divided into lateral Cavities by a membranous Septum, named Mediaſtinum, which is a Production or Duplicature of the Pleura.

Theſe Parts are the Heart, Pericardium, Trunk of the Aorta, great Arch of the Aorta, Trunks of the carotid Arteries, Subclavian Arteries, Trunks of the vertebral and axillary Arteries, the ſuperior Portion of the deſcending Aorta, the intercoſtal Arteries, the Vena Cava Superior, Vena Azygos, Subclavian Veins, Trunks of the Jugular, vertebral and axillary Veins, a Portion of the Aſpera Arteria, and of the Oeſophagus, the Ductus lacteus, or Thoracicus, the Lungs, pulmonary Artery, pulmonary Veins, &c.

The Arteries and Veins, which particularly belong to the Thorax, are theſe:

Arteriæ & Venæ Thoracicæ, ſuperiores & inferiores.
Arteriæ & Venæ Mammariæ, externæ & internæ.
Arteriæ & Venæ Intercoſtales, ſuperiores & inferiores.
Arteriæ & Venæ Spinales, with the venal Sinuſes of the Canal of the Spine.

The Nerves diſtributed to the Thorax, are theſe:

Nervi ſympathetici Medii, or the eighth Pair.
Nervi ſympathetici Univerſales, commonly called Intercoſtales.
The laſt cervical Pair.
The twelve dorſal Pairs.
Nervi Diaphragmatici.

The Cavity of the Thorax is terminated downward by the Diaphragm, which parts it from the Abdomen.

The whole Extent of the Thorax, in a living Subject, is commonly determined, not only by the Sternum Vertebræ of the Back and Ribs, but, alſo, by all that Space contained between the Articulations of the two Arms with the Scapulæ and Clavículæ; and, in this Senſe, the Outſide of the Thorax is broader above than below, in an healthy Subject, who has a moderate Quantity of Fleſh on his Bones.

This Breadth of the upper Part of the Breaſt proceeds from the Pectorales majores, and Latiſſimi Dorſi, viewed directly forward or backward. But when we take a direct lateral View of the Breaſt, it appears narrower above than below, not only in an entire Subject, but even after every thing has been removed, that cover the Sides of the Thorax, and in the Skeleton itſelf.

The common Integuments of the Thorax are the ſame with thoſe of the Abdomen; and the convex Side of this Part of the Body is, likewiſe, covered by ſeveral Muſcles. Anteriorly we find the Pectorales majores and minores, a large Portion of the Serrati majores, the Subclavii, a Portion of the Scaleni, and of the Obliqui Abdominis Externi: Poſteriorly, we have all the Muſcles which cover both Sides of the Scapula, the Serrati Poſtici, and a Part of the Sacro-lumbares, Longiſſimi Dorſi, Vertebrales, &c. Among all the external Parts of the Thorax, only two are peculiar to it in the human Body, I mean the two Eminencies called Mammæ.

The hard Parts which form the Sides of the Cavity of the Thorax, are the twelve Vertebræ of the Back, all the Ribs, and the Sternum. The ſoft Parts, which complete the Sides, are the Membrane called Pleura, which lines the Cavity, and the Muſculi Intercoſtales, Sterno-coſtales, and the Diaphragm.

All theſe hard and ſoft Parts, taken together, repreſent a kind of Cage, in ſome meaſure of a conical Figure, flatted on the fore Side, depreſſed on the back Side, and, in a manner, divided into two Nooks, by the Figure of the Vertebræ of the Back, and terminated below by a broad-arched Baſis inclined backward. The intercoſtal Muſcles fill up the Interſtices betwixt the Ribs, and ſo complete the Sides of the Cavity: The Baſis is the Diaphragm, and the Pleura not only covers the whole inner Surface of the Cavity, but, by forming the Mediaſtinum, divides it into two, one on the Right Hand, the other on the Left.

For the Breaſts, ſee MAMMÆ.
For the Pleura and Mediaſtinum, ſee PLEURA.
For the Thymus, ſee THYMUS.
For the Heart, ſee COR.
For the Lungs, ſee PULMONES.
For the Oeſophagus, ſee OESOPHAGUS.
The Ductus Thoracicus is under the Article CHYLUS. *Winſlow.*

Mr. *Monro* tells us, that the Ribs, or *Coſtæ*, (as if they were *Cuſtodes* or Guards to theſe principal Organs of the animal Machine, the Heart and Lungs) are the long crooked Bones placed at the Side of the Cheſt in an oblique Direction downwards, with reſpect of the Back-bone. Their Number is generally twelve on each Side, though frequently eleven, or thirteen, have been found. I never ſaw fewer or more than the ordinary Number; but in the Skeleton of a Boy about eight Years old, now in my Poſſeſſion, the fourth and fifth Ribs of the Left Side are grown together at their Roots for near an Inch; and, afterwards dividing, have the ſame Appearance as the Ribs of the oppoſite Side, which are naturally formed.

The Ribs are all convex externally, and concave internally, where they are, alſo, made ſmooth by the Action of the contain'd Parts, which on this account are in no danger of being hurt by them. The Extremities of the Ribs, next the Vertebræ, are rounder than after theſe Bones have advanced forwards, when they become flatter and broader, and have a ſuperior and inferior Edge, each of which is made rough by the Action of the intercoſtal Muſcles, inſerted into them. Theſe Muſcles, being all of near equal Force, and equally ſtretched in the Interſtices of the Ribs, will reſiſt theſe Bones, having their broken Ends, in a Fracture, removed far out of their natural Places to interrupt the Motion of the vital Organs.

The upper Edge of the Ribs is more obtuſe and rounded than the inferior, which is depreſſed on its internal Side by a long Foſſa, for lodging the intercoſtal Veſſels and Nerves. This Chanel is not obſervable, however, at either Extremity of the Ribs; for at the poſterior, or Root, the Veſſels have not yet reached the Ribs; and, at the anterior Extremity, they are ſplit away into Branches, to ſerve the Parts between the Ribs; which plainly teaches Surgeons, how much ſafer it is to perform the Operation of the Empyema, towards the Sides of the Thorax, than either near the Back or Breaſt, tho' there were no other Reaſons to determine them in the Choice of the Place, where this Operation ſhould be performed.

At the poſterior Extremity of each Rib, a little Head is formed, which is divided by a middle Ridge, into two plain or hollow Surfaces, the inferior of which is the broadeſt and deepeſt. The two Plains are joined to the Bodies of two different Vertebræ, and the Ridge forces itſelf into the intervening Cartilage. A little Way from this Head, we find on the external Surface a ſmall Cavity, where mucilaginous Glands are lodged; and round the Head the Bone appears ſpongy, where the circular Ligament of the Articulation is fixed. Immediately beyond this, a flattened Tubercle, riſes with a ſmall Cavity at, and Roughneſs round the Root of it, for the Articulation of the Rib, with the tranſverſe Proceſs of the loweſt of the two Vertebræ, with the Bodies of which the Head of the Rib is joined. Advancing ſtill a little further on this external Surface, we obſerve another ſmaller Tubercle, into which the Tendons of the *Longiſſimus Dorſi* are inſerted. Soon after this the Ribs make a conſiderable Curve, which ſome call their Angle; into it the *Sacro-lumbalis* is inſerted. Then the Rib begins to turn broad, and continues ſo to its anterior Extremity, which is hollowed and ſpongy, for the Reception of, and firm Coalition with, the Cartilage which runs thence to be inſerted into the Sternum, or to be joined with ſome other Cartilages. In Adults, generally, the Cavity at this anterior Extremity of the Ribs, is ſmooth and poliſhed on its Surface, by which the Articulation of the Cartilage, with it would ſeem deſigned for Motion; which, however, is not allowed.

The Subſtance of the Ribs is ſpongy, cellular, and only covered with a very thin external lamellated Surface, which is thicker and ſtronger near the Vertebræ, than at the anterior Extremity.

To each Rib a long, broad, and ſtrong Cartilage is fixed, and reaches thence to the Sternum, or is adjoining to the one next it: This Courſe, however, of theirs, is not a ſtrait Line with the Rib; for generally the Cartilages make a conſiderable Curve, the concave Part of which is upwards; therefore, at their Inſertion

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tion into the Sternum, they make an obtuse Angle above, and an acute one below. These Cartilages are of such a Length, as never to allow the Ribs to come to a right Angle with the Spine, but keep them situated so obliquely, as to make a very considerable obtuse Angle above, 'till once a Force superior to the Elasticity of the Cartilages is applied. These Cartilages, as all others, are firmer and harder internally, than they are on their external Surface, and sometimes in old People, according to *Vesalius*, all their middle Substance becomes bony, while a thin cartilaginous Lamella appears externally, tho' the Ossification begins much oftener at the external Surface. The greatest alternate Motions of the Cartilages being made at their great Curvature, that Part, as *Havers* has remarked, remains frequently cartilaginous after all the rest is ossified.

The Ribs are, then, articulated at each Extremity, of which the posterior is doubly joined to the Vertebræ, for the Head is received into the Cavities of two Bodies of the Vertebræ, by a Species of Ginglymus; and the larger Tubercle is articulated to the transverse Process of the inferior Vertebræ, by what is commonly called Arthrodia. As soon as one considers this double Articulation, he must immediately see, that no other Motion can here be allowed than up and down, since the transverse Processes hinder it from being thrust back; the Resistance on the other Side of the Sternum prevents the Ribs coming forward; and each of the two Joints, with the other Parts attached, oppose their turning round: But then 'tis likewise as evident, that even the Motion upwards and downwards can be but small in any one Rib at the Articulation itself, tho' it may be very conspicuous at the anterior Extremity, which moves in a Circle, whose Radius is the Length of the Rib. If, at the same time, we consider, how obliquely the Ribs are situated with respect to the Vertebræ, we must be convinced, that the Ribs cannot be raised without removing farther from the Back-bone; and, as a considerable Resistance is made by the Sternum, to their anterior Extremities, these Bones must, in moving upwards, be, also, turned outwards, as *Winslow* has proved. The anterior End of the Ribs has no proper moveable Articulation, except so far, as the Catilages between the Sternum and Ribs will yield, on which account, and because of the Resistance, such Ribs as perform large Motions under these Disadvantages, are commonly twisted towards their anterior Extremities.

Hitherto I have laid down the Structure and Connection, which most of the Ribs enjoy, as belonging to all of them; but must now consider the Specialities, wherein any of them, either collectively or singly, may differ from the general Description given, or from each other. In viewing the Ribs from above downwards, their Figure is still straiter, the uppermost being the most crooked of any. Their Obliquity, with respect to the Spine, increases as they descend; so that tho' the Distance of their posterior Extremities from each other is very little different; yet at their anterior Extremities, the Distances between the inferior ones must increase. In consequence, too, of this increased Obliquity of the inferior Ribs, each of the Cartilages of the inferior Ribs make a greater Curve in its Progress from the Rib towards the Sternum; and the Tubercles, which are articulated to the transverse Processes of the Vertebræ, have their smooth Surface gradually facing more upwards. The Ribs becoming thus more oblique, while the Sternum advances forward in its Descent, make the Distance between the Sternum and the anterior Extremity of the lower Ribs greater, than between the Sternum and the superior Ribs; consequently the Cartilages of those Ribs that are joined to the Breast-bone, are longer in the lower ones. These Cartilages are placed nearer to each other, as the Ribs descend, which assists to make the Curvature of the Cartilages greater. The Length of the Ribs increases from the first or uppermost Rib, as far down as the seventh, and from that to the twelfth as gradually diminishes.

The superior of the two plain, or rather hollow Surfaces, by which the Ribs are articulated to the Bodies of the Vertebræ, gradually increases from the first to the fourth Rib, and is diminished after that in each lower Rib; and the Distance of their Angles from the Heads always increases, as they descend to the ninth. This is remarked by *Winslow*.

The Ribs are commonly divided into True and False.

The true Costæ are the seven superior of each Side, whose Cartilages are all gradually longer as the Ribs descend, and are joined to the Breast-bone: So that being pressed constantly between two Bones, they are flatned at both Extremities, and are thicker, harder, and more liable to ossify than the other Cartilages, which are not subject to so much pressure. These Ribs include the Heart and Lungs, and therefore are the proper or true *Custodes* of Life.

The five inferior of each Side are the False, or Bastard, whose Cartilages do not reach the Sternum; and therefore, wanting that Resistance at their anterior Extremity, are there pointed, and, for the same Reason, being less pressed, the Substance of these Cartilages is softer. The Cartilages of these false Ribs are shorter as the Ribs descend. To all these five Ribs the circular Edge of the Diaphragm is connected; and its Fibres, instead of being stretched immediately transversely, and so running perpendicular to the Ribs, are pressed so as to be often, especially in Expiration, parallel to the Plan in which the Ribs lie; one may even judge by the Attachments, which these Fibres have so frequently to the Sides of the Thorax, a considerable way above where their Extremities are inserted into the Ribs, and by the Situation of the Viscera, always to be observed in a dead Subject laid supine, that there is constantly a large Concavity, formed on each Side by the Diaphragm, within these bastard Ribs, in which the Stomach, Liver, Spleen, &c. are contained, which, being only reckoned among the Viscera Naturalia, have occasioned the Name of Bastard Custodes to these Bones.

Hence we may easily understand the Justice of *Hippocrates's* Rule, in simple Fractures of the false Ribs, without a Fever, to keep the Stomach moderately filled with Food, lest the pendulous Ribs, falling inwards, should thereby increase the Pain and Cough. The Truth of this Observation *Paré*, after his long Experience, confirms; but it is now-a-days much forgot, or entirely neglected.

The uppermost or first Rib has several proper Specialities, some of them contradictory to any Character yet delivered of the Ribs; for the Figure of it is much more curve, than any of the rest; whence the Name of *αντίσειραι retortæ*, has been applied to it and the second. The Situation of the first is such, that the flat Sides are superior and inferior, while the Edges are anterior and posterior, or nearly so; therefore sufficient Space is left above it, for the Subclavian Vessels and Muscle; and the broad concave Surface of it is opposed to to the Lungs: But then, in consequence to this Situation, the Chanel for the intercostal Vessels is not to be found, and the Edges are differently formed from all the other, except the second, the lower one being rounded, and the other sharp. The Head of this Rib is not divided into two plain Surfaces by middle Ridge, because it is only articulated with the first Vertebræ of the Thorax. The Cartilage, at the anterior Extremity of the first Costa, is ossified in Adults, and is united to the Sternum at right Angles. Frequently this first Rib has a Ridge, rising near the middle of its posterior Edge, where one of the Heads of the Scalenus Muscle rises; and, nearer to the anterior Extremity, it is flattened, or sometimes depressed by the Clavicle.

The third and fourth Ribs have been distinguished by the Name *σάρκαι, solidæ*; the fifth and sixth, by the Appellation of *στερνικὰς, pectorales*, the seventh and eighth are called *παρασάρκες, distractæ*. But it must be acknowledged, there is no great Occasion, or good Reason, for these Names, since these Ribs scarce can claim any thing particular, but what comes under the general Description, or belongs to more than two of them. The fifth, sixth, seventh, or rather the sixth, seventh, eighth, and sometimes fifth, sixth, seventh, eighth, and ninth, Ribs have their Cartilages, at least, contiguous; and frequently they are conjoined hy crois Cartilages; and most commonly the Cartilages of the eighth, ninth, and tenth, are connected to the former, and to each other, by firm Ligaments.

The eleventh, and sometimes the tenth, Rib has no Tubercle for its Articulation with the transverse Process of the Vertebræ, to which it is only loosely fixed by a Ligament. The Fossa, in its inferior Edge, is not so deep as in the superior Ribs, because the Vessels run more towards the Interstice between the Ribs. Its anterior Extremity is smaller than its Body, and its short small Cartilage is but loosely connected to the Cartilage of the Rib above.

The twelfth Rib is the shortest and straitest: The Head of it is only articulated with the last Vertebra of the Thorax; therefore it is not divided into two Surfaces. This Rib is not joined to the transverse Process of the Vertebræ, and therefore has no Tubercles, being often pulled necessarily inwards by the Diaphragm, which an Articulation with the transverse Process would not have allowed. The Fossa is not found at its under Edge, because the Vessels run below it. The anterior Extremity of this last Rib is smaller, than its middle, and has only a very small pointed Cartilage fixed to it. To the whole Length of this Rib internally the Diaphragm is connected.

The Ribs are all complete in a new-born Child; only their Cartilages are proportionally longer than in an adult Person.

Here I cannot help remarking the wise Providence of our Creator, in preserving us from perishing, as soon as we come into the World. The Extremities, by which the Bones of the Limbs are articulated, remain in a cartilaginous State after Birth, and are many Years before they are entirely united to the main Body of their several Bones; whereas the Condyles of the occipital Bone, and of the lower Jaw, and the Heads and Tubercles of the Ribs, are true original Processes, and ossified before Birth; and therefore the Weight of the large Head is firmly supported, the Actions of Sucking, Swallowing, Respiration

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ration, &c. which are indispensably necessary for us, as soon as we come into the World, are performed without any Danger of the Parts of the Bones, which are most pressed on in these Motions, being separated; whereas, had these Processes of the Head, Jaw, and Ribs, been Epiphyses at the Birth, Children must have been exposed to an evident Danger of dying, by such a Separation, whose immediate Consequences would be the Compression of the Beginning of the Medulla Spinalis, or want of Food, or of Respiration.

The STERNUM.

The Sternum, or Breast-bone, is the broad flat Bone, or Pile of Bones, at the anterior Part of the Thorax. The Number of Bones this should be divided into, has occasioned Debates among Anatomists, who have considered it in young Subjects of different Ages. In Adults of a middle Age, it is composed of three Bones, which easily separate, after the Cartilages connecting them are destroyed: Frequently the two lower Bones are found intimately united; and very often, in old People, the Sternum is a continued bony Substance, from one End to the other, tho' on the Surface of it we may still observe two, sometimes three transverse Lines, which mark out the former Divisions.

When we consider the Sternum as one Bone, we find it broadest and thickest above, and becoming smaller as it descends: The internal, or posterior Surface of this Bone, is somewhat hollowed for enlarging the Thorax; but the Convexity on the external Surface is not so conspicuous, because the Sides are pressed outwards by the true Ribs, the round Heads of whose Cartilages are received into seven smooth Pits, formed in each Side of the Sternum; and are kept firm there by strong Ligaments, which on the external Surface, have a particular radiated Texture: Frequently the cartilaginous Fibres thrust themselves into the bony Substance of the Sternum, and are joined by a sort of Suture. The Pits at the superior Part of the Sternum are at the greatest Distance one from another, and, as they descend are nearer, so that the two lowest are contiguous.

The Substance of the Breast-bone is cellular, with a very thin external Plate, especially on its internal Surface, where, with *Jac. Sylvius*, we may frequently observe rather a cartilaginous Crust spreads over it. On both Surfaces, however, a strong ligamentous Membrane is closely braced; and the Cells of this Bone are so small, that a considerable Quantity of osseous Fibres must be employed in the Composition of it: Whence, with the Defence the Muscles give it, and the moveable Support it has from the flexible Cartilages, it is sufficiently secured from being broke by any small external Force: For it is strong by its Quantity of Bone; its Parts are kept together by the Ligaments; and it yields enough to elude considerably the Violence offered.

So far in general may be said of this Bone: But, to descend to its particular Description, let us examine the three Bones, which, according to the common Accounts, go to the Composition of it in an Adult.

The first, all agree, is somewhat of the Figure of an Heart, as it is commonly painted; only it does not terminate in a sharp Point. This is the uppermost thickest Part of the Sternum.

The superior middle Part of this first Bone, where it is thickest, is hollowed, to make place for the Trachea Arteria, tho' this Cavity is principally formed by the Clavicles pressing on one Side, and by the Sterno-mastoidei Muscles pulling the Substance of the Bone above, to both which it yields while it is soft; and therefore is rais'd into two Tubercles, while the middle is not protruded by such Powers. On the Outside of each Tubercle there is an oblong Cavity, that, in viewing it transversely from before backwards, appears a little convex: Into these *Glenæ* the Extremities of the Clavicles are received. Immediately below these, the Sides of this Bone begin to turn thinner; and in each a superficial Cavity, or a rough Surface, is to be seen, where the first Ribs are received or conjoined to the Sternum. In the Side of the under Extremity of this first Bone, half of the Pit for the second Rib on each Side is formed. The superior Part of the posterior Surface is covered with a strong Ligament described by *Weitbreicht* and *Winslow*, which secures the Clavicles.

The second or middle Division of this Bone is much longer, narrower, and thinner, than the first; but, excepting that it is a little narrow above, is pretty equal all over as to its Dimensions of Breadth or Thickness. In the Sides of it are complete Pits for the third, fourth, fifth, and sixth Ribs; and half of the Pits for the second and seventh are formed in it. Near its Middle an unossified Part of the Bone is sometimes found, which, freed of the ligamentous Membrane, or Cartilage, which fills it, is described as an Hole; and in this Place, for the most part, we may observe a tranverse Line running, which has made Authors divide this Bone into two. When the Cartilage between this and the first Bone is not ossified, a manifest enough Motion of this upon the first may be observed in Respiration, or in raising the Sternum, by pulling the Ribs upwards in a recent Subject.

The third Bone is by much the least, and has only one half of the Pit for the seventh Rib formed in it; wherefore it might be reckoned only an Appendix of the Sternum. In young Subjects it is always cartilaginous, and is better known by the Name of Cartilago Xiphoides or Ensiformis, than any other, tho' the Antients often called the whole Sternum, Ensiforme, comparing the two first Bones to the Handle, and this Appendix to the Blade of a Sword. This Bone is seldom of the same Figure, Magnitude, or Situation, in any two Subjects; for sometimes it is a plain triangular Bone, with one of the Angles below, and perpendicular to the middle of the superior Side, by which it is connected to the second Bone. At other times the Point is turned to one Side or other, or obliquely forwards or backwards.

Frequently it is all of near an equal Breadth, and in several Subjects the Extremity of it is bifurcated; whence some Writers give it the Name of *Furcella* or *Furcula inferior*; or else it is perforated in the Middle. In the greatest Number of Adults it is ossified, and tipped with a Cartilage; in some it is half or wholly cartilaginous.

So many different ways this small Bone may be constituted without any Inconvenience: But then some of these Positions may be so directed, as to bring on a great Train of ill Consequences; particularly, when the lower Extremity is entirely ossified, and is too much turned outwards or inwards, or when the Conjunction of this Appendix with the second Bone is too weak.

Rolfincius relates the History of an old Man, who could not bend his Body forwards, without a violent pungent Pain from the Ossification and sharp Point of this Bone. *Paaw* assures us, he has seen several Instances of a difficult Breathing from the same Cause; and enumerates several Diseases, such as a *Phthisis pulmonalis*, Obstructions of the Spleen, Liver, or Mesentery, which may depend on too great a Relaxation of this Cartilage; and sometimes this Relaxation may only be a Consequence of these Diseases. *Borrichius* confirms all this by some Examples. But, not to be tedious in relating such Histories, I shall refer you to *Bonetus*, who has several Examples collected; and will direct you to the Writers on this Subject, which in the last Century employed several Pens, tho' it is now much neglected. This Neglect is the more surprising, since the Connection of the Diaphragm here, the Situation of the large Lobe of the Liver, and of the Stomach, and the constant Pressure and Rubbing of our Clothes on this Part, leads us naturally to consider the Effects of a faulty Structure and Situation of this Bone.

The Sternum is joined by Synchondrosis to the seven superior Ribs, unless when the first coalesces with it in an intimate Union of Substance; and it is articulated with the Clavicles by a Ginglymus of the second Kind.

The Sternum most frequently has four round small Bones, surrounded with Cartilage, in Children born to the full time; the uppermost of these, which is the first Bone, being the largest by much. Two or three other very small bony Points are, likewise to be seen in several Children. The Number of Bones increases for some Years, and then diminishes, but uncertainly, till they are at last united into those above described of an Adult.

The Uses of this Bone are, to afford Origin and Insertion to several Muscles; to sustain the Mediastinum; to defend the vital Organs, the Heart, and Lungs, at the anterior Part; and, lastly, by serving as a moveable Fulcrum of the Ribs, to assist considerably in Respiration: Which Action, so far as it depends on the Motion of the Bones, we are now at Liberty to explain.

When, then, the Ribs which are connected by their Cartilages to the Sternum, or to the Cartilages of the true Ribs, are acted upon by the intercostal Muscles, they must all be pulled from the oblique Position their Cartilages kept them in, nearer to right Angles with the Vertebræ and Sternum, because the first or uppermost Rib is by much the most fixed of any; and their large arched middle Part, will be turned outwards, to increase the Distance between the Sides of the Thorax, or to widen this Cavity; while, by raising the Ribs nearer to right Angles, the Distance between the parallel Lines, which comprehend their Extremities, is increased: And as the Vertebræ hinder the Ribs from receding back, this whole Increase must be by the Advance of these Extremities forwards. Hence, the intermediate Fulcrum, the Sternum, pressed strongly on both Sides, must be pushed forwards, and that, at its several Parts, in Proportion to the Length and Motion of its Supporters, the Ribs; that is, most at its inferior Extremity; which, thus forced forwards, will, with the Cartilages now in the same manner acted upon, draw the Diaphragm connected to them; consequently so far stretch it, and bring it nearer to a Plain: And the same Power which raises this Bone and Cartilages, will sufficiently fix them, to that they may resist the Action of that Muscle, whose Fibres contract at the same time, and thrust the Viscera of the Abdomen downwards. The arched Part of the Ribs being thus moved outwards, the anterior Extremity of the Ribs, and the Sternum,

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Sternum, being advanced forwards, and the Diaphragm being brought nearer to a plain Surface, inſtead of being greatly convex on each Side, within each Cavity of the Thorax, 'tis evident how conſiderably the Cavity, of which the nine or ten ſuperior of theſe Bones are the Sides, muſt be widened, and made deeper and longer. But while this is doing in the ſuperior Ribs, the inferior, whoſe Cartilages are not conjoined, perform a very different Office, tho' it conſpires to the ſame Intention, the Enlargement of the Thorax. For as they have no fixed Point, to which their anterior Extremity is faſtened, and have the Diaphragm inſerted into them, at the Place where that Muſcle runs pretty ſtrait upwards from its Origin at the Vertebræ; therefore theſe Ribs being expoſed on the one Side to the direct Action of this ſtrong Muſcle, and of the Muſcles of the Abdomen, which at this time are reſiſting the ſtretching Force of the Bowels, and are drawing theſe Bones down, while the intercoſtal Muſcles are pulling them upwards, the Effect of either of theſe Powers, which are Antagoniſts to each other, is very little as to the moving the Ribs either up, or down. But the Muſcles of the Abdomen, being puſhed at this time outwards by the Viſcera, carry theſe Ribs along with them; and thus the Thorax is not only to be ſhortened, but is really widened at its lower Part, to aſſiſt in making ſufficient Space for the due Diſtention of the Lungs.

As ſoon as the Action of theſe ſeveral Muſcles ceaſes, the elaſtic Cartilages, extending themſelves to their natural Situation, depreſs the ſuperior Ribs, and the Sternum ſubſides; the Diaphragm is thruſt up by the Abdominal Viſcera, and raiſes the inferior Ribs with it, in which it is aſſiſted by any Action their intercoſtal Muſcles have, while the oblique and tranſverſe Muſcles of the Belly ſerve to draw theſe Ribs inwards, at the ſame time: From all which the Cavity of the Breaſt is diminiſhed in all its Dimenſions. Thus, then, the Thorax is made wider, deeper, and longer; and is, again, ſtraitened and ſhortened in a manner not generally ſo well underſtood. *Monro's Oſteol.*

Diſorders of the *Thorax*, which require the Aſſiſtance of Surgery:

For Fractures of the Ribs; and Clavicles, ſee FRACTURA.
For Luxations of the Ribs, and Clavicles, ſee LUXATIO.
For Bandages proper for the Breaſt, ſee FASCIÆ.

Wounds inflicted in the Thorax, and not penetrating into its Cavities, are known by Sight; by the Probe; by the Impoſſibility of procuring a Diſcharge of the Air by any Art; by the Return of any tepid Liquor injected into the Wound; by placing the Patient in the Poſture he was in when the Wound was received; and by the ſure Signs of an Adheſion of the Lungs to that Part of the Pleura, thro' which the Wound is made.

The Thorax is that Part of the human Trunk, which, before, is terminated by the Sternum; behind, by twelve Vertebræ of the Back; on the Sides, by the arched Ribs; above, by the two ſuperior Ribs; and, below, by the Diaphragm, which ſeparates it from the Abdomen. But as the Thorax forms a kind of arched Vault, which riſes in the Middle, and is lower at the Edges, 'tis obvious, that its Cavity muſt be far greateſt towards the hinder or poſterior Parts. Internally this whole Cavity is lin'd with an highly ſmooth Membrane, call'd the Pleura; which, as is ſhewn under the Article VULNUS, forming, as it were, two hollow Bladders, approaching to each other near the Sternum, divides the Thorax into two equal Cavities. Between theſe two Portions of the Pleura is ſituated the Pericardium, with the Heart, which conſtitutes the third Cavity of the Thorax.

In all Wounds of the Thorax, 'tis firſt to be inquired, Whether they have penetrated into its Cavities, or not? When the wounding Inſtrument has perforated the Pleura, or the Pericardium, then the Wound is ſaid to penetrate into the Cavity of the Thorax; but otherwiſe not. Many Parts, however, may be very dangerouſly wounded, tho' the Wound does not penetrate into the Cavities of the Thorax; for the Pleura on both Sides, when it reaches to the Sides of the Bodies of the Vertebræ, ſeparates from the laſt Extremities of the Ribs, and, riſing thence, leaves a pretty large Space poſſeſſed by the cellular Membrane, thro' which the Oeſophagus, the Aorta, and the thoracic Duct, paſs. All the Parts, therefore, ſituated here, may be hurt, tho' the Wound does not penetrate into the Cavities of the Thorax; but 'tis ſufficiently obvious, that this can rarely happen, becauſe in the poſterior Part the Bodies of the Vertebræ are pretty ſecurely defended. That a Wound has not penetrated into the Cavities of the Breaſt, may be known from the following Signs.

By the Sight: When, for Inſtance, the Wound is ſufficiently large, and has penetrated in a ſtraight Direction.

By the Probe: For this Purpoſe, a Probe of Lead, or the ſofteſt Silver is to be introduced, without any Violence, into the Wound. But 'tis ſufficiently obvious, that a Change of the Situation of the Body, Fat obſtructing the Wound, or a Thrombus, may make a Reſiſtance to the Probe, even tho' the Wound has penetrated into the Cavity of the Thorax.

By the Impoſſibility of procuring a Diſcharge of Air by any Art; Under the Article VULNUS, 'tis ſhewn, that ſo long as the Cavity of the Thorax is cloſe and entire, the Lungs are always exactly contiguous to the Pleura, and that there is no Air lodg'd between them; but when a wounding Inſtrument has penetrated the Pleura, the Air can enter, the Lungs on that Side, collapſe, and the empty Space, form'd by that means, is fill'd by the Air that enters. And this Air, when rarefied by the Heat, will, again, in ſome meaſure, be diſcharg'd thro' the Wound, whilſt freſh Air enters, and thus it goes and returns thro' the Wound; eſpecially, if the Wound of the Pleura is not too large; for, in this Caſe, ſome Dilatation of the Lungs may be ſtill produc'd by the Air, which is convey'd to them thro' the *Glottis*, as is ſhewn under the Article VULNUS. In Wounds of the Thorax, skilful Surgeons examine whether the Air is impetuouſly convey'd thro' the Wound, in the following manner: After they have, with their Thumb, or Fingers, to compreſſed the Lips of the Wound, that no Air can either get in or out, they order the Patient ſtrongly to inſpire the Air, and retain it in the Lungs, by cloſing the Larynx; then, before the Patient performs Expiration, the Surgeon places a ſmall lighted Candle near the Wound, and ſuddenly ſeparates the Lips of the Wound; in which Caſe, if any Air has enter'd the Cavity of the Thorax, it will be impetuouſly diſcharg'd from the Wound, ſo as ſenſibly to act on the Flame of the Candle; for when Air, in conſequence of a Wound of the Pleura, is lodg'd in the Cavity of the Breaſt, when the Wound is clos'd, this Air will be rarefied by the Heat of the Body. If at the ſame time, by a ſtrong Inſpiration, the Lungs on that Side can be ſtill but a little dilated, the Air retain'd in the Lungs by cloſing the Glottis, being rarefied, will expand the Lungs: Hence the Air, receiv'd into the Cavity of the Thorax, will be more preſs'd upon; and therefore, upon opening the Wound, be diſcharg'd impetuouſly, and with an hiſſing Noiſe. 'Tis ſufficiently obvious, if the Air is thus diſcharg'd from ſuch a Wound, that it has penetrated into the Cavity of the Thorax: It may, however, happen, that a Perforation of the Thorax is made, and yet no Air enter its Cavities; when, for Inſtance, Fat, eſpecially after a Change of Situation in the Body, immediately fills up the Paſſage made by the wounding Inſtrument; or, when a little Air has enter'd in this manner, it cannot, for the ſame Cauſe, be eaſily diſcharg'd again: And this principally happens, when the Wound is ſmall.

By the Return of any tepid Liquor injected into the Wound: This Method ſeems, of all others, the moſt ſafe and infallible; for a Search made with the Probe may often prove fallacious, ſince ſometimes by a Change of Poſture in the Body, eſpecially in fat Perſons, the cellular Membrane obſtructs the Probe, and hinders it from reaching to the Bottom of the Wound. Sometimes, alſo, the Probe may be introduc'd a great Way, and yet not penetrate into the Cavity of the Thorax; when, for Inſtance, the wounding Inſtrument, by means of the Fat, has paſs'd along the Ribs, as is certain from chirurgical Obſervations. Thus, in fighting a Duel, a certain Student had his Antagoniſt's Sword paſs'd into the Right Side of his Thorax, ſo far that its Point wounded the Left Side, without penetrating into the Cavity of the Breaſt, but only paſſing along the Ribs. Tepid Water is gently to be injected into the Wound, by means of a Syringe; and if a conſiderable Quantity of Water may be thus injected without Reſiſtance, and if there is no Tumor in the adjacent Parts, produc'd by the Water collected in the *Membrana Cellulosa*, we then know, that the Water is convey'd thro' the Wound into the Cavity of the Thorax, but if there is a great Reſiſtance, and the Water immediately returns thro' the Orifice of the Wound, we know, that it has not penetrated into the Cavity of the Thorax. Nor is any Harm to be dreaded from a Conveyance of the tepid Water into the Cavity of the Breaſt; ſince it may be eaſily evacuated again by a proper Poſture of the Body, or other Meaſures, to be afterwards ſpecified. And tho' the Water ſhould even be left in the Cavity of the Breaſt, it will be reſorb'd by the bibulous venous Veſſels, diſtributed thro' all the internal Surface of the Thorax, and the Surface of the Lungs. That Fluids, contain'd in the Cavity of the Thorax, have been frequently diſſipated in this manner, is certain from chirurgical Obſervations. In an Empyema, it has been found, that the Pus has been reſorb'd by Expectoration, Stool, and Urine; and, alſo, that the Pus entering the Veins, and mixing with the Blood, has been, by a Tranſlation, convey'd to various Parts of the Body. *Paré*, in the tenth Chapter of his Works, informs us, that when he injected a bitter Liquor into the Cavity of the Thorax, in order to deterge the Parts from the extravaſated and corrupted Blood, he was ſurpriſed to find his Patient complain of a violent Senſe of Bitterneſs, and an Inclination to vomit; for which Reaſon he afterwards abſtain'd from that Practice.

By placing the Patient in the Poſture he was in when the Wound was receiv'd: Under the Article VULNUS, 'tis obſerv'd, of

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of how great Importance it is in determining the Nature of Wounds, and forming Prognoſtics of the Misfortunes to be dreaded from them, to know the Poſture of the Body at the time the Wound was received; for it would often be impoſſible to trace the Way of the wounding Inſtrument, unleſs the Patient was put in the ſame Poſture with that he was in when wounded; for the various Actions of the Muſcles may ſurpriſingly change the Situation of the Parts, as *Euſtachius* has beautifully ſhewn in his *Tabulæ Anatomicæ*; for, in the thirtieth Plate of that Work, he repreſents the Right Arm elevated, and the Elbow bended; and the Left Arm ſtretched downwards, with the Elbow unbended; ſo that, upon comparing the Right, with the Left Side of the Thorax, there appears a conſiderable Difference in the Situation of the Parts. And, laſtly,

By the certain Signs of the Adheſion of the Lungs to that Part of the Pleura where the Wound is made: As the Lungs, both in Inſpiration and Expiration, are always contiguous to the Pleura, as is certain from Phyſiology, yet they are naturally free in the Cavity of the Breaſt, adhering only by their Air-veſſels to the Aſpera Arteria, and by their Blood-veſſels to the Heart, but nowhere elſe. The principal Cauſe why theſe Parts do not grow together, ſeems to be, that the ſmall arterial Veſſels of the Lungs and Pleura always exhale a fine ſubtile Dew, which hinders the Adheſion of the Lungs to the Pleura. This is beautifully expreſſed by *Hippocrates*, who, in his Treatiſe *de Arte*, *Cap.* 8. informs us, "that every Part of the human Body, not concrete, or "adhering to another, whether covered with Skin, or whether "its Surface is fleſhy, is filled with Air, if ſound; but with Ichor, "if unſound and infirm." But when, in conſequence of an Inflammation, the large Veſſels are ſo diſtended, as to compreſs theſe ſmall Veſſels to that degree, that they cannot exhale their highly fine and ſubtile Fluid, the dry Surfaces of the Parts pretty ſoon grow together. Hence it is, that after Pleuriſies, Peripneumonies, and Empyemas, the Lungs are ſo often found adhering to the Pleura. If it is, therefore, obvious, that the Patient has formerly been afflicted with theſe Diſorders, the Surgeon is carefully to advert to ſuch a Circumſtance; for, if the Wound is inflicted in the Part where the Lungs adhere to the Pleura, the wounding Inſtrument may penetrate the Subſtance of the Lungs, without entering the Cavity of the Breaſt. This may be known to be the State of the Patient, when Water, injected into the Wound, excites a gentle Cough, and is thrown up through the Aſpera Arteria; for then the Wound has penetrated into the Lungs, but not into the Cavity of the Thorax.

Theſe are the Signs by which Surgeons generally conclude, that Wounds have only injured the external Parts, but not penetrated into the Cavity of the Breaſt. But it may ſometimes happen, that all theſe Circumſtances, tho' ever ſo carefully adverted to, may yet prove fallacious, eſpecially if the Wound is inflicted with a very ſmall Inſtrument; for, in this Caſe, upon withdrawing the Inſtrument, the Fat may ſo obſtruct the Wound, that neither the Air, the Probe, nor warm Water, can enter; and yet the hurt pulmonary Veſſels may diſcharge Blood into the Cavity of the Thorax. Hence the Surgeon is to conſider, whether the Reſpiration is injured; for if the Cavity of the Thorax is leſſened and oppreſſed, either by the Air that enters, or by extravaſated Blood, the Reſpiration will always be difficult; and if this Symptom is obſerved after Wounds of the Breaſt, it always ſeems to indicate, that the Wound, tho' it ſhould appear by no other Signs, has penetrated into the Cavity of the Thorax. Phyſicians, therefore, and Surgeons, ought to take care not to loſe their Reputations, by looking on the ſmalleſt Wounds as inconſiderable, and void of Danger.

If Wounds of the Thorax deſcend obliquely upon or within the Ribs, the Pleura being, by this means, frequently corroded, they depoſite Pus in the Cavity of the Thorax, eſpecially if the Paſſage of the Pus to the external Parts is by any Cauſe obſtructed. In this Caſe an Empyema is formed, and many Misfortunes produced.

Tho' 'tis certain, that a Wound has not penetrated into the Cavities of the Breaſt, yet many terrible Misfortunes may ariſe from it; for if the Condition of a Wound is ſuch, that its Orifice is placed in a ſuperior Part, whilſt, at the ſame time, it deſcends pretty deep among the Muſcles, the extravaſated Humours will be here collected, become acrid by their Stagnation and Continuance, form various Sinuſes, and at laſt, may, in conſequence of a Corroſion of the Pleura, fall into the Cavity of the Breaſt. The collected Pus will daily fall from ſuch a ſinuous Ulcer; the Quantity of Fluids contained in the Cavity of the Thorax will be augmented; an Empyema will be formed; and the Lungs, being macerated in Pus, which daily becomes more acrid, will be conſumed. Hence, a moſt inſupportable Train of Miſeries is ſucceeded by Death. Theſe Misfortunes are moſt dangerous and troubleſome, when ſuch fiſtulous Cavities deſcend behind the Ribs; for then there is ſcarcely any Room left either for Dilaration, or Compreſſion. Beſides, if the bony or cartilaginous Subſtances of the Sternum and Breaſt are injured, many Misfortunes may ariſe from ſuch a Circumſtance; and the Cure will be highly difficult, as is obvious from what is ſaid under the Article Os. *Galen*, in *Treat. de Anatom. Adminiſtr. Lib.* 7. *Cap.* 13. confirms this by a memorable Inſtance. In the *Paleſtra*, a Boy receiving a Blow on the Sternum, was, at firſt, neglected, and afterwards not well cured. Four Months after, Pus appeared in the Part where he received the Blow; a Surgeon made an Inciſion in the Place; and, as he thought, brought it ſoon enough to a Cicatrix. Afterwards, a freſh Inflammation ariſing, a ſecond Inciſion was made, nor could the Wound any more be brought to a Cicatrix. After this, *Galen*, and ſeveral other Phyſicians, being called, found the Bone of the Sternum carious; and when all refuſed to attempt the Cure, *Galen* cut out the corrupted Part of the Sternum, found Part of the ſubjacent Pericardium putrid, and ſaw the naked Heart; and yet the Boy was recovered in a ſhort time. And *Galen* himſelf, in the Beginning of his firſt Book *de Placitis Hippocratis & Platonis*, ſeems to ſpeak of this Caſe, when he tells us, that in a Boy he ſaw the Heart as diſtinctly, as in Animals diſſected for that Purpoſe.; and he adds, that this Boy recovered. But ſuch Misfortunes are moſt of all to be dreaded, when either by the Situation of the Wound, or prepoſterous Meaſures, the Paſſage of the Pus to the external Parts is hindered.

Hence, in the Cure of Wounds of the Thorax, we are to abſtain from all Tents, emplaſtic Subſtances, and Compreſſion; and are, on the contrary, to uſe depurating and balſamic Subſtances, Pledgets, ſlight Bandage, and a proper Poſture of the Body.

Since, in Wounds of the Thorax, ſo many terrible Misfortunes may ariſe from the extravaſated Humours retained in their Cavities, and frequently making new Ways to themſelves through the *Membrana Celluloſa*, 'tis ſufficiently obvious, that a free Diſcharge of them ought to be procured. It was once the Cuſtom of almoſt all Surgeons, to put Tents into moſt Wounds, eſpecially thoſe of the Thorax, in order to prevent the ſudden Conſolidation of the Orifice of the Wound, before its internal Parts are grown together; that there might be a free Diſcharge for the heterogeneous Bodies left in the Wound, and that vulnerary Remedies might have the freer Acceſs to the Bottom of the Wound. *Belloſte*, to whom we owe the beautiful Invention of making ſmall Perforations in the Bones ſtript of their *Perioſteum* mentioned in the Article CAPUT, in his *Hoſpital Surgeon*, oppoſes this Practice; and by ſolid Arguments demonſtrates, that the Uſe of Tents is pernicious, eſpecially in Wounds of the Thorax; and ſhews from Inſtances, that Experience has confirmed the Truth of his Arguments: For Tents, prepared of folded Lint, or any other ſimilar Subſtance, and put into the Orifice of a Wound, become tumid, by abſorbing the extravaſated Humours; and are ſoon expelled, unleſs ſecured by an adheſive Plaiſter, or a Bandage. But if they are ſo ſecured that they cannot be expelled, becoming tumid, they, by a ſlow Dilaceration, dilate the Orifice of the Wound, with great Pain and Irritation of the Parts. At the ſame time, by blocking up the Orifice of the Wound, they hinder the Evacuation of the Pus, and other diſcharged Liquors, which will, therefore, find new Ways for themſelves, and are capable of converting the Wound into a malignant ſinuous Ulcer; or perhaps, when the Pleura is corroded, they may fall into the Cavities of the Thorax, a new Source of terrible Misfortunes. Beſides, every Moment the Capacity of the Thorax is changed, ſince, in the mildeſt Reſpiration, the Ribs, and the Muſcles affix'd to them, move. Hence ſuch a Wound is never at Reſt, and there is a continual Friction of its Lips on the Tent. Hence Pain, Inflammation, and at laſt, a Calloſity, is produced in the Lips of the Wound; which Calloſity muſt be afterwards remov'd, before a Conſolidation can be obtained. Hence 'tis ſufficiently obvious, that in Wounds of the Thorax, no Good is to be expected from the Uſe of Tents. Perhaps the only Caſe in which they are proper is, when the Orifice of the Wound, being too ſmall, ought to be dilated; though, as is obſerved under the Article VULNUS, this is more eaſily done by the Knife. And if Tents are to be uſed for this Purpoſe, they ought only to be applied for a Day or two, and not thro' the whole Courſe of the Cure. Beſides, as is obſerved under the laſt-mentioned Article, a Tent of Sponge duly prepared, and put into the Orifice of a Wound, is, in a few Hours, capable of making a very conſiderable Dilatation. For the ſame Reaſon 'tis obvious, why the moſt tenacious and adheſive Plaiſters are injurious in Caſes of this Nature, becauſe they hinder the free Diſcharge of the Humours from the Wound. 'Tis, therefore, moſt expedient, in Wounds of the Thorax, to apply plain Pledgets, covered with vulnerary Balſam, or the ſofteſt Digeſtives, according to the Condition of the Wound. Over ſuch Pledgets we are to apply a Plaiſter, which is not very tenacious, and cut into many ſmall Holes; over this we may apply a proper Bandage, if it is thought neceſſary; obſerving this Caution, that by Bolſters, or ſome other Expedient, we hinder the Bandage from compreſſing the Aperture of the Wound, and by that means preventing the Diſcharge of the extravaſated Humours.

Hippocrates, in *Coac. Prænot.* N° 430. obſerves, "that thoſe "who have the external Part of a Wound of the Thorax cured, "and

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" and not its internal Part, are in Danger of having an Empyema " formed; and if a weak Cicatrix is formed in the internal Part, " it is eaſily broken." Hence 'tis obvious, that great Care ought to be taken, that the internal Surface of the Wound ſhould be conſolidated, before its external Orifice is brought to a Cicatrix. Hence ſome may poſſibly conclude, that Tents would be beneficial in hindering the Concretion of the external Orifice of the Wound. But if we conſider, that a Tent ſo blocks up the Wound, that the Pus cannot be diſcharged, it will be obvious, that it hinders the Concretion of the internal Parts of the Wound, ſince the Pus retained in the Wound, prevents the Contact of the Parts which ought to be united, and, being increaſed in Quantity, makes new Ways for itſelf, by which means the Surface of the internal Wound is enlarged. That *Hippocrates* condemned the Uſe of Tents, is certain from another memorable Paſſage of that Author, who, in *Tract. de Morbis, Lib.* 1. *Cap.* 9. tells us, " that in thoſe who have an Empyema formed, by Wounds of " the Thorax, inflicted either by a Spear, Dagger, or Dart, ſo " long as the Matter of the Ulcer is diſcharged externally by " the original Wound, then the Pus is eaſily evacuated; and, if " the internal and external Parts are healed together, the Patient " is reſtored to Health. But if the external Part is healed, but " not the internal, the Patient has an Empyema formed. But " if both the internal and external Parts are healed together, and " the Cicatrix within remains weak, rough, and livid, the Ulcer " ſometimes recurs, and the Patient is ſeized with an Em- " pyema."

From this Paſſage 'tis ſufficiently obvious, that an equable and firm Conſolidation of the internal and external Parts of the Wound ought not to be attempted by Tents; but by ſuch a Poſture of the Body, that the Fluids, contained in the Cavity of the Wound, may, by their own Weight, fall to the external Aperture of the Wound; and when the Bottom of the Wound is lower than its Orifice, and when this Misfortune cannot be corrected by the Poſture of the Patient, then by Compreſſes applied to the Bottom of the Wound, and proper Bandage, the Humours are to be forced to its Orifice; and thus, by expelling the Fluids, the Parts in the Bottom of the Wound, being brought into Contact, eaſily grow together. The Pus, in the mean time, continually diſcharg'd from the Orifice of the Wound, will hinder it from cloſing, before the internal Parts are healed. But if the internal Surface of the Wound, being ſordid, requires Depuration before a Conſolidation can be expected, then the Remedies ſpecified under the Article VULNUS for that Purpoſe, are to be uſed, and their Uſe is to be perſiſted in, till the Pus diſcharged is white, mild, viſcid, ſmooth, equal, and without Smell. Then, by a gentle and gradual Compreſſion from the Bottom to the Orifice of the Wound, its Conſolidation is to be attempted.

That a Wound has penetrated into the Cavity of the Breaſt, may be known, firſt, by comparing the Cauſe with the Largeneſs of the Wound; ſecondly, by means of a Probe, after the Body is reduced to the ſame Poſture in which the Patient received the Wound; thirdly, by a ſtrong Inſpiration of Air into the Lungs, whilſt the Wound is clos'd, upon which, if the Mouth and Noſtrils are ſhut, and the Wound ſuddenly uncovered, the Air in the Cavity of the Breaſt is diſcharged from the Wound, and frequently with a Noiſe; fourthly, by Injection; fifthly, by an Emphyſema, when the Air, contained in the Cavity of the Breaſt, being continually increaſed by the Action of the wounded Lungs, rarefied, compreſſed by Inſpiration, hinder'd from a free Evacuation thro' the Wound, and at the Lips of the Wound forced into the cellular Membrane, occaſions frequently, that the whole Body is raiſed into a livid, ſmooth Tumor, which renders him eleven Inches larger; but this Tumor does not affect the Soles of the Feet, and the Palms of the Hands; ſee *Acad. Reg. Sc.* 1713. *Hiſt.* where we have an Account of a mortal Emphyſema, from a Fracture of the Ribs, without any Injury done to the Skin; and, ſixthly, from a Diſcharge of frothy Blood.

Great Caution is requiſite in determining, whether a Wound has penetrated into the Cavity of the Thorax, or not; for the Cavity of the Thorax, before, aſcends much higher than in the poſterior Parts. Hence ſhameful Errors have happened, when Wounds were thought to penetrate into the Cavity of the Thorax, whilſt they only paſſed into that of the Abdomen. Of this we have a memorable Inſtance in Mr. *Ruyſch's Obſervationum Anatom. Chirurg. Centur. Obſervat.* 65. from which Obſervation, 'tis certain, that the Situation and Diſpoſition of the Diaphragm ought to be duly known, in order to determine, whether a Wound has penetrated into the Cavity of the Thorax, or not.

But Wounds may penetrate into the Cavity of the Thorax, when, being inflicted on the Abdomen, they paſs thro' the Diaphragm; but of this there are no certain Signs, ſince ſuch Misfortunes are generally only diſcovered after the Death of the Patient; Inſtances of this are ſpecified under the Article VULNUS. Or Wounds perforating the Thorax, properly ſo called, paſs into its Cavities: Theſe we are here treating of, and they may be known by the following Signs.

1. *By comparing the Cauſe with the Largeneſs of the Wound:* As almoſt all Inſtruments, with which Wounds are inflicted by Puncture, are of a conical Figure, 'tis ſufficiently obvious, that the Largeneſs of the Wound, compared with the wounding Inſtrument, may inform us how far ſuch an Inſtrument has penetrated. But this Sign may prove fallacious, if the Wound is among the Muſcles upon the Ribs; for in this Caſe a great Part of the Inſtrument may penetrate into the Muſcles, without entering into the Cavity of the Thorax.

2. *By means of a Probe, after the Body is reduced to the Poſture in which the Patient received the Wound:* This Sign we have already conſidered both in this Article, and under the Article VULNUS, where 'tis ſhewn, that, by a Change of Poſture, the Muſcles change their Situation, and the Fat preſſed into the Wound may eaſily obſtruct the Probe.

3. *By a ſtrong Inſpiration of the Air into the Lungs, whilſt the Wound is cloſed:* We have already, in the Beginning of this Article, conſidered this Sign; but in making ſuch a Trial, we are to take care, that the Air do not enter the Cavity of the Thorax; for when the Lips of the Wound are ſeparated, and the Thorax dilated by Inſpiration, the Air may eaſily enter, tho' it had not before found a Paſſage; for in fat Perſons, when a Wound penetrates into the Cavity of the Thorax, the Fat, upon withdrawing the Inſtrument, ſo blocks up the Wound, that the Air cannot enter. Hence, when an Attempt is made this way, the Lips of the Wound are carefully to be compreſſed; then the Patient is to retain the Breath drawn in by a ſtrong Inſpiration; then, cloſing his Mouth and Noſtrils, he is to make a ſtrong Effort of Expiration; then the retained Air, expanded by the Heat, will violently dilate the Lungs. Hence they will compreſs the Air between the Pleura and the Lungs, which is, alſo, rarefied by the Heat of the Place; then, uncovering the Wound, there is no Fear, that the Air will, thro' the external Wound, enter the Cavity of the Thorax, becauſe the diſtended Lungs will be everywhere apply'd to the Pleura, if there is already no Air in the Cavity of the Breaſt: But if any Portion of Air has already entered, this Air, rarefied by the Heat, and preſſed upon by the dilated Lungs, will be more than a Balance for the Preſſure of the external Atmoſphere, and be diſcharged impetuouſly from the Wound. But if the Wound is ſuch, that there is a free Ingreſs of the Air into the Cavity of the Thorax, and is not, at the ſame time, much larger than the Aperture of the Glottis, ſee VULNUS, the Air will go and come thro' the Aperture of the Wound, with a manifeſt Hiſſing.

4. *By Injection:* We have already treated of this Sign.

5. *By an Emphyſema:* Under the Article CAPUT, this ſurpriſing Symptom is ſaid ſometimes to ſucceed Wounds of the Head; but happens far more frequently in Wounds of the Breaſt, which penetrate into the Cavity of the Thorax; in which Caſe the *Emphyſema* may, in a ſhort time, be diffuſed over all the Body; for when Air enters the Cavity of the Thorax through the Wound, and when the external Aperture is clos'd up by adheſive Plaiſters, or Fat, the Air, rarefied by the Heat of the Place, often makes a Way for it ſelf thro' the Membrana Adipoſa. But large Tumors of this Kind are moſt frequently produced, if the Air-veſſels of the Lungs, injured by the Wound, have depoſited the inſpired Air in the Cavities of the Breaſt; for, in this Caſe, the Diſorder is every Moment increaſed. In the Works of *Ambroſe Paré, Lib.* 10. and in the Memoirs of the *Acad. des Sciences*, for the Year 1713. there are Inſtances which ſufficiently confirm, that *Emphyſemas* frequently ſucceed Wounds of the Breaſt, eſpecially if the Wound admits Air into the Cavity of the Thorax, whilſt, at the ſame time, the free Egreſs of the Air is by any means obſtructed. But 'tis certain, from ſuch Obſervations, that the largeſt Tumors of this Kind are formed, if the Lungs, being wounded, convey the inſpired Air into the Cavity of the Breaſt, eſpecially when there is not a great Hæmorrhage; for when there is, the Blood, falling into the Cavity of the Thorax, and filling it, prevents ſuch an Accumulation of Air in the Cavity of the Breaſt, as is ſufficient for inflating the whole Body. Hence, alſo, appears the Reaſon, why, if a Wound of the Thorax is ſuddenly ſucceeded by ſuch an *Emphyſema*, we may juſtly conclude, that it has penetrated into the Cavity of the Thorax. And,

6. *By a Diſcharge of frothy Blood.* This is a certain Sign that the Lungs are wounded; for when the Blood-veſſels of the Lungs are wounded, the Blood, flowing out of them, and mixing with the Air of the Air-veſſels of the Lungs, froths. Hence, in ſuch a Caſe, the Patient either expectorates a frothy Blood through the Aſpera Arteria, or ſuch a Blood is copiouſly diſcharged. But the Lungs cannot be hurt, unleſs the wounding Inſtrument has penetrated into the Cavity of the Thorax, except the Lungs adhere to the Pleura in that Part where the Wound is inflicted, as is already obſerved. *Virgil*, in his *Æneid. Lib.* 9. has beautifully painted this Caſe, when he deſcribes *Antiphates* as wounded by *Turnus*.

——*volat Itala Cornus*
Aera per tenerum, Stomachoque infixa ſub altum
Pectus abit: reddit Specus atri Vulneris Undam
Spumantem, & fixo ferrum in Pulmone tepeſcit.

Fat

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For the ſame Reaſon, if in any Diſorder a frothy Blood is expectorated, we conclude that it comes from the Lungs.

The Effects of ſuch Wounds are frequently, firſt, a Preſſure of the Air, which has entered upon the Lungs, which are, by that means, rendered unfit for carrying on Reſpiration, and the Circulation of the Blood; ſecondly, an Effuſion and Accumulation of Blood in the Thorax; thirdly, a Putrefaction of the extravaſated, heated, moved, and every way pent up Blood; fourthly, hence a Maceration, Corroſion, Corruption, and *Fœtor* of the Pleura, Lungs, Mediaſtinum, Diaphragm, and Pericardium; fifthly, an infinite Number of Diſeaſes ariſing from theſe Circumſtances; and, ſixthly, a Spitting of Blood.

In this Paragraph are enumerated the Misfortunes, ſometimes, obſerved to ſucceed Wounds penetrating the Cavity of the Thorax; all which principally depend either on the Admiſſion of the Air, or an Extravaſation of the Humours.

1. *As for the Preſſure of the Air, which has entered upon the Lungs*, under the Article VULNUS, 'tis ſhewn, that, in a ſound Perſon, there is naturally no Air between the Lungs and Pleura; and that this Circumſtance was requiſite, that the Lungs when the Breaſt is dilated, might be diſtended by the Air, which enters by the Glottis. Hence, as ſoon as, by a Wound of the Thorax, the Air is admitted into the Cavity of the Breaſt, the free Expanſion of the Lungs is hindered, and, in large Wounds, totally deſtroy'd. Under the laſt-quoted Article, 'tis, alſo, ſhewn how far, and under what Limitation, this is true; for if the Air can enter very freely into the Wound, the Lungs cannot be dilated at all. If thro' a ſmaller Wound, a leſs Quantity of Air enters, than that convey'd thro' the Aperture of the Glottis, there will be ſome Expanſion of the Lungs, tho' not ſo great as in a natural State. *Galen*, in his Treatiſe *de Anatom. Adminiſtrat. Lib.* 8. *Cap.* 3. has beautifully expreſſed this in the following manner: "Now it is evident, that, in Inſpiration by the Mouth of an "Animal, ſo much is defeated or loſt, by means of the Wound, "as is equal to the Quantity of the circumambient Air, which "flows into the Thorax thro' the Wound, inſtead of Inſpiration "by the Mouth; and that the leſs is drawn in by Inſpiration, the "leſs muſt, alſo, be diſcharged in Expiration; and the more the Ex-"piration is decreaſed, the ſhorter the Voice muſt of courſe be." If the Air, convey'd into the Cavity of the Breaſt, cannot again, by whatever Cauſe, be diſcharged, thro' the Wound, this Air, being rarefied by the Heat, will be expanded, and, by ſtrongly compreſſing the Lungs, hinder Inſpiration, and the Dilatation of the Lungs by that means; which, after we are brought into the World, is requiſite, that the Blood expelled from the Right Ventricle of the Heart, may paſs freely thro' the narroweſt Parts of the pulmonary Artery. The Reaſon of all theſe Circumſtances is eaſily deduced from a Knowledge of the Properties of the Air, and thoſe Things which in Phyſiology are ſhewn to be neceſſary to Reſpiration, and a free Circulation of the Blood thro' the Veſſels of the Lungs.

2. *As for the Effuſion and Accumulation of Blood in the Thorax*; if, for Inſtance, the intercoſtal Arteries are injur'd, a large Quantity of Blood may be collected in the Thorax; for the adjacent Heart, with great Force, throws the Blood into theſe Arteries. The Motion of the Thorax, in Reſpiration, hinders theſe wounded Arteries from remaining in a State of Reſt, and being ſoon contracted. Now, if the Blood-veſſels of the Lungs ſhould be cut, 'tis ſufficiently obvious, that a large Quantity of Blood muſt ſuddenly be accumulated; but if the large Blood-veſſels, running from the Heart, ſhould be wounded, Death would ſoon enſue. The Blood thus poured out from the Veſſels, unleſs diſcharged thro' the external Aperture of the Wound, will be collected in the Cavity of the Thorax, and hinder the free Dilatation of the Lungs. Hence a violent Uneaſineſs and Impediment of Reſpiration will be produced.

3. *As for the Putrefraction of the extravaſated Blood*; the Blood, thus extravaſated, is lodged in a Part which is warm, moiſt, and continually moved by Reſpiration. Hence it muſt eaſily degenerate into a putrid Corruption; eſpecially ſince, thro' Wounds penetrating into the Cavity of the Thorax, the Air almoſt continually enters; as, alſo, if the Air-veſſels of the Lungs, being wounded, convey the inſpired Air into the Cavity of the Breaſt, Chirurgical Obſervations ſufficiently evince, that ſuch extravaſated Blood ſoon becomes putrid. Thus *Hippocrates*, in his Treatiſe *de Morbis, Cap.* 2. informs us, "that Blood, flowing from a "Wound or Vein into the Thorax, muſt neceſſarily become "corrupted."

4. *As for the Maceration of the Pleura, Lungs, Mediaſtinum, and Diaphragm*; the ſudden Corruption of the extravaſated Blood will every Moment be increaſed; for in theſe Parts there is a violent Heat, on account of the Vicinity of the vital Viſcera: Hence the Blood will be changed into an highly putrid Ichor. The Lungs ſituated in this gangrenous corrupted Liquor will be macerated, and rendered putrid: So, alſo, will the Pericardium, Pleura, and other Parts mentioned. 'Tis ſhewn, in the preceding Paragraph, that Blood thus extravaſated may be ſoon corrupted; and 'tis certain from Experience, that it is capable of acquiring the greateſt Degree of Corruption. Inſtances confirming this are found in *Sculter. Armament. Chirurg. Obſerv.* 43. *ibid. Obſ.* 50. and in *Hildani Obſervat. Chirurg. Centur.* 2. *Obſerv.* 27.

As for the infinite Number of Diſorders ariſing from theſe Circumſtances; the extravaſated Humours may, by compreſſing, or, if they have acquired a putrid Acrimony, by corroding, diſturb, or even aboliſh, all the Functions of the Viſcera ſituated here. Hence may ariſe violent Dyſpnœas, exceſſive Palpitations of the Heart, intolerable Anxieties, Inflammations, Exulcerations, and Gangrenes of theſe Parts. The extravaſated Blood, alſo, by the Heat and Length of Time becoming putrid and attenuated, may be reſorbed by the bibulous Veins on the Surface of theſe Parts, mixed with the Blood, and induce a malignant Cacochymy. Hence ariſe acute putrid Fevers, ſurpriſing Tranſlations of the putrid Matter to other Parts of the Body, a Phthiſis, an Atrophy, and Death. Hence we juſtly conclude, that numberleſs Diſeaſes, even of the worſt Kind, may ariſe from an Extravaſation of the Humours in the Cavity of the Thorax.

As for a Spitting of Blood; if, immediately after the Infliction of the Wound, Blood is ſpit, 'tis a Sign, that the Lungs are wounded, eſpecially if the Blood is frothy. Hence, if the Veſſels of the Lungs are wounded, the Blood may fall down into the Cavity of the Breaſt, unleſs the Lungs adhere to the Pleura in that Part where the Wound was inflicted. If, a few Days after the Infliction of the Wound, a bloody Matter is expectorated, this may happen, becauſe the extravaſated Blood, being, by the Heat and Length of Time attenuated, may be reſorbed by the Veſſels of the Lungs. How this happens, we ſhall not pretend to determine: 'Tis, however, certain, that an Empyema has been cured by an Expectoration of purulent Spit. In a true Pleuriſy, yellow Spit, mixed with bloody Streaks, has been often obſerved to remove the Diſorder, as is certain from practical Obſervations. Hence 'tis obvious, that Blood extravaſated in the Cavity of the Thorax may produce a Spitting of Blood.

The Signs of Blood extravaſated in the Cavity of the Thorax are, firſt, an Orthopnœa; ſecondly, the Patient's lying moſt commodiouſly on his Back, with Difficulty on the wounded Side, and the abſolute Impoſſibility of his lying on the ſound Side; thirdly, the Conſequences already ſaid to attend ſuch a Wound; fourthly, a Weight in the Septum; fifthly, the Fluctuation of Matter; ſixthly, the Nature and Situation of the Wound inflicted; ſeventhly, the great Weakneſs of the Patient, accompanied with Paleneſs, and a cold Sweat; and, eighthly, the continual Increaſe of almoſt all the Symptoms.

After it is determined, that a Wound has penetrated into the Cavity of the Thorax, it is next, with equal Care and Accuracy, to be examined, whether, in conſequence of an Aperture of the Veſſels, there is not a conſiderable Quantity of extravaſated Blood, lodged in the Cavity of the Thorax. Nor is it always eaſy to determine this, ſince many of the Signs, to be afterwards ſpecified, may prove fallacious: Hence a Concurrence of many of them is requiſite to eſtabliſh any thing certain in this Caſe. But that much Harm may be done by the Phyſician's or Surgeon's Error, in the Diagnoſtic, is ſufficiently obvious, ſince the extravaſated Blood ought to be evacuated either by the Wound already made, or by making a new Aperture. But if this is attempted, when there is no Blood in the Cavity of the Breaſt, the Air, which, in this Caſe, is always injurious, is admitted, and the Wound is irritated. Hence all Circumſtances ought to be carefully adverted to, leſt the Patient ſhould be expoſed to unneceſſary Pain, and the Reputation of the Phyſician endangered.

As for an Orthopnœa; this is a difficult and ſnorting Reſpiration, which can only be performed with the Neck and Thorax in an erect Poſture; and which always denotes, that the free Expanſion of the Lungs, by the inſpired Air, is hindered, by whatever Cauſe this happens. But as the Blood, extravaſated in the Cavity of the Thorax, poſſeſſes that Space which the dilated Lungs ought to fill, 'tis ſufficiently obvious, that a difficult Reſpiration muſt ariſe from ſuch a Circumſtance. But when the Patient remains in an erect Poſture, the Diaphragm is, by the Weight of the extravaſated Blood, depreſſed, and the Cavity of the Thorax by that means enlarged. Hence at that time there may happen ſome Expanſion of the Lungs, at leaſt a greater than in any other Poſture of the Body. But this Sign, conſidered by itſelf, may prove fallacious; for the Air entering the Cavity of the Breaſt, and hindering the free Expanſion of the Lungs, may produce an Orthopnœa. A ſpaſmodic Conſtriction of the Lungs in aſthmatic Patients, alſo, produces the ſame Diſorder.

2. *As for the Patient's lying moſt commodiouſly on his Back*; this Sign is of great Importance; for the Diaphragm, deſcending very far towards the poſterior Parts of the Body, greatly increaſes the Capacity of the Thorax. Hence the Blood extravaſated in the Cavity of the Thorax, when the Patient lies on his Back, ſpontaneouſly falls to the inferior and poſterior Parts of the Thorax, and that Part of the Diaphragm is more eaſily preſſed downwards; for the middle and tendinous Part of the Diaphragm, to which the Pericardium adheres by a broad Baſis, cannot be eaſily depreſſed, as is obſerved under the Article VULNUS. Hence

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Hence 'tis obvious, that, in this Poſture, the extravaſated Blood is moſt commodiouſly diſpoſed of. Whilſt the Patient lies on the wounded Side, that Poſture is more uneaſy, tho' ſtill tolerable; but if he lies on the ſound Side, the extravaſated Blood will preſs the Mediaſtinum and Pericardium towards the other Cavity of the Breaſt: Hence its Capacity will be diminiſhed, and the Difficulty of Reſpiration increaſed, which when the Patient perceives, he is forced to change the Poſture of his Body, for fear of a Suffocation.

3. *As for the Conſequences already deſcribed in the preceding Paragraph*; theſe principally depend on the Corruption of the extravaſated Blood, and the Taint communicated to the Viſcera, by ſuch a putrid Gore. Hence, by the Signs, the Preſſure of extravaſated Blood is known, but often too late.

4. *As for the Weight perceived in the Diaphragm*; when the Patient is in an erect Poſture, the extravaſated Blood, by its Weight, preſſes the Diaphragm downwards. Hence a Senſe of the incumbent Weight is perceived, and a Pain produced about thoſe Parts to which the Diaphragm adheres. In conſequence of the Depreſſion of the Diaphragm, there, alſo, appears a Tumor of the Abdomen on the Side affected. Hence in an Empyema, ſometimes the Diaphragm depreſſed, and gradually moved, and more diſtended by the collected Pus, renders the Abdomen ſo protuberant, that the Diſorder reſembles that Species of Dropſy, called *Aſcites*.

5. *As for the Fluctuation of the peccant Matter*; when there is a Suſpicion, that Pus is lodged in the Cavities of the Breaſt, *Hippocrates*, in his Treatiſe *de Morbis*, *Lib.* 2. *Cap.* 6. orders the Patient to be waſhed with a large Quantity of warm Water, and placed in a firm Chair; then, whilſt an Aſſiſtant holds his Hands, and ſhakes the Trunk of his Body, the Phyſician is to liſten on what Side the Noiſe is to be heard. In the ſame Part, *Cap.* 24. he preſcribes the ſame Method, in order to diſcover a latent Dropſy of the Breaſt, and determine the particular Part, by opening which, the Serum accumulated in the Breaſt may be evacuated. But it is ſufficiently apparent, that this Sign may, ſometimes, prove fallacious, when extravaſated Blood is collected in the Cavity of the Breaſt; for this Blood, by Stagnation, becomes grumous, in conſequence of which its Fluctuation is, with Difficulty, perceived. Beſides, if the Breaſt is full of Blood, no Sound, in conſequence of the Plenitude, can be heard, upon ſhaking the Thorax. Hence, in *Coac. Prænot.* N° 432. he gives the following excellent Caution: "Thoſe Perſons labouring "under an Empyema, in whom, upon ſhaking the Shoulders, a "great Noiſe is heard, contain a ſmaller Quantity of Pus, than "thoſe in whom, when afflicted with a greater Difficulty of "Breathing, tho' their Colour is better, only a ſmall Noiſe is perceived. But thoſe in whom no Noiſe is perceived, whilſt there "is a violent Difficulty of Breathing, and a livid State of the Nails, "are full of Pus, and conſequently in a dangerous Condition."

6. *As for the Nature and Situation of the inflicted Wound*; when, from Anatomy, we know the Place of the Wound, and the Direction of the wounding Inſtrument thro' the Parts, it is eaſy to determine, whether large Arteries or Veins are wounded or not. Thus the large Trunks of the intercoſtal Arteries run near the inferior Margin of the Ribs. The internal mammary Arteries are placed behind the Cartilages of the Ribs, on each Side of the Sternum, about a Finger's-breadth from that Bone; and the large Vein, diſtinguiſhed by the Name *Azygos*, is ſituated on the Right Side of the Vertebræ of the Back: And from a due Acquaintance with this Diſpoſition of the Parts, the greater or ſmaller Danger of the Wound is determined.

7. *As for the Weakneſs of the Patient, accompanied with Paleneſs, and a cold Sweat*; ſome Perſons are ſo timorous and faint-hearted, as to fall into a Deliquium, upon ſeeing the Wound of another; and ſuch Perſons, even when wounded very gently, are eaſily ſeized with all theſe Symptoms. But they are ſoon reſtored by ſprinkling cold Water upon them, or by exhibiting a ſtimulating Cardiac. Nor does the Weakneſs, ariſing from this Cauſe, continue long. But when, after a Wound penetrating into the Cavity of the Thorax, there is a great Weakneſs, a Paleneſs and Contraction of the Face, a Paleneſs and Languor of the Eyes, a cold Sweat, appearing in Drops, eſpecially on the Face and Breaſt, and a hardly perceptible Pulſe, we then know that, from the wounded Veſſels, ſo large a Quantity of Blood is diſcharged, that hardly any returns to the Heart, but almoſt the Whole is diſcharged from the Body, or lodged in the Cavities of the Breaſt. In this Caſe, the Danger is very great. Thus *Hippocrates*, in *Prorrhet. Lib.* 1. N° 130. tells us, "that Wounds of the Tho"rax diſcharging Blood, and accompanied with Sweats, are of "the worſt Kind, ſince ſuch Patients unexpectedly die, whilſt "ſpeaking." In *Coac. Prænot.* N° 328. he affirms the ſame thing; in which Paſſage, inſtead of ἐφιδρῶντα, the Word ἐπιῤῥιγῶντα occurs. In his *Prorrhet.* alſo, *Lib.* 1. N° 153. he informs us, that Rigors ſucceed large Hæmorrhages, and affirms, that the Rigor ſtops the Effuſion of the Blood. But from what has been ſaid, 'tis obvious, that in this Paſſage, he only treats of Hæmorrhages from the Noſe. But when, in Wounds of the Thorax, the large Veſſels, ſo contiguous to the Heart, are wounded, 'tis ſufficiently obvious, that a Rigor may ſucceed a large Hæmorrhage, tho' the Effuſion of the Blood cannot, in ſuch a Caſe, be ſtopt by its means.

8. *As for the perpetual Increaſe of almoſt all the Symptoms*; in the Thorax are very large Blood-veſſels, and thoſe very contiguous to the Heart. Hence, if theſe Veſſels are wounded, the Blood will be diſcharged into the Cavities of the Thorax. Hence the Compreſſion of the Lungs, the Anxiety and Dyſpnœa, will be continually increaſed, till, in conſequence of a Diminution of the Patient's Strength, or a Contraction of the wounded Veſſels, the Effuſion of Blood ceaſes. Many Symptoms may, in ſuch Caſes be, alſo, produced by concomitant Dread or Anger, which, however, are gradually leſſened; but the the Symptoms ariſing from the Effuſion of Blood will continue as long as the Hæmorrhage laſts; for which Reaſon, the perpetual Increaſe of the Symptoms is juſtly reckoned among the Signs, by which it is known, that there is an Effuſion of Blood into the Cavities of the Thorax. But when the Signs evince, that the Wound has penetrated into the larger Cavities of the Body, and it is to be dreaded, leſt the wounded Veſſels ſhould diſcharge large Quantities of Blood internally, tho' there ſhould be no Hæmorrhage externally, great Caution is neceſſary in making a Prognoſtic, leſt the Reputation of the Surgeon or Phyſician ſhould be riſqued in pronouncing, that nothing was to be feared; for often ſuch Patients die unexpectedly, and their Deaths will, by ſuch as defend the Cauſe of him who inflicted the Wound, be imputed to their Ignorance. With how great Accuracy all Phenomena ought to be adverted to in order to determine, whether extravaſated Blood is lodged in the Cavities of the Breaſt, is obvious from this, that the moſt skilful Surgeons have ſometimes been deceived. Thus Mr. *Mery*, in the Memoirs *de l'Acad. des Scien.* for the Year 1713. ingenuouſly confeſſes, that he was deceived in a Caſe of this Nature; ſince, in a young Man wounded with a Sword in the ſuperior and anterior Part of the Right Arm, three Hours after the Infliction of the Wound, he ſaw ſo many, and ſo violent Symptoms, that he concluded the Cavity of the Thorax filled with extravaſated Blood, and reſolved to perform the Operation for the *Empyema*. But the Event ſhew'd, that he was miſtaken, ſince in eight Days time the Wound was perfectly healed. 'Tis highly probable, that in this Patient a Wound in the Tendon of the pectoral Muſcle produced the intenſe Pain, and the Difficulty of Reſpiration.

Blood extravaſated in the Cavities of the Thorax is with all Expedition to be evacuated; firſt, by a proper Situation, Motion, and Effort of the Body; ſecondly, by Suction thro' a flexible Tube, perforated on the Sides, and blunt at the End; thirdly, by an Injection of diluting, reſolvent, and depurating Liquors; fourthly, by a Dilatation of the Wound; and, fifthly, by another Aperture between the ſecond and third of the inferior true Ribs, about four Fingers-breadths from the Vertebræ, and the inferior Angle of the Omoplata, made by a cutting Inſtrument, and making the Inciſion parallel to the Ribs in the middle Space between them, and directing the Edge downwards.

After 'tis certain from the Signs ſpecified in the preceding Paragraph, that extravaſated Blood is lodged in the Cavity of the Thorax, the great Intention of Cure is, with all Expedition, to eliminate it, leſt it ſhould prove injurious by its Corruption, or a Compreſſion of the Parts. But 'tis to be obſerved, that this Evacuation of the Blood is not to be made, till 'tis certain, that the wounded Veſſels diſcharge no more Blood; for it would be of no Importance to evacuate the Blood, if the as yet open Mouths of the wounded Veſſels are ſo irritated by the Motion of the Body, the Suction and the Injection, as ſtill to diſcharge Blood. But when the Pulſe is pretty ſtrong and equable, the Extremities of the Body warm, the Patient afflicted with no Cough nor Spaſms; and if he enjoys a conſiderable Degree of Strength, we know, that the internal Spaſm has ceaſed, and that the Meaſures for the Evacuation of the Blood lodged in the Cavity of the Thorax may be ſafely taken.

'Tis, alſo, to be doubted, whether the extravaſated Blood ought always to be evacuated by Art; ſince, 'tis certain from Obſervation, that Blood, Pus, and Water, have been gradually removed from the Cavity of the Thorax, being reſorb'd by the Veins, and afterwards eliminated by Sweat, Urine, and other Methods. Inſtances of this are found in *Fabricius ab Aquapendente*, *Opera Chirurg. Part.* 1. *Lib.* 2. *Cap.* 22. and in *Belloſte's Hoſpital Surgeon*. 'Tis, alſo, certain from Experience, that in ſuch Caſes, copious Diſcharges of Urine, and profuſe Sweats, have proved highly beneficial. Various Obſervations, of this Kind, occur in practical Authors, but theſe are ſufficient to prove, that Nature, which is often ſufficient for anſwering her own Ends, has, in very ſurpriſing Manners, cured ſuch Wounds. But lucky Accidents of this Kind rarely happen; and the Phyſician ought carefully to obſerve whether he diſcovers any ſuch Efforts of Nature: However, if this Work was always left to Nature alone, 'tis certain that many would die, in conſequence of the corrupted and extravaſated Blood, preying upon the vital Viſcera, who might otherwiſe have been preſerved, if that Blood had been evacuated. Now this Evacuation is to be attempted by the following Means.

1. *By*

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1. *By the Posture, Motion, and Effort of the Body:* If the Blood, in the Cavity of the Thorax, is as yet fluid, and the Wound, being pretty large, does not run obliquely through the Integuments, but penetrates directly, the Blood will be spontaneously discharged, if the Patient is put in such a Posture, as that the Blood may, by its Weight, fall down to the Aperture of the Wound. Hence, in such Cases, the most skilful Surgeons, for some Hours, apply nothing at all to the Orifice of the Wound, that, thus the Blood may be freely discharged. *Dionis*, in his *Operations de Chirurgie*, informs us, that, he treated, in this manner, a Man, who, with a Sword, received a Wound under his left Pap, which penetrated into the Cavity of the Thorax; for, when he found the Cavity of the Breast full of Blood, after dilating the Orifice of the Wound, he ordered the Patient to lie upon it all Night, and next Morning found the Cavity of the Thorax entirely empty, after which the Cure succeeded very happily. *Ambrose Paré*, in Book 10. informs us, that he ordered a Man wounded in the same manner, to be placed with his Feet high, and his Head low; after which passing his Fingers into the Orifice of the Wound, and removing a Thrombus of coagulated Blood, he evacuated the extravasated Blood, and preserved the Patient from imminent Suffocation.

But this Evacuation of the extravasated Blood, through the Orifice of the Wound, is much assisted, if by a broad Bandage, or the Application of the Hands, the Abdomen is compress'd, if the Patient long retains the inclosed Air, and closing the Glottis makes a strong Effort of Expiration, for thus the Lungs being greatly dilated, and the Diaphragm pressed upwards, the Blood contained in the Cavity of the Thorax, is expressed through the Aperture of the Wound.

2. *By Suction through a flexible Tube*; As it is often incommodious, in many Wounds of the Thorax, to retain the Patient in such a Situation, that the extravasated Blood may, by its Weight, be discharged through the Aperture of the Wound, Surgeons have invented another Method: Thus *Scultetus, in Armament. Chirug. Tab.* 12. *Fig.* 9, and 10, has exhibited a flexile Tube of Gold, perforated on the Sides, and its Cavity filled with a golden Probe, that it might be commodiously introduced without an Angustation, or Lessening of its Diameter. This Tube is to be cautiously introduced, as far as possible, into the Cavity of the Thorax, and then withdrawing the Probe, the extravasated Blood is to be extracted, either by Suction of the Mouth, or the Application of a Syringe. The Point of the Pipe must be obtuse, lest it should injure the Lungs. Pipes, for this Purpose, may, also, be prepared of Lead, or flexible Leather, and a Whalebone Probe. *Scultetus*, in the same Work, *Obs.* 42, informs us, that by such an Instrument, bended into an Angle, after extracting the Probe, he without any Suction, evacuated a large Quantity of Blood from the Cavity of the Thorax.

3. *By the Injection of diluting, resolvent, and depurating Liquors.* 'Tis sufficiently obvious, that the two preceding Methods can only be used, where the extravasated Blood is as yet fluid; but, if it is formed into grumous Concretions, it cannot easily be discharged from the Wound, much less enter the Perforations of the Pipe introduced. 'Tis true, indeed, the coagulated Blood is afterwards spontaneously dissolved, but, at the same time, it becomes putrid; a Circumstance, which in this Case, would be highly injurious; and often on account of the Compression of the Lungs, there is so great an Anxiety, that this spontaneous Resolution of the concreted Blood could not be waited for. In such a Case, they inject tepid Water with Honey, and the Addition of a little Salt and Venice Soap. For this Purpose,

Take of common Honey, two Ounces; of Venice Soap, two Drams; of Sea-salt, four Drams; and of Rain-Water, twelve Ounces; mix all together.

Or,

Take of Sal Ammoniac and Nitre, each three Drams; of the recent Urine of a sound Person, twelve Ounces; and of common Honey, two Ounces; mix all together.

Or,

Take of Aloes, dissolved in Water, duly depurated from its resinous Fæces, and, again gently instilled, four Drams; of Sal Ammoniac, two Drams; of Borax, two Drams; of pure Honey, two Ounces; of Rain-water, nine Ounces; and of French White-wine, two Ounces; Mix all together.

These Liquors, when injected, are by the Motion of Respiration agitated, and, as it were, triturated with the grumous Concretions, which are thus so resolved, that they may be discharged, through the Aperture of the Wound, together with the injected Liquor. According to various Intentions, the Liquor to be injected may be prepared of different Ingredients: For the Dilution and Resolution of the concreted Blood, tepid Water, with Honey, and a little Salt, is sufficient; but when the extravasated Blood, begins to become putrid, it is most expedient to inject Infusions of Sordium, Rue, Horehound and other similar antiseptic and gently detergent Substances, with the Addition of a little Vinegar.

4. *By the Dilatation of the Wound.* This Method is treated of under the Article VULNUS.

5. *By another Aperture made in the Manner directed.* When the State and Condition of the Wound is such, that the Matter collected, in the Cavity of the Thorax, cannot be evacuated, then, the only Measure to be taken, is to make a new Incision in a Part of the Thorax, to which, in consequence of its natural Figure, the contained Fluids may naturally fall. This is principally requisite, when the Wound is inflicted in the superior Part of the Thorax; for in this Case, 'tis hardly possible, that the extravasated Blood should be discharged through the Aperture of the Wound. But, as the Cavity of the Thorax, in the posterior Parts, descends very deep, in consequence of the Situation of the Diaphragm; hence, it is, that in such a low Place, the Cavity of the Thorax may be penetrated, without any Wound in the Diaphragm, which adheres to the inferior Ribs; and from the posterior Part of the Thorax, ascending towards the anterior Parts, is formed a pretty acute Angle, with the Bodies of the Vertebræ. But lest the strong Muscles, called the Sacrolumbalis, and the Longissimus Dorsi, which being placed at each Side of the Spine of the Back, and ascending through the Loins and Back, should be wounded, this Aperture of the Thorax ought at least to be three Fingers Breadths from the Vertebræ. This Aperture is generally made between the second and third, or the third and fourth of the inferior spurious Ribs. But, since, according to *Albinus*, in *Histor. Musculorum Hominis*, *Lib.* 3. *Cap.* 81. the Diaphragm on the Right Side, ascends higher into the Thorax than on the Left; hence, when the Operation of the Paracentesis, in the Thorax, is performed in the Right Side, the Incision is generally made between the third and fourth Rib; but on the Left Side, between the second and third of the spurious Ribs; as *Van Solingen*, in his *Manuale Operat. Cap.* 1. advises. Perhaps, for this Reason, *Hippocrates*, when inquiring on what Side the Operation for the *Empyema* ought to be perform'd, wished that the Pus was contained in the Left, as he informs us, in his Treatise *de Morbis*, *L.* 2. *C.* 16. *Dionis*, also, in his *Cours d'Operation de Chirurg.* ordered this Operation to be performed between the third and fourth Rib: hence there seems to be an Error in the Text of *Boerhaave* in this Place, since the Operation is ordered to be perform'd between the second and third of the true Ribs, because afterwards the Operation is order'd to be performed far lower; and because under the Article *Empyema*, where the Perforation of the Thorax is treated of, the Part specified, is between the fifth and sixth, or fifth and fourth of the inferior Ribs; which Place, according to *Paulus Ægineta*, *Lib.* 6. *Cap.* 44. is by some open'd for the Cure of an Empyema, tho', as he tells us, the Operation is succeeded by sudden Death, or, incurable Fistulas: Hence I am of Opinion, that the Words of the Text ought to be *between the second and third of the inferior spurious Ribs*, unless in this Passage we were to suppose, that the Perforation was to be made in the anterior Part of the Thorax; in which Case the Operation is best perform'd between the second and third of the inferior true Ribs, as *Dionis*, also, informs us, in his *Cours d'Operations de Chirurgie*, where he only mentions this Advantage, as attending the Operation perform'd in this Place, that the Patient can in the Surgeon's Absence take care of his own Wound. But the greater Deepness of the posterior Parts of the Thorax, and the spontaneous Tendency of the extravasated Blood to the Aperture of the Wound, whilst the Patient lies, readily convince any thinking Person, that a Perforation of the Thorax in the posterior and inferior Parts is preferable. Tho' *Hippocrates*, in his Treatise *de Morbis*, *Lib.* 2. *Cap.* 16. when treating of the Cure of an Empyema, does not exactly specify the Part to be open'd; yet he determines, that the Operation ought to be perform'd in the posterior and inferior Parts; for, says he, "if, on account of the Thickness and "Redundance of the Pus, there is no Noise perceiv'd, as it "sometimes happens, which ever of the Sides is tumid and "painful, is to be open'd in the lowest Part between the Ribs, "rather on the posterior, than the anterior Part of the Tu-"mor, that a more easy Discharge of the Pus may be procur'd." And, in the same Work, *Lib.* 3. *Cap. penult.* when treating of the same Disease, he tells us, "that we must make an Incision "or cauterize the Patient, as near the Septum as possible, taking "care however not to wound it."

When, in a Dropsy of the Breast, the Waters are to be evacuated, *Hippocrates*, in his Treatise *de intern. Affection. Cap.* 24. orders an Incision to be made in the Integuments lying above the third inferior Rib, which is then to be perforated with an acute Perforator, and a small Quantity of Water is to be evacuated: From which Passage 'tis sufficiently obvious, that *Hippocrates* made Choice of the lowest Part of the Thorax, as the most proper for an Evacuation of any Liquids contain'd in it.

The Place most proper for this Purpose is easily found by numbering the Ribs, when the Patient is naked; but 'tis not to be found without some Difficulty in fat Persons, and those labouring under an Emphysema; for which Reason Surgeons have fallen upon another Method of determining the Part. Thus *van Solingen*, in his *Manuele Operation*, *Cap.* 1. orders a Thread to be

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be convey'd from the Cartilago Enſiformis to the Spine of the Back; then he divides this Thread into three equal Parts, and determines the Part for the Operation to be two Thirds of the Length of the Thread from the Sternum. *Dionis*, in his *Cours d'Operations de Chirurgie*, *Demonſtrat.* 5. orders us to meaſure four Fingers-breadth from the lower Angle of the Omoplata, and the like Diſtance from the Spine of the Back, in order to find the proper Place for the Inciſion. But as the Scapula is moveable, and may change its Situation by the various Actions of the Muſcles adhering to it, 'tis ſufficiently obvious, that this Method is not always very certain. Hence 'tis more proper, when the Place is found, to examine with the Fingers, whether it correſponds to the Interſtice of the Ribs.

The proper Place for the Inciſion, when found, is generally mark'd with Ink, that it may not afterwards be miſtaken: But as the Ribs are moveable, 'tis ſufficiently obvious, that, by a Change of Poſture in the Body, the Situation of the Skin may be, alſo, alter'd. Hence *Hippocrates*, in his Treatiſe *de Morbis*, *Lib.* 3. *Cap. penult.* juſtly adviſes, "that, after the Part is "mark'd, we are to take care, that in cauterizing, or making "the Inciſion, the Figure of the Skin does not deceive us by a "Change of its Situation, either upwards or downwards." The Aperture ought to be made with a cutting, but not with a pungent Inſtrument, as in the Paracenteſis of the Abdomen, which is perform'd by a Steel Trocar, introduc'd into a Silver Canula; becauſe by this Method there would be great Danger of wounding the Lungs. But that the cutting Inſtrument may penetrate the Cavity of the Thorax, the Skin, the Panniculus Adipoſus, the Longiſſimus Dorſi, the intercoſtal Muſcles, and the Pleura muſt be cut; and, that this may be done ſafely, the Patient's Body is to be a little reclin'd towards the poſterior Parts, that the Skin may be looſe. Then the Surgeon is with his Fingers to elevate all the common Integuments, and, if poſſible, along with them, the Latiſſimus Dorſi; and make an Inciſion in them about three or four Fingers-breadth long. After this let the Body of the Patient be bended forwards, and at the ſame time a little towards the oppoſite Side, that the Ribs may recede the more from each other, and the intercoſtal Muſcles be ſtretch'd. Then with a Knife gently incurated, and the Back and Apex of which are to be cover'd with the fore Finger, the Surgeon is to cut the ſtretch'd intercoſtal Muſcle and Pleura, penetrating cautiouſly, and with a ſmall Wound, into the Cavity of the Thorax, leſt he ſhould wound the Lungs. As ſoon as the Pleura is cut, the Lungs immediately collapſe, and recede from the Ribs; after which the Wound may be ſafely dilated. The Inciſion to be made parallel to the Ribs, in the middle Space between them, and with the Edge of the Knife downwards, in order to avoid the intercoſtal Veſſels, adjacent to the inferior Part of the ſuperior Rib, which is ſulcated.

By an Obſervation of theſe Cautions, the Operation is moſt ſafely perform'd: In practical Authors, there are, however, ſome Directions of leſs Moment to be found. Thus *Fabricius ab Aquapendente*, *in operat. Chirurg. Cap.* 45. orders the Patient at the time the Pleura is cutting, to expire ſtrongly, that the Lungs, by this means, receding from the Pleura, may not be hurt by the Knife. But from Phyſiology 'tis now known, that the Lungs, both in Inſpiration and Expiration, are continually contiguous to the Pleura, and that they are expanded according to the Dilatation of the Breaſt. *Hippocrates*, in *Aphor.* 27. *Sect.* 6. informs us, that if dropſical Patients, or thoſe labouring under an Empyema, are cut or cauteriz'd, and the Water or Pus diſcharg'd all at once, they die. Hence ſome have ordered, that the extravaſated Blood ſhould not be evacuated all at once, but at different times. But in an Empyema, or Dropſy of the Breaſt, the Lungs are long macerated by the Pus, or extravaſated Serum. Hence, if the Whole of this Sordes is at once evacuated, the Blood, ſuddenly dilating the almoſt conſum'd Veſſels of the Lungs, may burſt them, and occaſion a ſudden Death. But in Wounds of the Thorax, when this Operation is perform'd, we rarely defer it ſo long, that this is to be dreaded; and 'tis certain from many Chirurgical Operations, that all the extravaſated Blood has been in this manner ſafely and ſuddely evacuated. It much facilitates this Operation, that the extravaſated Humours, by compreſſing the Lungs, and by their Weight depreſſing the Diaphragm, occaſion that upon cutting the Pleura theſe Parts are not ſo eaſily wounded.

We have already obſerv'd, that the Lungs ſometimes adhere to the Pleura. Now, if the Paracenteſis ſhould be perform'd in the Part where ſuch an Adheſion is, 'tis ſufficiently obvious, that great Difficulty muſt ariſe from ſuch a Circumſtance. Moſt Chirurgical Authors, who have wrote on this Subject, inform us, that this has happen'd to them; in which Caſe they order the Surgeon, by introducing his Finger into the Wound, cautiouſly to ſeparate the Lungs from the Pleura, to which they adher'd; and certainly nothing elſe remains to be done, tho' it ſeems cruel thus to lacerate concreted Parts in a living Perſon; for, unleſs this was done, the Paracenteſis would be performed in vain. *Hippocrates*, in his Treatiſe *de Morbis*, has a ſurpriſing Paſſage relating to this; for he there deſcribes the Diſorders which ariſe when the Lungs fall upon the Side [ὁ πλεύμων πεσσπεσών ἐς τοπλευρὴν] which ſufficiently agree with thoſe Phenomena, which appear after acute inflammatory Diſorders, in which the Lungs adhere to the Pleura: And the Method of Cure he preſcribes for ſuch Diſorders, alſo, confirms this; but he afterwards adds, "But if this Miſfortune ſhould happen by a Wound, or by an Inciſion for the "Empyema, we are to fix a Bladder to a Pipe, introduce it into "the Wound, blow it full, and force it forwards by means of "a ſolid tin Probe."

From this Paſſage we may conclude, that *Hippocrates*, in order to divide the Lungs from the Pleura, introduc'd a folded Bladder into the Wound, and afterwards blow'd into it, that thus, being diſtended in the Cavity of the Thorax, the Lungs might be ſeparated from the Pleura, to which they adher'd. Or, at leaſt, we may hence deduce, that the Antients attempted the Separation of the Lungs from the Pleura, for fear of ſuch a Concretion. Some adviſe the Integuments, and Intercoſtal Muſcles, to be prudently cut without wounding the Pleura, and then carefully to examine the denudated Part of the Pleura, whether from its unuſual Thickneſs or Calloſity, 'tis to be dreaded, that in this Part the Lungs adhere to the Pleura; in which Caſe, it would be expedient to lengthen the Inciſion, till we come to a Part free from the Adheſion. But ſuch an Operation is more eaſily demonſtrated on a Carcaſs, than perform'd on a living Perſon, on whom it ſeems very cruel to perform, ſo flow an Inciſion thro' the Integuments and Muſcles: But there are ſometimes ſo ſurpriſing Concretions of the Lungs to the Pleura, as to render this Operation entirely uſeleſs. Thus, ſays *van Swieten*, in a young Gentleman who died of an Apoplexy after a Spitting of Blood, I ſaw the middle Lobe of the Right Side of the Lungs every-where ſo adhering to the Pleura, that the Right Cavity of the Thorax was divided into two diſtinct Cavities. If in ſuch a Caſe a Wound had been made in the ſuperior Part of the Right Breaſt, 'tis ſufficiently obvious, that the Paracenteſis muſt have been of no Service, if perform'd in that Part. But Caſes of this kind rarely occur, and Errors of this ſort are not to be aſcrib'd to the Surgeon, ſince ſuch a latent Circumſtance could not be diſcover'd by any Signs.

After the Perforation of the Thorax, all the Meaſures before preſcribed are to be us'd in order to evacuate the extravaſated Blood. But if Liquors proper for diſſolving concreted Blood are to be injected, they may be commodiouſly convey'd thro' the Wound firſt inflicted, becauſe 'tis pretty high in the Thorax; after which they are eaſily diſcharg'd thro' the new Aperture.

If Wounds of the Thorax are diſtended by no Tents, and uncover'd rarely; if the Acceſs of the Air is prevented; if by artificial Suction, and a due Effort of Reſpiration, the admitted Air is expel'd; and if Cold is avoided; they are ſoon and efficaciouſly cur'd, if they are curable.

We have already ſpecified the Reaſons, for which the Uſe of Tents is to be condemn'd, in ſuch Wounds as do not penetrate into the Thorax; but when it ſeems expedient, not all at once, but at different times, to evacuate the Liquids contain'd in the Cavity of the Thorax, which rarely, tho' ſometimes, happens in Wounds of the Breaſt, Water, or Pus, as *Hippocrates* obſerves, being collected in it, then a Tent is to be put into the Wound, that the Matter ſtagnating in the Breaſt may be evacuated at Pleaſure. And *Belloſte*, in his Hoſpital Surgeon, tho' in all other Caſes he condemns the Uſe of Tents, yet adviſes the Uſe of them the firſt Day after the Paracenteſis, leſt the new Inciſion of the Pleura ſhould be concreted; but after this they always ſeem to be hurtful, ſince by abſorbing the Fluids they become tumid, and by the Motion of the Thorax, rub upon the Libs of the Wound, which by that means become callous, and render the Cure more difficult. Some pretend that, by means of Tents, the Acceſs of the Air into the Cavity of the Thorax is prevented; but every time the dreſſing is renew'd, that Fluid enters freely thro' the open Wound, and when its Return is hinder'd by the Application of a new Tent, it is dilated by the Heat, often finds ſtrange ways for its eſcape, and may produce the worſt of Emphyſemas. 'Tis therefore, better to cover the Wound with a plain Pledget, and if leave a free Paſſage for the Humours to be diſcharg'd; and if the Wound is pretty large, we are to take care, that the Pledget do not fall into the Cavity of the Breaſt, which ſome practitioners Authors affirm to have happen'd with reſpect to Tents. Thus *Tulpius*, in *Obſerv. Medicin. Lib.* 2. *Cap.* 15. informs us, that a certain *Daniſh* Gentleman being wounded in the Thorax, and not duly taken care of by his Surgeon, a Tent fell into the Cavity of his Thorax, which he expectorated ſix Months after, and afterwards enjoy'd a State of perfect Health. Another inſtance of the like Nature is found in *Hildanus*, *Obſ. Chirurg. Cent.* 1. *Obſ.* 46.

Another Step, neceſſary in this Caſe, is, to hinder the Air from entering the Cavity of the Thorax; and, if it has entered, to evacu-

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evacuate it. So long as the extravasated Liquids are not evacuated from the Cavity of the Breast, 'tis impossible to hinder the Ingress of the Air, because a free Discharge of the extravasated Humours is requisite; but when no more Matter is discharg'd thro' the Wound, then the Air in the Thorax between the Lungs and Pleura is to be evacuated, and its future Ingress carefully prevented; for 'tis certain from Physiology, that, in order to a free Expantion of the Lungs, by the inspir'd Air, there must be no Air in the Cavity of the Thorax. This Evacuation of the Air may be obtain'd by Suction, but best of all in the following manner: The Lips of the Wound are to be clos'd by the Fingers, that no Air can enter; then the Patient is, by a slow and profound Inspiration, to draw in a large Quantity of Air, and retain it in the Lungs as long as he can. The Air thus retain'd, being rarefied by the Heat, will expand the Lungs, and by that means compress the Air between the Pleura and the Lungs. If, in this Case, before the Patient performs Expiration, the Lips of the Wound are separated, a large Quantity of the Air in the Cavity of the Thorax, will be express'd: Upon this, the Lips of the Wound are to be immediately clos'd; and then let the Patient perform Expiration, but not before. If this Method is several times repeated, all the Air in the Cavity of the Breast will be expel'd, and the Patient will immediately find his Respiration easier: When all the Air is thus expel'd, we suddenly apply an adhesive Plaister, at the time the Patient retains the inspir'd Air in his Lungs; for then the distended Lungs, being contiguous to the Pleura, will hinder the Ingress of the Air thro' the Wound. This Plaister is left on as long as possible; and if there is a Necessity for a new Dressing, a similar Plaister is to be applied, with the same Cautions; and certainly rare Dressing is in no Wounds more beneficial, than in those which penetrate into the Cavity of the Thorax. The Efficacy of this Method is prov'd by the Experiments made on live Animals, mention'd under the Article VULNUS; for when, by Perforating both Sides of the Thorax with a large Wound, Respiration ceas'd, and the Animal seem'd dead, upon extracting the Air from the Cavities of the Breast, the Animal reviv'd, and Respiration was immediately restor'd.

But, as, all the Parts contain'd in the Thorax, lying near the Heart, the Source of Heat, are continually cherish'd with a gentle Warmth, we are to take care, that they be not injur'd by an unusual Cold in dressing the Wound. Hence, the State of the Air is always to be kept warm, especially when the Dressings are renew'd.

By these Measures, Wounds penetrating into the Cavity of the Thorax, tho' of the most dangerous Kind, and accompanied with the most terrible Symptoms, have been sometimes cur'd; nor are we easily to despair, since Instances of very surprising Cures of this Kind are recorded by Authors, as is shewn under the Article VULNUS. That great Harm is always to be dreaded from such Wounds, is certain; since the vital Viscera, the Heart, the Lungs, and the largest Blood-vessels, are situated in the Thorax. But as Wounds of the Heart are not always absolutely mortal, [tho' *Pliny*, in his *Natural History*, *Lib.* 11. *Cap.* 37. affirms, that they are instantaneously fatal] 'tis obvious, that some Hopes remain in the most desperate Wounds, since Men, who, in consequence of Wounds, of the largest Blood-vessels, have been given over for dead, have yet recover'd, when no Methods were us'd for their Relief, nor any Cordials exhibited in order to recruit their Strength. 'Tis not only certain from Experience, that violent Wounds of the Thorax have been cur'd; but, also, that they have been cur'd in a very short time: Of this there is a memorable Instance in *Bellofte's* Hospital Surgeon, *Part* 2. *Cap.* 8. The same Author, also, furnishes us with various Cases, which evince, that the most desperate Wounds of the Thorax, and such as are accompanied with the worst of Symptoms, have sometimes been happily cur'd, by rare Dressing without the Use of Tents.

When all the violent Symptoms before-mention'd are prevented:

The worst Consequences which appear after Wounds of the Thorax, arise almost only from the Ingress of Air into the Cavities of the Thorax; or from the extravasated Liquors, which either lessen the Cavities of the Thorax, or by their Corruption injure the contain'd Viscera. When such Wounds are not clos'd up with Tents, the extravasated Blood is freely discharg'd. Rare Dressing and the Cautions already directed, prevent the Ingress of the Air, which, when admitted, may be evacuated in the manner before directed. Hence, a successful Cure is always obtain'd, unless such Parts as are absolutely necessary to Life are wounded; and it is at the same time obvious, that the History and Cure of Wounds of the Thorax afford great Light in many Diseases of the Breast, and Viscera contain'd in it. *Van Sweiten.*

FROM HEISTER.

Wounds of the Thorax are of three Sorts; 1. External; 2. Penetrating into the Cavity of the Thorax, without injuring its Contents; or, 3. The Internal Parts are also injur'd.

The Wound may be known to be external only, by several Methods: 1. By the Sight; 2. If no Sound is perceived from the Wound in breathing; 3. If neither the Finger, nor a Probe, can be introduced into the Cavities of the Thorax; 4. If, upon injecting warm Water with a Syringe, it immediately returns; or, 5. When no violent Disorders appear, such as Difficulty of breathing, Faintings, and other dangerous Symptoms. All these Circumstances being carefully examined, if it appears that the Wound is only external, it may be dressed with a digestive Ointment, and vulnerary Balsam, and treated in the same manner with other slight Wounds.

Sometimes indeed it happens, that external Wounds of this kind run deep and obliquely between the Muscles and Ribs, so that the Wound cannot without Difficulty be cleansed from the Blood and Matter: Hence, the contained Matter may putrefy, and corrode the neighbouring Parts; and produce Ulcers, and incurable Fistulas; or, by forcing its Way through the Pleura, into the Cavity of the Thorax, it may occasion an Empyema, Phthisis, or even Death.

In order to prevent these Disorders, particular Care must be taken to clear the Sinuses of the Wound of the Blood and Matter, either by Compression, by the Suction of an healthy Person, by extracting it with a Syringe, or, if necessary, by making farther Incision. The Remainder of the Cure is to be performed as we above directed. The most proper Bandage, for securing the Dressings, is the Napkin with the Scapular, which, however, must not be made too tight, that the Discharge of the corrupt Matter may be facilitated.

Various Sorts of Syringes, for extracting the Blood, are used in this Case. Some are straight, others crooked. Some Surgeons use a tin Syringe, about twice as large as that represented in *Tab.* XXVII. *Fig.* 8. whose Mouth B is larger than the Pipe AA, and may be either triangular, round, or oval; its true Size is exhibited at *Fig.* 9. In using this Syringe, its Mouth must be exactly fitted to the Orifice of the Wound, and the Blood extracted by drawing out the Sucker of the Syringe. It is therefore necessary to be provided with Mouths of different Sizes, accommodated to different Wounds. Concerning the Excellency and Use of these Syringes, it may be proper to consult *Anel* in his Treatise call'd *L'Art de succer les Playes.*

When the Wound penetrates into the Cavity of the Thorax, it may be discovered, 1. By the Sight, when you can plainly see into the Cavity; 2. By Feeling, when the Finger or Probe may be introduced into the Cavity; 3. By Hearing, when the Patient makes a particular sort of Noise in drawing his Breath; 4. From the Agitation of the Flame of a Candle, or of Feathers, when held near the Wound, in Respiration, or in Coughing; 5. From the Injection of warm Water, when it appears to be received into the Belly; or lastly, from a Difficulty of breathing, Faintings, and other violent Symptoms; which may proceed from the Compression of the Lungs, or from the Blood collected in the Cavity, or from both these Causes.

When Blood is discharged into the Cavity of the Thorax, which, however, is not always the Case, the Expansion of the Lungs, Respiration, and the Circulation of the Blood in the Lungs, must be impeded; and the Blood being by these means inspissated in the Lungs, Death must be the Consequence. But, though the Quantity of Blood lodged in the Thorax should not be sufficient to obstruct the Breathing, or Course of the Blood in the Lungs, yet still there is great Danger, that this Blood should by Degrees putrefy, and consequently corrupt and consume the Diaphragm, the Pleura, or the Lungs, producing many violent Symptoms, and at last inevitable Death.

When Blood has been discharged into the Thorax, it appears from the following Symptoms; 1. When there is a Difficulty of breathing, and the Patient cannot draw his Breath, unless whilst sitting upright; 2. When the Patient lies easiest upon his Back, or wounded Side, and finds lying upon the sound Side, extremely troublesome, or even impracticable; 3. When the Patient feels the Diaphragm, as if it were, pressed with a Weight; 4. If the Fluctuation and Agitation of the Blood is perceived inwardly, upon turning the Body round; and, lastly, If little or no Blood flows outwardly from the Wound.

When from these Signs it appears, that Blood is collected in the Cavity of the Thorax, care must be immediately taken to procure its Discharge. 1. If, therefore, the middle or lower Part of the Thorax be wounded, and the Orifice be large, the Patient should be laid upon the wounded Side, and advised to draw his Breath vehemently, or endeavour to cough. *Dionis*, in his Surgery, relates, that, in a Case of this Kind, he left the Patient inclined all Night, upon the Wound without dressing, and afterwards happily completed the Cure; and *La Motte* gives us another Instance of this Kind in his *Observationes Chirurgicæ*. If the Passage should be obstructed by Clots of Blood, they must be remov'd with the Finger, or a Probe, or sucked out with the Syringe. 2. If the Blood be already too thick to flow out of the Wound, a digesting and attenuating Injection becomes necessary; which may be made of a Decoction of Barley, common Honey, Honey of Roses, mixed with a little Soap, which must be several times injected, and again discharged, till all the Blood appears to be extracted out of the Cavity. For this Purpose, the Syringe of *Tab.* XXVII. *Fig.* 8. may be used, with the Pipes describ'd in *Fig.* 10 and 11.

3. If

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3. If the Wound be so narrow, or oblique, as not to permit the Discharge of the contained Blood, it must be cautiously enlarged by Incision, either with the common Knife, and grooved Probe, or with such Knives as are represented in *Tab.* V. *Fig.* 3. 4. and 5. But particular Care must be taken, not to give the Patient too much Fatigue, by endeavouring to discharge the extravasated Blood all at once; and therefore, if he be weak, the Blood may be extracted at Intervals; especially, if he be subject to Swoonings. In the mean time it will be proper to introduce into the Wound, to keep it open, a Leaden or Silver Pipe, like those of *Tab.* XXIII. Q, R, S; or, if more convenient, a flexible one, like that of *Tab.* XXVI. *Fig.* 9. Some, instead of these Pipes, use Tents armed with a String, or a long narrow Bit of Linen, dressing with Plaisters and Compresses, securing the Whole with the Napkin and Scapular, till no Blood or Matter appears upon the Dressings; and then the Wound may be conveniently healed.

But if the Wound should be inflicted in the upper Part of the Thorax, or between the superior Ribs, then this Method of inclining the Body upon the Wound has generally but little Effect, in discharging the Blood contained in the Cavity, as the Patient must be turned upon his Head. If, therefore, the Suction of the Syringe should prove ineffectual, another Aperture should be made in the lower Part of the Thorax, by Incision, which Operation is called Paracentesis. This Aperture, is generally made between the second and third Rib, if the Blood is lodged in the Left Side; or between the third or fourth, if in the Right Side, about the Distance of an Hand's-breadth from the Spine of the Back, which should be marked with Ink. The Trocar is generally used on this Occasion, which must be introduced above the Rib into the Breast, very cautiously and gently; then retracting the triangular Part of the Instrument, leave the Pipe, for the Discharge of the confined Blood, which may, also, be extracted by the Suction of a Syringe. But as the Lungs may be readily injured by the Trocar, it may, therefore, be safer, first to open the Integuments with the Knife, and then gently to make an Incision through the Intercostal Muscles, and at last through the Pleura itself; taking particular Care, that the Lungs, which often adhere to the Pleura, be not at the same time wounded. This Operation being properly performed, proceed in the rest of the Cure as before directed; and the superior Wound must be healed expeditiously, with a vulnerary Balsam, and proper Plaisters.

As the Lungs frequently adhere to the Pleura, this Operation requires particular Circumspection in the Surgeon. The Pleura, therefore, must be opened with the greatest Tenderness; and then the Surgeon must examine, whether the adhesive Lungs can be separated with the Finger or Probe. For if the Lungs are too firmly connected with the Pleura, all the Pains taken to perforate the Thorax, in order to discharge the Blood, prove ineffectual

If by these means the Thorax can be cleansed, the Wound needs only be dressed once a Day, and that with all Expedition, in order to prevent the Intrusion of the external Air. It will, also, be necessary for warming and attenuating the external Air, to have a Chasing-dish of hot Coals placed near the Thorax, at the time of Dressing; sometimes, likewise, it may be necessary to extract the Air, that has obtained Admittance into the Wound, with a Syringe; and the Patient should be advised to draw his Breath with more than ordinary Vehemence. Then the Wound must, without Delay, be dressed with a vulnerary Balsam, Plaisters and Compresses, and the Whole must be secured with a proper Bandage: This Method must be continued, till the Wound is almost entirely conglutinated.

When any of the Contents of the Thorax are wounded, as the Heart, the Aorta, the Vena Cava, the Pulmonary Vein or Artery, the Diaphragm, or a large Portion of the Lungs, Death is generally too sudden for all the Art of the Surgeon. But if the Lungs are only slightly wounded, that is, if only the smaller Ramifications of the Aspera Arteria, and pulmonary Vein, are divided, the Danger is indeed very great, though the Wound may be curable; and a Cure of this Kind is completed more by the Strength of Nature, than the Skill of the Surgeon.

We may conclude, that the Lungs are wounded, when a large Quantity of frothy Blood is discharged at the Mouth, and attended with a short Cough; when the Blood appears florid at the Wound; and when Breathing is performed with a particular Noise. The Duty of the Surgeon, in such Wounds, seems to consist in extracting the Blood collected in the Cavity of the Thorax, and treating the Wound externally, as we have already directed; for the internal Wound will admit of being dress'd. In such Cases, therefore, when the Effusion of Blood spontaneously ceases, the Patients may be preserved, though, after their Recovery, they are extremely subject to Ulcers of the Lungs, and Consumptions. But when the larger Blood-vessels of the Lungs are divided, the Violence of the Hæmorrhage either occasions immediate Death; or, if it ceases a little, it is liable to return, and cut off the Patient in a more lingering manner. In order to prevent such a Relapse, the Patient ought to keep himself quiet for some Days; to speak little or none; to take lenient internal Medicines, proper for stopping an Hæmorrhage; to avoid every thing that is acrid or heating; and, if the Patient has Strength sufficient, Venesection should be performed.

Sometimes the divided Part of the Lungs is protruded into the Wound of the Thorax, where it firmly adheres, as *Fontanus*, *Tulpius*, and *Ruysch*, have observed; nor is it proper to repress it, lest the Blood should be discharged into the Cavity of the Thorax. It will, therefore, be safer to allow this Part of the Lungs to remain in the external Wound, and to treat it with a vulnerary Balsam, scrap'd Lint, and Plaisters, earnestly advising the Patient to keep himself quiet; and thus will the wounded Part of the Lungs by degrees be conglutinated with the external Wound. But if the wounded Part of the Lungs should be protruded without the Thorax, it should be carefully wrapped up in a Piece of soft Linen, and a Ligature should be made with a strong Thread above the Linen, cutting off all that projects below the Ligature. The remaining sound Part of the Lungs should be gently returned by the Finger into the Cavity of the Thorax, leaving the Thread of the Ligature hanging without the external Wound, which must be kept open with a Tent, till the Ligature can be extracted; the Cavity of the Thorax must be carefully deterged; and the Wound must be treated as before directed. *Hildanus*, in *Cent.* 2. *Obs.* 32. relates a Case of this Kind, where the Part of the Lungs prolapsed without the Thorax, being become black and corrupted, was extirpated with a red-hot Knife; and the Patient, after the sound Part of the Lungs was returned, and the Wound healed, recovered his former Health.

The most proper internal Medicines, after the Hæmorrhage is stopped, are vulnerary Decoctions, adapted to promote the Cure, with frequent Doses of *Lucatellus*'s Balsam, or that of *Mecibomius*, observing at the same time a strict Regulation with regard to Diet. By these means the Surgeon may sometimes preserve his Patient, at least as far as the Nature of the Circumstances will permit.

See the Method of performing the PARACENTESIS of the THORAX under the Article EMPYEMA; and the BANDAGES proper for this Part under the Article FASCIA.

THOREXIS, θώρηξις, from θώρηξ, the Thorax, in *Hippocrates*, signifies either simply a drinking of Wine, or else a drinking of Wine purer than ordinary, because, as a Reason for the Etymology, it warms and strengthens the Thorax, and arms it, as it were, with a Breast-plate. Θώρηξις, in *Galen*'s Exegesis, is expounded by ὕπνωσις ἥδιον ἢ μέθη, "Drunkenness with Wine." But *Erotian*, from 2 *Aph.* 21. and 7 *Aph.* 48. expounds it by οἰνοποσία, "a drinking of Wine." *Galen*, also, *Com. ad* 2 *Aph.* 21. says that *Hippocrates* usually calls drinking of Wine *Thorexis*, and Drinkers of Wine *Thoressomeni*; and, *Com. ad* 7. *Aph.* 48. he says θώρηξις, τυλέγιν ἥδιον ἁπλῶς ὄινου ἢ ἀκρατέστερου. "*Thorexis* "is either simply a drinking of Wine, or else of Wine purer "than ordinary." The Word, also, as well as the Verbs θωρέω, θωρήκομαι, (*thoreco, thorecomai*) often signify and import Ebriety; for instance, *Lib.* 2. *de Morbis*, θωρηξίων ἀπεχέσθω ἢ ἀφροσύνων, "let him abstain from Ebriety and Venery:" And, *ibid.* ἢν γε ἐκ θωρηξίων ταῦτα πάθη, "if these Disorders proceed "from Drunkenness:" And, 4 *Epid.* ὅτοι ἐθώρηξαν, "they were "inebriated:" And, 2 *Prorrhet.* ἢ θωρηχθῇ, "or shall be inebriated." Ἀκροθώρηκες (*Acrothoreces*), from ἄκρον, the Top or Extremity, and θώρηξ, the Thorax, with the Antients, were such as had drank but slightly, or were but just beginning to be inebriated; and *Erotian* says, that till his very time they called τὲς μὴ ἐπιπλέον οἰνομένες, "those who were not much overcome with Wine," *Acrothoreces*. And in *Aristotle*'s Problems, *Sect.* 3. *Prob.* 2. the *Acrothoreces*, Ἀκροθώρηκες are opposed τοῖς σφόδρα μεθύουσι, "to those who are very drunk." *Hesychius* and *Varinus* write the Word, also, θώρηξις, and *Thorixis*, and expound it by οἰνοποσία, *Oenoposia*, a drinking of Wine. *Festus* expounds it by *Oenoposia*, a drinking out. Male Sperm.

THOROS, θορὸς, from θορέω, to gush out. Male Sperm.

THORYBOS, θόρυβος, is a Perturbation excited in the Body. Thus *Progn. & Coac.* 282. σφυγμὸς ἐν τῷ ὑποχονδρίῳ θόρυβον σημαίνει ἢ παραφροσύνην. "a Pulsation in the Hypochondrium "indicates some Perturbation, or a Delirium." Here *Galen* on the Passage says, θόρυβον μὲν σημαίνεσθαι, &c. "A Perturbation "is signify'd, which is one common Symptom of all dangerous "Cases, in which not only the Patients, but the Physicians "themselves are under a Perturbation, [θορυβεῖσθαι συμβαίνει] Θορυβώδεες γνῶμαι signify a disorder'd Mind, or a Mind very subject to Perturbation. And, 5 *Epid. T.* 94. we find θορυβώδες γέλως, "a disorderly Laughter," or a Laughter with a Perturbation, related as a Symptom of a Wound in the Breast, which proved mortal. The Word generally imports, as used by *Hippocrates*, a Perturbation of Mind. *Foesius.*

THRACIAN STONE. THRACIUS LAPIS. Offic. Gæbal. 30.

This Substance is produc'd in the River *Ponto* in *Scythia*, and, by *Dioscorides*, has the same Virtues with the Jet afterwards it. Authors entertain various Opinions concerning this Stone. *Matthiolus*, from *Galen*, introduces *Nicander* the Poet, as informing us, that if this Stone after Ignition is immers'd in Water, it will be all in a Flame; but is effectually extinguish'd by

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by an immediate Affuſion of Oil. But it is of no Uſe in Medicine, nor does *Nicander* aſcribe any Virtues to it, except that its fetid Smell, when us'd by way of Fumigation, baniſhes wild Beaſts. But *Matthiolus* concludes, that it is rather a fabulous than a real Stone, ſince neither he, nor any of his Friends, could find it in *Italy*. *Boetius de Boet* informs us, that ſome take it for the Jet, and others for the Pit-coal; and *Wormius* takes it for the ſame with the *Terra Ampelitis*. It is at preſent unknown in the Shops; but, as *Dioſcorides* gives it the ſame Virtues with Jet, ſo Jet may be us'd in its ſtead. *Dale.*

THRANOS, θρᾶνος. A Seat, Chair, or Stool. *Galen. Exeg.*

THRASI. A Name for the *Cyperus*; *rotundus*; *eſculentus*; *anguſtiſolius.*

THRASOS, θρᾶσος. *Hippocrates* uſes this Word to expreſs a certain Fierceneſs and Audacity of the Aſpect, or Eyes, in or on the Approach of a *Delirium.*

THRAUSMA, θραῦσμα from θραύω, to break. A Species of Gum Ammoniac, which is friable, and broke into ſmall Pieces.

THRINCOS, θρῖγκος, is expounded by περίβολος, περίφραγμα, a Circumvallation, Paliſade, Incloſure. The Word occurs in *Hippocrates*'s Epiſtles, where he ſays of the Tongue, that ὀχυρῆς ὀδόντων θριγκοῖσι πεφράχθαι, "it is guarded by the ſtrong Paliſade of the Teeth."

THRISSA, θρῖσσα. The ſame as ALOSA. The Shad-fiſh.

THRIX, θρίξ. An Hair.

THROMBOS, θρόμβος. A Grume, or Clot of Blood.

THRONOS, θρόνος, in *Hippocrates*, *Lib.* περὶ εὐχημ. is a high Seat, or a Seat in an high Place; where he directs to obſerve the Decubitures of the Sick, as in the following Words: οἱ μὲν γὰρ ἀνίεων ἐς θρόνους, οἱ δ' ἐ καλαγείους ἢ σκοτεινὺς τόπους· "Some of them (lie ſick) in high and airy, others in dark "and ſubterranean Places, or Seats." *Foeſius.*

THRONUS MARCELLIUS, in *Paulus Ægineta*, *L.* 7. *C.* 12. is the Name of a Paſtil there deſcrib'd.

THRYALLIS. A Name for the *Phlomis*; *fruticoſa*; *Salviæ folio longiore & anguſtiore.*

THRYMMA, θρύμμα, from θρύπτω, to break, is a Fragment, *Lib.* 1. περὶ γυν. *Heſychius* expounds the Word by κλάσμα πᾶρῆς, a Morſel of Bread; *Suidas* by τρύφος, *Tryphus*, a Fragment. *Foeſius.*

THUNUS. Offic. Aldrov. de Piſc. 112. Schonf. Ichth. 75. Jonſ. de Piſc. 4. Charlt. de Piſc. 6. *Thynnus*, Bellon. de Aquat. 106. Geſn. de Aquat. 967. Salv. de Aquat. 123. *Thynnus ſeu Thunnus.* Raii Ichth. 176. Ejuſd. Synop. Piſc. 57. *Orcynus.* Rondel. de Piſc. 1. 249. THE TUNNEY FISH, or SPANISH MACKAREL.

The Tunny, which the *Latins* call *Thunnus*, is a pretty large, heavy, big-belly Fiſh, which is plentiful in the *Mediterranean*, eſpecially in *Provence*, and at *Nice*, from whence comes what we ſell: There are, likewiſe, a great many of them upon the Coaſt of *Spain*. The Net being taken out of the Sea, the Fiſh die, not being able to live out of the Water; then they hang them up in the Air, open them, take out their Entrails, and take off the Head; and, having cut them in Pieces, broil them on large Gridirons, and fry them in Olive-oil; and, after having ſeaſoned them with Salt and Pepper, and Cloves, and ſome Bay-leaves, they put them into little Barrels, thus dreſs'd, and ready to eat with freſh Olive-oil, and a little Vinegar, or to tranſport into ſeveral Parts, where this is call'd *Sea Tunny.*

There are two Sorts which have no other Difference, but that ſome have the Black-bone taken out; and for that Reaſon are called bon'd Tunny, and are uſually put up in little white Wood-barrels, broad at the Bottom, and narrow at the Top; and that which is unbon'd, is in little round Barrels: Chooſe both Sorts new, firm, laid in good Oil, and the Fleſh white like Veal. Its Uſe is very common in *Europe*, and ſeveral other Parts of the World; as well becauſe it is ready to eat, as becauſe it is of an excellent Taſte like Veal. They commonly catch with the Tunny another Fiſh, which the *Provincials* call *Imperadro*, or Emperor; and Dolphins are, alſo, there to be ſeen.

Ariſtotle obſerves, that this Fiſh ſometimes goes up into Rivers. It is covered with large Scales cloſely united to one another, and feeds upon Weeds and Sea-plants. Some relate that this Fiſh ſees better with the Right Eye, than with the Left; and, that it is ſo cruel as to devour its own Young. Some Authors aſſure us, that it lives but two Years; but it is difficult to conceive, how, in ſo ſhort a Space of Time, it can acquire ſo large a Size.

The Tunny contains much Oil, and volatile Salt; is firm, ſhort, and of an excellent Taſte; and yields a nouriſhing, ſolid, and durable Food; and is reckoned to be good againſt Poiſon, the Stinging of Serpents, and the Bite of a mad Dog; but it is hard of Digeſtion. The moſt delicious and juicy Part is the lower Part of the Belly, but it is fatteſt; it adheres to the Stomach, relaxes and debilitates the Fibres, and therefore is not ſo wholſome as the reſt. It agrees with thoſe who are young, bilious, and ſanguine; who have good Stomachs, and are uſed to Exerciſe. *Lemery on Foods.*

The pickled Fleſh of the Tunny cures thoſe who are bitten by the Viper called *Præſter*; but the Patient is to vomit plentifully at every Turn with large Draughts of Wine; it is of great Efficacy, alſo, againſt the Bite of a Dog, bein rubbed on the Wound. *Dale* from *Dioſcorides.*

THUREÆ GLANDULÆ. The ſame as TOLLES.

THUS. Frankincenſe. See OLIBANUM.

THUYA. See ARBOR VITÆ.

THYE, θύη (the Plural of θύος) from θύω, to ſacrifice, in *Galen's Exegeſis*, are expounded by θυμιάματα, ἀρώματα, "Perfumes, Spices." *Heſychius* gives much the ſame Explication; only he puts θύματα (*Thymata*) for θυήματα (*Thyemata*); and θυήματα, he ſays, are τὰ ἐπιφερόμενα ἅλφιτα εἰς θυσίαν, "the "Cake offer'd in Sacrifice," Θύεα, in *Homer*, *Il.* Z, *Verſ.* 270. are expounded by the Scholiaſt θυμιάματα, θυσίαι, "Perfumes "(or Incenſe) Sacrifices."

Thye, *Thyeia*, *Thyia*, θύη, θυεία, θῦα, are alſo Names for a Mortar, *Lib.* 1. & 2. γυναικ. *Foeſius.*

THYEMA, θύημα. See the preceding Word.

THYITES LAPIS. Offic. Matth. 1386. *Thyites.* Boet. 415. De Laet. 142. Aldrov. Muſ. Metall. 670. THE GREEN STONE.

This Stone is of a greeniſh Colour, reſembling the Jaſper; tho', when diluted, it renders the Liquor us'd for that Purpoſe of a milky Colour. It is produc'd in *Ethiopia*, is of an highly pungent Quality, and, according to *Dioſcorides*, removes Specks and Dimneſs of the Eyes.

The Thyites of *Dioſcorides* is now unknown to us; but we do not find, that the Writers of former Ages were better acquainted with it. *Fuchſius* thinks, that it is the Lapis Turcicus; but this Opinion is excellently confuted by *Matthiolus*. *Agricola*, in *Lib.* 6. *de Nat. Foſſil.* thinks, that it is not at all different from the *Marochillius.*

THYLACOS, or THYLACION, θύλακος, or θυλάκιον. A Bag, or Pouch. *Thylacion* is us'd to expreſs the Bag form'd by the Membranes of the *Fœtus* at the Orifice of the *Pudenda*, before the Birth.

THYMA, θῦμα. A pruriginous Puſtule excited by Heat.

THYMALLUS. See ASCHIA.

THYMBRA. A Name for ſeveral Sorts of SATUREIA.

THYMBRA HISPANICA. See MASTICHINA.

THYMELÆA.

The Characters are;

The Leaves are entire, the Flower is monopetalous, as it were, Funnel-ſhaped, and quadrifid. The Ovary in the Centre of the Flower becomes an oval Fruit, full of Juice, or dry, and containing an oblong Seed.

Boerhaave mentions four Sorts of *Thymelæa*; which are,

1. Thymelæa; Lauri folio; ſemper virens; ſeu Laureola mas. *Tourn. Inſt.* 495. *Boerh. Ind. A.* 2. 213. *Laureola.* Offic. Ger. 1219. Emac. 1404. Park. Theat. 205. Raii Hiſt. 2. 1587. Synop. 3. 465. *Laureola ſemper virens, flore viridi, quibuſdam Laureola mas.* C. B. P. 462. *Laureola ſemper virens, flore luteolo.* J. B. 1. 564. *Daphnoides & Laureola.* Chab. 45. SPURGE-LAUREL.

This is a low Shrub, ſeldom growing above two or three Feet high; with a woody Stem about a Finger thick, covered with an Aſh-coloured Bark; it is divided towards the Top into ſeveral Branches, cloathed with long, thick, ſmooth, and ſhining green Leaves, which are ſet round the Tops of the Branches. The Flowers grow among theſe Leaves, being oblong greeniſh Tubes, divided at the Ends into four Segments, with a few yelloviſh Stamina in the middle, of a ſweet Smell; theſe are ſucceeded by ſmall oval Berries, of a blackiſh Colour when ripe. It flowers in *March* or *April*, and the Berries are ripe in *September*. The whole Plant is of an hot cauſtic Taſte, burning, and inflaming the Mouth and Throat. It grows in Woods and Thickets. The Leaves and Berries are uſed, though but rarely.

They purge Bile, choleric and ſerous Humours, with great Violence, both upwards and downwards; and, by ſome adventurous Perſons, are given in the Dropſy, and to evacuate tough Phlegm from the Lungs; but, being frequently attended with dangerous Conſequences, it is rarely preſcribed by judicious Phyſicians. *Miller's Bot. Off.*

This Plant has the Qualities of the *Daphnoides* of *Pliny* and *Dioſcorides*; for the Leaves vellicate and inflame the Mouth and Fauces. The ſame, taken inwardly, whether green or dry, purge Phlegm by Stool; and provoke Vomiting, and the Menſes. Being chewed, they attract Phlegm from the Head; and alſo, promote the menſtrual Flux. Fifteen of the Berries (five or ten, according to *Pliny*) are a Doſe for a Purge.

The Leaves taken inwardly are very hurtful to the Stomach, provoke Vomiting, and burn and injure the internal Parts. Some Empirics venture to uſe the Leaves and Berries, in hydropical Caſes, to evacuate ſerous Humours; but, ſays *J. Bauhine*, we ſhould be very cautious of exhibiting this Plant, or any Part of it, becauſe of its extraordinary Acrimony; which however, ſays *Ray*, may be corrected by macerating it in Vinegar.

This *Thymelæa*, firſt macerated in Vinegar, then dry'd and pulverized, and the Powder ſprinkled upon a Cancer, is found to be of Service in that Diſorder. Cold and repellent Remedies

are

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are proper in an occult Cancer, but not in an ulcerated one. *D. Bowle. Raii Hist. Plant.*

The Plant flowers in *February*, and the Bark, Leaves, and black oblong Berries, are used.

It is of an igneous, very acrid, exulcerating, and stimulating Quality; exciting Fevers; weakening the Force of the Heart, and the noble Parts; and purging Bile and bilious, Serosities with great Violence: It is corrected by Maceration in Acids. *Dale from Schroder.*

2. Thymelæa; Lauri folio deciduo; sive Laureola fœmina. *Tourn. Inst.* 595. *Boerh. Ind. A.* 2. 213. *Mezerion, Chamælæa.* Offic. *Chamælæa Germanica sive Mezerion.* Ger. 1216. Emac. 1402. Raii Hist. 2. 1587. *Chamælæa Germanica, sive Meserion vulgo.* Park. Theat. 201. *Laureola folio deciduo, flore purpureo, Officinis Laureola fœmina.* C. B. Pin. 462. *Laureola flore deciduo, sive Mezerion Germanicum.* J. B. 1. 566. MEZEREON, or SPURGE-OLIVE.

This is a low shrubby Tree, with many flexible Branches, seldom growing above four or five Feet high, shooting out Clusters of Flowers, all round the upper Parts of the Branches, early in the Spring, before the Leaves appear; they are of a pale Purple, or Peach-colour, of a single tubulous Leaf, cut into four Segments at the End; of a pleasant, sweet Smell, and are succeeded by small, longish, round Berries, of a red Colour. The Leaves grow thick together on the Tops of the Twigs, about two Inches long, and scarce half so broad at the End where they are broadest. The Root is full of Branches, and runs deep in the Earth; it is planted here in Gardens, but grows wild about *Geneva*, and the mountainous Parts of *Germany*; flowering in *February* and *March*. The Root, Bark, Leaves, and Berries, are used.

They all of them purge serous and choleric Humours very violently; and help the Dropsy, and inveterate Asthma; but, we having milder, gentler, and yet as prevalent Medicines, these are very rarely used. *Miller's Bot. Off.*

The Bark, Leaves, and red Berries, are used, and agree in Virtues with those of the former. *Dale.*

It is in great Esteem among us, on account of the beautiful Aspect, and pleasant Smell, of the Flowers; and is very studiously cultivated every-where in Gardens and Green-houses. The whole Plant, except the Flowers, has a strong Smell, and a very acrid and burning Taste. There is a Variety in the Colour of the Flowers, some being of a palish Red, others white; and the Berries are the *Cocci Cnidii*, or *Grana Cnidia*, of the Shops.

This Species is, like the other, of a very caustic and exulcerating Quality: Chewed in the Mouth, it burns the Fauces and Oesophagus, the troublesome Sensation and Impression from it lasting a long time, as we are assured by *Lobel*, and by Experience. It is corrected by macerating it four-and-twenty Hours in Vinegar, as the *Elleborus* and *Eluſa* are, or in the Juice of Pomegranates or Quinces, or of Purslane, or in Mucilage of the Seeds of *Psyllium*. Some correct it by infusing it in Wine, and afterwards drying it, others macerate it three Days in Vinegar, every Day pouring fresh Vinegar on it, and at last giving it a thorough washing with Water.

But the Leaves, Bark, and Berries, in what manner soever corrected and prepared, very seldom come in Use, on account of their Malignity; and are not to be exhibited, but for want of safer Medicines, and in desperate Cases, and even then with great Caution and Consideration. *Raii Hist. Plant.*

3. Thymelæa; Lauri Folio deciduo; flore albido; fructu flavescente.

4. Thymelæa; Alpina; linifolia; humilior; flore purpureo; odoratissima. *Tourn. Inst.* 594. *Boerh. Ind. A.* 2. 213. *Cneoron niger.* Offic. *Cneoron Matthioli.* Ger. Emac. 1596. *Cneoron Matthioli suffrutex.* J. B. 1. 570. *Thymelæa minor, sive Cneoron Matthioli.* Park. Theat. 201. *Thymelææ affinis facie externâ.* C. B. Pin. 463. Raii Hist. 2. 1589. ROCK-ROSE.

It is a beautiful Under-shrub, consisting of a Multitude of slender, flexible, surculous Branches, which shoot directly out of the Earth, and diffuse themselves on the Ground. The Leaves are disorderly disposed, nearly resembling those of the *Thymelæa vera*, at first of an unpleasant, afterwards of a better Taste, with very little or no Acrimony, as far as I could perceive by the Taste. The Flowers grow on the Tops of the small Branches, six, seven, or more, close together, and are tetrapetalous, of a red Colour inclining to purple, almost like the Flowers of the lesser Centaury, of an ungrateful and bitter Taste, but of a very beautiful Aspect, fragrant, and affecting the Head, if long smelled to. These are succeeded by a small Fruit, not unlike that of the *Thymelæa*, tho' not red, but white, and somewhat oblong, containing a Seed mix'd with an Ash-colour'd Membrane, round, and of the Size of a Grain of the *Thymelæa*. The Root is long, generally of the Thickness of the little Finger, sometimes blackish, but commonly yellowish, tough, and flexible, and sometimes slenderest in its upper Part: Whence proceed the flexible Branches, which are dispers'd on the Ground; and here-and-there, according to the Cavities of the *Alæ*, shoot forth yellowish Fibres of a competent Thickness.

It grows on many of the Mountains about *Vienna* in *Austria* in so great Abundance, that the Country-women gather the Flowers by Handfuls, and sell them in the Market, where they buy it to adorn their Dining-rooms: It flowers generally in *April*, and the Fruit is ripe in *June*; sometimes it flowers thrice in a Year. *Raii Hist. Plant.*

It agrees in Virtues with the *Chamælæa*. *Dale.*

The Antients us'd the Leaves of the *Thymelæa* to evacuate serous Humours; it is a most violent Cathartic, and is corrected with Sugar. *Hist. Plant. adscript. Boerh.*

Besides the foregoing Sorts of *Thymelæa*, *Dale* mentions the two following; which are,

1. THYMELÆA. Offic. Ger. 1217. Emac. 1403. Park. Theat. 201. Raii Hist. 2. 1588. *Thymelæa foliis Lini* C. B. P. 463. Tourn. Inst. 594. *Thymelæa Monspeliaca.* J. B. 591. SPURGE-FLAX.

This is a Shrub an Inch sometimes in Thickness, and a Cubit or more in Height, and divided into many slender, beautiful strait Twigs, a Cubit in Length, surrounded by evergreen Leaves, pretty well resembling those of Flax, but larger and broader, not blunt like those of the *Chamælæa*, nor so brittle, but mucronated, tough, and feeling somewhat gummy under the Teeth. The Flowers grow in great Plenty on the Ends of the Branches, and are tetrapetalous, white, nearly resembling those of the *Olea*, or Olive-tree, and generally hang in Clusters. The Fruit is sometimes of the Size of Myrtle-berries, but somewhat longer, green at first, but afterwards red as Coral, with a juicy Pulp, like that of Cherries, inclosing a Seed, cover'd with a black and frail Membrane, and containing a Medulla of a fervid Taste. The Root is hard and woody, and cover'd with a thick, but very tough and tenacious Bark, as is also the whole Plant.

It grows in *Italy*, and in *Provence* and *Languedoc* in *France*, in low Grounds, among other Shrubs, almost every-where. *Clusius* says, that it grows in rugged Places over all *Spain*.

The most skilful Botanists take the Fruit of this Plant to be the *Coccus Cnidius*, or *Granum Cnidium* of the Antients, tho' the Shops take the Berries of the *Mezereon* for the *Grana Cnidia*. The *Coccus Cnidius* is of a very caustic Quality, and burns the Fauces, whence we wonder, that Partridges and small Birds feed so greedily on the Berries of the Thymelæa. But the *Grana*, or Grains, are not the entire Berries, which perhaps are eatable, but the Seeds which are inclosed in the Berries. The Peasants of *Spain* catch vast Numbers of small Birds with this Seed, by Help of a crooked Rod, and some Lime, as we are inform'd by *Amatus* and *Clusius*. We are advis'd by *Camerarius*, to beware of eating the Root, because it proves mortal in a few Hours. *Raii Hist. Plant.*

It is cultivated with us in the Gardens of the Curious, and the Berries called *Grana Cnidia* are used, being of a caustic Quality. The *English* Shops, as well as some of the most skilful Botanists, take the Fruit for the *Coccus Cnidius*, or *Grana Cnidia*, but *Cordus* and *Schroder* will have the Berries of the Mezereon to be the *Grana Cnidia* of the Shops. *Dale.*

2. SANAMUNDA. Offic. *Sanamunda prima Clusii.* Ger. Emac. 1595. Park. Theat. 203. *Thymelæa foliis Chamælææ minoribus subhirsutis.* C. B. P. 463. Tourn. Inst. 594. *Thymelæa foliis candicantibus, serici instar mollibus.* Raii Hist. 2. 1538. *Tarton-raire Gallo-Provinciæ.* Ger. 408. Emac. 506. *Tarton-raire Massiliensium, Sanamunda prima Clusii.* J. B. 1. 523. HEATH-SPURGE.

This is a Shrub, a Cubit in Height, very ramous; the Root runs very deep in the Earth, and is cover'd with a Bark extremely viscous and pliant, and capable of being drawn into very small Threads, not without Flocks, which you may call Wool: The Branches are, also, cover'd with the like Bark, but overlaid with a dense, whitish, and, as it were, Silver-colour'd tomentaceous Substance. The Leaves are of the Size of those of the *Tarentine* Myrtle, only a little broader towards the Extremity, and ending in a more obtuse Point, quite cover'd with Down, soft to the Touch, and whitish, or Silver-colour'd, and shining. From the midst of these Leaves proceed the Flowers, resembling those of the *Olea*, yellow, oblong, and tetrapetalous. The Fruit, as *Clusius* was inform'd, is much like that of the Thymelæa, but of a blackish Colour. The same Author *Clusius* says, that the Leaves are carnous, gummous, and bitterish at first; but leaving an acrimonious and burning Taste behind.

It grows about *Marseilles*, on the Declivities towards the Sea, and very plentifully on the dry, squalid, and gravelly Hills called *Ment rond*.

The Leaves are of a caustic Quality, as has been said, and very much in Use among the *Spanish* Peasants, on account of their cathartic Virtue; but this Property, says *Lobel*, is so violent, and difficult to be restrained, that it frequently induces Dysenteries, and immoderate Fluxes; and therefore is not to be given but to robust Persons, and then with Caution. *Raii Hist. Plant.*

THYMELÆA is, also, a Name for the EMPETRUM; which see. THY-

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THYMIAMA, *Θυμίαμα.* A Suffumigation of Aromatics.

THYMION, *Θύμιον.* A Caruncle, or Tubercle, generated in the Pudendum, Anus, Glans, or Præputium. *Galen. M. M. Lib.* 14. *Cap.* 13. *& Lib. de Tumor. præter Nat.* The *Latins* call it *Thymion* and *Thymus. Hippocrates, Lib. de Ulceribus,* says that the Parthenium called *μικρόφυλλον* (*tenuifolium*) cures a *Thymion* affecting the Præputium.

What they call an *Acrothymion* (*Thymion*) says *Celsus*, elevates itself above the Superficies like a Wart, being narrow and slender at the Skin, but broader above, somewhat hard, and very rough at the Top, where it is of the Colour of the Flowers of Thyme, whence it has its Name, and easily cleaves and bleeds, and sometimes discharges a small Quantity of Blood. It is usually of the Size of an *Egyptian* Bean, seldom bigger, sometimes very small; sometimes but one, sometimes several together, are generated in the Palms of the Hands, or Bottoms of the Feet; but the worst and most subject to bleed, are those which affect the Pudenda. *Celsus, Lib.* 5. *Cap.* 28.

Thymi, Θύμοι, in *P. Ægineta, Lib. 6. Cap.* 58. are carnous Tubercles, affecting sometimes the Glans, sometimes the Præputium; and, *Cap.* 71. he says, *Thymus* is an Eminence in the Skin, sometimes red, sometimes white, for the most part indolent, and of the Figure of the Tufts or Tops of the Herb *Thyme.*

For the Cure of the *Acrothymion*, or *Thymion*, *Celsus* recommends a Caustic prepared of the Lees of Wine, or a Fig boiled in Water.

THYMITES, *Θυμίτης.* An Epithet for Wine impregnated with Thyme. *Dioscorides, L.* 5. *C.* 59.

THYMOXALME. A Preparation of Vinegar, Thyme, Salt, and some other Ingredients, given by *Dioscorides, L.* 5. *C.* 24. See ACETUM.

THYMUS, *Θύμος*, in Nosology, is a small, indolent, carnous Tubercle, like a Wart, arising sometimes about the Anus, and sometimes about the Pudenda, of both Sexes, resembling in Shape the Flowers of Thyme.

THYMUS, in Anatomy, is that Gland, which in Calves, Lambs, and young Animals, is call'd the Sweetbread.

The Thymus is an oblong, glandular Body, round on the upper Part, and divided below into two or three Lobes, of which that toward the Left Hand is the longest. In the Fœtus it is of a pretty large Size, less in Children, and very little in aged Persons. In Children it is of a white Colour, sometimes mixed with Red; but, in an advanced Age, its Colour is generally dark.

The greatest Part of the Thymus lies between the Duplicature of the superior and anterior Portion of the Mediastinum, and the great Vessels of the Heart, from whence it reaches a little higher than the Tops of the two Pleuræ, so that some Part of it is out of the Cavity of the Thorax; and in the Fœtus, and in Children, it lies as much without the Thorax as within it.

Its particular inward Structure and Secretions are not as yet sufficiently known to determine its Uses, which however seem to be designed more for the Fœtus, than for Adults. It has Vessels belonging to it, called *Arteriæ* and *Venæ Thymicæ. Winslow.*

THYMUS, in Botany, is a well known Plant; the Characters of which are;

The Leaves are short, narrow, and rigid; the Stalks ligneous, small, and erect. The Galea is erect, and generally bifid; and the Beard divided into three Parts. The Flowers are collected into little Heads, the lower Whorle being remov'd at some Distance from the Head.

Boerhaave mentions five Sorts of *Thymus*; which are,

1. Thymus; vulgaris; folio latiore. *C. B. P.* 219.

2. Thymus; vulgaris; folio tenuiore. *C. B. P.* 219. *Tourn. Inst.* 196. *Boerh. Ind. A.* 155. *Thymus.* Offic. *Thymum durius.* Ger. 458. Emac. 573. Raii Hist. 1. 521. *Thymum durius vulgare.* Park. Theat. 7. *Thymum vulgare rigidius, folio cinereo.* J. B. 3. 263. THYME.

The common Thyme seldom grows above half a Foot high, full of slender, round, and somewhat hairy Stalks; having two small roundish Leaves, a little pointed at the Ends, set opposite at a Joint: The Flowers grow in loose Spikes towards the Top of the Branches, set in Whorles among the Leaves, of a purple Colour, galeated, and labiated in small hairy Calyces; both Leaves and Flowers have a strong pleasant Smell, and an hot Taste; the Root is composed of a Bush of stringy Fibres. It is planted in Gardens, but grows wild in *Spain* and *Italy*, and flowers in *July*. The whole Plant is used.

Thyme is heating and attenuating, good to free the Lungs from viscid Phlegm; and by that means is helpful to those who are troubled with Wheesing and Shortness of Breath. It is likewise, cephalic, and of Use against all Diseases of the Head and Nerves.

The only Officinal Preparation is the *Oleum Thymi distillatum.* Distil'd Oil of Thyme. *Miller's Bot. Off.*

There is scarce a more common Herb in *Provence* and *Languedoc.* The Virtues are suppos'd much the same with those of SERPYLLUM; which see: But it is particularly serviceable in tartareous Affections of the Lungs and Joints, frees all the Viscera from Obstructions, and excites an Appetite, &c. *Dale* from *Schroder.*

3. Thymus; capitatus; qui Dioscoridis. *C. B. P.* 219. *Raii Hist.* 1. 519. *Tourn. Inst.* 196. *Boerh. Ind. A.* 155. *Thymum verum.* Offic. *Thymum Creticum.* Ger. 459. Emac. 574. *Thymum Creticum sive Antiquorum.* J. B. 3. 262. *Thymum legitimum capitatum.* Park. Theat. 6. *Hyssopus capitata minor, Thymi odore.* Hist. Oxon. 3. 360. TRUE THYME.

It grows plentifully about *Seville* and *Cadiz*, where the Island is join'd by a Bridge to the Continent, and over all *Andalusia*, on the maritime Hills, facing the Sun, and in the Islands of *Crete, Sicily*, and *Corcyra*; and in the Island of *Cithera*, now *Cerigo*, there is another Species or Variety of it, with lesser Leaves, growing in Parcels together. It is found over all *Greece*, as *Bellonius* tells us; and no Herb is more common on the Mountains, where, according to the Variety of Soil, it produces a Flower, sometimes all white, sometimes bluish, or purple, or mixt.

This *Thyme*, with Vinegar and Salt, purges Phlegm by Stool; the Decoction is serviceable in an Asthma and Orthopnœa, expels the small Worms called *Tineæ* from the Belly, provokes the Menses, and brings away the Birth and After-birth, and is a good Diuretic. Made into an Eclegma with Honey, it facilitates Expectoration; it discusses Tumors, dissolves concreted Blood, and removes Warts, being rubbed on the Parts with Vinegar. Apply'd with Wine and Polenta, it gives Relief under the Sciatica; and, used in Food, helps Dimness of Sight, and is very good for healthy Persons to eat as Seasoning to their Meats. *Dioscorides.*

Pliny ascribes the same Virtue to it, and adds, that it is exhibited to epileptic Persons, who are roused from their Fit by the Smell of Thyme, and to Men afflicted with Inflations, Flux of the Belly, or Pains of the Testes or Bladder; that, being bruised, and apply'd with Oil on Wool, it is effectual in the Gout and Luxations; and that, for the Gout, it is taken, also, inwardly, to the Weight of three Oboli in three Cyathi of Vinegar and Honey.

The Inhabitants of *Seville*, as *Clusius* says, use a Decoction of *Thyme*, in washing out and cleansing their Wine-vessels, because of its most grateful Smell; and it is of no less Service in giving a good Scent to those Vessels in which they preserve their Grapes. *Raii Hist. Plant.*

4. Thymus; vulgaris; folio tenuiore, candido & graveolente. *C. B. P.* 219.

5. Thymum; legitimum; cephalotes; angustifolium. *Salvad. Boerh. Ind. alt. Plant.*

This Plant is excellent in Suffumigations to revive the Spirits; and, by its extraordinary Fragrancy, is very comfortable to the Brain, and highly exhilarating to the Heart. Infused in cold Wine, it cures the Bites of all venomous Animals, and is recommended against the Bite of a mad Dog. It is very effectual against pituitous and cold Diseases, particularly the Asthma and Cough. A Conserve is prepared of the Leaves with Sugar, and kept in China or Glass-vessels; there is, also, a medicated Wine made of the same, and, also, a Water which has the same Virtues in curing almost all Diseases of the Breast incident to aged and phlegmatic Persons; but in hot or inflammatory Diseases these Plants are not to be used. A little *Thyme* mixed with Wine gives it a most grateful Savour, and both the Smell and Taste of it are very penetrating; whence it becomes sudorific, inciding, penetrating, healing, and opening; and is of Service in the flatulent Colic, restores a decay'd Appetite, is properly given in difficult Labour, and removes Obstructions of the Menses: Externally used, it is effectual against the Pain of the Gout, and cold Tumors. *Hist. Plant. adscript. Boerh.*

THYMUS CEPHALOTES. A Name for the *Satureia*; *Virginiana.*

Besides the foregoing Sorts of *Thymus*, *Dale* mentions the following;

THYMUS SYLVESTRIS. Offic. *Thymus Narbonensis Zygis dictus Serpyllum Creticum.* Ger. 456. Emac. 571. *Serpyllum Narbonense.* Park. Theat. 7. *Serpyllum folio Thymi.* C. B. P. 220. Raii Hist. 1. 523. *Serpyllum sylvestre, Zygis Clusio, Thymo vulgari rigidiori simile.* J. B. 3. 271. *Toymbra Hispanica Caridis folio.* Tourn. Inst. 117. WILD THYME.

This *Thyme*, as *Clusius* describes it, in Appearance, Branches, Height, and Roots, is very like the common *Thyme*; only its Leaves are somewhat broader, and not so sweet-scented; but have a stronger Smell, as between that of *Abrotanum* and *Stœchas.* The Flowers, also, are disposed in Whorles on the small Branches, and are of a white Colour, inclining to Purple; by which Disposition of the Flowers, and its Smell, it can almost only be distinguish'd from the common *Thyme.* It has, also, less Acrimony, as having a Mixture of Astringency. *Raii Hist. Plant.*

It grows in *Old Castile* in *Spain*, in the same Places with the other *Thyme*; but is cultivated with us in the Gardens of the Curious, and is esteemed to have the same Virtues with the *Thymus Offic.* or common Thyme. *Dale.*

THYNNUS. See THUNNUS.

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THYROARETÆNOIDEI MUSCULI. Two Muſcles of the Larynx. See LARYNX.

THYROIDEÆ GLANDULÆ. The Thyroide Glands. On the lower Part of the Larynx, upon the Sides of the annular Cartilage, and of the firſt Ring of the *Trachea*, there are two lymphatic Glands called *Thyroidea*, of the Figure of a Pear; their Colour is red; they have Veins, Nerves, and Arteries, as the Larynx. *Keil's Anatomy*. See LARYNX.

Theſe Glands ſecrete a lubricating Fluid, which moiſtens the Cartilages and Muſcles of the *Larynx*. *Boerhaave's Inſtitutes*.

THYROIDES, θυεοειδὴς, from θυεὸς, a Shield, and εἶδος, Shape. The Name of a Cartilage of the LARYNX; which ſee.

THYROPHARYNGÆI MUSCULI. Two Muſcles of the *Pharynx*. See OESOPHAGUS.

THYROSTAPHYLINI MUSCULI. Two Muſcles of the *Uvula*. See PALATUM.

THYRSUS. See ACANTHUS.

THYSSELINUM.

The Characters are;

The Root is perennial, large, and very full of a lacteous Juice, as is, alſo, the whole Plant; it has the Leaf of the *Ferula* or *Phellandrium*. The Seed is oval, flat, large, ſtriated, marginated, and ſometimes caſts its Husk.

Boerhaave mentions two Sorts of *Thyſſelinum*; which are,

1. *Thyſſelinum*. Plinii. See APIUM.

2. Thyſſelinum; paluſtre. *T.* 319. *Seſeli, paluſtre, lacteſcens acre, foliis ferulaceis, flore albo, ſemine lato*. J. B. 3. 2. 188. *Seſeli, paluſtre, lacteſcens*. C. B. P. 162. Prodr. 85. Ic. *Anethum Pyrethrum umbelliferum*. C. B. P. 148. *Boerh. Ind. alt. Plant.*

Thyſſelinum is from θύω, (*thyo*) to be hot, and σέλινον, (*Selinon*) Apium; that is to ſay, hot Apium.

It is a very acrid Plant, ſo that when I firſt found it in the Ditches, and taſted it, I felt my Mouth and Fauces inflamed. We are to rank it, therefore, among thoſe Plants which are of the moſt acrimonious Nature; and, tho' it may have its Uſe in Medicine, it muſt be with a great deal of Caution. The Roots are aperient and penetrating, and provoke Urine and the Menſes. It grows in watry Places; the Milk is much of the Nature of Scammony, and may be ſubſtituted in its room. *Hiſt Plant. adſcript. Boerhaav.*

TIBERIANUM TORMENTUM. The Colic.

TIBIA. The larger Bone of the Leg. See CRUS.

TIBIÆUS. The ſame as TIBIALIS.

TIBIALIS. An Epithet for ſeveral Muſcles. Thus there is the TIBIALIS ANTICUS.

This is a long Muſcle, fleſhy at the upper Part, and tendinous at the lower, ſituated on the fore Side of the Leg, between the Tibia and the Extenſor Digitorum Longus.

It is fixed above by fleſhy Fibres, in the upper third Part of the external Labium of the Criſta Tibiæ, and of the Inſide of the Aponeuroſis tibialis, or of that ligamentary Expanſion, which goes between the Criſta Tibiæ, and the anterior Angle of the Fibula. It is, alſo, fixed obliquely in the upper Two-thirds of the Outſide of the Tibia, or that next the Fibula.

Thence it runs down, and ends in a Tendon, which firſt paſſes through a Ring of the common annular Ligament, and then through another ſeparate Ring, ſituated lower down. Afterwards the Tendon is fixed partly in the upper and inner Part of the Os Cuboides, and partly in the Inſide of the firſt Bone of the Metatarſus.

The Tibialis Anticus bends the Foot, that is, turns the Point of the Foot toward the Leg; which Motion is performed by the Ginglymoide Articulation of the Aſtragalus with the Tibia and Fibula. It, likewiſe, bends the Leg on the Foot, or hinders its Extenſion. The firſt of theſe Uſes is generally known; and we have an Inſtance of the ſecond, every time we ſtand or walk. When we ſtand, the Feet being turned directly forwards this Muſcle, like a Frænum, keeps the Leg in Æquilibrio, and hinders it from falling backward. This Uſe is ſtill more evident, when we walk backwards.

By its lateral Inſertions in the Os Cuneiforme Maximum it moves this Bone, in particular, over the anterior Extremity of the Os Calcis, by which the Sole of the Foot is turned inwards toward the other. This lateral Situation of its Inſertion is the Reaſon why it cannot bend the Foot directly, without the Help of the anterior Peronæi; neither can it alone keep the Leg in Æquibrio, when we ſtand on one Foot. *Winſlow.*

TIBIALIS GRACILIS. See PLANTARIS.

TIBIALIS POSTICUS.

This is a long fleſhy penniform Muſcle, broader above than below, ſituated between the Tibia and Fibula on the back Side of the Leg, and covered by the Extenſor Digitorum Longus.

It is fixed above by fleſhy Fibres, immediately under the Articulation of the Tibia and Fibula, to the neareſt Parts of theſe two Bones, principally to the Tibia, reaching to the lateral Parts of that Bone, above the interoſſeous Ligament, which is here wanting.

From thence its Inſertion is extended below the oblique Line or Impreſſion in the Tibia, over all the neighbouring Part of the interoſſeous Ligament, and through more than the upper Half of the internal Angle of the Fibula.

Through all this Space it is fleſhy, penniform, and covered by the Extenſor Digitorum Longus, which ſometimes communicates with it by a middle Tendon, and ſends off an Aponeuroſis to it, which does the Office of a Frænum.

After this it forms a Tendon, which runs down behind the inner Malleolus, through a cartilaginous Groove; and an annular Ligament, paſſing under the Malleolus, is inſerted in the Tuberoſity or lower Part of the Os Scaphoides. This Tendon is ſometimes divided into two, either of which, croſſing a little over that of the Peronæus Longus, is fixed in the Os Cuboides.

When the Tibialis Poſticus acts alone, it extends the Foot obliquely inward. When it acts together with the Gaſtrocnemii and Soleus, it changes the ſtraight Direction of their Motion to an oblique one. When it acts with the Tibialis Anticus, the Sole of the Foot is turned more or leſs directly inward or toward the other Foot. *Winſlow.*

TIBURO.

This is a large cetaceous Fiſh, found in the *Indian* Ocean, which is ſometimes twenty Feet in Length, and ten in Thickneſs. In its Head are found three or four bony, inſipid Stones, which may be eaſily ſcraped into Powder. The Stones are reckon'd good for the Stone, and a Difficulty of Urine, ſerving to diſſolve the Stone in the Kidneys and Bladder. *Lemery des Drogues.*

TIFACOUM. Quickſilver. *Rulandus.*

TIFATUM. Sulphur. *Rulandus.*

TIGALA. An *Arabic* Epithet for Sugar. *Caſtellus.*

TIGILLUM. A Tile. According to *Blancard*, a Crucible.

TIGRIS. Offic. Aldrov. de Quad. Digit. 101. Geſn. de Quad. Digit. 936. Jonſ. de Quad. 84. Charlt. Exer. 14. Schw. Quad. 130. Raii Synop. A. 165. THE TIGER.

The Part of this Animal uſed in Medicine is the Fat, which is ſuppos'd to agree in Virtues with the Fat of a Dog. *Dale.*

TILIA.

The Characters are;

The Calyx is pentaphylloidal, the Flower roſaceous, polypetalous, and furniſhed with numerous Stamina. The Ovary has a long Tube, with a globous Apex, and becomes a roundiſh unicapſular Shell, containing oblong Seeds.

Boerhaave mentions five Sorts of *Tilia*; which are,

1. Tilia; fœmina; folio majore. *C. B. P.* 426. *Tourn. Inſt.* 611. *Boerh. Ind. A.* 2. 230. *Tilia*. Offic. *Tilia fœmina*. Ger. 1298. Emac. 1483. *Tilia fœmina major*. Park. Theat. 1407. *Tilia vulgaris platyphyllos*. J. B. 1. 131. Raii Hiſt. 2. 1694. Synop. 3. 473. THE LIME-TREE.

This is a Tree well known, having an handſome Body with a ſmooth Bark, ſpreading its Branches round in a regular manner; the Leaves are broad and roundiſh, with a ſharp Point, ſerrated about the Edges; at the Foot of theſe, in the Summer ſpring out thin leafy Ligulas, of a yellow Colour, from the middle of the back Ribs of which ariſe Stalks about an Inch long, divided into four or five ſhorter ones, each bearing a yellow, five-leaved, ſweet Flower, ſucceeded by a ſmall hoary Fruit about the Size of a Pea. Limes grow every where about Gentlemens Seats, and in Parks, and flower in *July*.

We ſeldom uſe any thing but the Flowers, which are accounted cephalic and nervine, and good for the Apoplexy, Epilepſy, Vertigo, and Palpitation of the Heart. They are put in the compound Peony-water, and the Spirit of Lavender. The *Aqua Florum Tiliæ*, or Water of the Flowers of the Lime-tree, takes its Name from them. *Miller's Bot. Off.*

The ſeminal Leaves of the *Lime-tree*, as *J. Bauhine* obſerves, are generally cut into five Diviſions, as into ſo many Fingers, the extremes and middle one exceeding the reſt in Length, which is a Thing rare and ſingular.

Thalius obſerv'd an Excreſcence, or Tumor, like the Gall of an Oak, in the Roots of old Lime-trees. *Raii H. P.*

It is planted in Walks and Areas, flowers in *June*, and the Leaves and Flowers are uſed. The Leaves are drying and repellent, and provoke Urine and the Menſes. The Flowers are hearing and drying, and of fine Parts, diſcutient, and cephalic. *Dale.*

2. Tilia; fœmina; folio minore. *C. B. P.* 426. *Tourn. Inſt.* 611. *Boerh. Ind. A.* 2. 230. *Tilia*. Offic. *Tilia folio minore*. J. B. 1. 137. Raii Hiſt. 2. 1695. Synop. 3. 473. *Tilia*. Offic. *ſive fœcunda Pſeudopiperifera*. Hoff. Cat. Alt. THE SMALLER LIME-TREE, BAST, or PEPPER-TREE.

It grows in Woods and Hedges; the Flowers are uſed, and agree in Virtues with thoſe of the former. *Dale.*

3. Tilia; foliis molliter hirſutis; viminibus rubris; fructu tetragono. *Raii Synop.* 316.

4. Tilia; folio ſubtus glauco Populi. *Boerh. Ind. alt. Plant.*

5. Tilia; folio magno; ramis erectiſſimis.

The Bark and Leaves of the *Tilia* are drying and repellent; the Mucilage of the Bark is of great Uſe in Wounds and Ambuſtions. *Dodonæus* recommends the Bark chew'd, and applyed for theſe Purpoſes. The Leaves bruiſed, and ſprinkled with Water,

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Water, discuss Tumors of the Feet, and are accounted a singular Remedy for the Aphthæ, and flatulent Spasms in Women with Child; the expressed Juice, mixed with Wine, and rubbed hot on the Joints, is good for the same spasmodical Affections.

The Flowers are of fine Parts; their Smell is extremely sweet, and the Water of Use in cephalic Affections; it is commended in Palpitation of the Heart, Pains of the Uterus, Stone in the Kidneys, and Concretions of Blood occasioned by Contusions. Some mix therewith Powder of Charcoals made of the *Tilia*. The Dose is an Ounce, or an Ounce and an half; some exhibit the same against the Gripes; and Women use it as a Cosmetic.

The Berries, reduced to Powder, are highly commended in the Dysentery, and other Fluxes of the Belly; the same, bruised with Vinegar, and put up the Nostrils, stop Bleeding at the Nose; and some of the Berries, swallowed, are said to be very effectual for that Purpose.

The Antients wrote on the inner Bark of the *Tilia*, called *Philyra*, while it was fresh. *Raii H. P. p.* 1694.

The distilled Water of the Flowers is good against the epileptic Disorders of Children, and against hypochondriac and cephalic Affections. Externally they are recommended in the Form of a Cataplasm in a Tenesmus. *Hist. Plant. adscript. Boerhaav.*

The *Tilia* affords us some very good Remedies, particularly in the Flowers, by an Infusion of which in Water, after the manner of Tea, with long and constant Use, I have known an inveterate Epilepsy perfectly cured. The Water of the Flowers is specific in all Diseases where Pains or Convulsions are predominant; whence it justly deserves the Name of *Polychrestum*. The middle Bark of the Tree, reduced with Water to a Mucilage, is of incomparable Virtue in mitigating Pains, Heats, and Inflammations; whence it gives immediate Relief in the Pain of the Arthritis and Podagra. *F. Hoffman.*

TILMATA, τίλματα (the Plural of τίλμα, *Tilma*), from τίλλω, to vellicate. Vellications. *Galen, Com. 3. in Lib. κατ. ιατρ.* tells us, that Spasms affect the Fibres of the Muscles, which are distended to such a Degree, as to cause a Rupture in some of them; and that these Spasms are, by the more modern Physicians, properly called τίλματα, Vellications.

Τίλματα (called, also, τιλμάτια and τίλτα) in *Hippocrates, Lib. περὶ ἐυσχημ.* signify scraped Lint, or Tents of the same. Thus, also, *Archigenes*, in *Galen, Lib. 2. τῶν κατὰ τόπων*, by τίλμα and τιλμάτιον (*Tilmation*), means a kind of scraped Lint, proper for Wounds of the Head, and otherwise called *μοτὸν τιλτὸν*, (*Moton tilton*) or, simply, τιλτὸν (*Tilton*); and number'd among the five Kinds of μοτὸς (*Motos*), or Lint.

Τίλμοι (*Tilmoi*), in *Hippocrates, Lib. περὶ χυμῶν*, and 1 *Epid. Sect.* 3. signify Vellications of the Bed-clothes, plucking Hairs out of Garments, or picking Motes from the Wall, and such-like Motions as are usually practised in a Delirium, by those who labour under acute Diseases, as a Phrensy and Peripneumony. Sometime τίλμοι signify Vellications or Lancinations of the Parts from acrimonious Humours, or corroding Pus; sometimes, also, Vellications of the Parts by the Patients themselves, when under a Delirium, as we are informed by *Galen, Com. 3. in 1 Epid.*

TIMÆI COMPOSITIO AD IGNEM SACRUM VEL CANCRUM. The Name of a Composition in *Celsus, Lib. 5. Cap.* 22.

TIMARTIRI. This Word occurs in *Nicolaus Myrepsus, Sect. 1. Cap.* 150. *Fuchsius*, his Commentator, confesses, he don't know what the Author means, unless it be burnt Silk.

TIMBO. See GUAIANA.

TIN. Sulphur. *Rulandus.*

TINA. A Bath, of great Service in the Colic.

TINCA. Offic. Schrod. 5. 334. Aldrov. de Pisc. 645. Bellon. de Aquat. 324. Gesn. de Aquat. 984. Charlt. de Pisc. 43. Mer. Pin. 190. Jonst. de Pisc. 114. Rondel. de Pisc. 2. 157. Salv. de Aquat. 90. Raii Ichth. 251. Ejusd. Synop. Pisc. 117. Schonf. Ichth. 76. THE TENCH.

It is a mucous, excrementitious Fish, which delights in marshy and muddy Waters. As to its Uses, it is cut abroad, and apply'd to the Wrists, and Soles of the Feet, in order to mitigate feverish Heats, and to divert the Venom of the Pestilence; in like manner is it apply'd in Pains of the Head and Joints. Live Tenches, apply'd one after another to the Regions of the Umbilicus and Liver, and kept there till they die, are said to cure the Jaundice; for they contract, it seems, a yellow Colour. *Schroder* says, that he has seen an incinerated Tench, and especially its Tegument, exhibited with Success in the *Fluor Albus.*

TINCAR. See BORAX.

TINCONES. Bubos. *Fallopius de Morb. Gallico.*

TINCTORIA *Arbor*, J. B. is a Tree growing in the Kingdom of *Jenago* in *Ethiopia*, of the Thickness of our glandiferous Trees, bearing a Fruit like a Date, from which is extracted an Oil of admirable Virtue. This Oil, mixed with Water, turns it quite of a Saffron-colour, and with the same Colour they dye their Cups, and their Caps, which are made of a Contexture of Rushes, or Rice-straw; the Oil smells like the *Viola Martia*, and tastes like our Oil; for which Reason many use it in seasoning their Fish, Rice, and other Food. *Raii Hist. Plant.* 1794. from *M. Thevet.*

TINCTORIUS FLOS. A Name for the *Genista*; *tinctoria*; *Germanica.*

TINCTURA. A Tincture.

The Processes of Distillation, and that for extracting Tinctures, differ only in this, that the former can take out those lighter Parts only which are able to rise in Vapour; and the latter, all such Parts as are capable of being suspended in a Menstruum.

The Management and Rules of Procedure in Tinctures, Elixirs, medicated Wines, Vinegars, Decoctions, and Infusions, depend upon the same Reason and Principles; these several Forms differing only in the Fitnesses of the Materials for Suspension in Fluids of different Consistences, and the best manner thence arising for drawing them out: The principal Rule in all which is, that the Liquor made use of for a Menstruum, or Vehicle, be more or less spirituous, as the Ingredients which are ordered in it are of a lighter or more fixed Nature; and the Times of standing in Digestion, either hot, or cold, are, also, to be proportion'd accordingly.

Under the Denomination of Tinctures and Elixirs are generally included those Things of a volatile, light Texture, which best give out their Virtues to spirituous Liquors; and these are either simple or compound. Of the former are the Tinctures of Saffron, Castor, Myrrh, Sulphur, Snake-root, and red Roses; all which are ordered in Liquors, judged suitable to their respective Textures and Virtues. Saffron is drawn with the Treacle-water in the Intention of an Alexipharmic; but as a Cordial, and for the better Preservation of its Colour, which soon fades with any Acid, Liberty is given to infuse it, also, in Canary, or *French* Brandy. The Tincture of Castor is, likewise, drawn by a Spirit with equal Ease and Readiness, because both these are of a lax Texture, and soon open in such Vehicles; but the Myrrh, upon Account of its Tenacity, requires a Mixture of Salt of Tartar with it, and to stand for some time, previous to its Infusion in Spirit; by which means its adhesive Texture is broken, and it comes more readily to unite with the Spirit afterwards. Something like to this is ordered with the *Virginian* Snake-root, it being directed to be drawn with the Tincture of Salt of Tartar; but if this Root is broke small in a Mortar, it gives out all its Warmth to a various Spirit; and some rather prefer it, because the Tincture of Salt of Tartar gives it a nauseous urinous Scent, and makes it almost intolerably burning in the Stomach; which Quality in itself is frequently moderated with Acids, which is a very opposite Management to this. The red Roses are drawn only with hot Water acidulated with Oil of Vitriol, which not only greatly assists the Intention of an Astringent in all Instances, as well as this, but, likewise, contributes to strike a most beautiful red Colour. The Tincture of Poppies become a Compound only by the Addition of some Nutmeg; and it agrees with the Roses in this respect, of being greatly improveable in its Colour by Acids, but both would change into a most unsightly Green, were Salt of Tartar, or any alkalious Matter to touch them, a Difference very proper to take notice of.

In all compound Tinctures or Elixirs, drawn with a Spirit, and where the Dose is so small, as to be assigned in Drops, particular Care ought to be taken not to interpose any Ingredients, which are not of proportionable Efficacy with the rest, howsoever they may agree in Intention. For it is not here as in Distillation, where an useless, or a weak Ingredient may do no Harm; because, in a Tincture, every such one will so help to sate the Menstruum, that it will be less able to take up Things of more Efficacy, and will consequently be, in the Whole, a weaker Medicine. Thus, in *Mynsicht's* Elixir of Vitriol, tho' Mint certainly comes within the Intention of a Stomachic, and Sage may be allowed to do so too; yet, in a Medicine that will not bear Exhibition in a larger Quantity than twenty or thirty Drops for a Dose, such things are very improperly crouded; for, besides the Hindrance they occasion to the Menstruum in taking up the other more efficacious Ingredients, by sating it with something from themselves, if we compute the Share they have in a Dose, it will vanish almost to nothing; for here is no more than half an Handful of these Things, in a Quantity that makes some Thousands of Doses; whereas common Experience informs us, that they may be, and frequently are, taken with our common Food, in as large Quantities as they enter into the Whole of this Composition, without any Inconvenience. What the Sugar-candy does in this Composition is, likewise, not easy to guess or justify; and the Oil of Vitriol seems to be ordered in too large a Quantity, the Sharpness of, that necessarily making a Dose small, that the Spices have not a due Proportion in it. But the greatest Error in this celebrated Medicine consists in the making, when all the Ingredients are digested together; for the Oil of Vitriol entirely burns and hardens them, so that they not only give out their Virtues the less, but, also, deform the Whole with a blackish dirty Colour; both which Inconveniencies might be avoided by infusing the Spices in the Spirit alone; and, after that is strained fine, the Oil of Vitriol might be added, which then only gives it a thicker Consistence, and somewhat raises its Colour.

The same is observable of the Acid in that Sort of Elixir Proprietatis, which is made with it. If it be put upon the Ingredients with

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with the Spirit, it unfits them for giving out their Virtues, and will not admit of so good a Colour or Consistence, as when put in afterwards.

These Remarks naturally lead us to another Circumstance, very necessary to be regarded in the Extraction of all compound Tinctures; and that is, when the Ingredients are so different in Texture, that some open and fate the Menstruum much sooner than others, they ought to be drawn separately, with a proportionable Part of the Menstruum, because, otherwise, those which with most Difficulty give out their Virtues, will have very little or no Share in the Composition. Thus, in the common *Elixir Proprietatis*, though there are but three Ingredients, yet they are so unequal in their Fitness for Solution, that if they are put in together, the hardest, which is the Myrrh, will, in a good measure, be lost; because the Spirit will be very soon loaded with the other two, and, consequently, become less able to take up the Myrrh. If, therefore, they are all infused in their proper Shares of Spirit, they will be all easily dissolved; and when put together afterwards, with the Addition of the Acid, they will make a most beautiful high-coloured Tincture, almost of the Consistence of a Syrup. To this Rule the *Elixir Proprietatis* of *Helmont* hath a particular Regard, where the Aloes and Saffron, which are of the loosest Texture, are dissolved together, and the Myrrh separately from them both, the several Tinctures being at last united.

Thus, likewise, in the compound Tincture of Myrrh, if the Myrrh be first dissolved, the Aloes, with equal Ease, will afterwards be taken up; but if they are put in together, the Aloes loads the Spirit so soon, that the Myrrh will be much longer in Solution. And in all the liquid Laudanums, if the Spices are first drawn out, the Opium will soon dissolve afterwards; but if the Opium be put in with them, they will give out their Virtues to great Disadvantage. Thus, also, in the *Elixir Salutis*, if the Seeds, Liquorice, and Raisins, were added, after the harder Ingredients had stood some time in the Spirit, the Medicine would be the better; but these are Circumstances which very few Compounders will be exact enough to observe.

The usual Intentions, for which Tinctures are ordered in common Practice, are those of Cephalics, Stomachics, or Cathartics. The Cephalics take in oleous and aromatic Simples, and such as are called for in nervous Affections; the Stomachics receive the same things in Conjunction with Bitters; the Cathartics, such as are appropriated to that Distinction by their purgative Qualities. In all nervous Cases, the odorous Simples are best brought into Tincture with spirituous or vinous Liquors, as they most readily give out their Virtues to them; and this is best done cold, or, when Heat is required, in close Vessels, to prevent Exhalation and Loss of the better Parts. Tinctures, also, of Stomachics, are best ordered without Heat, and commonly in Liquors moderately spirituous, as the ordinary White-wines. And Cathartics, whether resinous or saline, for extemporaneous Occasions, want nothing more than hot Water, as in making common Tea, to draw out their Virtues. The Proportions of Ingredients in all these Cases cannot be adjusted, but by Examples, and Experience of the Patient's Strength; but, for Cephalics and Stomachics, it is a certain Rule, never to fate a Liquor with Ingredients beyond what is agreeable to the Palate, for an irksome Cordial, or Stomachic, almost implies an Absurdity; tho' in hysteric Affections, and where the fetid Simples are required, the Case is quite otherwise.

In the Exhibition of the officinal Tinctures of any Intention; all those which are so fated with resinous, or gummy Simples, that they turn milky in common Water, are, in a more agreeable and sightly manner, directed in Wine, where the Circumstances of a Patient will admit of it; and, for Bitters in particular, made with a vinous Liquor, they are much better directed between the Times of Breakfast and Dinner, or about an Hour before the latter, than fasting, which was formerly the customary Way, because they then less affect the Head.

A cordial, or cephalic Tincture for present Occasions, is very readily made; and now occurs frequently in extemporaneous Prescription, with the *Species Diambræ*, and some generous White-wine. In hysteric and hypochondriacal Affections, the Root of Castamunair, black Hellebore, and others of the same Tribe, are conveniently directed in compound Briony-water, or Water of Penyroyal; and, for a Stomachic, Centaury-flowers, Gentian-root, Galangal, the Peels of *Seville* Oranges, and other Things of like Properties, may be drawn with any White-wine. All these are to be varied in the Proportion of the Ingredients to the Strength of the Liquor, and the Quantities for a Dose, according to the several Circumstances of a Patient. *Quincy's Pharmaceutical Lectures.*

TINCTURA ANTIMONII ACRIS SIMPLEX. The simple acrid Tincture of Antimony is directed to be made in the *Brandenburgh* Dispensatory, by digesting the *Scoria* of the Martial *Regulus* of Antimony just made, and hot, in highly rectify'd Spirit of Wine. Another acrid Tincture of Antimony, called the *Reguline Tincture*, is made by digesting equal Parts of the Martial *Regulus* of Antimony detonated with an equal Quantity of Nitre, in highly rectify'd Spirit of Wine.

It is said, that neither of these take up much from the Antimony, but that all their Virtues are borrowed from the Nitre rendered alcaline and acrid, by being fused with Antimony.

These Tinctures, given in a proper Vehicle, and a considerable Dose, are said to bring away the serous Humours of cachectic Patients.

TINCTURA ASTHMATICA.

Tincture for an Asthma.

Take Roots of Elecampane, Florentine Orris, Seeds of Anise, Caraway, Liquorice, of each two Drams; Leaves of Carduus Benedictus, two Handfuls; stoned Raisins, one Pound; Sena, six Ounces; Aniseed-water, six Pints. Let them all digest four Days; then strain the Liquor, and keep it for Use.

The Carduus here nauseates the Medicine, and contributes but little to its Efficacy; and, therefore, is better left out. This may be taken two or three Spoonfuls, going to Bed; and as much next Morning, according to the Strength of the Patient; and if it be long continued in corpulent Habits, it is said to do much Good.

TINCTURA AURI. See AURUM.

TINCTURA BENZOINI. See BENZOINUM.

TINCTURA BEZOARTICA.

The Bezoartic Tincture.

Take Roots of Elecampane, Angelica, Zedoary, *Virginia* Snake-root, of each one Ounce and an half; Saffron, one Ounce; Myrrh, Cinamon, dry'd Citron-peels, of each six Drams; Leaves of Scordium and Rue, of each half an Handful; *Venice* Treacle, three Ounces; Opium, two Drams; rectify'd Spirit of Tartar, fifteen Ounces; Spirit of Vitriol, three Ounces; Spirit of Elder, and Juniper-berries rectify'd, of each eighteen Ounces. Digest them together for some Days in a Sand-warmth in a close Body, then filtre and dissolve in it Salt of Amber, one Ounce; and of Camphire, two Drams; which keep close-stopt for Use.

This is an admirable Alexipharmic, and very convenient to give in extemporaneous Draughts or Mixtures, from two Drams to one Ounce in a Dose. It has in it all that can be expected, or wished for, to answer the Intentions of a Cordial and Cephalic. Where, therefore, a Person is almost spent with struggling under a Fever, or the Nerves are even convuls'd, it is very proper to be given. And in the Beginning, also, of an acute Distemper, it will, with proper Diluters, as soon as any thing, raise a Sweat. The Camphire and Salt of Amber are admirable Ingredients, and in very few officinal Prescriptions besides; though the latter is often in occasional Practice. This is not much known in the Shops, but highly deserves Encouragement, being preferable to most of those in Use.

TINCTURA CANTHARIDUM. See CANTHARIDES.

TINCTURA CASTOREI. See CASTOR.

TINCTURA CINNAMOMI.

Tincture of Cinnamon.

Take Cinnamon, two Ounces; rectify'd Spirit of Wine, one Quart. Digest for four Days; then add Sugar, half a Pound; Rose-water, one Quart, Ambergrise half a Scruple, and Musk four Grains.

It is preferable to the Spirit in all Fluxes and Relaxations, as it abounds more with the rough astringent Parts of the Spice. It is, also, as pleasant to take, and from the Sweets in it, where they do not offend, is much more cardiac. The Dose is from half an Ounce, to two or three Ounces.

TINCTURA CORALLI. See CORALLIUM.

TINCTURA CORTICIS.

Tincture of the Bark.

Take of the Bark in Powder four Ounces; put it into a Bolt-head; add to it rectify'd Spirits of Wine, twelve Ounces; fit it for Circulation, and set it in a gentle Sand-heat four or five Days, shaking it often; then decant the Spirit carefully into a Phial for Use.

It is best given in red Wine, from twenty to one hundred Drops; and to be repeated every four Hours between the Fits, or oftener, according to the Urgency of the Symptoms.

TINCTURA CROCI. See CROCUS.

TINCTURA EUPHORBII.

Tincture of Euphorbium.

Put into a Phial what Quantity you please of pulverized Euphorbium, and pour upon it Oil of Tartar made per Deliquium,

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quium, about four Fingers high; ſtop the Phial, and place it in Digeſtion upon hot Sand, and leave it there for two Days, and there will be made a deep-yellow or reddiſh Tincture; ſtrain it, and keep it in a glaſs Bottle.

This is very attenuating and inciſive, and is powerful in cleanſing old foul Ulcers, carious Bones, and callous Lips of Wounds; and is good, alſo, to diſſolve ſcrophulous Tumors, and very obſtinate Indurations of the Glands.

TINCTURA FERRI. See MARS.
TINCTURA GUAIACI. See GUAIACUM.
TINCTURA HELLEBORI. See HELLEBORUS.
TINCTURA HIERÆ PICRÆ. See HIERA PICRA.
TINCTURA GUMMI LACCA. See JUJUBA INDICA.
TINCTURA MARTIS AUREA. See MARS.
TINCTURA MARTIS GLAUBERI. See MARS.
TINCTURA MARTIS MYNSICHTI. See MARS.
TINCTURA MARTIS CUM SPIRITU SALIS. See MARS.
TINCTURA MELAMPODII. See HELLEBORUS.
TINCTURA MELLIS. See MEL.

TINCTURA METALLORUM. *Tincture of Metals.* I have already given the Manner of preparing this under the Article *Metallum*, from the Memoirs of the Royal Academy, which ſee. But *Quincy*'s Preparation is different, and is as follows:

Take of Regulus Martis, half a Pound; of Spittle Duſt, (which is the Scoria that falls from hot Plates of Copper, quenched in Water) four Ounces (or the like Quantity of Caput Mortuum of the Spirit of Verdegriſe); of Saltpetre, two Pounds; of Tartar, half a Pound. Powder and mix them well; and put them into a red-hot Crucible by Spoonfuls: After it has ſtood melting half an Hour, remove it from the Fire, and powder it in a clean warm Mortar. Before it attracts the Air, return it into a Matraſs, and add two Pounds of tartarized Spirit of Wine: Make a circulating Veſſel of the Matraſs, and let it digeſt two Days. When cool and ſettled, decant the Liquor by Inclination.

It is reckoned an efficacious Alterative in all chronic Caſes. The Doſe is from twenty to an hundred Drops.

TINCTURA MYRRHÆ. See MYRRHA.

TINCTURA NITRI.

Tincture of Nitre.

Take of the Nitrum fixatum, (deſcribed in *Quincy*) one Pound, melt it in a Crucible, with a ſtrong Heat, for three or four Hours; then put it into a warm Mortar; powder it, and, whilſt warm, pour upon it half a Pound of tartarized Spirit of Wine: Set the Mixture in a Matraſs upon warm Sand, gradually increaſing the Fire, till the Spirit of Wine ſimmers; and ſo continue for two or three Hours, in which time the fixed Nitre will have communicated its Tincture to the Spirit of Wine: Decant, and put on more, and digeſt, as long as it yields any more Tincture.

This operates both by *Diaphoreſis* and Urine, but principally the latter Way. It is accounted a great Purifier of the Blood, and a good Antiſcorbutic. Its Doſe is from twenty to ſixty Drops.

TINCTURA PARALYTICA.

Tincture againſt the Palſy.

Take *Spaniſh* Flies in Powder, two Ounces; Seeds of Biſhopsweed, ſix Drams; rectified Spirit of Wine, three half Pints. Let them digeſt together for ſome Days in a Sand Heat, and then decant, or filtre the clear Liquor from the Ingredients.

This is deſigned for Embrocations in Numbneſs, and for paralytic Limbs; in which Caſes it is a notable Stimulus; and, if poſſible, will rouze and ſtir the almoſt inſenſible and ſtupefied Fibres, and occaſion a proper Derivation of their Fluids. If much rubbed into the Part, it is ſharp enough to excoriate; but for inward Uſes, it is not to be meddled with, without Hazard of Stranguries, and other Diſorders of the Bladder.

TINCTURA PAPAVERIS COMPOSITA.

Compound Tincture of Poppies.

Take of the wild Poppy Flowers, one Pound; of Nutmegs ſliced, three Drams; of white Sugar, two Ounces; of *French* Brandy, four Pounds. Draw out the Tincture by a gentle Heat.

TINCTURA REGALIS.

The Royal Tincture.

Take of Copper, in little Pieces, two Ounces, put it in a

Crucible, and ſet it in a melting Furnace; when it is red-hot, put to it of *Regulus Jovis* (in groſs Powder) fourteen Ounces, let them melt well together the Space of a Quarter of an Hour; then caſt them into a warm greaſed Cone; when cold, beat them into a Powder, which muſt be put (by a Spoonful at a time) into double its Weight of melted Salt of Tartar; when it is all in, ſhut the Door of the melting Furnace, and keep it in the ſtrongeſt Fire can be given it, for two or three Hours: Then take it from the Fire, and pour it into a clean warm Mortar; beat it to Powder, whilſt warm; and, before it attracts any Air, put it into a Matraſs, where there is one Pint of tartarized Spirit of Wine: Lute it as in the *Tinctura Antimonii*; and in all things proceed as in that Tincture.

Some are ſo fond of this, as to cry it up for an univerſal Medicine: And indeed its Deſerts are great; for it is very efficacious in all chronic Diſeaſes. It is ſudorific and diuretic. Its Doſe is from ten to fifty or ſixty Drops. In the room of two Ounces of Copper, there may be uſed two Ounces and an half of the Scoria of Copper, and the Tincture will be more beautiful. Some are of Opinion, that the emetic Quality of Antimony is not to be deſtroyed, ſo as not to return again; but if theſe Tinctures are kept ever ſo long, they will not prove emetic.

TINCTURA REGIA.

The Royal Tincture.

Take Muſk, half a Scruple; Civet, five Grains; Balſam of Peru, twelve Drops; Oil of Cloves, four Drops; of Rhodium, two Drops: Drop theſe upon half a Dram of Salt of Tartar, and mix them well together; then pour upon the Maſs, rectified Spirits of Wine, two Ounces; and let them ſtand in a Heat equal to that of the Sun, in a cloſe Veſſel, many Days; and afterwards pour off the clear Spirit by Decantation.

This is fit only to be kept in Readineſs to flavour any cordial Dram, that ſuch things are proper and required in, and is as good for this Purpoſe, as can well be contrived: The leaſt Drop is ſufficient for many Ounces of a Liquor. This is a Preparation of *Le Mort*.

TINCTURA RHABARBARI.

Tincture of Rhubarb.

Take of Rhubarb, one Ounce and an half; of the leſſer Cardamom-ſeeds and Saffron, of each two Drams; of Liquorice-root, half an Ounce; of *French* Brandy, one Pint; and make into a Tincture.

This is given for the ſame Intention as the Root.

TINCTURA RORIS SOLIS.

Tincture of Sun Dew.

Take of Ros Solis, or Sun Dew, four Handfuls; Cinnamon, Nutmegs, Mace, Cloves, Ginger, of each one Ounce; Muſk, five Grains; Spirit of Wine, one Gallon: Digeſt all together twenty Days; and then diſſolve in the ſtrained Tincture, of Loaf Sugar, one Pound; and put up in a cloſe Veſſel for Uſe.

This is a warm high Cordial, and a good Cephalic, eſpecially in cold Conſtitutions: It heats the Blood, and quickens its Motion, and greatly recruits the animal Spirits. For all theſe Reaſons it contributes to what it is moſt celebrated for, the Cure of Impotence, and a Provoker to Venery.

TINCTURA ROSARUM RUBRARUM.

Tincture of Red Roſes.

Take half an Ounce of Red Roſe Leaves, well cleared of the white Heels, and thirty Drops of Oil of Vitriol; pour upon them, in a glazed earthen Veſſel; two Pints and an half of boiling Spring-water; and let them ſtand cloſe covered for three Hours; then ſtrain off the Liquor; and put to it three Ounces of fine Sugar-candy.

In the making, moſt drop in the Oil of Vitriol, after the Water is poured upon the Roſes.

TINCTURA SACRA. See HIERA PICRA.
TINCTURA SALIS TARTARI HARVEYANA. See TARTARUS.
TINCTURA SALIS TARTARI HELMONTIANA. See TARTARUS.
TINCTURA SCAMMONII. See SCAMMONIUM.

TINCTURA

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TINCTURA SERPENTARIÆ VIRGINIANÆ.

Tincture of the Virginia Snake-root.

Take of *Virginia* Snake-root powdered, two Ounces; of the Tincture of Salt of Tartar, ſixteen Ounces. Digeſt ſo, as to draw out a Tincture.

It is convenient enough to thoſe who cannot take it in Subſtance; and may be given from one to three Drams in any proper Liquor.

TINCTURA STOMACHICA AMARA.

The bitter Stomachic Tincture.

Take Gentian-root, and Orange-peels dried, both cut very ſmall, of each one Pound; pour upon them, into a glaſs Body, rectified Spirits of Wine, one Gallon and an half: Let them ſtand cloſe covered, in a very mild Warmth, for ſome Days; then preſs out the Spirit ſtrongly, and let it fine down for Uſe.

The Peels muſt be of the moſt fragrant *Seville* Oranges, cleared of the White, and carefully dried. This makes a Tincture not to be known from ſeveral which are ſo extravagantly cried up in Empirical Advertiſement, and is the beſt that can be made, notwithſtanding thoſe Boaſters talk of ſo many Ingredients in theirs; which is only to put a Blind upon the Ignorant. To this, Centory, and many things of the like kind, might be added; but they would rather clog the Medicine, than increaſe its Virtues. This is very conveniently kept in the Shops, to make the bitter Draught *extempore*, with any kind of Wine, or other Vehicle. From fifteen to ſixty Drops is ſufficient for a Doſe of two or three Ounces. It is, alſo, very conveniently added to Steel-wine, as Bitters are often joined with it. It has all the Virtues of the common Bitters, and warms and ſtrengthens the Stomach; but anſwers that End much better when joined with a little Acid, which makes a Subaſtringent of it not much unlike the *Elixir Vitrioli*; one Ounce of *Spiritus Sulphuris per Campanam* would be enough for a Pint of this Tincture, and make it of a more beautiful Colour, and pleaſanter to take.

TINCTURA SUCCINI. See AMBRA.

TINCTURA SULPHURIS.

Tincture of Sulphur.

Beat of the Liver of Sulphur, (while it is warm) four Ounces, in a warm Mortar; put it preſently into a Matraſs; and to it Spirit of Wine, one Pint; ſet them in Digeſtion for twenty-four Hours, and there will be a very red Tincture, which keep in a Phial well ſtopped, for Uſe.

Canary Wine is the beſt Vehicle to give it in. Its Doſe is from ten to forty Drops.

TINCTURA TARTARI TARTARISATI. See TARTARUS.

TINCTURA THERIACALIS.

The Alexipharmic Tincture.

Take of *French* Brandy, and the beſt Vinegar, of each one Quart; of *Venice* Treacle, and Mithridate, of each half a Pound; digeſt them in a gentle Heat, and ſtrain out the Tincture for Uſe.

It has all the Virtues of the Treacle; and, by the Help of the Vinegar, will ſometimes procure a Diaphoreſis, where that fails. In ſhort, it is an excellent Alexipharmic, and well deſerves the firſt Rank in Practice. It may be given from two Drams to two or three Ounces with any convenient Vehicle, or by itſelf. This may, alſo, be enticed down with many Children, who cannot be prevailed upon with any other Form: They may take from one Dram to half an Ounce. In Fevers, if no other Medicines of the ſame Intention are uſed, it ought to be repeated every four or ſix Hours, according to the Exigency of the Caſe, till a Sweat riſes.

TINCTURA TERRÆ JAPONICÆ.

Tincture of Japan *Earth.*

Powder finely four Ounces of *Japan* Earth; of Cinnamon, one Ounce; of *Peruvian* Bark, one Ounce and an half; Musk and Ambergriſe, of each ſix Grains; rub the two laſt with Sugar-candy, one Ounce: Put them all into a Matraſs; and put to them Spirit of Wine, twenty-four Ounces; make of the Matraſs a circulating Veſſel; lute well the Juncture; ſet it upon warm Sand, to digeſt, for four or five Days, ſhaking it about two or three times a Day; then ſet it by to ſettle; and, by gentle Inclination, pour it into a Phial for Uſe.

This is of good Service in all Defluxions, Catarrhs, Fluxes of the Belly, Dyſentery, and Overflowing of the Menſes; and even in a Gonorrhœa and old Gleets, where the Virulence has been already conquered. It is, alſo, ſaid to be a good Succedaneum to the Bark, and that it will cure Intermittents. Its Doſe is from half a Spoonful to three or four, in rough Wine, or any other proper Vehicle.

TINCTURA VENERIS.

Tincture of Copper.

Take Verdegriſe, one Dram; Spirit of Sal Ammoniac, and rectified Spirit of Wine, each half an Ounce; let them ſtand until they are of a deep Sky-colour.

This is not fit for any inward Uſe; for it offends the Stomach, and provokes to Vomiting; but it makes an admirable Injection for a Gonorrhœa; and if Care be taken, and Skill enough acquired to know when the Infection is only in the Urethra, a Perſon may be ſoon and infallibly cured with it. But it is adviſeable, that Beginners be not too buſy with it.

TINCTURA VIPERARUM COMPOSITA.

Compound Tincture of Vipers.

Take of Flowers of Sulphur, one Pound; crude Antimony, four Ounces; grind them to a fine Powder; put it into an earthen Diſh, and ſaturate it with Oil of Sulphur, made by the Bell, (or Oil of Vitriol) four Ounces; put it into a Retort, and pour gradually upon it, of ſweet Spirit of Nitre, one Pound; place the Retort in a ſand Furnace, and draw off the Spirit. Into one Pound of this Spirit put two Ounces of dried Vipers; (cut into ſmall Pieces) let them digeſt forty-eight Hours in a Matraſs; when cool, ſtrain it thro' an hair Cloth. Return the Menſtruum into a Matraſs, adding of Cochineal, Saffron, and Virginia Snake-root, of each two Drams; let them digeſt forty-eight Hours; then decant the clear Tincture.

This is ſaid to be an excellent Diaphoretic; and in the *London* Sickneſs 1665. it was much uſed with Succeſs. Its Doſe is from ten to fifty or ſixty Drops, in *Canary* or Plague-water.

TINCTURA VIRIDIS.

The green Tincture.

Take of Verdegriſe, half an Ounce; of yellow Arſenic, ſix Drams; of Alum, three Drams: Boil them together in one Pound of White-wine, to the Conſumption of half the Quantity; and, after it is cold, add to it of Roſe and Plantain-water, of each ſix Ounces.

This hath not been received by the College, until the Diſpenſatory before the preſent; and in that, Nightſhade-water was ordered, where that of Plaintain is here ſubſtituted, becauſe that is not now directed to be made amongſt the ſimple Waters.

TINDA *parva*. H. M. *Arbor Malabarica, baccifera, cortice albicante, glomerato flore*. D. Syen. It is a tall Tree, growing in ſandy Places, in the Country of *Malabar*.

The Root bruiſed, and uſed by way of Lotion, is good for the Morbus Sacer; the ſame, bruiſed, is applied to Impoſtumes. The Leaves, in Decoction, are uſed in Fomentations, or Cataplaſms, for eaſing all Kinds of Pain, and are ſerviceable to Women in Childbed. *Raii Hiſt. Plant.*

TINEA. See ACHOR.

TINEARIA. A Name for the *Stœchas Citrina anguſtifolia*.

TINIARIA, in *Marcellus Empiricus*, *C.* 17. is the *Polygonum*.

TINKAR. Borax.

TINNITUS AURIUM. A Noiſe in the Ears, like that of a Bell.

TINNUNCULUS. A Species of Hawk mentioned by *Aldrovandus*.

TINTINNABULUM. The UVULA. *Veſalius*.

TINUS.

The Characters are;

The Calyx is double, the lower trifid, the upper quinquefid, and both monophyllous. The Flower is monopetalous, rotated, quinquefid, tabulated for a ſhort way below, and furniſhed with five Stamina, which ariſe from the Inſide of the Tube of the Flower. The Ovary in the Bottom of the Calyx is furniſhed with a long, triangular, ſcabrous Tube, and becomes a Fruit like an Olive, umbilicated, and full of a ſingle pear-ſhaped Seed.

Boerhaave mentions three Sorts of *Tinus*, which are; 1. Tinus;

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1. Tinus; prior; Cluſii. *Tourn. Inſt.* 607. *Boerh. Ind. A.* 225. *Laurus Tinus.* Offic. Ger. 1224. Emac. 1409. *Laurus Tinus Luſitanica cœrulea bacca.* Park. Theat. 206. *Laurus ſylveſtris corni fœminæ, foliis ſubhirſutis.* C. B. P. 461. *Lauri Tini ſylveſtris primum genus.* J. B. 1. 418. WILD BAY.

It is a Native of *Portugal*, and flowers in *July* and *Auguſt*. The Berries, which are uſed, being taken inwardly, purge by Stool, with great Diſorder and Perturbation of the whole Body. *Dale* from *Parkinſon*.

2. Tinus; II. *Cluſ. H.* 49. *Lugd.* 204. *Laurus ſylveſtris, foliis venoſis.* C. B. P. 461.

3. Tinus; III. *Cluſ. H.* 49. *Lugd.* 204. *Laurus ſylveſtris, folio minore.* C. B. P. 461. *Boerh. Ind. alt. Plant.*

The *Tinus* is a poiſonous Plant; the Berries, held in the Mouth, ſoon burn the Fauces; they are ſometimes exhibited in the Dropſy with ſingular Succeſs, being a very ſtrong Cathartic; but I would not adviſe the internal Uſe of this Plant. *Hiſt. Plant. adſcript. Boerhaav.*

TIPI. A ſhrubby Species of *Alliaria* growing in *Braſil*, with a whitiſh Flower, and a black round Fruit, like a Plum. *Piſ. Raii Hiſt. Plant. Index.* There are no Virtues aſcribed to it.

TIPIOCA. A Sort of Cremor prepared of the MANIHOT, which ſee.

TIPSARIA. Barley-water, from *Ptiſana*, *Rulandus* and *Johnſon* write it *Tapſaria. Caſtellus.*

TIPULA. A kind of Water-fly, reſembling a Spider. It has ſix long Legs, which it extends upon the Water, and walks upon them without ſinking; its Body is of an oval Shape, and a whitiſh Colour; its Wings are ſilver-coloured, its Eyes black, and its Tail ſharp-pointed.

It is of a diſcuſſive Virtue, being outwardly applied. *Lemery des Drogues.*

TIRUCALLI. *H. M.* A Name for the *Tithymalus Indicus fruteſcens.*

TITANOKERATOPHYTON, from τίταν Lime, or Plaiſter, and KERATOPHYTON, which ſee. A Name given by *Boerhaave* to a very large marine Plant, found near the Coaſt of *Norway*, reſembling the *Keratophyton*, except that it is incruſted, as it were, with a calcarious or gypſeous Subſtance. *Boerhaave* mentions twenty-four Species of this Plant, none of which have any medicinal Virtues aſcribed to them at preſent, that I know of.

TITANOS, τίταν, *Calx*, Lime; τίταν is expounded in *Erotian* by ἡ κονία, Lime, or a Lixivium prepared thereof; τίταν ἡ ἀσβέστος is Quicklime, commonly called ἄσβεστος (*Asbeſtus*), and adviſed by *Galen, de C. M. S. L. Lib.* 1. *Cap.* 4. among dry Depilatories. *Titanos* in *Rulandus* is Lime of Gypſum. *Foeſius. Caſtellus.*

TITHYMALOIDES.

The Characters are;

It is a Species of Tithymalus; the Flower is monopetalous, anomalous, and ſhaped like a Shoe.

Boerhaave mentions two Sorts of *Tithymaloides*, which are;

1. Tithymaloides; fruteſcens; folio myrti ampliſſimo. *T.* 654. *Tithymalus Curaſſavicus, myrtifolius, flore coccineo mellifero.* Par. Bat. H. R. D.

2. *An* Tithymaloides; fruteſcens; foliis Nerii. *Plum. T.* 654. *Boerh. Ind. alt. Plant.*

There are no medicinal Virtues aſcribed to this Plant at preſent, that I know of.

TITHYMALUS.

The Characters are;

The Root is fibrous or tuberous; the Leaves are alternate, oblong, intire, and a few of them orbicular. The Pedicle ends in a groſs Body, hollow like a Calyx, to the Top of whoſe Lobes grow four or five anomalous Petals, often ſemilunated, and excavated, repreſenting a tetrapetaloidal Flower, with almoſt lunar Segments, ſurrounded with two Leaves, inſtead of a Calyx. From the very Bottom of the Cavity of the Calyx, at the Sides of the Pointal, ariſe four, five, or more Stamina, longer or ſhorter, with their Teſticuli. From the Centre of the Calyx ariſes a long Style, or Pointal, bearing a triangular or hexagonal tricapſular Ovary, from whoſe Centre ariſes a long, triple Tube, with a bifid, ſcabrous Apex; this Tube runs out into ſo great a Length, that the Ovary appears almoſt in the Middle of the Pointal. Every Part of the Plant abounds with Plenty of Milk.

Boerhaave mentions forty-four Sorts of *Tithymalus*, which are;

1. Tithymalus; latifolius; Cataputia dictus. *Tourn. Inſt.* 86. *Boerh. Ind. A.* 255. *Cataputia minor, Lathyris.* Offic. *Cataputia minor.* Raii Hiſt. 1. 866. *Lathyris major.* C. B. Pin. 293. *Lathyris major hortenſis.* Theat. 191. *Lathyris, ſive Cataputia minor.* Ger. Emac. 503. J. B. 3. 880. *Eſula major.* Ruvin. Tet. Irr. Rupp. Flor. Jen. 219. GARDEN SPURGE.

It is frequently found in Gardens, and the Parts in Uſe are the round oblong Seeds, or Grains, which are bigger than a Pea, and include under a corticous Pellicle a white, pinguious Nucleus, or Kernel, of a ſweetiſh, acrid, and nauſeous Taſte, and a violent cathartic Quality; but thoſe Grains, as well as thoſe of the other Species of *Tithymalus*, are ſeldom uſed.

Twelve or fourteen Grains, bruiſed, and taken in Wine, put the whole Body in a Commotion, purge the Belly, evacuate Bile and Phlegm, potently provoke Vomiting, and attract Phlegm, Bile, and Melancholy.

This Plant, the firſt Year of its ſpringing from Seed, grows ſcarce to be two Foot high, with a thick reddiſh Stalk, beſet with long and narrow bluiſh-green Leaves, and ſo continues, without running into Branches, till the next Year, when it riſes to three or four Foot high, with many Branches toward the Top; on which, at every Diviſion, grow broader and ſomewhat triangular Leaves, ſet on without Footſtalks: The Flowers are ſmall and yellow, ſtanding in round hollow Leaves, which encompaſs the Stalk like a Cup, and theſe are followed by three ſquare Seed-veſſels, containing three oblong Seeds. The whole Plant is ſo full of Milk, that, if you cut off a Branch, it will run out by Drops in ſome Quantity; which Milk is of a hot, fiery, burning Taſte, inflaming the Mouth and Throat for a great while. This Spurge grows in Gardens, where it ſprings up of its own ſowing, dying after it has brought its Seed to Perfection.

This is much of the ſame Nature with the *Cataputia major*, but is rather ſtronger, and more violent, in its Operation; and therefore only given by bold adventuring Empirics. The Milk is good to take away Warts. *Miller's Bot. Off.*

The Whole of this Plant abounds with a milky, highly acrid Juice, which operates violently both by Vomit and Stool. It is claſſed among the Poiſons which are manifeſtly acrid and cauſtic, which create a Gangrene and Putrefaction, and whoſe Effects are to be oppoſed by aqueous, tepid, ſomewhat acrid, and pinguious Subſtances; as, alſo, by Preparations of Honey. See *Boerhaave, Inſtitut.* 1137. *Foreſt. Obſ. Med. L.* 1. *Obſ* 23. *Foel. T.* 2. Its moſt ſpecific Remedy or Antidote is ſaid to be St. John's-wort. See *Kircherus, Mund. Subt. T.* 2. and *Bauhine* from *Matthiolus* informs us, that if any one intends to deſtroy the Hairs of his Eyebrows and Forehead, he may mix the Juice of this Plant with Oil, and anoint them with it in the Sun, but in ſuch a manner, that no Part of the Preparation touch his Eyes and Face, ſince ſuch Parts are immediately inflated, become red, and reſemble a Leproſy. The Juice of the Garden ſpurge removes the Tooth-ach, when put into the Cavity of the affected Tooth; but due Care muſt be taken to fortify the Gum by means of red Wax; for which reaſon it ought to be principally uſed in removing ſuperfluous Hairs, Warts, and Serpigos. Impudent Beggars generally uſe to ſpoil and deform their Skins by means of this Juice, in order the more effectually to move the deluded Spectator to Compaſſion. *Bauhine*, alſo, informs us, that, in order to purge by Stool, *Fernelius* orders three or four Leaves of Garden-ſpurge to be exhibited in pinguious Broth. *Dioſcorides*, alſo, obſerves, that the Leaves of this Plant boiled with a Fowl, or Pot-herbs, produced the ſame Effect. If Fiſhes eat the Leaves and Seeds of this Plant, when thrown into Ponds and Lakes, they turn up their Bellies as if they were dead, ſo that they may be catched by the Hand, and will revive, when put into other Water, according to *Bauhine* from *Hollerius*. Twelve or fourteen Seeds of Garden-ſpurge, bruiſed and drank in Wine, throw the whole Body into Commotions, purge by Stool, eliminate Phlegm and Bile, powerfully vomit, and procure an Expectoration of Phlegm, Choler, and Melancholy. *Moriſon* from *Tragus* affirms, that Pills prepared of the Milk of this Plant, Vinegar, and aromatic Subſtances, are beneficial to dropſical Patients. *Dioſcorides* informs us, that ſix or ſeven of the Seeds taken in Pills, Figs, or Dates, purge by Stool, and evacuate Bile, Phlegm, and Water, but that the Patient muſt drink cold Water after them. According to *Pliny*, "twenty Seeds of "Garden-ſpurge, drank in pure Water, or Hydromel, cure "dropſical Patients, and evacuate Bile. Thoſe who intend to "be violently purged, take them with the Husks; but, as theſe "are found offenſive to the Stomach, it is thought proper to "take them with Fiſh, or Broth prepared of Fowls." *Bauhine* from *Matthiolus* informs us, that ten or twelve Seeds of Garden-ſpurge, freed from the Husks, are beneficially exhibited in order to excite a violent Vomiting in thoſe who have ſwallowed Love-potions, or other bewitching Things. But as there is no Scarcity of ſecure Emetics and Purgatives in the Materia Medica, there can be no Reaſon for preſcribing the Seeds of this Plant, with which preſumptuous Quacks have killed many, thinking to diſtinguiſh themſelves from the knowing and ſkilful Phyſicians. Thoſe who have, perhaps, without any Injury, ſwallowed any of theſe Seeds, owe their good Fortune rather to the Smallneſs of the Doſe, their Stomachs abounding with acid Juices, a previous Uſe of oleous Liquors, the uſing Things of a like Nature immediately after, or the natural Vigour of their Conſtitutions, than to the ſafe and innocent Nature of ſuch a Medicine. That in ſome Patients the Seeds of Garden-ſpurge ſhould operate by Stool, and in others by Vomit, ſeems to be owing to the particular Habit and Temperament of thoſe who uſe them; ſince it is certain, that ſome have Bodies more diſpoſed to one particular kind of Evacuation, than others; or to the Juices, or Remains of

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of the Aliments, lodged in the Stomach, and promoting one or other of the Evacuations by means of the Purgative. Perhaps this Circumſtance has laid a Foundation for the Story which prevails among ſuperſtitious old Women, who aſſert that, if the Seeds are ſtript downwards they purge by Stool; whereas, if they are ſtript upwards, they evacuate by Vomit. *Ettmuller* informs, "that the "Seeds of Garden-ſpurge are purgative. Thus, for Inſtance, if "from ten to twelve or fifteen Seeds are bruiſed and taken in a "poached Egg, they purge violently and inſtantaneouſly by "Stool. If the Intention is, that they ſhould purge ſtrongly, "they ſhould be well chewed; but if they are intended to vomit, "they are to be ſwallowed whole." See *Bauhine*, 3. *P. Moriſ.* 3. *Ray*, 1. *Dioſc.* 4. *Plin.* 27. *Bodæus in Theophraſt. Schrod. Pharm. Ettmuller*, 1. *Dale Konig. R. U. Boceler.* 1.

2. Tithymalus; Characias; amygdaloides. *Boerh. Ind. A.* 255. *Tithymalus Characias.* Offic. *Tithymalus Characias Monſpelienſium.* Ger. 405. Emac. 499. Park. Theat. 186. Raii Synop. 3. 312. *Tithymalus Characias rubens peregrinus.* C. B. P. 290. Tourn. Inſt. 85. *Tithymalus amygdaloides ſeu Characias.* J. B. 3. 672. Raii Hiſt. 864. *Eſula Characias rubens.* Rivin. WOOD-SPURGE.

This Species grows in rocky Places both in *France* and *Italy*, and flowers in *March*; the Flower is not of a pale or yellowiſh Colour, as in the reſt, but black.

The Root, Leaves, and Seeds, are of an acrimonious and cauſtic Quality; and the Juice, as *Dioſcorides* ſays, is a violent Cathartic.

3. Tithymalus; Characias; amygdaloides; foliis eleganter variegatis. *Flor.* 2. 115.

4. Tithymalus; Characias; folio ſerrato. C. B. P. 290.

5. Tithymalus; Aſer; arboreſcens; folio Hyperici majore, in ſummitate ramorum confertim nato.

6. Tithymalus; arboreſcens: folio glauco, anguſto, acuto, denſe congeſto. *Boerh. Ind. A.* 256. *Tithymalus paralius.* Offic. J. B. 3. 674. Ger. 401. Emac. 498. Raii Hiſt. 1. 865. Synop. 3. 312. *Tithymalus paralias ſive maritimus.* Park. Theat. 184. *Tithymalus maritimus.* C. B. P. 291. Tourn. Inſt. 87. *Eſula marina Linariæ folio.* Rivin. Irr. Tet. SEA-SPURGE.

It grows in ſandy Places by the Sea-ſide, and runs up, with ſome red, woody Sprigs, a Foot, or a Cubit in Height, and thick-ſet, from Top to Bottom, with Leaves ſomewhat like thoſe of Flax, but thick, and of a greyiſh Sort of Colour, and turgid with a lacteous Juice of a very acrimonious Quality. The Root is of a good Thickneſs, oblong, woody, and perennial.

The whole Plant is reſerved for Uſe, and is eſteemed of the ſame Virtues with the other Spurges.

7. Tithymalus; myrſinites; latifolius. *C. B. P.* 290. *Boerh. Ind. A.* 256. *Tithymalus myrtites.* Offic. *Tithymalus myrſinites.* J. B. 3. 674. Park. Theat. 187. Raii Hiſt. 1. 865. *Tithymalus myrtifolius.* Ger. 402. *Tithymalus myrtifolius, latifolius.* Ger. Emac. 499. *Eſula foliis myrti.* Rivin. Irr. Tet. MYRTLE-SPURGE.

This Species ſhoots forth ſpriggy Stalks a Span in Length, and pretty thick, which, for the moſt part, ſpread themſelves on the Ground, and are ſurrounded with Leaves orderly diſpoſed, reſembling thoſe of Myrtle, fattiſh, of a glaucous Colour, and acuminated. The Ends of the Branches run into ſmall Sprays, perforating round, pyxidated Leaves, and diſpoſed in the Form of an Umbella; upon theſe, among the Leaves, grow Flowers of an herbaceous Colour. *Raii Hiſt. Plant.*

It grows in *Calabria* and *Sicily*, and flowers in Summer. The Root, Leaves, Seed, and Juice, are uſed, and are ſaid by *Dioſcorides* to be of the ſame Virtues with thoſe of the *Tithymalus Characias*, or WOOD-SPURGE.

8. Tithymalus; myrſinites; anguſtifolius. *C. B. P.* 290.

9. Tithymalus; arboreus; caule corallino; folio Hyperici; Pericarpio barbato.

10. Tithymalus; Characias; radice repente. *H. R. Par.*

11. Tithymalus; ſalicis anguſto folio glabro.

12. Tithymalus; tuberoſa pyriformi radice. See APIOS.

13. Tithymalus; paluſtris; fruticoſus. *C. B. P.* 292. *Tourn. Inſt.* 87. *Boerh. Ind A.* 256. *Eſula major.* Offic. *Eſula major Germanica.* Ger. 404. Emac. 501. *Tithymalus paluſtris, ſive Eſula major Germanica.* Park. Theat. 188. *Tithymalus magnus multicaulis, ſive Eſula major.* J. B. 3. 671. Raii Hiſt. 1. 864. GERMAN SPURGE.

This Species of *Tithymalus* has a very large thick Root, ſeveral times bigger than a Man's Arm, ſpread out into many Branches, and ſending up many rough Stalks, two or three Foot high, reddiſh, and much divided, having ſmooth, long, narrowiſh, green Leaves, broadeſt at the End. The Flowers, which grow on the Tops of the Stalks, are ſmall and yellow, like other Spurges, which are followed by triangular Seed-veſſels containing three roundiſh Seeds. The whole Plant is full of a cauſtic Milk, burning and inflaming the Mouth and Jaws for a great while together. It grows in ſeveral Parts of *Germany*, flowering in *June*. The Root is uſed, and of that the Bark only.

It is a ſtrong Cathartic, working violently by Vomit and Stool, but is very offenſive to the Stomach and Bowels by reaſon of its ſharp corroſive Quality, and therefore ought to be uſed with the utmoſt Caution by ſteeping it in Vinegar, and giving proper Correctors, and then it is ſaid to evacuate ſerous and bilious Humours, and to help the Dropſy, Gout, and other obſtinate Diſtempers. It is put in the *Pilula Mechoacannæ* and *Fetidæ*. *Miller's Bot. Off.*

It grows plentifully in the upper *Germany*, and in the lower by the *Rhine*, and in *Sileſia* on the ſandy ſhelving Banks of Rivers, but with us is cultivated in Gardens. The Part uſed in Medicine is the Root, which is a very potent Purge of Phlegm, chiefly by Stool. Of the Root, Herb, and lacteous Juice, is prepared a ſingular kind of Ointment, which is very effectual againſt a contagious Scabies of the Head.

14. Tithymalus; arboreus; altiſſimus; folio ſalicis; caulibus rubentibus.

15. Tithymalus; arvenſis; latifolius; Germanicus. *C. B. P.* 291. *Eſula minor, vulgo.*

16. Tithymalus, Amygdali folio anguſtiori; montis Pollini.

17. Tithymalus, Amygdali folio, breviori; latiori, hirſuto; montis Pollini.

18. Tithymalus; ſubrotundis foliis majoribus, crenatis. *Boerh. Ind. A.* 256. *Tithymalus.* Offic. *Helioſcopius.* Ger. 313. Emac. 498. Park. Theat. 189. C. B. P. 291. Raii Hiſt. 1. 869. Synop. 3. 313. Tourn. Inſt. 87. *Tithymalus Helioſcopius ſive ſolſequius.* J. B. 3. 663. *Eſula ſolſequia.* Rupp. Flor. Jen 219. SUN-SPURGE, or HARTWORT.

This Species is of an herby Taſte, a little ſaltiſh; it gives a very deep Tincture of Red to the Blue-paper. *Martyn's Tournefort.*

This Plant has a ſingle white Root, which runs ſtrait downwards, is furniſhed with ſome Fibres, and ſhoots forth a ſingle Stalk, half a Foot, or a Foot in Height, round, and with a few Hairs. The Leaves grow thick on the Stalk, without any Order, and are like thoſe of Purſlane, or the *Peplis*, a Digit, and ſometimes a Digit and half in Length, roundiſh at the End, and finely indented about the Edges. The Top of the Stalk divides itſelf into Sprays, commonly five in Number, making a ſort of Umbella and ſurrounded by a like Number of Leaves, which are large, and rounder than thoſe on the Stalk, and each Spray parts into three others, ſurrounded by as many Leaves. The Flowers grow ſingle on the Stalks and Divarications of the Sprays, and are ſmall, herbaceous, tetrapetalous, with roundiſh, and not atall lunulated Petals. The Pointal proceeds from the Middle of the Flower, and has its Apex turgid with a triangular, tricoccous Seed-veſſel, reflexed towards the Sides of the Flower.

It flowers, and the Seed is ripe in Summer, but it periſhes in Winter. It grows in Kitchen-gardens, fat ploughed Fields, and is frequently found among Ruins by the Walls of Cities, and in the like Places. *Raii Hiſt. P.*

Beſides the Virtues it has in common with the other Species, the Juice is recommended againſt Warts. *Dale.*

19. Tithymalus; rotundis foliis, non crenatis. *Tourn. Inſt.* 87. *Boerh. Ind. A.* 256. *Peplus.* Offic. *Peplus ſive Eſula rotunda.* C. B. P. 292. Ger. 406. Emac. 503. J. B. 3. 669. Raii Hiſt. 1. 869. *Eſula rotunda ſive Peplus.* Park. Theat. 194. *Tithymalus parvus, annuus, foliis ſubrotundis, non crenatis, Peplus dictus.* Raii Synop. 3. 313. PETTY-SPURGE.

This is a Plant a Span in Height, full of a milky Juice, like the *Tithymalus Helioſcopius*, and ſeems to be a Species of it, only leſs in all reſpects. The Stalks are reddiſh, the Leaves are very ſmall, of an oblongiſh Round, and entire at the Margin, (by which proper Character it is certainly diſtinguiſhed from the *Tithymalus Helioſcopius*, whoſe Leaves are crenated) larger below, and ſmaller above. The Coma, or Tops of the Stalks, are rounded, or formed into an Umbella. The Root is ſlender, fibrous, and annual.

It grows in Gardens and Vineyards, and ſometimes is cultivated in Fields; flowers in Summer, and endures till Winter. *Raii in Hiſt. Plant.*

Taken in Hydromel, it evacuates Bile and Phlegm; ſprinkled upon Meat, it excites Commotions in the Belly. *Dale* from *Dioſcorides.*

20. Tithymalus; annuus; folio rotundo; & caule viridi. *Boerh. Ind. A.* 256. *Tithymalus amygdaloides anguſtifolius.* Tourn. Inſt. 86. *Tithymalus characias anguſtifolius.* Ger. Emac. 500. Park. Theat. 187. *Tithymalo maritima affinis, Linariæ folio.* C. B. P. 256. *Eſula folio Amygdali anguſto.* Rupp. Flor. Jen. 220. *Alypum Matthioli, Tithymalo affinis.* J. B. 676. NARROW-LEAVED WOOD-SPURGE.

21. Tithymalus; maritimus; folio Linariæ. *Boerh. Ind. A.*

It grows in Woods, and among Ruſhes and Brambles; the Leaves are uſed, and eſteem'd of the ſame Virtues with thoſe of the other Species of *Tithymalus*. *Dale.*

22. Tithymalus; Raguſinus; flore luteo; pentapetalo. *M. H.* 3. 342.

23. Tithymalus; exiguus; erectus. *H. L. Eſula exigua, Tragi Lob. Ic.* 357.

24. Tithymalus; foliis Pini; forte Dioſcoridis Pityuſa. *C. B. P.* 292. *Tourn. Inſt.* 86. *Boerh. Ind. A.* 257. *Eſula minor,*

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minor, Pityusa. Offic. *Tithymalus Pineus.* Ger. 402. Emac. 499. *Pityusa, Tithymalus Pineus sive Esula minor.* Park. Theat. 192. *Tithymalo Cyparissiæ similis, Pityusa, multis.* J. B. 3. 665. Raii Hist. 1. 867. PINE-SPURGE.

This Species has a much lesser Root than the *Tithymalus palustris fruticosus*, and sends forth many Stalks not much branched, a Foot or more high, set thick with long narrow Leaves like Toad-Flax, but rounder pointed; the Tops of the Stalks are divided into several Partitions like Umbels, having several hollow Cup-like Leaves pierced through by the Foot-stalks of the Flowers, which are small and yellow; the Seed-vessel is triangular. It grows in several Places of *Germany* and *France*, but with us only in Gardens.

The Virtues ascribed to this Spurge are the same with those of the *Tithymalus palustris fruticosus*, being a strong and violent Cathartic and Emetic; but the Shops being furnished with safer and gentler Medicines, both of them are worn out of Esteem, and very rarely prescribed. *Miller's Bot. Off.*

The Parts used in Medicine are the Root, Bark of the Root, and the Leaves. The Root is oblong, more slender than that of the *Esula major*, of a brown Colour on the Outside, but of a whitish Yellow within, and of a pretty acrid Taste.

It burns the Tongue and Fauces by its caustic Acrimony, when but tasted; but, taken inwardly, it purges Water from hydropic Persons upwards and downwards, with such Violence and Disorder, as requires great Caution in using it. Both this, and the *Esula major*, are corrected by Maceration in Acids. *Dale.*

Esula purges Phlegm most violently, and especially by Stool; whence it is called the Countryman's Rhubarb. It is of an acrimonious, caustic, and corrosive Nature, so as to be serviceable to sturdy Beggars, who with its Juice raise Exulcerations on their Skin, that they may appear afflicted with the Scabies, and the like Diseases, in order to move Pity. *Schroder.*

C. Hoffman says, that he never prescrib'd it himself, but has been an Observer of the Rashness of the common Sort, who have ventur'd to take it by whole Spoonfuls. If any, however, has a mind to try it, let him use the *Esula præparata* of the Shops, which has lain four-and-twenty Hours in an Infusion of very strong Vinegar, and then dry'd. The Dose hereof is from two Scruples to a Dram, and is an innocent Purge. *Casp. Dornavius* corrects it thus:

> Take of Esula prepar'd, four Ounces; Mace, Galangals, each two Drams; Spodium prepared, one Dram; Tragacanth, Bdellium, each three Drams: Reduce them to a Powder, of which give from half a Dram to a Dram. *Raii Hist. Plant.*

25. Tithymalus; cyparissias. *Prosp. Alpin. Exot. 65. M. H.* 3. 338.

This Species of *Tithymalus* has a thick Root, four Digits in Length, and turgid with a milky Juice, as is, also, the whole Plant, while it is fresh. This Root shoots up a Multitude of thin, slender juncous, Stalks, furnished with numerous small, slender, short Capillaments, like Lime-leaves, (whence the Name *Cyparissa* has been given to this Plant) naked near the Root, but marked with frequent blackish small Spots. Each of these Stalks has its Top form'd into an Umbella consisting of three or four Sprigs; and at the Beginning of the Umbella, on each Side a small oblong Leaf, sharp at the Extremity, and resembling a Myrtle-leaf; but less, and thinner. Every Sprig of the Umbella, also, has about the Middle, on each Side, a Leaf like the former, but less, from whence it continues to bare Leaves in manner of a Spike to the Extremity, inclining on one Side, and much shorter and broader than the rest; with small Flowers, like those of the *Leucoium*, and small Fruit of a triangular Figure, containing three round, white Seeds, less than a Grain of Pepper. Among the aforesaid long, slender, and strait Stalks, there are sometimes one or two of the Thickness of the little Finger, which are likewise divided into several foliated Caules, or Sprigs, each adorned on the Top with an Umbella, as the others, and these thick Stalks, before their Division, are, also, naked; and marked with Spots

The whole Plant, while fresh, abounds with a milky Juice, which the Natives use as a Cathartic for the Evacuation of pituitous and serous Humours. *Prosper Alpinus de Plantis exoticis.*

26. Tithymalus; exiguus; procumbens; Chamæsyce dictus. *Boerh. Ind. A.* 257. *Chamæsyce.* Offic. Ger. 407. Emac. 504. Park. Theat. 195. C. B. P. 293. J. B. 3. 667. Raii Hist. 1. 869. *Tithymalus exiguus glaber, Nummulariæ folio.* Tourn. Inst. 87. *Esula minima Chamæsyce dicta.* Volck. Flor. Nor. 155. TIME-SPURGE.

This Species has a little slender Root, about a Palm in Length, and furnished with some very slender Fibres. The Stalks are from three Inches to a Foot in Length, and subdivided into small Branches; the Stalks are of a reddish Colour, somewhat hairy, and spreading circularly on the Ground; at their Joints grow small Leaves, conjugated, roundish, and reddish on the Side towards the Earth, and greenish above, only distinguished with a purple Spot in the middle; and some of them at the Extremities of the Sprays, have both their upper and under Face of a very deep Red. The Flowers are of a purple Colour, and are produced at the Divarication of the Sprays among the Leaves.

It grows in the Vineyards and Fields of *Italy*, *Sicily*, and *Languedoc* and *Provence* in *France*, and flowers in Summer.

The Herb is used, and is esteem'd a Cathartic, as well as the Juice, which is a Remedy against the Sting of a Scorpion, the Place being anointed therewith. *Dioscorides.*

27. Tithymalus; Americanus; arborescens; folio Cotini. *H. A.* 1. 29.

28. Tithymalus; Indicus; frutescens. *Raii Hist. Plant.* 1710. *Tiru Calli. H. Malabar.* H. A. 2. 85.

29. Tithymalus; Indicus; vimineus; penitus aphyllos. *H. R. D.*

30. Tithymalus; arboreus. *Park. Theat.* 187. *Alpin. Exot.* 63. *Raii Hist.* 1. 864. *Tourn. Inst.* 85. *Boerh. Ind. A.* 257. *Tithymalus dendroides.* Offic. J. B. 3. 675. *Tithymalus dendroides ex Codice Cæsareo.* Ger. Emac. 501. *Tithymalus myrtifolius arboreus.* C. B. P. 290. *Tithymalus myrsinites, arborescens.* Ger. Emac. 499. *Esula caule crasso.* Rivin. Irr. Tet. TREE-SPURGE.

The *Tithymalus arboreus* grows in the Island of *Crete* (now *Candy*) to the Height of a Man, or higher. The Roots are numerous, long, slender, whitish, running out here-and-there in strait Lines within the Earth, and all meeting together at the Beginning of the Trunk, or all proceeding from the Beginning of the Trunk From the Trunk, which is thick, round, and of a Man's Height, proceed several strait, slender, viscid Branches, forming a kind of Umbella, and beset with long Leaves, without any Order, and thinner than those of the *Tithymalus Characias.* On the Tops are the Flowers representing a small Umbella, and succeeded by small, round, white Seed. The whole Plant is turgid with a lacteous Juice.

It is used as a Cathartic; for the Weight of half an Obolus purges Bile, Phlegm, and serous Humours. It is hot and dry beyond the third Degree, and excites an Inflammation and Exulceration. *P. Bellonius* tells us, that he saw on the Top of Mount *Ida* a *Tithymalus Dendridas* of twice a Man's Height, and as thick as a Man's Thigh. *Prosper Alpinus de Plantis exoticis.*

It grows in the mountainous Parts of the Kingdom of *Naples*, and other Countries. The Leaves, Seeds, and Juice, are used; which, according to *Dioscorides*, have the same Virtues as most of the other Species of *Tithymalus.* *Dale.*

31. Tithymalus; Orientalis; Salicis folio; caule purpureo; flore magno. *T. Cor.* 2.

32. Tithymalus; annuus; erectus; folio oblongo, acuminato. *T.* 87. *Peplis, annua, foliis acutis, flore muscoso.* Bocc. Rar. 24.

33. Tithymalus; Africanus; tuberosus; folio Myrti.

34. Tithymalus; Americanus; folio & facie Hyperici.

35. Tithymalus; folio longo, glauco; caule rubro; capsulis verrucosis; elatior; Siculus. *Raii H.* 872.

36. Tithymalus; Creticus; characias; angusti folius; villosus & incanus. *T. Cor.* 1.

37. Tithymalus; sylvaticus; lunato flore. *C. B. P.* 190. *Tourn. Inst.* 85. *Boerh. Ind. A.* 257. *Tithymalus lunato flore Columnæ.* Park. Theat. 187. Raii Hist. 1. 871. *Tithymalus sylvaticus toto anno folia retinens.* J. B. 3. 671. EVERGREEN WOOD-SPURGE.

This Root is small in respect of the Plant, black on the Outside, and produces several Stalks a Foot in Height, reddish from the Bottom, and smooth; but, from the Middle, there are several Leaves dispos'd almost in the Form of a Wheel, to the Top, of a lively Green and hairy, and cover'd with short, roundish Leaves, placed alternately. The Stalk about the Bottom is bare of Leaves, like the *Characias.* From the Top of the Leaves proceed some Alæ, bearing, on the Top, round, hollow Leaves, from whence proceed two others, standing on juncous Pedicles, and hollow, like a Bason: In these grow the Flowers, which are of an herbaceous Colour, inclining to yellow, tetrapetalous, and representing the Figure of a new Crescent, the Horns turned outwards, and the gibbous Parts looking inwards, and touching one another. They are furnished with four yellow Stamina, from whose Umbilicus proceeds the Pointal, sustaining on the Top a triangular Fruit, propending downwards.

It grows in several Parts of *Italy*, delighting in high, moist, and but little sheltered Places; it has nothing singular in its Virtues. *Raii H. P.*

38. Tithymalus; folio lini; major; Italicus. *Barr. Obs.* 60. *Ic.* 821.

39. Tithymalus; marinus; folio retuso; Terracinensis. *Barr. Obs.* 50.

40. Tithymalus; palustris; villosus; mollior; erectus. *Barr. Obs.* 41. *Ic.* 835.

41. Tithymalus; folio Salicis tenuissimè serrato & villoso. *T.* 86.

42. Tithymalus; Lugdunensis; Laureolæ folio. *D. Goiffon. H. R. D.*

43. Tithymalus; annuus; Lini folio acuto. *Bot. Monsp. M. H.* 3. 339.

44. Tithymalus; exiguus; villosus; Nummulariæ folio. *T.* 87. *Chamæsyce villosa, major, cauliculis viridibus.* Schol. Bot. 122. M. H. 3. 340. *Boerh. Ind. alt. Plant. Vol.* 1.

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The whole Plant, in what Part ſoever wounded, diſcharges a very copious and very white Milk, which by Inſolation becomes of a brown Colour. This Juice is of a moſt acrid, fervid, and penetrating Taſte, which remains a long time; and, if taken in too great a Quantity, it inflames the Fauces, and produces a Quinſey. Apply'd to the Skin, and ſuffer'd to remain there for ſome time, it firſt cauſes a Redneſs, and afterwards corrupts the whole Part. Hence by virtue of its cauſtic Quality, it is very effectual in eating out and extirpating Warts, ſmall Cancers, and Tumors. The Plant dried, and taken to the Weight of four Grains, cauſes a plentiful Evacuation of Serum, but not without moſt violent Gripings, and forces out Water through the Kidneys and Bladder. The Roots dry'd, and boiled in Whey, are proper in a Dropſy, and we read of wonderful Effects of it in *Rulandus*'s Book of *Empiric Caſes*. From the firſt Species is prepar'd the Juice of the *Cataputia* of the Shops, and of the ſame is prepared an Oil, which is brought from *India*. A few Drops of this Juice, being involved in ſome tenacious Matter, and taken, are a more potent Cathartic than the *Eſula*. This Juice is much like Scammony, but more acrimonious. If this Plant be boiled in Vinegar or Rheniſh Wine, it loſes all its Force; and this is all the Method by which the *French* Phyſicians would have it corrected, but then it is of no Service in the Cure of Diſeaſes. *Hippocrates* ſays, that the *Eſula*, *Hellebore*, and the *Grana Cnidia*, cure the Dropſy; but thoſe are of an alcaline and igneous Quality. The *Tithymalus*, ſince the Root of Jalap has been known, is but little uſed. *Hiſt. Plant. adſcript. Boerhaav.*

Beſides the foregoing Sorts of *Tithymalus*, *Dale* mentions the following;

1. Tithymalus Myrſinites fructu Verrucæ ſimili. *C. B. P.* 291. *Tourn. Inſt.* 84. *Tithymalus verrucoſus.* J. B. 3. 673. Raii Hiſt. 1. 871. Synop. 3. 312. *Tithymalus verrucoſus Dalechampii.* Park. Theat. 187. ROUGH-FRUITED-SPURGE.

It grows in the Fields, and the Herb, which is uſed in Medicine, agrees in Virtues with the other Spurges.

2. Tithymalus platyphyllos. *Offic. Ger.* 404. *Emac.* 500. *Raii Hiſt.* 1. 870. *Tithymalus latifolius Hiſpanicus.*. C. B. P. 291. Tourn. Inſt. 86. Park. Theat. 188. BROAD-LEAVED SPURGE.

It grows in *Spain*, and flowers in Summer. The Parts uſed are the Root, the Juice, and the Leaves, which have the ſame Virtues with the other Species. *Dioſcorides* ſays, that, bruiſed, and thrown into the Waters, it kills Fiſh.

3. PITYUSA. Offic. *Tithymalus foliis brevibus, aculeatis.* C. B. P. 292. *Tithymalus Cyparisſias vulgaris.* Park. Theat. 193. *quoad icon.* PINE-SPURGE WITH SHARP-POINTED LEAVES.

It grows in *Italy*. The Root, which is the Part uſed, is reckoned among Cathartics.

4. PEPLIS. *Offic. Ger.* 406. *Emac.* 503. *Park. Theat.* 194. *J. B.* 3. 668. *Raii Hiſt.* 1. 869. *Peplis maritima folio obtuſo.* C. B. P. 291. *Tithymalus maritimus ſupinus annuus Peplis dictus.* Raii Synop. 3. 313. *Tithymalus maritimus folio obtuſo, aurito, rubro perinde ac caule.* Tourn. Inſt. 87. PURPLE SEA-SPURGE.

This Species grows in the ſandy Places of the Sea-ſhore, and flowers in Summer. The Herb, which is uſed, is endu'd with the ſame medicinal Virtues as moſt of the other Species.

The fifth is the HIPPOPHAES; which ſee.

The ſixth is the Tithymalus cyparisſias. *Offic. C. B. P.* 291. *J. B.* 3. 663. *Raii Hiſt.* 1. 867. *Tourn. Inſt.* 86. *Tithymalus cyparisſias vulgaris.* Park. Theat. 193. *Tithymalus cupreſſinus.* Ger. 402. Emac. 499. *Eſula Officinarum.* Volck. 154. Cæſalp. 374. CYPRESS-SPURGE.

Caſpar Bauhine ranges under this laſt Species the *Tithymalus cupreſſinus* II. of *Tabernæmontanus*; but thoſe who conſider this Figure well, and thoſe of the *Tithymalus Cyparisſias*, and of the *Tithymalus Cupreſſinus* I. of the ſame Author will allow that *John Bauhine* had Reaſon to believe, that theſe three Figures repreſent the ſame Plant in different States. It is often found in the Spring, with ſeveral Stalks without Branches, garniſhed with larger Leaves than ordinary; eſpecially towards the Top, where they are marbled with Spots of the Colour of Oker. *Caſpar Bauhine* has made a different Species of it. *Thalius* calls it *Tithymalus* σικυόφυλλος, and has taken it for a *non deſcript. John Bauhine* believes, that it is an Abortion of the common *Tithymalus Cyparisſias*. It has been obſerved in the Wood of *Boulogne*, that the ſame Plant had ſuch Stalks and Leaves as *Thalius* has deſcribed; theſe Stalks were mixed, alſo, among others that were in good Condition; they periſhed in a little ime, and then the Root produced better.

The Leaves of the *Tithymalus Cyparisſias* have the Taſte of Almonds, the Milk of which has been drawn by Emulſion; they are ſtyptic, but without any Acrimony, or Bitterneſs; and give a pretty deep Tincture of Red to the blue Paper; but the Roots give a much deeper: They ſeem at firſt, to have the ſame Taſte with the Leaves, but leave at laſt a very conſiderable Acrimony in the Throat. It is very likely, that there is in the Roots of this Plant a Salt reſembling Alum, but involved in a great Quantity of reſinos Sulphur. This Mixture whitens the Phlegm of the Spurge much afer the ſame manner, as is hapens to the Magiſtery of Jalap, or that of Scammony. This Spurge is an excellent Hydragogue. It is very proper to correct it by macerating it in Vinegar, or the Solution of Cream of Tartar: For if one ſwallows ever ſo little of this Root, it leaves a conſiderable Acrimony and Burning, not only in the Throat, but all along the Oeſophagus, and ſometimes in the Stomach itſelf. The Bark of the Roots of this Plant is given in Subſtance from a Scruple to a Dram, and in Infuſion from one Dram to two. This Purgative is good for the Dropſy, Cachexy, and intermitting Fevers. It may be uſed in all Diſeaſes, where it is requiſite to carry off the Humours that reſiſt the ordinary Purgatives. It muſt be given in a Bolus after the following manner; take half a Dram, or two Scruples, of the Root of this Spurge, half a Dram of Cream of Tartar, twenty Grains of *Mercurius dulcis*; mix them with a ſufficient Quantity of Marmelade of Orange-flowers, or with the Conſerve of Wormwood perfumed with five or ſix Drops of Balſam of *Peru*: The Magiſtery may, alſo, be made of the whole Plant, bruiſed and digeſted in Spirit of Wine. Twelve, fifteen, or twenty Seeds, with the Husks of this Spurge, purge well: It is uſually called in *French, Petite Eſule, Eſula minor Officinarum.*

Fernelius uſed it as the Baſis of the Pills, which he calls *Pilulæ ex Eſula*, the Doſe of which is two Scruples. The Root of this Plant is an Ingredient in the *Benedicta laxativa*, *Hydragogum eximium* of *Renodæus*, *Extractum eximium* and *Cholagogum* of *Rolfincius*. *Martyn's Tournefort.*

TITHYMELÆA. The ſame as THYMELÆA. *Blancard.*

TITIANOS, τιτιανός. The Name of an emollient Peſſary, deſcrib'd by *Aetius*, and by *Paulus Ægineta. L.* 7. *C.* 24.

TITILLARES VENÆ. The Iliac Veins.

TITILLICUM. The Arm-pit.

TITTHOS, τιτθός. The Breaſt. See MAMMA.

TLACHICHINOA PATLAHOAC. A Name for the *Heliotropium*; *Mexicanum*; *mali Limonis foliis.*

TLA ALLI. A Name for the *Mayz*; *granis aureis*, which ſee.

TLAPALCOCATLI. A Name for the *Tagetes*; *Indicus minimus*; *flore ſericea hirſutie obſito.*

TLAPALTE. A Name for the *Tagetes*; *Indicus*; *medius*; *flore luteo*; *multiplicato.*

TLATLANCUAYE. A Name for the *Piper longum*; which ſee.

TLEON. The Name of a Serpent found in *Braſil*, whoſe Bite is extremely dangerous, and which is to be cur'd by the ſame Methods, as thoſe taken for the Bite of the Viper.

As to its medicinal Virtues, it is eſteem'd ſudorific, and a Reſiſter of Poiſons.

TLILZOCHITL. See VANILIA.

TMOLITES, τμωλίτης. The Name of an excellent Wine, like the *Falernian*, mention'd by *Galen.*

TODDA-PANNA. A Name for the *Palma*; *Japonica*; *ſpinoſis Pediculis*; *Polypodii Folio.*

TOETICA, according to *Blancard*, are attenuating Medicines.

TOLLES, TOLES, or TOLÆ. The Tonſils. The Name is, alſo, apply'd to glandular Abſceſſes in the Limbs. *Caſtellus*, from *M. Aur. Severinus.*

TOLUTANUM BALSAMUM. Balſam of *Tolu*. See BALSAMUM.

TOMAHUACTLI COPATLI *Hernandez.* The Name of a *Mexican* Species of *Ariſtolochia.*

TOMEION, or TOMEUS, τομεῖον, or τομεύς. An Inciſion, or cutting Inſtrument, either in Mechanics, or Surgery; from τέμνω, to cut.

TOMINEIO. The Name of an extremely minute Bird, found in *Braſil*, ſaid to be good for an Epilepſy, either eaten, or taken in Powder. *Lemery des Drogues.*

TOMOTOCIA, from τέμνω, to cut, and τόκος, a Fœtus. The Cæſarean Operation.

TONDI-TEREGAM. H. M. P. 4. T. 60. p. 123. *Arbor flore tetrapetalo odorato, fructu nullo.*

This is a tall Tree, about ſixty Feet in Height, with a thick Trunk, and very numerous, ſtrait, long, dark-green, lanuginous, rough Branches, full of fungous Pith. The Leaves ſtand by Pairs, in a parallel Order, on long Pedicles, about the ſmall Branches, and are oblong-round, acuminated, crenated, thick, ſoft, ſmooth, green, and ſhining above, and greeniſh and lanuginous beneath, of a ſweet Smell, and an aromatic Taſte. The Flowers, which conſiſt of four acuminated Petals, proceed from the Boſom of the Leaves, three or more together, and are of a purple Colour, and, being rubbed in the Hands, emit a pleaſant Smell. Between the Petals are four purpliſh Stamina, in the middle of which is the Pointal, of a beautiful red Colour, and a whitiſh Apex. The Inhabitants of *Malabar* aſſure us, that this Tree bears no Fruit; but we cannot believe them.

The Leaves of this Tree, boiled in Whey, make a good Collution of the Mouth for the Aphthæ; and of a Decoction of the Bark and Root is prepared an Apozem, with Water which allays the Heat of Fevers, opens Obſtructions of the Liver, and cures the Herpes, Scabies, and the like Affections. *Raii Hiſt. Plant.*

TONICOS, τονικός. An Epithet in *Galen*, for external Applications, which increaſe the Strength, Vigour, and Elaſti-

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city of the Parts. Or it is apply'd to internal Medicines of the same Efficacy.

TONITRU. Thunder. It is more the Province of the Naturalist, than Physician, to explain the Nature of Thunder. It has been sometimes esteem'd the Cause of Epilepsies; and I have been acquainted with some, in whom it always excited a temporary Purging. But, in both these Causes, I apprehend it acted only by causing a Terror.

TONOS, τόνος, from τείνω, to stretch, in the Language of *Hippocrates*, is a Nerve; whether proceeding from the Brain, or the spinal Marrow. *Galen. Lib.* 1. *de Mot. Musc.* tells us, that the same Organ is called by two Names, νεῦρον and τόνος, because it may be said, both νεύειν, to hang loose or slack, and τείνειν, to stretch. The same Author, *Com.* 1. *in 6 Epid.* tells us, there are three Kinds of similar Bodies in Animals, which are exanguious, and void of Cavity, some proceeding from the Bones; others generated of the Brain, and spinal Marrow; and others in the third place, deduced from the Muscles. The first of these, in *Hippocrates*, have commonly the Name of σύνδεσμος, (*Syndesmos*) a Ligament: The second he calls νεῦρον, and τόνος. the Third, τένων (a Tendon). And to the same Purpose *Ruffus Ephesius* describes the τόνοι, as taking their Original, and doing the Functions of Action, Motion, and Sensation to the whole Body. We often meet with the Word in this Sense in *Hippocrates*; for Instance, *Lib.* 2. *Epid.* where he says, δύω δὲ τόνοι ἀπ' ἐγκεφάλου ὑπὸ τὸ ὀπίσθιον τῶ μεγάλω σπονδύλω, "there are "two Nerves which proceed from the Brain, under the Bone "of the great Spondyle or Vertebra." The same is repeated, *Lib. de Ossium Natura*; and, *Lib. de Artic.* we read, τοῖσι γὰρ ἐπικαιροτάτοισι τόνοισι χειλονεύουσι, "for they are in the Vici- "nity of the principal Nerves." Here *Galen*, in his Comment, writes thus: ὑποκεῖσθαι τῶ ὑπὸτῶ μασχάλη φησὶ τόνους ἐπικαίρους, &c. "He (*Hippocrates*) says that under the Alæ (or Arm-pits) are "seated some considerable τόνοι, so he calls the Nerves. It is a "ridiculous Assertion, therefore, of some modern Physicians, "who imagine, that he only calls the Nerves which proceed "from the Brain by Pairs, by the Name of τόνοι, because, in "a Book of his *Epidemics*, he says, there are two Nerves, &c. "as before; for the Nerves which proceed to the Arms, are, "by all skilful Anatomists, concluded to arise from the spinal "Marrow about the Neck, in those Parts which are in the "Vicinity of the Thorax; and are here, by *Hippocrates*, called "τόνοι, as he, also, calls them again twice successively, that is, "a little below, and where he treats of the Spine." He uses the same Word, τόνοι, to express the Nerves in other Places of the same Treatise. *Galen*, also, explaining those very remarkable Nerves under the Arm-pits, which *Hippocrates* calls ἐπικαιροτάτους τόνους, "says, that *Hippocrates* usually applies this Appellation to "those Nerves which have a great Force, as those have in particular, "on account of their Vicinity to the spinal Marrow, and their ex- "traordinary Thickness." Again, in the same Treatise of *Hippocrates*, we read ἧσιν ἂν κοινωνήσωσιν οἱ τόνοι οἱ σύνεγγυς, "with "which the neighbouring Nerves communicate." Here, tho' *Galen* understands, by τόνοι, the Nerves of the Back and Vertebræ, it is rather meant of the Ligaments, which by their Force, and a Communication of Tubercles, more easily pervert and draw aside the Vertebræ, from whence they have their Original, than the small, soft, and weak Nerves. In the same Book, τόνοι νευρώδεες are the Nerves, which are extended lengthwise on both Sides of the Vertebræ, from the Top to the Bottom. Here νευρώδεες are expounded, in *Galen*, by ἰσχυροί, "strong." With respect to these, and some other like Places of *Hippocrates*, *Erotian* expounds the Word τόνοι, where he says, τὰ περιτεταμένα σώματα τοῖς σάρξιν, ὅτιν φλέβας, ἢ τὰ ὅμοια, τόνους ὀνόμαζεν, ἀπὸ τῦ περιτείνεσθαι· ἐνίοτε δὲ τὰ νεῦρα μόνον, ἔνιοτε δὲ τὰς ὑμένας ἔφασαν, "Those Bodies which stretch them- "selves about the Flesh, as Veins, Nerves, and the like, he calls "τόνους from the Verb περιτείνεσθαι (to be stretched about); "sometimes he gives this Name to the Nerves only; and some "have bestow'd the Appellation on the Membranes."

Τόνος, also, is not only a Nerve, but a Tension of that Nerve, as well as of other Parts, as appears from *Aretæus*, *Cap.* 4. *Lib.* 1. ὀξ. παθ. and *Hippocrates de Glandulis*.

TONSILLÆ. The Tonsils. These are describ'd under the Article SALIVA, by the Name of the Almonds, or AMYGDALÆ.

The Method of scarifying the Tonsils, when affected with and Inflammation and Quinsey.

A violent Inflammation of the Tonsils, especially if attended with a Quinsey, may be reckoned amongst the most violent Disorders. In order to prevent a Gangrene, and the like dismal Consequences, immediate recourse must be had to the most efficacious Remedies, for alleviating the Inflammation. Besides the Remedies of this kind proposed in an Inflammation of the Uvula, (SEE UVULA) repeated Bleedings at the Arms, Legs, Jugulars, and under the Tongue, and Scarification of the Tonsils themselves, will be very beneficial; for, by these means, the superfluous and inspissated Blood may be happily discharged. The antient Surgeons used to perform Scarification and Cupping on the external Parts of the Neck, nearest the Tonsils; a Practice which I have found very efficacious in this Disorder. In *England* and *France* it is usual, as I have been informed, to scarify the Tonsils internally; which is certainly the readiest and most convenient Method of Cure, if, at the same time, proper internal Medicines are exhibited; as plentiful drinking of thin aqueous Liquors, and cooling Clysters. For the more convenient Performance of this Operation, such an Instrument should be used as is delineated in *Tab.* XLII. *Fig.* 9. which may serve to depress the Tongue, whilst at the same time the Scarificator is concealed. This Instrument may be called *Paristhmiotomus*, from the *Greek* Word *Peristhmia*, which signifies the Tonsils, and should be somewhat longer than it is represented in the Figure.

The Method of opening Ulcers in the Tonsils.

Sometimes, through Neglect or Mismanagement, an Inflammation of the Tonsils cannot be resolved, but degenerates into an Abscess, or Scirrhus. In such a Case it is necessary, by emollient Gargarisms and Malagmas, to accelerate the Suppuration with all Expedition; by which means the Patient will not only be relieved from a most miserable Situation, but, also, from the Danger of Suffocation, which is threatened by the Increase of the Exulceration; having, likewise, his Speech and Deglutition restored. For these Reasons it would be highly improper and extremely dangerous, to wait till the Matter bursts spontaneously; and, therefore, the Abscess must be opened by Incision, as soon as the Pus can be perceived to be formed; which must be carefully observ'd both by Feeling and Inspection.

This Operation may be thus performed: Take a long Lancet covered with Linen, or a Piece of Plaister, so that only about the Breadth of a Finger may be left naked at the Point. Then the Tongue being depressed with a Spatula, like that in *Tab.* XXII. P, or the plain Handle of a Spoon, the Lancet must be entered into the most proper Part of the diseased Tonsil; and, immediately upon the bursting of the Matter, the excruciating Pains will abate. In this Operation, the *Paristhmiotomus*, or Instrument above recommended, for scarifying the Tonsils, (see *Tab.* XLII. *Fig.* 9) may be more conveniently used; which not only serves to depress the Tongue, instead of a Spatula; but, as the Lancet is concealed, as it were, in a Sheath, the Patient is not intimidated by seeing it: It must be introduced into the Abscess by pushing forward the Button B, with the Fingers. This Instrument is, therefore, very necessary for Children, and timorous Patients.

The exulcerated Tonsils being thus opened, a warm Gargarism of a Decoction of vulnerary Herbs mixed with Honey of Roses, or of Wine mixed with Water, or a little of the Infusion of Tea, and Honey of Roses, must be often used every Day, till the diseased Part is healed. Mean while the Patient should be strictly ordered to abstain from whatever is acrid or salt; for, should any such Substances adhere to the Wound, they may irritate and excite a new Inflammation, to the great Hazard of his Life.

The Method of treating indurated Tonsils.

Sometimes, after an Inflammation of the Tonsils, they are so extremely indurated and swelled, that they almost close up the Fauces, and prevent the Patient from either swallowing or breathing, especially if both the Tonsils are affected. As this Hardness cannot easily be discussed, it will be more proper to extirpate it; and Extirpation may be performed either with corrosive Medicines, with the Knife, or sometimes by a Ligature.

In the Application of corrosive Medicines, particular Care must be taken not to use the stronger Escharotics, which might happen to slip into the Stomach, and occasion greater Misery to the Patient. Here, then, we may apply the Oil of Tartar *per Deliquium*; and, if that should fail, a Mixture of Aqua-fortis, with as much Quicksilver as it can dissolve over the Fire. With these, or the like Remedies, that Part of the Tonsils, which is most severely indurated, should be touched once or twice a Day with a Brush, till they are sufficiently diminished. Two Cautions are necessary to be observed in this Method of Cure; that none of the sound Parts be touched with the Escharotic; and that neither Meat nor Drink be taken, nor even the Spittle swallowed, for some time after its Application, lest some of it should be carried into the Stomach. It is, therefore, expedient for the Patient to incline his Face downwards, for half an Hour after the Application, that the Escharotic may flow, with the Spittle, out of his Mouth; and, before eating or drinking, he should wash his Mouth, and gargarize with warm Water. This Course he must pursue, till a sufficient Quantity of the Tonsils is consumed to make him breathe and swallow freely. There is no Occasion for consuming the Tonsils totally, which would not only prolong the Cure, but prove prejudicial.

The Method taken by the Antients to extirpate indurated Tonsils, was by Incision. They opened the Mouth with an Hook, like those represented in *Tab.* XXIX. *Fig.* 2. or 3. and carefully removed the indurated Part with a proper Knife. But as this Operation must be very cruel, and is, also, inconvenient, because of the obscure Situation of the Tonsils, it is seldom now performed.

Lastly,

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Laſtly, the third Method of removing indurated Tonſils, is by Ligature, which is to be performed when the Tonſil hangs, as it were, by a ſlender Stalk; though, it may be, with equal Conveniency, extirpated with a Knife, or Pair of Sciſſars. To apply the Ligature, that Inſtrument is recommended, which is repreſented in *Tab.* XLII. *Fig.* 7. The Ligature muſt be renewed every Day, till the corrupted Part of the Tonſils falls off; which, according to ſome Phyſicians, happens in two or three Days, if the Ligatures be exactly made. The Ends of the Thread or Ligature ſhould be fixed upon the Cheek with a Piece of Plaiſter, leſt it ſhould ſlip into the Fauces. *Cheſelden* made a Ligature in this kind of Diſorder, with the Aſſiſtance of a Probe. But in a ſcirrhous Tonſil, with a broad Root, he perforated its Baſis with a peculiar kind of Needle, made a Ligature on both Sides, and, and by this Method extirpated it. *Heiſt. Chir.*

Of Ulcers of the TONSILS.

The *Tonſils* are ſubject to Ulcers, ſome of which are familiar, of a favourable Kind, and harmleſs; others foreign, malignant, and deadly. The mild or favourable Sort are pure, ſmall, not deep, and free from Pain and Inflammation; but the malignant are broad, hollow, ſordid, and contained under a white, livid, or black concreted Humour; and theſe Ulcers go by the Name of *Aphthæ*. If the Concretion be deep, the Diſeaſe is an *Eſchara*, (or Cruſt) and is called by that Name. Round this *Eſchara* appears a great Redneſs and Inflammation, attended with a Pain in the Veins, as from a Carbuncle, and an Eruption of thin, ſmall Puſtules, which, breaking out one upon another, form at laſt a Coalition, and become one broad Ulcer. And if this Ulcer eats its Way outwardly, it comes firſt to the Uvula, and conſumes it; and afterwards makes its Approaches to the Tongue, Gums, the Ligaments of the Jaws, [χαλινὸς] and the Teeth, which are looſened in their Sockets, and become black, and the Inflammation extends itſelf to the Neck; after which the Patient ſurvives but a few Days, ſinking under the accumulated Weight and Oppreſſion of the Fever, Inflammation, Fœtor, and Famine. But if the phagedenic Ulcer ſpreads itſelf through the Aſpera Arteria towards the Thorax, it induces a Suffocation on the ſame Day; for the Heart and Lungs are incapable of ſupporting either the Smell, or the Ulcer, or the Ichor; but Coughs and a Dyſpnœa ſeize the Patient.

The Cauſe of an Affection of the Tonſils is the Deglutition of cold, rough, hot, acid, and aſtringent Things; for theſe Parts are ſerviceable to the Thorax for the Voice and Reſpiration, to the Belly for the Tranſmiſſion of the Aliment, and to the Stomach for Deglutition. And if any Diſorder happens to the internal Parts, as to the Belly, Stomach, and Thorax, the ſame aſcends, and is communicated to the Fauces and *Tonſils*, with the adjacent Parts, by Eructation. For this Cauſe Boys, before the Age of Puberty, are principally ſubject to this Diſeaſe; for as, at this tender Age, they abound with Heat, they require and receive great Quantities of cold Air by Inſpiration; they are, alſo, intemperate in eating, and covet Varieties; and are, beſides, much given to Vociferation, when they are angry, or at Play. Girls, too, are much ſubject to this Diſtemper, before their firſt menſtrual Purgations. *Aret.* περὶ αἰτ. καὶ σημ. ὀξ. παθ. *Lib.* 1. *Cap.* 9. *See the Remainder of this Chapter, which gives an Account of the Countries moſt ſubject to this Diſorder, and the moſt miſerable Kind of Death it induces, under the Article* ÆGYPTIA ULCERA.

Of the Cure of malignant Ulcers in the TONSILS.

The Method of Cure of this Kind of Ulcers is partly in common with that of other Affections of the *Tonſils*, partly proper to the Diſeaſe itſelf. Common Remedies, which ſerve as well for an Inflammation and Strangulation, are Clyſters, Phlebotomy, Embrocations, Cataplaſms, Fomentations, Ligatures, and Cupping. But ſtronger Unctions are to be uſed; for neither the Ulcers remain in a ſettled State, nor Cruſts ariſe on the Superficies; and if there be a Diſtillation of Ichor from the Place inwards, the ſound Parts are very ſoon ulcerated, and the Ulcer very quickly eats its Way into the internal Parts, and deſtroys the Patient.

It would, therefore, be proper indeed to cauterize the diſeaſed Part, if it were not too raſh an Undertaking on account of the Situation of the Fauces; but we ought, however, to uſe Remedies equivalent to a Cautery, in order to reſtrain the ſpreading of the Ulcer, and to cauſe the Cruſts to fall off. Such are Alum with Honey, Galls, Balauſtines dry mixed with Hydromel; or the ſame may be blown in through a Reed, Pen, or a long and thickiſh Quill [καυλῷ] ſo as that the Medicines may apply themſelves to the Ulcers. Very proper Remedies are, alſo, burnt Chalcitis, with Cadmia triturated with Vinegar; or two Parts of Cadmia with one Part of the Root of Rheum in ſome (proper) Liquor. But Care is to be taken, that the Ulcers may not be compreſſed; for by that means they would contract Humidities, and ſpread themſelves the farther. For this Reaſon dry Medicines are to be applied by way of Inſperſion with a Feather, and the liquid Kind rendered thin enough to be infuſed on the Uvula. If the Cruſts are already reſolved, and the Ulcers appear red, there is great Danger of Convulſions; for, as the Ulcers generally dry up, the Nerves are contracted. The Parts are, therefore, to be moiſtified and moiſtened with Milk and Amylum, or the Juices, or Cremors, of Ptiſan, *Tragus*, Linſeed, or the Seed of Fenugreek. Sometimes the Uvula is corroded to the very Bone of the Palate, and the Tonſils are conſumed to their very Baſis, and the Epiglottis; by which means a Cicatrix is induced ſo conſiderable, as to intercept the Deglutition of either ſolid or liquid Aliment, and even to force a Return of what the Patient drinks, through his Noſtrils, whence, of Neceſſity, he periſhes with Hunger. *Aretæus*, περὶ θεραπ. ὀξ. παθ. *Lib.* 1. *Cap.* 9.

TONSORIS EMPLASTRUM. See EMPLASTRUM.

TOPAZIUS. The Topaz. See CHRYSOPASIUS.

TOPHUS. A Toph. A calcarious, or rather chalky Subſtance, growing in any Part of the Body.

TOPICA, from τόπος, a Place. Topics, or local Applications.

The beſt and moſt generous Remedy may, according to *Galen*, prove injurious, as well as beneficial. This Maxim holds true, not only with reſpect to internal Medicines, but, alſo, with reſpect to Topics, or external Applications. Though the former of theſe are more efficacious, and of more univerſal Uſe, than the latter, yet Topics are, in ſome Caſes, ſo neceſſary, that Practice cannot ſubſiſt without them; for which Reaſon we ſhall point out the ſeveral Errors with reſpect to the Uſe and Application of Topics.

Topics in general include whatever is externally applied to any Part of the Body, and conſequently comprehend whatever is laid to Wounds, Ulcers, or any Injuries of the Limbs; whether it conſiſts in the Application of the various chirurgical Inſtruments, or in the Uſe of Ointments, Plaiſters, Injections, and Tents. But we ſhall confine ourſelves to the Conſideration of thoſe Topics uſed in Diſorders which ariſe from an internal Cauſe, and conſequently belong rather to the Province of the Phyſician, than of the Surgeon.

Baths, then, for the Head, whether prepared of ſimple Water and a Lixivium, or Wine boiled with cephalic or emollient Herbs, are often prepoſterouſly uſed by Perſons ignorant of Medicine. Theſe are generally prejudicial in all Diſorders of the Head, and a Weakneſs of the Brain or Nerves; but they are in a particular manner injurious in Achors, Catarrhs, a Ringing of the Ears, Dulneſs of Hearing, and Inflammations of the Eyes. I have often known an Epilepſy produced by a prepoſterous Uſe of Baths for Childrens Heads; and I am of Opinion, that we ought totally to abſtain from ſuch Baths; and ſubſtitute, in their room, Frictions of the Head, and Subſtances of a drying and corroborative Nature; for the above-mentioned Diſorders are produced by an impetuous Conveyance of the Humours from the inferior Parts to the Head, and an Infarction and Stagnation of Blood either pure or ſerous there. Now nothing more diſpoſes the Head to receive the Impetus of the Humours, and retain the ſerous Parts of the Blood, than theſe Baths; which, by their hot or tepid Moiſture, render the Fibres flaccid, and hinder the congeſted Humours from returning thro' the Veins. But in all Diſorders of the Head, or ſuperior Parts, we are rather to bathe and relax the Feet and Legs, in order to make a Revulſion and Derivation from the ſuperior to the inferior Parts.

I, alſo, condemn the Uſe of cephalic Plaiſters; when, for Inſtance, the whole Head is ſhaved, and covered with a Plaiſter, as is uſual in violent Hæmorrhages, Epilepſies, and other Symptoms, generally produced by external Cauſes, ſuch as Contuſions or Blows: And though ſome, upon this Occaſion, make a Diſtinction between Plaiſters prepared of Balſams and Gums, and thoſe which conſiſt of viſcid and glutinous Subſtances; yet, in my Opinion, both are more hurtful than uſeful, not excepting the celebrated Betony-plaiſter. The Reaſon of this Aſſertion ſeems to be, that the freer the Perſpiration of the Part affected, is, the Cure always ſucceeds the better. Beſides, the farther the Parts are removed from the Heart, the Source of Heat, or the leſs Blood circulates in them, of the greater Importance it is, to promote Tranſpiration in them. Every one muſt, therefore, be convinced, that Plaiſters muſt prove prejudicial by cloſing the Pores of the Head.

We can, therefore, from Experience, recommend in their ſtead dry Powders, either ſprinkled on the Head, or included in Bags; and which, by their ſubtle, mild, and ſulphureous Quality, corroborate the nervous or cold Parts, and preſerve a free Perſpiration. But if dry Powders are contraindicated, we may ſubſtitute, in their room, Bags with cephalic Ingredients, boiled in Wine, or Liniments prepared of ſuch Subſtances, as are poſſeſſed of a penetrating Quality, a volatile, oleous Salt, and a balſamic Reſin; among which the moſt conſiderable are the *Peruvian* Balſam, Camphire, rectified Spirit of Wine, Sal Ammoniac, or volatile Salt of Worms, ſtrengthened by the unadulterated Oils of Lavender, Marjoram, Roſemary, or Nutmegs, and impregnated with Eſſence of Caſtor. Theſe Liniments afford great Relief in all Diſorders of the Head, whether they partake of the Nature of Convulſions and Epilepſies, or are accompanied with Pain,

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Pain, and the Interception of any of the Senſes. But my Intention is not to deſtroy the Uſe of all Plaiſters, which, in certain Caſes, are beneficial, when applied to the Forehead, or Nape of the Neck; but I only ſpeak of thoſe Plaiſters which cover the Whole or Half of the Head. It is, alſo, to be obſerved, that frequently powdering the Hair, eſpecially with pounded Starch, is productive of bad Conſequences. Thus a Gentleman of Diſtinction told me, that, by the frequent and immoderate Uſe of ſuch Powder in his Youth, he contracted a Weakneſs of his Eyes, which at laſt terminated in a perfect Cataract. Nor is it difficult to aſſign a Reaſon for this, ſince ſuch tenacious Subſtances, by blocking up the Pores of the Head, greatly obſtruct Perſpiration, ſo neceſſary to the Health and Strength of that Part.

It is a common Error in Practice, to apply various Liniments and Balſams in moſt Diſorders of the Head, eſpecially a Vertigo, an Head-ach accompanied with a Senſe of Weight, a Carus, an Apoplexy, a Torpor of the Senſes, and an Hemicrania. Thus it is cuſtomary not only to anoint the Noſtrils and Temples, but, alſo, the Crown of the Head and Neck, with fragrant Balſams prepared of Musk, Amber, Civet, and Oil of Roſes, becauſe theſe are thought efficacious againſt Diſorders of the Head. But ſuch a Practice is not ſo innocent as it is imagined; for theſe are vaporous Medicines, and, by their elaſtic Vaporolity, inſinuating themſelves into the Pores of the Veſſels, diſtend them too much, and, in ſome meaſure, fix the impetuous Motion of the Blood; and thus, by their ſedative and anodyne Quality, diſpoſe to Drowſineſs. Hence every one muſt perceive, that we are to deal cautiouſly with Medicines of this kind, which are not proper in Diſorders of this Nature, where the Head and its Veſſels are already infarcted and diſtended by the Impetus and Quantity of the Blood. In this Caſe, by increaſing the Expanſion of the Humours, and conſequently augmenting the Danger of their Stagnation, they are experimentally found to produce Head-achs, Vertigos, Ringing of the Ears, Drowſineſs, and a greater Oppreſſion and Torpor of the Mind and Senſes. What *Hippocrates* ſays in *Aphor.* 28. *Sect.* 5. with reſpect to Fumigations, holds true concerning theſe Medicines; which is, that they would, in many reſpects, contribute to the Production of good Effects, if they did not induce an Heavineſs of the Head. For which Reaſon, to the Remedies above-mentioned, we prefer ſuch balſamic Liniments, as only conſiſt of highly rectified Spirit of Wine, in which Camphire, the Oils of Marjoram, Lavender, and Rue, but not adulterated with Turpentine, are diſſolved; for theſe Subſtances rather operate by diſcuſſing and opening the Pores, than by filling the Head with Vapours; and for that Reaſon are always ſafer in Cephalalgias, and violent apoplectic Fits.

We now proceed to the Topics generally uſed in Diſorders of the Eyes; and ſo great are the Errors committed both by Phyſicians and Surgeons in this reſpect, that we may juſtly affirm, that more are deprived of Sight by a prepoſterous Application of theſe, than by the Violence of the Diſorders. That is a vulgar Error, that cold Subſtances are friendly to the Eyes; whereas ſuch as are hot are prejudicial to them: This, indeed, holds true, when the Eyes are ſound, in which Caſe it is more expedient to waſh them with cold, than with warm Water; becauſe the latter, by relaxing the Fibres, diſpoſes the Eyes to Defluxions, whereas cold Water, by corroborating the Pores of the Coats, and Sides of the Veſſels, prevents an exceſſive Flux of Blood and Humours, and thus preſerves the Eyes ſerene, lively, and ſound. But this Rule is by no means to be obſerved in a preternatural State of the Eyes, eſpecially in an Ophthalmia, in which the Uſe of cold Subſtances is highly dangerous. Thus *Foreſtus*, in *Obſ. Chirur. L.* 2. *Obſ.* 19. gives us an Account of a Woman, who, labouring under an Ophthalmia, uſed a Collyrium of Talc, and diſtilled Water; but, ſoon after, her Eyes were ſeized with ſuch an intenſe Pain and Heat, that an Ulcer ſucceeded. When the Eyes have been afflicted with an inflammatory Heat, I have often ſeen them rendered turbid, and the Inflammation ſo greatly increaſed, that within a few Days the Sight has not only been obſcured, but, alſo, ſometimes totally deſtroyed for want of proper Management; for as in all Inflammations, ſkilful Phyſicians juſtly condemn the external Application of cold, aſtringent, and incraſſating Subſtances, ſo I ſee no Reaſon why we ſhould admit their Uſe in Inflammations of the Eyes, whoſe capillary Veſſels are far more tender than thoſe of other Parts; for the Cauſe and Origin of every Inflammation is an Infarction of Blood or Humours in the larger Veſſels, on account of the Obſtruction of the adjacent ſmall Veſſels: Now Obſtructions are by nothing more confirmed, than by Things actually cold, which deprive the Juices of their Fluidity, and render them thick, and incapable of Circulation.

In inflammatory Diſorders of the Eyes, we not only reject ſuch Collyriums, as are actually cold, but, alſo, ſuch as are poſſeſſed of an incraſſating and condenſing Quality, or invite a farther Afflux of the Humours to the Part affected; ſuch as all the ophthalmic Waters, the Frogſpawn Water, for Inſtance, Roſe-water, that of Plantain, that with Sugar of Lead, that of Alum, the White of an Egg, red Bole, and all mucilaginous Subſtances. Thus *Foreſtus*, in *Lib.* 2. *Obſ.* 26. obſerves, that oleous and pinguious Subſtances are hurtful to the Eyes; in Confirmation of which, he tells us, that a Barber treated an Ulcer with hot Oil, till, breaking into the Tunica Cornea and Uvea, it at laſt degenerated into a Cataract. Greater Efficacy is to be promiſed from ſuch Subſtances, which, without any great Acrimony or Heat, are poſſeſſed of a diſcuſſive Quality; among which Camphire is the moſt conſiderable, becauſe, as in all other Inflammations, ſo, alſo, in this, it affords inſtantaneous Relief. If, therefore, the Inflammation is only ſlight and ſuperficial, Elder-flower Water, in which a little Saffron is diſſolved, with the Addition of a few Drops of a well-ſaturated Solution of Camphire, applied tepid, is of ſingular Service. If the Inflammation is accompanied with a ſaline and acrid Lymph, a Mucilage of Quince-ſeeds, or Roſe-water mixed with Saffron and Camphire, are of ſingular Efficacy; for when the Inflammation is violent, deep, and dangerous, the Eye being almoſt deprived of Sight and Senſibility, I have found happy Effects produced by tepid camphorated Spirit of Wine, mixed with *Peruvian* Balſam; by which means the Senſation, Motion, Tone, and Colour of the Eyes are gradually reſtored.

It is ſufficiently known, that Vitriol, in conſequence of its partaking of Copper, is among Practitioners reckoned a great Arcanum in Diſorders of the Eyes; but as it is almoſt promiſcuouſly uſed in all Collyriums, great Misfortunes are ſometimes produced by it. We are, therefore, to abſtain from the Uſe of Vitriol in all Inflammations, and in ſaline, hot, and acrid Defluxions, accompanied with Redneſs and Itching, becauſe Vitriol, by its Acrimony, increaſes all theſe Symptoms. But Vitriol is properly uſed, either when the Humours are thick, and formed into Sordes, or when they begin to form ſmall Membranes in the Tunica Albuginea, which frequently happens after the Small Pox and Meaſles, which induce a too great Thickneſs of the Lymph. In ſuch a Caſe, therefore, ſurpriſing Effects are produced by one Grain of *Cyprian* Vitriol, diſſolved in one Ounce of Celandine Water, with which Liquor upon a Feather the Part affected is to be frequently touched every Day. But when a manifeſtly corroding and burning Matter is perceived, temperating, demulcent, and mucilaginous Subſtances are to be uſed; and of theſe the beſt are, the Mucilages of the Seeds of Fleabane, and white *Sieff* without Opium; as, alſo, the Powder of Sarcocolla.

With reſpect to the Fat of Vipers, and of that Species of Fiſh called *Umber*, which is ſo greatly extolled in Wounds of the Eyes, and in that Diſorder in their Corners, which is generally called the *Pannus*, we are to obſerve, that theſe Fats ought to be recent, ſince, when by Age they have contracted a Rancidity, they are not only injurious in theſe, but, alſo, in all other Diſorders of the Eyes. Beſides, Collyriums are of no Uſe, or rather hurtful, when, from a Fault and Dyſcracy of the Lymph and Blood, which often happens in a Scurvy and Lues Venerea, the Eyes are red, painful, dropping, and turbid. In ſuch Caſes, Topics of all Kinds are uſeleſs: We firſt correct the Juices by internal Medicines, which is excellently performed by Decoctions of the Woods, and of ſuch Herbs, as ſweeten the Blood. It, alſo, ſometimes happens, that, in conſequence of an inveterate Tumor of the Glands of the Neck, an obſtructed Diſcharge from the Ears, an Application of Coſmetics to the Face, or the Retropulſion of an Achor in the Head, the peccant Matter fixes its Seat in the Eyes; in which Caſe we are not to truſt to Topics alone, but theſe are to be aſſiſted by internal Medicines, and the Cauſe of the Diſorder muſt be totally removed.

With reſpect to Diſorders of the Ears, numberleſs Errors are, alſo, committed; for nothing is more improper, than, in a Dulneſs of Hearing, to put Oils, whether expreſſed, as the Oil of ſweet Almonds, or mixed with Cephalic Oils, into the Ears. Though this Piece of Practice is extolled by many Practitioners, yet I I have rarely found it productive of good Effects: For a Dulneſs of Hearing proceeds either from a too great Relaxation of the Tympanum, or from an exceſſive Humidity of the Membrane ſurrounding the Organ of Hearing, that is, the Labyrinth and Cochlea; ſo that Oils, by producing a greater Relaxation, increaſe the Diſorder; and Oils of an hot, acrid, or too ſpirituous Kind produce intenſe Pain and Heat in that highly nervous and ſenſible Membrane, which ſurrounds the auditory Paſſage. Beſides, if we have recourſe to the Obſervations of the moſt ſkilful Practitioners, we ſhall find, that Topics are ſo far from being beneficial in a Dulneſs of Hearing, or Ringing of the Ears, that they are rather hurtful. Nor do I ſee by what means the Virtues of Medicines, whether unctuous, oleous, or ſpirituous, can penetrate to the Seat of the Diſorder, which is within the Brain, or in the moſt remote Receſſes of the Os Petroſum. In ſuch Caſes I have always obſerved happier Effects produced by apophlegmatizing and cephalic Subſtances.

There are, however, ſome Caſes, in which Topics are beneficial in Diſorders of the Ears; when, for Inſtance, the Ear-wax is ſo indurated, as to aſſume the Nature and Conſiſtence of a Plaſter, and greatly obſtruct the Hearing; in which Caſe tepid Oil of ſweet Almonds mollifies the indurated Ear-wax, ſo that it may be commodiouſly extracted with Ear-picks. I remember ſome Years ago a Mountebank pretended to a wonderful Secret for removing Deafneſs, which conſiſted in injecting into the Ear, with a Syringe, Fennel-water, into which a little of the Oil of Tartar had been dropped. This Injection he cautiouſly made ſeveral

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times a Day; and in some Patients, that is those whose auditory Passages were block'd up with the Ear-wax, the Experiment succeeded very well. The like happy Effect is sometimes produced by a tepid Injection of mineral Waters into the Ear; but they are only beneficial, when the Dulness of Hearing proceeds from Sordes too much clogging the Membrane of the Tympanum.

As Abscesses sometimes arise in the internal Ears, 'tis to be observed, that these require a particular Treatment, since, if they are treated in any other manner, they frequently terminate in putrid and carious Ulcers, accompanied with a total Loss of Hearing. 'Tis, therefore, a bad Piece of Practice to use digestive and oleous Ointments, such as these cold, dry, nervous, and sensible Parts cannot bear. But such Abscesses are rather consolidated and hindered from degenerating into Ulcers, by putting warm Balsamics into the Ear, with Cotton; such as the Essences of Myrrh, Opobalsam, and Amber.

The Nostrils have, also, their peculiar Topics, which, when properly apply'd, are very beneficial, but no less prejudicial, when preposterously used; an Instance of this we have in the great Variety of Things thrust up the Nostrils, in order to stop excessive Hæmorrhages: And tho' the Applications of this Kind are inconceiveably numerous, yet few of them are useful, or even innocent in Practice. For as an Hæmorrhage generally proceeds from an internal Cause, which for the most part is a Spasm, a violent Constriction or Obstruction of some Parts remote from the Nostrils, and as the Blood is impetuously convey'd to the Vessels of the Head, when this Blood is too much congested, it distends the Orifices of the Vessels, and at last breaks the Coats of the Nostrils. Hence, every one must perceive, that it is not only in vain, but, also, dangerous, in such Cases, to use external Styptics and Repellents; for, closing up the Orifices of the Vessels by Astringents, we derive the Disorder to other Parts of the Head, or perhaps to the Breast, whilst the internal Impetus of the Blood still remains. But if the open Orifices of the Vessels from which the Blood flows, are situated pretty deep in the Fauces, so that the Efficacy of Styptics cannot reach them, and the Nostrils, in the mean time, so stopt up, as to afford no Discharge of the Blood, it falls from the Fauces upon the Aspera Arteria, sometimes not without Danger of Suffocation. Besides, as all Styptics are unfriendly to nervous and glandular Membranes, they greatly injure these Parts, when thrust far into the Nostrils.

These Topics, for the Nostrils, are, therefore, of little or no Use, unless we previously derive the Blood from the Head, by Venesections, Frictions, and Immersions of the Feet and Hands in warm Wine or Water; as, also, by Diaphoretics, which, without any great Motion and Heat, propel the Blood from the Centre to the Circumference of the Body; and then there is no Necessity for these cold and styptic Repellents, since the Essence of *Terra Japonica* alone, received into the Nostrils, is far superior to them all. 'Tis customary, among the Vulgar, in excessive Hæmorrhages of the Nose, to apply a Piece of Silver Coin wet in cold Water, either to the Forehead or Nape of the Neck; or to apply a Linen Cloth wet with cold Water, either to the Forehead or Whole of the Neck. But these Practices cannot be used in the Beginning of the Hæmorrhage, without Danger of an Apoplexy. We do not, however, disapprove of such Epithems as are at once possessed of a discutient and corroborative Virtue; such as Vinegar of Roses, mixed with Nitre, Camphire, and the Oil of Rosewood; which Mixture, when apply'd tepid to the Temples and Neck, is of singular Efficacy, and preferable to all others.

We now come to consider the Topics generally used in those putrid and carious Ulcers of the Ossa Squamosa, which are familiar to those labouring under the Lues Venerea, or the Scurvy. The Topics for these Purposes are generally the Waters of Roses, Plantain, and Housleek, mixed with red Bole, Sugar of Lead, or Magistery of Lead; or, if the Ulcers penetrate to the Bones of the Fauces, or corrode or consume the Substance of the Uvula, Injections or Gargarisms are commonly used. But all these cold Preparations are of no Use, since they are by no means fit for stopping the putredinous Corruption. Disorders of this Kind require far more powerful, and more penetrating Medicines; such as Oil of Cloves, which is an excellent Preserver of the Bones, especially when mixed with *Peruvian* Balsam; *Elixir Proprietatis*, prepared without an Acid; Essence of Amber, or camphorated Spirit of Wine, cautiously injected thro' the Nostrils, by means of a Syringe, are, also, excellent for curing these fetid and malignant Ulcers. This Method I have often, upon Reflection, concluded good; and, upon Trial, found it to answer my Expectations. Many Venereal Patients, on account of the Ignorance of their Surgeons, and the preposterous Application of Medicines, are long afflicted with such sordid Ulcers, which at last corrode and consume the whole internal Structure of the Nostrils, the Uvula, and the Bone of the Palate, to the great Detriment not only of their Voice, but, also, of their Health, since Gargarisms, tho' prepared of the most efficacious Ingredients, are in vain apply'd, because they cannot reach the Root of the Disorder, and the Part affected, which is above the Bone of the Palate.

Many Topics are, also, prescribed both by Physicians, Surgeons, and the Vulgar, for the Tooth-ach; but most of these generally do more Injury than Good: And tho' after the Use of gentle Astringents and Anodynes, the best of which seems, to me, to be the Essence of *Terra Japonica*, mixed with the anodyne Essence, there is some Alleviation of the Pain; yet it is very small, short-liv'd, and, at another time, not to be obtained. And as a Tooth-ach is frequently epidemical, and arises from a Rheumatism, or an acrid erysipelatous Defluxion, infesting the carious Tooth, and generally joined with a catarrhal Fever, it is easy to perceive, how foolish and ineffectual an immediate Application to the Tooth must be. In this Case, if any Benefit is to be expected from external Applications, the best we can use, are paregoric Bags, prepared of discutient, carminative, and anodyne Ingredients: And tho' the Oils of Cloves and Origanum are excellently appropriated to a Caries of the Teeth, accompanied with Pain, yet, when, in a carious Tooth, a nervous Membrane is too much distended, or corroded by an aqueous Fluid, lodged between the narrow Interstices of the Bone, we are rather to use the liquid apoplectic Balsam, or the Balsam of Life, received into the Nostrils, or a tepid Decoction of Milk with Elder-flowers and Saffron kept in the Mouth, will better alleviate such a Pain, than any other external Application whatever. And I can affirm, from Experience, that Diaphoretics alone, such as the Bezoardic Tincture, Sulphur of Antimony, prepared in the manner directed by me, or succinated Spirit of Hartshorn, mixed with the sweet Spirit of Nitre, used in violent Tooth-achs, with a sudorific Regimen, after the Use of such Medicines as render the Body soluble, produce very happy Effects; so that 'tis sufficiently obvious, how preposterously Topics are generally used in Tooth-achs.

Various Errors are, also, committed, with respect to the Cure of cutaneous Disorders of the Face and Head. Thus nothing is more customary among the Vulgar, than the curing Achors and Scal'd-heads in Children, with various Lotions, Lixiviums, Decoctions, and Ointments prepared with Sulphur, Oil of Olives, and other unctuous Substances. But I have experimentally found this Method productive of the worst Consequences, since it is generally succeeded by Epilepsies, Inflammations, and Suppurations of the Eyes, an Epiphora, a Gutta Serena, violent Peripneumonies, Asthmas, and other Disorders of a like Nature. We are, therefore, in such Cases, to deal very cautiously with external Applications, for fear of obstructing the Perspiration in the Parts; nor are we ever to prescribe them, without at the same time exhibiting internal Medicines for correcting and evacuating the peccant Humours. We are never externally to apply moist, oleous and astringent Substances; and if Topics are indicated as proper, antimonial Balsam of Sulphur, dissolved in camphorated Spirit of Wine, and mixed with Oil of sweet Almonds, will produce excellent Effects, by mollifying, discussing, and resisting farther Putrefaction. In Venereal Pustules, and the Gutta Rosacea, we are, also, to deal very cautiously with Repellents, and such Medicines as constrict the Pores of the Skin, since, by their means, I have often observed the saline acrid Serum precipitated to the Coats of the Eyes, and an Ophthalmy produced. How much Topics are abused in the Cure of an Erysipelas, is too obvious; for, certainly, this Disorder requires a cautious Application of Externals, particularly when near the Brain and Origin of the Nerves; and it is not free from Danger, especially in scorbutic Patients, as Practitioners sufficiently know.

Practical Authors furnish us with numberless Instances of the bad Effects of Topics in the Cure of an Erysipelas. Thus *Rolfinckius*, in *Method. curand. Affect. Capit.* makes mention of a Quinsey produced by the unseasonable Use of Repellents in the Cure of an Erysipelas of the Head. *Aquapendente*, also, in *Lib. de Tumoribus*, justly orders, that, in an Erysipelas of the Face or Head, we are neither to use Topics before, nor after Purging; for, by cold Substances, the Matter may be repelled to the Brain, and produce a Phrenitis; or to the Fauces where it induces a Quinsey. In such Cases all Cataplasms, all unctuous, moist, and aqueous Substances are highly prejudicial. But we are rather to use dry Substances alone, such as Bags prepared of emollient and discutient Herbs, that the Transpiration may remain free. Sometimes, however, camphorated Spirit of Wine, mixed with Essence of Castor, or Oil of Nutmegs, mixed with volatile Salt of Worms, Nitre, and a little Opium, used by way of Ointment, produce very salutary Effects. Those seem to be in a great Error, who, for the Cure of a Gutta Rosacea, and Pustules, use sublimate Mercury, or a weak Water of precipitate Mercury, since these, when received into the Pores, greatly dispose to violent Heads-achs, Hemicranias, and Looseness of the Teeth. But the Intention will be far better answered by Essence of Benjamin, mixed with Magistery of Lead, Camphire, Sugar of Lead, Frogs-spawn-water, and Elder-flower-water.

When the Flesh of the Gums is so corroded, that the Roots of the Teeth appear bare, the Disorder is generally thought to proceed from a Relaxation of the Fibres. Hence 'tis a common Custom to prevent this Misfortune by the external Use of Astringents, such as the Essences of Mastich and Tormentil, Alum, and the Essence of *Japon* Earth, which, instead of being beneficial, are rather hurtful; for the Disorder is an Atrophy, and proceeds from a Defect of the nutritive Juice, in consequence of an Obstruction of the minute and numerous Arteries of the Gums. Now, if this

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this Obstruction is confirmed by Astringents, the Gums must be still more deprived of their fine nutritive Juices. In such Cases, happier Effects are produced by Decoctions of Wine with Sage, Origanum, Rosemary, Camphire, Nitre, and a small Quantity of the Spirit of Sal Ammoniac. By washing the Mouth and Gums frequently with such Decoctions warm, the Vessels are opened, the Blood and Juices invited, the Fibres of the Gums corroborated, and the Use and Vigour of those Parts restored.

We now come to consider the Abuse of Topics in Disorders of the Thorax. In those inflammatory Tumors, therefore, of the Lungs, commonly called Pleurisies, or Peripneumonies, nothing is more customary than the external Use of oleous Ointments, in order to allay the Pain. But I have rarely seen happy Effects produced by such a Practice, since, when the Disorder might at first have been dissipated by internal Diaphoretics and Discutients, they hinder its Discussion, and dispose it to a Suppuration; just as in other erysipelatous Disorders of the external Parts, these Ointments, by obstructing the Pores, and relaxing the Fibres, invite a farther Defluxion of Humours, and dispose the Part to Suppuration and Exulceration. If, therefore, as it often happens, the Pleurisy is spurious, that is, if an acrid saline Serum stagnates between the Membranes of the intercostal Muscles, in which Case, it is a Species of Rheumatism, the above-mention'd Topics will be far more injurious than beneficial, by hindering the Transpiration and Excretion of the stagnant Matter; which, however, is absolutely necessary to the Recovery of the Patient. Some, in order to allay violent Pain, have a Custom of adding to those, Oil of Henbane, by which means the Pain is, indeed, mitigated, but, at the same time, a Drowsiness, a Languor of the Strength, and a difficult Expectoration succeed, which, especially in Old-age, are not without Danger. Besides, in these Disorders, 'tis customary, with some, to apply Plaisters, such as the Emplastrum Vigonis, mixed with Mercury, Balsam of Sulphur, and Camphire. But, by this means, I have found, that when the Pleurisy has been spurious, and affected the intercostal Muscles and Membranes, but not the Lungs, the Pain has, indeed, been dissipated, but the Matter has been conveyed to other Parts; and I have frequently known the Matter repelled to the Substance of the Lungs, where it has produced Impostumations sufficiently chronical and dangerous.

In my Opinion, therefore, in all these inflammatory Disorders of the Thorax, we are either absolutely to abstain from all Topics; or, if any are to be admitted, camphorated Spirit of Wine, mitigated, and rendered anodyne by an Addition of Castor, Saffron, and distilled Oil of Nutmegs, used by way of Ointment, seems preferable to all others. There are, however, some Disorders in which pinguious Ointments, those possessed of an anodyne Quality, and such as relax the Fibres, produce happy Effects, though they are rarely used. A Disorder of this Kind is the dry Chincough, in which, not so much the Quantity, as the peccant Quality of a thin and acrid Matter stimulates the pneumonic Nerves and Thorax to violent convulsive and concussive Motions, in which Case 'tis necessary to allay these Motions, and relax the constricted Parts of the Thorax, not neglecting, at the same time, to inspissate and correct the thin and acrid Humour. This Species of Cough is frequently very obstinate, and raging violently at certain Seasons, principally attacks Children and Infants. I have frequently seen good Effects produced by anointing the whole Breast with an Ointment prepared of the Unguentum Potabile Rubrum, Sperma Ceti, Badger's Fat, Ointment of Poplar, Oil of Anise, and Camphire.

We shall now subjoin something with respect to Topics, in a true Phthisis, or Exulceration of the Lungs: We have Instances of phthisical Patients who bear some Ointments and Plaisters well, but others not without Injury. The Nature, therefore, of every Phthisis, and its particular Cause, are to be investigated. Topics are not, therefore, useless, when the Lungs are full of hard Tubercles, which, for the most part, gradually come to a Suppuration: For this Purpose the Plaisters ought not to consist of too hot Substances, nor of those of too tough and unctuous a Kind; for the former increase the Pain and Inflammation, and the latter hinders a free Perspiration. The best of all is *Rulandus*'s Emplastrum Diasulphuris, without the Colophony, which is prepared of amygdalated Balsam of Sulphur, Myrrh, Earth of Vitriol, Wax, and Turpentine, to which Bdellium may be added. This Plaister, by its corroborating Quality, diverts the Impetus of the Humours from the Breast, and discusses the Stagnation of the Juices. But 'tis to be observed, that, in Disorders of the Lungs, Plaisters are not to be applied to the Sternum, thro' which they cannot penetrate, but rather to the Back and Sides, because there the Pores are more open, the Blood more copious, and the Vessels more numerous, in consequence of which, the subtile and salutary Parts of the Plaister are the better received and admitted.

We now come to consider some Disorders of the Stomach, in which Topics are beneficial, provided they are duly applied. No Pain is more cruel than that which is fixed in the Right and Left Orifices of the Stomach, which are highly sensible; and is generally called a Cardialgia. In this Disorder, 'tis customary to take internally various Remedies for mitigating the Pain, and externally to anoint the Region of the Stomach with some spirituous Liniment, or an Ointment prepared of carminative and anodyne Ingredients. But this Method does not produce the desired Effect; for since the Pain is fixed in a very small Part, that is, in these nervous Orifices, it is sufficiently obvious, that a penetrating and efficacious Medicine is to be applied as near as possible to those Parts. Now, if either a Plaister, Liniment, or Ointment, is applied to the whole Region of the Stomach, a small Quantity of any of them can only penetrate to the Orifices of the Stomach. Besides, as 'tis certain from Anatomy, that the superior Orifice of the Stomach is nearer the Back and Vertebræ, since it is situated hard by the Aspera Arteria, it is sufficiently obvious, that the Medicines applied to the Pit of the Stomach can by no means penetrate to it. Such Remedies are, therefore, to be applied to the Back about the eighth or ninth Vertebra, before they can affect it. But if the Right Orifice is affected, we are to apply our Remedies under the Stomach, towards the Right Side. But in Cases of this Nature, we are by no means to use too volatile Substances, such as Spirits; nor unctuous and emplastic Substances, which operate too slowly, but rather a pretty thick Liniment, in the Form of a Plaister, and prepared of Treacle, Saffron, Oil of Nutmegs, Camphire, *Peruvian* Balsam, and Oil of Henbane. I have often found this Preparation afford Relief, and where it proves unsuccessful, nothing is to be expected from other Topics.

Practitioners well know, that in a Weakness of the Stomach, Vomitings and Nauseas, nothing is more common, than to apply Ointments, or oval stomachic Plaisters under the Sternum. But, upon dissecting Carcasses, we find, that only a very small Portion of the Stomach, but the Liver, the Intestinum Colon, and the small Intestines are situated there. The Stomach rather inclines to the Left Side under the Ribs, where, at least, three Parts of it are situated towards the Spine. If, therefore, we apply generous and penetrating Medicines to the spurious Ribs of the Left Side towards the Back, we shall find far more happy Effects produced on the Stomach by them.

The violent Pain arising from a Stone sticking in the Beginning or Middle of the Ureters, also, demands the Use of Topics; but they must be applied with great Caution; for 'tis sufficiently known, that a pretty large Stone, whilst lodged in the tubular Substance of the Kidneys, creates no Uneasiness; but creates an intolerable Pain, when it falls into the narrow and sensible Ureters. Hence we perceive, that Topics for this Purpose ought not to be applied to the Loins where the Kidneys are situated; but according to the Direction of the Ureters, that is from the Loins to the Groin. But even in this, a violent Error is generally committed, whilst, with the Ointments, most Persons mix hot forcing Substances, such as the Oil of Amber, the Spirit of Turpentine, and the Oil of Juniper; which Practice is productive of very bad Effects. Many, indeed, intend, by these hot Substances, to force the Passage of the Stone thro' the Ureters; but it is, by this means, rather fixed, and more violent Symptoms, such as a Suppression of Urine, Vomitings, and Convulsions, are excited: For that the Stone remains fixed in the Ureter, is not so much owing to the Bulk thereof, as to the painful Spasm of the Ureter; and, as by the Asperity of the Stone, the nervous Fibres are generally irritated, there happens an Influx of the Spirits, and Pain accompanied with Spasms and Constrictions; and the more intense the Pain is, the more narrow and contracted the Passages are. Now, if spirituous hot Substances are, in such a Case applied, we excite an Influx of the Blood and Spirits, fix the Stone more firmly in the Part, increase the Pain, and induce many terrible Symptoms. 'Tis not, indeed, to be denied, that where there is neither Pain nor Spasms, or where there is a certain Laxity, or Want of Tone, in the nervous and membranous Fibres of the Kidneys, such Things, externally applied, because they strengthen the Tone of the Parts, promote a Discharge of the Urine, but they are by no means to be used when there is any Pain or Spasm, in which case we are rather to use emollient paregoric and anodyne Oils, such as the Ointments of Poplar, Henbane, Poppy-seeds, and white Lilies, Badger's Fat, and Camphire, which gives them a penetrating Quality. With these the Region of the Ureters is to be frequently rubbed and anointed with a warm Hand; for these Substances, by checking the Impetus of the Spirits, and relaxing the constricted Fibres of the Ureters, occasion a far more easy and expeditious Passage for the Stone. For this Reason, sitting in a Bath is highly beneficial, and sometimes affords instantaneous Relief.

In excessive Discharges of the Menses, and involuntary Effusions of Seed in Men, 'tis customary to apply to the lumbar Region, where the large Ramifications of Blood-vessels are situated, and freely exposed, such Medicines, as, in some measure, check the Impetus of the Blood to the genital Parts; for it is of great Importance, what Medicines are used on such an Occasion, and at what Time they are applied; for I knew a Woman, who, when after forty Years of Age, in an immoderate Flux of the Menses, had a Plaister applied to her Loins, consisting of the Frog's-spawn Plaister, mixed with Sugar of Lead, and Oil of of Henbane; but, from that time forth, her Menses never returned to the great Detriment of Health. We are, also, carefully to abstain from all things actually cold, and much more from Narcotics; because

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because all these, by checking the Blood, if it tends too much to these Parts, produce a palliative Cure; but bring on much worse Misfortunes, such as Inflammations of the Kidneys, convulsive Colics, and spasmodic Disorders of the Abdomen. Hence, 'tis the safest Method, especially in Evacuations of Blood, totally to abstain from these Topics, and rather carry on the Cure by internal Medicines.

We now come to consider some Disorders which proceed from a Relaxation, Resolution, or Want of Tone and Strength in the Ligaments; such as the Falling down of the Fundament in Infants, and of the Uterus in Women. Physicians and Surgeons, in consequence of the Relaxation, generally treat these Disorders with Astringents; and, for that Purpose, foment and cherish the Parts affected with astringent Decoctions. But as this Prolapsus, or Falling down, does not so much proceed from a Relaxation of the Uterus, or Intestinum Rectum, as from a Relaxation of their Ligaments, on account of the Congestion and Accumulation of the Juices there, so every one must perceive, that this Method is idle and ineffectual, because these external Astringents cannot penetrate to the Ligaments themselves. Hence, in a Falling down either of the Uterus itself, or of the Vagina, such Things, immediately applied to the Uterus, are of no Efficacy. But rather the inguinal Region is to be cherished with balsamic and penetrating Liniments and Plaisters, which, being not so much possessed of an earthy Stypticity, as of a spirituous corroborating Quality, restore Vigour, Motion, and Tone, to the moist and relaxed Parts. But 'tis here to be observed, that as in all other Cases, so, also, in these, Topics alone are not sufficient, but that internal Medicines are more universally necessary in all internal, and even external, Disorders of the Body. I do not, however, reject Fumigations, and Fomentations of Wine prepared with aromatic Herbs, such as are possessed of a volatile, oleous Salt, and a certain earthy Principle, by which these Parts may be immediately affected, since the Force of Fumigations penetrates intimately, as do, also, the Effluvia arising from Baths.

With respect to the blind Hæmorrhoids, it is sufficiently known, that great Uneasiness is produced by this Tumor of the hæmorrhoidal Veins arising from the too great Afflux and Stagnation of the Blood, or of a viscid Serum. For the Cure of this Disorder, Physicians and Surgeons have invented numberless Medicines, especially Topics; but how much they all fall short of their Intention, is too well known to the miserable Patients; for the Astringents recommended rather obstruct the Humours which produce the Tumor; on the contrary, emollient and anodyne Substances, relax the Parts, and invite a farther Afflux of the Humours; whilst acrid Medicines corrode the Parts, and generally dispose them to malignant Ulcers, and even Fistulas. The Skill, therefore, of the Physician consists in distinguishing the Use of these according to Circumstances, and knowing what he ought, and what he ought not to do; for, if the Pain is excessive, anodyne and emollient Substances are beneficial. Hence, Linseed-oil alone, applied in a sufficient Quantity, excellently mitigates the Pain. If the Tumor is troublesome by its Bulk, then not so much earthy Styptics, as Corroboratives, are to be used, such as Fomentations of Wine prepared with Mastich, Amber, Rose-flowers, Balaustines, Frankincense, and Yarrow. Nor are Fumigations, in such Cases, to be excluded, especially such as are prepared of Things impregnated with a volatile, oleous Salt, the Nature and Virtues of which are, to insinuate themselves deeply, to strengthen the Pores, and dissipate the excessive Humidity. Hence, also, the Sea-mice (a Sort of Shell-fish), whose peculiar Virtues are at present so much extolled, act in no other manner, than other Fumigations impregnated with a certain volatile, oleous Salt: From what has been said, I think 'tis sufficiently obvious, how preposterous a Practice it would be, when the Pain is greatest, to use astringent, cold, or acrid Substances; or if, when there is a violent Tumor without Pain, we should apply emollient, anodyne, and relaxing Substances.

Here occurs a Question to be discussed; which is, Whether, in excessive Effusions of Blood or Lymph from the Uterus, Injections may be properly used, especially since we find from Experience, that they are with great Advantage used in excessive Fluxes of the Semen? But as the Vulgar are of Opinion, that Fluxes ought only to be stopt by Astringents, so nothing is more dangerous, than to attempt the checking of excessive Discharges of this kind by external Injections possessed of an astringent Quality. I remember a Woman, who, when labouring under an excessive Discharge of the Menses, by an Injection of the Decoction of Yarrow impregnated with Alum, contracted an Ulcer, accompanied with a Consumption and hectic Fever, which prov'd mortal to her. We are, therefore, to deal very cautiously with Injections, since they do more Harm than Good.

We now come to consider the Disorders of the Joints: And certainly, if Topics are in any Cases abused, they are so in arthritic and gouty Pains; for, because the Disorder lies in the external Parts, many are of Opinion, that the Remedy is immediately to be applied to the Part affected, that they may the sooner reach the Cause of the Disease. But in this they are greatly mistaken; for Topics are not, in these Disorders, so requisite, but the Pain may be mitigated without them; for we learn from Experience, that without any Topics, by internal Medicines alone, opposite to the morbific Cause, the Violence of these Pains may, in Procels of Time, be not only mitigated, but, also, totally removed. But we are, above all things, to take care, that Repellents, especially in the Beginning of the Disorder, be not used; for these disturb the Motion of Nature, which is from the Centre to the Circumference, repel the peccant Matter inwards, and excite violent Symptoms. See *Drabizius de Scorbut. Tit. de Arthrit.* In the Beginning of a Gout, I know the Application of a Plaister, composed of the White of an Egg and Alum, in a plethoric Man, produce, in one Night's time, a lathargic Disorder, which destroy'd the Force of his Genius, and the Strength of his Memory, all his Life after. *Hagendorn*, in *Cent.* 1. *Hist.* 28. gives us a memorable Instance of a Merchant, who, labouring under a scorbutic Tumor, had an Epithem prepared of distilled Waters, Ceruss, and Camphire, applied to it, by which his Pain was alleviated, but he lost his Speech, and the Use of his Left Arm. With no better Success is the present Practice, of anointing the external Parts with camphorated Spirit of Wine. It is hardly possible to enumerate the Misfortunes which may be produced by this Remedy, used without any respect to the Patient, and his Circumstances. Thus, by the Application of it to gouty Feet, I have frequently observed Cardialgias, convulsive and epileptic Motions of the Limbs, Palsies, and other terrible Symptoms, excited. 'Tis, also, certain from Experience, that all Medicines are not beneficial to all Patients, since some Topics remove the Pain in some, and increase it in others, whilst others are relieved by spirituous Liniments, others by anodyne Plaisters, and others by Cataplasms prepared of Milk, and the Crums of Bread, whilst none of all these Remedies agree with others.

The Cause of these particular Effects is not sufficiently adverted to, and investigated, since 'tis sufficiently known to Surgeons, that all Patients cannot equally bear the same thing in external Wounds. But the Cause of this is not so much the peculiar Disposition of the peccant Humours, as the tensive and tonic Constitution of the Fibres, Pores and Vessels of the Skin; for all the Parts, especially the Emunctories and Strainers, have their peculiar Strength, Tone, Tension, and Dilatation, which Species of Motion, so highly necessary to the Secretions and Excretions principally depend upon the Influx of the animal Spirits, and the Tension of the nervous Membranes. Of what Kind, therefore, this Influx of the animal Spirits, and Tension of the nervous Membranes, is in every Patient, in all Disorders, and their various Stages, ought to be diligently considered by Physicians, in the Application of their Topics; for every one sees, that when the Pores are constricted by Pain and Spasms, hot and spirituous Substances are by no means proper, but rather such Medicines as gently relax the constricted Parts. On the contrary, if there is too great a Relaxation after the Pain, which appears from the Tumor, and the Decrease of the Pain, all moist, unctuous, and anodyne Ointments are very injurious; in which Cases we are, therefore, rather to use spirituous nervous Liniments. And tho' Topics, sometimes, are beneficial in allaying Pain, and mitigating the Fever, yet they do not always produce the same happy Effects in the same Patients. In a Word, the stronger Nature is in expelling, and the greater the Strength of the Body, and of the internal Motion, are, the less Danger Topics, if decently applied, induce. But, if the Vigour of the Motions has ceased, if the Patient is old, or afflicted with a Cachexy, Topics are absolutely to be rejected; for the principal Intention of the Physician is not, by Topics, to hinder the Evaporation of the peccant Matter, but to promote it; and, since great Judgment is necessary to this, it is safest to abstain from all Topics, to commit the whole Cure to internal Medicines, and keep the Parts affected in a gentle Heat.

I have, also, observed, that the Generation of Tophs, which principally happen in a fixed Gout, is, for the most part, owing to an incautious Application of Topics, especially those of the stupefying and refrigerating Kind. Thus *Wedelius*, in his *Tract. de Medicament. Facultat.* informs us, "that many arthritic Patients have suffered much, have had their Wandering converted "into fixed Gouts, and many Tophs formed, by using unctuous "and pinguious Plaisters." Hence *Galen*, in *Method. Medend. Lib.* 4. *Cap.* 3. tells us, that in the Gout, Tophs are produced by a thick and glutinous Humour, which is not gradually digested, but suddenly dried by violent Remedies. And *Fernelius*, in *Consil.* 12. observes, that Gout Pains are produced by the same means. But I am of Opinion, that all Topics are not to be discarded in external Pains of the Joints; for when the Pain is inveterate, and accompanied with a certain Torpor, and Insensibility, which frequently happens in Old-age, then after checking the internal Ebullition of the Blood, we are, by nervous and balsamic Liniments, to corroborate the Nerves, and invite the Influx of the nervous Fluid into the weakened Parts.

We must not forget the common Practice of applying live Earthworms to the Parts affected in a wandering scorbutic Gout. Great Encomiums are bestowed on this Remedy, by practical Physicians, especially by *Wierus*. And 'tis certain, that on account of the volatile, abstersive, and nitro-sulphureous Salt these Animals contain, they are of an excellent discutient and sedative Virtue, which manifests itself not only internally, but, also, externally

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ternally in various Kinds of Pains, and even in the Lues Venerea itſelf. Yet great Caution is requiſite in the Application of theſe Animals; for though, in the moſt cruel Pain, when the Fluids are in Motion, the Strength entire, and the Patient young, theſe actually cold Subſtances produce happy Effects, yet they produce quite contrary Effects in a fixed inveterate Gout.

We ſhall ſubjoin ſomething more, with reſpect to an Eryſipelas; for the Cure of which, moſt Surgeons and Phyſicians have immediate recourſe to Topics, tho' the Errors ariſing from that Practice have been often expoſed. But I would have it obſerv'd as a general Maxim, that an Eryſipelas, ariſing from an external, ought to be diſtinguiſhed from that ariſing from an internal Cauſe. In the former, produced by Contuſions, and other Wounds, Topics are not generally prejudicial; but when the Diſorder proceeds from an Orgaſm of the Humours, and a febrile Impetus, an heterogeneous Matter, generally of an acrid and corroſive Nature, is protruded to the Surface of the Body; in which Caſe we muſt be very cautious, ſince the Matter is eaſily repelled, and ſince by thoſe Topics, which, in other Caſes, prove beneficial, we may do an irreparable Injury to the Patient, by repelling to the internal Parts the peccant Matter, which then acquires the Nature of a Poiſon; ſee *Frid. Hoffman. Diſſert. de Converſione Morbi Benigni in Malignum.* Nothing is more common, than by Aſtringents, ſuch as the White of an Egg, mixed with Alum, to render a ſlight Eryſipelas fixed and profound, and to excite malignant Ulcers; Inſtances of which daily occur in Practice. Hence thoſe Phyſicians act prudently, who treat all the Species of Eryſipelas with Internals, applying only, externally, Bags full of paregoric Herbs, which, by their mild Influence, keep the Pores open, relax ſuch as are conſtricted, and cheriſh the Parts.

We muſt, alſo, obſerve, that Surgeons commit a terrible Error in applying hot Cataplaſms, prepared of Bean-meal, Liquorice-root, emollient and diſcutient Herbs, and proper Waters: For ſince by the Heat the Moiſture is dried up, and the Matter is more firmly impacted in the Skin, and its Pores, ſo that it can hardly be remov'd by a Knife, the Buſineſs of Tranſpiration is greatly injur'd; and the Eryſipelas, which by proper Meaſures might have been diſcuſs'd, is converted into an Abſceſs or an Ulcer: We are, therefore, to endeavour, to preſerve a free Reſpiration in the Parts affected; which can neither be obtained under a cold State of the Air, an intenſe Heat, or a great Load of Clothes, but under a moderate Heat, which excellently encourages Perſpiration.

In like manner Topics ought to be cautiouſly applied to Buboes, becauſe by Repellents they are render'd malignant. Much leſs are we to apply Topics of an aſtringent and refrigerating Kind to malignant and critical Buboes, becauſe ſuch a Practice is highly dangerous. Critical Buboes, when the Humours are convey'd to the Glands, are known by the Patient's retaining his Strength, by their happening on the critical Days, and by the previous Signs of Concoction in the Urine. At this Time all Repellents are highly prejudicial; for, as *Hippocrates* juſtly obſerves, in a perfect Criſis, no Change of the Patient's State is to be attempted, but the whole Buſineſs is to be left to Nature. Sometimes a Bubo ariſes from a Redundance of Blood, in which Caſe, according to *Avicenna*, *Oribaſius*, and others, we are by no means to uſe Repellents. But when a Bubo tends to Suppuration, nothing is more beneficial than the Application of the Diachylon plaiſter with the Gums, mixed with Opopanax.

'Tis juſtly to be doubted, whether Topics are proper in the Small Pox; only we may affirm in general, that, as this Diſorder is a critical Evacuation, great Caution is requiſite. However, if before the Eruption the Patient is afflicted with a Delirium, we may with Advantage apply to the Forehead Spirit of Roſes mix'd with Camphire. But, during the Eruption and the Suppuration, I am of Opinion, that we ought to abſtain from all Liniments. In the Decline, and at the Time of the Exſiccation of the Diſeaſe, when the Force of the Diſorder is ſubdued, I can not diſapprove of Oil of ſweet Almonds, mix'd with Camphire and Sperma Ceti, in order to prevent the Defedation of the Skin, and correct the Acrimony, which generally lies pretty deep. See *Frid. Hoffman. Diſſert. de Variolis epidemice graſſantibus.* For this Reaſon we are cautiouſly to proceed with Topics of this Kind, ſuch as Spirit of Wine impregnated with Myrrh, and Sugar of Lead mixed with Roſe-water.

The Itch, which is a puſtulous Exulceration of the Skin, more or leſs moiſt, is generally thought incurable without the Uſe of Topics. Hence, neglecting all internal Remedies, they forthwith have recourſe to various ſulphureous and mercurial Liniments, which they apply either to the whole Surface of the Body, or only to the Joints, tho' frequently with a very conſiderable Danger both to Life and Health; for it is never ſafe by Topics to cure external Diſorders, proceeding from an internal Cauſe; but as Nature expels the heterogeneous and morbid Matter, the Phyſician ought to do the ſame, and never counteract the Intentions of Nature, which is generally done by Repellents, externally applied. Hence I am of Opinion, that the Cure of theſe cutaneous Diſorders, ought not only to be begun, but, alſo, finiſh'd by ſuch internal Medicines, as correct and diſpoſe the peccant Matter to Excretion, and at the ſame time eliminate it. To this Claſs of Medicines belong not only Diaphoretics, emollient and laxative Infuſions, but, alſo, if the Itch is inveterate and malignant, Preparations of Mercury and Antimony. Then, for the better Conſolidation of the Skin, and the Reſtitution of its Beauty, we may uſe Baths, drying, ſulphureous, and ſaturnine Ointments. But we are always to abſtain from external mercurial Liniments, which can never be us'd without Danger, as is obvious from numberleſs practical Obſervations.

As for mercurial Liniments and Fumigations us'd to excite a Salivation in the Lues Venerea, it is ſufficiently known, what violent Symptoms are brought on by this means, and how precarious this Method of curing ſo obſtinate a Diſorder is. I am certain from Experience, that the Lues Venerea may be happily remov'd by proper Preparations of Mercury and Antimony, and Decoctions of the Woods exhibited internally in a due manner, without any external mercurial Applications, and often without exciting a Salivation, or any Train of uneaſy Symptoms.

With reſpect to Topics applied to paralytic Parts; tho' theſe excellently aſſiſt the Operation of internal Remedies; yet they ought to be properly choſen, and cautiouſly applied. Thoſe are, in my Opinion, greatly miſtaken, who think that only Fats, Lards, and unctuous Liniments, ought to be applied either immediately to the Parts affected, or to the Spine of the Back; for theſe Subſtances obſtruct the Pores, and ſtill more relax the Fibres, whoſe Tone is already deſtroy'd; by which means they diſpoſe the Parts to a Tumor. On the contrary, ſpirituous, hot and ethereal Oils alone, do not produce the deſir'd Effect, ſince moſt of them, in conſequence of the Subtility of their Parts, fly off in the Air, and leave the nervous and muſcular Fibres too rigid. This Intention is better anſwer'd by Ointments prepar'd of the Fats of Animals, and the diſtil'd Oils, ſuch as thoſe of Rice, Marjoram, Lavender, Juniper, Cloves, and Roſemary; for the Tone of the nervous Parts ought to be render'd natural, ſo that there be neither too great a Relaxation nor Conſtriction, too great an Humidity or Dryneſs. Beſides, 'tis to be obſerv'd, that in a Palſy ariſing from a Diſorder of the Spinal Marrow, and Origin of the Nerves, theſe Medicines are not to be applied to the Parts deſtitute of Senſation and Motion; but to the Source of the Diſorder, which is lodg'd in the Spinal Marrow. But 'tis quite otherwiſe in that Species of Palſy, in which the Motion, but not the Senſation of the Part is deſtroy'd, which happens frequently to Mettal-diggers; in which caſe 'tis of no uſe to anoint the Spinal Marrow, but the Part affected is to be frequently fomented and cheriſh'd with the above-mention'd Medicines.

With reſpect to œdematous Tumors, which frequently ſeize the Feet; great Caution is, alſo, in this Caſe, requiſite, as to the Application of Topics, ſince they who treat them with Baths, commit a terrible Error. Thus I have ſeen cachectic Perſons, by immerſing their Feet in warm Water, contract, in one Nights time, a conſiderable Tumor of them, which could not afterwards be eaſily remov'd. The Reaſon of this is obvious; for theſe Baths by their Moiſture, which by means of the Heat inſinuates itſelf into the Pores, renders the weaken'd Fibres ſtill more lax, ſo that the Humours flow down, and are not quickly again receiv'd into the Veins, and lymphatic Veſſels. The ſame Effects are, alſo, produc'd by thoſe who attempt to diſſipate ſuch Tumors by Ointments and Plaiſters, for a Reaſon eaſily deduc'd from what has been ſaid. Some have a Cuſtom of tying diſcutient Herbs about the Feet, ſuch as the greater Celandine, Fumitory, Wormwood, and Rue; but if theſe are moiſt and cold, they often increaſe the Tumor, inſtead of removing it. 'Tis, therefore, better to abſtain from all theſe, and apply proper Bandage to the Feet, eſpecially towards the Evening, when ſuch Tumors are always obſerv'd to increaſe, that by this means the Fibres may be corroborated and ſtrengthen'd. Fomentations of ſtrong Vinegar, mixed with Eſſence of Amber, and pour'd upon ignited Bricks, have often been found productive of happy Effects.

'Tis cuſtomary, in various Diſorders, to apply Epithems and Plaiſters to the Pulſe in the Wriſts. This Practice, tho' not to be diſcourag'd in itſelf, is nevertheleſs often abus'd, eſpecially by Nurſes, and the common People, who, whether a Diſorder is of the cold or hot Kind, commonly have recourſe to the celebrated Aqua Carbunculi, which they think of ſo incredible Efficacy to reſtore Strength. But every one muſt perceive, that this is by no means proper in a burning or acute Fever, or in the Heat of an intermittent Fever; in which Caſes rather penetrating Acids, ſuch as Citron-juice, and Vinegar of Roſes, are proper. Epithems and Plaiſters are, alſo, applied to the Wriſt, in order to remove the febrile Paroxyſms in Intermittents; for which Purpoſe, they mix Alum, Vinegar, Rue, the greater Houſleek and Spiders Webs. They, alſo, make a Plaiſter of Turpentine, Alum, and Powder of Spiders, which are often of great Service in mitigating the Paroxyſms, and even in totally removing them, if the greater Part of the febrile Matter is evacuated.

The Manner in which ſuch Medicines operate, is ſomewhat difficult to be conceiv'd; and ſuch an Experiment, in my Opinion, illuſtrates the Generation of Fevers of this Kind; for the Heart

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CCO, Gurukul Kangri Collection, Haridwar, Digitized by eGangotri

and Arteries, which have their proper Nerves, and syſtaltic and diaſtaltic Motions, are the Inſtruments, by which the intenſe Motion of the Fluids is perform'd. Hence ſuch things as in ſome meaſure check and hinder the exceſſive Motion of the Spirits to theſe Parts, when immediately apply'd to the Arteries, muſt neceſſarily for ſome time ſtop the febrile and intenſely hot Motion of the Blood. *Frederic Hoffman.*

TOPINARIA. A Species of Tumor in the Skin of the Head. The ſame as TALPA.

TORCULAR HEROPHILI, in Anatomy, is the Place where the Sinuſes of the *Dura Mater* meet.

TORCULAR, in Surgery, is the *Tournequet.*

The Tournequet is a ſort of Bandage, which is very neceſſary In ſuppreſſing copious Hæmorrhages, particularly after the Amputation of the larger Limbs; and conſiſts of ſeveral Parts; 1. A plain Roller, an Inch in Breadth, and a *Paris* Ell in Length; 2. A ſmall cylindrical Piece of Wood; 3. A rolled Bandage, about the Thickneſs of two Fingers, and four in Length; 4. Long Compreſſes about the Breadth of four Fingers, for encompaſſing the Leg or Arm, to which the Roller is to be applied; laſtly, 5. A ſquare Piece of thick Paper, or ſtiff Leather, about the Breadth of four Fingers.

Let us next conſider the Method of applying the *Tournequet.* The rolled Bandage muſt be applied to the Trunk of the wounded Artery lengthwiſe; and the Compreſſes muſt be placed in a contrary Direction, ſurrounding the Arm or Leg like a Ring; then the Roller muſt be twice brought round them, and tied, but ſo looſely, that the Hand may eaſily paſs between it and the wounded Limb. The Piece of Leather, or thick Paper muſt next be introduced with the greateſt Caution, under the Roller, on the external Side of the wounded Leg or Arm; then the ſmall cylindrical Piece of Wood muſt be introduced above the Piece of Leather or Paper, and the Roller twiſted about by it, till it be made ſufficiently tight to ſtop the Bleeding. Then the Stick muſt be fixed, leſt it ſhould untwiſt itſelf; the Wound muſt be treated in a proper manner, and the Profuſion of Blood ſuppreſſed by Aſtringents, by a Ligature, or the actual Cautery, or by any other Inſtruments deſigned for that Purpoſe in Amputations. This Intention being anſwered, the Tournequet may be relaxed or removed, as ſoon as it can be done with Safety and Convenience. When the *Tournequet.* is applied to the Arm, the rolled Bandage ſhould be placed near the Arm-pit, in the internal Part of the Humerus, as the Situation of the Artery requires that Poſition; and the Stick, with which the whole is to be tightened, is to be introduced on the external Part. See *Tab.* XXIV. *Fig.* I. *Let.* K. When the Hæmorrhage is to be ſtopped in the Leg, the *Tournequet* ſhould be applied to the upper Part of the Thigh, or a little above the Ham, according to the Circumſtances of the Caſe. See *Let.* L, M. N. But in order to give a diſtinct Idea of this *Tournequet*, it is repreſented ſeparately in *Tab.* XXIV. *Fig.* 2.

In the room of this Inſtrument, *Petit*'s *Tournequet* has been ſubſtituted, who invented and deſcrib'd it in 1718, which has been preferred, becauſe it could be applied without the Help of an Aſſiſtant, which the other required to preſerve its Situation. It might, alſo, be retained upon the Limb, as long as might be thought neceſſary, without obſtructing the Circulation of the Blood in the Part affected; whilſt the other entirely ſtopped the Circulation, and muſt therefore be quickly removed. But its Deſcription is ſo ſhort and imperfect, eſpecially as the Parts of the Inſtrument are not deſcribed ſeparately, that in many Places I could not underſtand it. *Garengeot* has given us another Repreſentation of it; but he, alſo, is obſcure.

I have, therefore, endeavoured to correct it, as is ſhewn in *Tab.* XXVI. *Fig.* 6. AA repreſent the upper Part; BB the lower; C the Screw, all in their proper Size, and made of ſtrong Wood. In the Extremity DD are faſtened two ſmaller Iron Screws, to which a ſtrong Silk Roller or Bandage is to be fixed, being of the ſame Breadth with the Inſtrument, and about twenty Inches in Length, that it may encompaſs the larger Limbs, the other End being to be faſtened to the Hooks at EE. The Extremities FFFF muſt be a little hollowed, that the Roller may lie firm without Danger of being moved, or falling off. G repreſents an Iron Plate, which is there placed to ſtrengthen the Wood. The Wound, therefore, being properly dreſſed, the lower Part of the *Tournequet* BB, being guarded with a thick Bolſter, muſt be applied to the Side oppoſite to the Wound, and the Roller drawn tightly round the Limb, and faſtened to the Hooks at E. Then by turning the Screw C, it may be ſtretched ſufficiently to ſtop the Hæmorrhage, and kept in this Situation as long as may be thought neceſſary.

Garengeot has deſcribed and delineated another *Tournequet* of this Kind, invented by *Morand*; which in many Particulars agrees with that of *Petit*, but principally differing in this Circumſtance, that, inſtead of a ſimple Screw, *Morand* furniſhed his with a compound Screw made of Iron, for quicker Actions, one Turn of which would tighten the Roller more, and conſequently ſooner compreſs the Wound or Artery, than two or more Turns of the Screw uſed by *Petit*. However, *Garengeot* makes ſome Objections to this Inſtrument, and prefers that of *Petit.*

I once ſaw a *Tournequet*, made of Iron, and very heavy, which in many reſpects agreed with that of *Morand*, though in ſome Particulars it differed, by I know not whoſe Contrivance, which is delineated in *Tab.* XXVI. *Fig.* 7. AA, is the lower Plate with many Perforations towards the Edges, by which means a Cuſhion or Bolſter may be ſewed to it. B is the Barrel for receiving the Screw; CC is the ſuperior Plate; D is another Barrel on the ſuperior Plate for receiving the Screw. EE repreſent the Extremities of the ſuperior Plate, one furniſhed with Hooks, the other with Hooks, and a kind of Arch, for fixing the Roller, for compreſſing the Limb, as is done in the *Tournequets* repreſented in *Fig.* 2. and in *Tab.* XXVII. *Fig.* 1. 'Tis a kind of Ring ſurrounding the Barrel in the ſuperior Plate; G is a ſquare or cubical Body, made like a female Screw, for the Reception of the ſmall Screw H; and thus is the larger Screw I, K, kept firm in the Box D, which would otherwiſe eaſily fall down, and remit. L is an Iron Cylinder, which is firmly fixed in the lower Plate, but is looſe in the other, that the upper Plate may be allowed to ſlide freely up and down, as Occaſion may require; it, alſo, ſerves to retain the Plates in the ſame Situation with reſpect to one another.

With Deſign to improve this Inſtrument, I ordered one to be made of Braſs, like that repreſented in *Tab.* XXVII. *Fig.* 1. where the ſuperior Plate is much ſhorter than the inferior, which, being fixed to one Extremity of the upper Plate, is brought round the Limb, and faſtened to Hooks in the other. The Belt muſt, alſo, be paſſed through Openings, made at each Extremity of the lower Plate for that Purpoſe. By this Contrivance the Inſtrument is kept even, and does not change its Poſition on the Motion of the Screw. The Reader may chooſe which of theſe Inſtruments he pleaſes: All of them will anſwer the Intention, for which they were deſigned; only ſome do it ſooner than others.

It may be proper to obſerve here, that aſtringent Medicines, exhibited internally, have little or no Effect in ſtopping Hæmorrhages proceeding from Wounds of the larger Arteries; and they not only create Obſtructions in the lacteal Veſſels of the Inteſtines, Glands of the Meſentery, and other Parts, but, alſo, excite Pains, Inflammations, Fevers, and the like dangerous Diſorders; and therefore we ſhould abſtain from them, rather than uſe them. *Heiſt. Chirurg.*

TORDILIUM.

The Characters are;

The Root is annular and fibrous; the Petals are unequal; Heart-ſhaped, and deeply bifid. The Seed is orbiculated, flat, with a raiſed Margin, which is for the moſt part denticulated, and depoſites its Husk.

Boerhaave mentions ſeven Sorts of *Tordylium*; which are,

1. Tordylium; maximum. *T.* 320. *Caucalis, maxima, Sphondylii aculeato ſemine.* C. B. P. 152. *An & Seſeli, majus.* C. B. P. 161?

2. Tordylium; minus; limbo granulato; Syriacum. M. U. 37. 40. *Gingidium, foliis Paſtinacæ latifoliæ.* C. B. P. 151. *Caucalis, Syriaca, cum maximo ſemine.* J. B. 3. 2. 86.

3. Tordylium; Narbonenſe; minus. *Tourn. Inſt.* 320. *Boerh. Ind. a.* 68. *Raii Synop.* 266. *Seſeli, Creticum.* Offic. Ger. 894. *Seſeli Creticum minus.* C. B. P. 161. Ger. Emac. 1050. *Tordylium ſive Seſeli Creticum minus.* Park. Theat. 906. Raii Hiſt. 1. 412. *Caucalis minor pulchro ſemine ſive Bellonii.* J. B. 3. 84.

HARTWORT OF CANDY.

It is cultivated in the Gardens of Botaniſts; and the Seed, tho' but ſeldom, is uſed.

The Seed of this Plant is Nephritic, Uterine, and Pulmonic: Its principal Uſes are in the Strangury, and Stoppage of Urine. It removes Pain, provokes the Menſes, and promotes Expectoration in Catarrhs. *Schroder.* In the Catalogue of Simples in the *London* Diſpenſatory this Plant is, I know not how, confounded with the *Seſeli Maſſilienſe.*

4. Tordylium; Apulum; minimum. *Col.* 1. 124. *M. H.* 3. 316. *Seſeli, Creticum, minimum.* C. B. P. 161.

5. Tordylium; album; facie Tordylii luteo, Columnæ. *H. C.*

6. Tordylium; folio longo, anguſto; flore albo, magno, ſemine elegantiſſimè & profundiſſimè crenato, albo.

7. Tordylium; Orientale; Secacul Arabum dictum Rauwolfio. *Boerh. Ind. a.* 68. *Secacul.* Offic. *Siſarum alterum Syriacum.* C. B. P. 155. Raii Hiſt. 1. 443. *Siſarum alterum Syriacum, & Secacul Arabum quibuſd.* Park. Theat. 945. *Paſtinaca Syriaca Rauwolfii, Secacul Arabum.* J. B. 3. 66. *Paſtinaca Syriaca Rauwolfii, Secacul Arabum & Maurorum quorumdam.* Chab. 390. *Apium Syriacum radice amplâ eduli.* Hiſt. Oxon. 3. 292.

SYRIAN SKIRRET.

It has a tender, ſmooth Root, hoary on the Outſide, and white within, brittle, of the Thickneſs, but double the Length of a Finger, and diſtinguiſh'd with Nodes or Tubercles, like Warts; it has a pleaſant Taſte, like a Carrot. From this Root ariſe a Multitude of Leaves very much cut and jagged, like thoſe of the Carrot. The Stalks at the Joints are cover'd with the ſame ſort of Leaves, and have their Tops adorn'd with a plain Umbella of Flowers, like thoſe of the Carrot, but of a pale yellow Colour. It grows ſpontaneouſly about *Grand Cairo* in *Egypt*, and *Aleppo* in *Syria.* *Raii Hiſt. Plant.* The

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The Root, in medicinal Uſes, agrees with that of the common *Siſer*, or Skirret. *Dale.*

TORI. The Knots in the Stalks of Plants.

TORMENTILLA. Tormentil. A Name for the *Quinquefolium*; *minus*; *repens*; *luteum*; *flore tetrapetalo.*

TORMENTUM. Pain in general; the Colic; or Iliac Paſſion, in which laſt Senſe it us'd by *Cœlius Aurelianus.*

TORMINA. Gripes. See COLICA.

TORNA SOLIS. Torneſol. See HELIOTROPIUM.

TORNATA URINA. Urine which is thick, muddy, and not tranſparent. *Johannes Anglicus.*

TORNESOL. See HELIOTROPIUM.

TORNEUMATA, τορνεύματα. Shavings, or Raſpings. *Dioſcorides, L. 1. C.* 108.

TORPEDO. Oſſic. Aldrov. de Piſc. 415. Rondel. de Piſc. 1. 358. Jonſ. de Piſc. 18. Charlt. Piſc. 9. Salv. de Aquat. 142. Bellon. de Aquat. 89. Geſn. de Aquat. 988. Raii Ichth. 81. Ejuſd. Synop. Piſc. 28. THE CRAMP FISH.

It is taken in the *Mediterranean Sea.*

It mitigates the Violence of the Pain in an inveterate Headach, being apply'd to the Part; and, alſo, prevents and reſtrains the Prolapſe or Falling-down of the Anus, being in like manner apply'd. *Dioſcorides.*

TORPOR. A Numbneſs, or deficient Senſation.

Of Prædictions from a *Torpor* and *Paralegia.*

By a *Torpor*, we mean a Diſorder of the animal Faculty, attended with a Difficulty of Senſe and Motion, and ſometimes a kind of dull Senſe and Motion of ſome Part.

The Cauſe of this laſt, as we are taught by *Galen, de Cauſ. Symp. Lib.* 1. *Cap.* 5. is an Obſtruction, Incraſſation, or Hebetude of the Nerves, by which means the Spirits are clog'd and hinder'd in their Motion; for the Nerves are render'd dull by cold and groſs Humours, in the ſame manner, as the Air is darken'd and obſcur'd by Dirt, Water and Clouds: Or elſe the Diſorder is occaſion'd by ſome cold Quality, either internal or external. The Cauſes of this kind of *Torpor* maybe, alſo, a Fever Phlegmon, Scirrhus, and a Luxation of the Vertebræ inwards, by which the Nerves, being under a compreſſion, are obſtructed, and the Paſſages ſtraiten'd.

The Cauſes of a *Torpor*, in our firſt Senſe of the Word, or, as it is defin'd, an Affection of the Animal Faculty, with a Difficulty of Senſe and Motion, is a Refrigeration of the Brain, either poſitive, as they call it, or from an Extinction of the natural Heat.

Having thus aſſigned the Cauſe of a *Torpor*, we are next to conſider what it portends in Diſeaſes; for in healthy Perſons it threatens an Apoplexy, according to *Coac.* 476. "Unuſual "*Torpors* and *Stupors*, it is there ſaid, are Forerunners of an "Apoplexy." And, a little after *T.* 478. we read, that "Refrige-"rations and Torpors under apoplectic Diſorders are of bad "Signification."

In continual Fevers, then, a perpetual *Torpor* is bad, eſpecially of the firſt Sort, or that of the Mind, which they call a *Stupor*: Such *Torpors* in acute Fevers are quite pernicious, as proceeding either from a Refrigeration of the Brain, or an Extinction of the natural Heat, both which are deſtructive. The Author of the *Coac. T.* 14. pronounces *Torpors* proceeding from Rigors malignant, where he ſays τὰ πολλὰ ῥιγώδεα ῥίγεα κακοήθεα, "ma-"ny toporific Rigors are malignant." And, *ibid.* 91. he pronounces a *Torpor* of the Mind, or Stupor, in a Phrenſy, deſtructive; and juſtly, becauſe it is occaſion'd either by a Refrigeration of the Brain, which is a very pernicious Symptom in a Phrenſy, or an Extinction of the natural Heat. *Ibid. T.* 208. 334. he condemns a *Torpor*, and Deafneſs, ſucceeded by a ſmall Diſtillation of Blood from the Noſe: And we may affirm the ſame to be not only ſomewhat difficult and troubleſome, as he pronounces it, but to be abſolutely deſtructive.

Nor is this *Torpor* of the Mind leſs pernicious in an internal Phlegmon, as being occaſion'd by a flammeous Heat, the natural Heat being diſſipated. Of this kind of *Torpor*, perhaps, we read, *Coac.* 315. where it is ſaid, that "a Pain ſettled in the "Breaſt with a *Torpor* is bad in a Fever." For it is a bad Sign to ſee the Patient labouring under a *Torpor* from an internal Inflammation, which admits neither of Reſolution, Suppuration, nor Expectoration. With relation to this Caſe, perhaps we find it written, *Coac.* 374. that, "under a Quinſey, a Pain of "the Hypochondrium not critical, attended with an Impotence "and *Torpor*, proves mortal in an occult manner, while the "Patients ſeem to lie very quiet and compos'd." A *Stupor*, therefore, or a *Torpor* of the Mind, in acute Diſeaſes, is always fatal.

A *Torpor* in the other Senſe, affecting ſome Part of the Body, and inducing a Dulneſs or Diminution of Senſe and Motion, is never good, unleſs it happens critically, and when the Diſeaſe is concocted. For it is not impoſſible for the Humors to be critically tranſlated from the Veins upon the Nerves, and by that means to induce a *Torpor* upon the Parts which are ſupply'd by thoſe Nerves, in the ſame manner as a critical *Tremor* [ſee that Word] is ſometimes occaſion'd. But ſuch an Event rarely happens, and may eaſily be diſtinguiſh'd by other critical Signs.

The ſame Judgment is to be form'd of a Palſy, Paraplexia, or partial Apoplexy, which are ſometimes of Service in Diſeaſes, the Humour being propelled from the Veins, either to the Spinal Marrow, or to the Nerves of ſome particular Parts, by which a Palſy is occaſion'd. But when theſe Diſtempers proceed from a Diſorder of the Brain in acute Diſeaſes, they are abſolutely pernicious; and, therefore, in recent Wounds, where ſome Parts ſuffer a Reſolution, they indicate the near Approach of Death.

It is not ſo dangerous, after an Apoplexy, for ſome Parts to be deprived of Motion, which kind of Diſorder is by *Hippocrates* uſually called by the proper Name of παραπληξία, or παρὰ πλησιν, *Paraplexia*, or *Paraplegia.* It ſometimes happens, that the Matter, which is the Cauſe of the *Paraplexia*, in it's impetuous Courſe from one Part to another, induces a paraplectic Reſolution of thoſe Parts, which is ſucceeded by Convulſions. Theſe Mutations are mention'd by the Author of the *Prorrhetics*, *T.* 118. "Morbific Matter, he ſays, communicated by Redun-"dance to the Neck and Head, and cauſing a Reſolution in "theſe Parts after a *paraplectic* Manner, threaten Convulſions, and "a Delirium: It deſerves Inquiry, whether ſuch Diſorders are re-"mov'd by Convulſions. The Patient in ſuch Diſorders is long and "variouſly affected:" Such Mutations, then, are occaſion'd by the various Motions of the Humours, and are agreeable to the Obſervations of *Galen*, who, in his Comment on the Place, ſays, that "he once knew a Perſon affected after this manner, "and obſerv'd him labouring under Mutations of various Sym-"ptoms ſucceeding one another. After thoſe preceding Pains of "the Loins, Neck, and Head, the Patient had one of his Hands "depriv'd almoſt of Senſe and Motion in every Part, after a "*paraplectic* manner, as is here ſaid, tho' it was not a perfect "*Paraplegia.* But a Convulſion, which ſoon ſucceeded, ren-"der'd the Part more ſenſible, and more capable of Motion; "but when the Convulſion ceaſed, the Part grew worſe again "by Degrees. Afterwards the Patient was again ſeized with "Pains of the Loins, Neck and Head, and had a ſudden and "univerſal Increaſe of the Palſy in his Hand, after which "it was again conſiderably convuls'd." All this may be very true, and yet nothing of Certainty concluded or learnt from it; for neither does a ſupervening Convulſion remove a Palſy, nor is the reverſe true; for in whatever manner the Patient becomes *paraplectic*, in acute Fevers, it is always bad.

But what is moſt of all to be dreaded, both by ſound and ſick Perſons from *paraplectic* Affections is an Apoplexy. And this we find confirm'd by *Hippocrates*, *6 Aph.* 51. "Whoever, "he ſays, in a State of Health are taken with a ſudden Pain of "the Head, and immediately become ſpeechleſs, and ſnore, die "in ſeven Days, unleſs a Fever ſeizes them. *Proſper Alpinus de Præſag. Vit. & Mort.*

TORQUILLA. The Wry-neck; a ſort of Bird.

TORQUIS. A Necklace or Collar. *Galen, de ſimpl. Medicament. Facult. L.* 9. informs us, that he had experienc'd the Virtues of a Necklace made of the Jaſper-ſtone, in ſuch a manner, that the Stones reach'd to the Region of the Mouth of the Stomach, in Diſorders of that Part. The Whimſical among the Moderns have, alſo, aſcrib'd great Virtues to Necklaces made of various Materials, in a great many Diſeaſes.

TORREFACTIO. The Roaſting, or Toaſting of Medicines. In Metallurgy it is the Roaſting of Ores, in order to deſtroy their volatile Sulphur, for the more eaſy Extraction of the Metals.

TORSIONES. Gripes.

TORTA. A Paſty; or Tart.

TORTIO. A Strain of the Joints.

TORTUALIS FACIES. A cadaverous Countenance, or Hippocratic Face. *Cœlius Aurelianus* gives this ſort of Countenance the Epithet *Mortuoſa.*

TORTURA. A Spaſm, particularly of the Face and Mouth. *Caſtellus* from *Valeſius de Taranta.*

TORUSCULA. A Drop. *Rulandus.*

TORYBETHRUM or THORYBETHRON. A Name in *Oribaſius, Collect. Medicinal. L.* 11. for the *Leontopetalon.*

TORYNE, τορύνη. A kind of Ladle, or *Spatula*, with which any thing, during Coction, is ſtir'd in a Pot.

TORYNETOS, τορυνατὸς, from the preceding Word. A kind of Panada made by boiling Bread, and agitating it, during the Coction, with a Spatula, Spoon, or ſome ſuch Inſtrument. *Cœlius Aurelianus, Chron. L.* 1. *C.* 1. calls it, in his barbarous manner, *ex Panis Pulticula confecta.*

TOSTIO. The ſame as TORREFACTIO.

TOTA BONA. *See Bonus Henricus.*

TOTANUS. The Name of a black and white aquatic Fowl, mention'd by *Jonſton*, whoſe Fat is ſaid to be anodyne and reſolvent.

TOTOCIFERA ARBOR *Orellanenſium, indigenis Adomanie Totocke.* De Laet.

This is a very tall and ramous Tree, with great Leaves ſhaped almoſt like Elm-leaves. It bears no Flower, but a kind of Buds, of the ſame Colour with the Leaves, that is, of a dark Green,

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Green, which increases in Bigness by degrees, and protrudes at last a large Fruit, sometimes as big as a Man's Head, almost round, but somewhat compressed on the fore Part, of a ligneous, hard and very thick Cortex, striated and tuberous on the Outside, and of a dark-brown and almost black Colour. It is divided by certain Spaces into six Regions, as we call them, in each of which are contained eight, ten, and sometimes twelve Nuts closely joined together, and each of them cover'd with a ligneous, hard, and pretty thick Cortex of various Forms, but generally triangular, convex on one Part, with three Suckers, as it were, and very rough and wrinkled, yet not so much as the whole Cortex, three Inches long, and an Inch and half broad, and of a russet, and sometimes of a brown, or Ash-colour. The Inside is wholly taken up with an oblong Kernel, like an Almond, cover'd with a red Skin, and consisting of a very white and solid Flesh, which is, also, somewhat oleous: but in Taste it is more like a Filberd than an Almond; it may very well, however, supply the Place of Almonds, even in Confections, as *Europeans* have observ'd. The Natives ascribe to them a Faculty of provoking Lust.

The Trees which bear this Fruit are so high, and the Fruit itself so hard and ponderous, that the Natives of the Country dare not enter the Woods when the Fruit is ripe, without having their Heads defended by some strong Buckler, or some other Covert, from the falling of the Fruit, which would break their Heads as effectually as a Stone. *Raii Hist. Plant.*

TOXICODENDRON, from τοξικὸν, (*Toxicon*) Poison, and δένδρον, (*Dendron*) a Tree. *The Poison-tree.*

The Characters are;

The Leaves grow by Threes, as in the Trefoils. The Calyx is very small, dentated. quinquefid, and monophyllous; the Flower rosaceous and pentapetalous. The Ovary in the Bottom of the Calyx becomes a roundish, dry, striated Fruit, pregnant with a compressed, or flattish Seed.

Boerhaave mentions two Sorts of *Toxicodendron*; which are,

1. Toxicodendron; triphyllum; glabrum. *T.* 611. *Edera, trifolia, Canadensis.* Corn. 96. *Vitis, sylvestris, trifolia.* Park. Theat. 1556. *Apocynum, trifolium, Indicum, vulgò Epimedium.* Stap. in Theoph. 364.

2. Toxicodendron; triphyllum; folio sinuato, pubescente. *T.* 611. *Hederæ trifoliæ Canadensi affinis Planta, peregrina, Arbor venenata quorumdam.* H. R. Par. 84. *Arbor, trifolia, venenata, Virginiana, folio hirsuto.* Raii Hist. 1799. *Boerh. Ind. alt. Plant.*

This Species differs from the *Vitis Virginiana* by its hairy Leaves, and their red Pedicles, Ribs, and Fibres. *Raii Hist. Plant.*

To these two Species *Miller*, in his *Gardeners Dictionary*, adds,

3. Toxicodendron; Carolinianum, Foliis pinnatis, Floribus minimis herbaceis. Carolina Poison-ash, *vulgo.*

This Plant is poisonous to such a Degree, that it is said to kill all kinds of Animals; whence no Insect will feed on it, nor is ever found in it. *Hist. Plant. adscript. Boerh.*

The Wood of these Trees, when burnt, emits a noxious Fume, which will suffocate Animals, when shut up in a Room where it is burnt. An Instance of this is mention'd in the *Philosophical Transactions* by Dr. *William Sherard*, which was communicated to him in a Letter from *New England* by Mr. *Moore*, in which he mentions some People, who had cut some of this Wood for Fuel, which they were burning; and in a short time they lost the Use of their Limbs, and became stupid, so that if a Neighbour had not accidentally open'd the Door, and saw them in that Condition, it is believed they would have perished. *Miller's Dictionary.*

TOXICON, τοξικὸν, from τόξον. An Arrow, or Bow. That particular Species of Poison, with which the Antients us'd to infect their Arrows and Darts. But it is us'd to express any sort of Poison. *Toxicon* is, also, a Species of *Ladanum*, which is found in *Syria* and *Africa.*

TRACHEA ARTERIA. The Aspera Arteria. See Pulmones.

TRACHELAGRA. The Gout in the Neck.

TRACHELIUM. A Species of Campanula; which see.

TRACHELO-MASTOIDÆUS. The Name of a Muscle, thus describ'd by *Douglas.*

It arises from the transverse Process of the first and second Vertebræ of the Back and from the three or four lowermost of the Neck, by so many thin Tendons, which, uniting, form a pretty thick fleshy Belly, that runs up under the *Splenius*, and is inserted into the middle of the Backside of the *Processus Mastoidæus* by a thin Tendon.

Its Use is to assist the *Complexus.*

N. B. This Muscle often receives a roundish fleshy Slip from the *Longissimus Dorsi.*

TRACHELOS, τράχηλος. The Neck.

TRACHEOTOMIA. Bronchotomy. See Angina.

TRACHOMA, τράχωμα, from τραχὺς, rough. An Asperity, or Roughness of the Eye-lids, particularly the internal Parts.

The Eye-lids are subject to Scabs, which differ in proportion to the Largeness of the pruriginous Ulcers, that are formed about their Edges; and to the Malignity of the Humour, which produces them.

This Disease is known by the following Signs: A Weight and Heaviness in the Eye; Swelling in the Eye-lids, with Pain and Itching; Heat and Redness at the Corners, and in the *Conjunctiva.* A viscid Humour, mixed with pungent Tears, flows from the Ulcers; and, in proportion to its Viscosity, it glews the Eye-lids together in the Night-time. This Disease sometimes affects the Whole, and sometimes a Part, of the Eye-lid; and if it continues long, especially in old People, the lower Eye-lid grows considerably thick, and turns downwards, so that the Cartilage resembles raw Flesh.

The Tetter of the Eye-lids very much resembles those Scabs, and its Signs are almost the same, the Appearance of raw Flesh excepted; and if the Eyelids be turned out, they appear red in the Inside, and seem to have Inequalities resembling the small Grains of Figs.

The original Cause of these Disorders is a saline, corrosive Humour of the Blood, that is discharged on the Eye-lids, which suffer in proportion to its Malignity. The immediate Cause is often the Ulceration of the glandulous Vessels, which furnish the Film on the Edge of the Eye-lids; when these Vessels are ulcerated, they emit constantly a viscid slow Humour, which promotes their Ulceration.

Although this Disease is generally very obstinate, yet it may be speedily cured by Medicines which sweeten the Blood, and lessen the Violence of its Motion, provided the following Remedies be joined with them.

To cure the Ulceration of the Eye-lids, when it is caused by the Itch, I have found, that, by touching them with the *Lapis infernalis*, they cicatrize easily. The violent Heat of the Caustic must be abated, as soon as they have been touched, by washing the Eye in a small Glass full of warm Water; and all possible Care must be taken, that the Part of the Eye-lid, which was touched with the Escharotic, may not bear against the Globe of the Eye, till the Pain be entirely ceased. They may be touched, in this manner, once or twice a Week, till they seem to require no more Use of the Caustic; then apply to the Parts, Morning and Evening, Tutty, reduced to a very fine Powder, which will cicatrize them.

But, before the Application of the *Lapis Infernalis*, I use the following Water.

Take of Liver of Antimony, two Drams; prepared Tutty, half an Ounce; Camphire, half a Dram; Cloves, twenty Grains: Infuse them together for eight Days, in Eye-bright, Fennel, great Celandine and Rue-waters, of each four Ounces: Let some of this Water be dropped into the Eye, three times a Day.

Let the following Pomatum be used at the same time.

Take of Butter, melted, purified, and washed several times in Plantain and Rose-waters, an Ounce; of prepared Tutty, a Dram: Mix them together. Every Night, going to Bed, let a little of this Ointment be rubbed between the Eye-lids, so that some of it may pass on the Eye.

Ulcers of this Kind, which lie deep, are more difficult to cure than those attended with fungous Flesh.

The Tetters of the Eye-lids do not require such powerful Medicines; for the Ulcerations, which they cause, in the Inside of the Eye-lids, scarcely appear. The following simple Remedy may be successfully used.

Take of Sugar of Lead, and crude Sal Ammoniac, each four Grains; dissolve them in Plaintain, and Rose-water, of each four Ounces. Let the Eye-lids be washed with this three or four times a Day.

These Remedies, together with Internals, proper to correct the peccant Quality of the Blood, and to dissipate its sharp Humours, will procure a speedy Cure of these Disorders. *St. Yves.*

TRACHOMATICON, τραχωματικὸν. The Name of a *Collyrium* describ'd by *Galen, Meth. Medendi*, L. 14. *C.* 19.

TRACHSAT. A Metal existing in its Ore.

TRACHURUS, τραχῦρος. The Name of a Fish mentioned by *Aldrovandus.*

TRAGACANTHA.

The Characters are;

The Leaves grow by Pairs, as it were conjugated, to a Rib which ends in a stiff, sharp Point. The Pod, which is bicapsular, and divided lengthwise, is full of Kidney-shaped Seeds.

Boerhaave mentions four Sorts of *Tragacantha*; which are,

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1. Tragacantha. *Offic. C. B. P.* 388. *Boerh. Ind. A.* 2. 53. *Tragacantha vera.* Park. Theat. 995. *Tragacantha Massilienſis.* J. B. 1. 407. Raii Hiſt. 1. 933. Tourn. Inſt. 417. *Tragacantha, ſive Spina Hirci.* Ger. 1147. Emac. 1328. *Aſtragalus aculeatus frutiçoſus Maſſilienſis Tragacantha dictus,* Pluk. Almag. 60. GOAT'S-THORN.

The true Goats-thorn has a long, thick, crooked, woody Root, taking faſt Hold in the Ground by its many Fibres, from which ſpring diverſe Branches, growing very thick together, having ſeveral ſmall, round, whitiſh, hoary Pinnæ, ſet oppoſite upon long Foot-ſtalks, ending in a Spine; which, when the Leaves drop, as they do every Year, become harder and ſtiffer; new Leaves ſpringing out, the old Stalks degenerating into Thorns: The Flowers grow towards the Tops of the Branches, ſingly, being white; in Shape like Broom-flowers, but much leſs; and after them in their native Country, come ſhort, flat Pods, with two or three ſmall round Seeds. It grows in the Southern Parts of *France* and *Italy*, but it yields the Gum, only, in the more Eaſtern Countries.

The Gum Tragacantha, or Gum Dragon of the Shops, burſts forth from the Root of this Plant; it is brought to us from *Turkey*, in Pieces of different Magnitudes, twiſted and curled up like Worms, ſometimes white and ſometimes yelloviſh, but the whiteſt and cleareſt is beſt: It has little Smell or Taſte, it ſwells very much in Water, a little of it making a great deal of Mucilage.

Gum Dragon is of a glutinous Nature, good to correct the Acrimony and Sharpneſs of the Humours, and therefore pectoral and good for Coughs, Hoarſneſs, and catarrhous Defluxions; it likewiſe takes off the Heat and Sharpneſs of the Urine, and helps Dyſenteries, ariſing from the Excoriation of the Bowels, by ſharp corroſive Humours. Outwardly, it is good in Collyriums, for hot inflamed Eyes. *Miller's Bot. Off.*

Gum Tragacanth has an emplaſtic Virtue of ſtopping the Pores, and of obtunding Acrimony. Its Uſe is in Ophthalmic Medicines, as alſo in Coughs, Aſperities of the Windpipe, Defects of the Voice, and in Catarrhs, being made into an Eclegma with Honey, or ſuffered to melt under the Tongue. A Dram of it macerated in *Paſſum*, is taken for Pains in the Kidneys, and Corroſions of the Bladder, being mixed with burnt and waſhed Hartſhorn, and a little feathered Alrum. *Dioſcorides, Lib.* 3. *Cap.* 23.

Externally, ſays *Schroder*, it is of Efficacy in Clyſters for the Dyſentery; and diſſolved in Milk, or Roſe-water, is good for the Redneſs, and acrimonious Rheums affecting the Eyes, and for Aſperities of the Eye-lids. Being diſſolved in warm Water, it makes a Mucilage, very convenient for the Formation of Troches, and other Forms of Medicines.

It is moiſtening, lenient, emplaſtic, corrects Acrimony, and incraſſates: Hence it is of Efficacy in Hoarſneſſes, Spitting of Blood, Aſperities of the Fauces, and the Strangury. *Dale.*

It is called *Tragacantha*, from τράγος, (*Tragus*) a Goat, and ἄκανθα, (*Acantha*) a Thorn, that is to ſay Goat's Thorn, becauſe its Pod reſembles a Goat's Beard.

Gum Tragacanth is a moſt gentle and excellent Medicine, in all Diſeaſes attended with a Bleeding of the Capillary Veſſels, on Account of their Debility, or the Acrimony of the Humours. Four, or Six Grains, taken in Milk, or Water, are effectual againſt Piſſing of Blood, and two Grains, diluted with Roſe-water, are commended in Inflammations and Aſperities of the Eyes. It is a Demulcent, and incraſſates thin and acrid Lymph, and is therefore good in Hoarſneſſes and Coughs, proceeding from thin Rheums; in the Strangury, and Acrimony, and Heat of Urine; a Decoction of the Leaves is a Strengthener. *Hiſt. Plant. aſcript. Boerhaave.*

2. Tragacantha; foliis incanis; minoribus; minuſque villoſis.

3. Tragacantha, humilis; Balearica; foliis parvis; vix incanis; flore albo. *Salvador.*

4. Tragacantha; foliis minimis; viridibus. *Boerh. Ind. alt. Plant. Vol.* 2.

Beſides the foregoing Sorts of *Tragacantha*, *Dale* mentions the following,

POTERIUM. Offic. *Spina Hirci minor.* Ger. 1147. Emac. 1328. *Tragacantha altera, ſeu minor, Poterion forte, Dioſcoridis.* Park. Theat. 996. *Tragacantha altera Poterium forte Cluſio.* J. B. 1. 408. Tourn. Inſt. 417. Raii Hiſt. 1. 933. *Tragacanthæ affinis lanuginoſæ ſive Poterium.* C. B. P. 388. SMALL GOAT'S THORN.

It grows in the Kingdom of *Granada* in *Spain*, and flowers in Summer. The Root, which is the Part uſed in Medicine, being bruiſed and applied, conglutinates Wounds and Cuts where the Nerves are divided; the Decoction, alſo, being drank, is effectual in nervous Affections. *Dioſcorides, Lib.* 3. *Cap.* 17.

TRAGANOS. A Name for the *Ephedra, maritima, major.*

TRAGASIUS, τραγάσιος. An Epithet for a Sort of Salt, procured from a certain ſtagnant Water, very little different from Sea-ſalt. *Galen de Simp. Facult. L.* 15.

TRAGEA, A Sort of Powder, made up with Sugar, in order to be apply'd externally, as to the Region of the Stomach; or to be infuſed in Wine; or made into an Electuary. *Schroder* gives ſeveral Powders under this Name, *L.* 2. *C.* 77.

TRAGELAPHAS. An Animal reſembling a Goat and a Stag, mentioned by *Aldrovandus.*

TRAGEMA. The ſame as TRAGEA.

TRAGI, TRASI, or TRASSI, Names for the *Cyperus*; *rotundus*; *eſculentus*; *anguſtifolius.*

TRAGIA.

The Characters are;

It hath a funnel-ſhaped Flower, conſiſting of one Leaf, for the moſt Part divided into three Segments, but theſe are barren; for the Embrios are placed at a Diſtance, on the ſame Plant, which afterwards become tricoccous Fruits, compoſed of three Cells, each containing one ſpherical Seed.

Miller mentions two Species.

1. *Tragia alia ſcandens, urticæ Folio. Plum. Nov. Gen.*

2. *Tragia ſcandens, longo Betonicæ Folio. Plum. Nov. Gen.*

Theſe Plants were diſcovered by Father *Plumier* in *America*, who conſtituted this *Genus* by this Name, in Honour to *Hieronymus Bock*, a famous Botaniſt, who was commonly called *Tragus.*

The firſt Sort grows plentifully in the *Savannahs* in *Jamaica.* and the other warm Parts of *America*; where it twines round whatever Plants or Trees it grows near, and riſes ſeven or eight Feet high, having tough woody Stems. The Leaves are like thoſe of the common Nettle; and the whole Plant is covered with burning Spines, like thoſe of the Nettle, which renders it very unpleaſant to handle.

The ſecond Sort was found by the late Dr. *Houſtoun*, at *Campeachy*, from whence he ſent the Seeds. *Miller's Dictionary.*

TRAGIUM.

Dioſcorides mentions two Species of *Tragium*, but has written ſo obſcurely of them as to leave much room for Controverſy, concerning the firſt of them, among Botaniſts, who call ſeveral Plants by that Name. *Geſner*, makes it the *Polygonum bacciferum*; *Dodonæus*, in his *Hiſtoria Gallica*, will have it to be the *Atriplex olida*, which he calls *Tragium Germanicum*; *Pena* and *Bellus* take it for the *Androſæmum fœtidam*, which *Bellonius* calls *Tragium Creticum. Lobel* affirms the *Tragium* of *Dioſcorides* to be our *Fraxinella*, to which Opinion I am moſt inclined, becauſe none of the foreſaid Plants, beſides this, can be ſaid to be like the Lentisk in Seed, Leaf, and Branches, only of a leſſer Size.

The other Tragium *Rauwolfius* makes a Species of *Stœchas*; which ſee under *Tragium alterum.*

TRAGIUM ALTERUM, Offic. *Tragium alterum Dioſcoridis quibuſdam, Foliis Trichomanis*, J. B. 3. 279. *Stœchadi ſerratæ Affinis*, C. B. P. 216. Raii Hiſt. 1. 514, *Secudus, vel Sucudas Avicennæ*, Rauwolf. BASTARD DITTANY.

Dioſcorides deſcribes it as having the Leaves of the *Scolopendrium*, and the fine white Root of the wild Radiſh. The Leaves in Autumn have the ſtrong, rank, Smell of the Goat, whence the Plant takes the Name of *Tragium.* It grows on Mountains and Precipices, and was found by *Rauwolfius* about *Aleppo*, eſpecially in moiſt Places.

The Herb and Root are uſed; the Herb, whether crude or boiled, is ſaid, by *Dioſcorides*, to be good for the Dyſentery.

TRAGOCEROS. *Brunfelſius* informs us, that this is the *Anemone*; and, alſo, that the *Tragium Alterum*, and the *Aloe* are both thus called by *Dioſcorides.* But he either miſtakes, or miſquotes his Author, for I find no ſuch Paſſages.

TRAGOPOGON.

The Characters are;

It has all the Characters of the *Scorzonera*, only the Calyx is oblong, not ſquamous, and its Segments are extended without the Flowers, ſurrounding them in the Form of a Star; the Floſcules, alſo, are eaſily convolved, and unfold themſelves againſt the Sun.

Boerhaave mentions nine Species of *Tragopogon*, which are;

1. Tragopogon; alter; gramineo Folio; ſuaverubens. *Col.* 1. 232. *Deſcr.* 231. *Ic.*

2. Tragopogon; flore obſolete purpureo. *Flor.* 2. 29. *An. Tragopogon, Porri Folio, dilute ianthino Flore.* H. R. P?

3. Tragopogon; pratenſe; luteum; minus. *M. H. R. Blæſ.*

4. Tragopogon; pratenſe; luteum; majus. *C. B. P.* 274. *Tourn. Inſt.* 477. *Boerh. Ind. A.* 90. *Tragopogon.* Offic. Park. Parad. 514. *Tragopogon luteum.* Ger. 595. Emac. 735. Raii Hiſt. 1. 252. Synop. 76. *Tragopogon Flore luteum.* J. B. 2. 1058. YELLOW GOAT'S BEARD.

It grows in Meadows and Paſtures, and flowers in *June* and *July.* The Roots are very nutritive, and for that Reaſon good for lean and conſumptive Perſons. They are ſaid, alſo, to cure Diſorders of the Breaſt, the Cough, and Difficulty of Reſpiration, and the Pleuriſy; for which Effects, ſince the Roots are ſweet, *C. Hoffman* knows not how to account. They are, alſo, ſuppoſed to be good for the Strangury, and to expel the Stone, whence the Herb is called by the *Italians Saſſifica*, as much as to ſay *Saxifraga.* It is, alſo, uſefully apply'd to Wounds. The expreſſed Juice of the Root, and its diſtilled Water work the ſame Effects. *Raii H. P.*

This Herb grows in Meadows and moiſt Places. Its Root is ſoft and ſweet like Milk, affords good Nouriſhment, removes Coſtiveneſs, purifies the Blood, ſweetens the acrid Humours, increaſes the Milk, provokes Urine, expels Gravel, and is good againſt Oppreſſions of the Breaſt and Lungs, the Cough, a Conſumption, and pricking Pains of the Sides. Some in Conſumptions, ariſing from Ulcers in the Lungs, recommend the Roots of this Herb and a Syrup prepared of its Juice. The expreſſed Juice cures recent

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cent Wounds. Its Water is said to be possessed of surprising Qualities for the Cure of a Spitting of Blood. *Zorn. Botanologia.*

It is said to be good for Effusions and lancinating Pains of the Stomach and Thorax. *Dale.*

5. Tragopogon; luteum; Foliis gramineis; caule purpurascente; *Rand.*

6. Tragopogon; purpuro-cœruleum; crocifolium. *C. B. P.* 275. *M. H.* 3. 80. 8.

7. Tragopogon; Coronopi Folio. *C. B. P.* 274.

8. Tragopogon; purpuro-cœruleum; Porri Folio; quod Artisi vulgo. *C. B. P.* 274. *Barbula Hirci, purpura cœrulea.* Tab. Ic. 599. *Gerontopogon, sive Sassifica Italorum.* Lugd. 1079.

9. Tragopogon; caule circa caput tumido. *Vaill. Boerh. Ind. alt. Plant. Vol.* 1.

The Name is from τράγος, (*Tragos*) a Goat, and πώγων (*Pogon*) a Beard; because its downy Seed, while inclosed in the Calyx, resembles the Beard of a Goat.

The Virtues are the same as those of the *Scorzonera*, only a little weaker; it affords very good Nutriment, and is therefore adapted to culinary Uses. It is accounted, also, a Specific against the Pleurisy, and the Stone in the Kidneys and Bladder; it opens and mollifies the Passages, and acts upon them by its demulcent Quality; it is, also, a very good Digester of Phlegm, and for that Reason of excellent Service in an Asthma and Dyspnœa. *Hist. Plant. adscript. Boerhaav.*

Tragopogon Hispanicus. A Name for the *Scorzonera*; *latifolia*; *sinuata.*

Tragopogon, laciniatum. A Name for the *Scorzonera*; *laciniatis Foliis.*

TRAGOPYRUM. The same as FAGOPYRUM.

TRAGORCHIS; see ORCHIS,

TRAGORIGANUM. Offic. *Tragoriganum Creticum.* C.B.P. 223. Park. Theat. 16. Raii Hist. 1. 523. *Tragoriganum Cretense.* Ger. Emac. 668. *Tragorigauum quibusdam nigrius, Folio duro, Flore purpureo.* J. B. 3. 261. GOAT'S MARJORAM.

It grows in the Island of *Crete* or *Candy*, and flowers in *March.*

Tragoriganum is of an hot and acrimonious Quality, and useful for the same Purposes as Thyme, Savory, Hyssop, and the like; that is, for pulmonic Affections, as the Cough and other Disorders of the Lungs; to provoke Urine, and the Menses; for Crudities of the Stomach, acid Eructations, and the like Affections of that Part.

TRAGORIGANUM ALTERUM. Offic. *Tragoriganum Clusii.* Ger. 543. Emac. 668. *Tragoriganum Hispanicum.* Park. Theat. 16. *Tragoriganum angustifolium.* C. B. P. 223. Raii Hist. 1. 523. *Tragoriganum tenuioribus Foliis, Flore candido.* J. B. 3. 261. SPANISH GOAT'S MARJORAM.

It grows in the Kingdom of *Valentia* in *Spain*, and flowers in *March*; and the Herb, which is the Part used in Medicine, agrees in Virtues with common Goat's Marjoram.

TRAGORIGANUM, is, also, a Name for several Sorts of *Satureia*; which see.

TRAGOSELINUM.

The Characters are;

The Root is like that of a Cabbage, and acrimonious in many Plants, the Leaves are pinnated like those of the *Pimpinella sanguisorba*; the Petals of the Flower are bifid and unequal in many; and the Seeds are oblong, gibbous, and striated.

Boerhaave mentions nine Sorts of *Tragoselinum*; which are,

1. Tragoselinum; majus; umbella candida. *Tourn. Inst.* 309. *Boerh. Ind. A.* 54. *Pimpinella Saxifraga.* Offic. Ger. 887. Emac. 1044. Raii Hist. 1. 445. Synop. 3. 213. *Pimpinella Saxifraga major umbellâ candidâ.* C. B. P. 109. *Saxifraga Hircina major.* Park. Theat. 947. J. B. 3. 109. BURNET SAXIFRAGE.

The Root, of the great Burnet Saxifrage, is thick at the Head, spreading into several Branches; which grow deep in the Earth, of a whitish Colour, and an hot biting Taste, from which spring several pinnated Leaves, having three or four Pair of Pinnæ, set opposite, with an odd one at the End; they are somewhat hard in handling, and are larger, narrower, and more deeply cut in, than those of the common Burnet; the Stalks are about a Yard high, stiff-jointed, and full of Branches cloathed with narrower Leaves; and at their Ends grow Umbels of small white Flowers, followed by very small, dark, brown, striated Seed; it grows in divers Parts of *England*, particularly, in many Places of *Kent*; but is not very common about Town; and therefore our Herb-women sell the Roots of the smaller Kind, or the *Pimpinella Saxifraga minor Foliis Sanguisorbæ*, Ray's Synop. which grows frequently in gravelly Places, and is a much smaller Plant, with lesser and rounder Leaves, next the Stalks; and, in the Composition of the *Syrupus Althææ*, they generally give either the common Burnet, or that and the Meadow Saxifrage, instead of this.

The Roots of Burnet Saxifrage are hot and dry, carminative, expelling Wind, and are good for the Colic, and Weakness of the Stomach; they are, likewise, diuretic, and usually given against the Stone and Gravel, as, also, for the Scurvy, and are an Ingredient in the *Pulvis Ari composita. Miller's Bot. Off.*

2. Tragoselinum; majus; umbella rubente. *T.* 309. *Pimpinella Saxifraga, major, umbella rubente.* C. B. P. 159.

3. Tragoselinum; alterum; majus. *Tourn. Inst.* 309. *Boerh. Ind. A.* 54. *Pimpinella, Saxifraga minor.* Offic. *Pimpinella Saxifraga minor, Foliis Sanguisorbæ.* Raii Hist. 1. 445. Synop. 3 213. *Pimpinella Saxifraga major, altera.* C. B. P. 159. *Pimpinella Saxifraga major nostras.* Park. Theat. 946. *Saxifragia hircina minor Foliis Sanguisorbæ.* J. B. 3. 111. SMALLER BURNET SAXIFRAGE.

It grows in dry Pastures and flowers in *June*: The Herb is used, which agrees in Virtues with the *Tragoselinum*; *majus*; *umbella candida*, to which it may be a *Succedaneum.*

4. Tragoselinum; minus. *T.* 309. *Pimpinella, Saxifraga, minor.* C. B. P. 160. *Saxifragia, hircina, minima, Pimpinella crispa Trag.* J. B 3. 2. 113. *Saxifraga parva.* Dod. p. 315.

It is very well adapted, as *Tragus* says, for breaking and expelling the Stone, being of an hotter Temperament than all the Species of *Apium*. The dried Root may be used with Food, instead of Pepper; for in Taste and Strength it so well answers to Pepper, that it might, fitly enough, be called *German Pepper*: And, in my Opinion, it is more useful and salutary than Pepper, as I have learnt by long Experience. The Herb, Root, and Seeds, have the Virtues of the *Petroselinum*; but are much more efficacious in mitigating and removing Pains. Of the Roots may be prepared Troches, of great Service in a cold Distemperature of the Stomach, or when that Part is affected with gross and viscous Humours. The Root, in what Manner soever taken, whether in Powder, Potion, or Eclegma, is a singular Remedy against all Kinds of Poison; mitigates Pains of the Intestines; is good for the Stone in the Kidneys; provokes the Menses, and whatever else requires to be evacuated with the Urine. The same Effects are to be expected from the Seed, and the distilled Water, which latter, also, deterges Spots of the Face, and renders it hard. That it is a Vulnerary, is not so certain, because of its Heat and Acrimony; but perhaps it may be of Service in destroying sordid Ulcers. The Root, according to *Fuchsius*, is of extraordinary Use in preventing and curing the Pestilence, and other contagious Diseases. Taken in Vinegar, it is highly commended in pestilential Distempers. Some extol an Electuary of the Root bruised very small, and made up with Sugar of Roses, against a Phthisis: But, says *J. Bauhine*, I can scarce persuade myself, that so hot and acrimonious a Root can be proper in a Phthisis. Others prescribe it for the Colic, I know not how successfully. Externally, it is of Use as a Masticatory, in the Tooth-ach, by extracting Phlegm; and to ripen Buboes, and cancerous Tumors; to increase Milk, and for some other Purposes.

5. Tragoselinum; majus; degener; umbella alba. *Pimpinella, Saxifragia, major, degener, seu Foliis longius dissectis.* M.H. 3. 284.

6. Tragoselinum; quæ Pimpinella; Saxitraga; minor; crispa; *M. U. Ic. T.* 5.

7. Tragoselinum; parvum; Folio Apii; umbella alba.

8. Tragoselinum; Folio Apii; mininum.

9. Tragoselinum; perenne; Folio Apii majus. *Boerh. Ind. alt. Plant. Vol.* 1.

It has its Name from τράγος (*Tragos*) a Goat, and σέλινον (*Selinon*) *Apium, Petroselinum*, because the Leaves resemble those of the *Petroselinum*, and the Goats delight to feed upon them; and it is called *Saxifrage*, because it grows out of the Rocks, as if it broke through them. Many think this Name given it because it breaks the Stone, but they are mistaken, for Plants which grow on rocky Mountains, or spread their Roots among Rocks, are of an acrid and aromatic Quality.

It is scarce thought of any Use in Medicine: The first, second, and third Species are called Pepper, because they are so hot as not to be suffered in the Mouth, whence they are proper where heating Things are required, as in an aqueous Dropsy; the second acts very powerfully, and may be of great Force in expelling the Stone, but I do not say that it is always proper to be given. The Plant, in short, is an Aperient, Emmenagogue, Diuretic, and Diaphoretic. The fourth Species is called Pepper, for it exceeds Pepper in Acrimony. *Hist. Plant. adscript. Boerhaave.*

TRAGUS, τράγος, (*Hircus* a Goat,) is a *Greek* Word, signifying that Affection of Youth, about fourteen Years of Age, when the Voice alters to a graver Sound, Hair begins to appear on the Beard and Pubes, and Venereal Inclinations arise, with an Intumescence of the Testes, as in the *Tragos*, or Goat, whence the Name is derived, and in which, during their Time of Rutting, that Intumescence is very remarkable. *Hippocrates* seems by the Word τράγος to mean rather this Intumescence of the Testes, than the Alteration of Voice, in those who have their first Venereal Desires and Titillations, in that Expression, 6 *Epid. Sect.* 4 *Aph.* 25 τράγος ὀκτώ ἐτέων ἂν φανῇ ἔξω, ὀψὲ δὲ ἔξιδε, ἄφωνος, ὕπλυ, "which *Tragos* (*Testis*) appear jutting out, if it be "the Right Testicle it is a Male, if the Left Female;" for he seems here to advise us to observe which of the Testes swells and is prominent, and this Affection he calls τράγος. To the same Purpose, with an Eye to this Passage, speaks *Galen*, when he says, "right Testis is better turn'd, and foremost in the *Tragos*, or "Intumescence [τρῶτος μὲν ἐν τῷ τραγῷ διαστραφεὶς] it makes "Begetters of Males; when slenderer, and last in Intumescence, "it disposes for the Generation of Females. Here the Verb "τραγᾶν seems to be spoken of that Intumescence of the Testes "in

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" in Animals, at their first Impulses to Coition." The same Author, *Lib.* 14. *de Usu Partium*, has the following Expression, " ὁ δὲ ὄρχις ὁ δεξιὸς ὅταν ἀσθενέστερος ἀπεργασθῇ θαλέρα, &c. But " when the Right Testis is of the weaker Construction, the Left " is first distinguished by what they call the *Tragus*; and by " this we may conjecture, that the Animal will be a Procreator " of Females; as, on the contrary, if the Left Testis remained " as Nature required, and the Right were first elevated, ac- " cording to the *Tragus*, that Animal, as far as lay in this Part, " would beget Males." But *Galen*, in his Comment on the fore- quoted Place, *6 Epid.* seems in the Phrase ἐν τῷ τραγῷ, to join both Affections, the Change of the Voice, as well as the Intu- mescence of the Testes, for these are his Words; ὅτως ἂν κάκεῖνα πρὸς Ἱπποκράτες ἐλέγετο, τράγος ὁπότερον ἂν φανῇ ἔξω, &c. " To " the same Purpose are these Words of *Hippocrates*. You are to " observe which Testis is prominent, if it be the Right, a Male, if " the Left a Female (is portended). For when the Members of " Generation are first elevated, and the Voice is somehow al- " tered to a rougher and graver Tone, which is what we mean " by the *Tragus*, (τάτο γὰρ τὸ τραγιᾶν ἐστι). *Hippocrates* directs " us to observe which of the Parts is more robust, for those Parts " which first swell, and grow big, from a Supply of Mat- " ter, are certainly the strongest." And, hence it is, I suppose that *Alexand. Aphrodis.* in his *Natural Questions*, expresses this Change of the Voice, not simply by the Verbs τραγᾶν, or τραγίζειν, but by βράγχει τραγᾶν, to signify the Roughness of the Voice, made by this Alteration.

The Verb, τραγίζειν, as derived from τράγος, is used by *Hippocrates 6 Epid. Sect.* 3. *Aph.* 18. to signify that State of Youth which first begins the Use of Venereal Exercises, when the Voice becomes rougher and more unequal, and in a manner hoarsish, and Hæmorrhages happen from the Nose, on account of the Increase of Heat in the Blood. These are Symptoms incident to those, who, as *Hippocrates* expresses it, 3 *Aph.* 27. πρὸς τὴν ἥβην πεσάγεσι, " arrive at Puberty;" which as *Alex. Aphrod. Lib.* 1. *Qu.* 123. explains it, is about the fourteenth Year.

Some will have τράγος, and τραγίζειν, to be spoken by *Hippocrates*, of young Men, who have experienced the Use of Venery, and have lecherous Desires, in that respect resembling Goats, as well as in a kind of Rankness of Smell, in which, as the *Latin* Phrase is, *Hircum olent*, they smell of the Goat. Young Men of this Cast, were called by the Antients *Hircosi*, and *Hirquitalli*, and were said *Hirquitallire*, which expresses the Greek τραγίζειν. *Hirquitalli*, in *Festus*, are Boys approaching to the State of Manhood, and so called, he says, from their Goat-like Lust. And hence τράγος seems to signify, also, that rank and goatish Smell under the Alæ, or Armpits, of which *Horace* says,

——*Gravis hirsutis cubat Hircus in Alis.*

Τράγος is, also, a kind of Food prepared of *Zea*; according to *Galen, Com.* 1. *in Lib. de Rat. Vict. in Morb. acut.* or of *Olyra. Lib. de Alim. Fac.* which *Pliny, Lib.* 18. *Cap.* 10. calls *Tragum*. Τράγος, also, is reckoned among oleraceous, as well as frumenta- ceous Foods.

Τράγος, signifies, also, a Disease in Vines, when they bear no Fruit, but abound in Leaves, as appears from *Aristotle, Lib.* 5. *Cap.* 18. *de Gen. Animal.* and *Theophrastus, de Caus. Plant. Lib.* 5, *Cap.* 10, 13.

TRAGUS. A Name for the *Ephedra*; *maritima*; *major*; and for the *Ephedra*; *maritima*; *minor*.

TRAGUS, in Anatomy, is a Part of the external Ear. See AURIS.

TRAGUSSPINOSUS. A Name for the *Kali*; *spinosum*; *Foliis longioribus & angustioribus*.

TRAMIS, τρᾶμις, is expounded by ὄρρος (*Orrhus*) called ἱππό- πουρις, (*Hippopruris*), that is, the Line which intersects the Mid- dle of the Scrotum, and passes through the *Taurus* to the Anus. But *Ruffus Ephesius*, reckoning the Parts of the Pudenda virilia, calls the propending Part, as he expresses it, καῦλος and σῆμα, the non- propending, or fixed Part, ὑπόστημα, and κύστεως πρόχυλος: the Neck of the Bladder, and the Line which intersects them τράμις, which, others, he says, call ὄρρος. *Hesychius* makes τράμις the Fu- sure of the Anus; so τράμη, or τράμις, in *Aristophanes*, signifies τὸ τρῆμα τῆς ἕδρας, " the Perforation of the Anus ", that is, the Podex, or σφιγκτὴρ " the Sphincter," according to *Lysimachus*, as we read in *Erotian*. *Pollux* says, that the Line, like a Suture, under the Penis, which passes through the Middle of the *Scrotum*, and under the Part called *Taurus*, ταῦρος, is called περίναιον (*Peri- naeum*), τράμις, (*Tramis*), and ὄρρος, (*Orrhus*).

TRANSFUSIO.

Transfusion and Infusion may be reckoned chirurgical Opera- tions, because, as in Bleeding, the Aperture of a Vein is required. By Infusion, is meant the Injection of Medicines into the Blood; and by Transfusion, the Conveyance of the Blood of one Person, or Animal, into the Veins of another. Although these Operations are seldom now performed, yet they were much practised from the Year 1660 to about 1680, and the following were the Rea- sons that occasioned the Invention of them.

The Generality of Physicians agree, that almost all Diseases proceed from a Disorder of the Blood, which, may, therefore, be sooner, and more easily, corrected by the Injection of Medi- cines into the Blood, or by the Transfusion of the Blood from a sound Person, or Animal, into the Veins of the Patient. For Me- dicines taken by the Mouth, are not only changed in the Stomach, and Intestines, but are likewise weakened before they arrive at the Blood. There are, also, some Cases, in which Medicines can- not be taken by the Mouth, as in Apoplexies and the Quinsey, which may be expeditiously remedied by the Infusory Method. Physicians, therefore, imagined that the most inveterate Diseases must yield to this Method, such as proceed from the Leprosy, Gout, Epilepsy, Apoplexy, Consumption, the Pox, Scurvy, ma- lignant and obstinate Fevers, and large Hæmorrhages, and that it would even restore Youth to Old-age, and recover the worst Constitutions. But how much soever a Remedy, endowed with such Virtues, might be desired, yet the Event of these O- perations, was so far from answering Expectation, that it often produced the worst Consequences. For almost all the Patients, on whom the Experiment was tried, were affected, either, with Stu- pidity, Foolishness, a Delirium, or Melancholy, or were suddenly deprived of Life. Such fatal Consequences soon brought these Operations into Disrepute, and they are said to have been con- demned and prohibited by an Edict of the Parliament of *Paris*.

The Infusory Method is thus performed A Vein must be o- pened, generally in the Arm, as in Bleeding: Here the Remedy must be injected, with a Syringe, or with a Clyster-pipe and Bag, as in *Tab.* XXXII. *Fig.* 10. which must be turned upwards, that the Medicine may the sooner arrive at the Heart, and then the same Manner of Dressing may be used as in Phlebotomy. But whether this Operation should be entirely condemned, or whether it may be useful to inject proper Remedies in an Apoplexy, or Quinsey, when the Case is desperate, as warm Milk, or Broths; or to transfuse the Blood of a sound Person, or Animal, into the Veins of the Patient, after discharging the morbid Blood, remains, in my Opinion, to be determined by future Experience. *Purman* in his Surgery, *Part* 3. *Chap.* 31. testifies, that he not only cured others in this Manner, but, also, himself of a violent Itch, and an obstinate Fever.

The Transfusion of Blood may be done in this manner. A Vein of the Patient's Arm must be opened, as in *Tab.* XXXII. *Fig.* 11. or his Hand, as in *Fig.* 12. into which introduce a Pipe of Silver, Brass, or Ivory, keeping the End in the Vein turned upwards: The same should be performed in the sound Person, but so, that that End of the Pipe, which is introduced into the Vein, should be turned downwards, or towards the lower Part of the Vein, then let the smaller of the two Pipes, be inserted into the larger, and as much Blood, as may be thought necessary, will flow from the sound Person, into the Vein of the Patient, and then the Wound may be dressed. If thus the Patient is not recovered, the Operation, after some time may be repeated. But before the Blood be transfused, some of the morbid Blood should be drawn from the Patient, that the new Blood may circulate more freely. Sometimes a Vein is opened in each of the Patient's Arms at the same time, so that the same Quantity of the vitiated Blood, is discharged at one Ori- fice, that he receives of the sound by the other. *Lamsweerde*, in his Notes on *Schultetus*, may be consulted about this Operation, and *Junken*, in his *Chirurgia Germanica*, *p.* 487. If it be neces- sary to convey the Blood of an Animal into the Patient, as that of a Calf, or a Sheep, a Vein or Artery must be opened in their Neck, Leg, or Thigh, and the Operation proceeded in nearly as before. See *Tab.* XXXII. *Fig.* 13. and *Lamsweerde in Append. ad Scultetti Armamen. Chir.* & *Purmanni Chirurg. P.* 3. *Cap.* 31. When Pipes of Metal and Ivory were found too stiff, and on that account painful, others were invented of a softer and flexible Kind, to be placed between the two solid ones, made of the carotid Artery, or Ureter of an Ox, Calf, or Sheep, or of the Aspera Arteria of a Fowl; by which means both the Pain and Trouble in Trans- fusion of the Blood were lessened.

Dr. *Lower*, in his Treatise *de Corde*, asserts himself to be the Inventor of the Transfusion of the Blood, in Opposition to *Denys*, who in a certain Epistle claims this Honour to himself. Many Experiments of this kind did *Denys* make at *Paris*, but they were attended with very ill Success. *Sturmius* a celebrated Mathematician of *Altorf*, and *Vobrius* a Professor of *Francfort*, ascribe this Invention to *Maurice Hoffman*, a Physician at *Altorf*. *Mays*, however, contends, that *Libavius* described it at large in 1615, but without informing us in what Book. The Invention of the Infusory Method has been generally attributed to *Wren* a celebrated *Englishman*. But I think this Method was described before him by *Major*, a Professor of Physic at *Kiel*, in a Trea- tise published in 1664, this Operation being never before heard of in *Germany*. Those who desire more on this Subject may consult *Majoris Lib. de Chirurgia infusoria*; *Ettmullers Disputat. de eod. Eltzholzii Clysmat. nov.* & *Purmanni Chirurgia*. The most remarkable Writers on the Transfusion of the Blood are, *Lower de Corde*, *Santinellus in Confusione Transfusionis*, *Manfre- dus de Sanguinis Transfusione*, *Sturmius in Philosophia eclect. Diss.* X. *Mercklinus de Ortu & Occasu Tranfusionis Sanguinis*; and *Lamsweerde in Appendice ad Scultetum*, *pag.* 29. Cases of the Infusory Method, in desperate Diseases, may be seen in *Misc. Nat. Cur. Ann.* IX. & X. *Heist. Chirurg.*

TRANSLATIO. The same as METASTASIS; which see.

TRANSPIRATIO.

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TRANSPIRATIO. Tranſpiration, or Perſpiration. See CUTIS, and PERSPIRATIO.

TRANSPLANTATIO. Tranſplantation. *Paracelſus*, in many Parts of his Works, mentions, and recommends a Method of curing Diſeaſes, by tranſplanting them into Vegetable or Animal Subſtances. A Subject too whimſical to deſerve farther Notice.

TRANSVERSALES MUSCULI. The tranſverſe Muſcles; a Name for a great many Muſcles of the human Body. Thus there are the

TRANSVERSALES ABDOMINIS. See ABDOMEN.

TRANSVERSALIS ANTICUS PRIMUS.

This is a ſmall, pretty thick, and wholly fleſhy Muſcle, about the Breadth of a Finger, ſituated between the Baſis of the Os Occipitis, and the tranſverſe Apophyſis of the firſt Vertebra. It is fixed by one End, in the anterior Part of that Apophyſis; and from thence, running up a little obliquely, it is inſerted by the other End in a particular Impreſſion between the Condyle of the Os Occipitis, and the Maſtoide Apophyſis of the ſame Side, behind the Apophyſis Styloides, and under the Edge of the Jugular Foſſula.

For the Uſes of this and the following Muſcle, ſee RECTUS ANTICUS.

TRANSVERSALIS ANTICUS SECUNDUS.

This is a ſmall Muſcle ſituated between the tranſverſe Apophyſis of the firſt two Vertebræ of the Neck. It is fixed by one Extremity, very near the Middle of the ſecond Apophyſis, and by the other near the Root or Baſis of the firſt; and therefore it is a Muſcle of the Neck rather than of the Head.

TRANSVERSALIS COLLI MAJOR.

This is a long thin Muſcle, placed along all the tranſverſe Apophyſes of the Neck, and the four, five, or ſix upper Apophyſes of the Back, between the *Complexus major & minor*, lying, as it were, on the Inſertions of the firſt of theſe Muſcles.

It is compoſed of ſeveral ſmall muſcular Faſciculi, which run directly from one or more tranſverſe Apophyſes; and are inſerted ſometimes in the Apophyſis neareſt to theſe, ſometimes in others more remote, the ſeveral Faſciculi croſſing each other between the Inſertions of the two *Complexi*, which are, alſo, croſſed by them. They have ſometimes a Communication with the *Longiſſimus Dorſi*; but this is not uniform.

The *Tranſverſalis major*, *Tranſverſalis gracilis*, and the little *Tranſverſales*, acting on one Side, can have no other Uſe, but to bend the Neck laterally; and to hinder theſe Inflections, when they act on both Sides. The ſmall *Tranſverſales* may, alſo, preſerve the Capſular Membranes of the Joints from being compreſſed, or otherwiſe hurt, by the Motions of the oblique Apophyſes.

TRANSVERSALES COLLI MINORES. See INTER-TRANSVERSALES.

For the Uſes of this Muſcle, ſee TRANSVERSALIS COLLI MAJOR.

TRANSVERSALIS DIGITORUM.

This is a ſmall Muſcle, which lies tranſverſely under the Baſis of the firſt Phalanges, and which, at firſt Sight, appears to be a ſimple muſcular Body, fixed by one End to the great Toe, and by the other to the little Toe.

When this Muſcle is carefully examined, we find that it is fixed by a very ſhort common Tendon to the Outſide of the Baſis of the firſt Phalanx of the great Toe, conjointly with the Antithenar, and by three different Portions or Digitations to the three interoſſeous Ligaments, which connect the Heads of the four Metatarſal Bones next the great Toe, laterally to each other. Theſe three Portions are veay ſlender, and gradually cover each other.

This Muſcle might be reckoned a ſecond *Antithenar*.

TRANSVERSALIS DORSI MAJOR. See LONGISSIMUS DORSI.

TRANSVERSALES DORSI MINORES.

I have found, ſays *Winſlow*, ſome particular Muſcles of this kind fixed to the Exremities of the three loweſt tranſverſe Apophyſes of the Back. The reſt are all, in ſome meaſure, Continuations of the *Tranſverſalis major*; but theſe few which are diſtinct, and which lie in the Interſtice between two Apophyſes, may juſtly enough be termed *Inter-tranſverſales*.

For the Uſes of theſe Muſcles, ſee SPINALES.

TRANSVERSALIS GRACILIS, SIVE COLLATERALIS COLLI.

This is a long thin Muſcle, reſembling the *Tranſverſalis Colli major* in every thing but Size, and ſituated on the Side of that Muſcle. It is commonly taken for a Portion or Continuation of the *Sacro-lumbaris*. *Diemerbroek* diſtinguiſhed it by the Name of *Cervicalis Deſcendens*; and *Steno*, and others after him, have called it *Acceſſorius Muſculi Sacro-lumbaris* See its Uſes under TRANSVERSALIS COLLI MAJOR. *Winſlow*.

TRANSVERSALES LUMBORUM. See SPINALES.

TRANSVERSO-SPINALES COLLI. See SEMISPINALIS.

TRANSVERSO-SPINALIS LUMBORUM. See SACER.

TRAPESIUS MUSCULUS. A Name for the CUCULARIS.

TRASI. See TRAGI.

TRAUMA, τραῦμα. A Wound. See VULNUS.

TRAUMATICA. Vulnerary Medicines. See ASTRINGENTIA.

TRAUMATICUM DECOCTUM. A Vulnerary Decoction.

Take of Sarſaparilla, two Ounces; of the greater Comfrey, and Liquorice-roots, each ſix Drams; of white Dittany, two Drams; of ſtoned Raiſins, two Ounces; of the Shavings of Hartſhorn, half an Ounce: Boil them in a ſufficient Quantity of Spring-water, to ſtrain off four Pounds; adding towards the latter End, of the Leaves of St. John's-wort, Agrimony, Plantain, and Ground-ivy, each half an Handful; of the Flowers of the great Daiſy, one Handful; of Nettle-ſeed, two Drams: Strain out the Liquor for Uſe.

ANOTHER VULNERARY DECOCTION.

Take of the Tops of St. John's-wort, *Paul's* Betony, both Sorts, Periwinkle, Agrimony, each two Handfuls; Roots of *China*, Comfrey, white Sanders, Nephritic-wood, each an Ounce; Dates cut, thirty; Liquorice, an Ounce and an half: Infuſe all for twelve Hours in a ſufficient Quantity of Lime-water; and ſtrain to four Pounds; and thereto add Syrup of Mouſe-ear, and of the Juice of Fluellin, each two Ounces. Mix, and keep in a cold Place for Uſe.

TRECHON, τρέχων. Quickſilver. *Nicolaus Myrepſus*, *Sect.* 3. *C.* 97.

TRECHYSMA, τρήχυσμα. The ſame as TRACHOMA.

TREMATE *Braſilienſibus*. Marcgrav. *Tremaè* Piſoni *Frutex Braſilienſis flore compoſito, in pappos abeunte. Raii* 1783.

This Shrub in Figure reſembles the Pomegranate-tree; its Bark reſembles that of Elder; its Wood is white, and contains a Marrow. Its Leaves are of a dark-green Colour, and, when triturated, ſmell exactly like Storax; and are uſed by the *Braſilians* in Pains and Redneſs of the Eyes. *Raii Hiſt. Plant.*

TREMOR. See PYRETOS.

TREPANATIO. The Operation of Trepanning. See CAPUT.

TREPANUM. The ſame as TEREBELLA.

TREPONDO. Three Pounds.

TRIANGULARIS. Triangular. A Name of ſeveral Muſcles. Thus the Deltoide Muſcle is call'd the Triangularis Humeri. There is, alſo, the

TRIANGULARIS STERNI. See STERNO-COSTALES.

TRIANGULUS. See TRIGONOS.

TRIBADES. See MALTHACOS.

Tho' the *Clitoris* is commonly concealed within the Lips of the Pudenda; yet in ſome Women it becomes ſo far prominent, that they are either, by ignorant Perſons, thought to be transform'd into Men, or make Attempts to converſe in a criminal manner with other Women. The unhappy Females, who pollute themſelves in this manner, are by the *Greeks* call'd Τριβάδες, and by the *Latins Fricatrices*, who, according to *Cœlius Aurelianus*, in *Lib.* 4. *Tard. Paſſ. Cap.* 9. are fonder of aſſociating themſelves with Women than with Men.

Henrica Schuria, a Woman of a maſculine Turn of Mind, being weary of her Sex, dreſs'd herſelf like a Man, and ſerv'd in Quality of a Soldier for ſome time under his Serene Highneſs *Frederic Henry* Prince of *Orange*, in the Siege of *Boiſleduc*. But returning Home, ſhe was accus'd of uncommon and preternatural Luſt, ſince her *Clitoris* ſometimes appear'd ſo far without the Lips of the Pudenda, that ſhe frequently attempted that Species of criminal Dalliance with other Women, which the *Greeks* call Κειτοειζειν. She could, alſo, perform what the *Greeks* call Τρίβειν with ſuch a Degree of Vigour and Virility, that ſhe plead'd a certain Widow, of whom ſhe was exceſſively fond, ſo well, that, if the Laws of the Land had permitted, ſhe would have married her, perhaps more chearfully than ſhe had done her deceas'd Huſband, by whom ſhe had ſix Children.

This Woman, in external Appearance had the ſame Configuration of the Parts of the Pudenda with other Women. But, according to the Declaration of three Midwives, internally, a little before the urinary Paſſage, there was evidently perceiv'd a certain glandulous Caruncle, call'd the *Clitoris*, which tho' in other Women it hardly exceeds the Bulk of a Nail, was yet ſaid to be half a Finger long in her, and in Thickneſs to reſemble the Penis of a Boy.

This Clitoris, tho' not always, yet ſometimes, appear'd without the Lips of the Pudenda, eſpecially when ſhe diſcharg'd her Urine with Difficulty, or was under the Influence of ſtrong Inclinations to her unnatural Crime; at which time her Clitoris protuberated half a Finger's Length, or ſometimes more, accord-

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ing to the Strength of her Inclinations. *Johannes Poponius*, a celebrated Lawyer, in *L.* 22. *Tit.* 7. *Arest.* 11. is of Opinion, that such Women ought to be punished by Death. But *Henrica Schuria* had a milder Judge, and, being only whipt with Rods, was banish'd far from the Partner of her Crimes; who was, also, punish'd, tho' allow'd to remain in the City. *Tulpii Observat. L.* 3. *C.* 35.

TRIBE, τριβὴ, (from τρίβω, a Verb, besides its usual Significations of rubbing, breaking, and the like, importing, in a metaphorical Sense, Exercise and Employment) is Practice, Use, Exercise. Τριβὴ μετὰ λόγου is Exercise or Practice founded on Reason, and opposed to λογισμὸς πίθανὸς, a Persuasion grounded on mere Ratiocination. *Hippocrates*, *Lib. Præcept. prope Initium.* In the same Treatise, towards the End, τριβὴ and δογμάτων ἰσχὺν, that is, Exercise, or Practice, and the Knowledge of Precepts or Rules, are set in Opposition; as are, also, in the Words which follow, δογμάτων πολυωφελίη, a comprehensive Knowledge of Precepts, and χειροτεχνικὴ ἀτρεμίστης, the Usefulness and Stability of manual Operations and Practice. Τριβὴ, in this Sense, is express'd by *Hippocrates*, in this same Treatise, and in *Lib. περὶ ευχημων.* by πράγματα, Actions, Practice. *Quintilian*, *Lib.* 2. *Cap.* 16. renders τριβὴ by *Usus*, Use. *Foesius.*

TRIBOS, τρίβος, from τρίβω, to rub, in *Hippocrates*, signifies a well-trodden and frequented Path; but, in a metaphorical Sense, is taken for a Place much wore by long Attrition, or become callous, as we read in *Galen*, *Com.* 1. in *Lib. de Art.* Hence the Head of the Os Humeri, when it has continu'd long in a Place, whither it is remov'd by Luxation, and has work'd itself by continu'd Attrition into a kind of Settlement, is said by *Hippocrates*, *Lib. de Art.* τρίβον ποιεῖσθαι, "to make "a *Tribos*." And in the same Treatise we read ὅταν μὲν ἐν τρίβῳ λάβῃ τὸ ἄρθρον ἐν τῇ σαρκὶ, "when the Joint shall ac-"quire a *Tribos* (a Settlement by Attrition) in the Flesh;" where he writes, that τρίβος is spoken by way of Metaphor taken from Places much worn by the Feet of Travellers. Again, in *Mochlic.* it is said, τὸ ὀστέον τρίβον ποιεῖ, by which Words we are to understand, that Use induces a Calius on elapsed Joints. But in *Lib. καὶ ἱππείου*, τρίβος, according to *Galen*, is that Part of a Member with which it operates when inflected, extended, or resting on one Side. Τρίβος, also, signifies that Part of the Body which is rubbed, or with which we act, or on which we stand, or lay any Stress, whether standing, walking, sitting, or lying; as the Soles of the Feet, when we stand or walk; the Buttocks, when we sit; and the Back, and hinder Parts of the Head, when we lie in a supine Posture. Some call that Part, on which the Stress is laid, *Mora*, Rest, because we rest, in a manner, on it; others, *Samita*, or *Callis*, a Foot-way, or Path, from its being, like these, subjected to continual Impressions.

TRIBULUS.

The Characters are;

The Root is annual; the Leaves are like those of the *Lenticula*, or *Cicer.* The Flower is rosaceous and pentapetalous; the Fruit cruciform, or turbinated, composed of a Multitude of small muricated Particles collected into an Head, in each of which are oblong Seeds disposed in their proper Cells.

Boerhaave mentions but one Sort of *Tribulus*; which is,

Tribulus; terrestris; folio Ciceris; fructu aculeato. *C. B. P.* 350. Emac. *Boerh. Ind. A.* 298. *Tribulus terrestris.* Offic. Ger. 1066. Emac. 1246. Park Theat. 1097. Raii Hist. 2. 1344. J. B. 2. 352. CALTROPS.

It grows in *Italy*, and flowers in *July*; and the Herb and Seed are used.

The *Tribulus* refrigerates and inspissates, cures Inflammations, Ulcers in the Mouth, and Putrefaction of the Gums. The Seed is commended against Poisons, and restores those who are bitten by Serpents. *Dale.*

This Plant, is refrigerating, aperient, astringent, and, taken inwardly, a Vulnerary: Hence it is of Service in a Diarrhœa, and the Stone. *Hist. Plant. adscript. Boerhaav.*

TRIBULUS AQUATICUS, *Nuces aquaticæ.* Offic. Ger. 676. Emac. 874. C. B. P. 194. J. B. 3. 775. Raii Hist. 2. 1321. *Tribulus aquaticus major.* Park. Theat. 1248. *Tribuloides cultare aquis innascens.* Tourn. Inst. 655. WATER-CALTROPS.

The Root of this Plant grows deep under Water, being jointed, and full of Fibres at every Joint. The Leaves are somewhat like Poplar-leaves in Shape, being roundish and indented about the Edges, each standing on a long Foot-stalk. The Flowers arise immediately from the Root, being small and white, growing on separate Stalks; and are succeeded by large round prickly Heads, of a blackish Colour when ripe, containing a large eatable Kernel; it grows in standing Pools and Lakes in *Italy* and *Germany*, but no-where in *England.*

They are eaten as other Nuts in the Places where they grow; but as they are rarely to be met with here, so I never knew them applied to any physical Use. *Miller's Bot. Off.*

Tribulus aquaticus is, also, a Name in *Boerhaave* for several Sorts of *Potamogiton*; which see.

The Nuts, while new, are good against the Stone. The Herb is endu'd with the same Virtues as the *Tribulus terrestris.* *Dale.*

TRICA LUMBORUM. A Species of PLICA POLONICA. *Blancard.*

TRICAUDALIS. A Name for the TRICEPS AURIS.

TRICEPS AURIS, or RETRAHENS AURICULAM. The Name of a Muscle of the external Ear, called by *Winslow* the Posterior. See AURIS.

TRICEPS PRIMUS.

This, with the two following Tricipital Muscles, are fleshy and flat, and of different Lengths, situated between the Os Pubis, and the whole Length of the Os Femoris. The first and second cross each other in such a manner, as that the Muscle which is the first on the Os Pubis, becomes the second on the Os Femoris, and the second on the Os Pubis is the first on the Os Femoris. The third Muscle keeps its Rank.

The Triceps Primus is fixed above, by a short Tendon to the Tuberosity or Spine of the Os Pubis, and to the neighbouring Part of the Symphysis, its Fibres mixing a little with those of the Pectineus. Thence it runs down, increasing in Breadth; and is inserted by fleshy Fibres interiorly in the middle Portion of the Linea Femoris Aspera.

At the lower Part of this Insertion, a Portion of the Muscle separates from the rest, and sends off a long Tendon, which, together with a like Tendon from the Triceps Tertius, is inserted in the inner Condyle of the Extremity of the Os Femoris.

TRICEPS SECUNDUS.

This Muscle is fixed above by fleshy Fibres, below the superior Insertion of the Triceps Primus, in all the Outside of the inferior Branch of the Os Pubis as low as the Foramen Ovale; but seldom so low as the Branch of the Os Ischium. This Insertion is broader than that of the former Muscle.

From thence it runs down, and is inserted in the upper Part of the Linea Aspera, between the Pectineus and Triceps Primus, mixing a little with each of these Muscles. This Insertion appears sometimes divided.

TRICEPS TERTIUS.

This Muscle is fixed above by fleshy Fibres to the anterior Part of all the short Branch of the Ischium, and to a small Part of the Tuberosity of that Bone. This Insertion covers some Part of the Tendon of the Semi-membranosus, and is covered by that of the Semi-nervosus.

From thence it runs down, and is inserted by fleshy Fibres in the Linea Aspera almost from the little Trochanter, down to the Middle of the Os Femoris. It goes lower down than the first Triceps, sending off a separate Portion like that of the Muscle last-mentioned.

These two Portions join together, and form a common Tendon, which, running down to the lower Extremity of the Os Femoris, is inserted in the back Part of the Tuberosity of the inner Condyle. This separate Portion is sometimes large enough to be taken for a distinct Muscle, in which Case we have a Quadriceps instead of a Triceps.

In all this Progress this Muscle is joined to the Vastus Internus by a perforated Aponeurosis, through which the Blood-vessels pass

The three Triceps Muscles join in the same Use, that is, to move the Thigh inward, and bring the two Thighs near each other; as when, in riding, we press the Thighs close against the Saddle; when, in sitting, we hold any thing close between the Knees; when we cross the Thighs; or when, in standing, we bring the Legs close together, in order to jump.

The Use of these Muscles is, also, to hinder the Thighs from separating more than is convenient, especially in great Efforts and Jerks. This might happen, for Instance, when, in mounting an Horse, or laying the Leg over any Height, we raise one Thigh hastily, and support the Body on the other. It might, also, happen by the Weight of the Body alone, when, in standing, we separate both Legs at once, or jump hastily to one Side.

This Use of bringing the Thighs together, and hindering their Separation, has Place in all possible Situations of the Body or Thighs; that is, in standing, sitting, and lying, and when bent, extended, or turned backward, or outward. This shews the great Necessity of providing for this Function, not only by a strong moving Force, but, also, by distributing this Force in such a manner as that it may be able to act through almost all the Degrees of a very long Lever of one kind.

The longest Portion of the Triceps Tertius, being inserted in the Side of the inner Condyle of the Os Femoris, seems to counterbalance the other Portions, which are inserted more posteriorly in the Linea Aspera. *Winslow.*

TRICHIASIS, τριχίασις, from θρὶξ, an Hair, is a Disorder of the Eye, consisting in an Irritation thereof by the Eye-lashes; or, according to the Author of the *Definitiones Medicæ*, it is βλάβερον ἄθροισις, ἢ τῶν ἐν αὐτοῖς τριχῶν γένεσις παρὰ φύσιν, "a

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" a Falling of the Eyelids; and a preternatural Generation of " Hairs in them." He makes three Sorts of τριχίασις, to which he gives the Name of φαλάγγωσις (*Phalangosis*), πῶσις (*Ptosis*), and ὑπόρυσις (*Hyporhysis*); to which some, he says, add διστιχία (*Distichia*). See these Words in their proper Places. In *Lib. de R. V. I. A.* this Disease is called *Trichosis*, as, also, by *Actuarius*.

Trichiasis, also, signifies an Affection of the Urine, when something like Hairs is seen floating in it. Thus *Galen, Com. ad 4. Aph. 76.* says that " the more modern Physicians call " that Disorder, when something like Hairs, especially white " ones, appear in the Urine, by the Name of *Trichiasis*." Some call it *Pilimiction*, or Pissing of Hairs; whence, in the Additions to the Book *de Natura humana*, they are called, τριχοειδέα σαρκία σμικρὰ ἐν τῷ ἐρήμαλι ξυνεξερχόμενα, " minute Pieces of Flesh, like Hairs, mixed with the Urine;" and the same thing is expressed 14 *Aph. 76.*

Trichiasis, in *Erotian*, is called an Abscess about the Breasts of Women, when he expounds τριχιάσθαι in *Hippocrates*: Whence I am persuaded, that *Erotian* read that Passage, *Lib. 2. περὶ γυναικ.* as follows: ὅταν γυναικὶ ὁ μαστὸς τριχιάσθαι, " when the Woman shall have her Breast affected with " a *Trichiasis*;" instead of which, it is written every-where, " τραχὺς γένηται," shall become rough; so that *Trichiasis* is a kind of Asperity of the Breasts, when they are affected with capillary Fissures, or rugous Inequalities, like very fine Scissures; in which Sense, *Trichiasis*, or *Trichismos*, signifies a very fine Species of Fracture, resembling a Hair; and, under this Notion, *Erotian* ought rather to be read with ἀπόσχασις than ἀπόστασις, " an Abscess."

Trichiasis signifies, in the last Place, the *Pilare Malum*, as *Gaza* renders it, or the hairy Evil, which *Aristotle, Hist. Animal. Lib. 7. Cap. 11.* calls *Trichia*, τριχία, where he says, by way of Description, " the whole Breast is of so fungous a " Substance, that if the Woman happens to swallow an Hair in " drinking, she is affected with a Pain in her Breast, which " ceases not, till the Hair is discharged either spontaneously, " or by Pressure, or is sucked out with the Milk." *Foesius.*

Few Physicians have had an Opportunity of observing the τριχίασις, or a Discharge of Hairs by Urine; and fewer still, a periodical Return of this Disorder. A memorable Case of the last-mentioned Kind I had in the Son of a Gentleman of Distinction, who was afflicted for more than four Years with a *Trichiasis*, which return'd every fourteen Days with a considerable Difficulty in discharging his Urine, and so great an Uneasiness of Body, that he could hardly lie in Bed.

Every Hair in Length equal'd sometimes half, and sometimes a whole Finger's Length; but they were so cover'd and wrapt up in Mucus, that they were rarely discharg'd separately, but, as it were, wrapt up. Every Paroxysm lasted almost four Days; and tho' during these he continually render'd his Urine with Difficulty, yet he pass'd the intermediate Days without any Pain, or Discharge of Hairs by Urine, till the fresh Paroxysm returned. *Tulpius Observat. Medic. L. 2. C. 52.*

TRICHOMANES.

The Characters are;

The Leaves consist of roundish Lobes, which are, in a manner, conjugated; and the Fruit is like that of the Filix, or Fern.

Boerhaave mentions two Sorts of *Trichomanes*; which are,

1. Trichomanes; five Polytrichon; Officinarum. *C. B. P. 356. Tourn. Inst. 539. Boerh. Ind. A. 25. Trichomanes.* Offic. *Capillus Veneris*, Pharmacopolis. *Trichomanes.* Park. 1051. Raii Hist. 1. 140. Synop. 46. *Trichomanes mas.* Ger. 985. Emac. 1146. *Trichomanes sive Polytrichum.* J. B. 3. 754. *Trichomanes, Polytrichum, Calitrichum.* Chab. 556. ENGLISH BLACK MAIDENHAIR.

The Root of this Maidenhair is composed of small Strings or Fibres, from which spring several Leaves about a Span long, having a slender shining black Stalk, set on both Sides with small roundish Leaves, sometimes a little crenated about the Edges, and sometimes not; whose under Part is covered, at the latter End of the Year, with small dusty Particles, which is the Seed. It grows in hollow shady Lanes, and on old stone Buildings, being to be gathered in *September* or *October*.

This is what is commonly made use of in the Shops for the true *Capillus Veneris*, or Maidenhair, there being but a little of that to be had: It is reckoned to be much of the same Nature with the true; and to be pectoral, and good for Coughs and Consumptions; to help the Stone, Gravel, and Stoppage of Urine; and to be, in all Cases, a fit Succedaneum for the true *Capillus Veneris. Miller's Bot. Off.*

In the *English* Shops it is a *Succedaneum* for the *Adianthum verum*, or *Capillus Veneris*, which grows not spontaneously in *England*; and is supposed to have the same Virtues, and *Tragus* ascribes the same Effects to it. The Herb, boiled in Wine or Hydromel, and drank, removes Obstructions of the Liver; cures the Jaundice; cleanses the Lungs; helps Difficulty of Breathing; purges Melancholy by Urine; mollifies hard Tumors of the Spleen; expels Poison, and the Stone; and provokes the Menses. The same Decoction, or the Powder of the Herb, or an Eclegma, or Syrup prepared of it, or the distilled Water, stops all sorts of Fluxes of the Belly, and cools Inflammations of the Liver. A Lixivium of the Leaves restrains the Falling off of the Hair, the Head being washed therewith; and cures the Bite of Serpents, and other Animals. Some Farmers and Graziers make a singular Use of the *Trichomanes*, in curing the Diseases of their Swine. But let the Skilful judge, says *J. Bauhine*, whether an astringent, cold, and dry Herb can perform such Effects as are ascrib'd to the *Trichomanes*. The chief Virtues of this Plant, and which are allow'd it by all, were in its being adapted to the Cure of Pulmonic Fevers, the Gravel in the Kidneys, and the Strangury.

2. Trichomanes; foliis eleganter incisis. *T. 539. Adiantum mas.* Tab. Ic. 797. *Boerh. Ind. alt. Plant.*

This Plant is, also, called Polytrichum, from πολὺς (*Polys*), much, and θρὶξ (*Thrix*), Hair; as much as to say, a capillary Herb, because it is one of the Plants which go by the Name of *Capillary*.

These Plants have their Seed-vessels in the back Part of the Leaf; the *Trichomanes* have all the Properties of the Polypodium, except its cathartic Quality; it is aperient and pectoral, and of Service in Diseases of the Spleen, and Obstructions of the Menses. *Hist. Plant. adscript. Boerhaav.*

TRICHOPHYES, τριχοφυὲς, from τρίχες, the Hairs, and φύω, to grow.

TRICHOPHYLLON. A Plant, whose Leaves are small, and resemble Hairs, according to *Blancard*. But it seems rather to imply what Botanists call a capillary Plant.

TRICHOSIS, τρίχωσις. The same as TRICHIASIS.

TRICHOTON, τρίχωτον. The Hairy Sclap.

TRICOCCOS. The Medlar. *Blancard.*

TRICOR. Gold. *Rulandus.*

TRICOTYLOS, τρικότυλος. A Measure of three Cotylæ.

TRICUSPIDES VALVULÆ. Three Valves plac'd at the Mouth of the Right Ventricle of the Heart, just at its Juncture with the Auricle. See COR.

TRIDACTYLES. A Name in *Boerhaave* for several Sorts of *Saxifraga*.

TRIENS. Three Ounces.

TRIFOLIATA PALUDOSA. A Name for the *Menyanthes*; *palustre*; *latifolium*; *triphyllon*.

TRIFOLIUM.

The Characters are;

The Flowers are papilionaceous, or nearly so, obvolved, together with the Ovary, in a fimbriated Vagina, and disposed in Spikes. The Ovary becomes a Capsula, which is concealed in the Calyx, and full of Seed; which is, for the most part, Kidney-shaped; and, when ripe, closely adheres to the Capsule: The Fruit itself is of a wonderful Variety of Forms; the Leaves are disposed by Threes, rarely by Fours or Fives.

Boerhaave mentions thirty-six Sorts of *Trifolium*; which are,

1. Trifolium; montanum; purpureum; majus. *C. B. P. 328.*

2. Trifolium; Hispanicum; angustifolium; spicâ dilute rubente. *C. B. P. 328. Lagopus, angustifolium, foliis, Hispanicum.* Clus. H. 247.

3. Trifolium; montanum; spicâ longissimâ, rubente. *C. B. P. 328. Lagopus major, alter.* Dod. p. 578.

4. Trifolium; lagopoides; hirsutum; angustifolium; Hispanicum, flore ruberrimo. *M. H. 2. 141. Lagopus minor, flore ruberrimo.* Park. Theat. 1107.

5. Trifolium; montanum; angustissimum; spicatum. *C. B. P. 328.*

6. Trifolium; arvense; humile; spicatum; sive Lagopus. *C. B. P. 328. Tourn. Inst. 405. Raii Synop. 3. 330. Boerh. Ind. A. 2. 31. Lagopus Pes Leporinus.* Offic. *Lagopus vulgaris.* Park. Theat. 1107. Raii Hist. 1. 948. *Lagopus trifolius quorundam.* J. B. 2. 377. *Lagopodium sive Pes Leporis.* Ger. 1023. Emac. 1193. HARES-FOOT.

This Plant seldom rises very high, but spreads out into many slender Branches, having small narrow hairy Trefoil-leaves set at every Joint: On the Tops of the Branches, grow short round Heads composed of small papilionaceous pale-purple Flowers, each set in a soft woody Calyx, making the Heads appear soft and downy. The Seed is small, lying at the Bottom of the Calyx; the Root is little, and perishes yearly. It is found frequently among Corn and in Fallow-fields, and flowers in *June* and *July*. The whole Plant is used, though not very often.

Hare's-foot is drying and binding, accounted good for a Diarrhœa and Dysentery, and to stop the two great Flux of the Catamenia, and the *Fluor Albus*, and Spitting of Blood. It helps the Ulceration of the Bladder; Strangury, and Heat, and Pain, in making Water. It is sold in our Shops for the *Hispidula. Miller's Bot. Off.* and *Dale.*

7. Trifolium; pratense; flore monopetalo. *Tourn. Inst. 404. Boerh. Ind. A. 2. 31. Trifolium, Lotus Herba, agrestis.* Offic. *Trifolium pratense purpureum. Trifolium pratense.* Ger. 1017. Emac. 1185.

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purpureum. C. B. P. 327. Raii Hist. 1. 943. Synop. 3. 328. *Trifolium pratense purpureum vulgare*. Park. Theat. 1110. *Trifolium purpureum vulgare*. J. B. 2. 374. *Triphylloides pratensis flore purpureo*. Pont. Anth. 241. COMMON TREFOIL.

The common purple Trefoil has three oval Leaves growing on the Top of pretty long hairy Foot-stalks; they are of a lighter Green underneath, and deeper above, having a white Spot in each Leaf. The Stalks grow to be a Foot or more in Height, with but a few, and those shorter Leaves; but having a Couple of small ones at the Bottom of the Flowers, which consist of round Spikes of small purple papilionaceous Flowers, set each in an hairy five-pointed Calyx; in which, afterwards, grow little short Pods, including two or three small, round, yellowish Seeds. The Root is long, slender, and spreading; it grows everywhere in the Fields and Meadows, flowering in *May* and *June*. The Leaves and Flowers are used, tho' but seldom.

They are drying and binding, and good for all Kind of Fluxes, as, also, for the Strangury, and Heat of Urine, made into a Cataplasm with Hog's Lard. They are reckoned good for Tumors and Inflammations. *Miller's Bot. Off.*

It is hardly ever used in Physic. *Tragus* prescribes the Flowers and Seeds, boiled in Wine, to ease acute Pains, and cut the glutinous Matters in the Intestines. He recommends them, also, boiled in Water or Oil, and apply'd in form of a Cataplasm, to resolve Tumors, where there is no Inflammation. *Martyn's Tournefort.*

8. Trifolium; purpureum; majus; foliis longioribus & angustioribus; floribus saturatioribus. *Raii Syn.* 194.

9. Trifolium; pratense; album. *C. B. P.* 327.

10. Trifolium; quadrifolium; hortense; album. *C. B. P.* 327. *Boerh. Ind. A.* 2. 31. *Trifolium purpureum*. Offic. *Trifolium phæum fuscum luxurians quaternis, quinis & senis foliis*. Tourn. Inst. 406. *Trifolio affine quadrifolium Phæum Lobelii*. J. B. 2. 380. Raii Hist. 1. 942. *Quadrifolium fuscum*. Park. Theat. 1112. *Lotus quadrifolia*. Ger. 1028. Emac. 1198. PURPLE WORT, and PURPLE-GRASS.

It is found in Meadows, whence it is taken, and carefully cultivated in Gardens; it flowers in Summer, and the Herb is used.

The Juice expels phlegmatic Humours from the Intestines, cures Ulcers of the Mouth and Tongue, is a Preservative against the Small-pox, and is vulgarly esteemed a present Remedy for the Purple Fever of Children.

11. Trifolium; fragiferum; Frisicum; folio cordato; flore rubro. *M. H.* 2. 144.

12. Trifolium; semen sub terram condens. *H. R. P.*

13. Trifolium; pratense; luteum; capitulo Lupuli; vel agrarium. *C. B. P.* 328.

14. Trifolium; pratense; hirsutum; majus; flore albo sulphureo, seu ὠχρολεύκῳ. *Raii Synop.* 193.

15. Trifolium; flosculis albis, in glomerulis oblongis, asperis, cauliculis proxime adnatis. *Raii Synop.* 195.

16. Trifolium; lupulinum; alterum; minus. *Raii Synop.* 195.

17. Trifolium; stellatum. *C. B. P.* 329. *Prodr.* 143.

18. Trifolium; siliquis Ornithopodii; nostras. *Raii Syn.* 195.

19. Trifolium; pratense; folliculatum. *C. B. P.* 329. *M. H.* 2. 144.

20. Trifolium; globosum; repens. *C. B. P.* 329. *Prodr.* 143.

21. Trifolium; elegans; flore inverso. *Barrell. Obs.* 73. *Ic.* 872.

22. Trifolium; Alpinum; flore magno; radice dulci. *C. B. P.* 328.

23. Trifolium; Africanum; fruticans; flore purpurascente. *H. A.* 2. 211.

24. Trifolium; Bitumen redolens. *C. B. P.* 327. *Tourn. Inst.* 404. *Boerh. Ind. A.* 2. 32. *Trifolium bituminosum*. Offic. Ger. 1019. Emac. 1187. Raii Hist. 1. 943. *Trifolium Asphaltites sive bituminosum*. Park. Theat. 716. *Asphaltites sive Bituminosum odoratum & non odoratum*. J. B. 2. 366. *Trifolium Asphaltites sive bituminosum, Oxytriphyllum & Menianthes dictum*. Chab. 160. STINKING TREFOIL.

This is a shrubby Plant, a Cubit, or a Cubit and an half, in Height, with stiff, hoary, and, also, blackish, striated Stalks, or Sprigs. The Leaves are, at first, round; but grow, by Degrees, long and accuminated; they are hoary, also, and hairy; have the noisome Smell of Bitumen, and are glutinous to the Touch. The Flowers are not quite collected into a Body, but disposed on an oblongish Head, sand are of a purple-violet Colour, and seated in oblong, striated, villous Calyces. The Seed is black, rough, hairy, and ends in a foliaceous Point; it has the same Smell as the rest of the Plant, and a medicated Taste.

I have, for a long time, says *Ray*, cultivated a Plant resembling this now described in all respects, except in that its Leaves are quite destitute of Smell, but the Flowers have a sweet, tho' faint Scent. The Reason of this is given by *C. Bauhine*, when he says, that the Seed of this *Trefoil* from *Italy*, sowed in *Germany*, produces a Plant of a bituminous Smell; but the Seed of a Plant grown in *Germany*, being sown again, brings forth a Plant deficient in Taste and Smell; and if the Sowing were repeated, it is probable, that the Produce would degenerate into a Plant destitute of all Smell and Taste.

It grows plentifully in *Italy*, *Sicily*, and in *Languedoc*, and *Provence*, on rocky Hills not far from the Sea; but is cultivated with us in Gardens, and flowers in *August*; and the Root, Leaves, and Seed, are used.

The expressed Oil of the Seed is highly commended for the Palsy. *D. Soam. Raii Hist. Plant.*

The Leaves and Seed, taken in Water, are effectual against the Pleurisy, Dysury, Epilepsy, Dropsy, and female Disorders, and provoke the Menses; they, also, cure the Bites of Serpents. The Root is alexipharmic. *Dale* from *Dioscorides*.

25. Trifolium; Bitumen redolens; angustifolium.

26. Trifolium; stellatum; glabrum. *Raii Synop.* 194.

27. Trifolium; flosculis albis, in glomerulis oblongis, asperis, cauliculis proxime adnatis. *Raii Synop.* 194.

28. Trifolium; capitulo oblongo, aspero. *C. B. P.* 329.

29. Trifolium; Epithymi capitulis inter genicula; annuum.

30. Trifolium; minus; supinum; capitulis densiori lanugine candicantibus. *Triumf.*

31. Trifolium; minus; supinum; flore flavescente; capitulis globosis, parvis tomentosum.

32. Trifolium; foliis parvis, lanuginosis; flore pallide rubello; capitulo globoso, lanuginoso, molli.

33. Trifolium; capitulo spumoso, lævi. *C. B. P.* 329. *Prodr.* 140.

34. Trifolium; cum glomerulis rotundis ad caulium nodos. *Raii Synop.* 194.

35. Trifolium; clypeatum; argenteum. *Prosp. Alpin. Exot.* This is a very beautiful small Plant, almost trails on the Ground, resembles the *Trifolium pratense*, and grows in my botanic Garden at *Padua*, from Seed which I procured from *Candy*. It bears a silver-coloured Flower, void of Smell, but of a moderately acrid Taste. These Flowers, which are collected into a sort of silver-coloured Heads, are succeeded by black, oblong, broad, thin, foliaceous Seeds, in Shape very much resembling the old *Venetian* Bucklers. The Plant is annual, and the Seeds come to Maturity in Summer, and thrive well enough in the Soil of *Padua*.

The Flowers, Leaves, and Seeds, are moderately heating, drying, deterging, and digestive; and a Decoction, prepared of them all, is a potent Anodyne in Pains proceeding from Flatuosities. *P. Alpinus de Plant. Exot.*

36. Trifolium; Alopecuron; spicâ globosâ. *Barr. Ic.* 497. *Boerh. Ind. alt. Plant. Vol.* 2.

It is called *Trifolium*, from its three Leaves; and *Lagopus*, from λαγὼς (*Lagos*), a Hare, and πὸς (*Pys*), a Foot; Hares-foot, because the Spikes on the Tops of the Branches represent the Figure of an Hare's Foot.

This Plant, especially the seventh, eighth, and ninth Species, affords plentiful Fodder for Cattle; and much better than Grass, and the Cattle are rendered much stronger by it, because it remains longer in the Stomach. The twenty-fourth and twenty-fifth are called Bituminous, because they have the Smell of a Species of *Bitumen Judaicum*; whence they afford, by Infusion, a very penetrating Oil. *Hist. Plant. adscript. Boerh.*

Trifolium is, also, a Name for several Sorts of *Melilotus*, *Medica*, and *Lotus*; all which see.

Trifolium acetosum. See ACETOSELLA.

Trifolium album. A Name for the *Dorycenium*; *Monspelliensium*.

Trifolium arborescens. A Name for the *Cytisus*; *glabris foliis, subrotundis*; *pediculis brevissimis*.

Trifolium fruteſcens. A Name for the *Medicago*; *trifolia*; *fruteſcens*; *incana*.

Trifolium fruticans. A Name for the *Jasminum*; *luteum*; *vulgò dictum bacciferam*.

Trifolium Halicacabum. A Name for the *Vulneraria*, *pentaphyllos*.

Trifolium Hepaticum. A Name for the *Hepatica*; *trifolia*; *cæruleo flore*.

Trifolium Lusitanicum. A Name for the *Sinapistrum*; *Lusitanicum*; *triphyllum*; *flore rubro*; *siliquis corniculatis*.

Trifolium palustre. A Name for the *Menyanthes*; *palustre*; *latifolium*; *triphyllon*; and for the *Menyanthes*; *palustre*; *angustifolium*; *triphyllon*.

Trifolium siliqua falcata. A Name for the *Medicago*; *annua*; *trifolii facie*.

TRIGLA, τρίγλα. The Mullet.

TRIGLOCHINES, τριγλωχῖνες. The same as TRICUSPIDES.

TRIGONA, τρίγωνα. The Name of certain narcotic compound Medicines mentioned by *Galen*.

TRIGONOS, τρίγωνος. The Name of a Troche, described by *Galen*, *de Comp. M. S. L. Lib.* 7. *C.* 5. and *Paulus Ægineta*, *L.* 7. *C.* 12.

TRIMESTRIS. This is an Epithet for Wheat, Meal, or Barley, which frequently occurs in medicinal Authors. It imports, that the Grain has been but three Months in the Ground. I cannot, with *Columella*, and *Bapt. Porta*, believe, that this is a distinct Kind of Wheat; but rather think, that Husbandmen, after a bad Autumn, sow it by way of Recompence; that some of the Nations about the *Alps*, because their Wheat cannot bear the Rigours of the Winter, and the Showers, they delay the Sowing

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ing of it till the Spring; not because they imagine, that it is a peculiar Kind, and would not thrive, if it was sown in another more indulgent Soil, and elsewhere in *Italy*. Thus the *Triticum Trimestre* is unknown in most Countries; and Wheat for several Years sown in the Spring, constitutes a certain particular Kind; for the Continuation of a Thing changes its Nature. Hence the Wheat, which has the Epithet *Trimestre* bestowed on it, differs not from the common Wheat in Species, but only in a certain Weakness of Constitution. *Raii Hist. Plant.*

TRINCIATELLA. A Name for the *Sonchus*; *lævis*; *angustifolius*

TRINITAS. A Name for the *Trifolium*; and, also, for the *Viola Tricolor*, according to *Blancard*.

TRIOBOLON, τριώβολον. The Weight of three Drams.

TRIOMPHYLLON. The Name of a Compound Medicine in *Mesue*. *Castellus*.

TRIOPHYLLUS ANTIDOTUS. The Name of an Antidote described by *Nicolaus Myrepsus*, *Sect.* 1. *C.* 212.

TRIORCHIS, τριόρχις. A Person who has three Testicles; of which there have been some Instances. *Triorchis* is, also, a Sort of Hawk, called a Buzzard.

TRIOSTEOSPERMUM. *Doctor* Tinkar's *Weed*, *or false Ipecacuanha*.

The Characters are;

It hath a tubulous Flower consisting of one Leaf, divided into five roundish Segments, and inclosed in a five-leaved Empalement, having another Cup resting on the Embryo; which, afterwards, becomes a roundish, fleshy Fruit, inclosing three hard Seeds, which are broad at their upper Part, and narrower at Bottom.

Miller mentions but one Sort of this Plant; which is,

Triosteospermum latiore folio flore rutilo. *Hort. Elth.*

This Plant is a Native of *New England*, *Virginia*, and some other Northern Parts of *America*, where it has been frequently used as an Emetic, and is commonly called Ipecacuanha. One of the first Persons who brought it into Use, was Doctor *Tinkar*, from whence many of the Inhabitants call it by the Name of *Doctor* Tinkar's *Weed*. The Leaves of this Plant greatly resemble those of the true Ipecacuanha, but the Roots are very different; and, by the most authentic Account we have of the true Sort, it differs in Flower and Fruit from this Plant.

It grows on low marshy Grounds, near *Boston* in *New England*, very plentifully; where the Roots are taken up every Year, and are continued in Use amongst the Inhabitants of *Boston*. *Miller's Dictionary*, *Vol.* 2.

TRIPALE. See KANDEL.

TRIPETALOUS FLOWERS are such Flowers as consist of three Leaves, which are called Petals, to distinguish them from the Leaves of Plants. *Miller's Dict. Vol.* 1.

TRIPHYLLON. Trefoil.

TRIPLOIDES, according to *Blancard*, is the Name of a chirurgical Instrument for elevating a large Depression of the *Cranium*. See CAPUT.

TRIPOLIS, or TRIPOLITANA TERRA. See ALANA TERRA.

TRIPOLIUM. Offic. *Tripolium majus & minus*. J. B. 2. 1064. *Tripolium vulgare majus*. Ger. 333. Emac. 413. *Tripolium majus sive vulgare*. Park. 673. *Tripolium majus cæruleum*. C. B. 267. *Aster maritimus cæruleus Tripolium dictus*. Raii Synop. 80. *Aster maritimus purpureus Tripolium dictus*. Raii Hist. 1. 270. *Aster maritimus palustris cæruleus Salicis folio*. Tourn. Inst. 481. SEA STARWORT.

It rises from a fibrous Root to the Height of a Cubit, or a Cubit and an half. The Leaves are pretty like those of the *Limonium majus*, narrower, but almost equal in Length, with the strait Fibres of the Plantain leaf, smooth, thick, fat, sometimes inclining to a cerulcous Colour, and disposed about the Stalks and Branches in an irregular manner. The Flowers grow on the ramous Top of the Stalk, adhering to the Extremities of the Sprays; and are of a purple or cerulcous Colour [an Edge or Border of small purple Leaves surrounding a middle yellow tufted Bos], and vanish into Down.

The *Tripolium majus & minus*, differing only in Size, are here put together. The *Tripolium Flore nudo* has been known to grow about *Bristol*, in great Plenty.

It grows, as *Lobel* truly observes, on the Sea-shores of *England* and *France*, and by the Banks of Rivers exposed to the Ebbing and Flowing of the Tide. We observed a smaller Species in the salt Marshes, not far from *Montpelier*. *Raii Hist. Plant.*

Two Drams of the Root, which is white, sweet-scented, and hot in Taste, purges off Water and Urine by Stool; it is, also, an Ingredient in alexipharmic Compositions. *Dioscorides*, *Lib.* 4. *Cap.* 135.

TRIQUETRA OSSA. Triangular Bones found in some Sculls. See CAPUT.

TRISCA, TRISCHA, or TRISSIA. The Name of a Fish, the same as MUSTELA.

TRISPASTUM APELLIDIS SEU ARCHIMEDIS. The Name of a Chirurgical Machine, described by *Oribasius*, in his Treatise *de Machinamentis*, *Cap.* 26.

TRISPERMON. The Name of a Cataplasm consisting of the Seeds of Cumin, Apium, and Bay-berries.

TRISSAGO. See CHAMÆDRYS.

TRISTITIA. Sorrow. This relates to Medicine only, as it relaxes the Fibres, and is hence the Cause of various Disturbers.

TRISTO, according to *Paracelsus*, is the material Fire contained in all the four Elements, and producing the proper Effects of each Element.

TRISULCÆ. The same as TRICUSPIDES.

TRITÆOPHYES, τριταιοφυὴς, from τριταῖος, tertian, and φύω, importing Similitude of Nature, or Original, is an Epithet of a Fever, much of a Nature with a Tertian, and taking its Rise from it. It seizes the Patient on the third Day, and arrives almost at its Height, or Perfection, so as to be distinguished from a Tertian, simply so called, a perfect Tertian, a lengthened Tertian, and a Semitertian, and to be a Sort of a Medium between them, as we are informed by *Galen*, *Com.* 2. *in Lib.* 6 *Epid.* where he, also, says, that τριταιοφυὴς may be, also, a general Epithet of all Fevers, which return with their periodical Fit, or Accession, every third Day. But, in his *Com.* 1. *in* 1 *Epid.* though he distinguishes the *Tritaiophyes*, from a Semitertian in Name, yet he seems, in some measure, to join them together, as, also, *Lib. de Temp. Morb.* For it is of those Kinds of Fevers, or Mixtures of Tertians and Semitertians, that *Hippocrates* seems to speak, 1 *Epid.* where he says of them, τὸ μὲν ὅλον οὐκ ἐκλείποντες, παροξυνόμενοι δ' τεταιοφυέα τρόπον, "they were not wholly intermittent, but had their Paroxysms, or Fits, after the manner of a "*Tritæophyes*." And again, *ibid.* οἱ δ' δὴ ξυνεχέες, &c. The Fevers were continual, and never intermittent, but had Paroxysms "after the manner of the *Tritæophyes*." Here *Galen*, on the Place last-quoted, expounds the Word τεταιοφυὴς, of a kind of Conjunction of a Tertian and Semitertian.

Erotian, explaining the Fevers called τριταιοφυεῖς, from 6 *Epid.* tells us, that he thinks the Word τεταιοφυεῖς may be supposed to be used by some, instead of τεταῖοι, for the Smoothness or Elegance of the Term; but he seems to be rather of the Opinion of *Philonides Siculus*, who will have the *Tritæophyes* to be a Fever which gives Signs of its approaching Paroxysms, but whose Intervals are regular, as it never arrives at Perfection; and that it takes its Name from its great Similitude to a Tertian; and that it is, also, called a small Semitertian. In 6 *Epid. Sect.* 2. *Aph.* 15. it is said, that the Night preceding a Fit of the *Tritæophyes* is very troublesome. In 4 *Epid.* the *Tritæophyes* is mentioned with the *Epialodes*; and *Coac.* 33. a *Tritæophyes*, attended with an Anxiety, is said to be malignant. *Ibid.* 37. we read of a wandering or uncertain *Tritæophyes*. And again, *ibid.* 26. we meet with τριταιοφυία, ῥίγεα, "Rigors, such as are incident to a *Tritæophyes*." *Forsus.*

TRITÆOS, τριταῖος. A Tertian.

TRITARII. The same as DIATRITARII. See DIATRITOS.

TRITICOSPELTUM. A Name for the *Triticum*; *spica Hordei Londinensibus*.

TRITICUM.

The Characters are;

The Flowers are hermaphrodite, and apetalous, consisting of simple masculine Stamina, furnished with their proper thin and slender Testiculi, within which is seated the Ovary, furnished with a Pair of scirrhous and recurve Tubes, which are each defended by two petaloidal Leaves, often awned, by means of a long, sharp, slender Appendix, which is sometimes hairy, sometimes smooth; they are, besides, surrounded with two hollow carinated Leaves, instead of a Calyx These are sustained by one Pedicle, a Number of which, growing to an Axis, constitutes a dense Spike. The Seeds are large and oblong.

Boerhaave mentions eleven Sorts of *Triticum*; which are,

1. Triticum; Hybernum; aristis carens. *C. B. P.* 21. *Theat.* 351. *Tourn. Inst.* 512. *Boerh. Ind. A.* 2. 155. *Triticum.* Offic. *Triticum spica mutica.* Ger. 58. Emac. 65. Park. Theat. 1120. Raii Hist. 2. 1236. Synop. 3. 386. *Triticum sive siligo spica mutica.* Merc. Bot. 1. 75. *Triticum vulgare, glumas triturando deponens.* J. B. 2. 407. *Frumentum, Triticum.* Chab. 173. WHEAT.

This is the most common Wheat that is sown with us, of which there are two Sorts, white and red; they grow alike, having an hollow Stalk, with usually four Knots taller than Barley, but not so tall as Rye; the Spikes are three or four Inches long, without Awns or Beards, containing a longish, round, white, or reddish Grain, easily rubbed out from the Ear. Wheat is sown in Autumn, and reaped in *July* or *August* following.

Wheat is most generally used, and the best Grain we have in *England*; the Bread made of it being more pleasant and nourishing, than of any other Grain. It is more used for Food, than Medicine, tho' a Poultice made of it, boiled in Milk, eases Pains, and ripens Tumors and Impostumations; and a Piece of roasted Bread, dipt in Wine, and applied to the Stomach, is good to stay Vomiting. Bran is sometimes made use of in Cataplasms, and applied hot in Bags, for Pains in the Sides.

There was formerly kept, in the Shops, an *Emplastrum de Cruce*, *Panis*; but it has been out of Use a great while. *Miller's Bot. Offic.* Wheat,

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Wheat, the more ponderous, the better it is, other Properties being alike; for which Reason our *London* Corn-factors sometimes buy Wheat by the Weight: It has something of Viscidity, and an obstruent Nature. The Characters of the best Wheat are, that it be new, of perfect Maturity, of a yellow Colour, very dense and ponderous; that, when macerated in Water, it swells very much, and very speedily; that it yields a great Quantity of Flour, and is free from all Mixture and Defects, as Tares, Cow-wheat, Blights, or Rust.

Among all Sorts of Corn, proper for Food, Wheat is esteemed the most excellent, not only for its highly nutritive Quality, but for its medicinal Uses, both internal and external, in many Diseases. *C. B.*

Of the Flour of Wheat, well fermented, is made the best Bread; and *Pliny* says, that *Amylum* is, also, prepared of it. Of the same, boiled in Water or Milk, are made the most convenient Pap-meats for Infants, which afford the best Nourishment, and are commended in a canine Appetite, and Impotence. They are of great Use, also, in Affections of the Fauces and Breast, Ulcerations of the Kidneys and Bladder, Fluxes of the Belly, and especially the Dysentery, being prepared as before, or of Broth, with an Addition of Butter. The Eating of raw Wheat causes Inflations of the Belly, and is not easily digested. *Galen* condemns the Use of boiled Wheat in Food; but we have often eaten it seasoned with Butter, and sweetened with Sugar, without the least Inconvenience.

Cato's Method of preparing the *Grana triticea* (which is the Name he has for a wheaten Ptisan, or a Sort of Spoonmeat of it) differs but little from that of our Preparation of wheaten Puls, or Spoon-meat, which we call Frumenty. "Put, he says, half a "Pound of pure Wheat into a clean Mortar; wash it, and "cleanse it carefully from the Husks; this done, after washing it "throughly, put it into a Pot with pure Water, and boil it; "when it is boiled, add thereto Milk, by little and little, till it "comes to the Thickness of a Cremor."

As to its external Use, there is prepared a Collyrium, in which *Wheat* is an Ingredient, for Weakness and Dimness of Sight, and to remove Specks and Films; for which latter Purpose, the expressed Juice of Wheat is, also, effectual. Wheat-flour, dissolved in warm Bean-water, clears the Face from Wrinkles. *Galen* mentions a Medicine of *Crispus*, prepared of Wheat, for a recent Lichen on the Chin, or any other Part of the Face.

Put a good Number of Grains of Wheat upon an Anvil; then take a Plate of Brass, or Iron, for it is all one, heated in the Fire, and lay it upon the Wheat; the hot Liquor, which by this means comes from the Wheat, must be taken off, and rubbed upon the Lichen. By this Remedy alone, we have known many cured; and is not only good for a Lichen of the Face, but for all Sorts of Herpes and Impetigo, as we have experienced. The same is effectual in sinuous Ulcers, Chaps of the Feet or Hands, proceeding from Cold; and to render the Skin smooth, and free from Asperities.

Wheaten-flour, mixed with Oil, and applied in the Form of a Cataplasm, tho' better with boiled Water, and an Addition of Oil, mollifies the Hardness of the Breasts, and ripens Impostumes of the Liver, Spleen, and other Parts. Flour boiled in Vinegar, and apply'd, is effectual in Contractions of the Nerves, and for hanging Breasts. Crude Wheat chewed, and applied to the Place, is said to be effectual for the Bite of a mad Dog; the same ripens Abscesses of the Eyes.

To provoke Excretion by Stool, make a Paste of two Parts Flour, and one Part Salt, with the White of an Egg; and, reducing it to the Form of a Suppository, rub it over with Oil or Butter, and intrude it into the Anus. For the Gout, it is a good Remedy to put the Feet and Legs up to the Knees into Wheat, by which *Sextus Pompeius*, as *Pliny* relates, was freed on a sudden; but the Cure would succeed better, if the Wheat were first tossed in a Vessel, and heated at the Fire.

For all Pains of the Joints, of what Kind soever, is prepared a Cataplasm of Wheaten and Barley-meal, with the Flowers of Chamomile and Roses, each two Ounces, boiled in Water; to which afterwards is added, of the Oils of Chamomile and Roses, each one Ounce: It is to be apply'd hot.

The Ferment or Leaven of Wheaten-meal is endued with the Virtue of heating, extracting, and maturating; it wastes Callosities in the Soles of the Feet, and with Salt maturates and opens a Furunculus, and other Sorts of Tubercles.

Bran is of manifold Use; it serves instead of Soap, to scour the Hands, being mixed in the Water; and, besides, renders the Hands soft and white. Water, in which, when heated, Bran has been infused for a Day and a Night, is good to deterge the Furfur of the Head; and a Gargarism of the Decoction of Bran mitigates the Pain and Asperities of the Fauces.

Bran boiled in Water, then put into a Bag, squeezed dry, and apply'd hot, removes the pungent Pains of a Pleurisy, if the Bag, when cooled, be heated in the same Water, then again squeezed and apply'd, and this Method be several times repeated.

It is certain, that Bran has an abstersive Virtue, by which the Intestines are stimulated to Excretion. Bread, therefore, which is made of Flour not throughly cleansed from the Bran, provided it be duly fermented, seems to us to be more wholsome, and, also, more savoury, than what is made of pure Flour, or Siligo. For outward Use, Crums of Bread serves for much the same Purposes as Wheaten-flour. *Galen* writes, that a Cataplasm, prepared of Bread, is more digestive then one of Wheat, because Bread has a Mixture of Salt and Leaven; and his Opinion seems consonant to Reason, and is confirmed by Experience.

Far is of two Kinds, native and factitious. The first is a Sort of frumentaceous Grain; the latter seems to be taken, by *Pliny*, for the Meal, Puls, or decorticated Grain of the *Far*; where he tells us, from *Verrius*, that, for three hundred Years, the *Romans* used nothing but *Far*, prepared of *Frumentum*. *Far*, according to *Aetius*, is any Kind of Frumentum, or frumentaceous Grain, first decorticated, and cleansed from the Husks, and afterwards broken into some Parts, and dry'd.

Athera, *Puls*, and *Gluten*, as prepared from Wheat, differ only in Consistence. For the first, see the Article ATHERA. The *Gluten*, or Paste, as prepared of the Flour of Wheat, is more thick and solid than the *Athera*, and serves to conglutinate Papers; it is esteemed good for an Hæmoptoe, on account of its being an Agglutinant. *Puls* is a middle Preparation between them; as being thicker, and more solid, than the *Athera*, and more liquid than the *Gluten*; consequently, it is less obstruent of the Viscera, than the *Gluten*; but has more of that Quality, than the *Athera*. A Kind of *Athera*, or rather *Puls*, is that Sort of Food, which, *Galen* tells us, is made of Wheaten-flour mixed in great Proportion with Milk, an Aliment which all *Lower Germany* very frequently uses at this Day [I suppose he means the *Puls* which we call Hasty-pudding]. This is a Food of good Juice, and very nutritive; but hurtful to those who daily use it; for it causes Obstructions in the Liver, and generates Stones in the Kidneys, as we are taught by *Galen*. *J. Bauhine.*

Tragus is a factitious Thing. It was made of several Sorts of Corn, or frumentaceous Grain; as appears by comparing together, those Places of *Dioscorides*, *Galen*, and *Pliny*, where they treat of it. It differs from the *Chondrus* and *Alica*, principally in the Way of Preparation; for the *Chondrus* was completed with Gypsum and Sand, the *Alica* was cleansed with Chalk, but the *Tragus* was excorticated by Maceration in Water alone. *Raii Hist. Plant.*

Among the Preparations of this Grain may, perhaps, be reckon'd the *Vermicelli* made at *Genoa*, so called from their Likeness to small filamentous Worms. They are of two Kinds, the *white* and the *yellow*, and are used in the Kitchens of the Nobility and Gentry for Broths and Soops, and are thought to have an analeptic Virtue. *Dale.*

For other Preparations of Wheat, with their Uses and Virtues, see the Articles ARTOS, PANIS, ALICA, AMYLUM, FURFUR, FARINA.

2. Triticum; spica multiplici. *C. B. P.* 21. *Theat.* 371. *M. H.* 3. 175.

3. Triticum; spica Hordei Londinensibus. *Raii Synop.* 3. 387. *Tourn. Inst.* 512. *Boerh. Ind. A.* 2. 155. *Zeopyrum.* Offic. *Zeopyrum seu Triticospeltum.* C. B. P. 22. Theat. 423. Park. Theat. 1123. *Hordeum nudum.* Ger. 66. Emac. 72. *Hordeum nudum sive Gymnocrithon.* J. B. 2. 430. Raii Hist. 2. 1908. NAKED BARLEY.

The Spike, or Ear, of this Grain is bearded like that of Barley, but the Corns are rediish, sharp at both Ends, sulcated on one Side, and shewing a longish Bud proceeding from the Mucro, or Point on the Side opposite, covered with a simple Husk, which is more easily rubbed off, than that of Wheat. The Rows of Grain, if an Observation may be taken of them, seem to be four; to which we may add, that the Leaves are broad, and much envelope the Stalk. *Raii Hist. Plant. p.* 1908.

It is sown in *Germany*, where it serves to make Bread, and other Sorts of Food, and is no less used than Barley.

The *Gymnocrithos* is of a refrigerating Quality, like the Hordeum, or Barley, being administered in Broths.

4. Triticum; siligineum. *C. B. P.* 21. *Theat.* 355.

5. Triticum; spica & granis rubentibus; culmo rubro.

6. Triticum; spica & granis rubentibus; culmo luteo.

7. Triticum; majus; longiore grano, glumis foliaceis incluso. *M. H.* 3. 175.

8. Triticum; spica quadrata; villosa, breviori.

9. Triticum; spica quadrata; villosa, longiori.

10. Triticum; spica albicante; granis rufescentibus; sive Triticum mixtum. *M. H.* 3. 175.

11. Triticum; aristis circumvallatum; granis & spica rubentibus; glumis lævibus, & splendentibus. *Raii Synop.* 244.

The following Grasses are reckoned, by *Boerhaave*, among the Species of Wheat.

1. Gramen caninum; Spicæ Triticeæ aliquatenus simile. See AGROSTIS.

2. Gramen latifolium; spica triticeâ, latiore, compacta. *C. B. P.* 8. *Prodr.* 17. *Ic. J. B.* 2. 477.

3. Gramen; caninum; longius radicatum majus. *C. B. P.* 1. *Theat.* 12.

4. Gramen; caninum; longius radicatum minus. *C. B. P.* 1. *Theat.* 12.

5. Gra-

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5. Gramen; caninum; maritimum; ſpicatum. *C. B. P.* 1. *Theat.* 14.

6. Gramen; caninum; maritimum; ſpicâ foliaceâ. *C. B. P.* 2. *Theat.* 15.

7. Gramen; maritimum; vulgari canino ſimile. *Park. Lob. M. H.* 3. 178.

8. Gramen; geniculatum; parvum; arenoſorum aggerum maritimorum Zelandiæ, longius radicatum. *Lob. M. H.* 3. 178.

9. Gramen; anguſtifolium; ſpica Tritici muticæ ſimili. *C. B. P.* Prodr. 17. Theat. 132. *Boerh. Ind. alt. Plant.*

TRITICUM INDICUM. A Name for the *Mayz*; *granis aureis.*

TRITICUM TEMULENTUM. A Name for the *Lolium, verum*; *Geſneri*; *Lolium*; *album.*

TRITICUM VACCINUM. A Name for the *Melampyrum*; *comâ purpuraſcente.*

TRITIO. Triture.

TRITOMA. An Inſtrument us'd in Diſorders of the Ears. *Caſtellus* from *Albucaſis.*

TRITORIUM. A Chymical glaſs Inſtrument, open at both Ends, like a Funnel, narrow at the Top, but more ſo at the Bottom, but wide in the Middle. Its Uſe is to ſeparate Liquors of different ſpecific Gravities; for when the heavieſt is run out, the inferior Orifice is ſtopt, and the lighteſt is kept in the Veſſel.

TRITURA. Triture.

TRITURATIO. Triture, or Trituration.

This is principally employ'd to reduce hard Subſtances to fine Powders, either by the Mortar, or by way of Levigation upon a Marble. There is little Difficulty in this, beſides the Labour.

Trituration has a great Share in ſome Inſtances, in raiſing or depreſſing the Efficacy of what comes under its Management. For, in grinding, all thoſe Bodies whoſe Efficacy conſiſts much in the peculiar Shape and Points of their component Parts, the more and finer they are broke, the leſs will they operate: Thus may Calomel be render'd much gentler, and made capable of being given in much larger Quantities, only by long rubbing in a glaſs Mortar: For the continual Triture has the ſame Effect upon it, as repeated Sublimation, which is only breaking of the ſaline Spicula more and more, until it becomes almoſt plain Mercury. But in reſinous Subſtances, particularly thoſe which are purgative, as Jalap, Scammony, *&c.* the finer the Powder they are reduced into, the greater is likely to be their Efficacy: As the Senſe which the Stomach and Bowels have of them, is in Proportion to their Contacts, therefore, the more the ſame Quantity is divided, the further will it diffuſe itſelf, and vellicate the Fibres; that is, in other Words, it will work the more.

TRIUMFETTA.

The Characters are;

It hath a Flower conſiſting of ſeveral Petals, which are placed circularly, and expand in form of a Roſe: From whoſe Empalement ariſes the Pointal, which afterward becomes an hard ſpherical burry Fruit, incloſing four angular Seeds.

Miller mentions two Sorts of *Triumfetta*; which are,

1. Triumfetta fructu echinato racemoſo. *Plum. Nov. Gen.*

2. Triumfetta fructu echinato racemoſo, minor. *Miller.*

The firſt of theſe Plants is very common in the Iſland of *Jamaica*, and ſeveral other Parts of *America*; but the ſecond Sort is more rare, being found in but few Places. The Seeds of this Kind were ſent to *England* by Mr. *Robert Miller*, who diſcovered the Plant on the North Side of the Iſland of *Jamaica.*

The Flowers of theſe Plants are ſmall, and of a yellow Colour, ſomewhat like thoſe of Agrimony; for which the Plant has been by ſome ranged under that Genus. Theſe Flowers are produced in Branches, at the Extremity of the Shoots; but as they are not very beautiful, ſo they are ſeldom preſerved, but in ſuch Gardens, where Variety is principally intended.

The firſt of thſe Sorts riſes to the Height of ſix or ſeven Feet, and the Stem becomes woody. Toward the Top it divides into ſeveral Branches, each of which produces a Spike or Bunch of Flowers. The Leaves of this Sort are pretty large, and ſhap'd like thoſe of the larger *Malvinda.*

The ſecond Sort ſeldom riſes more than three Feet high, and has ſmaller Leaves than the firſt. The Stem of this Sort is woody, but it doth not branch ſo much as the former, and is in every reſpect a much leſs Plant than that. *Miller's Dictionary.*

TRIXAGO, the ſame as *Triſſago.* See CHAMÆDRYS.

TROCHANTERES. Two Proceſſes of the Thigh-bone are thus call'd. One is the greater; the other the leſſer *Trochanter.*

TROCHILODES, τροχιλώδης. An Epithet for the round Part of the Arm, in *Galen de Uſu Partium, L.* 2. *C.* 15.

TROCHILUS. The Wren.

TROCHISCI.

The Form of Troches, is in all reſpects blamed by ſome Commentators on the officinal Diſpenſatories, particularly by *Saſſenus*, who wonders how it came to be contrived at all: But there are certainly ſome good Reaſons for it, as it either better preſerves thoſe things againſt their Time of Uſe, which would decay in Powder; or aſſiſts in a particular manner of taking them, by gradually diſſolving in the Mouth.

The *Trochiſci Hyſterici* are an uniform and efficacious Compoſition; but ſtill ſeem to give place to thoſe *de Myrrha*, which are of the ſame Intention, and ſomething preferable in two reſpects: For every Ingredient in them fully coincides with the main End, and they are more ready in this Form for extemporaneous Occaſions, than the ſame things could be in any other, or in their natural Productions. The *Trochiſci de Terrâ Japonica*, are not yet come much into Acquaintance; but are ſo eaſily made, and ſo much pleaſanter to take, than any other of this Form in the like Intention, that they are much to be preferred to the *Trochiſci Gordonii*, and *de Terra Lemnia.* The *Trochiſci Bechici albi* and *nigri* are both calculated likewiſe to diſſolve gradually in the Mouth, and for the ſame Intention; the former are by much more grateful, but the latter more efficacious. The *Trochiſci Alhandal* might be mention'd among thoſe for inward Uſe; but they are ſo much in Neglect, unleſs in a few officinal Preſcriptions, that it is hardly worth Inquiry, whether the Reduction of the Colocynth from ſix Ounces to ſix Drams, in the laſt Alteration of the College, be Miſtake or not. The *Trochiſci albi Rhaſis* are purpoſely contrived for cooling Lotions, and are principlay uſed in Solution, with Plantain or Roſe-water, againſt Inflammations, and hot Defluxions upon the Eyes; the uſual Quantity is about half a Dram to two Ounces of Water, which, when diſſolved, looks white as Milk. The *Trochiſci de Plumbo*, are deſigned for the ſame Purpoſes; but are a much coarſer Medicine, and therefore hardly ever preſcrib'd.

There are many things, which might be contrived into this Form for extemporaneous Uſes, in the manner of the *Trochiſci Bechici*, and ſeveral Medicines are reduced under the Title of Lozenges; but the ſame Intentions are anſwerable by things in other Forms, with more Certainty; and few caring to be troubled with them, they are hardly ever met with in regular Preſcriptions; though, for the Preſervation of ſome things for preſent Uſe, it is a very ſerviceable Form, as hath been already obſerved, concerning the Troches of Myrrh, and ſome other officinal Compoſitions of the like Nature. *Quincy's Prælect. Pharm.*

TROCHISCI ALBI RHASIS.

The white Troches of Rhaſes.

Take of Ceruſs waſhed with Roſe-water, ten Drams; of Sarcocolla, three Drams; of Starch, two Drams; of Gum Arabic, and Tragacanth, of each one Dram; of Camphire, half a Dram: And make them all together into Troches with a ſufficient Quantity of Roſe-water.

Theſe are diſſolv'd in White-wine, Roſe-water, or any other Liquid, to make Collyria for the Eyes. They aſſwage Inflammations, and ſometimes repel hot corroſive Rheums. The ſame are ſometimes uſed for Injections in Gonorrhœas to cool the Urethra, and defend it againſt the Corroſions of the gleeting Humours. Two Drams diſſolved in two Ounces of Liquid, is the uſual Proportion of Mixture; with which the affected Part is to be frequently waſhed.

TROCHISCI ALEXITERII. See ALEXITERIA.

TROCHISCI ALHANDAL. See ALHANDAL.

TROCHISCI ALIPTÆ MOSCHATÆ. See ALIPTÆ.

TROCHISCI ALKEKENGI. See ALKEKENGI.

TROCHISCI APOPLECTICI.

Lozenges againſt the Apoplexy.

Take Ambergriſe, half a Dram; Oil of Roſemary, Cinnamon, Nutmeg, of each two Drops; Oil of Cloves, and Marjoram, of each one Drop; Spirit of Lavender, eighty Drops; fine Sugar, four Ounces: Make into Lozenges with a ſufficient Quantity of the Mucilage of Gum Tragacanth.

Theſe are proper to chew, and roll about in the Mouth frequently, by ſuch who are ſubject to apoplectic Diſorders: For this way the warm Aromatics more immediately penetrate the Fibres, than when ſwallowed at once into the Stomach.

TROCHISCI BALSAMICI.

Balſamic Lozenges.

Take Balſam of Tolu, Orrice-root, of each one Ounce; Gum Tragacanth and Arabic, of each half an Ounce, Flowers of Benjamin, two Drams; white Sugar-candy, one Pound. When all are reduced to fine Powder, make them into a Paſte, with Mucilage of Quince-ſeeds and Roſe-water for Lozenges.

Theſe

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These make a most grateful and efficacious Remedy in all Kinds of Coughs, but particularly those from tickling Defluctions and Rheums. They will, also, greatly contribute to restore decaying Lungs, and Persons almost worn out in Consumptions. On no Account can they disagree, and almost in all Cases will they prove of great Service. They may be, also, used at Pleasure.

TROCHISCI BECHICI ALBI. See BECHICA.

TROCHISCI BECHICI NIGRI. See BECHICA.

TROCHISCI DE BENZOINO.

Troches of Benjamin.

Take Sugar-candy, one Pound; melt it in Rose-water; then taking it from the Fire, dissolve in it strained Storax, one Ounce; which stir well together; and, when almost cold, sift in fine Powder of *Benjamin*, six Drams; Aloes-wood, half an Ounce; Orrice-root, one Ounce; Musk, one Scruple: And with a sufficient Quantity, if any be wanting, of the Tragacanth, Mucilage, and Rose-water, make them into a Paste.

This is an admirable Balsamic, and would be of great Service to such who are subject to Diseases of the Breast, and inclinable to Consumptions, if frequently taken. They give, also, a very agreeable Sweetness to the Breath. They may be used at Discretion. If the Aloes-wood was omitted, they would be never the worse, but rather more grateful. These are from the *Pharmacopœia Regia*.

TROCHISCI DE CARABE.

Troches of Amber.

Take of Amber, one Ounce; of burnt Hartshorn, Gum Arabic, red Coral, Gum Tragacanth, Acacia, Hypocystis, Balaustines, Mastich, Gum-lacca washed, and black Poppy-seeds, of each two Drams and two Scruples; of Frankincense and Saffron, of each two Drams; of Opium, one Dram: And make them all into Troches with a sufficient Quantity of the Mucilage of Fleawort-seeds made in Plantain-water.

This Composition is ascribed to *Mesue*, and seems designed against Hæmorrhages, and principally Spitting of Blood.

TROCHISCI CEPHALICI.

Cephalic Lozenges.

Take *Pulvis de Gutteta*, and native Cinnabar, o each half a Dram; Oil of Rosemary, and Nutmegs, of each two Drams; fine Sugar, two Ounces; Mucilage of Gum Tragacanth, a sufficient Quantity.

TROCHISCI CYPHEOS PRO MITHRIDATICO. See CYPHI.

TROCHISCI AD EMULGENDUM SALIVAM.

Lozenges to occasion Spitting.

Take Pellitory of *Spain*, in fine Powder, half an Ounce; Mastich, two Drams; Oil of Cloves, and Marjoram, of each two Drams. Make into Lozenges or Pellets, with a sufficient Quantity of the best-scented yellow Bees-wax.

These may be of Use to such who want a Discharge of Rheum from the Glands about the Mouth, and cannot comply with the Custom of smoking Tobacco for that Purpose. For a great many Complaints arise from those Parts being overcharged with Moisture, for which this would be a convenient Drain; the Heat of it irritating the Glands to the Discharge of their Contents.

TROCHISCI GORDONII.

Gordon's Troches.

Take of the Four greater cold Seeds blanched, of the Seeds of white Poppies, Mallows, Cotton, Purslain, and Quinces, of Myrtle-berries, Gum-tragacanth, and Arabic, of Pistachios and Pine-nuts cleansed, Sugar-candy, Liquorice, Barley, Mucilage of Fleawort-seeds, and sweet Almonds blanched, of each two Drams; of *Armenian* Bole, Dragon's-blood, Spodium of Ivory, and red Rose-flowers, of each half an Ounce: Let them be made into Troches, *S. A.* with a sufficient Quantity of the Mucilage of Gum Tragacanth.

It was originally prescribed by *Gordonius, de Passionibus Renum*, Cap. 10. It is intended for some Distempers of the Kidneys, and urinary Passages; but it is not often described, and for that Reason it is seldom to be met with in the Shops.

TROCHISCI HEDYCHROI GALENI AD THERIACAM. See HEDYCHROI.

TROCHISCI HÆMOPTOICI.

Lozenges against Spitting of Blood.

Take Japan Earth, two Drams; astringent Saffron of Steel, one Dram; Sugar of Lead, and Starch, of each half a Dram; fine Sugar, four Ounces; Mucilage of Gum Tragacanth, a sufficient Quantity to make them into Lozenges.

These may be taken at Discretion, by any who are subject to spit Blood; and they will, also, do Service in any Sort of Fluxes, whether of the Belly, or other Parts.

TROCHISCI HYSTERICI.

Hysteric Troches.

Take of Asafœtida, and of Galbanum, of each two Drams and an half; of Myrrh, two Drams; of Castor, one Dram and an half; of the Roots of Asarum, long Birthwort, or Savine, Motherwort, and Calemint, of each one Dram; and of Dittany, half a Dram: Let the Gums be soaked in the Juice or Decoction of Rue, and strained and boiled up to the Thickness of Honey; and then add the other Ingredients, finely powdered, so that the Whole may be made into Troches, *S. A.*

They are well contrived to the Purpose their Title denotes; and are very effectual in all uterine Disorders, to allay Vapours, Convulsions, to promote the Menses, to assist Delivery, and all that belongs to rectifying the Diseases of those Parts. They are conveniently reducible into Powder, for any extemporaneous Form; and may be given from five Grains to one Scruple for a Dose.

TROCHISCI DE LIGNO ALOES.

Troches of Aloes-wood.

Take of Aloes-wood, and red Roses, of each two Drams; of Mastich, Cinnamon, Cloves, *Indian* Spikenard, Nutmegs, Carrot-seeds, the greater and lesser Cardamoms, Cubebs, Gallia Moschata, Citron-peels, and Mace, of each one Dram and an half: And make them into Troches with the Pulp of Raisins, half a Scruple of Ambergrise; and Musk may be added at Pleasure.

TROCHISCI DE MYRRHA.

Troches of Myrrh.

Take of Myrrh, three Drams; of the Leaves of Rue, Horse-mint, and Cretic Dittany, of Cumin-seeds, Asafœtida, Sagapenum, *Russian* Castor, and Opopanax, of each two Drams: Let the Gums be dissolved in a Decoction of Mugwort, and the rest be thrown in, so that the Whole may be made into Troches, with a sufficient Quantity of the Juice of Mugwort, *S. A.*

These were first prescribed by *Rhases, Cap.* 9. *ad Almansorem*, against Obstructions of the Menses. This Medicine is so approved as to be pretty much called for in common Prescription, and esteemed beyond the Hysteric Troches before directed for the same Purposes.

TROCHISCI ODORATI.

Perfumed Lozenges.

Take Musk, and Ambergrise, of each six Grains; grind them fine with a little white Sugar-candy, and ten Drops of Spirit of Roses; then put to them Powder of Orrice, four Ounces; Starch, two Ounces; fine Sugar, four Ounces; and Gum Tragacanth, a sufficient Quantity.

These are of no great Service, unless to those few who delight in Sweets, and to disguise a stinking Breath.

TROCHISCI PARALYTICI.

Lozenges against the Palsey.

Take Sugar in fine Powder, one Ounce; compound Spirit of Lavender, sixty Drops; Oil of Rosemary, four Drops; with a sufficient Quantity of Mucilage of Gum Tragacanth.

These may be given at Discretion, to such who are inclinable to nervous Disorders, as they are best liked.

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Trochisci Peruviani:

Peruvian Lozenges.

Take of *Peruvian* Bark, one Ounce; reduce it into a moſt fine Powder; Balſam of Tolu, two Drams; of Gilead, half a Dram; Sugar, half a Pound; Mucilage of Gum Tragacanth; a ſufficient Quantity to make them into Lozenges.

They who can take theſe, will find Service from them in all hectic Indiſpoſitions, and beginning Conſumptions.

Trochisci sive Sief de Plumbo. See Sief de Plumbo.

Trochisci de Rhabarbaro.

Troches of Rhubarb.

Take of choice Rhubarb, ten Drams; of the Juice of Eupatorium (that is, of the *Ageratum Meſues*) inſpiſſated, of each half an Ounce; of red Roſes, three Drams; of Aſarum-root, Madder, and Spikenard, of the Leaves of Wormwood, of the Seeds of Aniſe and Smallage, of each one Dram: And, with the depurated Juice of Eupatorium, make them into a Maſs for Troches.

Trochisci Restringentes.

Reſtringent Lozenges.

Take Japan Earth in fine Powder, one Ounce; Gum Tragacanth, three Ounces; Oil of Cinnamon, one Dram; Sugar of Roſes, two Pounds: Make them into a Paſte with Mucilage of Quince-ſeeds made very ſtrong.

Theſe are great Reſtorers of a weak Stomach and Bowels, and ſuch as are ſubject to Indigeſtion, Vomiting, and Fluxes. They may be taken at Diſcretion, and by continu'd Uſe they have been known to recover ſome from Weakneſſes, under which they have been juſt ſinking; and for the Fluor Albus, and other female Complaints, there is not a more pleaſant and effectual Remedy; as, alſo, in old Gleets, where no Malignity remains.

Trochisci de Scilla ad Theriacam. See Scilla.

Trochisci Stomachici.

Stomach Lozenges.

Take *Spaniſh* Angelica-root in fine Powder, one Dram; Oil of Cinnamon, Nutmeg, and Cloves, of each two Drops; Oil of Mint and Wormwood, of each one Drop; fine Sugar, four Ounces: Mucilage of Gum Tragacanth, made with Orange-flower-water, a ſufficient Quantity.

Theſe are good to warm the Stomach, and diſſipate ſuch Flatulencies, which ſometimes communicate their Diſorders a great way further, and ſo are of Service to the Head.

Trochisci de Terra Japonica.

Troches of Japan Earth.

Take of Japan Earth, two Ounces; of white Sugar, ſixteen Ounces; of the Mucilage of Gum Tragacanth made in Plantain-water, a ſufficient Quantity to make them into Troches.

Theſe were not in any Diſpenſatory before, and are not only eaſy to preſerve and take; but, alſo, more effectual to all the Intentions of a Reſtringent, than many others.

Trochisci de Terra Lemnia.

Troches of Lemnian Earth.

Take of Lemnian or Seal'd Earth, of Armenian Bole, Japan Earth, Acacia, Hypocyſtis, Gum Arabic roaſted, Dragon's-blood, roaſted Starch, red Roſes, Anthora, or, in its Defect, red Roſe-ſeeds, Blood-ſtone, red Coral, Amber, Balauſtines, Spodium of Ivory, Purſlane-ſeeds ſomewhat roaſted, Olibanum, calcined Hartſhorn, Cypreſs-nut, and Saffron, of each two Drams; of black Poppy-ſeeds, Gum Tragacanth, and Pearls, of each one Dram and an half; of Opium, one Dram: And make them all up together into Troches, with a ſufficient Quantity of the inſpiſſated Juice of Plantain.

This is deſign'd much for the ſame Purpoſe as the *Trochiſci de Carabe*, and the *Trochiſci Gordonii*, that is, to ſtop Hæmorrhages, eſpecially Spitting of Blood.

Trochisci; sive Sief de Thure. See Sief de Thure.

Trochisci e Violis solutivi.

Solutive Troches of Violets.

Take of Violet-flowers moderately dry'd, ſix Drams; of gummy Turpeth, one Ounce and an half; of the Juice of Liquorice, Scammony, and Manna, of each two Drams: To the Violets well bear, put the Manna, the Juice of Liquorice; and add the Turpeth, and Scammony in fine Powder; and when they are all well mixed together, make them into Troches with a little Syrup of Violets, if it be wanted.

Trochisci de Vipera ad Theriacam.

Troches of Vipers for the Theriaca.

Take of Viper's Fleſh, after the Skin is ſtripped off, the Fat and Entrails being taken out, and without the Head and Tail, eight Ounces; of the fineſt wheaten Bread, or rather Biſcuit, powdered and ſifted, two Ounces: Let them be formed into little Troches, by anointing the Head with Opobalſam, or Oil of Nutmegs by Expreſſion; then dry them upon the Bottom of a Sieve inverted in ſome open Place, where the Air hath Paſſage thro'; and turn them often, till they are thoroughly dry.

TROCHITES. The Name of a Stone ſhaped like a Top (*Trochus*) with which Children play. It is without-ſide of a cineritious Colour, but white within.

TROCHLEA. A kind of cartilaginous Pully, through which the Tendon of one of the Muſcles of the Eye paſſes. See Oculus.

TROCHLEARIS MUSCULUS. That Muſcle of the Eye, whoſe Tendon paſſes thro' the Trochlea. See Oculus.

TROCHOIDES, τροχοειδὴς, from τροχὸς, a Wheel. An Epithet for a Species of a Articulation, when one Bone enters into the Cavity of another, like an *Axis* into the Cavity of a Wheel, as it happens in the Articulation with the firſt and ſecond *Vertebræ* of the Neck.

TROCHOS, τρόχος, from τρέχω, to run, is a Courſe; but, in *Hippocrates*, ſeems to mean a curve or circular Courſe, as oppoſ'd to a ſtrait one, which he calls *Dromos*, δρόμος. Thus, *Lib. de Inſomn.* we read, δεῖ δὲ ἀμφοτέρας τὰς ἀνίσπασις ποιεῖσθαι, καὶ τοῖσι δρόμοισι τοῖσι τε καμπτοῖσι χρῆσθαι. "Re-"vulſions muſt be made both Ways, and Running muſt be "uſed both ſtrait forwards, and in curve or circular Lines." In the ſame Treatiſe, he adviſes to uſe τοῖσι τρόχοισι ἐξέναι, "ſwift, circular Courſes, or Running at the Ring," which is repeated in the ſame Book. In *Lib.* 1. περὶ διαίτης, we read δρόμος ὀξεῖς καὶ καμπτὸς, "ſwift and wheeling Races;" and *Lib.* 2. he ſeems to ſet τὰς δρόμους μακρὰς, "long Courſes," and καμπτὰς τοῖς τρόχοις, "crooked with or after the manner of the *Tro-*"*chus*," in Oppoſition. Τρόχοι, in *Galen*'s Exegeſis, are expounded by δρόμοι (*Dromoi*) ſtrait Races; in which Senſe the Word ſeems to be uſed, *Lib.* 2. & 3. *de Diæta.*

TROCHUS is the Name of a Shell-fiſh, reſembling in Shape a Top; which is alcaline and abſorbent, like other Sea-ſhells.

TROCTOS, τρωκτὸς, from τρώγω, to eat, is the ſame as τρώξιμος (*troximus*) eatable, eſculent: But the Word is moſt commonly apply'd to ſuch Foods as are eaten crude; for Inſtance, ſuch as are eaten in Sallads, and ſerv'd up in ſecond Courſes, as dry'd Grapes, Figs, and the like, and, alſo, to *Tragemata*. *Galen*, in his Exegeſis, expounds τρακτὰ by ἐμὰ ἐσθιόμενα, "eaten raw."

TROGLE, τρώγλη, is a Cavern or Cavity made by Eroſion. *Heſychius* expounds τρῶγλαι by τρύπαι, (*Trupæ*) Perforations, and τρῶγαι by τρῶγλαι, Holes eaten. In *Moſchion, Cap.* 126. the Inciſures made by Leeches are called τρῶγλαι. *Hippocrates*, *Lib. de Carn.* calls the Paſſages, Perforations, or any other ſort of Cavity, containing Humidities, *Troglæ*, τρῶγλαι, where he ſays, τὰ δὲ κοιλῶδες τρῶγλαι ἐγὼ νοέω, ἐν δὲ τῇσι τρώγλῃσι ταύτῃσιν τὸ ὑγρὸν, ὥσπερ καὶ ἐν τῇσι φλεψὶν τῇσι μεγάλῃσιν. "The glutinous Subſtance paſſed into Perforations, in which "Perforations is contained an Humid, as there is in the large "Veins."

TROGLODYTES, τρωγλοδύτης. The Wren is call'd *Paſſer Troglodytes*. See Passer.

TROGLODYTICA MYRRHA. The beſt Species of Myrrh; ſo call'd from the Country where it was produc'd.

TROLLIUS FLOS. A Name for the *Helleboro-ranunculus; flore luteo globoſo.*

TRONOS, or TRONOSSA. The choiceſt Species of *Manna. Paracelſus. Rulandus.*

TROPHIODES, τροφιώδες, in *Galen*'s Exegeſis, is expounded by ἔχον ἐμφερόμενά τινα πεπηγότα, "containing ſome Matters of "a compact Subſtance," carry'd off (in the Urine); for the Word is ſpoken of the Urine, 7 *Epid.* in a Paſſage to which *Galen* had certainly a Regard in his Expoſition, where it is ſaid ἐκλαίη ἕρπησιν ἀθρόαν πεπὸ τροφιώδες, "on the ſixth Day ſhe "made

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" made Water freely and plentifully with something of a com-
" pact Substance," which floated in it.) Here by τροφιῶδες, and ὕρησε τροφιώδεα, and ὕρα τροφιώδεα in the same Book, is to be understood Urine, which has swimming in it something of a dense and compact Substance, or some thick and condensed Corpuscles like an Enæorema, [see that Word] compacted into a globular kind of Form, as is observ'd under a great Redundance of Crudities, and in Fevers of a bad Kind; and indicates a great internal Burning, and vehement Exagitation of Nature, with an extraordinary Mixture of Flatuosities, of which we have frequent Instances in the *Epidemics*. We meet with τροφιῶδες ὕρον, also, *Coac.* 578. but the Reading seems to be corrupted, if we consult the *Prorrhetica*. And *Coac.* 604. we read of τροφιώδεα διαχωρήματα, by which must be understood, Excretions of a dense and concreted Substance. But the Reading appears to me very suspicious; and it appears from the *Prorrhetica*, that we are to read ἐκ τροφωδέων (not τροφιωδέων) ὑπόστασις ὑποπέλιος, " a sublivid Sediment of Excretions attended with Gripings;" which almost constantly accompanies liquid Stools, especially if it be considered, that the sublivid and muddy Sentiment proceeds from a great internal Heat, and a kind of Torrefaction, as *Galen* observes in *Prorrhet.* 156. and indicates a Distemperature of the Liver, and that such Excretions are usually attended with Gripes.

Τροφιῶδες is reckon'd by *Galen* one of those Words which are obscure, and but seldom used; and he derives it from τρέφομαι (*trephomæ*) which he expounds by πήγνυμαι, to be compacted. *Eustathius* expounds τρέφεσθαι by πήγνυσθαι, and *Hesychius* explains τρέφειν by πηγνῦναι, and τρέφεσθαι ὁμοίως, in like manner, that is, by πήγνυσθαι. *Galen*, also, *Com.* 3. in *Prorrhet*, where he explains τροφώδεα ὕρα, to be the same as in his *Exegesis* he makes τροφιώδεα to be, expounds διατρέφεσθαι by πήγνυσθαι, and tells us, that in *Homer* διατρέφεσθαι κυκλοῦσι signifies περιπήγνυται, where διατρέφεσθαι and περιστρέφεσθαι seem to be put for διαλρέφεσθαι and περιλρέφεσθαι, as in *Homer*, *Odyss.* ξ. where we read ᾗ σακέεσσι περιστρέφεσθε κρύσαλλος, *Hesychius* reads περιλρέφεσθε, and expounds it by περιεπήσσεσθε. And in *Iliad.* ε, μάλα δ' ἄλλα περιστρέφεται κυκεῶνι, *Herodian* reads περιλρέφεται, which Reading is approv'd by *Eustathius*. *Erotian* says that τρέφαι with the *Attics* signifies πῆξαι, when he expounds τέθραμμένον by πεπηγότα, and observes further, that τρόφαλις is πεπηγὼς τύρος, and derived from τρέπω, but *Hesychius* better derives it from τρέφω, and says that it signifies τὸ πεπηγμένον. The same Author expounds τραφῆσθαι by παχύνεσθαι, to be incrassated.

TROPHOS, τροφός. The Name of a Sort of Liniment mention'd by *Paulus Ægineta*, *L.* 4. *C.* 40.

TROPICUS MORBUS. A Chronical Disease.

TROXIMOS, τρώξιμος. The same as TROCTOS.

TRUNCULI. The Extremities of Animals, as the Feet, Ears, and Head. Pettitoes.

TRUTTA. Offic. Schrod. 5. 334. Bellon. de Aquat. 181. Mer. Pin. 188. *Trutta fluviatilis*. Aldrov. de Pisc. 585. Salv. de Aquat. 96. Gesn. de Aquat. 1005. Rondel. de Pisc. 2. 169. Jonst. de Pisc. 85. Raii Ichth. 199. Ejusd. Synop. Pisc. 65.

THE TROUT.

The Trout is a Fish of excellent Taste, and is covered with small Scales, usually streaked with red. There are several Species of this Fish, which live in various Places, and differ in Colour and Size. Some are found in deep and rapid Rivers, others in Lakes; some are of a blackish Colour, others reddish, and rather of a gold Colour. There is another Sort, which is larger than the rest, named the Salmon-trout, because it resembles a Salmon, but is not so large; it is more valued for the Delicacy of its Taste, than the other sorts of Trout.

This Fish swims with much Agility and Swiftness, and is said on hearing Thunder to be so astonished, as to become immoveable. It feeds upon Worms, Slime, Mud, Insects, and small Fishes, which it pursues with so much Eagerness, from the Bottom to the Surface of the Water, that it sometimes throws itself into the Boats passing near it.

Trouts, besides being well tasted, produce good Juice, because they are always in Motion, feed upon good Food, and usually swim in clear and running Streams: Thus they acquire less gross and viscous Humours, eat short, and are easily digested; but they soon putrefy and corrupt, and therefore should be eaten without Delay, after they are brought out of the Water.

The Trout contains much Oil, volatile Salt, and Phlegm; and agrees with any Age and Constitution. In Summer it is most delicious, but in Winter it is deprived of almost all the Excellency of its Taste. It may be boiled, fried, roasted, or baked; and some salt it for Exportation.

There is another kind of Trout, somewhat different from those already mentioned, which is called in *Latin Thymallus*, *a Thymi Odore*, because it smells like Thyme. It is delicious Food, easy of Digestion, has good Juice, and so wholsome, that in some Places they allow sick Persons to eat it. Its Shape resembles that of the common Trout, and it, also, lives in clear and running Waters: It feeds upon the same Food, and in some Countries is more valued for the Goodness of its Taste than the other sorts. Its Fat is good to remove Prints of the Small Pox, Deafness, Noises of the Ears, Specks, and Catarrhs of the Eyes:

The Fat of the first-mentioned Species is of a lenifying and dissolving Nature; good for the Piles, and other Distempers of the *Anus*, Ulcers in the Breast, and Fissures in the Nipples. *Lamery on Foods.*

TRYBION, τρυβίον, in *Hippocrates* περὶ γυναικ. φύσ. is by Translators render'd *Glandula*, a Pessary; but the Place, τρυβίον ποιήσας, " having made of them a Pessary," seems suspicious and corrupt, as appears from the Asterisk in the *Asulan* Manuscript, and for τρυβίον ποιήσας we are to read, in my Opinion, τρίβων λεῖον ποιήσας, " triturating and levigating," that is, the Medicines before-mention'd, which are to be involv'd in fine Wooll for a Pessary. *Foesius.*

TRYBLION, τρυβλίον, in *Hippocrates*, *Lib.* περὶ ἀφόρων, is the Kettle, Dish, or Can, in which the Matter for Suffumigation is placed. In some Authors it is the same as ὀξύβαφον, *Oxybaphon*, or *Acetabulum*. The Word is often used by *Hippocrates*, *Lib.* περὶ τῶν ἐντὸς παθῶν. In the spurious Additions to *Lib.* 1. περὶ γυναικ. we read ἀλὸς τρυβλίον πλεῖον, which the Translators render an Hemina, or Acetabulum, full of Salt. *Foesius.*

TRYCHOS, τρύχος, is a worn and ragged Piece of Cloth, called, also, ῥάκος, a Rag. In *Aristoph. Acharn.* a Person calls a Fragment of Tragedy, τα ῥάκια of Tragedy, and the ῥάκιον of the old Drama, τα ποια τρύχη, " a kind of *Tryche*;" where the Scholiast observes, that τρύχη is the Tragedian Word for ῥάκη, *Rhacke*, " Rags." The Person here represented intends to laugh and jest at the worn and threadbare Habits of the old Comedy, and the ragged Dresses of the modern Tragedy, in which *Euripides* introduced his Heroes in poor, mean, and pitiful Habits.

Τρύχος ὀθονίς μακρὸν, in *Theophrast. Hist. Plant. Lib.* 3. *Cap.* 9. is the long Panicle of the *Ægilops*, and is the same with those Substances which *Pliny*, *Lib.* 18. calls *Panos arentes muscoso villo canos*, " dry'd Panicles, appearing hoary with their " mossy Capillaments;" for whatever is of a round oblong Figure is called by *Pliny*, *Paniculus* and *Panus*, as well as what hangs down from the Boughs of the *Picea* and *Rubus*.

Τρυχίον is a Diminutive of τρύχος, and signifies the same as ῥάκιον, " a small Rag;" and is frequently used by *Hippocrates de Morb. Mulier.* and is sometimes expressed by ῥάκιον and ὀθονίον, all signifying a thin linen Rag, fit for wrapping up Medicines in the Form of a Pessus.

TRYGE, τρύγη, is expounded in *Hesychius*, ὁ πυρὸς, ἢ ἢ κριθὴ, ἢ πᾶς ἄλλος καρπὸς, ἢ ποία βοτάνη, " Wheat or Barley, " and all other sorts of Fruit, and a kind of Herb." *Eustathius* expounds τρυγὴ by ὁ δημώδεις καρπὸς, " Corn or Grain for " Bread." Hence τρυγαβόλιον signifies a Granary, or Repository for Corn.

TRYGEPHANIOS, τρυγηφάνιος ὄινος. A kind of secondary Wine, made by expressing the Husks of Grapes, after the first Juice is press'd out.

TRYGIS, τρύγις, in *Lib.* 2. περὶ διαίτης, is the *Tragus*, or *Olyra*, tho' *Calvus* renders it *Semen*.

TRYGODES. An Epithet for a Species of *Collyria* mention'd by *Galen. de C. M. S. Loc. Lib.* 4.

TRYPANON, τρύπανον. The same as TEREBELLA.

TRYPHEROS, τρυφερὸς, tender, soft, delicate, or mild. This is the Name of several Medicines describ'd by medicinal Writers. Thus *Scribonius Largus*, N° 230. mentions two mild Cauteries by the Names of *Tryphera*, or *Triphera*. *Galen* describes a *Collyrium*, and a Pastil or Troche, with this Epithet; the first in *L.* 4. *Cap.* 7. *de C. M. S. L.* the last in *L.* 7. *C.* 4. of the same Work.

In the *Augustian* Dispensatory, I find the following Medicines describ'd under the Title of *Tryphera*.

TRYPHERA PERSICA MESUÆ, which is thus prepared.

Take of the Juice of the best Endive three Pints; of the Juices of Smallage and Hops, each two Pints; of the Juice of Nightshade, nine Ounces; and of the Juice of Barberries, three Ounces: Pour all these upon recent, or dried, Violets and Roses, of each three Drams; of Sena-leaves, two Ounces; of Agarie, one Ounce; of damask Prunes, fifty; of Dodder, half an Ounce; of the Citrine, Chebule and Indian Myrobalans, rubbed with recently expressed Oil of sweet Almonds, each two Ounces; and of Indian Spike, three Drams: Let them boil on a slow Fire, till only two Pints of the Liquor are left: Then add of Dodder of Thyme, forty Drams: Then boil all together, and take the Vessel off the Fire; strain the Liquor, and in one Half of it, dissolve, of Tamarinds, three Ounces; of Manna, an Ounce and an half; of the Pulp of Cassia, four Ounces; and of the Conserve of Violets, one Pound: Strain the Whole, and cleanse it from Seeds and Sordes. To the other Half of the strained Liquor, add, of the finest white Sugar, three Pounds; and of Wine-vinegar, one Pint; boil over a gentle Fire, and pour it upon that which was dissolved in the Juices; mix all together, and boil to the Consistence of Honey. Then sprinkle into the Preparation the following Ingredients, reduced

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reduced to Powder; of the beſt Rhubarb, two Ounces; of *Citrine* Myrobalans, an Ounce and an half; of Chebule, and *Indian* Myrobalans, each an Ounce; of the Belleric, and Emblic Myrobalans, each half an Ounce; of the Seeds of Fumitory, the Trochiſci Diarhodon, Mace, Maſtich, Cubebs, Spodium of Ivory, and yellow Sanders, each two Drams; of the Kernels of the Four greater cold Seeds, each two Drams and an half; of Aniſeeds, half an Ounce; and of *Indian* Spike, two Drams. Make into an Electuary, in the Form of an Opiate.

This Medicine is ſaid to be good in acute Fevers, in an hot Intemperature of the Stomach and Liver, and in all Diſorders ariſeing from a preternatural Heat of the Humours. It extinguiſhes Thirſt; cures a Jaundice accompanied with Heat; diſcuſſes thoſe Suffuſions which ariſe from bilious Vapours, and are offenſive to the Sight. It, alſo, purifies the Blood; for which Reaſon it is, by *George Agricola*, and others, highly recommended in peſtilential Fevers, and the Plague.

TRYPHERA MAGNA NICOLAI is thus prepared.

Take of Opium, two Drams; of Cinnamon, Cloves, Galangals, *Indian* Spike, Zedoary, Ginger, Coſtus, Styrax Calamita, Cyperus, Calamus Aromaticus, Root of *Illyrian* Orris, Hogs Fennel, the Acorus, or greater Galangals, the Bark of Mandrake, Red-roſes, *Celtic* Spikenard, Pepper, Aniſe, Smallage, Parſley, Fennel, Carrot, the Sinonus, Henbane, Hyſſop, the Seeds of Ocymum, each one Dram, and of the pureſt Honey, ten Ounces and an half.

Theſe Preparations are called *Tripheræ*, becauſe they enliven the Colour of the Body, render the Breath ſweet, and have a beautiful Appearance. They correct Putrefactions of the Humours, reſtore a due Succulence to the Body, and, like other Coſmetics, contribute much to augment Beauty. And this Preparation is in a peculiar Manner efficacious in Diſorders of Women, ariſing from Coldneſs of Conſtitution. It may be, alſo, injected into the Uterus with Oil of Nutmegs.

TRIPHERA MINOR PHÆNONIS MESUÆ is thus prepared:

Take of Chebule, Belleric, *Indian* and Emblic Myrobalans, and of Nutmegs, each five Drams; of the Seeds of Water-creſſes, of Aſarabacca, *Perſian*, or *Cretan* Origanum, Pepper, Frankincence, Biſhops-weed, Ginger, the Fruit, or Leaves of the Tamariſk, *Indian* Spikenard, Camels Hay, each four Drams; and of the Scoriæ of Iron or Steel, macerated for five Days in Vinegar, twenty Drams. Let the Myrobalans be moderately roaſted with recent freſh Butter, and let the other Ingredients be covered with Oil of ſweet Almonds: Then add of Muſk, one Dram; and of the fineſt Honey, two Pounds, nine Ounces, and ſix Drams: Make into an Electuary.

This Preparation corroborates the Stomach, Liver, Kidneys, and Bladder; checks immoderate Diſcharges of the Hæmorrhoids and Menſes; corrects a Corruption of the Humours, Crudities, and Putrefactions in the Stomach; renders the Colour good, and the Countenance beautiful.

TRIPHERA SARACENICA MESUÆ is prepared in the following Manner.

Take of the five Kinds of Myrobalans, each five Drams; of Cinnamon, the three Species of Pepper, Secacul or Eryngo, *Indian* Leaf, or Mace, *Indian* Spike, both Species of the Cardamoms, Caſſia Lignea, *Indian* Scitaragia, or Dittander, Cyperus, Smallage, Seeds of the Aſh-tree, Cloves, both Species of the Been, and of Ginger, each two Drams; of Nutmeg, Mace, and excorticated Seſamum, each three Drams; of both Species of Almonds, each five Drams; of Aloes-wood, Rhubarb, Rue, Fennel-ſeeds, and Maſtich, each two Drams; of the Ocymus Caryophyllatus, dried *Mint*, and *Cretan* Origanum, each half a Dram.

Let the Myrobalans, when triturated, be fried with recent freſh Butter, obtained from Cows Milk; and the other Ingredients with Oil of ſweet Almonds; and with a third Part of fine Honey, make into an Electuary. This Preparation, by its Heat, is beneficial to the Liver; aſſiſts Digeſtion; diſſipates Flatulencies; removes putrid Matter lodged in the Stomach, or any other of the Viſcera. It, alſo, enlivens the Colour, ſweetens the Breath, removes Wearineſs, preſerves Health, when preſent; and prevents the Generation of Diſeaſes.

TRYPHONIS EMPLASTRUM. *Scribonius Largus* mentions ſeveral Plaiſters under this Title. N° 203, 205, and 210.

TRYPHOS, τρύφος, in *Hippocrates*, ſignifies a Piece, or Fragment. Thus, *Lib.* 2. (περὶ γυναικ.) τρύφος ἀμφορέως διαφανὲς is a red-hot Sheard, or Fragment of a Pot, in which the Matter for Suffumigation is laid. Inſtead of this, *Lib.* 1. περὶ γυναικ. we find, ὀστράκινον χυτρίδιον καινὴν διάπυρον, a new earthen Pot, heated red-hot, directed for that Purpoſe.

TRYX, Τρύξ, is the Lees of Wine or Oil; the Lees of which laſt are, alſo, called ἀμόργη, *Amorga*. *Hippocrates*, *Lib.* 1. περὶ γυναικ. adviſes dry *Tryx* of old Wine, in Peſſaries, and Collutions of the Uterus.

Τρύξ, 5 *Epid.* ſignifies, alſo, black Bile, which is, as it were, the Lees of the Blood; and 7 *Epid.* and *Coac.* we read Τρυγώδης πτύσις, feculent Spitting.

TSHINKA. Popoua *Indis*. Piſon. *Caryophyllus Regius*. Worm. *Caryophyllus ramoſus, vel dentatus*. Jo. Bod. a Stapel. *Spicatus*.

The *Dutch* call this the Royal Caryophyllus, becauſe it is valued by the petty Kings and Nobles of the *Molucca* Iſlands, even to Superſtition; not ſo much for its Taſte and Fragrance, though it excels others even in theſe reſpects, as on account of its ſingular Form, and extraordinary Rarity; for they ſay, that there are but two Trees of it to be found, and thoſe in the Iſland of *Makian*. One of theſe Trees is bigger than the other, but both of them like the other caryophylliferous Trees, except in Tallneſs.

I am of Opinion, that theſe Trees are not a different Species, but belong to the Order of monſtrous Vegetables; and that their Fruit is no other than the common aromatic Caryophyllus, divided into more Horns, which grow out by degrees, but want of the floriferous round Cup. It is no Wonder, therefore, that the Species is extinct. *Raii Hiſt. Plant.*

TSJAKELA. H. M. *Ficus Malabarica, ſemel in Anno fructifera, Fructu minimo*. A Species of *Ficus*, or Fig-tree, growing in *Malabar*. Of the Bark of the Tree the Natives make Strings for their Bows, and of the ſame prepare a red Colour, for dying what they call *Panos de Cambacci*, or *Cambayan* Cloths.

The Virtues are the ſame with thoſe of the

Atty-Alu, or *Ficus Malabarenſis Folio oblongo acuminato; Fructu vulgari æmulo*. D. Syen. *Annot. in* H. M. The Fruit, like the Fig, is full of ſmall, thin, oblong, Grains, in numerous Series, and, when ripe, Ants are found in them. The Natives feed on this Fruit, but not on the Fruit of the other Species.

The Decoction of the Root, or the Juice which flows from an Inciſion made in the Tree, and received in a Veſſel ſet under it, ſerves to purify the Blood, to rectify Diſorders of the Liver, and to heal Chops and Fiſſures of the Hands, Mouth, and other Parts: The Bark in Decoction ſerves for the ſame Purpoſes, and, being bruiſed, is ſucceſsfully applied to Ulcers, and to the Part affected with the *Morbus Sacer*, called by the *Portugueſe*, *Cobrella*. The Fruit binds the Belly, and is good to correct Phlegm, and the Diſtemperature of the Humours.

We ſhall here take notice of another Species of *Indian* Fig-tree, which, as well as the former, was omitted under the Article *Ficus*, to which it was referred; and that is the

Are-Alu. H. M. *Ficus Malabarenſis; Folio cuſpidato; Fructu rotundo; parvo, gemino, D. Sien.* This is a tall Tree with thick and ſhady Leaves, and growing in ſandy and rocky Places, like the *Itty-Alu*; and has a Root like the *Per-Alu*. [See theſe *Alu's* below]. The Leaves are inſpiſſated, and not ſo thick as thoſe of the *Itty-Alu*, the Fruit grows in Pairs, cloſe together, at the Origin of the Leaves; and are ſmall, round, with a ſmall Umbilicus in the Vertex, but containing no Ants, but numerous Grains, of the Size of thoſe of the *Atti-Alu*, and incloſing a blackiſh minute Seed. The reſt of the *Alu's* mentioned by *Ray* are,

Itty-Alu, H. M. *Ficus Malabarenſis; Folio denſiuſculo nitente; Fructu parvo rotundo coronato*. This is a tall Tree, but leſs than the other Species of *Alu*. It is propagated by Fibres ſhooting downwards from the Branches. The Leaves have an aſtringent and bitteriſh Taſte. The Fruit grows either ſingle, or two or three together, and that either out of the Boſoms of the Leaves, or here-and-there out of the Boughs, and is ſmall, round, with an eminent Umbilicus on the Vertex, of a yellow Colour when ripe. The Grains are like thoſe of the *Atty-Alu*.

An Infuſion of the bruiſed Bark in Milk, being firſt ſtrained, is exhibited for the Vertigo. A Decoction of the Leaves in Oil is ſerviceable in the Cure of Ulcers, the Body being thoroughly anointed with it.

Itti-Are-Alou, H. M. *Ficus Malabarica, Folio mali cotonei; Fructu exiguo plano rotundo ſanguineo. D. Commelin. Arbore de Raiis minor Luſitanis*. This is a tall Tree, running into a Multitude of Branches, which, after the Tree has lived forty or fifty Years, ſhoot forth a ſort of ſlender Fibres, or Filaments, and thoſe ſingle, downwards, which, taking hold of the Earth, there take Root, and grow up into new Trees, which again propagate themſelves in their Season, by other Fibres ſhooting downwards from their Branches, and ſo ſucceſſively *ad infinitum*, ſo that ſometimes one Tree has been found to occupy the Space of an *Italian* Mile in Compaſs, by this ſucceſſive Propagation of its Shoots; and it has been difficult to know the Original, or firſt Parents, but only by the Thickneſs of its Trunk, which ſometimes can ſcarce be fathomed by three Men; and not only the lower Branches ſend out Fibres, but the higheſt do the ſame, by which means one Tree makes a very thick Wood, which after remains for ſeveral Ages. The Inhabitants make themſelves Paſſages under theſe Trees, and cut them into Arbours, and cloſe and ſhady Walks, well defended from all Heat of the Sun, by the cloſe Contexture and Luxuriancy of the Branches; and ſo extenſive, that a thouſand Perſons may repoſe themſelves under the Shade of one ſuch Tree. The Leaves are

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are like those of the *Itty-Alu*, but less; the Fruit is small, flat, oblong, first green, then of a sanguineous Colour, both within and without, and full of Grains, like the common Fig, and sweet like that, but not so savoury; so that they are rather Food for Birds than Men.

It grows in all Parts of *Malabar*, and is green and fructiferous throughout the Year. Of the Bark, Leaves, and Root, boiled in Oil, is prepared a vulnerary Balsam: Of the Bark, boiled in Butter-milk, is prepared a Collution for the Mouth, which abstergeres Aphthæ, heals flaccid and corroded Gums, and fastens loose Teeth. The Tree is not much different from the preceding, except in Bigness.

Tsjerou-meer-alou. This is less and lower than the preceding, but grows and propagates itself in the same manner, and the Leaves and Fruit are much like those of the other, only less; and the Virtues are the same as those of the preceding, except that of the Root boiled in Water, with Lime and Turmeric, is prepared a Bath for the Epilepsy, and the Leprosy.

Peralu. H. M. *Ficus Malabarensis; Folio crassiusculo majori; Fructu gemino intense rubente.* D. Syen.

The Liquor of the Filaments, which hang down from the Boughs, drank only in Water, or given in Decoction, mitigates the Heat of Fevers, and purifies the Liver and Blood. The Bark of the Tree, bruised, and applied to the Part affected, cures the *Morbus Sacer*.

Atty-meer-Alou, or *Alu.* H. M.

This is a Tree of a vast Bigness, with a thick Trunck; whence it shoots some slender and single Fibres downwards, which, adhereing to the Tree, renders it vastly thick: By those Fibres taking Root in the Ground this Tree is propagated.

The Tree takes its Beginning from the Trunks of some Trees, or from Rocks, or the Gaps and Fissures of some old Walls, from whence it comes forth like a *Convolvulus*; after this the Root and Trunk shoot forth some thin Filaments, by which the Trunk is considerably increased. By the same Filaments it is settled in the Earth, and propagated far and wide, while the Tree, whence it had its Original, dies. This is the largest of all the Trees hitherto discovered in the *Indies*, and lives some Centuries. In *Kandanate*, a Province of *Cochin*, near the Temple of *Beykan*, is a Tree of this Kind, which is fifty Geometrical Feet in Circumference, and is said by the Natives to be of two thousand Years standing.

The Juice of the Leaves cures burning Fevers, and the Fruit stops all manner of Fluxes of the Belly.

Hondir-Alu is a tall Tree, and propagates itself in the same Manner as the preceding. The expressed Juice of the tender Leaves is an excellent Remedy for corroded Gums, and other Affections of the Mouth, being used as a Collution. Of the same, prepared with fresh Butter, is prepared a Digestive, which is useful in cleansing and consolidating Ulcers. Of the Roots and Leaves, boiled together in Water, is prepared a Bath, which is said to be effectual towards curing the Epilepsy and Leprosy. *Raii Hist. Plant.*

TSJAMBOU. See JAMBOS.

TSIAPANGAM. See LIGNUM CAMPESCANUM.

TSIELA. *Ficus Malabarica; Fructu Ribesii Forma & Magnitudine;* is a large Tree, seven Feet in Height, with a thick Trunk, eighty Feet in Compass, and numerous Branches spreading circularly. The Fruit adheres to the Boughs among the Leaves, being without Pedicles, in Shape and Size resembling Currants, full of small, reddish Grains, as all the Fruits of the *Alu* and *Teregam*, and without Taste or Smell.

The Bark of the Root, boiled with long Pepper in common Water, cures an inveterate Cough, and other pulmonic Disorders. The expressed lacteous Juice of the Root and Fruit is an effectual Remedy in Diseases of the Eyes. *Raii Hist. Plant.*

TSJEM-TANI. *Myxa pyriformis Osseculo trispermo.* This is a Tree of vast Bigness, growing in *Malabar*.

The Bark of the Tree is heating, incites viscous and pituitous Humours, attenuates, strengthens the weakened Viscera, and purges the Water from Hydropics. The same, with the Pulp of the Fruit, reduced to Powder and exhibited, cures an intermittent Fever; the Kernels of the Fruit, if eaten, loosen the Belly. *Raii Hist. Plant.*

TSJERIAM-COTTAM. H. M. *Frutex Indicus Bacciferus; Fructu racemoso, cuspidato, Ribium simili, monopyreno.* It is an evergreen Shrub of *Malabar*, whose Fruit is not much unlike our Currants.

Of the Leaves boiled in Water is made a Collution for the Mouth, which cures loose and tumid Gums; and of the Bark boiled in Whey, with the Seeds of Cumin, is prepared a Gargarism, which is said to be a potent Remedy for the Aphthæ. *Raii Hist. Plant.*

TSJEROM-KARA, *Malabarensibus.* H. M. *Bacciferа Indica Floseulis ad Vo'orum Exodum confertis, Fructu dicocco.* It is a little low Tree, or rather Shrub, seven or eight Feet high, growing in *Malabar*, with a Trunk of a moderate Thickness, and a Multitude of small ash-coloured Branches, armed with rigid Spines, which are circularly disposed. The Root is reddish, sweet-scented, and bitter; the Flowers are small, greenish, scentless, and are seated in a small green Calyx, divided into five acuminated Lobes, and are succeeded by flat, round, dicoccous Berries, crowned with a broad Umbilicus at Top, and full of a green, humid, and bitter Pulp, within which are lodged two oblong Seeds, placed at Distance from each other.

Of the Leaves, boiled in Water, is prepared a Collution for the Mouth, and for the Aphthæ. The Decoction of the bruised Root in Water opens Obstructions of the Liver, purges the Blood, and exhilarates the Patient. *Raii Hist. Plant.*

TSJEROE-KATOU, *seu Cheru.* H. M. *Prunifera Malabarica; Fructu racemosa parvo, acrie Succo tinctorio.* This is a very tall and beautiful Tree, with a thick Trunk, and numerous Branches, spreading far and wide. The Wood is whitish, close, covered with a dusky, and lanuginous Bark, which wounded, discharges a reddish, glutinous, strong-scented, very acrid, and caustic Tear, which grows black with long standing in the Sun. The Root is whitish, covered with a dusky Bark, scentless, and of an unctuous, acrimonious, and caustic Taste; as are, also, the Leaves, which emit a reddish, acrimonious, and burning Juice, which exulcerates the Skin, like the Ranunculus. The Flowers are of a beautiful, white, tender, sweet-scented, hot and acrid Taste, and pentapetalous. To the Flowers succeed small, round, oblong Fruit, exactly resembling those large cerulean Grapes, which the *Greeks* call βάμμοι (*Bumasti*) both in Size and Shape: They are first green; a little before Maturity, glaucous and lanuginous; but, as they ripen, become of an atro-cerulean Colour, and glabrous, and full of a browniish, succulent, glutinous, acrid, and caustic Pulp, inclosing an oblong Stone, containing a whitish, unctuous, bitterish, and sub-acrid Kernel, in Shape something like the Kernel of a Filberd.

It grows in all Parts of *Malabar*, and is usually cultivated in Fields where Rice or Corn is sown, in order to keep off the Birds, by its deleterious Quality.

The Tear of the Cortex, or the acrid, and glutinous Juice of the Fruit, with a Mixture of Lime, are used by the Painters in staining their Cottons with an indelible Colour. The Decoction of the Fruit, drank, cures the Itch, Leprosy, Pain of the Head from a cold Cause, the Vertigo, tormenting Pain of the Colic, and other Disorders, proceeding from viscid, pituitous, and flatulent Humours. The expressed Juice of the Fruits, and the Bark of the Tree, by Application, cures the Tooth-ach, and opens cold Tumors, by corroding the Skin, and raising a Blister.

This Tree is very strong Poison to some among the *Indians*, who swell, in every Part of their Body, at a strange Rate, from but a slight Toutch of it; but this Symptom is immediately mitigated by taking Milk, Butter, or Oil. *Raii Hist. Plant.*

TSJEROE-POEAM. H. M. *Bacciferа Malab. racemosa, tripetala, Fructu oblongo tricocco, Calyce excepto.* This is a small low Tree, with a slender, whitish Trunk, cover'd with a blackish Bark, green on the Inside, and furnished with many geniculated Branches. The Root is yellowish, cover'd with a reddish Bark, and of an unpleasant Smell and Taste, as are, also, the Leaves, which are oblong-round, acuminated, smooth, of a Dark-green, and shining on the upper Face, and greenish and lanuginous beneath, and tripetalous: From whence arises a slender, oblong Pointal, of a green Colour inclining to yellow, and with a round Apex. The Flowers are succeeded by oblong-round Berries, tricoccous, green, lodged in Calyces, and containing Seeds of a whitish-green Colour, having their Cells separated by membranaceous Pellicles.

Of the Flowers, Fruit, and Bark, boiled in Oil, a Liniment is prepared, which, apply'd to the Part, is said to cure the Headach. The fresh Leaves, bruised, and apply'd to the Place affected with an Erysipelas, are reported to remove the Disorder. *Raii Hist. Plant.*

TSJOCATTI. H. M. *Frutex baccifer Malab. Fructu calyculato, tetracocco, umbellato.* It is a little low Tree, about twelve Feet high, with a slender Trunk, and a Multitude of small ligneous Boughs. The Wood is whitish, cover'd with a reddish Bark. The Root is whitish, bitter, and aromatic. The Leaves are oblong-round, acuminated, slightly crenated, thick, dense, glabrous, of a blackish Green on the upper Face, and greenish beneath. The Flowers are yellowish, scentless, and are disposed on the Top of the Boughs in the Form of an Umbella. The Berries are tetracoccous, and sometimes pentacoccous, first greenish, but when ripe, red and shining, and inhering in a blackish red Calyx; their Taste is an acid Bitter; and they contain, for the most part four whitish Kidney-shaped Seeds of a bitter-sweet Taste.

The Decoction of the Leaves in Whey is very much commended for the Cardialgia. The same boiled in common Water with the Flowers and Fruit, and the Mouth washed therewith, cures Erosions of the Gums, and fastens loose Teeth. Of the Root boiled with Cumin-seed in Milk, is made a Drink, which is a potent Anti-emetic; and the same, worn as an Amulet upon the Belly, is said to mitigate the Pain of the Colic. *Raii Hist. Plant.*

TUBA. A Trumpet. Acoustic Tubes are Instruments contriv'd to assist Hearing. See AURIS.

TUBÆ FALLOPIANÆ. The Fallopian Tubes, Appendages of the Uterus thus call'd. See GENERATIO and UTERUS.

TUBEL. The same as *Squamæ Æris*, Scales of Copper. *Rulandus.*

TUBELECH.

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TUBELECH. The ſame as DUELECH.

TUBERA. Fungi, or Muſhrooms. Round Tumors on the Body, are, alſo, thus call'd,

TUBERARIA MAJOR, Myconi. J. B. The Name of a Species of *Ciſtus*, call'd by *Caſpar Bauhine Ciſtus, Folio Plantaginis.*

TUBERCULUM. A Tubercle, or ſmall Tumor. See NÆVUS and TUMOR.

For Tubercles in the Auditory Paſſage, ſee AURIS.

For Tubercles on the Eye-lids and Eyes, ſee OCULUS.

For Tubercles of the *Vagina*, ſee VAGINA.

TUBEROSA. The Tuberoſe.

TUBULARIA.

The Characters are;

It reſembles a *Madrepora*, conſiſting of a Multitude of ſmall Tubes elegantly compacted together.

Boerhaave mentions but one Sort of *Tubularia*; which is,

Tubularia; purpurea. *T. Coralliis affinis*; *Alcyonium*; *fiſtuloſum, rubrum.* J. B. 3. 808. *Boerh. Ind. alt. Plant.*

There are no Virtues aſcrib'd to this Lithophyte.

TUBULI *Arundinacei ad Aſthma.* C. B. *Tabaci Haytinorum, quos Mexicani vocant* POCYLT. Fr. Hernandez.

They give the Name of *Tabacos* to thoſe hollow and perforated Fragments of Reeds, which are a Span and half long, and ſmutted on the Outſide with Charcoal, but have their Cavities filled with *Yeli*, that is, Tobacco, Liquid Amber, *Kochicozetl*, and ſometimes other heating Plants and Spices. Theſe being ſet on Fire, at the End which is full, by the other the Fume is attracted and ſwallow'd; by which means, as by a Suffumigation, Sleep is induced, and all Senſe of Labour and Laſſitude is remov'd. By the ſame Remedy are mitigated all kinds of Pain, eſpecially of the Head; Phlegm is expectorated; the Aſthmatic are relieved; and the Stomach is corroborated. But we are to beware, leſt the exceſſive Uſe of theſe Tubuli, or *Tabacos*, ſhould induce an hot Diſtemperature of the Liver, with a Cachexy, and other incurable Diſtempers. *Raii Hiſt. Plant.*

TUBULUS MARINUS. A Name for the ANTALIUM.

TUBUS. A Tube, or Pipe. This Name is apply'd to many Conduits in the Body.

TUCUM. The Name of a Species of Palm, which grows in *Braſil.*

TUINAMTIIBA. A Name for the *Corallodendron*; *tripbyllon*; *Americanum*; *ſpinoſum*; *Flore ruberrimo.*

TULIPA.

The Characters are;

The Flower is liliaceous, hexapetalous, Pitcher-ſhaped, naked, ſingle on the Top of a Stalk, erect, and furniſhed with ſix Stamina, and embracing the Ovary, which becomes an oblong Fruit, full of flat Seeds, lying one on another in a double Row, and furniſhed with a remarkably hairy Tube. The Stalk is ſurrounded by broad Leaves; the Root bulbous, tunicated, with its ſeſſile Part fibrous.

Boerhaave mentions twelve Sorts of *Tulipa*; which are,

1. Tulipa; præcox; rubra; flavo per oras diſcurrente. *C. B. P.*

2. Tulipa; præcox; alba; varia. *C. B. P.* 59.

3. Tulipa; præcox; lutea; varia. *Cluſ. Hiſt.* 140.

4. Tulipa; præcox; lutea. *C. B. P.* 57. *Tourn. Inſt.* 373. *Boerh. Ind. a.* 2. 138. *Tulipa.* Offic. *Tulipa præcox tota lutea.* Ger. 117. Emac. 138. *Tulipa præcox flava.* J. B. 2. 666. THE TULIP.

It grows in Gardens, and flowers in the Spring; and the Root, which is uſed, is by ſome affirmed to have the ſame medicinal Virtues as the *Battatæ*, or *Paſtinaca latifolia.*

5. Tulipa; præcox; rubra. *C. B. P.* 50.

6. Tulipa; præcox; purpurea. *C. B. P.* 57.

7. Tulipa; præcox; flore Amethyſtino. *T.* 373. *Lilio narciſſus, purpuro-violaceus.* Lob. Ic. 129.

8. Tulipa; præcox; alba. *C. B. P.* 57. *Lilio-narciſſus, niveus, totus.* Lob. Ic. 131. J. B. 2. 666.

9. Tulipa; flore pleno; centifolia; præcox.

10. Tulipa; pumilio; præcox.

11. Tulipa; ſerotina.

12. Tulipa; dubia. *Boerh. Ind. alt. Plant.*

Tulipa is a *Turkiſh* Word, ſignifying a Turbant. This beautiful Plant, which was firſt deſcribed by *Geſner*, was brought into *Europe* from *Conſtantinople*, in the Year 1590. The *Dutch*, and eſpecially thoſe of *Harlem*, have often given an hundred Ducats for the Root of a Tulip. There are no Plants ſo variable and tranſmutable in their Colours, as a Poppy, and a Tulip; and thoſe Colours are chang'd by tranſplanting; and, if the Seeds of one Tulip are ſown, they produce Flowers of all ſorts of Colours.

This Plant ſeems to be of a fine, gentle emollient Virtue, like other Bulbs; but the Price has been an Impediment to its Uſe. In ſome reſpects it reſembles the Onion, but its Bulb is not ſo aromatic. The Bulb gently roaſted is ſaid to afford good Nutriment, and to provoke Luſt. *Hiſt. Plant. adſcript. Boerhaav.*

TULIPA CAPENSIS. A Name for the *Hæmanthe Africanus.*

TULIPIFERA, of *Tulipa*, a Tulip, and *fero* to bear. THE TULIP-TREE.

The Characters are;

The Flower conſiſts of ſeveral Leaves, which expand in ſuch a manner, as, by ſome thought, to reſemble a Tulip; the Pointal riſes in the Centre of the Flower, ſurrounded by a great Number of Chives; and afterwards becomes a ſquamous Fruit, or Cone growing erect. To theſe Marks may be added, the Leaves, for the moſt part, being angular, the upper Part is hollowed, as if cut off with Sciſſars, terminating in two Points.

Miller mentions two Sorts of *Tulipifera*; which are,

1. Tulipifera; Arbor Virginiana. *H. L.* THE VIRGINIAN TULIP-TREE.

2. Tulipifera; Virginiana, laurinis Foliis, averſa parte Rore cœruleo tinctis Condi-baccifera. *Pluk. Phyſ.* THE LAUREL-LEAVED TULIP-TREE.

The firſt Sort is very common in *America*, where it grows to a great Magnitude; but in *England* there are, at preſent, but very few of them, which have arrived to any conſiderable Stature. This Sort was formerly kept in Pots and Tubs, and houſed in Winter with great Care; in which Management the Plants made but poor Progreſs, nor would ever have produced Flowers. But, about fifty Years ago, there was one of theſe planted out, in a Wilderneſs, in the Gardens of the Right Honourable the Earl of *Peterborough*, at *Parſons Green* near *Fulham*, which ſoon convinced the Curious of their Miſtake in the Culture of this Tree, by the great Progreſs it made; and in a few Years after it produced Flowers. This Tree is yet ſtanding, and annually produces a great Quantity of Flowers; though ſome of the Branches begin to decay, which perhaps may have been occaſioned by its being too cloſely ſurrounded by other Trees, whoſe Roots are ſo much entangled with thoſe of this Tree, that they draw the Nouriſhment of the Ground from it. In ſome Years this Tree produces Cones, but they have not ever been perfected ſo as to contain good Seeds.

There are ſome other Trees of this Kind, which have produced Flowers ſeveral Years, though I believe none of them are very large; the biggeſt I have ſeen (excepting that at *Parſons Green*) is not more than twenty-five Feet high; whereas my Lord *Peterborough's* is upwards of fifty Feet high, and is proportionably large in the Trunk; but this has a naked Body near forty Feet high, all the Branches growing near the Top of the Tree, which might be occaſioned by being ſo cloſely ſurrounded with other Trees; for I have obſerved, where-ever they have a more open Situation, they are ſubject to extend their Branches, and do not aſpire upwards very much, though they gennerally have one upright Shoot in the middle, much after the Manner of the Plane-tree, whoſe Manner of Growth is very like that of this Tree.

The Flowers, which theſe Trees produce, are by no means like thoſe of the Tulip, though many Perſons have been ſo incurious as to imagine they are ſo; eſpecially the Inhabitants of *America*, who firſt gave the Name of Tulip-Tree unto this Plant, by which Name it has been ſince called by the Inhabitants of *Europe*, who received it from them, with the Plant, many Years ſince; but I have not heard, that any of theſe Trees have flowered in any Part of *Europe*, except in *England.*

Mr. *Catesby* in his Natural Hiſtory of *Carolina*, &c. ſays, there are ſome of theſe Trees in *America*, which are thirty Feet in Circumference; that the Boughs are very unequal and irregular, making ſeveral Bends or Elbows, which makes the Trees diſtinguiſhable at a great Diſtance, even when they have no Leaves upon them. They are found in moſt Parts of the Southern Continent of *America*, from the Cape of *Florida* to *New-England*, where the Timber is of great Uſe.

The Laurel-leaved Tulip-Tree is at preſent very rare in *England*, though formerly there were ſeveral of theſe Trees in the Garden of the Biſhop of *London*, at *Fulham*; and thoſe of the Dutcheſs of *Beaufort*, at *Chelſea*; but theſe have been ſince loſt, ſo that there are very few of them to be ſeen in the *Engliſh* Gardens. The largeſt Tree of this Kind, which I know at preſent, is in the Gardens of Mr. *Peter Collinſon* at *Peckham*, which has produced a great Number of Flowers the three Years paſt.

Though I have inſerted this Tree under this Title, (which is the Name, by which it was firſt brought into *England*) yet it does not ſtrictly belong to this Place, there being a Genus under which this Plant ſhould be ranged, which was eſtabliſhed by Father *Plumier*, by the Name of *Magnolia*, in Honour to the learned Botanift *Peter Magnol*, Profeſſor of Botany and Phyſic in the Univerſity of *Montpelier*. This Plant is curiouſly figured in the third Part of Mr. *Catesby's Natural Hiſtory of Carolina*, by the Name of *Magnolia Lauri Folio ſubtus albicante*: He deſcribes it to be a ſmall Tree, ſeldom growing more than ſixteen Feet high; that the Wood is white and ſpongy, covered over with a white Bark: The Leaves are in Shape like thoſe of the common Bay, of a pale-green Colour, and white on their Backſides. In *May* they begin to produce their Flowers, which are white, and very fragrant; theſe are continued the moſt Part of Summer, during which time the Woods are perfumed with their Odour. When the Petals of theſe Flowers are decayed, the Pointal becomes a conical Fruit, about the Size of a large Walnut, thick ſet with Knobs or Riſings, from each of which

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which, when the Fruit is ripe, are discharged flat Seeds, of the Bigness of French Beans, having a Kernel, within a thin Shell, covered with a red Skin. These red Seeds, when discharged from their Cells, fall not to the Ground, but are supported by small white Threads, of about two Inches in Length, which make a very beautiful Appearance. The Fruit is at first green; when ripe, red; and, when declining, turns brown. The Tree grows naturally in moist Places, and often in shallow Water; and, what is very extraordinary, they, being removed on high dry Ground, become more regular and handsome, and are more prolific of Flowers and Fruit. They usually lose their Leaves in Winter, unless it be moderate: It is called by some, *The sweet Bay*.

There is, also, another Sort of this Tree, which hath been lately brought into *England*, which is called, by Father *Plumier*, *Magnolia amplissimo flobe albo, fructu cæruleo*. This is esteemed one of the most beautiful Trees in *America*, where they usually grow in moist swampy Woods; and often rise to the Height of sixty Feet, or more: The Leaves are much larger than those of our common Laurels, and are of a light-green Colour; the Flowers, I am told, are very large, of a whitish Colour, and very fragrant: The Fruit is shaped like that of the former Sort, but is much larger, and emits the Seeds in like Manner; so that it is in Beauty from *May* to *November*; and the Leaves, always remaining green, afford an elegant Prospect in Winter: They are of quick Growth, and generally rise with strait Stems, which is a great Addition to their Beauty; and, since they are hardy enough to endure the Cold of our Climate in the open Ground, I doubt not, but, in a few Years, we shall have the Pleasure of seeing its beautiful Flowers, there being several Trees planted in the Gardens of some curious Persons near *London*, where they have borne the Cold of the three last Winters, without Shelter; and make considerable Progress every Year. *Miller's Dictionary*, *Vol.* I.

TULPBOOM. A Name for the *Lepidocarpodendron*; *foliis angustis, brevioribus, salignis*; *calycis squamis elegantissimè ex roseo, aureo, albo, atro rubro variegatis*; *florum plumis albis*.

TULOS. Τύλος A Callus.

TUMBABA, or TUMPABAR. Live Sulphur. *Rulandus*.

TUMBALUM, or TUBEL. The Scales (*Squamæ*) of Metals.

TUMBIL. Earth. *Rulandus*.

TUMOR.

By a Tumor, Physicians mean any Part of the Body that is preternaturally enlarged, or swelled; and its Situation and State may be known, both by seeing and feeling. But, although it has been usual to refer Excrescences, such as Warts and Corns, with other similar Pustules in the Nostrils and *Pudenda*, to the Class of Tumors; yet as these Excrescences do not grow beneath the Skin, but without, or upon the Skin, they may be properly distinguished from Tumors.

Tumors are of different Kinds, and assume different Names, according to the Causes, whence they proceed; and the particular Places, in which they are situated. Some are called *hot*, others *cold* and *watery*; some *windy*, others *scirrhous*; and some *benign*, others *malignant*. Some Tumors are contained in a membranous Bag, like a proper Coat, and, therefore, are called *encysted* Tumors. If a Tumor appears in the Arteries, they are called *Aneurisms*; if in the Veins, *Varices*; if in the Veins of the *Anus*, or *Intestinum Rectum*, the Disorder is termed *Hæmorrhoids*; if in the Scrotum, Insides of the Thighs, or Navel, they assume the Appellation of Hernias, or Ruptures: But if any *Pus*, or Matter, be formed in a Tumor, it is called an Abscess. When a Tumor rises on the Bones, it is named Exostosis.

All these various Sorts of Tumors are generally subdivided into several other Species. Thus, the hot and burning Tumors, which are the same with Inflammations, when they are violent, and rise externally, are termed Phlegmons; if smaller, and gentler, they are called Furuncles. When the inflammation is not seated deep in the Flesh, but only spreads superficially upon the Skin, it is commonly named an Erysipelas. A Tumor, or Inflammation, on the Extremities of the Fingers, is termed a Paronychia, or Whitlow; but in the Inside of the Thighs, in the Groin, or under the Arm-pits, a Bubo; but near the Ears, a Parotis: But if, from extreme Cold, violent Inflammations be raised in the Hands or Feet, they are named Perniones, or Chilblains. Other Inflammations assume different Appellations, according to the different Parts of the Body which they affect. Thus, in the medicinal Writers, we frequently read of Inflammations in the Breasts, Eyes, Tonsils, Testicles, Arms and Legs.

The Method of treating encysted Tumors.

If Tumors, or Tubercles, arise in the Body, contained in certain Coats, they receive the Appellation of encysted Tumors, which are generally unaccompanied with Pain, of the same Colour with the rest of the Skin; and sometimes harder, and sometimes softer. This Species of Tumor is produced by certain Obstructions in the Glands, or in the Fat, and appear in almost all Parts of the Body, particularly in the Head, Face, and Neck, (see *Tab.* XXXIII *Fig.* 13.) frequently occasioning a prodigious Deformity. The Coat, which is often very thick, is formed either by the obstructed Gland, or by some Cell of the Membrana Adiposa: They are, at first, small; and, generally, moveable; but, in time, they gradually increase; and, sometimes, arrive to an enormous and surprizing Size. Their Substance is sometimes thinner, and softer; and, at other times, harder and thicker. Their Figure is very various; some have the Shape of Filberts, Acorns, Balls, Walnuts, or Eggs; sometimes they assume the Form of a Pear, like a fleshy Excrescence suspended, as it were, by a Stalk; some have a broad Base, and some resemble a Fist, some a Head; with many other Shapes: Some grow so very large, as to weigh many Pounds; others adhere firmly to the adjacent Parts; and, at last, become entirely immoveable; and, others resemble a Callus, or a Cartilage, in Hardness; some, however, continue always moveable; and some always soft. Encysted Tumors are, also, distinguished by the different Nature and Consistence of the Matter, which they contain. When the Matter of a Tumor resembles a Pultice, it is termed *Atheroma*; when like Honey, *Meliceris*; when it is like Fat, Suet, or Lard, *Steatoma*; when it resembles an indurated Gland, *Scirrhus*; and, when it seems to be a fleshy Substance, it is called *Sarcoma*. In some Patients, as *Celsus* observes, they are found like Concretions of Hair. These Tumors are, also, variously denominated, according to their various Situations. When one arises in the Scalp, it is by some named *Talpa*, *Testudo*, or *Lupia*; in the Neck, *Struma*, or *Scrofula*; but, if they appear in the Hands, or Feet, especially near the Tendons of the Muscles, they are called *Ganglia*.

Encysted Tumors may be easily known from others, by seeing and feeling them; but, they are not so easily distinguished from one another, unless we are able, by the Touch, to discover some Difference in the Consistence of the Matter, whether it be hard, thick, and tenacious; or, soft, thin, and liquid; for, as the Colour of the external Skin suffers little or no Alteration by these Tumors, we can learn little or nothing from it: Nor is it a Matter of great Importance, to know the Nature of the included Matter before the Cure, the Hardness only excepted; for, whatever Matter they contain, the Method of Cure is nearly the same. It is, however, necessary to be observed, that the Scirrhus and the Sarcoma, are the hardest of this Species of Tumors; next to these, is the Steatoma; the rest are softer, and, sometimes, differ a little in their Treatment, according to their different Degrees of Consistence. Those Tumors of the Neck, which are called *Scrofulous*, or *Strumous*, are, generally, said to be indurated Glands; but I have frequently observed Steatomas, and other encysted Tumors, to proceed from the Fat of the Neck: For it seems scarcely possible, that these small Glands, situated in the Sides of the Neck, should, sometimes, increase to so monstrous a Size, as to hang down over the Belly; which is frequently the Case with the *Tyrolese*, who are troubled with this strumous Affection, which may easily happen, when the Disorder is lodged in the Fat. But, besides these, there are sometimes smaller and harder Tumors in the Neck, which proceed from the Induration of these Glands, which then belong to the scirrhous Species.

If the Pain of encysted Tumors be not violent, if their Bulk and Hardness be not formidable, they are attended with little Danger. Whence it is not surprising, that some, especially among the poorer Sort, bear them as long as they live, rather than submit to the Severity of chirurgical Operations. But if, as it sometimes happens, their Size should greatly increase, so as to weigh ten, twenty, or more Pounds; if they should begin to excite Pain, as is commonly the Case in scirrhous Tumors; they not only produce a monstrous Deformity, but intolerable Uneasiness; and, unless seasonably extirpated, they induce a Consumption and Weakness, or a Cancer; and the greatest Danger of Death. But, in the Cure of these Tumors, the Use of the Knife is almost always necessary; for they are not easily digested, or brought to a Suppuration. If they are recent, soft, moveable, and small, they may be readily and safely extirpated with the Knife; but not without Danger, if they are large, hard, and resist the Touch; especially if they be situated near the larger Veins and Arteries, or about the Nerves, Tendons or Joints; or if the Patient be worn out with Infirmities, or old Age: The Surgeon, therefore, must regulate his Method of Cure according to the Nature of the Disorder, and Circumstances of the Patient.

Of these Tumors, various Methods of Cure have been instituted. Many Surgeons direct them to be immediately extirpated by the Knife; but, according to the Precept of *Hippocrates*, I would not leave mild Means unattempted: For, when the Tumor is recent, and the Patient is of a lax, delicate Habit, it seems expedient to attempt Resolution or Suppuration, before the Application of the Knife. But, when the Tumor is inveterate and hard, external Remedies ought not to be applied; which would be so far from promoting Digestion, especially in a Scirrhus, or Steatoma, that they would increase the Tumor, and make it degenerate into a Cancer; whereas, without topical Applications, the Patient might have been supported under them many Years. In such Cases, therefore, immediate Recourse must be had to the Knife. But, if the Timidity of the Patient will not permit him to yield to the Knife, so that he will allow of nothing but external Remedies, digestive Plaisters may be properly applied; such as the Plaister of *Ammoniacum*, of *Galbanum*, of Frogs with

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with Mercury, of *Diachylon* with Mercury, the *Emplaſtrum Oxycroceum, Mynſicht*'s diaphoretic Plaiſter, the *Emplaſtrum Diaſaponis ſive miraculoſum*, and the like. *Scultetus* aſſerts, that he has cured various Tumors, of the melicerous Kind, with the *Ceratum Diaſinapios*. But, before a Plaiſter of this Kind is applied, the Tumor ought to be anointed with the Peruvian Balſam, the Oil of Soap, or Petroleum. By theſe means, when the Tumors are not inveterate, nor of the larger Size, they may be again diſcuſſed; and, for the more readily anſwering of this Intention, it may be expedient frequently to rub the Part with a warm mercurial Ointment; eſpecially if the Tumor be of the ſcirrhous Kind.

When nothing can be effected by Plaiſters, or digeſtive Medicines, Suppuration muſt be attempted; eſpecially if the Tumor be ſtill ſoft, as in an *Atheroma*, or *Meliceris*. The Plaiſter of Diachylon with the Gums, and digeſtive and emollient Cataplaſms, frequently applied to the Tumor, excellently anſwer this Intention; eſpecially, if the Middle of the Part affected be ſeveral times well moiſtened every Day with the ſtrongeſt Spirit of Sal Ammoniac; and, as ſoon as the included Matter is perceived to have ripened, the Tumor ſhould be opened by a large Inciſion, and the Pus diſcharged. After this Operation, the Tumor, with its Bag, muſt be removed by the Application of ſtrong Digeſtives, or of mild corroſive Medicines; for, if any of the Coat ſhould remain, after the Abſceſs is healed, a Relapſe will gradually enſue; and, therefore, it is extremely neceſſary to apply, daily, a Diachylon-plaiſter, till the Deterſion of the Wound be completed: Thus, whatever preternatural Subſtance remains in the Wound, will be more expeditiouſly ſoftened, and the Wound more conveniently healed.

If, by theſe means, neither Diſcuſſion, nor Suppuration, can be obtained, but the Tumor rather gradually increaſes, leſt it ſhould become too much enlarged and be concreted with the neighbouring Parts, or degenerate into a Cancer, ſo as to yield to no Medicine, or Operation, they ought to be immediately extirpated. But theſe encyſted Tumors ought to be extirpated by different Methods, according to their different Natures. Thoſe which have a ſlender Root, and hang, as it were, by a Stalk, cannot be more expeditiouſly removed than by a Ligature, like Warts, or other Exereſcences; by which means, in a few Days, it will drop off, as it were, ſpontaneouſly; or it may be extirpated with the Knife; and the Wound may be dreſſed, and healed, like other Wounds: But if, by the Inciſion, a large Artery ſhould be wounded, the Hæmorrhage may be ſtopt with ſome ſtyptic Medicine, or the actual Cautery; or the Artery may be taken up with a Needle and Thread. Laſtly, theſe Tumors may be removed with corroſive Medicines daily applied round the Root, and retained by Plaiſters, till it falls off; or, the greateſt Part of the Root being conſumed, it may be conveniently cut through.

When the Root of the Tumor is broad, recourſe muſt be had to Inciſion, or Eſcharotics, although the latter be generally preferred. The Inciſion may be thus performed: The Skin muſt be divided longitudinally, through the Middle of the Tumor; but, if this Wound be not ſufficiently large, another Inciſion muſt be made tranſverſely, in the Form of a Croſs; then, with the Knife, and Fingers, the Tumor, with its Coat, muſt be carefully ſeparated from the Skin and Fleſh, keeping the Coat entire, that the Tumor may be extracted whole. That this may be done more commodiouſly, an Aſſiſtant ſhould draw, aſunder the Lips of the Wound, with Hooks; and the Blood, as it flows, ſhould be wiped up with a Sponge, that it may not hinder the Operation. As ſoon as the Coat of the Tumor appears, which is, uſually, whitiſh, and ſtretched, the Surgeon muſt keep it raiſed with his Left Hand, if it be ſmall; but, if it be too large to be held in the Fingers, another Aſſiſtant ought to keep the Tumor raiſed with a Hook, (See *Tab.* XXIX. *Fig.* 2.) or with the Forceps repreſented in *Tab.* XLIV. *Fig.* 1. or with a crooked Needle and Thread: Thus, the Tumor, being cautiouſly ſeparated from the contiguous Parts, it may be extracted entire. The Task is eaſily performed, if the Tumor be moveable; but, if fixed, the Operation requires both Pains and Skill. Particular Care muſt be taken, not to wound any of the principal Parts that may be ſituated near the Tumor; and, if the Tumor is to be taken from the Leg, or Arm, where a large Artery or Vein muſt be divided, the Tournequet ought, firſt, to be applied to the Limb. Theſe Directions being duly obſerved, Tumors of this Kind, weighing ſeveral Pounds, may be extirpated, not only from the fleſhy Parts, but, alſo, when they adhere to the Bones and Jaws.

The Tumor being rightly extracted; if the Wound be ſmall, and the Hæmorrhage ſlight, the Lips muſt be brought into Contact with the Fingers, Lint and Compreſſes muſt be applied, and the Whole ſecured with a Bandage: Thus will the Wound be healed in a few Days. But, if the Hæmorrhage be large, it muſt be ſtopped, as in other Wounds, principally by the Application of Lint, Compreſſes, and Bandages, by Aſtringents, by a Ligature, or the actual Cautery. But, when, in the Operation, either by Negligence, or Accident, the Coat, including the Tumor, particularly, of the ſofter Kind, is wounded, as may ſometimes happen in preventing the Eye from being injured, when the Tumor is in the Eye-lid, or by cautiouſly avoiding a large Vein or Artery in any other Part of the Body, particular Care muſt be taken, that the Coat be entirely extracted; otherwiſe the Tumor will eaſily return. In a Scirrhus, Sarcoma, or Steatoma, when the glandular, fleſhy, or pinguious Subſtance is hard, though the Coat be wounded, the Matter will not flow out: Wherefore the whole Tumor, with its Bag, muſt be carefully extracted, as we have already directed; ſo that none of the Coat may be left behind. In other Tumors, where the Matter is ſoft and fluid, if the Coat be wounded or lacerated, the Contents are immediately diſcharged; then all that can be extracted of the remaining Bag, muſt not only be removed with the Knife and Sciſſars, but, if any Fragments ſhould happen to remain, they muſt be extirpated with corroſive Medicines; ſuch as red Precipitate, with burnt Alum, or the *Unguentum Ægyptiacum* mixed with a Digeſtive: And then the Wound may be healed like other Wounds, without the Danger of a Relapſe.

When, in the Extirpation of encyſted Tumors, Eſcharotics are preferred to the Knife, the *Lapis Infernalis*, Butter of Antimony, or the like, may be applied: But, in my Opinion, when the Tumors are large, hard, of a cancerous Diſpoſition, inveterate, and painful, the Method by Eſcharotics is often dangerous, becauſe a Scirrhus is eaſily changed into a Cancer: And in other Caſes they cannot be totally conſumed without intenſe Pain, large Effuſions of Blood, with great Decay of Strength, or the Loſs of Life. It is, therefore, ſafer to extirpate large hard Tumors by Inciſion, though ſometimes they may be happily removed by Eſcharotics. But if the Tumors be of ſofter Kinds, ſuch as the *Atheroma* or *Meliceris*, I frequently uſe this Method, opening the Integuments and Bag with a Cauſtic, or with a Knife, in the Middle of the Tumor, and diſcharging the contained Matter; then by promoting Suppuration, and the Uſe of Corroſives, I extirpate the Bag; and deterge and incarn, as in other Wounds. This Method I think milder than removing the entire Coat by Inciſion. *Heiſt. Chir.*

For PHLEGMON, ſee INFLAMMATIO.
For Abſceſſes, ſee ABSCESSUS.
For Tumors and Inflammations of the Breaſts, ſee MAMMÆ.
For Inflammations of the Teſticles, ſee TESTICULI.
For Eryſipelatous Tumours, ſee ERYSIPELAS.
For Furuncles, ſee FURUNCULUS.
For Bubos, ſee BUBO.
For Carbuncles, ſee CARBUNCULUS.
For Chilblains, ſee PERNIO.
For the Gangrene and Sphacelus, ſee GANGRÆNA.
For Burnings, ſee AMBUSTIO.
For ſcirrhous Tumors, ſee SCIRRHUS.
For cancerous Tumors, ſee CARCINOMA.
For œdematous Tumors, ſee OEDEMA.
For fungous and dropſical Tumors of the Joints, ſee FUNGUS.
For fleſhy Tumors, ſee NÆVUS.
For Tumors of the parotid Glands, ſee PAROTIS.

TUNA. A Name for the *Opuntia*. *Indian* Fig.

TUNETANUS FLOS. A Name for the AFRICANUS FLOS.

TUNICA. A Name for the *Caryophyllus*; *altilis*, *major*.

TUPA-IPI. A Species of large Onion, which grows in *Braſil*, called by the *Portugueſe Cebola Albæraa*.

TUPHUS, or TUFUS. See TYPHOS.

TUPI-EWA. A Name for the SCOPARIA.

TURAS. The ſecret Effect of the Water; as *Thonus* is that of the Earth; and *Samies* that of the Air. *Paracelſus.*

TURBEDON. The *Arabic* Name for TURBITH.

TURBINATA OSSA. The turbinated Bones of the Noſe.

TURBINATUM. The Pineal Gland.

TURBITH and TURPETHUM. Offic. *Turbith Alexandrinum Officinarum*. Ger. 335. Emac. 415. *Turbith Officinarum*. Park. Theat. 1610. *Turpethum repens foliis Althææ, vel Indicum*. C. B. P. 149. *Convolvulus Indicus, alatus, maximus, foliis Hiſpanicis nonnihil ſimilibus, angulosis*. Raii. Hiſt. 2. 1882. Tourn. Inſt. &. *Convolvulus Zeylanicus alatus maximis foliis, Ibiſco nonnihil ſimilibus angulosis. Tiraſtawalu. Turbith Arabum legitimum & Officinarum*. H. Muſ. Zeyl. 26. TURBITH.

This is a Root about a Finger thick, brown on the Outſide, and whitiſh and ſomewhat reſinous within; of an hot Taſte.

Herman, in his *Catalog. Hortenſ. Lugd. Batav.* gives a Figure and Deſcription of it. He ſays, the Root is long and ſpreading; when broken, yielding a milky Juice, which ſoon hardens into a reſinous Subſtance. It ſhoots forth many long, trailing and climbing Branches, that twiſt one about the other like the great Bindweed; the Leaves are ſoft and downy, and in Shape like thoſe of Marſhmallows. The Flowers come forth among the Leaves, ſeveral together, on long Foot-ſtalks, of a white Colour, in Shape like thoſe of the great *Convolvulus*, of which it is a Species. It grows plentifully in *Ceylon* and *Malabar* in the *Eaſt-Indies*; from whence the Roots are brought to us, being the only Parts uſed.

Turbith is a pretty ſtrong Cathartic, purging tough ſerous Humours from the remote Parts; and thereby helps the Dropſy, Gout and Rheumatiſm; and is put into ſeveral of the ſtronger purging Compoſitions. The

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The *Pulvis Diaturpethi compositus* takes its Name from this Root. *Miller's Bot. Off.*

Turbith Gallorum. A Name for the *Seseli*; *quæ Ferulæ facie*; *Thapsia.*

TURBOTUS. The Turbot. See RHOMBUS.

TURCHOIS. Offic. Worm. Mus. 106. Charlt. Foss. 39. Boet. 265. De Laet de Lap. 87. *Turchesia.* Aldrov. Mus. Metall. 902. THE TURQUOIS.

This is a precious Stone of the opaque Kind, and variegated with Streaks of green, white, and blue. There are two Species of it, the Oriental, and the Occidental: The former is more blue than green, and is found in *Persia* and the *East-Indies.* There are two Sorts of it; one, which always retains its Colour, and is called the Turchois of the old Rock; and another, which loses a little of its Colour, becomes greenish, and is called the Turchois of the new Rock.

The occidental Turchoise is of a Colour partly green, and partly white: It is found in *Spain*, *Germany*, *Bohemia*, and *Silesia.*

Sometimes Turchoises are found as large as an ordinary Nut, but very rarely; since their Bulk is generally no greater than that of a very small Nut.

This Stone is thought proper to fortify the Sight, and the Spirits of the Brain; but this pretended Virtue is not to be confided in. If it is reduced to a fine Powder, and exhibited internally, it operates like other alkaline Substances; absorbs Acids, and stops Fluxes; Hemorrhages, and Vomiting. The Dose is from six Grains to one Scruple. *Lemery des Drogues.*

The Virtues of this Stone are very great in Falls; a memorable Instance of which is related by *Boetius* concerning himself. *Scylla* would have it to be a Sort of Fish's Tooth. Dr. *Woodward* is of Opinion, that the Stones which the Jewellers call Turquoise, are only Fragments of Bones ting'd with a bleuish Colour in the Veins of Copper Mines, where they are found. These Stones are polished by the Lapidaries, and set in Rings. *Woodw.* Attempt. F. 2. *Brown's* Travels. *Dale.*

TURCHOSA. A Name for the TURCHOIS.

TURDUS. Offic. *Turdus vulgaris.* Mer. Pin. 176. *Turdus viscivorus minor.* Bellon. des Oyse. 326. *Turdus simpliciter dictus.* Aldrov. Ornith. 2. 600. *Turdus minor alter.* Gesn. de Avib. 690. *Turdus musicus.* Schw. A. 361. *Turdus simpliciter dictus*, *sive Viscivorus minor.* Raii Ornith. 188. THE MAVIS, or THRUSH.

These Birds, when stuffed with Myrtle-berries, and roasted, are said to be exhibited with Success to those who labour under Fluxes. *Plin. Bellon.* In the Time of the Plague they are, by *Alexand. Bened.* said to be highly beneficial when macerated in Vinegar. The Powder of these Birds is, by *Gainarius*, recommended against the Effects of the *Napellus* or Monkshood. *Dale.*

Turdus is also a Name for a Fish, which Authors thus distinguish.

TURDUS. Offic. Charlt. Pisc. 13. Bellon. de Aquat. 258. Mer. Pin. 186. *Turdus vulgatissimus.* Raii Ichth. 319. Ejusd. Synop. Pisc. 136. *Turdus primus*, Rondel de Pisc. 174. Aldrov. de Pisc. 21. Jonst. de Pisc. 26. *Turdus primus.* Gesn. de Aquat. 1016. THE WRASS, or OLD-WIFE.

This Animal is found in the main Ocean, and in the *Mediterranean.* *Alexander Trallian* highly recommends it in the Epilepsy and Pleurisy. *Dale.*

TURNERA.

The Characters are;

It hath a funnel-shaped Flower, consisting of five Leaves, which are fastened to the Calyx, which is monopetalous, and divided into five Parts at the Top: Under the Flower-cup there are two Leaves, which join at the Bottom, and surround the Cup: From the Centre of the Flower-cup arises the Pointal, which is divided into three Parts to the Bottom, and surrounded by five Stamina. This Pointal afterwards becomes an almost spherical Fruit, which is divided into three Parts, and filled with roundish Seeds, which are fastened to the Placenta by slender Threads.

Miller mentions two Sorts of *Turnera*; which are,

1. Turnera frutescens ulmifolia. *Plum. Nov. Gen.* 15.

2. Turnera frutescens, folio longiore & mucronato.

These Plants are both of them Natives of the warm Parts of *America.* The first Species was found by F. *Plumier* in *Martinico*, who gave it the Name of *Turnera*, from Dr. *Turner*, a famous *English* Physician, who lived in Queen *Elizabeth's* Reign, and wrote an Herbal, in which he has principally figured and described the useful Plants.

The other Species was discovered by Sir *Hans Sloane*, Baronet, who has figured it in his Natural History of *Jamaica*, under the following Name; *Cistus urticæ folio, flore luteo, vasculis trigonis.* But both these Sorts were observed by Dr. *William Houstoun*, in several Parts of *America.* *Miller's Dictionary*, *Vol.* 2.

TURNESIUM. Τυρνήσιον, The Name of a Weight mentioned by *N. Myrepsius. Sect.* 8. *C.* 116. But it is not known what Weight he means.

TURPETHUM. Turbith.

TURPETHUM MINERALE. Turpeth, or Turbith Mineral. See MERCURIUS.

TURREIS. The Name of a Stone, which is said to preserve the Bones from being fractured in a Fall.

TURRITIS.

The Characters are;

The Pod is pretty flat; the Seed is not marginated, but in other respects like the *Leucoium* and *Hesperis*; the Pods end in a pyradimical Form.

Boerhaave mentions four Sorts of *Turritis*; which are,

1. Turritis; foliis inferioribus cichoraceis, cæteris perfoliatæ. *T.* 224. *Brassica sylvestris*, *foliis circa radicem cichoraceis.* C. B. P. 112. *Sinapi album.* Lugd. 1688.

2. Turritis; quæ Barbarea muralis. *J. B.* 2. 869. *Eryssimo similis hirsuta alba.* C. B. Prodr. 42.

3. Turritis; vulgaris; ramosa. *T.* 244. *Bursa Pastoria*, *sive Pilosella siliquosa.* J. B. 870.

4. Turritis; folio Leucoii *Tourn. Inst.* 224. *Boerh. Ind A.* 215. *Camelina.* Offic. Ger. 213. Emac. 273. *Camelina sive Myagrum alterum amarum.* Park. Theat. 868. *Myagrum siliqua longa.* C. B. P. 109. *Myagro affinis planta siliquis longis.* J. B. 2. 894. Raii Synop. 3. 298. *Eryssimum Galeno & Theophrasto.* Raii Hist. 1. 811. TREACLE WORMSEED.

This is sometimes found in putrid Places, and flowers in *June* and *July.* The Herb itself is used, which kills and dislodges Worms, corroborates the Stomach, expels Poison, is beneficial to paralytic and epileptic Patients, and cures Ulcers of the Mouth. *Dale.*

Besides the foregoing Species of *Turritis*, *Dale* mentions the following Sort; which is,

TURRITIS. *Offic. Ger.* 212. *Emac.* 272. *Raii Hist.* 1. 799. *Synop.* 3. 293. *Tourn. Inst.* 223. *Turritis vulgatior*, J. B. 2. 836. Park. Theat. 852. *Lobelio Brassica sylvestris hispida*, *non ramosa.* C. B. P. 112. *Leucoium flore albo*, *siliquis uno versu dispositis*, *& reflexis.* Ejusd. 243. TOWER MUSTARD.

This is found in sandy Hillocks, and flowers in *June.* The only Part of it used, is the Herb itself; the Juice of which is, by some, recommended for curing Ulcers of the Mouth, and killing Worms. *Dale.*

TURSIO. The Porpoise.

TURTAS, τέρτας. A sort of Tart, made of Dates, Meal, and Water, and baked under the Embers. *Erotian.*

TURTUR. Offic. Schrod. 5. 324. Mer. Pin. 175. Bellon. des Oyse. 310. Aldrov. Ornith. 2. 505. Gesn. de Avib. 277. Schw. A. 362. Charlt. Exer. 85. Jonst. de Avib. 64. Raii Ornith. 183. Ejusd. Synop. 61. Will. Ornith. 134. THE TURTLE-DOVE.

This Bird, and its Fat, are used. In Virtues it agrees with the Pigeon, especially in stopping Dysenteries, and immoderate Discharges of the Menses. The Fat, collected when the Animal is roasting, is, according to *Schroder*, properly used as an Ointment in Disorders of the Kidneys, Abdomen, Breast, and Groins. *Dale.*

TURUNDÆ. Tents.

Tents are sometimes used in dressing Wounds, and are made of scraped Lint artfully rolled up, with a broad Head like a Nail. Their Length and Thickness are different, according to the different Sizes of the Wound for which they are designed. See *Tab.* XXIII. *Lit.* K, L, M, and N. This sort of Tents are principally used in deep Wounds and Ulcers; for by their Assistance, 1. Remedies may not only be conveyed to the innermost Recesses and Cavities of the Wound; but, 2. they prevent the external Parts of the Wound from coalescing, before the Bottom appears to be healed. 3. By their Means, also, Wounds may be conveniently cleansed from Blood, and other Sordes. But they must not only be fitted to the Wound, but, also, made extremely soft, that they may not increase the Pain of the Wound. That they may not obstruct the Healing of the Wound, if it appears to be sufficiently deterged, and that the Cavities are gradually uniting, the Tents should be lessened in Size, and, as soon as possible, entirely laid aside. And it is not improbable, that the Neglect of this Caution induced some Surgeons, both antient and modern, of no mean Reputation, to forbid entirely the Use of Tents: Among these are *Magatus* and *Bellosse.*

Some Tents are, also, made of Linen Rags, not scraped, but entire, twisted together in a conical Form, with a Thread fastened at its Basis; but the small End should be a little scraped, to render it softer, that it may not increase the Pain. The Thread is fastened to the Basis, that the Tent may be easily extracted, if it should accidentally drop into the Cavity of the Abdomen or Thorax. See *Tab.* XXIII. *Fig* O. This Kind of Tent is principally used in Wounds which penetrate into the Cavity of the Abdomen and Thorax, lest they should heal, before the Blood, and other purulent Matters, be evacuated.

A third Kind of Tent is made for dilating the Orifice of a Wound, lest it should be too narrow, that the Blood, Sanies, or any extraneous Substance lodged within the Wound, may be more easily extracted, or that Remedies may be more conveniently admitted. These Tents are generally made of a Piece of Sponge prepared in a peculiar Manner; or of the dried Roots of Gentian, Turnep, Calamus aromaticus, or Comfrey; which

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which are of such a Nature as to imbibe the Matter that flows to them; and, being by these means swelled, they dilate the Orifice of the Wound. Not unlike Tents are those Tubes or Pipes of Lead or Silver, which are sometimes used for discharging Blood or *Pus* out of narrow Wounds or Ulcers; and sometimes for evacuating dropsical Waters, and Urine. Their Size and Figure vary according as the Nature of the Wound may require. See *Tab.* XXIII. *Lit.* P, Q, R, S, T, V, X. Tents are rejected by *Magatus* and *Belloste* in *Fistulas*. See FISTULA.

Garengeot's Objections to Tents in Wounds of the Abdomen are considered under the Article ABDOMEN.

For the Use of Tents in the Cure of Inguinal Ruptures, see BUBONOCELE.

The Reasons against the Use of Tents in Lithotomy are taken Notice of under the Article LITHOTOMIA.

TURUNDULA. A small Tent.

TUS. The same as THUS.

TUSAI. A Name for several Species of *Corona Imperialis*.

TUSSEDO. A Cough.

TUSSICULARIA. Medicines which excite a Cough. *Cæl. Aurelianus*.

TUSSILAGO.

The Characters are;

The Root is very creeping; the Flower consists of very numerous Barbulæ, stands on a single Stalk, and is included in a Calyx, which has a multifid Base.

Boerhaave mentions two Sorts of *Tussilago*; which are,

1. Tussilago; vulgaris. *C. B. P.* 197. *Tourn. Inst.* 487. *Boerh. Ind. A.* 101. *Tussilago, Farfara.* Offic. *Tussilago.* J. B. 3. 563. Ger. 666. Emac. 811. Park. 1220. Raii Hist. 1. 259. Synop. 78. COLTS-FOOT.

The Roots of Colts-foot are thick at the Head, from which run several Strings. The Flowers spring up about the latter End of *February*, or the Beginning of *March*, on Stalks about two or three Inches long, beset with sharp-pointed scaly Leaves; they are yellow, radiated, and in Shape like Dandelion, which turn into Down like them: The Leaves spring up, after these are gone, somewhat roundish, but angular, and indented about the Edges, hollowed-in next the Stalk, in Shape like Butterbur, but much less, whitish underneath, having the upper Part green, but covered with a cottony Skin, that is easily wiped off. It grows in moist watery Places, and flowers early in the Spring. The Leaves and Flowers are used.

They are pectoral, and accounted good for Diseases of the Lungs and Breast, as Coughs Consumptions, and Shortness of Breath; and are frequently put into pectoral Apozems: The dry Herb, cut small, is smoked among Tobacco for Coughs, and other Affections of the Lungs. *Miller's Bot. Off.*

Colts-foot-leaves are bitter, glutinous, and a little styptic; they have the Taste of an Artichoke, and give but a very faint Tincture of Red to the blue Paper. There seems to be in this Plant a Salt resembling that of Coral, involved in Sulphur, and a great deal of viscous Phlegm. The Leaves and Flowers are very sweetening, moderately aperitive, and dedicated (if I may so say) to the Diseases of the Breast, which are occasioned by acrid and saltish Serosities. The Leaves are prescribed to asthmatic Persons, to smoke after the manner of Tobacco. Mr. *Boyle* advises to mix with those of Colts-foot, Flower of Sulphur, and some powdered Amber: He affirms, that this Medicine has cured several of the Phthisick. In the Time of *Dioscorides*, they made those that were afflicted with these Distempers, receive the Smoak of the Leaves of this Plant at their Mouths. The Flowers and Leaves are used in the pectoral Decoctions, and Lohochs to make one spit; there is a Syrup and a Conserve made of these Flowers. The following Ptisan is very good for a dry Cough.

> Pour four Quarts of boiling Water upon four Handfuls of the Leaves of Colts-foot, and three Pugils of the Flowers; two Pugils of the Tops of Hyssop, one Ounce of Raisins, and three Spoonfuls of *Narbonne* Honey; boil it a little; take the Pot from the Fire; cover it, and strain the Ptisan when it is cold. *Martyn's Tournefort.*

Hillerius informs us, that he restored many Children labouring under an Atrophy, only by the Leaves of Colts-foot, which he ordered to be cut down like other Pot-herbs, made up with a farinaceous Puls, fried in Butter like Sage, and used for a long Time, as we are informed by D. *Same ex Observat. Hieron. Reusneri. Raii Hist. Plant.*

2. Tussilago; Alpina; rotundifolia; glabra. *C. B. P.* 197. *M. H.* 3. 139. *Boerh. Ind. alt. Plant. Vol.* 1.

This Plant, in all Probability, is called *Tussilago*, from the Word *Tussis*; because it is good for a Cough. It receives the Name *Bechion* from the Greek Word βηξ, which corresponds to the Latin *Tussis*. It is called *Ungula Caballina*, or *Calceum Equinum*, because its Leaf, in Shape, resembles an Horse's Foot. It receives the Name of *Farfara*, or *Farfarella*, because its Leaves resemble those of the white Poplar, or appear to have Meal sprinkled on them. It is, also, called *Filius ante Patrem*, because in the Months of *February* and *March*, when its Leaves have not appeared, it suddenly sends forth its Flowers, which hardly continue above two Days.

The Flowers, Roots, Stalks, Leaves and Fruit, are used in Medicine. They are of a penetrating, heating, and lenitive Quality; for which Reason they incide thick and pituitous Humours contained in the Lungs; and are good in Coughs, Consumptions, and Pleurisies. The recent Leaves bruised in a Mortar, and boiled with double the Quantity of Sugar, are excellent in a Phthisis, an Exulceration of the Kidneys, a long-continued ulcerous Gonorrhœa, and Disorders of the Stomach arising from Phlegm. Colts-foot is accounted *alexipharmic*, because it excites Sweat. The recent Leaves, applied externally, are beneficial for the Cure of Ulcers and Inflammations. Its Juice drank for some Days, is said to cure quartan Agues. *Hist. Plant. adscript. Boerhaav.*

TUSSIS. A Cough.

A Cough and an Asthma are so nearly related, and so frequently complicated, that the one can hardly be without the other: A Cough, then, is a violent Expulsion of a foreign Matter from the Bronchia of the Lungs, by means of their increased contracted, or convulsive Force, accompanied with a violent Expiration.

As I intend to give the History and Pathology of this Disorder, I shall begin with a Description of those Parts, which most immediately concur to the Production of a Cough, that thus we may discover the true Essence of this convulsive Motion, and be able to understand its several Differences. The primary Seat, then, of a Cough is, that large Canal, by means of which we breathe, and which is divided into two Parts, the Aspera Arteria, and the Bronchia: The latter of these are distributed through the Substance of the Lungs, whilst the former reaches from the Lungs to the Fauces. The Origin of the Aspera Arteria, which is called the Larynx, is a Canal, beginning at the Fauces, and form'd of five Cartilages, connected by three Membranes, the exterior of which is nervous; that in the Middle fleshy, and the internal glandular: The superior Aperture of this Canal is call'd the Glottis, which is covered with a cartilaginous Covering, called the Epiglottis: The Larynx is succeeded by a cartilaginous and membranous Tube, call'd the Aspera Arteria, which, being wider at the Beginning, and gradually becoming narrower, in its Progress to the Lungs, is, near them, divided into two Ramifications, call'd the Bronchia. These Ramifications are divided into numberless other, which are distributed through the Substance of the Lungs, and which consist of cartilaginous Segments, and contractile Membranes; then they terminate in small Vesicles, like Clusters, which adhere to these small bronchial Ramifications, and constitute the most considerable Part of the Lungs.

All these pneumonic Canals, from Beginning to End, are surrounded with a Membrane, consisting of longitudinal and annular Fibres, and furnish'd with many excretory Ducts and Glands; the Number, Situation and Figure of which is exquisitely delineated by *Morgagni adverf. Tab.* XI. *Fig.* 1. These Glands pour into these Canals, subservient to Breathing, a thin, roscid, mild, and lymphatic Humour, which, also, in all Probability, drops from those Glands, which externally adhere to the Epiglottis, the arytenoide Cartilages, and the Extremities of the Bronchia. These Glands are represented by *Heister* in *A. N. C. Cent.* 7 & 8. *Ob.* 63. Provident Nature has bestowed on these Ducts, Vessels of various Sorts, especially of the arterial Kind, distributed from the bronchial Artery: This bronchial Artery takes its Beginning from the Trunk of the Arteria Magna descendens, above the Arch of the superior inter-costal Arteries; and is divided into three Ramifications, one of which runs externally upon the Aspera Arteria, whilst the other two distribute many Ramifications through the whole Substance of the Membranes of the Trachea, and of the pulmonary Bronchia. These Ducts, also, receive venous Vessels from the bronchial Vein; the Ramifications of which, being propagated in the same manner with the Arteries, at last, by a large Ramification, terminate in the Trunk of the Vena cava descendens, and the Azygos: Both these Species of Vessels were discovered and are accurately described by Mr. *Ruysch*, in *Epist.* 4. And lastly, the Ducts, subservient to Respiration, receive Nerves from the Par vagum, and the inter-costal Nerve.

The primary Use and Function of these Canals is, to afford a commodious Ingress of the Air to the Lungs, and a free Return of it thence, in order to facilitate the Circulation of the Blood, so necessary to Life and Health: For this Purpose, these Ducts are furnish'd, first, with a large Number of Glands, not for secreting an excrementitious Liquor, for this Part is by no means naturally destin'd for the Excretion of the Sorts, which the Design of those Glands is, to discharge a thin Lymph, which, by a mild and continual Lubrication, cherishes the Membranous of the Trachea and Bronchia, lest they should become dry by the continual Action of the Air in Inspiration; and, when this Lymph has perform'd its Office, it is resolv'd into Exhalations, and carried off with the expired Air, after the manner of cutaneous Perspiration. For the same Purpose, these Ducts, subservient to Respiration

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Respiration, are furnish'd, secondly, not only with nervous Coats, exquisitely sensible, but, also, with muscular Coats, possessed of longitudinal and annular Fibres, by means of which they are capable, not only of constrictory, but, also, of a dilatory Motion, which provident Nature has bestow'd on all the nervous and membranous Ducts of the Body, as we find in the Ureters, the biliary Ducts, the Stomach, and Intestines: Nor is this Motion without its peculiar Advantages; for it greatly contributes, not only to promote the Ingress and Egress of the Air, but, also, to the Secretion of the Lymph from the above-mentioned Glands, and to the Circulation of the Blood, through the bronchial Vessels. But, thirdly, tho' these membranous Ducts are not of themselves sufficient for the Business of Respiration, yet they are so necessarily connected with the other Parts, subservient to the same Purpose, such as the Lungs, the Pleura, and the Diaphragm, together with the intercostal and abdominal Muscles, that 'tis almost impossible, that when one Part acts, all the others should not, also, begin to act.

When these Parts are in their due and proper Condition, Respiration is carried on in a natural Manner: But when any one of them recedes from its natural State, Respiration is forthwith injured and perverted. Without considering other Disorders of Respiration, we only now treat of a Cough, which always arises from a preternatural State of some of the above mentioned pneumonic Canals. I don't hesitate to affirm, that what in the Stomach produces a Vomiting, in the Bronchia gives rise to the Cough; that is, an Inversion of their tonic Motion; for I am of Opinion, that under a Cough, the bronchial Ducts, being constricted from their inferior to their superior Parts, force their contain'd Air quickly and impetuously upwards, as if they were to expel something foreign: But since, when these are disorder'd, 'tis necessary the other Parts of the Breast destin'd to Respiration, and intimately connected with these, should, in consequence of the strict Consent between them, become Partakers of their inordinate Motions, it is sufficiently obvious, why the more violent a Cough, which is a preternatural Expiration, is, the more violently the Breast, the Abdomen, and the whole Body should be concussed. In consequence of this Consent, it also frequently happens, that when the Stomach, the Diaphragm, the Oesophagus, the præcordial Nerves, and those distributed from them, or the pituitary Membrane of the Nostrils, are, by any Cause, vellicated, the Ducts, subservient to Respiration, being by that means affected, a Cough is excited.

If, therefore, a spasmodic, and convulsive Disorder of these Ducts, is the remote Cause of a Cough, their Vellication must necessarily be the immediate Cause of such a convulsive Disorder, and consequently of the Cough. Every Cough, therefore, has its Seat in the Breast, tho' its productive Causes are not always lodg'd there. And this Diversity of remote Causes, which concur to the Production of a Cough, produces a great many different Species thereof.

Nor do we intend to consider that Species of Cough, which, as a terrible Symptom, accompanies various Disorders: Of this Kind is a Phthisical Cough, which arises from a Colliquation of the Vesicles, and bronchial Vessels, produced by an Ulcer of the Lungs; and, consequently, has, for its Foundation, a Solution of Continuity. In this Species of Cough, an ulcerous and foreign Matter is not conveyed through the pulmonary Glands, but thro' the corroded, lacerated, and gaping Cavities of the Bronchia, and, by vellicating the nervous Membranes, produces the Cough. To the Class of symptomatic Coughs, also, belong those which happen in Asthmas, Peripneumonies, Pleurisies, a Scirrhus, and Impostumation of the Lungs, or an Inflammation of the Diaphragm and Liver. Of the symptomatic Kind, are, also, those Coughs, which arise from a Wound inflicted in a Nerve or Tendon about the Neck; as, also, those which succeed Convulsions, Epilepsies, and hysteric Disorders: For those Species of Coughs are, for the most part, produced by a Vellication of the Bronchia, only induced by Consent, since the Cause of the Disorder is lodg'd in a Place more or less distant from the Præcordia.

Nor shall we, at great Length, consider that Species of Cough, which arises from a Falling of any foreign solid or fluid Body into the Aspera Arteria, thro' the Aperture of the Glottis: These Accidents are very terrible, and often fatal, by inducing a sudden Suffocation, memorable Instances of which are found in *Marcelli Donati Hist. Med. Mirab. Lib.* 3. *cap.* 7. To this Species of Cough, belong those produced by Tumors, Stones, and other preternatural Things, adhering to the Aspera Arteria and Bronchia. Hence Authors, of undoubted Veracity, assure us, that Stones, and other small Bodies, like Hail, have been thrown up in Coughing. See *Alexander Trallian*, in *Lib.* 5. *Paulus Æginetæ*, *Lib.* 3. *Cap.* 28 and 31. and *Pet. Borelli*, in *Obs. Cent.* 1. *Obs.* 67

Nor are we to consider those Coughs, which are produced by the Fumes of Lead, Metals, and, especially of acid Minerals being inspired with the Air; to which the Diggers and Refiners of Metals, Potters, who use much Litharge, Masons, and those who deal much in Quick-lime, are principally subject, since those Coughs are easily accounted for; because, when the metallic, and almost corrosive Particles, enter the Ducts subservient to Respiration, and possessed of an exquisite Sensibility, they insinuate themselves intimately into them, and constrict them violently, which proves the Cause of a dry Cough, complicated with an Asthma.

Nor does that slight and short Cough, which, in Persons otherwise sound, is produced by a Suppression of Transpiration, come under our Consideration. Coughs of this Kind are produced, when Persons, especially of pituitous Habits, suddenly expose their Heads or Breasts, when warm, and under a gentle Perspiration, to Cold; in consequence of which the acrid Serum, repelled from the Skin, falls upon the Asperia Arteria and Bronchia. Coughs of this Kind are, also, produced, in old Persons, when they sleep in cold Places, especially in the Night-time; or freely expose themselves to a cold and Winter Air: This Species of Cough is, also, a Concomitant of a Coryza; and is soon cured, either by keeping warm, or, perhaps, more expeditiously, by the Exhibition of proper Diaphoretics. To this Species of Disorders, also, belongs the Falling of the Mucus from the Nostrils to the Fauces and Larynx: But this Mucus is, however, easily expectorated in the Morning.

But we shall treat, at greater Length, of that Cough which is a primary Disorder, violently affects the whole Body, and racks the Patient, not only by its Vehemence, but, also, by its long Continuance: This we call a a rheumatic Cough; for it has for its Cause an inverted Motion of the Humours, from the Circumference of the Body to the Lungs, and a Congestion of them therein. Nor is it ever free from Horripilations, and febrile Commotions, principally observable towards the Evening. This Species of Cough is either dry or moist, according to the Habit of the Patient. The moist Species is incident to sanguineous and phlegmatic Persons; to Persons whose nervous, fibrous, and muscular Parts, are soft; to those who abound with serous and pituitous Juices, such as Women rather than Men; and Infants, Children, and old Persons, rather than young and adult Persons: But the dry Cough is more incident to hypochondriac, scorbutic, and cachectic Persons; to such as are of a rigid Habit of Body; to those who have a weak nervous System, disposed to spasmodic Motions; and to such as abound with an acrid Serum.

The highest Degree of a rheumatic Cough is called a convulsive or Chin-cough. This rages with such unbounded Fury, and agitates the Patient with such Concussions, that he frequently seems to be in Danger of a Suffocation. Sometimes, especially in the Beginning, it is dry; and none, or at most a very small Quantity of thin Serum, more or less acrid, is expectorated: At other times it is moist; and then, after violent Efforts, a sublivid, and often an highly tenacious Mucus is expectorated. Under this Species of Cough the Patient's Extremities become cold; he is costive, discharges thin Urine, and his vital Juices, being too copiously and impetuously conveyed to his superior Parts, fill his Head and Breast: Hence, under the Paroxysm, his Face is red, his Veins tumid, and his Pulse strong and quick; his Eyes are prominent, and discharge Tears; his Eye-lids swell, and sometimes, when he sneezes, the Blood bursts from his Nostrils. Sometimes, also, the small Vessels of the Lungs are ruptured, and a Spitting of Blood succeeds. This Species of Cough is frequently accompanied with an Hiccup, and troublesome Vomitings; some Patients involuntarily discharge their Fæces and Urine; and others, especially Children, in coughing, contract Hernias; or, according to *Hippocrates in Aph.* 46. *Sect.* 6. become gibbous. *In M. N. C. Cent.* 1. *Obs.* 1. we have a memorable Instance of one of the Bodies of the Vertebræ of the Back, broken through the Middle, by the Vehemence of a Cough of this Kind. It is, also, to be observed, that an Apoplexy may be produced by the excessive Vehemence of a Cough. And *Boyle* observes, that by such a Cough a sudden Loss of Memory, as, also, a Palsy of the Hands, and other Limbs, were produced.

The material Cause of a convulsive, or Chin-cough, resides in the thin, acrid, and almost caustic Humour deposited on the highly sensible Coats of the Ducts destin'd for Respiration. This Humour is either lodged only in the Larynx, and Aspera Arteria, in which Case it produces a continual and ungrateful Titillation of the Fauces; or it is more deeply seated in the pulmonary Bronchia; and then it excites the most atrocious Efforts of Coughing. This Humour is generated by the acrid and impure Sordes, either not sufficiently expelled to the Surface of the Body, or repelled by any Cause, especially Cold, and consequently congested in the Lungs. Hence we learn, that a Suppression of the Itch, Tineæ, and Achors of the Head, the Gutta Rosacea, as, also, a too hasty Consolidation of Ulcers, or the Repelling of the Gout, are succeeded by a Chin-cough: And there is no other Reason, why the Measles are preceded, accompanied, and succeeded with long continued Coughs of this Kind, than that the acrid morbillacious Matter is retired to the Ducts subservient to Respiration, and violently vellicates them. See *A. N. C. Dec.* 3 *Obs.* 11.

A rheumatic and convulsive Cough, arising from a common Cause, some Fault of the Air, for Instance, frequently rages epidemically in various Countries. It seizes principally in the Autumn

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tumn and Winter, especially if the Winter, after a South Wind, and a moderate Warmth, suddenly becomes intensely cold, and nipping North Winds begin to blow. But this Cause only excites a rheumatic Cough in impure Habits; whilst in others it only, for the most part, produces one of the catarrhous Kind: Hence we generally observe, that the Cause of these epidemic Coughs is an Air replete with pernicious fetid Clouds, or impregnated with other acrid and often poisonous Particles, the Causes, also, of exanthematous Fevers; which Particles, when drawn in with the Air, not only produce a violent Cough, but also Aphthæ, which render it more intolerable, than it would have otherwise been. Besides, in the Spring these several Coughs sometimes rage epidemically, and are accompanied with an Hoarseness; and at this Season they derive their Origin from the saline and acrid Exhalations contained in the Air, by the Heat of the Sun raised from the Earth after Winter, and insinuating themselves through the Glands of the Ducts subservient to Respiration. See *Hippocr. Epidem. Lib. 6. Sect. 8. Sennertus de Febribus, Lib. 4. Cap. 17. Sydenhami Opera.*

Let this suffice, with respect to the highest Degree of a rheumatic Cough, the Causes of which are generally external. But there are other Coughs, which are more properly called rheumatic, which proceed from an internal Cause, and which are not only long protracted, but, also, very uneasy to the Patient, since they are complicated with rheumatic Pains of the Breast and Head, Hemicranias, Tooth-achs, Punctures of the Sides resembling a Pleurisy, and Defluxions of an acrid Matter from the Head to the Fauces. Coughs of this Kind are principally incident to cachectic and scorbutic Constitutions, in consequence of a Suppression of œdematous Swellings of the Feet, or any other Tumors: And this preposterous Practice brings on so violent a Cough, and Difficulty of Breathing, that the miserable Patient seems to be in Danger of being suffocated. Coughs of this Kind are very common in old Persons, who abound with impure Juices; and in such Patients it is produced by external Cold, admitted principally to that Region of the Back, where the first Vertebra of the Loins, and greater Mesenteric Plexus of Nerves, are found; nor is it owing to any other Cause than a Conveyance of the acrid Serum from the external Parts of the Body to the Lungs. This Species of Cough, in pituitous and old Patients, who live delicately, use a sedentary Life, and have neglected usual Venesection, is frequently of the moist Kind, and produces a critical Effect; since by its means the whole Mass of Blood and Humours, though not without considerable Uneasiness, is excellently purged from the Redundance of impure Serum; so that when the Cough is removed, the natural Strength returns, and the Sleep, Appetite, and perfect Health, are restored.

To the Class of rheumatic Coughs, also, belong those of the stomachic and hypochondriac Kinds: The Cause of the former of which is lodged in the Stomach; and that of the latter, deeper in the Hypochondria and Intestines: And both these Species of Coughs are produced, partly by a Consent of the Nerves, and partly by a rheumatic Defluxion of Serum on the Lungs. The stomachic Cough discovers itself by peculiar Signs, which are a Nausea, a Cardialgia, a Loss of Appetite, a defective Digestion, a Sense of Weight in the Stomach: And the first Stimulus to Coughing is perceived about the Pit of the Stomach. The hypochondriac Cough, on the contrary, is accompanied with Flatulences, Spasms of the Intestines, and the other hypochondriac Symptoms. The stomachic Cough is produced by a bilious, acrid, and acid Sordes, which is lodged in the Stomach, especially in its superior Orifice, and in the Oesophagus, and which vellicates the nervous Coats of these Parts, which are closely connected with the Ducts subservient to Respiration. Hence this Species of Cough is accompanied with frequent Vomiting. It is most troublesome, when the Stomach is empty; and is familiar to those labouring under a Tertian, especially of the continual Kind, as we are informed by *Hippocrates in Epidem. Lib. 2.* The hypochondriac Cough is produced by thick, impure, and serous Humours, by the Force of Spasms, and abdominal Flatulences, conveyed to the Breast and Lungs; and it is the more violent, if an excessive Cold, or the Influence of exhorbitant Passions, have preceded, as the occasional Causes. But it is to be observed in general, that every periodic Cough derives its Origin from Sordes lodged in the Stomach, or rather in the Duodenum.

We must, also, consider an habitual Cough, which may be justly called one of the catarrhous and rheumatic Kind. This Species principally depends on a Relaxation of the Glands situated in the Fauces, Palate, and Larynx, and is protracted for many Years with a continual Expectoration. It is accompanied with a defective Digestion, and a successive Consumption of the whole Body. It is incident to serous Patients, to those who lead a sedentary Life, and to such as are addicted to Lucubrations, and drinking of Wines.

As for the Prognostics of Coughs, a dry Cough generally passes into one of the moist Kind, which, when of long standing, becomes habitual, spoils the Digestion, and induces a cachectic State, and a slow Fever. A moist Cough, passing into one of the dry Kind, and leaving a Sense of Weight in the Breast, subjects the Patient to the Danger of a putrid or an hectic Fever, according to *Lommius, in Observ. Medicin. Lib. 2.* Convulsive and Chin-coughs are dangerous in Infants, because they easily induce a Suffocation, especially in difficult Dentition, and the Measles. In Children they produce Distortions of the Back, and Hernias; in pregnant Women, Abortion; and in Adults, a Spitting of Blood, and a Phthisis. That Coughs of this Kind are, also, sometimes productive of a sudden Suffocation, we are inform'd by *Willis, in Pharm. ration. p. 2. Sect. 1. Cap. 6* and *Hildanus, Cent. 2. Obs. 68.* Coughs succeeding a Scirrhus of the Lungs, or any other of the Viscera, are generally incurable by any Remedies whatever. And those Coughs which are produced by a Repulsion of exanthematous Eruptions, cease when these Eruptions are again recalled. *Lommius*, in the Part above quoted, informs us, "That all Coughs, which deprive "the Patient of Sleep, are bad; and that such as are long-"continued, frequent, violent, and accompanied with a De-"fluxion, that is, habitual, rheumatic Coughs, are productive "of bad Effects." Coughs happening to dropsical Patients, are bad Signs, according to *Hippocrates* in *Sect. 6. Aphor. 35.* On the contrary, a moderate Heat in the Night, an equable Sweat or Moisture over all the Body, a copious Discharge of Urine, a due Solubility of Body, tranquil Sleep, and an easy Expectoration, are sure Signs, that the Cough is in a fair Way of being removed.

The CURE.

In the Cure of a rheumatic Cough, four Intentions are to be pursued: For, in the first Place, we are to correct the peccant Matter, dispose it for Elimination, and, if necessary, promote Expectoration. Secondly, we are to derive the Afflux of the Serum from the Præcordia, and invite it to other more proper Emunctories. Thirdly, we are to check the exorbitant Commotions of the Body. And, fourthly, we are to restore Strength to the weakened Parts.

If, therefore, the Bronchia are obstructed by a tenacious, coagulated Mucus, this Mucus is to be incided, resolved, and softened. This Intention is excellently answered by the resolvent Roots; the best of which are, the Root of Florentine Orris; the Root or Fæcula of Arum; and, what is very powerful in fusing tough and tenacious Humours, and procuring Expectoration, five of six Grains of Squill-root, exhibited with a little Nitre, as also Oxymel of Squills, Essence of Gum Ammoniac, anisated Spirit of Sal Ammoniac, Milk and Flowers of Sulphur, and Sperma Ceti.

An highly thin, acrid and saline Humour is disposed for Elimination, by incrassating Medicines, and such as correct the Acrimony of the Lymph. These Intentions are excellently answer'd by Decoctions prepared of Barley, Shavings of Hartshorn, Roots of Vipers-grass, and Liquorice; by Cremor of Barley and Water Gruel, prepared with sweet Almonds, and Currants; by a Decoction of Turneps, prepared with Sugar; by Jellies of the Horns of Deer, and other Animals; by Broths prepared of Fleshes and Milk; by Lohochs of the Lungs of Foxes; by the Syrups of Poppies, Colts-foot, and Mountain Diacodium; by Sperma Ceti exhibited with Milk; and, above all, by Oil of sweet Almonds recently expressed without Fire, and exhibited either alone, or with Syrup of Maiden-hair, or Julap of Roses. Thus,

> Take of the Oil of sweet Almonds, and of the Syrup of Maiden-hair, each one Ounce; of Sperma Ceti, three Drams; and of Saffron, fifteen Grains: Mix all together, and exhibit.

The same Intention is, also, excellently answered by Infusions of Paul's Betony and Hyssop; the Flowers of Mallows, Elder, red Poppies, Sage and Daisies; the Roots of Liquorice; the Seeds of Fennel; and the Bark of Sassafras. When a catarrhous Cough is become habitual, and accompanied with Loss of Appetite, and a Consumption, the Cure is to be attempted by Asses Milk, or Whey, or the *Selteran* Waters, mixed with an equal Quantity of Milk.

When there is too great a Congestion, Afflux, and Defluxion of Serum in the Breast, as happens in a very moist, pituitous and long-protracted Cough, it is expedient to derive this Serum from the Præcordia and pulmonary Vessels, partly by the Anus, the proper Emunctory of mucus Sordes, and partly by the Skin, the proper Outlet of the thinner and more subtle Humours. As in all Coughs, so more especially in those of the convulsive and rheumatic Kind, a due Solubility of Body is of great Advantage, for procuring which, correcting the Acrimony, and mildly, though copiously, and, without any Trouble or Loss of Strength, evacuating the serous Sordes, I have found none of all the Laxitives more effectual than Manna, two Ounces of which may be exhibited in some proper Infusion or Decoction, and the Dose repeated as the Situation of the Patient requires. I generally dissolve two Ounces of it in eight Ounces of the Water of Paul's Betony, or the Flowers of the *Egyptian Thorn*, with a gentle Heat, adding afterwards one Dram of the *Terra foliata*

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foliata Tartari, and a few Drops of the Oils of Cedar, Aniſe, or Mace. *Gabelchoverus*, alſo, in *Cent.* 4. *Obſ.* 7. recommends ſeveral Ounces of Manna to be exhibited for the ſucceſsful Cure of Coughs. The ſame Laxative may, alſo, be exhibited in an Infuſion of Paul's Betony, or in Milk. This Intention is, alſo, anſwered by ſolutive Syrup of Roſes, recently extracted Caſſia, the laxative Decoctions, and Raiſins impregnated with Rhubarb. And if the Stomach cannot bear theſe Laxatives, the redundant Serum and Mucus are, by Clyſters, to be evacuated through their proper Emunctory, which is principally in the large Inteſtines.

By reſtoring the equal Circulation of the Blood through the whole Body, and eſpecially by inviting the Serum to the ſubcutaneous Glands, its Afflux to the Præcordia is prevented. This Intention is anſwered by warm pectoral Infuſions of the Flowers of Mallows and Violets, the Leaves of Hyſſop and Sage, the Seeds of Fennel and Aniſe, and Cinnamon. Theſe Infuſions are to be drank in the Morning in Bed, obſerving a proper Regimen, and keeping the Body always in an equal Heat. The ſame Intention is, alſo, anſwered by the diaphoretic and bezoardic Powders prepared of Crabs-eyes, the Pulvis Marchionis, prepared Amber, diaphoretic Antimony, or, in its ſtead, *Poterius*'s Antihectic, uncalcin'd Hartſhorn, and Cinnabar, with the Addition of a few Grains of the expreſs'd Oil of Nutmegs, or of the Oil of Saffron. To theſe Powders we may, alſo, add Flowers of Sulphur, if the Cough is produced by a Retropulſion of Achors, or an Itch.

The third Intention is to check the exorbitant Commotions of the Body; which is to be attempted in the very Beginning, for fear of greater Danger. Among the Remedies anſwering this End, the beſt is Saffron, which is highly friendly to the Breaſt, and its Extract with the bezoardic Powders. Some, alſo, order Oak-moſs to be added both to the Powders, and to the Decoctions. The ſame Intention is, alſo, anſwered by the *Pilulæ de Styrace* mix'd with the *Pilulæ Aloephanginæ*, and exhibited in the Evening, ordering at the ſame Time Expectorants; ſuch as Oil of ſweet Almonds, and Sperma Ceti. This End is, alſo, anſwered by the anodyne mineral Liquor, or the Liquid Laudanum of *Sydenham*, united with Spirit of Hartſhorn, ſo much extol'd by *Boyle*. If the Diſorder does not yield to theſe, we are to have recourſe to more powerful Anodynes, ſuch as the Pilulæ de Styrace, the Pilulæ Starckeyanæ, the Piluiæ Wildeganſii, and Preparations of the Theriaca.

Nor for allaying the Vehemency of a Cough are we to condemn Topics; ſince, in a Cough of the phthiſical Kind, great Relief is afforded by applying the Emplaſtrum Diaſulphuris Rulandi to the Breaſt. In a convulſive, or Chin-cough, excellent Effects are produced by anointing the Præcordia with the Unguentum potabile rubrum, mixed with Spirit of Wine. The anointing the Sides of the Thorax with the pectoral Ointment in the Pharmacopœia Auguſtana, is of great Efficacy in allaying Coughs, mitigating Pains of the Breaſt, and promoting Expectoration. In all rheumatic Coughs I have, from long Experience, found the following Plaiſter very beneficial.

Take of the beſt Myrrh, Bdellium, and Amber, each half an Ounce; of Sperma Ceti, human Fat, Wax, and red Lead, each two Ounces; of *Venice* Soap, three Drams; of Saffron, one Dram; and of Camphire, half a Dram: Mix for a Plaiſter to be applied to the Breaſt, Neck, and Spine of Back.

In the Decline of the Diſeaſe, the fourth Intention is to be purſued, and the weakened Parts corroborated, becauſe Coughs eaſily recur. For this Purpoſe I recommend the Eſſence of Amber, and the Spirit of Hartſhorn mixed with Tincture of Tartar, or the anodyne Liquor; with the Addition of a few Drops of the Oil of Saſſafras-wood; as, alſo, the Eſſence of Caſcarilla. I have often obſerved happy Effects produced by a few Drops of the Balſam of Life, exhibited with Extract or Tincture of Saffron. In the End of the Diſorder, in order to corroborate the Stomach, I generally preſcribe the following Electuary:

Take of the Conſerve of red Roſes, two Ounces; of the the Conſerve of Rotemary, one Ounce; of prepared Amber and Nutmegs, each three Drams; and of the Syrup of Citron or Orange-peel, a ſufficient Quantity.

Crato, in *Lib.* 37. *Conſil.* extols Amber with a Decoction of Raiſins, and very juſtly, ſince that Medicine is poſſeſſed of a corroborative, and, at the ſame time, of a laxative Virtue. But the genuine Eſſence of Amber is far preferable to Amber itſelf. The Stomach is, alſo, excellently corroborated by old and generous *Falernian* Wine, which the Antients, and eſpecially *Pliny*, greatly extolled. *Hippocrates*, in *Lib. de Victu Acutorum*, greatly recommends the Uſe of ſweet Wine for old Perſons. Water of Paul's Betony, and of Hyſſop diſtilled with Wine, and edulcorated, adding a little Saffron, is very proper for the ſame Purpoſe. In order to ſtrengthen the Glands of the Fauces and Bronchia, from which the Humour continually falls down to the Larynx, and Aſpera Arteria, I have always, with great Succeſs, ſprinkled upon the Head a Powder prepared of Amber, Benjamin, Maſtich, Flowers of Roman Chamomile, and Clove-gilly-flowers. The Mouth is, alſo, to be frequently gargariſed either with *French* Brandy, or with a Decoction of Sage, Hyſſop, and Red-roſe-flowers, in Wine.

In preventing and curing Coughs of all Kinds, a proper Regimen is of the laſt Importance. The Air, then, ought to be neither too cold, nor too hot; but in ſuch a State as to preſerve the Body in a perpetual breathing Sweat. The Night Air is particularly hurtful, and bad Effects are produced by cold, cloudy, and rainy Weather; as, alſo, by exceſſive Heat; but, moſt of all, by Northerly Winds. Thoſe who are frequently ſubject to Coughs and Catarrhs, ought to abſtain from ſuch Aliments as are high-ſalted, indurated in the Smoak, too ſtrongly ſeaſon'd with Aromatics, as, alſo, ſuch as are acid and auſtere; becauſe theſe render the Blood, and its Serum, acrimonious and impure. They are, alſo, to have a due Regard to what they drink; for no Malt Liquor is proper, and much leſs acid Wine. For Drink, ſuch Perſons ought rather to uſe Barley-water, or Ptiſan, or a Decoction prepared of the *China* Root, Raiſins, and the Roots of Vipers-graſs, or Hydromel, which *Gabelchoverus* orders in the following Manner:

Take of deſpumated Honey, four Ounces; of Spring Water, three Quarts; of Liquorice, five Drams; ſix Figs; of the Seeds of Fennel, and Roots of Burnet, each two Drams; of the Flowers of Mallows, one Handful; of the Flowers of Sage, and Violets, each one Pugil; and of Cinnamon, two Scruples: Mix, and boil to the Conſumption of half a Quart.

Scorbutic Patients, afflicted with a Cough, may, for Drink, uſe pure Spring-water, not too cold, either alone, or corrected with ſweet Almonds, or fine Wheaten Bread. The common People, with great Succeſs, in violent epidemical Coughs, pour boiling Water upon the Bran of Wheat, and drink the Infuſion when cold.

The Prevention of Coughs, in a great meaſure, depends upon a proper Uſe of the Non-naturals. Thoſe Perſons who, when recovering from a Cough, drink Wine, expoſe themſelves to the Cold, or indulge themſelves in exorbitant Paſſions, are forthwith ſeized with a more violent Cough, than that which they before laboured under. Old Perſons ought to guard againſt Cold of the Feet, and eſpecially of the Back; and becauſe in the Winter rheumatic Diſorders are eaſily contracted, the Head, the Neck, and the Regions of the Præcordia and Loins, as, alſo, the Feet, in old Perſons, who are ſubject to a Cough, are to be carefully fortified againſt the Cold with warm Linen and Cotton, in order to preſerve a moderate and equal Perſpiration; for when any one of theſe nervous Parts is affected and penetrated by the Cold, eſpecially by Northerly Winds, all the reſt, in conſequence of their mutual Conſent, are preternaturally affected. It is, alſo, neceſſary to keep the Body ſufficiently ſoluble, and the Perſpiration free; for which Purpoſe moderate, but frequent Exerciſe is healthy during fine Weather. Thoſe who are plethoric, ought at ſtated Times, and eſpecially about the Equinoxes, to uſe Veneſection, or Scarification. When the Cough is epidemical, we ought to guard againſt its Tyranny by a proper Regimen of light Aliments, and preſerving the Excretions free and uninterupted.

In all Coughs we are to deal cautiouſly with Expectorants, ſweet Subſtances, and incraſſating Decoctions; leſt, as is cuſtomary among the common People, by exhibiting theſe alone, and in too large Quantities, we ſhould ſtill farther relax the Lungs, and excite a greater Afflux of Humours to them. And in ſtomachic and hypochondriac Coughs, we ought totally to abſtain from ſuch Medicines, becauſe they ſpoil the Digeſtion, and by that means pave the Way for a Cachexy and Dropſy.

A Chin-cough, ariſing from a Retropulſion of exanthematous Eruptions, indicates the recalling of the peccant Matter to the Surface of the Body. For this Purpoſe nothing is more effectual than Æthiops Mineral, or Flowers of Sulphur internally exhibited with diaphoretic Antimony, or the bezoardic Powder, eſpecially at Night: Nor, beſides Frictions, and Bathing of the Feet, is there a more effectual Remedy for drawing the Serum from the Breaſt, than Vellicatories; provided the Delicacy of the Age would but permit their Uſe. In the Chin-coughs of Children it is of conſiderable Service to anoint the Soles of the Feet with Hogs-lard.

In Coughs ariſing from a Repreſſion of œdamatous Tumours of the Feet, beſides Clyſters, inciding and diaphoretic Medicines, and ſuch as derive the Motion of the Humours from the Breaſt, gentle Diuretics are of ſingular Service; ſuch as the Tincture of Tartar, the tartariſed Tincture of Amber, and the viſceral Elixir mixed with the pectoral Elixir. But acrid ſaline Subſtances, and draſtic Diuretics, are not to be uſed, becauſe they

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they carry off the ſweet Serum; whereas the others carry off the acrid Serum through the urinary Paſſages.

I have frequently ſeen a long-continued Cough, ariſing from a ſcorbutic State of the Blood and Humours, cured by an internal Exhibition of Whey and Powders prepared of Crabs-eyes, the Pulvis Marchionis, prepared Amber, diaphoretic Antimony, Extract of Saffron, and the aqueous Extract of Caſcarilla, interpoſing a Laxative of Rhubarb, and ordering for common Drink cold Water, corrected with ſweet Almonds; or the *Selteran* Waters, mixed with *Moſelle* Wine; or a Decoction with Water of ſuch temperate Species as have a Tendency to depurate and ſweeten the Blood. I have, alſo, towards the Evening, exhibited the Pilulæ Aloephanginæ, mixed with the Pilulæ de Styrace, and ordered the Application of the above-deſcribed Plaiſter to the Breaſt.

If the Cough is excited by the acid and bilious Sordes in the Stomach, nothing is more efficacious than Abſorbents; ſuch as Crabs-eyes, and prepared Amber mixed with the Arcanum duplicatum, with the Addition of a few Drops of the Oil of Mace: To theſe we are, alſo, to join mild Laxatives prepared of Manna and Rhubarb. The ſtomachic Cough of Children is removed by a gentle Emetic, if nothing contraindicates that Practice.

In a Cough ariſing from an Obſtruction of the Viſcera of the Abdomen, which is called an hypochondriac Cough, thoſe Medicines are moſt proper, which recal the ſuppreſs'd Excretions of Blood. Happy Effects are, alſo, produced by Antiſpaſmodics, and bathing the Feet: But nothing is ſo effectual as tepid mineral Waters, mixed with Goats, or rather Aſſes, Milk, and drank with a proper Regimen.

A long-continued Cough, tending to a Conſumption, is moſt effectually cured by Aſſes Milk, provided the Body is duly prepared for drinking it: And this Method of Cure ſucceeds beſt, if long Journies, Changes of Air, and Corroboratives, are joined with it: Nor, if the Cough is very moiſt, has any thing a more happy Influence, than a proper Abſtinence from Aliments, eſpecially from Fleſh.

It is always expedient to mix Anodynes, ſuch as the Pilulæ de Cynogloſſo, and the Pilulæ de Styrace, with equal Quantities of Laxatives, ſuch as the Pilulæ Aloephanginæ, or the Pilulæ Cratonis de Succino, and to exhibit them in Conjunction at Bed-time; for when Anodynes are exhibited alone, I have obſerved, that the Cough is ſuppreſs'd, and an Aſthma produced by a too great Congeſtion of Humours, and a Weight about the Breaſt.

As an intenſe Cold, ſo alſo an exceſſive Heat, is prejudicial to Perſons afflicted with a Cough. Hence Infuſions, if exceſſively hot, exaſperate the Cough; for which Reaſon all the Liquors the Patient drinks ought to be only tepid.

Veneſections are beneficial to plethoric Perſons, whoſe Veins are tumid and prominent, like Cords; or who have their Excretions ſuppreſſed: They are, alſo, an excellent Preſervative even in old Perſons paſt the ſeventieth Year of their Age; nor can we be without Veneſection, when the convulſive Cough is ſo intolerably violent, that in Children, and young Perſons, a Rupture of ſome of the Veſſels is to be dreaded from it. *Sydenham* affirms, that he cured a Cough of the convulſive epidemic Kind, only by Veneſection, repeated Purging, and Veſicatories.

Celſus, in *Lib.* 4. *Cap.* 4. when treating of the Cure of a Cough, gives the following Directions: "The Patient is to drink "a Decoction of Hyſſop every other Day, and read with "a loud Voice, which is firſt hindered by the Cough, but "the Reading afterwards overcomes the Cough; then the "Patient muſt walk, uſe Exerciſe, and long-continued Frictions of "his Breaſt; then he is to eat fat Figs. In a moiſt Cough, ſtrong "Frictions, eſpecially of the Head, with hot Subſtances, are "beneficial: A poach'd Egg may, alſo, be exhibited, with the "Addition of a little Sulphur; and for Drink he is to uſe tepid "Water." And I muſt own, I am of Opinion, that it is beſt to follow the Advice of *Galen* in curing a Cough, who tells us, that we are to preſcribe Things light, ſimple, and moſt familiar to Nature, rather than compound active Medicines, prepared in the Shop. Thus I remember, among the common People, to have ſeen an obſtinate chronical Cough, not only alleviated, but, alſo, totally removed, by a Decoction of dried Turneps; or of the Stalks of red Colewort; or of the Bran of Wheat, mixed with Sugar. If the Matter of the Fluxion is thin, copious, and acrid, which is known from the Redneſs of the Eyes, the Titillation and Senſe of Biting in the Throat, and the ſaltiſh Taſte in the Mouth, the Juice of *Spaniſh* Liquorice, deſpumated Honey, an inſpiſſated Maſs conſiſting of Jelly of Hartſhorn, and Decoction of Liquorice, and Oil of ſweet Almonds, mixed with Syrup of Poppies, and gradually ſwallowed, afford immediate Relief. No leſs common and excellent a Remedy, is the Yolk of a new-laid Egg, mixed with Sugar-candy and Saffron, drinking after it a Diſh or two of Bohea Tea; as, alſo, freſh Butter, with Sugar and Milk, with an Infuſion of Paul's Betony, and the Flowers of red Poppies.

When the Epiglottis, the firſt and primary Inſtrument of the Voice, is ſo relaxed, and deprived of its Tone, that the Voice becomes hoarſe, it is expedient frequently to gargarize the Mouth with a Gargariſm prepared of nervous Ingredients; ſuch as the Flowers of Roſemary, Lavender, and common Chamomile, the Tops of Thyme and Origanum, Sage and Myrrh, boiled in Wine: Externally I uſe, with great Succeſs, to apply to the Larynx a Bag conſiſting of the above-mentioned Ingredients, with an Addition of Amber and Styrax Calamita. *Hippocrates*, in *Lib. de Victu Acutorum*, would not have hoarſe Perſons purged; but rather choſe to cure the Coldneſs and Moiſture of their Conſtitutions, by drying their Heads, and the other Parts affected, by the Uſe of Topics. *Hoffman.*

In 1675, the Seaſon having continued unuſually warm, like Summer, till towards the End of *October*, and being ſuddenly ſucceeded by cold and moiſt Weather, a Cough became more frequent, than I remember to have known it at any other Time; for it ſcarce ſuffered any one to eſcape, of whatever Age or Conſtitution he were, and ſeized whole Families at once; nor was it remarkable only for the Numbers it attacked, (for every Winter abundance of Perſons are afflicted with a Cough) but, alſo, on account of the Danger that attended it. For as the Conſtitution both now, and during the preceeding Autumn, eminently tended to produce the epidemic Fever, and as there was now no other Epidemic exiſting, which by its Oppoſition might, in ſome meaſure, leſſen its Violence, the Cough made Way for, and readily changed into, the Fever. In the mean while, as the Cough aſſiſted the Conſtitution in producing the Fever, ſo the Fever on this Account attacked the Lungs and Pleura, juſt as it had affected the Head even the Week preceding this Cough; which ſudden Alteration of the Symptoms occaſioned ſome, for want of ſufficient Attention, to eſteem this Fever an eſſential Pleuriſy or Peripneumony, though it remained the ſame as it had been during this Conſtitution.

For it began now, as it always did, with a Pain in the Head, Back, and ſome of the Limbs; which were the Symptoms of every Fever of this Conſtitution, except only that the febrile Matter, when it was copiouſly depoſited in the Lungs and Pleura, through the Violence of the Cough, occaſion'd ſuch Symptoms as belong to thoſe Parts. But nevertheleſs, as far as I could obſerve, the Fever was preciſely the ſame with that which prevailed to the Day when theſe Coughs firſt appeared; and this, alſo, the Remedies, to which it readily yielded plainly, ſhewed. And tho' the pungent Pain of the Side, the Difficulty of breathing, the Colour of the Blood that was taken away, and the reſt of the Symptoms that are uſual in a Pleuriſy, ſeemed to intimate, that it was an eſſential Pleuriſy; yet this Diſeaſe required no other Method of Cure, than that which agreed with the Fever of this Conſtitution, and did no ways admit of that which was proper in the true Pleuriſy. Add to this, that when the Pleuriſy is the original Diſeaſe, it uſually ariſes betwixt Spring and Summer; whereas the Diſtemper we now treat of, began at a very different Time, and is only to be reckoned a Symptom of the Fever which was peculiar to the preſent Year, and the Effect of an accidental Cough.

Now, in order to proceed in a proper manner to the particular Method of Cure, which Experience ſhews to be requiſite both in this Cough, and in thoſe which happen in other Years, provided they proceed from the ſame Cauſes, it is to be obſerved, that the Effluvia, which uſed to be expelled the Maſs of Blood by inſenſible Perſpiration, are ſtruck in, and thrown upon the Lungs, from the Stoppage of the Pores by Cold; and, by irritating the Lungs, immediately raiſe a Cough. And the hot and excrementitious Exhalations being by this means detained in the Habit, a Fever is eaſily raiſed in the Maſs of Blood, when either the Vapours are ſo copious, that the Lungs are unable to expel them, or the Inflammation is increaſed by the adventitious Heat ariſing from the Uſe of over-heating Remedies, or too hot a Regimen, ſo as ſuddenly to cauſe a Fever in a Perſon who was already too much diſpoſed to this Diſeaſe. But of whatever Kind the Stationary Fever be which prevails the ſame Year, and at that particular Time, this new Fever ſoon aſſumes its Nature, and becomes of the ſame Kind, and is every-where ſubſervient thereto; tho' it may ſtill retain ſome Symptoms belonging to the Cough, whence it aroſe. In every Cough, therefore, proceeding from this Cauſe, 'tis ſufficiently apparent, that Regard muſt not only be had to the Cough, but, alſo, to the Fever that ſo readily accompanies it.

Relying on this Foundation, I endeavoured to relieve ſuch as required my Aſſiſtance by the following Method: If the Cough had not yet occaſioned a Fever, and other Symptoms, which, as we ſaid, uſually accompany it, I judged it ſufficient to forbid the Uſe of Fleſh-meats, and all Kinds of ſpirituous Liquors; and adviſed moderate Exerciſe, and the Benefit of the open Air, with a Draught of a cooling Pectoral Piſan, to be taken between whiles. Theſe few Things ſufficed to relieve the Cough, and prevent the Fever, and other Symproms, uſually attending it. For by the Abſtinence from Fleſh, and ſpirituous Liquors, along with the Uſe of cooling Medicines, the Blood was ſo cooled, as not eaſily to admit of a febrile Impreſſion; and by means of Exercile thoſe hot Effluvia of the Blood, which ſtrike in, and occaſion a Cough, as often as the Pores are ſtopt by ſudden Cold, are commodiouſly

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modiously exhaled in the natural and true Way, with Advantage to the Patient. *Sydenham.*

TUTENAG. Speltre, or Zink.

TUTIA. Tutty. See CADMIA.

TYLLI GRANA. The Seeds of the leſſer *Ricinus*. *Caſtellus*, from *Gregor. Hymman.*

TYLOMA, Τύλωμα. A *Callus.*

TYMPANIAS. Τυμπανίας. The ſame as TYMPANITIS.

TYMPANITES. A Tympany.

In no Part of the human Body are ſo great Diſorders produced by Flatulences, which are nothing but Vapours and Exhalations, poſſeſſed of an expanſive and elaſtic Quality, than in the Cavities of the Stomach and Inteſtines; where being, as it were, pent up in a Priſon, they violently diſtend theſe Canals which are poſſeſſed of Senſation and Motion, deſtroy their Tone, produce great Pain and Anxiety, and by theſe means greatly injure all the ſeveral Functions of the Body.

If the Stomach is preternaturally diſtended by Flatulences, very violent Symptoms are produced, ſuch as intolerable Uneaſineſs about the Præcordia, accompanied with a Difficulty of Breathing, an Oppreſſion of the Breaſt, Inquietude, a Coldneſs of the Extremities, and an uncommon Loſs of Strength. In this State the Patient's Countenance becomes contracted and livid, and ſometimes the Fauces are ſo contracted, as to render Deglutition difficult; and Palpitations of the Heart, Flushings, Dimneſs of Sight, Vertigos, and other Symptoms of the like Nature, are brought on. Flatulences of this Kind, are known by a Tumour about the Pit of the Stomach, towards the Right Side, which is often diſcovered by the Touch; as, alſo, by a frequent and violent Eructation, by which the Symptoms are conſiderably mitigated.

The Cauſes of the terrible Symptoms produced by a violent Inflation of the Stomach, are theſe: 'Tis certain from Anatomy, that the Stomach is an highly nervous Part, and that the Ramifications of the eighth and intercoſtal Pairs of Nerves, are copiouſly diſtributed thro' its nervous Coat; and as theſe Ramifications run off to all the nervous Parts of the Body, and ſuch as are ſubſervient to Senſation and Motion, 'tis not to be wondered at, if, in conſequence of this cloſe Communication, violent Diſorders ſhould, alſo, be produced in all the other ſenſible Parts of the Body. And theſe Symptoms are accompanied with an Expanſion of the Stomach, by which the expanſive and conſtrictory Motion of the Diaphragm, on which Reſpiration depends, is hindered. And ſince by theſe means the Cavity of the Thorax is leſſened, the Lungs cannot duly expand themſelves. Hence the free Paſſage of the Blood from one Ventricle of the Heart to the other is obſtructed.

The Inteſtines, which are furniſhed with the ſame Kind of Coats and Ramifications of Nerves and Blood-veſſels, with the Stomach, are, alſo, ſubject to ſimilar flatulent Diſtenſions; and, if the Whole of the large and ſmall Inteſtines are violently diſtended by Flatulences, there is not only a Tumor of the whole Abdomen, but, alſo, a conſiderable Pain, eſpecially about the Navel, where the ſmall Inteſtines are ſituated, accompanied with an obſtinate Coſtiveneſs, Inquietude, Anxiety, Refrigeration of the Extremities, and Loſs of Strength; in which Caſe the Diſorder is called a flatulent Colic. When this Flatulence is not tranſitory, but protracted for ſome Months or Years, an hard Tumor of the Abdomen is produced, which, when ſtruck, ſounds like a Drum, and is for that Reaſon called Tympanites; a Diſorder hardly curable by any Medicines, eſpecially when accompanied with an *Aſcites*, and an Extenuation of the ſuperior Parts.

The proximate Cauſe of theſe Flatulences is twofold; the one, which is material, conſiſts in the eaſy and copious Generation of theſe Flatulences, and is owing to Aliments, eſpecially of a tenacious mucid Kind, and ſuch as are fit for inducing Flatulences, ſuch as Pot-herbs, the ſeveral Species of Radiſh, Peaſe, Beans, dry'd Sea Fiſhes, Summer Fruits, all fermentable and ſweet Aliments, Preparations of Honey, Ale prepared of Whear, farinaceous and wheaten Aliments; Paps, eſpecially prepared of Millet; and the Fat of Mutton, eſpecially if cold Liquors are drank after them. But it is to be obſerved, that theſe Aliments, whether moiſt or dry, are injurious in proportion to the Quantity taken.

The other, which is the formal Cauſe of theſe Flatulences, conſiſts in a conſiderable Weakneſs of the periſtaltic Motion of the Inteſtines, which depends upon an obſtructed Influx of the nervous Fluid, and arterial Blood, into the Inteſtines; for as this periſtaltic Motion, when in its natural State, not only reſiſts the Vapours generated in the Inteſtines, in conſequence of their Moiſture, but, alſo, without any Trouble, propels and eliminates them, ſo, on the contrary, this Motion, when the Tone and Strength of the Viſcera are weakened, and their Membranes rendered flaccid, becomes incapable of any longer performing its proper Office. Beſides, the Aliments, before they are convey'd to the Inteſtines, remain for a conſiderable Time in the Stomach, and are reſolv'd into Vapours. Hence, in the adjacent *Duodenum* and *Jejunum*, on account of the Acrimony, there is a particular Spaſm produced, which conſtricts the Right Orifice of the Stomach or Pylorus, and by Conſent the Left; ſo that the Vapours cannot be diſcharg'd, but violently exerciſe their elaſtic Force on the nervous Coats of the Stomach; and when this Diſtention is removed by a greater Influx of the nervous Fluid, and the Tone of the Stomach is for a time reſtored, the Flatulences are with great Impetuoſity diſcharged upwards.

As it is ſo, we may eaſily conceive, that whatever depraves the periſtaltic Motion, alſo contributes to the Generation of Flatulences. Hence the Reaſon is obvious, why Men of lax, ſpongeous, and phlegmatic Habits of Body, Women, old Perſons and Infants, are highly ſubject to Flatulences. And becauſe, under an inordinate conſtrictory and dilatatory Motion of the Inteſtines, the Vapours continually generated in the Inteſtines, cannot be freely tranſpir'd, but produce a great deal of Miſchief, we may eaſily underſtand why, by expoſing the Abdomen and Limbs to the Cold, by walking upon cold Floors, immerſing the Hands in cold Water, or drinking cold Liquors when the Body is over-heated in the Summer-time, flatulent Colics, and Gripes of the lower Abdomen, are ſo frequently produced; for all theſe Things have a remarkable Tendency to weaken the Tone of the Inteſtines.

But other more powerful Cauſes, by deſtroying the Tone of the Inteſtines, concur to the Production of Flatulences; for 'tis certain from Experience, that dangerous Inflations of the Abdomen are principally incident to thoſe whoſe Strength is impaired, and their Blood and nervous Fluid impoveriſhed by a previous Diſeaſe; ſuch as a Dyſentery, an acute, a variolous, or a chronical intermittent Fever; exceſſive Hemorrhages, Wounds, the hæmorrhoidal Diſcharge, Abortion, difficult Labours, or an immoderate Evacuation of the Menſes or Lochia, eſpecially if the Patients, without paying a due Regard to their Strength, eat too copiouſly. Hence we may learn, what Judgment is to be form'd, when, as it often happens in acute and dangerous Diſorders, about the critical Times, uneaſy Diſtentions of the Præcordia, accompanied with Rumblings, and a Fluctuation of Flatulences in the lower Abdomen, are perceiv'd; for they are generally a Sign of Death, not only becauſe they indicate an extreme Loſs of Strength, but eſpecially becauſe they in a great meaſure obſtruct Reſpiration. Theſe Inflations of the Abdomen, proceeding from a total Deſtruction of Strength, are by the Liquors and Medicines taken by the Patient, whilſt alive, generally ſo increaſed, that the Abdomen is, by proper Means, to be compreſs'd, for fear it ſhould break.

'Tis, alſo, certain from Experience, that violent and long-continu'd Spaſms of the *Primæ Viæ* are ſucceeded by a want of Tone and a Flaccidity of the Inteſtines, a Weakneſs of their periſtaltic Motion, and violent Inflations. Hence a ſpaſmodic Colic is frequently ſucceeded by one of the flatulent Kind; which, when not rightly treated, and when anodyne Potions are exhibited in order to mitigate the Pain, frequently and eaſily degenerate into a Palſy. For the illuſtration of this, *Wepfer's* Experiments in *Tr. de Cicuta aquatica*, in order to demonſtrate the Effects of Poiſon, are of ſingular Service; for by exhibiting Arſenic to Dogs, he firſt obſerved violent Vomitings, and ſpaſmodic Contractions of the Stomach. Then the Stomach, becoming flaccid, was afterwards incredibly diſtended by Flatulences. This is, alſo, evinced by diſſecting thoſe who are taken off by any acrid Poiſon, which operates by producing violent Spaſms; for, upon making an Inciſion in their Abdomen, their whole Inteſtines, by means of the Flatulences, burſt forth in ſuch a manner, that there is hardly a Poſſibility of replacing them. From a due Conſideration of what has been ſaid, we may clearly underſtand, why acrid Purgatives, and Emetics, Dyſenteries, and ſpaſmodic and hæmorrhoidal Colics generally leave a remarkable Weakneſs of the *Primæ Viæ*, which greatly tends to produce Inflations of the Abdomen.

It frequently happens, that both Spaſms and Flatulences afflict the Inteſtines; and whilſt the Spaſms contract their Coats, the Flatulences contained in their Cavities, attempt a violent contrary Expanſion. This principally happens, when the flatulent Matter is poſſeſſed of a certain bilious Acrimony, as is obſervable in ſucking Children, who are violently rack'd by Gripes and Rumblings, which diſcover themſelves externally by their vehement Exploſions, whilſt the Fæces of the Patient are green by the Admixture of an acid corroding Subſtance, which, like Aqua Fortis, conſumes fine Linen Cloths. The ſame is, alſo, obſerved, when tenacious mucous Fæces mixed with Bile, and reſembling the Yolk of an Egg, are diſcharged: The thick and mucous Humours, which are in Infants raiſed in a moiſt and mucilaginous Cough, and which, by being ſwallowed, obſtruct the Stomach and Inteſtines, are, alſo, frequently the Cauſe of copious Flatulences, accompanied with Gripes.

Having already conſidered thoſe Flatulences which equally diſtend the whole Inteſtines, we now come to treat of thoſe particular Inflations and Spaſms, which, in the Courſe of our Practice, we have obſerved only to afflict certain Parts of the Inteſtines. It is, therefore, to be obſerved, that Diſorders of this Kind are

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principally incident to hypochondriac Patients, and hysteric Women; when, for Instance, the Stomach is inflated without any Expansion of the Intestines. This principally happens, when the Spasm possesses the *Duodenum*, or Beginning of the *Jejunum*. The *Ileum*, also, without any Inflation of the Stomach, and large Intestines, is, in Children afflicted with Worms and *Hernias*, frequently found greatly expanded, and painful towards the Navel. And in hypochondriac Patients, and those labouring under the Hæmorrhoids, when the *Intestinum Rectum*, and inferior Part of the *Colon*, in consequence of the Stagnation of the Blood, and its obstructed Discharge thro' the hæmorrhoidal Veins, are violently constricted, and rendered narrow by the Spasms, the superior Part of the *Colon*, and especially its Flexure in the Left Side, and about the lumbar Region, is greatly expanded. Hence arises a pressory Pain, which is commonly, tho' falsly, ascribed to some Disorder of the Spleen. It sometimes, also, happens, that the Flexure of the *Colon* in the Right Hypochondrium, about the Liver, and Region of the Stomach, is greatly elevated, and produces troublesome Symptoms; the Cause of which is, in my Opinion, lodg'd in the Beginning of the *Colon*, which is situated in the Confines of the *Os Ileum*, the Valves of the *Colon*, and the *Intestinum cæcum*, since this Part of the *Colon* is deprived of its due Tone, and systaltic Motion; in consequence of which the Excrements are forced upwards, a Circumstance which greatly contributes to the Generation of Flatulences; and not only a spasmodic Stricture, and subsequent transitory Inflation seize a certain Portion of the Intestines, and are the Causes of the most violent Symptoms, but, also, a certain Narrowness, Hardness, or Callsity, arising from various Causes, affect particular Parts of the Intestines, and, by perverting their whole peristaltic Motion, give Rise to the most violent Symptoms. But Causes of this Kind can be only discovered by dissecting the Patients after their Death. See *Waltheri Dissert. de Angustia Intestinorum.*

We now come to consider that Species of Flatulence, in which there is not a transitory, but a permanent and continual Inflation of the Abdomen, and which is called a Tympanites; which *Celsus*, in *Lib.* 3. *Cap.* 12. defines, "A Tumor and "vehement Distention of the Abdomen, accompanied with "frequent Rumblings, produced by the Motion of the Flatu-"lences." This Disorder discovers itself by the following Signs: For the most part, after a Pain and Tension about the Left lumbar Region, and an obstinate Costiveness, the Abdomen is violently distended. Flatulences and Eructations are now-and then violently discharged upwards: The Pulse is inequal, the Appetite languid, and the Thirst increased; and, about the *Præcordia* and Navel, a tensive, corroding, and punctory Pain, accompanied with a certain Heat, is perceived. The Patient can lie on neither of his Sides, nor does the Tumor ever subside, when he lies on his Back.

The Cause of this continual uneasy and dangerous Inflation of the Stomach and Intestines, is by *Willis*, *Baglivi*, and others of the Moderns, justly asserted to be a spasmodic Stricture of the intestinal Coat, by the long Continuance of which, the Pores and Passages of the Intestines, through which the Vapours transpire, are straitened and obstructed; so that the retained Vapours, by their elastic Force, in consequence of an Admixture of the Air, afterwards produce a violent Distention of the Intestines. And that the genuine Cause of this Disorder consists in such a Stricture, seems to be pretty plainly indicated by *Hippocrates*, in *Aphor.* 11. *Sect.* 4. where we are told, "That those who have Gripes "in the Abdomen, and violent Pains about the Navel and "Loins, which can neither be removed by Medicines, nor any "other Means, fall into a Tympanites, or dry Dropsy."

This Disorder is both by the Antients and Moderns, accounted a Species of Dropsy, because, especially as a Symptom, it is often complicated with an Ascites; whereas, nevertheless, it is absolutely a distinct Disease, and accompanied with no Extravasation of Water in the Abdomen. Thus *Dolæus*, in *Encyclopæd. Lib.* 3. *Cap.* 9. informs us, That in a Girl of nine Years of Age, who died of a Tympanites, he found not one Drop either of Serum or Water in the Abdomen. And in *M. N. C. Decur.* 1. *Annot. Obs.* 85. we have an Account of a Boy who died of a Tympanites; and, upon dissecting his Body, his Stomach was found preternaturally distended with Flatulences, and contained a small Quantity of a viscid Humour: But his whole Intestines were pellucid, and in many Places, when prick'd, collaps'd; without the least Appearance of a single Drop of Water. *Valesius* also, in *Comment. in Lib.* 4. *Hippocrat. de Victus Rat. in acut.* and *Colladus in Adversar. Lib.* 2. *cap.* 40. observes, That, upon the Aperture of a similar Carcase, a very inconsiderable Quantity of Water was discharged; but a gross Flatulence being evacuated, the whole Abdomen suddenly subsided. *Platerus*, also, in *Obs* 53. informs us, that in a Boy who died of a Tympanites, the Intestines were so distended, as in some Places to be as large as a Person's Thigh, and that, being broken by Compression, they discharged the Fæces with a considerable Impetuosity. But in other Parts they were so contorted and wreathed up, that neither the Flatulences, nor the Excrements, could find any Passage downwards. A large Number of oblong Worms were, also, found in his Intestines.

A Tympanites without a Dropsy, is most incident to Women, especially after Labour; when the Lochia are either too scantily discharged, or by Cold, or the Influence of Passion, totally suppressed. The same happens when after Labour, the Abdomen not being duly compressed and swathed, any Error in Regimen is committed; or, when in the Beginning of their Lying-in, the *Primæ Viæ* are not sufficiently purged from their Sordes: For, in these Cases, Women have generally for a long time, an hard and inflated Abdomen, accompanied with considerable Uneasiness, Difficulty of Breathing, Anxiety, and obstinate Costiveness. I have often observed the same Symptoms produced by a difficult Labour, if the Secundines have not been totally removed; or if, in extracting them, the Uterus has beeen wounded. Imprudent Treatment after Abortion, also, lays a frequent Foundation for a Tympanites; the Cause of which is, in my Opinion, a perverse and disturbed Motion of the Blood, through the Vessels of the Uterus and Intestines: For if, in consequence of any Disorder of the Uterus, the natural Motion of the Blood, or its critical Excretion, are not duly carried on, by reason of the subsequent Stagnation, the free Circulation of the Blood will be, by Consent of the Parts, hindered thro' the abdominal Viscera, especially through the Intestines, where a Portion of the Blood or Serum remaining, distorts and constricts their tender and sensible Fibres, and renders them harder and more tense; so that the Perspiration of the Intestines cannot afterwards be freely and duly carried on. When this happens, the Flatulences are generally rather the Effect than the Cause of the Tympanitis.

These Inflations of the Abdomen are frequently observed in Infants and Children, especially if they are afflicted with Worms; as, also, after the Measles and Small Pox: And unless Misfortunes of this Kind are seasonably encountered with proper Remedies, the superior Parts become extenuated, and an hectic Heat supervening, the Patients die. By the Voracity, also, of Infants and Children, when the Stomach and its Tone are weak, Tumours of this Kind are often produced, and various Causes may concur to their Production; for as the Measles, Small Pox, or a continual Fever, in consequence of the Loss of Strength, and the Exhaustion of the spirituous Fluid, are succeeded by a considerable Weakness of the peristaltic Motion; and since, by reason of the Dyscrasy of the Blood and Humours contracted by the Disease, the Coats of the Intestines and Peritonæum, are spasmodically constricted by an acrid Serum, which hinders the Discharge of the Flatulences, it easily happens that a Tympanites is produced. Sometimes, also, there is an Infarction of the meseraic Glands, and lacteal Vessels, which not transmitting the chylous Juice, accumulates Sordes in the *Primæ Viæ*; and these Sordes are resolved into Flatulences, and partly carried off by Stool.

But not only hysteric Women and Infants, and Children labouring under Worms, or spent by previous Disorders, are subject to a Tympanites; but, also, those who are inclined to that Species of Dropsy called an Ascites: The principal Cause of which seems to be, that in such Patients, where the abdominal Viscera, especially the Liver, do not duly perform their proper Offices, the Bile becomes peccant both in Quantity and Quality, and is therefore deprived of its Qualities necessary for Digestion; for the Bile is a genuine and natural preservative Medicine: For by its alcaline, sulphureous, and saponaceous Principle, it not only promotes the intimate Solution and Digestion of the Aliments; but, also, by its moderately sulphureous and balsamic Bitterness, it gently stimulates and corroborates the Coats of the Intestines; by which means it preserves the peristaltic Motion entire; for when this Motion is perverted or disturbed, the whole Oeconomy of the vital Motions, together with the salutary Excretions, is, also, disturbed and perverted, as we generally observe in hypochondriac Patients.

For the Illustration and Confirmation of this Doctrine, let us consider a very singular Case, related in the Philosophical Transactions of the Royal Society of *London* in the Year 1730. N° 414. A Soldier received a Wound; of which, after the Appearance of various Symptoms, he died on the seventh Day: Upon laying open his Body, no internal Part was found hurt, except his Gall-bladder; which being gently perforated, in the Bottom, was callaps'd and flaccid, in consequence of a total Effusion of the Bile: Though no Signs of the slightest Inflammation appeared in any of his Viscera, yet his Intestines were highly inflated, distended, and tinged of a yellow Colour by the discharged Bile, which was effus'd all over the Abdomen. The external Wound was dry, and free from Tumor; nor, during the Patient's Life, was it accompanied with any Sign of Inflammation; so that it is surprising that a Wound apparently so slight, unaccompany'd with a Fever, or any other violent Symptoms, should so soon prove mortal.

Among the memorable Symptoms afflicting this Patient, we ought first of all to consider the Inflation of his Abdomen, which

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which immediately ſucceeded the Wound, and remained without any conſiderable Increaſe or Decreaſe, and even appeared after Death; ſo that the Patient appeared to have been affected with an Aſcites, or a Tympanites. Yet during this Diſtention of his Inteſtines, which was the Cauſe of the Inflation of his Abdomen, he could diſcharge no Eructations nor Flatulences either upwards or downwards; and though he eat and drank ſufficiently, yet he had not one Stool through the whole Courſe of the Diſorder, nor could his Body be rendered ſoluble by the ſtrongeſt Purgatives and Clyſters: His Urine was in ſmall Quantity, yellow, as it were tinged with Saffron, and without any Sediment. But nothing of a febrile Heat was obſervable in all his Body; for his Pulſe was not quick, but rather equal and ſtrong, till a little before his Death, when it became inequal: Nor was his Tongue black, hard, and rough, as it generally is in Fevers, eſpecially of the inflammatory Kind; but it was dry, for want of a due Quantity of Saliva. And though, during his Diſorder, he ſlept but about half an Hour at very diſtant Intervals, and could not be diſpoſed to ſleep by the Uſe of Opium, yet the ſmalleſt Signs of a Delirium did not appear; and thus he died without any more violent Symptoms, except an Hiccup and a gentle Effort to vomit, which, ſeized him the Day before he died.

From this Deſcription of the Caſe, and its concomitant Symptoms, we ſhall draw ſomething for the Eſtabliſhment of our Doctrine. Hence, then, we learn, how much a laudable Secretion of the Bile contributes to the Preſervation of Health, and how much its Defect or Peccancy tend to induce the moſt violent Diſorders, eſpecially a Tympanites; for in this Patient's Caſe, no other Cauſe than the Effuſion or total Defect of the Bile, produced the Inflation of the Inteſtines; by which, being diſtended beyond their proper Sphere of Elaſticity, they totally loſt their periſtaltic Motion; and when this Motion was deſtroy'd, not only the natural Motion of the Chyle through the lacteal Veſſels was hindered, but, alſo, the Secretions in the other Viſcera weaken'd, and at laſt deſtroy'd. Hence Death muſt of Neceſſity ſoon enſue.

As for the Prognoſtics of a Tympanites, it is juſtly reckoned a dangerous Diſorder, ſince the Patients are oftener obſerved to die than recover. Hence *Puerarius in Additam. ad Burnetti Theſaur. med. Tom.* 2. *Lib.* 8. ingenuouſly confeſſes, that he never knew a Patient afflicted with a Tympanites recover; becauſe this Diſorder indicates an obſtinate Conſtriction of the Pores, an hardly diſſoluble Incarceration of the Flatulences, and a violent Diſtention of the Parts, accompanied with a Privation of their Tone. When a Tympanites is accompanied with, or ſupervenes a Dropſy, it hardly admits of a Cure, becauſe the violent Diſtention of the abdominal Muſcles and Inteſtines, by compreſſing the Veins, renders the Circulation of the Blood very languid and weak, produces a coſtive State, and ſuppreſſes Perſpiration. A ſimple Tympanites, when inveterate, and not quickly cured, in Women and Infants, paſſes into an obſtinate chronical Diſorder, which proves mortal.

On the contrary, that Diſtention of the Abdomen, which is called a flatulent Colic, is not naturally very dangerous, and is eaſily cured; when, by proper internal and external Remedies, the loſt Tone of the Inteſtines is reſtored. But if Spaſms concur to produce the Flatulences, as it generally happens in Women whoſe Menſes are not duly diſcharged, or in thoſe who labour under a Stone in the Ureters, or biliary Ducts; or, if ſpaſmodic Symptoms ſupervene Efforts to the hæmorrhoidal Diſcharge, then the Cure is ſomewhat more difficult, becauſe the Force and Operation of the Medicines ought partly to allay the Spaſms, and partly to reſtore the Tone of the Inteſtines; which Intentions, however, ſeem inconſiſtent with each other.

In curing Flatulences of the Stomach and Inteſtines, the Phyſician's principal Intention is, to promote a Diſcharge of the Vapours by the Anus, and to attenuate, and gently carry off by Stool the tough and viſcid Matter which contributes to the Generation of the Flatulences. For this Purpoſe, we are, firſt of all, to uſe derivative, diſcutient, and evacuating Clyſters; ſuch as thoſe prepared of Hyſſop, Clary, Flowers of common and Roman Chamomile, Tops of Yarrow, Juniper-berries, and the larger carminative Seeds, with Veal-broth, adding a ſufficient Quantity of Sal-gemmæ, Sal-ammoniac, or *Epſom* Salt, and the Oil of Chamomile. But it is to be obſerved, that one or two Clyſters are not ſufficient for removing the Diſorder; but they are to be frequently repeated.

With theſe we are to interpoſe Laxatives, poſſeſſed of a carminative, and at the ſame time of a ſomewhat anodyne Quality; ſuch as the balſamic Pills, prepared in my Method, or that of *Becher* and *Stahl*. Or if the Patient is ſtrong, and the Inflation a real Tympanites, I generally exhibit two Parts of the *Extractum Panchymagogum Crollii*, with one Part of the *Pilulæ Wedegenſii*, or of the *Pilulæ Starckii*, or *Pilulæ de Styrace*, in ſome not very ſpirituous carminative Water.

After theſe, we are to uſe Medicines poſſeſſed of a moderately balſamic Principle, and a volatile, oleous, and aromatic Salt, commonly called Carminatives: But the Operation of theſe Medicines is not to be ſo explained, as if, by their ſubtle, volatile Salt, they attenuated the Matter of the Flatulences, and rendered it thinner; but rather, becauſe, by invigorating the Tone and Syſtole of the inteſtinal Coats, they hinder the Stagnation of the Flatulences, move them from their Seat, and render them more capable of being eaſily eliminated, or prevent the Generation of new Flatulences: For as the deſtroy'd periſtaltic Motion of the Stomach and Inteſtines is the principal Cauſe of Flatulences, ſo all Medicines, which have a remarkable Virtue in ſtrengthening theſe Parts, are moſt proper for the Removal of this Diſorder. The beſt and moſt approved of this Kind, are Powders prepared of the Roots of Wake-Robin, Zedoary, and white Burnet; the digeſtive Salt of *Sylvius*, or vitriolated Tartar; Cumin-ſeeds; the Tops of the leſſer Centaury, and dried Orange-peel, each one Dram; and ſix Drops of the genuine Oil of Chamomile, or of the Oil of Cedar, or of the Oil of Orange-peel; to which, if there is a Suſpicion of an Acid lodged in the *Primæ Viæ*, we may commodiouſly add Crabs-eyes.

To this Claſs of Medicines we may refer the following in a liquid Form.

Take of the Eſſence of Orange-peel, and of the carminative Eſſence of Zedoary of *Wedelius*, each half an Ounce; of the Spiritus Nitri dulcis, or of my anodyne Liquor, and of the Spiritus de Tribus, each two Drams: Mix, and exhibit forty Drops for a Doſe:

Take of the carminative Water of *Dornerellius*, of the Waters of common Chamomile and Zedoary prepared with Wine, each one Ounce; of the Spiritus Nitri dulcis, of the pure Oil of Caraway, eight Drops, mixed with two Drams of Sugar.

Nor are we to neglect external Remedies, ſuch as Liniments apply'd by way of Ointment to the whole epigaſtric Region. The principal Ingredients of theſe Liniments ought to be, boil'd Oils of Chamomile and Rue, Oil of Nutmeg, and Peruvian Balſam; with which we may mix the Oils of Juniper, Caraway, Aniſe, or Cumin: But, inſtead of all others, we may uſe the Liquid Balſam of Life, which, when mixed with three Parts of *Hungary* Water, and applied by way of Ointment to the Abdomen, or laid on with a warm Linen Cloth, is found of great Efficacy.

If a flatulent Diſtention of the Abdomen proceeds partly from a long-continued ſpaſmodic Stricture of the inteſtinal Coats, and partly from their preternatural Tenſion and Hardneſs, and if theſe are ſupported by the Stagnation and bilious Acrimony of the Humours, we are to deal very cautiouſly with hot, aromatic, volatile, and ſulphureous Carminatives, ſuch as the diſtil'd ethereal Oils of Juniper and Caraway; ſince theſe, by increaſing the Elaſticity of the Flatulences, and the Turgeſcence of the Humours, render the Inflation more obſtinate, and the Symptoms more dangerous; for they excite a preternatural Heat, accompanied with an inſatiable Thirſt, an Anxiety, and great Difficulty of Breathing. Hence *Fienus*, in *Lib. de Flatibus*, *Cap.* 12. mentions a Girl miſerably afflicted with a Tympanites, who, by the Uſe of an hot Electuary preſcribed by the Phyſician for the Diſcuſſion of the Flatulences, fell into a new, and at the ſame time ſo large an Inflation, that the whole Breaſt was ſurpriſingly diſtended, and the miſerable Patient ſoon after died. To this Purpoſe, alſo, *Helmot.* in *Lib. de Flatibus*, tells us, "That if Flatulences are "Vapours and Exhalations, Pain and Flatulences muſt be more "excited, and a Diſtention of the Parts produced, by the Ex- "hibition of hot Subſtances; becauſe, by this means, the Vapours "muſt be increaſed, and the Pains and Diſtentions multiplied."

All Purgatives, even Preparations of Sena and Aloes not excepted, are carefully to be avoided, becauſe they dry the Inteſtines, and render their Fibres tenſe, conſtricted, and hard. But they are ſtill more injurious and dangerous, if, by repeated Doſes of them, any one attempts the Evacuation of the Flatulences. We rather recommend Preparations of Manna, with Cream of Tartar diſſolv'd in Whey, or the *Sedlitz* Waters; not omitting, at the ſame time, emollient, and gently diſcutient Clyſters.

When Spaſms copiouſly generate Flatulences, which frequently happens in a plethoric hæmorrhoidal State, to young Perſons and Adults, Preparations of Nitre, join'd with deterſive and refrigerating Salts, are moſt ſafe. Good Effects are, alſo, produced by the mineral Liquor; Citron-juice, with Salt of Wormwood; Oil of ſweet Almonds; Emulſions of the Four cold Seeds; the *Pilulæ Sylvii*, and the *Pilulæ Starckii*: Veneſection is, alſo, ſometimes beneficial. Hence *Carolus de la Font*, Profeſſor in the Academy of *Avignon*, in *Diſſert. de Hydrope Tympanite*, gives us an Inſtance of a Perſon by him cured of a Tympanites, by Tincture of Roſes, impregnated with a few Drops of the Spirit of Vitriol, and a Julap, prepared of the Waters of Purſlane Succory,

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Succory, and Water-Lilies, together with the Syrups of Water-Lilies and Poppies, Sal Prunellæ, and Spirit of Sulphur; interposing now-and-then a temperate Emulsion, or a Decoction of Barley, with Syrup of Lemons, and Sal Prunellæ; and an Opiate composed of mineral Crystal, Crabs-eyes, Vitriol of Mars, and Conserve of Roses.

When these violent and obstinate abdominal Distentions happen after difficult Labours, Lying-in, Abortion, or an irregular Discharge of the Menses, the Pills made in Imitation of those of *Beccher*, of bitter Extracts and temperate resinous Gums, with a small Portion of Aloes, exhibited in a proper Order, and in due Doses, are of singular Efficacy. The same happy Effects are, also, produced by temperate balsamic Elixirs, prepared of the same ingredients; for these, by their mild, sulphureous, and balsamic Virtue, restore the lost Tone and Strength of the Stomach and Intestines, and produce happy Effects, especially when the Bile is defective, or too strong, provided they are not exhibited in too large Doses: But if the Patient is too long habituated to them, they, in Process of Time, by drying the intestinal Coats, pr duce preternatural Straitness in particular Parts, and often bring on fatal Symptoms.

Clysters are of great Efficacy, not only to prevent Flatulences, but, also, remove them, both in their Beginning and State. But if the Spasms exert their Tyranny in the small Intestines, Clysters are not sufficient; but we are to prescribe Preparations of Manna; Cassia; *Epsom* Salt; *Sedlitz* Salt; and Goats Whey, prepared with Cream of Tartar, or vitriolated Tartar. The proper Use of hot and cold medicinal Waters is, also, of great Use in hypochondriac Patients afflicted with Flatulences.

Among the external Remedies for violent Inflations of the Abdomen, the Antients most esteemed dry Fomentations; and, especially Sand dried by the Fire, or the Heat of the Sun. Hence they recommend this Remedy in various Parts of their Works. See *Celsus*, *Lib.* 3. *Cap.* 21. And *Pliny*, in *Histor. natural. Lib.* 21. *Cap.* 6. informs us, "That Sea-sand, especially when small. "and rendered hot by the Sun, is of singular Service in drying "the Bodies of dropsical Patients." *Cœlius Aurelianus*, in *Lib.* 3. *Tard. Pass. Cap.* 8. is, also, of Opinion, That warm Fomentations of Sand ought to be used in dropsical Cases. But, as other Things successfully used by the Antients, are by us neglected, so, also, this Practice is discarded, though it seems to have a pretty effectual Tendency to answer its Intention: For the warm Sand, not only by the Compression occasioned by its Bulk, checks and confines the Inflation, but, also, by its dry Heat attenuates the peccant and stagnant Humours, so as to restore a free Circulation of the Juices: By this means, also, the Pores of the Skin are opened, and Perspiration assisted. It is a common Practice at present to apply dry and hot Oats, included in a Bag, to the Regions of the Stomach and Navel; because Oats are possessed of a dissolving and discutient Virtue. Besides these Measures, I have, also, known the Soap-plaister well impregnated with Camphire, and soften'd with Oil of Henbane, afford considerable Relief when applied to the Abdomen. The Galbanum-plaister is, also, little inferior to it in Efficacy. *Frederic Hoffman.*

TYMPANUM. The Drum of the Ear. It, also, imports a Part of a chirurgical Machine, in *Oribasius*, *de Machinamentis*, *Cap.* 4.

TYPHA.

The Characters are;

It has the Appearance of the Arundo; the Flower is male, consisting only of naked and very dusty Stamina, which are closely compacted into a slender Spike. The Ovaries, which are collected into a very close Spike, are closely lodged under the former Spike, and are of a thin Contexture, and furnished with a Multitude of Filaments: Both Spikes are extended in one continued Length in the Figure of a Club.

Boerhaave mentions three Sorts of *Typha*; which are,

1. Typha; palustris; major. *C. B. P.* 20. *Theat.* 337. *J. B.* 2. 539. *Tourn. Inst.* 540. *Boerh. Ind. a.* 2. 167. *Typha.* Offic. Ger. 42. Emac. 46. Raii Hist. 2. 1312 Synop. 3. 436. *Typha palustris maxima.* Park. Theat. 1204. GATS-TAIL, or REED-MACE.

This Plant is found in Marshes, and on the Brinks of Rivulets. The only Part of it used is its Flower, which, when mixed with well-washed Hogs-lard, cures Burns. *Dale.*

2. Typha; palustris; clavâ gracili. *C. B. P.* 20 *Theat.* 340.

3. Typha; palustris; minor. *C. B. P.* 20. *Theat.* 341. *Boerh. Ind. alt. Plant.*

TYPHA AROMATICA. See ACORUS VERUS.

TYPHLINIDIA. τυφλινίδια. A Sort of pickled Fish mentioned by *Oribasius*, *Collect Medicinal. L.* 2. *C.* 58.

TYPHODES, τυφώδης πυρετός. The same as TYPHOS.

TYPHOMANIA, τυφωμανία, from τύφος, and μανία, in *Galen's Exegesis*, is expounded by μικτὸν ἐκ φρενίτιδος καὶ λήθαργε πάθημα, "a Disorder complicated of a Phrensy and a Lethargy." But in some Copies of *Galen* it is written τυφλομανία, as well as in 4 *Epid.* where they read ἀληθῶς τυφλομανία, to which Place *Galen* seems to have an Eye in his *Exegesis*, though it be there read in the Nominative Case. We, however, read τυφωμανία, in both Places, and understand it of an Affection compounded of a Phrensy and a Lethargy; in which the Patients are delirious, and labour under a sleepy Coma, from a Mixture of Bile and Phlegm, according to *Galen*, *Com* 1. *in Prorrhet.* where he says, ἐγὼ μὲν ὃν ὅταν ἄχρι τέλεος ἥτε παραφροσύνη καὶ τὸ κῶμα διαμείνῃ μικτὸν, &c. "When a Delirium and Coma continue to the "End, I call it a Disorder complicated of a Phrensy and "a Lethargy, which by some is called τυφωμανία, as in *Hippocrates, de Morbis.*" From hence arises a Suspicion, that the Books *de Morbis*, as now extant, are not entire; and that *Galen*, in his *Exegesis*, had a Regard to some Passage therein which is now wanting; for we find no mention of *Typhomania* in these Books, nor in the Book *de Morbis internis.* This Affection, thus complicated of a Phrensy and a Lethargy, may be called a lethargic Madness or Delirium, or a mad and delirious Lethargy, according to the Author of the *Definitiones medicæ*; though for τυφωμανία we there read corruptly τυφωνία (*Typhonia*), which corrupt Reading is follow'd by the Translator. *Galen*, *Lib. de Comate*, *Cap* 4. and *Com.* 1. *in Prorrhet.* tells us, that this Disorder is called *Typhomania*; but in his *Isag. Puls.* and *Lib.* 4. *de Caus. Puls.* he tells us, that it is a Disease which wants a Name, and therefore he defines it by some proper Characters; which is a Custom he himself, however, *Lib. de Comate*, *Cap.* 4. ascribes to ignorant Physicians. This Variety of Opinions about the Name, and the Disorder signify'd by it, might, perhaps, give Occasion to *Hippocrates*, 4 *Epid.* to call it, as it were, to prevent Mistakes, ἀληθὴς τυφωμανία, "a *true* Typhomania."

TYPHONIA. The same as TYPHOMANIA.

TYPHOS, τύφος. Of this Disorder, according to *Hippocrates*, there are five Species: The first is a legitimate continual Fever, which impairs the Strength, is accompanied with Pains of the Belly, and a preternatural Heat of the Eyes; hinders the Patient from looking steadily on any Object whatever; and renders him unable, in consequence of the violent Pain, to answer any Question that is asked him; though he begins to speak, and fix his Eyes attentively on Objects, when he is at the Point of Death.

The second Species of Typhus begins with a Tertian or Quartan Fever, which are succeeded by a Pain of the Head. In this Disorder the Patient discharges a large Quantity of Saliva and Worms from his Mouth: His Eyes are painful, his Countenance pale, and his Feet, and sometimes his whole Body, serz'd with soft Swellings: His Breast and Back are now-and then painful, his Belly rumbles, his Eyes are fierce, he spits a great deal, and his Saliva adheres to his Throat, which renders his Voice tremulous and faint.

The third Species of *Typhus* is known by intense Pains in the Joints, and sometimes over all the Body: The Blood, contaminated by the Bile, becomes hot, and stagnates in the Limbs; whilst that Portion of the Bile which is retained in the Joints, becoming indurated, like Gravel-stone, the Patient grows lame.

The fourth Species of *Typhus* is known by a violent Tension, Elevation, and Heat of the Abdomen, succeeded by a Diarrhœa, which sometimes terminates in a Dropsy, and is sometimes accompanied with a Fever.

The fifth Species of *Typhus* is known by a Paleness, and kind of Transparence of the whole Body, as if it was a Bladder full of Water, though without any Inflation. On the contrary, the Body is extenuated, dry, and weak, especially about the Clavicles and Countenance: The Eyes are very hollow, and the Body sometimes black. The Patient rarely winks with his Eyes, and feels the Bed-clothes with his Hands, as if he wanted to catch Knaps of Wool, or Straws. He is more uneasy after eating, than when he was in a State of Health. He loves the Smell of an extinguished Lamp, and is often troubled with Pollutions, both when asleep and awake.

TYPOS, τύπος. The Form, or Type of a Disease; importing the particular Manner of its Remission, and Exacerbation.

TYRANNIS, τυραννὶς. The Name of an Antidote in *Galen. L.* 2. *de Antidot. C.* 10.

TYRBE, τυρβὴ, is a Perturbation, or Confusion. Thus, *Lib. de Fract.* πᾶσαν γὰρ ἂν τυρβὴν παρέχοι τῇσιν ἐπιδέσεσιν, "should cause a Disorder in the whole Disposition of the Ban-"dage." Here τυρβὴ is by *Erotian* expounded ταραχὴ, a Perturbation, or Confusion. The same is the Sense of the Word in *Lucian*, *Polybius*, and *Aristophanes in Vespis.*

TYRIA. The same as OPHIASIS in the *Arabic* Authors, See ALOPECIA.

TYRIASIS, τυρίασις. The ELEPHANTIASIS, or Leprosy.

TYRIUM EMPLASTRUM. The Name of a Plaister described by *Aetius*, *Tetrabib.* 4. *Serm.* 3. *C.* 12.

TYROS, τυρὸς. Cheese.

TYROSIS. A Disorder of the Stomach proceeding from Milk coagulated therein.

TYRRHENICUM EMPLASTRUM. The Name of a Plaister mentioned by *Aetius*, *Tetrabib.* 4. *Serm.* 3. *C.* 14.

TYRUS. A barbarous Word, importing a Serpent, or Viper.

V.

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V.

VACCA. The Cow. See Bos.

VACCARIA. A Name for the *Lychnis*; *ſegetum*; *rubra*; *foliis Perfoliatæ*.

VACCINIA. See VITIS IDÆA.

VACCINIA NIGRA. A Name for the *Vitis Idæa*; *foliis oblongis*; *crenatis*; *fructu nigricante*.

VAGINA. The Paſſage from the external *Pudenda* to the Mouth of the *Uterus*. See UTERUS. The Name is, alſo, applied to other Parts of the Body, as to the *Capſula Gliſſonii*, which is called *Vagina Portæ*.

DISORDERS INCIDENT TO THE VAGINA.

The Method of dividing preternatural Coheſions in the Genitals of Women.

Some Girls are born with the Orifices of the *Pudenda* ſo conglutinated, that they are unable to diſcharge their Urine, whence they continue, for the firſt Days after their Birth, perpetually crying, without any Evacuation of Urine. In this Caſe, the Child muſt inevitably periſh, if not ſpeedily relieved by Inciſion. Some have the *Urethra* open, for the free Diſcharge of the Urine; and others, but a ſmall Perforation, by which the Urine is made with the greateſt Difficulty, and only by Drops; and, in both theſe Caſes, the *Vagina* may be preternaturally cloſed, by the *Hymen*, or ſome other Membrane; by which means, as they begin to ripen, and arrive at the Age of Puberty, when the menſtrual Flux begins to flow, it has no Paſſage left for its Diſcharge, nor can they admit of Coition: And thus, from the menſtrual Blood being collected in the *Vagina*, are produced violent Pains, Tumors of the *Abdomen*, Faintings, *Deliria*, and other moſt malignant Symptoms. This Diſorder has been obſerved by many Phyſicians, who have denominated Girls, in this Condition, *Atretæ*, which denotes *imperforate*. It appears, that *Ariſtotle* was acquainted with this Diſorder, when he ſays, "That in ſome Girls the Mouth "of the Womb continued cloſed, or conglutinated, from their "Birth to the firſt Appearance of the menſtrual Diſcharge; "which endeavouring to force its Way, violent Pain is ex"cited, and the Part either burſts ſpontaneouſly, or muſt be "ſeparated by the Surgeon. Sometimes the Death of the Pa"tient has enſued, when the Paſſage has been opened violently, "or could not be divided at all." Other Girls have the Mouth of the *Vagina* cloſed with a Membrane, which, however, is furniſhed with one or more Perforations proper for diſcharging the menſtrual Flux, but will not admit of connubial Embraces; and therefore the Diſorder is ſeldom diſcovered, before they are married. Various Caſes of theſe Kinds are deſcribed by *Roonhuyſen*, *Lib.* 2. *de Clauſura Uteri*, *Obſ.* 1. *Benevenius de abdit. Morb. Cauſſ. Cap.* 28. *Cabrolius Obſ. Anatom.* 23. *Fabricius ab Aquapendente*, *in Oper. Chir. de Hymene imperforato. Hildanus*, *Cent.* 3. *Obſ.* 60. *Schenck*, *Lib.* 4. *de Part. Genital. Solingen*, *in Obſ.* 5. *Meckren*, *Obſ.* 55. *Mauriceau*, in his *Obſ. ſur la Maladies des Femmes groſſes*; *Ruyſch*, in his *Obſ. Chir.* 32. and by *Saviard*, in his *Obſ. Chirurg.* 4.

This Diſorder differs, in different Patients: In ſome there appears the Mark of a Perforation, or Paſſage, whereby the Urine may be eaſily diſcharged, and which, at the ſame time, leads to the *Vagina* and *Uterus*: In others, no ſuch Perforation can be obſerved, becauſe of the Thickneſs and Denſity of the obſtructing Membrane, or the firm Coalition of the *Vagina*, which renders the Cure either impracticable, or extremely difficult. Sometimes, in new-born Infants, a copious Collection of Urine, perhaps, in the *Vagina*, or in Adults, who have the urinary Paſſage open, the menſtrual Blood, ſo diſtend the *Labia Pudendi*, as to ſhew the natural Paſſage of the *Vagina*, and, alſo, of the *Urethra*, according to the Obſervations of many of the above-mentioned Authors. Sometimes theſe Coheſions are not only formed in thr Fœtus before the Birth, as *Ariſtotle* and *Celſus* have obſerved; but they, alſo, happen in Adults, after an Exulceration of the Orifice of the *Vagina*, eſpecially after a difficult Birth, when the Parts are ſo violently lacerated, inflamed, and exulcerated, that its Sides either entirely coaleſce, or only a ſmall Perforation remain, for the Diſcharge of the menſtrual Blood, but not ſufficient to admit of Copulation. In new-born Infants, therefore, it prevents the Diſcharge of Urine; but, in Adults, it obſtructs the, 1. Menſtrual Flux. 2. Coition. 3. Conception. And, 4. The Birth. Its Cure, therefore, is extremely neceſſary.

Theſe Diſorders are diſcovered, in new-born Children, when they retain their Urine for the firſt Days after their Birth, and by ſeeing and feeling the Part; but in Adults, when the *Vagina* is obſtructed by a Membrane, it appears from a Defect of the menſtrual Diſcharge, intenſe Pains about the Pubes, Loins, and Belly, a Paleneſs of the Face, and Swelling of the Abdomen; and, moſt certainly, by feeling and inſpecting the Parts: But in thoſe who have a ſmall Perforation in the *Hymen*, ſufficient to permit the menſtrual Diſcharge, when Copulation is found to be obſtructed, difficult, and imperfect. With regard to the Prognoſtic, if the obſtructing Membrane be thin, it is generally broken in the firſt Act of Coition; or, if this Remedy ſhould not be ſufficient, it may be eaſily removed, by the Knife. But if the Coheſion of the Parts is ſtrong, and lies deep, or if the Obſtruction be made by a thick fleſhy Subſtance, the Cure is difficult; not only becauſe the Bladder, or neighbouring Inteſtine, are in danger of being wounded, as *Roonhuyſen* acknowledges once to have happened to himſelf; but the Cure often does not ſucceed, becauſe of the great Difficulty of preſerving a ſufficient Wideneſs of the Paſſage.

In order to the Cure, it is, in the firſt Place, neceſſary, to conſider, carefully, the Nature and State of the Diſorder: If there appears any Mark of the *Urethra*, and the *Vagina*, ſo that they are only obſtructed by a Membrane, this Membrane muſt be opened in both theſe Paſſages, if both are cloſed, by a rectilinear Inciſion, from the ſuperior to the inferior Part; or, as *Celſus* adviſes, by a crucial Inciſion, according to the natural Aperture of the Part; but if a ſmall Opening be left in the upper or lower Part of the Orifices of theſe Paſſages, the Membrane may be divided with a Pair of Sciſſars, or with a Director, and falciform Knife, taking care not to injure the urinary Paſſage, much leſs the Bladder: Then, if it appear neceſſary, the whole Membrane may be extirpated; afterwards, a proper Tent, anointed with Baſilicon, or ſome digeſtive Ointment, muſt be introduced into the Wound for a few Days; and, to prevent its falling out, ſecured by a Bandage; then a Tent, ſpread with a drying Ointment, as that of Ceruſs, or Diapompholyx, muſt be applied, as before, and continued till no Danger appears of a new Coheſion of the Parts: But if the Membrane be thick, or if the Obſtruction be formed by a fleſhy Subſtance, ſo that no Appearance remains of the natural Paſſage of the *Vagina*, a careful Inquiry muſt be made, whether the Cavity may not be perceived by the Finger; if it can thus be diſcovered, with great Caution make a rectilinear Inciſion, ſufficiently large, in the proper Place, as before directed; then laying hold of it by the Extremity, with a Forceps, or Hook, let it be extirpated, that the Paſſage may be ſufficiently opened: Proceed, in the reſt of the Cure, as before directed, excepting that, towards the Concluſion, when the Wound begins to heal, a leaden Pipe, of a ſufficient Size, ſpread with a cicatrizing Medicine, muſt be introduced; and this Medicine muſt be continued, till a Cicatrix be induced.

Sometimes new-married Women, and even thoſe who have lived Years in the matrimonial State, have the Orifice of the *Vagina* ſo contracted, either by an Exulceration, or ſome other Cauſe, that they cannot admit of conjugal Embraces, although the menſtrual Blood may be freely diſcharged. In this Caſe, it may be adviſeable, as I have happily tried the Experiment, to enlarge the Aperture, by making Inciſions, of a ſufficient Depth, in its Sides, and lower Parts, and by Abſciſſion of the ſuperfluous Parts of the Lips; and then a large Tent, with dry Lint, twiſted, muſt be introduced: Afterwards, in the ſubſequent Dreſſings, which muſt be repeated twice every Day, excepting the Day of Operation, leſt the retained Matter, and *Sordes*, ſhould occaſion a troubleſome fetid Smell, apply to the Sides of the Wound a vulnerary Balſam, and then a proper Peſſary, made of prepared Sponge, or the ſwelling Roots, for the more convenient dilating of the Part, and let this Treatment be continued, till it begins to heal: And, laſtly, a leaden Pipe, ſpread with ſome deſiccative Medicine, muſt be introduced every Day, till the Part is healed, and no more Danger of Coheſion remains. When the Conſtriction of the Orifice of the *Vagina* has not been from the Birth, but produced by ſome external Cauſes, I have ſucceſsfully experienced the Method of Cure here laid down. *Saviard* relates a like Caſe, in his *Obſ. Chirurg.* 32.

Cabrolius relates a remarkable Caſe of a Patient about eighteen or twenty Years of Age, whoſe urinary Paſſage was entirely obſtructed by a thick Membrane; and her Urine, being, probably,

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bably, conveyed by the *Urachus*, was conſtantly diſcharged by the Navel, which hung down about the Length of four Inches, like the Comb or Beak of a Turkey-cock; and exciting almoſt an intolerable fetid Smell, as of putrid Urine. To remedy this moſt troubleſome Diſorder, *Cabrolius* firſt made an Inciſion into the Membrane which obſtructed the Urethra; and, in order to preſerve a free Paſſage for the Urine, he introduced a leaden Pipe as far as the Bladder. Next Day he made a Ligature with a ſtrong waxed Thread, as is commonly done in cutting Ruptures, upon the protruded Part at the Navel, by which the Urine had been hitherto evacuated, and extirpated it below the Ligature: He then applied to it the actual Cautery, and, after the Eſchar was removed, he deterged the Ulcer, and induced a Cicatrix with deſiccative Medicines, as in other Ulcers: Thus he completed the Cure in twelve Days. The ſame Method may be followed in like Caſes, only omitting the actual Cautery, which is not here very neceſſary, and greatly intimidates the Patient, and all who are preſent.

The Method of opening the Vagina, when the Obſtruction is deeply ſeated.

Beſides theſe Diſorders already explained, Women are ſometimes ſubject to have the Vagina preternaturally obſtructed, by a Membrane deeply ſeated; or by an entire Coheſion of its Sides; and thus the Diſcharge of the menſtrual Flux being prevented, moſt acute Pains of the Belly and Hips, Swellings of the Abdomen, with *Nauſea*, Extenuation, Watchings, and the other Symptoms above-recited, and ſometimes even Madneſs, are induced. Sometimes the Diſorder is born with the Patient; but frequently it ariſes from an external Cauſe, eſpecially a difficult Birth, when, after a violent Laceration and Inflammation, the Vagina becomes exulcerated. Inſtances of this Kind are given by *Roonhuyſen*. *Benevenius* relates a Caſe of this Nature that proceeded from a Venereal Cauſe: And *Becker*, one from the Small-pox. Frequently the obſtructing Membrane is ſituated near the Orifice of the Vagina; ſometimes about the Middle; at other times near the Uterus. Sometimes the whole Vagina, or great Part of it, is concreted, or, at leaſt, filled up with a thick fleſhy Subſtance; and if this Concretion reaches deep, difficult and dangerous is the Cure; becauſe the Bladder, and *Inteſtinum Rectum*, as we before obſerved, are very ſubject to be injured. Sometimes the Membrane does not entirely obſtruct the Vagina: And ſometimes the Coheſion of its Sides is not total, but a Perforation is left for the Diſcharge of the Menſes. Women, however, in this Condition, are capable of but an imperfect Coition; and hence new-married People, eſpecially if they are prone to Superſtition, frequently imagine themſelves bewitched; or the Huſband may think his Wife incapable of Conception; and therefore, meditate a Divorce, though ſometimes ſuch Women have become pregnant. *Becker* relates a particular Story of a wanton Girl, who had been born with an obſtructed Vagina: She being convinced by repeated Trials, that ſhe was incapable of being deflowered, enticed many vigorous young Fellows to lie with her; and when ſhe had diſappointed their Hopes of Enjoyment, and deprived them of their Money, ſhe ridiculed them as inſignificant Bedfellows for a Woman. But at length ſhe committed herſelf to the Care of a Surgeon, to have this Impediment removed; and he ſoon ſo completely remedied his Patient, that ſhe, both as a Fee, and a Teſtimony of the happy Cure, in a proper Time preſented him with Twins, he himſelf being the Father.

With regard to the Cure of this Diſorder, it may be eaſily effected in young Girls, when the preternatural Membrane is thin, and not very remote from the Orifice of the Vagina, and if, as was above obſerved, the Inciſion be cautiouſly performed. But, in Women this Operation cannot be ſo conveniently performed, unleſs the Membrane be diſtended by the menſtruous Blood, as it has been performed by the above-mentioned, and others. *Amyand*, in the *Philoſophical Tranſactions*, N° 422. gives the Caſe of a Woman whoſe Vagina, after Delivery, was ſo obſtructed with concreted Caruncles, that the Efflux of the menſtruous Blood was not only prevented, but, by its collecting in the Vagina, the Urethra was compreſſed, and a Suppreſſion of Urine enſued. All theſe Authors relate, that immediately after the Inciſion, not only a ſurpriſing and copious Diſcharge is made of inſpiſſated Blood, and a fetid Liquor, but the Patient is relieved from all the Miſeries ſhe before ſuffered, and even from imminent Death: And, laſtly, the Wound has been brought to a Cicatrix, almoſt without the Uſe of any other Remedies than proper Tents, Peſſaries of Wax, and leaden Pipes. But, if the Membrane be thicker, and deeply ſeated in the Vagina, whether it be furniſhed with a Perforation or not, the Operation muſt be performed in the ſame manner: But greater Caution is required, as the *Inteſtinum Rectum*, and Bladder, are more expoſed to Injuries; the reſt of the Cure may be continued, as before directed: But greater Care is, alſo, neceſſary, in preſerving a ſufficient Wideneſs in the Paſſage. Nor will it be improper to uſe here a *Speculum Uteri*, for the more accurate Inſpection of the Parts, and the more wary Performance of the Inciſion.

If Women in their Pregnancy, or in Labour, be afflicted in this manner, a timely Remedy muſt be applied; leſt the Difficulty of the Birth ſhould induce the moſt violent Diſorders. If a pregnant Woman be thus affected, the Membrane ſhould be extirpated long before the time of Travail; for then the Fœtus, lying behind the Membrane, may be eaſily wounded with the Knife. But if the Cure, by Ignorance or Negligence, be delayed to the time of Labour, the Operation muſt, even then, be performed, but with the utmoſt Caution, to prevent any Injury happening to the Child. A ſmall Wound muſt, therefore, be firſt made in the preternatural Membrane, with a Knife armed with a Button, ſee *Tab.* XXVI. *Fig.* 4. 5. or a Director may be uſed; or a proper Forceps; or the common chirurgical Knife, which muſt be applied with extreme Care. *Mauriceau* adviſes, that the Midwife ſhould forcibly divide this Membrane with her Fingers; but, as the Conſequences attending Laceration may be extremely dangerous, I think Inciſion preferable.

It remains to be obſerved, that if the Vagina be not obſtructed by a Membrane, but by a thick fleſhy Subſtance, deeply ſeated; or if the Sides of the Vagina are concreted, the Operation muſt be both difficult and dangerous; from which, therefore, we ought rather to refrain, as *Benivenius* formerly did. But when the Operation is performed, in Caſes leſs dangerous, unleſs the Part be long kept diſtended with Spongetents, proper Pipes, or Peſſaries, it will, ſoon after the Cure, eaſily contract again, ſo as not to admit conjugal Embraces. And upon this account I have not only been obliged to repeat the Operation, but *Roonhuyſen* has done the ſame, who adviſes Surgeons particularly to attend to theſe Circumſtances. But when there is an Adheſion of the Sides of the Vagina, deeply ſituated, as I once obſerved in a Butcher's Wife, in whom the Diſorder proceeded from a difficult Labour, the Inciſion is extremely dangerous; from which I therefore abſtained, in this Caſe, contrary to the earneſt Intreaties of both her and her Huſband, who were deſirous of having Children. But if the Vagina be obſtructed by a thick fleſhy Subſtance, though the Inciſion ſhould be made, yet the Fleſh becomes ſo luxuriant, or indurated and callous, that not only part of the Lips muſt be extirpated, where it can be done with Safety, for which Purpoſe the Affair muſt be duly conſidered, by Inſpection, Feeling, and a *Speculum Uteri*; but the fungous Fleſh muſt be conſumed by corroſive and deſiccative Medicines, and repreſſed by proper Tents, and leaden Pipes, till the Paſſage be ſufficiently enlarged, and the Sides perfectly healed; otherwiſe the Vagina will eaſily reunite, and render all this troubleſome Procedure ineffectual. In Caſes of this Kind, *Roonhuyſen* and *Becker* may be conſulted, who illuſtrate this Affair with various Obſervations and Examples. *Roonhuyſen*, alſo, delivers a Method of opening the internal Orifice of the Womb, when obſtructed: But as almoſt all Acceſs is denied to this Part, this Operation appears ſcarcely practicable, and extremely dangerous; nor does it ſeem poſſible to preſerve the Opening. *Heiſter Chirurg.*

The Method of removing Tubercles, Caruncles, and other Excreſcences of the Vagina.

Sometimes Excreſcences of different Kinds, Sizes, and Figures, grow not only on the external Parts of the Vagina, but, alſo, internally, both in the anterior and poſterior or ſuperior Parts. Some of theſe Excreſcences reſemble a Muſhroom; others, a Fig; others, a Pear; and ſome, the Clapper of a Bell: And ſometimes they increaſe to ſuch a ſurpriſing Degree, that thoſe of the laſt-mentioned Figure will reach to the Knees; which are not only great Obſtructions to Copulation, and the Birth, but occaſion intenſe Pain, and even threaten a Gangrene or Cancer, if not timely removed: When they are very large, they are, by ſome, called *Sarcomas of the Womb*. *Celſus* and *Tulpius* call them ſimply *Fungi*; but *Solingen* terms them *Fici*, adding, though improperly, the Epithet *cancerous*, becauſe they admit of an eaſy Cure. The nearer they are ſituated to the Orifice of the Vagina, the more eaſily are they removed; but the Taſk is very difficult when they lie deep; ſo that *Tulpius* calls it a very uncommon Operation. Some have taken Excreſcences of this kind for a Falling-down of the Womb, but without Foundation.

The ſame Method of Cure muſt be followed here, that is generally obſerved in removing Tubercles and *Sarcomas*, or fleſhy Excreſcences, by the Ligature; by the Knife, or both; or by corroſive Medicines. But particular Care muſt be taken, not to miſtake a *Prolapſus Uteri* for an Excreſcence of this kind.

But,

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But, because these Disorders of the Vagina are not only nearly related to a Polypus of the Nostrils; but are sometimes so deeply situated, near to the Uterus, and sometimes proceed from the Uterus itself, that they cannot be extirpated by the Methods above proposed, *Fabricius ab Aquapendente*, and *Dionis*, thought it necessary to use the Forceps recommended in extracting Polypuses of the Nose, (see *Tab.* XL. *Fig.* 9. 10. 11.) with which Instrument the Excrescence may be twisted off. But, before this Method be attempted, particular Circumspection must be used, to see whether the Patient is not exposed to greater Injuries by the Operation. *Voelters*, a *German* Surgeon, informs us, that he has removed many of these Excrescences, of various kinds, with a red-hot Knife; but I am so far from recommending his Example to others, that I rather think it ought to be abhorred, as cruel and dangerous. *Solingen* relates, that he happily extirpated a cancerous Excrescence in the Vagina of a Woman, who recovered in a short time. *Obs.* 29. But he gives no Account how he performed the Operation; nor any Reason why he called the Disorder *cancerous*. *Heist. Chir.*

The Method of treating a Prolapsus Uteri, or Falling-down of the Womb.

That a *Prolapsus Uteri* is an Impossibility in Nature, was not only alleged, but obstinately maintained, by some Physicians of the last Century: Among these were *Mechren*, *Roonhuysen*, *Van Horne*, *Barbette*, *Vander Beche*, *Kerkringius*, *Verduc*, and others. But that the *Uterus* is sometimes protruded from the *Abdomen*, through the external Orifice of the Vagina, is manifest from the Observations of the most experienced Physicians, both antient and modern: Of this Number are, *Aetius*, *Ægineta*, *Rosset*, *Fabricius ab Aquapendente*, *Berengarius*, *Paré*, *Hildanus*, *Solingen*, *Mauriceau*, and many others. The celebrated *Ruysch*, in his *Obs.* 1. 7. 9. and 10. has clearly explained this Affair, and illustrated it with elegant and distinct Figures; two of which we have represented in *Tab.* LV. *Fig.* 2. and 3. Next to him is *Saviard*, a Surgeon of *Paris*, who gives ten Cases observed by himself; then *Jo. Mau. Hoffman*, a Physician of *Altorf*; *Schacherus*, a celebrated Physician of *Leipsic*; *Slevogtius*, *Vaterus*, and *Buggravius*, who all certified the Truth of this Disorder, and described it from Cases of which they were Eye-witnesses. And I myself have seen Instances of this kind. When the Womb only bears down upon the Vagina, it is called a *Descensus Uteri*; but when it is protruded without the Vagina, it is denominated a *Prolapsus*, or *Procidentia Uteri*. Of the *Prolapsus Uteri* there are two Kinds; one happens without an Inversion of the Womb, when the internal Orifice of the Uterus appears at the Extremity of the prolapsed Part, as in *Fig.* 2. *Lit.* C; the other with an Inversion of the Womb, when the internal Orifice of the Uterus does not appear (see *Fig.* 3.), as has been testified by the above-quoted Authors.

An inverted and non-inverted Uterus may be distinguished, as we just now observed, by the Orifice of the Womb, which appears when the Uterus is not inverted, as in *Tab.* LV. *Fig.* 2. C; and by this Sign, also, it may be known from a Bearing-down, or from fungous Excrescences of the Vagina. But it is not unworthy of Observation, that *Widemannus* not only described, but beautifully and clearly delineated, a singular *Prolapsus* of the whole internal wrinkled Coat of the Vagina, with an Orifice so nearly resembling that of the Uterus, that none could have doubted it, before the Body was opened; when the Uterus was found in its proper Place, and only the wrinkled Coat of the Vagina prolapsed. And that Physicians may more prudently distinguish these Disorders, and not rashly mistake a *Prolapsus Vaginæ* for a *Procidentia Uteri*, I thought it not improper to represent the Figure given us by *Widemannus*, in *Ephem. Nat. Cur. Cent.* VIII. *Obs.* 98. though not so large as the Life. See *Tab.* LV. *Fig.* 4. The Appearance, therefore, of an Orifice in such a *Prolapsus* (see *Lit.* F) is not an infallible Sign of a *Prolapsus Uteri*, as has been generally represented; but the prolapsed Part must be carefully considered, till it can be certainly known, whether it be the *Vagina* or *Uterus*. *Widemannus*, indeed, produces no pathognomic Sign, by which the Vagina, in this Case, may be assuredly distinguished from the Uterus; but he says, that when he introduced his Probe into the Perforation F, which so nearly resembled the Orifice of the Uterus, that it penetrated much deeper than the Cavity of the Womb, almost the Length of half a Foot: But whether this Sign always appears, remains to be proved by future Experiments. This Observation of *Widemannus* ought to be frequently read, and carefully considered.

A Prolapsus of the Uterus, and one of the Vagina, are difficult to be certainly known, as well as to be distinguished from one another. We have a remarkable Instance of this kind in the Physicians and Surgeons of *Tholouse*, and many of those at *Paris*, who imagined a Girl about thirty, who, from her Childhood, had been troubled with a *Prolapsus Uteri*, to be an Hermaphrodite; and publickly declared, that in this Hermaphrodite the Male Sex was predominant. Upon this Declaration, the Parliament of *Tholouse* ordained the reputed Hermaphrodite to lay aside female Apparel, and assume a masculine Dress, under a severe Penalty, if she refused. But when *Saviard* had narrowly examined her at *Paris*, he found her to be really a Girl, and, by restoring the Uterus to its natural Situation, metamorphosed her into her proper Sex; and, by the King's Command, she was ordered to dress accordingly. The inconsiderate Judgment of the *Tholousians* more plainly appears from this diverting Relation, of *Saviard*, in *Obs.* 15. who assures us, that she had no Resemblance either of a *Penis* or Testicles, Appendages which, in my Opinion, are absolutely necessary to the Formation of a Man; besides her Breasts were large, and her Face was entirely female, without a Beard.

This Disorder proceeds from a Relaxation and Weakness of the Ligaments of the *Uterus* and *Vagina*; whence it is observed frequently to follow a difficult Birth, or other violent Efforts; though Virgins and Girls are sometimes affected with it. Another Species of Prolapsus is, when the prolapsed Uterus is inverted like a Bag, with its interior Side turned outwards, and then the Orifice of the Womb does not appear, but is concealed in the Vagina. See *Fig.* 3. B. Of this Kind of Prolapsus we have, among others, a remarkable Instance, described by *Genselius*. In this Case, the prolapsed Uterus resembles a Mole, or a bloody and unseemly fleshy Excrescence; and, therefore, it is not surprising, that some unskilful Surgeons and Midwives have mistaken the Disorder, and by rude Treatment, endeavouring to extract the Womb by Force, bring the Patient's Life into extreme Danger. This miserable Disorder seldom happens, except when the Uterus is extracted with the Secundines; or immediately after a difficult Delivery, when the internal Orifice of the Womb is so dilated, that the Body of the Uterus is easily transmitted through it; or, lastly, when the Patient is so strained by the Labour-pains, or by the Continuance of the Throes after Delivery, that, by a vehement Effort the Uterus slips through its internal Orifice, and is forced without the *Labia Pudenda*. But from whatever Cause the Disorder proceeds, unless it be quickly restored to its natural Situation, as the above-mentioned Authors have observed, a sudden Death is generally the Consequence; and, therefore, any Delay must be extremely dangerous.

In this Species of a prolapsed Uterus, the Surgeon or Midwife must, in the first Place, take care that the Patient evacuate her Urine, lest the Repletion of the Bladder should obstruct the Reduction of the Uterus: Then the Patient being laid on her Back, with her Hips elevated, and Thighs distended, the Secundines, if they still adhere, must be cautiously removed by the Fingers, and the Uterus, with all possible Expedition, gently restored, by the Hand, to its former Situation. This Operation may be most conveniently performed, by tenderly returning into the Vagina the lower Part of the prolapsed Uterus, at *Fig.* 3. C, with the three first Fingers, and, then, with the whole Hand, into its natural Place in the Cavity of the Abdomen; then, contracting the Hand into the Form of a Fist, it must be retained there, till the Uterus is reduced to its usual Figure, and, then, gently contracted: These Particulars are more easily executed immediately after the Delivery, while the Orifice of the Womb, and the Vagina, are preternaturally dilated. The Uterus being thus replaced, and reduced to its former Figure, the Patient should be laid on her Back, in Bed, and earnestly exhorted to keep her Legs close, and to dispose herself for Rest; for by procuring Rest, and keeping this Posture, the Cure may often be completed, without any other Assistance. Nor will it be improper to close up the Orifice of the Vagina with Compresses, and a proper Bandage, lest, by Stress of Pains consequent to the Birth, by Coughing, or by Sneezing, the Uterus should be again prolapsed: Thus will the Orifice of the Uterus be gradually contracted, so as to afford no Passage for the Uterus, and, consequently, the Disorder be removed. If the Uterus be not quickly returned, according to *Hildanus*, *Stalpart*, *Ruysch*, *Saviard*, and other Authors above-quoted, sudden Death must be the Consequence: For the Orifice of the Womb is, by Degrees, so constricted by the superior Part of the Uterus, that an Inflammation is induced, and the Reduction of the Womb becomes impracticable; and a Sphacelus is occasioned by the stagnated and corrupt Blood, and the Patient suffers a miserable Death. But if the Case be not desperate, when the Surgeon is called, Care must be taken to free the Uterus from its Inflammation, and to restore it to its proper Place with all possible Expedition: For this Purpose it is, in the first place, necessary to bleed her copiously; and then she should discharge her Urine, that no Obstruction may be occasioned by the Distention of the Bladder: Then let the Patient be laid in the same Posture as is above directed; and then let the Uterus be carefully fomented with warm Milk and Water,

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and anointed with Butter, or warm Oil; or let digeſtive and emollient Fomentations, or Cataplaſms, be ſo long applied, till the Part becomes ſoft and ſlippery, and capable of being replaced by the Method already directed. For unleſs this Reduction can be ſeaſonably accompliſhed, the Preſervation of the Patient becomes impracticable; nor will the Extirpation of the Uterus, by Ligature or Abſciſſion, as ſome have imagined, ought avail. *Ruyſch* relates a Caſe, in which a Surgeon removed by Ligature a prolapſed Uterus, but without Succeſs; for the Patient ſoon died.

But here I think it may be worthy of Conſideration, whether Scarification may not be advantageouſly attempted in ſuch deſperate Caſes, when the Uterus is ſwelled and inflamed, as in other violent Inflammations of a cancerous Diſpoſition, which to me ſeems not improbable.

That Species of Prolapſus in which the Uterus is not inverted, but its internal Orifice appears, which is not always the Conſequence of a difficult Birth, but is often produced by a Weakneſs of the Ligaments, is not attended with ſuch unhappy Conſequences. By the Appearance of the internal Orifice of the Womb, this *Prolapſus Uteri* may, alſo, be diſtinguiſhed from fungous Excreſcences, or Tubercles of the Vagina, as was already obſerved. In this Caſe the Danger of an Inflammation, or Sphacelus, is not ſo much to be apprehended, as in the former Kind. This Species of *Prolapſus Uteri* is not only incident to Women after a difficult Labour, but, alſo, to others, to the chaſteſt Virgins, and even young Girls, according to the Obſervations of *Mauriceau*, *Saviard*, and others. But if this Diſorder be for ſome time neglected, not only great Uneaſineſs is occaſioned, but a Difficulty of Urine, violent Pains of the Hips, Exulcerations of the prolapſed Uterus, and an Inflammation followed with a Sphacelus, Scirrhus, or Cancer. And the longer the Uſe of proper Remedies is delayed, the more difficult is the Reduction of the Uterus, becauſe it becomes ſwelled and enlarged, and cannot be retained in its natural Situation, without proper Inſtruments. For a Relapſe can ſcarcely be prevented, either in Walking, or in ſome Commotion of the Body; or in Sneezing and Coughing, eſpecially if not ſuſtained by a proper Bandage or Inſtrument. But if the prolapſed Uterus be affected with a Cancer, or Gangrene, the Reduction ought not to be attempted: For *Ruyſch* informs us, in *Obſ.* 9. that, after it is replaced, more intenſe Pains, and other malignant Symptoms, are induced.

If, therefore, there be no Appearance of a Gangrene, or Sphacelus, two Intentions are neceſſary to be anſwered in the Cure: 1. That the Uterus be reſtored to its proper Place. 2. That a Relapſe be prevented. With regard to the firſt Intention, if the prolapſed Uterus has not been of long Duration, or greatly increaſed in Bulk, it may be eaſily replaced by the Method already directed: Let the Head be laid low; the Buttocks elevated; the Legs ſpread wide; and the Womb gently replaced with the Fingers, or a ſtrong Wax-candle. It has been often obſerved, that Women troubled with this Diſorder can replace the Uterus themſelves, without any Difficulty. But if the Diſorder be inveterate, and the Uterus enlarged, ſo that it cannot be without Difficulty reduced, digerent Fomentations muſt be applied, and the Bladder and Inteſtines emptied, that it may be the more eaſily reſtored to its natural Situation. But as the Uterus can ſcarcely be ſuſtained by the Coats of the Vagina, and its own relaxed, debilitated Ligaments, great Care, as well as proper Bandages and Inſtruments are required to prevent a Relapſe. For this Purpoſe it will be expedient to reſt ſome Days in Bed, and to convey the Steams of ſtrengthening Suffumigations through the Vagina, with a proper Funnel and Pipe (ſee *Tab.* LV. *Fig.* 14.): Aromatic and aſtringent Fomentations, prepared with Spirit of Wine ſhould, alſo, be injected with a Syringe. Then putting a Compreſs on the external Orifice of the Vagina, carefully apply the T Bandage. When the Uterus is greatly ſwelled, it ought to be fomented with Digeſtives, till its Bulk be diminiſhed, and then it may be replaced. If the Uterus be exulcerated, as frequently happens, the Reduction of it ought not to be delayed upon that Account: For *Saviard* obſerves, that theſe Ulcers are much eaſier healed when the Part is reſtored to its proper Situation, than when it is preternaturally prolapſed. This Author, alſo, relates an Inſtance of a *Prolapſus Uteri* in a Virgin, who had, at the ſame time, a Stone in her Bladder: In this Caſe he firſt replaced the Uterus, and then extracted the Stone, and relieved her from both Diſorders, only uſing a Peſſary. See his *Obſ.* 15.

If the Diſorder is already become ſo invéterate and obſtinate, that the Uterus cannot be retained by the Methods already propoſed, there remains but one Reſource, to which Recourſe is commonly had; and that is, to repreſs the Vagina, by introducing a Peſſary. The beſt Sort of Peſſaries are made of Box, Aſh, or other hard Woods, or of Cork, and covered with Wax, having a Perforation in the Middle (See *Tab.* LV. *Fig.* 6. 7. 8. 9.). Without the Wax they would ſwell, rot, and produce many Inconveniences, ſo as not to be, without Difficulty, extracted, and, perhaps, by Pieces. Thoſe who can afford the Expence, may have them made of Ivory, or of Silver or Gold excavated: Thus a Peſſary of a proper Size and Shape, muſt be carefully preſſed by the Fingers, deep into the Vagina, even to the Orifice of the Uterus, that it may not eaſily fall out; having a String faſtened to it, (ſee *Tab.* LV. *Fig.* 6. and 10.) by which it may be extracted and cleaned. The String ſhould, alſo, be tied to any Belt about the Waiſt, leſt, by happening to fall out, when the Patient walks, it ſhould indecently drop upon the Ground. A Peſſary is judged to be of a proper Size, when it is not eaſily admitted at firſt, that it may more firmly remain, and better repreſs the Uterus; but, in ſome Caſes, Peſſaries twice as large as theſe are required. The Perforations in Peſſaries are deſigned for a Paſſage for the menſtrual Blood, and other Sordes, diſcharged from the Womb; and, therefore, thoſe Peſſaries which are of an oval or pyramidal Form, are not ſo convenient; ſuch as thoſe of a prodigious Size, recommended by *Paré*, *Hildanus*, *Scultetus*, *Roonhuyſen*, and others: Beſides, theſe perforated Peſſaries will admit the *Semen* for Procreation, and, alſo, the ſtrengthening Suffumigations and Injections, ſo neceſſary in theſe Caſes. When theſe Peſſaries are rightly made, they are ſo far from being troubleſome, that when once Women have been accuſtomed to them, they retain them without the leaſt Uneaſineſs. It is proper to obſerve, that ſome Women, who have been affected with this Diſorder, have been freed from it upon their becoming pregnant, by reaſon of the Dilatation of the Womb. See *Pechlinus*, *Obſ.* 20. and *Saviard*, *Obſ.* 12. But *Mauriceau*, *Schelhammer*, *Hunerwolf*, *Saviard*, and others, prove that this is not always the Caſe; but the Orifice of the Womb, with the Head of the Fœtus, may be felt without the Vagina.

Saviard prefers a kind of elaſtic Steel Peſſary before all others; but as he gives no Deſcription of it, Nobody can know what he means. But *Goelicke*, in a Diſſertation publiſhed at *Halle*, in 1710. deſcribes a new Method of curing a *Prolapſus Uteri*, in which he recommends an elaſtic Peſſary, made of Iron-wire, and wreathed into a conical Form: He, alſo, gives a ſmall Repreſentation of it; but does not explain its proper Length or Thickneſs. But in *Tab.* LV. *Fig.* 11. theſe Faults are corrected, where it is repreſented of a convenient Size: He directs the Inſide to be covered with Lint, and the Outſide with thin ſoft Leather; and orders a String to be faſtened on each Side of the Baſis of the Cone, that it may be eaſily extracted. When it is to be introduced, it ought to be a little compreſſed; ſo that, after it is placed, it expands itſelf, by its elaſtic Force, and is thus firmly retained, without any Danger of falling out: He owns indeed, that he never experienced the Effects of this Peſſary, but, as it has all the Qualities neceſſary for the Formation of a good Peſſary, he does not doubt of its Excellency. But as I am afraid, that, in ſo moiſt a Place, ſuch a Peſſary ſhould ſoon be corroded by Ruſt, to which Iron is particularly ſubject, I have, therefore, always uſed the wooden Peſſaries, repreſented in *Fig.* 6. 7. and 8. which I have found to anſwer the End. *Heiſter Chir.*

The Method of treating a Bearing-down of the Vagina.

A Bearing-down of the Vagina has not only been confounded with a Bearing-down of the Uterus, by ignorant Midwives, but, alſo, by Phyſicians and Surgeons of Learning and Experience; and theſe different Diſorders have, likewiſe, been confounded with the ſame Denomination: But they may be diſtinguiſhed from one another; partly by conſidering the anatomical Structure of the Parts; and partly, by attending to the diagnoſtic Signs above obſerved. The Vagina is ſaid to be prolapſed, when the Whole, (as in *Tab.* LV. *Fig.* 4.) or only Part of it, being relaxed, by whatever Cauſes, hangs without the Pudenda. Sometimes the whole Vagina is prolapſed, and appears like crude bloody Fleſh, reſembling a thick fleſhy Ring, more or leſs ſwelled, according to the different Cauſes of the Diſorder, and other Circumſtances. If the prolapſed Vagina ſwells violently, and is attended with Inflammation, as I have ſometimes obſerved, after a difficult Labour, there is immediate Danger of a Sphacelus: If the prolapſed Part be affected with little or no Swelling; or if the Tumor be unaccompanied with Inflammation, the Diſorder may long be born, without Trouble, and without Danger. Sometimes a Part of the Vagina is preternaturally prolapſed out of the Pudenda, and may be produced by lifting too great Weights; or by an Effort in a difficult Birth; or by a Congeſtion of peccant Matter, reſembling a large Fungus, or a *Prolapſus Uteri*. Many plain Inſtances of this Diſorder have been obſerved: And *Meekren* has related, and illuſtrated with Figures, a very remarkable Caſe in *Cap.* 54. of his Obſervations. This kind of Diſorder may not only be taken for a *Prolapſus Uteri*; but rather

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rather for a Tumor, as a *Fungus*, *Ficus*, *Sarcoma*, or fleshy Excrescence; and, therefore, it may be thought necessary to remove it by a Ligature, or by Abscission. But to distinguish this Disorder from a *Prolapsus Uteri*, or a Tubercle of the Vagina, it is necessary to observe, that an inverted *Prolapsus Uteri* never happens, unless immediately after Delivery; but Tubercles of the Vagina, or any Part of it, may be produced at any Time besides that of Delivery, and increase gradually, and, as it were, imperceptibly. Though I observed in the Year 1720, in a Lady of Quality, suffering under a difficult Labour, that whilst the Fœtus was yet in the Womb, Part of the Vagina was suddenly prolapsed, and within twenty-four Hours a Fungus or Tubercle appeared, equal to the Size of two Fists, which soon became sphacelous; and, though the Child was safely brought forth, the unhappy Mother died within eight Days. Hence, then, it is not surprising, that some Physicians, not having sufficiently considered the Signs by which a *Prolapsus Uteri* may be distinguished from a *Prolapsus Vaginæ*, have, therefore, asserted, that a prolapsed Uterus may sometimes not only be extirpated without endangering Life; but that those very Women, though deprived of the Womb, may afterwards conceive and bring forth Children. That, after the Extirpation of a Tubercle of the Vagina, as in *Fig.* 5. or where the whole internal corrugated Coat of the Vagina falls down, like a *Prolapsus Uteri*, those Women may afterwards conceive, and bring Children, was never denied: But it is absolutely impossible, that, after the Uterus is extirpated, a Woman should conceive; and, therefore, these Relations may justly be accounted fabulous.

How Tubercles resembling a *Prolapsus Vaginæ* may be removed, we have already explained: But when the Vagina appears prolapsed, like a large bloody Ring, hard and inflamed, unless it be seasonably restored to its proper Place, there is great Danger of the prolapsed Part being affected with a Gangrene, or Sphacelus: But the Danger is less, if the prolapsed Part be flaccid, and not inflamed. If no Inflammation appears, the Vagina should be restored to its natural Situation with the Fingers, or a thick Wax-candle, and then fomented with strengthening and digerent Medicines: Then the Patient should be ordered to rest in Bed for some Days, keeping her Legs close, or crossed. Mean while the Part should be fomented with Decoctions of strengthening, digerent, aromatic, and astringent Herbs, with Red-wine; or with Lime-water, mixed with Spirit of Wine: Suffumigations, also, of Mastich, Olibanum, Myrrh, Amber, and the like, should, also, be conveyed into the Vagina with a proper Pipe (see *Tab.* LV. *Fig.* 14.) and Funnel; then let the Part be carefully bound with the T Bandage. Thus may the prolapsed Vagina be restored to its natural Vigour, especially if the Disorder be recent, and, if proper internal Medicines be exhibited: For this Purpose, the medicated Waters, hot Baths, and chalybeate Waters, are excellent. But if the Disorder be so inveterate as not to yield to the Remedies here proposed; it must, therefore, be palliated, and the Patient be ordered to wear the T Bandage constantly; by which means the Danger of a Scirrhus, or Gangrene, may be averted.

But if the prolapsed Part be seized with an Inflammation, the Inflammation must be removed, not only by the Application of discutient Fomentations and Cataplasms externally, but, also, by the Exhibition of proper internal Medicines, not omitting Venesection, before the prolapsed Vagina can be restored to its natural Position, otherwise a Gangrene might be induced, which would soon be followed by the Death of the Patient. But if the Inflammation be mild, the prolapsed Part may be reduced without Danger, as the natural Heat of the Body will greatly contribute to discuss the Tumor. But if a Sphacelus, or Fungus, already appears upon the prolapsed Vagina, which may be known from its Blackness and fetid Smell, the morbid Part must be scarified; digestive Fomentations and Cataplasms applied; and whatever else is necessary in the Cure of a Sphacelus. *Heister. Chirurg.*

VAGINALIS TUNICA. A Coat of the Testes; another of the Œsophagus, and another of the Spinal Marrow, are called by this Name.

VAGITUS. The Bewailings or Moanings of Children, when out of Order.

VALENTIA SCABIOSÆ. *Powers of Scabious.*

Take of the Juice of green Scabious, pressed out, and strained through a Cloth, and of Hogs-lard, cleared of its Membranes, each as much as you please: Let the Lard be beat in a Stone Mortar, and the Juice poured in by little at a time, for the Conveniency of Mixture, and giving its Tincture: Then put them together into a proper Vessel, to be exposed to the Sun, and so that the Juice may cover the Lard: After nine Days, put them again into the Mortar as before, and throw away that thin and discoloured Humidity, which separates upon beating, without rubbing them together; and again put it into its Vessel for five Days: Afterwards beat it again, and by a little at a time, mix with it fresh Juice of Scabious; and after a fresh Insolation of fifteen Days, in its proper Vessel, in the Sun, let it be cleared before of its watry Humidity. Let it then stand again in the same manner, for fifteen Days longer, with fresh Juice; and, after a little Beating, let it be kept for Use, in a glass or earthen Vessel.

This, we are told by the first Compilers of the College Dispensatory, was the Contrivance of *John Arden*, an experienced Surgeon at *Newark*, in *Nottinghamshire*, who lived in the Reign of *Edward* the Third. After Insertion of this, which they had from an antient Manuscript, they particularly direct to repeat the Processes with fresh Juice, till the Lard looks of a deep Green; and that is made the Measure of the Repetitions necessary.

VALERIANA.

The Characters are;

The Leaves are conjugated: The Stalk is florigerous, and divided as in umbelliferous Plants: Under the Umbellæ, both large and small, are two long small Leaves: The End of the Pedicle shoots forth two small similar Leaves, which supply the Place of a Calyx: From the Centre of the Area of the Pedicle, within these Leaves, proceeds an oblong Ovary, on whose fimbriated Apex grows a monopetalous, Funnel-shaped, naked Flower, furnished with three Stamina, proceeding from the internal Sides of the Flower: The Tube of the Flower, from its lower Part, where it adheres to the Ovary, frequently shoots forth a blind Spur at the Side: The Seed is oblong, depressed, running out narrow, almost flat and downy: From the Centre of the Apex of the Ovary shoots forth a long Tube.

Boerhaave mentions thirteen Species of Valeriana; which are,

1. Valeriana; major; hortensis. *Boerh. Ind. alt.* 74. *Phu majus, sive Valeriana major.* Offic. Park. 119. *Valeriana hortensis.* Ger. 917. Emac. 1075. *Valeriana hortensis, Phu Olusatri folio Dioscoridis.* C. B. P. 164. Tourn. Inst. 132. *Valeriana major odorata radice.* J. B. 3. 209. Raii Hist. 1. 388.

GARDEN VALERIAN.

The Root of the Garden Valerian is about a Finger thick, of a brown Colour, growing not deep in the Earth, but spreading itself across, with many large white Strings on each Side, which makes the Root appear, like a large Scolopendra, or Catterpiller with many long Feet, of a very strong Smell, especially when dry: It shoots out several hollow chanel'd Stalks, two or three Feet high, having the lower Leaves long and round-pointed; some whole, and others cut in, resembling those of Scabious, but that they are smooth: The Leaves, which grow on the Stalks, are, also, much more cut in: The Stalks are divided towards the Top into several Branches, having, at each Divarication, a long narrow Leaf; and at the Ends grow the Flowers, in a kind of Umbels, each Flower being a small, long, narrow Tub, divided at the Top into five Segments, with as many Apices of a white Colour; they stand on the Rudiments of the Seed, which, when they are fallen, grow larger, being longish, striated with a downy Top. It is usually planted in Gardens, though it grows wild in the *Alpine* Countries. The Roots are principally used.

They are alexipharmic, sudorific, and cephalic; and are accounted useful in malignant Fevers, and pestilential Distempers: They help the Head and Nerves, provoke Urine, and bring down the Menses.

They are one of the Ingredients of the *Theriaca* and Mithridate. *Miller's Bot. Off.*

The Root and Herb are alexipharmic, sudorific, and diuretic: Their principal Use is in Weakness of the Sight, Pestilence, Asthma, inveterate Cough, being boiled with Liquorice, Raisins, and Anise, in the Pleurisy, Obstructions of the Liver and Spleen, Jaundice, Stoppage of the Ureters, Hernia, and the like. Outwardly they strengthen the Sight, abstergе Specks, and Films, being boiled in Wine or Water, and instilled by Drops: They ease the Head-ach, provoke the Menses and Sweating, being used in Baths: In Suffumigations they dry up Rheums, and correct the Malignity of Buboes and Carbuncles, extract Bullets or Arrows, and cleanse inveterate Ulcers. Thus far *Schroder*: And indeed he has said enough, if not too much, in its Praise. It is certainly, however, a potent Diuretic.

The Powder of the Root, which grows spontaneously, before it produces a Stalk, taken once or twice, to the Quantity of half a Spoonful, in Wine, Water, Milk, or any other proper Juice, cures the Epilepsy; for it purges upwards and downwards. *Sylvius* thinks, that more is to be ascribed to this Plant, than to Peiony, on account of its abounding with a volatile Salt. It is usual with us in *England*, to apply the bruised Leaves to Wounds,

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Wounds, when but slight; whence it is called by some *Cut-finger*. *Raii Hist. Plant.*

2. Valeriana; sylvestris; major. *Ger.* 917. *Emac.* 1075. *Park.* 122. *C. B. P.* 164. *Raii Hist.* 1. 388. *Synop.* 3. 200. *Tourn. Inst. Boerh. Ind. A.* 74. *Valeriana sylvestris.* Offic. *Valeriana sylvestris magna aquatica.* J. B. 3. 209. *Phu Dioscoridis verior.* Col. Ecph. 1. 210. GREAT WILD VALERIAN.

We have two Species of this great wild Valerian; the first has a Root divided into several white thick Strings, growing more downward, and less spreading than the other; of no great Scent, when just taken out of the Ground, but smelling very strong when dry. The Stalks arise to be about a Yard high, hollow and chanelled, having several long winged Leaves, whose Pinnæ are long, sharp-pointed, and serrated about the Edges, high-veined, and somewhat hairy; the Leaves, which grow higher on the Stalks, are narrower, and less serrated. The Flowers are, in Shape, like those of the Garden Valerian, of a pale-purple Colour, and having the like Seed. This grows in Woods, and dryer Places than the other, which is larger, taller, the Root more spread out; the Leaves are larger, smoother, of a deeper shining Green, with broader Pinnæ; the Stalks grow taller; the Flowers are much alike. This grows in watery Places, and near Ditches, both flowering in *May*. The Root of this has as strong a Smell as the other; they are both used promiscuously, though the former seems to come nearest *Columna*'s Figure and Description in his *Phytopinax*.

They are come much into Use of late, in Diseases of the Head, and all nervous Affections. *Miller's Bot. Off.*

The Leaves of this Plant have no Smell, but an herby, saltish, bitter Taste, and give a pretty deep Tincture of Red to the blue Paper; the Roots stain it a little; they are bitter and styptic, of an aromatic penetrating Smell, and something disagreeable. This Plant has a volatile aromatic oily Salt, loaded with a Part of the Acid of the Sal Ammoniac; whereas the artificial volatile oily Salt of this Acid, is detained by the Salt of Tartar.

Thus the wild Valerian is anti-epileptic, sudorific, hysteric, and emmenagogic: It gives great Relief to those troubled with the Asthma, or Vapours: *Camerarius* commends it very much for the Jaundice; and *Fabius Columna* for the Epilepsy; who acknowledges himself to have been cured of the Epilepsy by this Root; and that he had seen several other Persons cured by it: He advises to pull it up before it pushes forth its Stalks, to reduce it to Powder, and swallow half a Spoonful of it in Wine, Water, Milk, or any other Liquor: It may be given to Children, and all Persons that have convulsive Fits. I have seen it have great Efficacy in the hysteric Passion, and most violent Paroxysms of the Asthma. Pour a Pint of boiling Water upon an Ounce of the Roots of this Plant; remove the Pot from the Fire; cover the Infusion well; and give it to drink by Glassfuls. The Extract of these Roots is good for the same Diseases: They give a Scruple of it with a Grain of Laudanum, or else mix the Laudanum with half a Scruple of the Powder of these Roots. *Martyn's Tournefort.*

It is effectual in Convulsions, Ruptures, and Bruises by Falls, as, also, for Inflammations, and Exulcerations of the Mouth and Gums, and the Aphthæ, *H. Ox.* and cures a Tertian Fever. *Schw. Dale.*

A Dram of the Powder of the dry'd Roots, taken in Wine, purges upwards and downwards. Dr. *Mead*, in his Book *de Imperio Solis & Lunæ*, highly commends the Root of this Plant against the Epilepsy.

3. Valeriana; major; sylvestris; montana. *C. B. P.* 164.

4. Valeriana; foliis Calcitrapæ. *C. B. P.* 164.

5. Valeriana; foliis Calcitrapæ, magis dissectis.

6. Valeriana; paluſtris minor. *C. B. P.* 164. *Tourn. Inst.* 132. *Boerh. Ind. A.* 74. *Phu minus & Valeriana minor.* Offic. *Valeriana minor.* Ger. 916. Emac. 1075. Raii Hist. 1. 388. *Valeriana sylvestris minor.* Park. 122. Raii Synop. 3. 200. *Valeriana minor pratensis vel aquatica.* J. B. 3. 211. SMALL VALERIAN.

The Roots of this Valerian are long, slender, and creeping, sending out a few small white Fibres. The Leaves which spring from them, before the Stalks run up to Flower, are almost round, but somewhat pointed. The Leaves which grow on the Stalks, are like those of the Garden-kind, but less. We have two Species of this Valerian, one whereof rises higher than the other, having usually three Pair of Leaves set opposite; the Umbels of Flowers grow closer, and the Flowers are a great deal smaller, than the other, which arises not so high, and has usually but two Pair of Leaves on the Stalks. The Flowers are much larger, and like the Garden Valerian, but of a pale-purple Colour, as are, also, the former. They grow both promiscuously in marshy Grounds, and moist Meadows, as in *Battersea Field*, near the *Thames*, in great Plenty, flowering in *May*.

I know no particular Virtue this Species of Valerian is endowed with, Authors having said but little about it; neither is it ever used in the Shops that I know of. *Miller's Bot. Off.*

The Parts in Use are the Root and Leaves, which as they resemble those of the *Great Wild Valerian* in outward Appearance, so are they supposed to agree with them in Virtues, tho' in an inferior, or milder Degree. *Dale.*

7. Valeriana; sylvestris; vel paluſtris; altera; flore minore densius stipata. *Raii Synop.* 98.

8. Valeriana; tuberosa. *J. B.* 3. 2. 207.

9. Valeriana; rubra. *C. B. P.* 165.

10. Valeriana; marina; latifolia; major; alba. *M. U.* 50.

11. Valeriana; rubra; anguſtifolia. *C. B. P.* 65.

12. Valeriana; maxima; Pyrenaïca; Cacaliæ folio. *Fagon. T.* 131.

13. Valeriana; Lusitanica; latifolia; annua; laciniata. *T.* 132. *Boerh. Ind. alt. Plant.*

The first is the true *Phu* of *Dioscorides*, and the Antients; and takes that Name either from the *Greek* Word φύω, (*phyo*) to grow, or spring from, or from *Phy*, a *Pontic* Word, denoting the penetrating Smell of its Root. But it is erroneously affirmed to be the *Herba Saracenica*, for healing of Wounds; for the Taste shews the contrary; for it is aromatic, penetrating, and somewhat ungrateful Taste, as it is said of the *Nardus* of the Antients; whence it appears to be of an aperitive Quality, and is reckoned among *Aristolochies*, Emmenagogues, and Antiscorbutics; it, also, exhilarates the Heart, and the Brain; and is effectual in all Disorders proceeding from cold, viscid, and aqueous Humours. A great Author, has talked much of its Virtues against Sorceries and Witchcraft, induced, I suppose, from its extraordinary Efficacy in spasmodic, hysteric, epileptic, and melancholic Cases. These Disorders are called *Lunatic*, and are attended with surprising Symptoms; for which Reason the Antients called them *Morbos Sacros*, Diseases of the Gods. But the Antients made but little Distinction between their Gods and Dæmons, which might lay a Foundation for this Opinion of the beforementioned Author. *Hippocrates* says very well of these *Morbi Sacri*, that there are some Diseases very surprising, and therefore called *Sacred*, or *Divine*, not because they came from the Gods, for then all would be *sacred*, but from their surprising Effects; whence this Plant has been esteemed an Antidemoniac, though Rue, also, cures the same Diseases. There are Authors who advise the Root as an Amulet against a Quotidian Fever, and hang it about the Neck for that Purpose. *Fabius Columna*, a Man of the first Rank, and concerned in public Affairs, fell into an epileptic Disorder. Finding no Relief from Physicians, and being fatigued with the long Continuance of the Disease, he betook himself wholly to the Reading of the Antients, in order to examine, whether he could find out by Name a Plant which would cure the Epilepsy; and at length he happened upon this Plant, the second, by the Root of which he was cured. From that time he became an extraordinary Botanist, and assures us, that he knew many epileptic Patients cured by this Plant. He advises to pull up the Root before it begins to sprout, and exhibit the same in Powder to the Patient, for six Days together, in the Morning fasting, in Water, Wine, or Milk: This Medicine provokes Sweat, and frequently gives the Patient a Stool or two, which is a very good Sign. The Roots are very odoriferous, acrimonious, and penetrating; and have a balsamic, and somewhat oily Taste: Whence the *Valeriana* has the same Virtues which we observe in umbelliferous Plants. It is a proper Ingredient in pectoral, stomachic, and uterine Diseases, and is very effectual in a Stoppage of the Menses, an Ounce or two of the bruised Root being made into an Infusion after the manner of Tea, and sweetened with Honey. It is an excellent Remedy against Worms, and epileptic Fits, in Infants. *Camerarius* highly commends it against the Jaundice, and a violent Asthma, the Infusion of the Root in Water, or the Powder thereof with a Grain of Laudanum, being exhibited. This Plant is effectual, also, against all Sorts of Contusions, the Leaves being bruised in Wine, and applied to the Place affected; the same discuss scirrhous Tumors without Suppuration, and speedily cicatrize Wounds; for which Reason the Peasants in the Country apply the Leaves of this Plant to all sordid Ulcers. The Root is received into all Antidotes; but the first Species is most celebrated, and I can recommend it from an hundred Experiments which I have made of its Virtues. The eighth, ninth, tenth, and following Species, are cultivated in Gardens, being beautiful Plants, and continuing a long time in Flower. *Hist. Plant. adscript. Boerhaav.*

VALERIANA is, also, a Name for several Sorts of VALERIANELLA; which see.

VALERIANA GRÆCA. A Name for several Sorts of POLEMONIUM; which see.

VALERIANÆ RUBRÆ SIMILIS. A Name for the *Limonium*; *maritimum*; *majus*.

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VALERIANA URTICÆ FOLIO. A Name for the *Eupatorium*; *Urticæ foliis*; *Canadense*; *flore albo*.

VALERIANELLA.

The Characters are;

The Root is annual and fibrous; the Leaves are conjugated; the Stalk and Branches are divided in two, and appear at Top like an Umbella. The Calyx is monophyllous, small, quinquefid, and closed. The Flower is monopetalous, of various Shapes in different Plants, and furnished with two, three, or four Stamina, growing out of the internal Sides of the Flower, which grows on the Apex of the Ovary. The Ovary grows on the Centre of the Calyx, shoots forth a Tube, and becomes a Fruit of various Forms, including a single Seed.

Boerhaave mentions six Sorts of *Valerianella*; which are,

1. Valerianella; arvensis; præcox; humilior; semine depresso. *Raii Synop.* 3. 201. *Tourn. Inst.* 132. *Boerh. Ind. A.* 75. *Lactuca agnina.* Offic. Ger. 242. Emac. 310. Park. 812. *Valeriana campestris inodora major.* C. B. P. 165. Raii Hist. 1. 392. *Locusta Herba prior.* J. B. 3. 323. *Locusta Herba, Pes Locustæ.* Chab. 437. LAMBS-LETTUCE, or CORN-SALLAD.

VALERIANELLA is cooling, and somewhat moistening, being in Temperament and Virtues not unlike Lettuce, and supplies its Room in Winter, and the Beginning of Spring, being pleasantly eaten with Vinegar, Salt, and Oil, like other Salads, among which it is reckoned one of the best. Lambs are mightily delighted and improved, and fattened, by eating this Plant; whence, they say, it takes the Name of *Lambs-lettuce. Raii Hist. Plant.*

It grows in Gardens, and among Corn, and flowers in the Spring. *Dale.*

2. Valerianella; arvensis; præcox; humilis; foliis serratis. *T.* 132. *Pseudo-valeriana, erecta, serotina, semine umbilicato, hirsuto, pyramidali.* M. H. 3. 104. *Locusta, altera, foliis serratis.* J. B. 324.

3. Valerianella; semine stellato. C. B. P. 165. *Pseudo-valeriana, annua, semine coronato, major, Lusitanica.* M. H. 3. 104.

4. Valerianella; Cretica; fructu vesicario. *T. Cor.* 6.

5. Valerianella; cornucopoïdes; rubra; vel Indica. *M. U.* 53. *Pseudo-valeriana, cornucopoïdes; annua, purpurea, semine solido.* M. H. 3. 104. *Valeriana, peregrina, purpurea.* C. B. P. 164.

6. Valerianella; Africana; foliis angustis; flore macula rubente notato. *H. A.* 2. 217. *Boerh. Ind. alt. Plant.*

The Plant is called *Valerianella*, that is, *small Valeriana*, from its Resemblance to the *Valeriana*. It grows in warm Places. The first and second Species are called *Lambs-lettuce*, because they contain a very mild Juice in all their Parts, with which Lambs are highly delighted and improved. The Name *Locusta* is given to this Plant from the Resemblance of its Branches to the Legs of a Grasshopper, when going to leap.

The first and second Species are very soft, succulent, mild, pleasant, and nourishing Herbs; whence they are good, mild, light, and nutritive Food for weak Stomachs. *Valerianella* is proper in Cases which require Lenients, Relaxants, or Lubricants; whence it is of Use in the Pleurisy and Nephritis, and, also, to procure Sleep. The crude Juice, or the Leaves, boiled in mild Flesh-broth, are very mild and wholsome Remedies in a Phthisis, where the softest and most lenient things are required. This Plant is, moreover, an extraordinary Demulcent; whence it is of Service in the Strangury, Pissing, and Spitting of Blood, Asperities of the Lungs, Cough, and Pains in the Kidneys, and is a celebrated Remedy for mitigating the Gout. It has the same Effect, whether boiled in Whey, or the expressed Juice thereof taken in good Quantity. It gives extraordinary Relief in hypochondriac Disorders. The Seed is highly aperient, and of excellent Use in the Scurvy, and all Diseases where the Root of the *Bulbocastanum* is of Service; it is, also, commended in a Gonorrhœa and Dysentery. *Hist. Plant. adscript. Boerhaav.*

VALERIANELLA ZEYLANICA. A Name for the *Hydrocotyle*; *Zeylanica*; *Asari folio.*

VALERIANELLOIDES.

The Characters are;

The Root is fibrous and perennial, and is produced from sowing the Seed, which is ash-coloured, oblong, sharp, and small, like the Seed of the Lesser Cumin. The Stalk is ramous, cineritious, covered with a slight Down, and frutescent. The Leaves are conjugated, roundish, scabrous, serrated, upon a long, sulcated Pedicle. From the Wings of the Leaves proceed other conjugated Leaves, similar, and four in Number. The Tops of the Stalk and Branches run into a very long and slender Spike, to which grow on every Side, as it were, engraved, long, monophyllous Calyces, deeply quinquefid, slender, tubulous, and very closely adhering to the Sides of the Spike. These Calyces contain a monopetalous, Funnel-shaped, quinquefid, expanded Flower, of a pale-bluish Colour. From the Inside of the Tube of this Flower proceed two Stamina. The Ovary is in the Centre of the Calyx, and consists of one long, cylindrical Seed, which has a long Tube with an hemispherical Apex. This Plant grows in *America. Boerh. Ind. alt. Plant.*

VALERIANTHEMUM. A Name for the *Rapunculus*; *Valerianoïdes*; *cæruleus*; *umbellatus.*

VALGUS. Bow-leg'd.

THE METHOD OF REMEDYING BANDY-LEGS IN CHILDREN.

Some Children have their Legs bent in an unseemly manner, either from their Birth, or if they are used by the Nurse to Standing or Walking too early: In some the *Tibiæ* are crooked, in others the Knees are distorted, in some the Feet, at the Articulation of the *Tibia* with the *Tarsus*, are turned inwards, and they are denominated *Vari*; and in some outwards, who are named *Valgi*. This Disorder requires a different Method, according to its different Degrees and Situation. 1. The most certain and mildest Method of preventing it, is to take care, that tender Children, and those who are otherwise exposed to this Disorder, especially by the Rickets, be restrained from Standing and Walking, but be allowed to lie down, sit, or be carried, either in the Arms, or some Vehicle, till the Bones, as they increase in Age, are strengthened and confirmed. But if the Disorder increase, or is born with the Child, it will be expedient, after the Application of Emollients, according to *Hildanus*, to use certain Instruments, or a kind of Boots, such as *Paré* has delineated, (see *Tab.* LVII. *Fig.* 14, 15.) made of strong Leather, Wood, or thin Plates of Iron, and adapted to the Size of the Leg. These Boots, being applied to the crooked Legs, especially to those of the *Vari* and *Valgi*, dispose them as they naturally grow, to receive by Degrees a proper Shape. The Boots must be worn Day and Night. But as several Inconveniencies may proceed from the Use of these Boots, especially if they do not fit exactly, Surgeons have thought it expedient to contrive other Instruments for this Purpose, as in *Tab.* XXXVI. *Fig.* 16. where A A represent the two Sides, made of strong Leather, or thick Pasteboard, or of thin Plates of Iron or Brass, so joined by the Piece B B, that one may answer to the interior, and the other to the exterior Side of the Legs, as in *Fig.* 17. where they are represented applied; and they may be so fastened by the Cord, or Thong, C C, as to be kept on for a considerable time Night and Day, and gradually reduce the crooked Legs to their natural Figure and Position. If the Disorder be not seated in the *Tibiæ*, but rather in the Ancles, whether the Feet be turned outwards or inwards, these Instruments of *Hildanus*, *Fig.* 16. 17. may be advantageously used; but if, by reason of the Rigidity of the Limb, it cannot easily be turned to its proper Position, let emollient Fomentations, Liniments, and Baths, be used for some Days before the Application of the Instrument. But, if the Disorder be but slight, in my Opinion, the Use of these Instruments should be neglected; which are not only very troublesome, but may, also, be hurtful by binding the Leg too hard, and hindering its Growth. And I have often observed, when the Legs have been moderately bent, and sometimes when they have been greatly incurvated, if the Children be young, and not suffered to use their Feet, but to be carried or wheeled about, that their Legs have been spontaneously restored to their proper Figure. *Hildanus* may be consulted on this Head, who has given the Figures of other Instruments suited to different Cases. *Solingen*, and *Le Clerc*, may, also, be consulted. *Heister. Chir.*

VALIGA. A Name given by some to an Infusion of Jalap, by some called *Rhabarbarum nigrum*, in Spirit of Wine, or, which is better, in Spirit of Citron; then carefully strained, and some time afterwards coloured with a little Saffron; so that it seems to be the same with the *Phalaia* of *Rolfinkius. Castel.*

VALLI, *Noel-valli, & Panni-valli.* H. M. *Siliquosa Indica Flore papilionaceo. Siliquis planis brevibus duo aut tria semina isthmia continentibus.* This is an *Indian* Shrub, which unites itself by its small Branches with the neighbouring Trees; the Leaves are like those of the Fraxinus, and have somewhat of an acrimonious Taste; the Flowers are papilionaceous, and void of Smell; the Pods are an Inch in Length, and as much in Compass, very flat, and contain two or three Seeds separated by Isthmuses, or narrow Intervals. The Beans, when parched by the Sun's Heat, are of a cineritious Colour, and an ungrateful Taste. It flowers in *August*, and the Fruit is throughly ripe in *December* and *January*.

The Beans, eaten crude, provoke to Stool with Gripings. The Leaves, made into a Cataplasm, cure an Erysipelas. The Bark supplies the Place of Hemp, in making of Ropes. *Raii Hist. Plant.*

VALLUM. The Eye-brow, and a Species of Bandage, are called by this Name.

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VALRAT. A Leaf. *Rulandus.*

VALVULA. A Valve. There are many Sorts of Valves in various Parts of the Body. Thus in the Inteſtines there are the *Valvulæ Conniventes*, and the Valve of the *Colon*; ſee CORLIA. In the Heart are found Valves at its Orifices. See COR; and Anatomiſts have diſcovered Valves in the Veins, and Lymphatic Veſſels.

VANELLUS. The Lapwing. See PLUVIALIS.

VANILIA, BANILIA. Offic. *Vaynillus*, *Vayniglia*. Mont. Exot. 9. *Vanillias Piperis Arbori ſamaicenſis innaſcens*. Pluk. Almag. 301. *Volubilis ſiliquoſa Mexicana foliis Plantaginis*. Raii Hiſt. 2. 1330. *Lathyrus Mexicanus ſiliquis longiſſimis, moſchatis, nigris*. Ammon. Char. Plant. 436. *Aracus aromaticus, Tlilxochitl, ſeu Flos niger*. Hern. 38. *Lobus oblongus aromaticus*. Cat. Jam. 70. *Lobus aromaticus ſubfuſcus Terebinthi corniculis ſimilis*. C. B. P. 404. *Lobus oblongus aromaticus, odore fere Belzuini*. J. B. 1. 428. THE VANELLOES, or BANILAS.

Theſe are dark-brown flat Pods, or Sheaths, five or ſix Inches long, and ſcarce an Inch broad, wrinkled on the Outſide, full of a vaſt Number of ſmall black Grains, almoſt as fine as Sand, of a pleaſant Smell, like Balſam of *Peru*. The Plant which bears theſe Vanelloes, climbs the Trees like Bindweed; the Leaves are ſmooth and broad, in Shape like Plantain-leaves, ſet in an alternate Order; the Flowers are of a dark Colour, which are ſucceeded by the Vanelloes. They grow in *New-Spain*, and other Parts of the *Weſt-Indies*, from whence they are brought to us.

They are only uſed with us, as an Ingredient in Chocolate, to which they give a pleaſant Flavour. They are commended by *Hernandez*, in his *Deſcriptio Rerum Medicarum Novæ Hiſpaniæ*, *Lib.* 2. *Cap.* 15. to be grateful to the Stomach and Brain, to expel Wind, to provoke Urine, and the Menſes, to promote the Birth, and bring away the After-birth, to reſiſt Poiſon, and cure the Bites of venomous Creatures. *Miller's Bot. Off.*

VAPORES. Vapours. See HYSTERICA.

VAPORARIUM. A Vapour Bath.

VAPORATIO. A Fomentation by the Vapours or Steam of warm Liquors.

VAPPA is Wine deprived of all its ſpirituous Parts, and what is uſually called *dead*. This corrupt State of Wine is frequently, and very properly, by modern Phyſicians, compared with a particular Corruption of the Blood, when it is in a low, ſpiritleſs, and, as we ſay, a *vapid* State, as the Caſe is in healthy Perſons, when their Spirits are exhauſted by immoderate Labour, or in ſick Perſons labouring under a Quartan, and in cachectic and ſcorbutic Indiſpoſitions. *Caſtellus.*

VARENI, VARI. Names for a ſcorbutic Affection, otherwiſe called *Arthritis vaga*, the wandering Gout, conſiſting in a wandering, or ſhifting Pain, affecting the nervous Parts about the Joints, and proceeding from an acid and malignant Acrimony of the nervous Fluid, or ſerous Lymph, together with an extraordinary Mobility and Vaporoſity of the ſame, on account of the Thinneſs of its Contexture.

Vareni, with ſome, ſignifies a quite different Affection from *Vari*, being the ſame with the AMBULO; which ſee.

VARICIFORMES PARASTATÆ, in Anatomy, are continuous to the *Epididymides*, and are Veſſels ſo called, becauſe they appear full of Flexures and Contortions, like the Varices, for the better Elaboration, as it is ſuppoſed, of the Semen.

VARICOSUS, κιρσοειδὴς, is an Epithet apply'd to ſeveral Plexuſes of the Veſſels about the Pudenda, particularly of the Male. *Caſtellus.*

VARICULA, a Diminutive of *Varix*, is a Name given by *M. A. Severinus* to an Intumeſcence of the Veins in the *Tunica Adnata* of the Eye, proceeding from a Diſtention of them by black Blood. *Caſtellus.*

VARIEGATIO, Variegation, in Botany, is a Diverſifying with ſeveral Colours, as is obſerved in the Leaves and Flowers of Plants.

VARIOLÆ. The Small-pox.

Perhaps from the Time of *Hippocrates* to this very Period, there never happened any thing ſo remarkable in Phyſic, as the Appearance of this new and ſurpriſing Diſtemper; the Original of which may be traced up from the *Arabian* Authors much farther backward, than is commonly imagined; even up to the famous Epoch of *Mahomet* himſelf, in the Beginning of the Seventh Century. The Meaſles, which no doubt was of the ſame Age, (called not improperly, by *Avicenna*, *Variola Cholerica*) they look upon as a Diſeaſe ſo near akin to the Small-pox, that they generally treat of them both together, as if the greater included the leſs. This was a Diſtemper, without Diſpute, unknown to the *Greeks*, whatever ſome of the Moderns have ſaid to the contrary; and firſt obſerved and deſcribed by the *Mahometans*. And ſince it is one ſo extraordinary in its Symptoms, ſo conſtant and regular in its Stages, and ſo univerſally incident to all Mankind, it were to be wiſhed, that Mr. *Le Clerc* had thought fit to have given us a ſhort Extract, at leaſt, of what theſe original Writers have ſaid of it; eſpecially, when, in its very Infancy, we may find the Image of this Diſeaſe very well painted in their Works, and the Practice clearly enough delivered. That Tract of *Rhazes* alone, intituled, *A Diſcourſe of the Peſtilence*, would very fully explain to us the Idea they had of this Diſtemper, and ſhew us, that they were not at all acquainted with the Difference of the diſtinct and the confluent Sort. By the earlieſt Account we have of the Small-pox, we find, that it firſt appeared in *Egypt*, in the time of *Omar*, Succeſſor to *Mahomet*; though no doubt, ſince the *Greeks* knew nothing of it, the *Arabians* brought it from their own Country, and might derive it originally from ſome of the more diſtant Regions of the Eaſt: For the oldeſt of their Writers do not ſpeak of it as a Diſtemper, which had taken its Riſe very lately. And as this People in leſs than thirty Years did propagate its Religion, and Empire, ſo did it no leſs this modern Evil, not only through *Egypt*, but *Syria*, *Paleſtine*, and *Perſia*; and a little while after, along the *Aſiatic* Coaſt, through *Lycia* and *Cilicia*: And, in the very Beginning of the next Century, farther into the maritime Parts of *Africa*, and croſs the *Mediterranean*, even into *Spain* itſelf.

Here, indeed, is a new Field in Phyſic. I will only give you a ſhort Plan of this Diſeaſe, as it lies in their own Authors, and eſpecially in one of the oldeſt and beſt of them, *Rhazes*; the firſt, indeed, as he ſays himſelf, who wrote any diſtinct or exact Treatiſe upon this Subject. To begin then in his Method; as the Evil was unheard of before, ſo he aſſigned a Cauſe as entirely new in Phyſic, a ſort of an innate Contagion. This is a Ferment in the Blood, like that in Muſt, which purifies itſelf ſooner or later, by throwing off the peccant Matter at the Glands of the Skin; an Hypotheſis ſince applied, though upon very ſlight Grounds, to Fevers in general, by many Moderns. This Ferment he ſuppoſes to be derived from the Mother in the Womb, which is the Reaſon why the Diſeaſe is ſo univerſal, and ſo equally incident to all. It is moſt epidimical in Spring, and Autumn, eſpecially after a wet Summer, or a warm Winter: Children, and Adults, are moſt ſubject to it; old Age but ſeldom, unleſs in a very peſtilential Seaſon. Corpulent flabby Bodies which abound in Humours, and which have been uſed to much Wine or Milk, receive the Infection ſooneſt; they who are of this dry Habit of Body, and of a bilious Conſtitution, are more ſubject to have a more violent Sort. The *Greek* Tranſlator, who made his Verſion from the *Syriac*, (the original Language probably in which *Rhazes* wrote) calls this Sort by a Term never heard of, Εὐλογία, which, he tells us, anſwers to the *Syriac*, *Chaſpe* *. This Word, indeed, in that Tongue, as well as in the *Hebrew*, and *Arabic*, ſignifies Ἐξάνθημα, an inflammatory Puſtule; and, therefore, *N. Machelli*, who has given us a very elegant Tranſlation of the *Greek*, expreſſes it properly enough by *Incendium*; but the *Greek*, he ſays, calls it Εὐφλογία. If we go a little farther, and ſuppoſe it ſhould be read Ἐκφλογία, the Senſe of the Author would be entirely preſerved, and very little Variation made in the Reading.

The forerunning Symptoms of this Diſtemper are, an acute Fever, violent Pain in the Head and Back, (the laſt particularly a ſure Sign) Dryneſs of the Skin, Heavineſs, Difficulty of Breathing, frightful Sleeps, Redneſs of the Eyes, Pricking all over the Body, Yawning, Stretching, Pulſation, and Weight in the Head, Sickneſs, and Inclination to vomit; Great Pain in the Back, violent Sickneſs, Reſtleſsneſs, and Burning all over the Body, and an high flaming Colour, eſpecially about the Throat, Signs of an ill Sort. He calls the Puſtules, either *Sublimia*, which muſt be diſtinct, pointed, or riſing high; or *Lata*, flat and broad, as in the confluent Kind. Many of theſe Symptoms are common to the Meaſles; and, if the Heat is more intenſe, and the Straitneſs and Oppreſſion extremely great, eſpecially if there be a Cough, and Itching of the Ears and Noſe, 'tis rather a Sign of this laſt Diſtemper, which is ſometimes more dangerous than the Small-pox.

He is very particular in relating the Differences and Prognoſtics of the Small-pox. If the Eruption is eaſy, and the Maturation comes on well, and the Fever vaniſhes, no Danger; otherwiſe, if the Fever continues after the Eruption. It is a kindly Sort when the Breathing is good, the Pulſe regular, the Senſe perfect, and the Perſon can take Nourithment, and Sleep. When the Puſtules, containing a white Matter, are large, diſtinct, and few, and ripen without any great Fever; and even though there be many, and in ſome Places confluent, yet, if they are for the moſt part large, and advance kindly, and if, with this, the Strength keeps up, and there be no

* *Capke*, or *Capheph*, in *Arabic*, ſignifies an Eruption of Puſtules. *Caſtelli Lexicon, ſub Voce* חפף.

Oppreſſion

Oppreſſion or Burning, this is to be reckoned one of the worſt Sort. But when they are thick and coherent, ſo that a great many of them make one by running together, when the Circle of theſe Cluſters is very large, and the Appearance of them like Fat or Suet, when they run like an Herpes, or like what they call a *Formica*, corroding, ulcerating, and contracting the Skin; when they riſe like Warts, and have no Matter in them, it is a very malignant Sort; eſpecially, if after the Eruption, they don't come on well, and the Patient be not relieved. If the Fever increaſes after the Eruption, an ill Sign: So a new Crop of Puſtules, as it ſometimes happens, ſhews a great Plenitude of Humours. The Sort is more kindly, when it is not attended with violent Redneſs; but if with great Paleneſs, dangerous. If the Eruption is made on the firſt Day of the Diſtemper, it ſhews the Humours to be too briſk and impetuous; if upon the third Day, it denotes they are more tempered and languid; if in the critical Days, by which I ſuppoſe he means the fourth and ſeventh, the Diſtemper is ſtill milder; if there be great Pain in any Part, and that Part grows greeniſh or black, and the Strength fails, it is fatal; if the Puſtules are extremely little, hard, of a violet, green, high-red, or a black Colour, and don't come to Maturation, it portends Ill: If they continue ſo throughout the whole Courſe of the Diſeaſe; if the Fever be not removed, and is attended with a Syncope, Sickneſs, or Trembling of the Heart, nothing to be expected but preſent Death. Thus far of the Symptoms, and the Judgment to be formed of the Event.

The Cure follows: And the better to judge of this, we muſt always carry it in our Memory, that *Rhazes* lived and wrote in the warm Climate of *Perſia*. He bleeds, or cups immediately, even in Children; and, if the Symptoms be violent, even to Faintneſs; otherwiſe, a leſs Quantity is ſufficient. If a Vein in the Arm be not eaſily found, the *Poplitæa* may be open'd: The Room to be kept cool; all the Regimen to be, alſo, cool; Ptiſan the Nouriſhment, and the Medicines principally Troches of Spodium, (a good Abſorbent) and the Juice of Pomegranate, and all other acid and aſtringent Plants. And the Rule, in uſing this refrigerating Method, muſt be with regard to the intenſe Burning of the Diſeaſe, and managed with that Moderation, as not to extinguiſh the natural Heat. At firſt he gives Ice-water, till the Patient vomits and ſweats; then vaporates with warm Water; and this he reckons the moſt effectual way to drive out the Puſtules: So for Prevention and Preparation, he adviſes Bleeding, Swimming, uſing Ice-water, and all the coldeſt acid Diet, as the Juice of unripe Grapes, Salading, *&c.* He gives a Receipt made of Acids and Spodium, much in Vogue among the *Indians*, who, it ſeems, affirmed, that whoever uſed it would not have ten Puſtules in the Whole. The Body, if bound, to be kept open, by ſome Infuſions taken twice a Day; this will make the Puſtules fewer; and to be done, if the Diſtemper be violent. After the Eruption, ſtrong Purging to be avoided, eſpecially towards the Criſis, for fear of a Dyſentery; and too great a Flux is to be reſtrained. If Bleeding has been omitted in the Beginning, then gentle Sweating, and promoting the Eruption. If the Patient be hot, and the Puſtules do not advance, the Decoction with Figs, Raiſins, Lentils, *&c.* to be conſtantly uſed. If the Diſeaſe be ſlight, and the Oppreſſion little, and the Small-pox be out, Coolers not to be given to any great Degree, for fear of retarding the Eruption; but the Decoction to be continued, with ſome Saffron, *&c.* When they are all come out, Vaporations with Water. For Dilution, Water of Barley, Pomegranates, Melons, *&c.* and other temperate Liquors; and any thing, which more reſolves the Humours, is leſs neceſſary, eſpecially in the Meaſles. If the Oppreſſion be very great, and near to a Syncope, dipping in cold Water, and Friction, to drive out the Meaſles; and to take care there be not too great a Solution of the Fluids, or too profuſe a Sweat. After the fifth Day, (reckoning from the firſt Seizure) if the Puſtules don't advance, uſe thoſe Medicines which promote the Eruption. But this is to be done with Circumſpection, and with regard to the Symptoms; eſpecially the Fever, which will be beſt judged of by the Breathing, and the Pulſe. But, if the Puſtules are hard and rough, like the Warts, and the Patient languid, it is to no Purpoſe to attempt any Maturation; for that cannot be done; ſuch a State of the Diſeaſe being plainly pernicious. Opiates, above all things, are proper in Want of Sleep, or in caſe of a Looſeneſs. The Body is open generally towards the End of this Diſeaſe, eſpecially in the worſt Kind. No Purging before the Criſis; but, if need be, and the Body be dry, purge at the Beginning, and before the Declenſion; the firſt to abate the Heat and Beating of the Head; the latter to eaſe Nature of her Burden, and to carry off the morbific Matter. This to be judged of either before or after Bleeding, by the Body's being weakly, yet bloated, and full of Humours; a lurking Feveriſhneſs, and undulating Pulſe. In this Caſe, Purging anſwers beſt; but if the Mouth be bitter, if Vomiting, and great Inflammation, if the Throat is ſo ſtuffed, as to endanger Strangling, it is proper to bleed. The Directions are very full, which relate to Gargles, Collyriums, *&c.* and the preventing any Ulcers, or Pitting, from the Small-pox.

This is the Deſcription *Rhazes* gives of the Small-pox; a very true one, though it does not minutely deſcend into Particulars; and, for above 500 Years, it was thought ſo complete, that ſucceeding Writers ſcarce added any thing to it: Till at laſt, indeed, they came to diſtinguiſh the ſeveral Stages of this Diſtemper, and obſerve the very Days in each of them with great Exactneſs. However, even ſince that Time to our own, though the modern Authors have enter'd into a more preciſe Detail of the Appearances, and the Symptoms, which attend the Diſeaſe; yet, as far as regards the practical Part, we ſee here the Foundation of every thing they have advanced. To inſtance in a few Particulars:

The *Arabians* have rightly diſtinguiſhed between the two Sorts of Small-pox, and between each of them, and the Meaſles; and have deſcribed not only the regular Sorts, but have taken Notice of the anomalous too. They have, alſo, obſerved, where one Crop has ſucceeded another.

At the Beginning, and ſometimes even after the Eruption, they preſcribe Evacuations, both by Bleeding and Purging. And, indeed, they thought, that the good or ill Event of the Diſtemper, depended ſo much upon the Treatment they uſed at the firſt Seizure, or in the firſt Days of it at leaſt, that they are extraordinarily careful and exact in the Regimen, which they order to be extremely cool, as was moſt proper and ſuitable in ſo ſultry a Climate as theirs was. Their Practice ſurely was founded upon good Grounds; though others have followed it in an extravagant manner, and even exceeded what they did in Nations, where neither the Nature of the Diſeaſe, nor the Conſtitution of the Air, required it. Even our Countryman *Sydenham* carried this Notion to an Extremity in the firſt Edition of his Works; though afterwards he was ſo wiſe as to retract a great deal of what he had ſaid; and came into the moderate Method, as, without Diſpute, more agreeable to Reaſon, and to the Temper of our own Iſland.

We may obſerve, that their whole Management, both as to Diet and Medicine, in this Stage, ran upon Dilution; which they thought the moſt effectual Means to produce a kindly Eruption, and to keep the Puſtules out. And as to this laſt Point, however cooling their Regimen in general was, they made no Scruple to uſe warm and generous Cordials, when Nature ſeemed to want Aſſiſtance, or when they apprehended any Danger of their ſtriking in. To the ſame End, when there was any great Diſorder and Ferment in the Humours, which ought to be allay'd, or any terrible Symptom, which hindered the Maturation of the Pock, they had recourſe to that ſovereign and divine Remedy, Opium; a Remedy often uſed by them in this Caſe; though *Sydenham* ſeems to have been the firſt, who ever gave the leaſt Hint of ſuch a Practice among ourſelves.

Here, too, you will find, that in the Declenſion of the Diſeaſe, when Nature has diſcharged all ſhe can, and is ready to ſink under the Load of the morbific Matter, they took the proper ways to relieve her by Art; and for that Purpoſe direct us, how to apply both Bleeding and Purging, in ſuch a Caſe of Extremity. *Freind's Hiſt. of Phyſic.*

History of the Disease.

When the Small-pox proves epidemic, and is mild and regular, it uſually begins about the vernal Equinox; but, when it is not only epidemic, but irregular and dangerous, it appears about *January*. The Small-pox is of two Kinds, the *diſtinct*, and the *confluent*; which though they differ not eſſentially, are eaſily diſtinguiſhed by ſome conſiderable Symptoms peculiar to each Kind.

The diſtinct Kind begins, (1.) with a Chilneſs and Shivering, immediately followed by (2.) extreme Heat, (3.) violent Pain in the Head and Back, (4.) Vomiting, (5.) and in Adults, a great Tendency to Sweat; (6.) Pain in the Parts immediately below the *Scrobiculum Cordis*, if they be preſſed with the Hand; (7.) Sleepineſs and *Stupor*, eſpecially in Children, and ſometimes Convulſions, which happening after Dentition, I always ſuſpect the Small-pox to be approaching; and the Eruptions, appearing in a few Hours after, generally confirm the Prognoſtic; and I have frequently obſerved, that the Small-pox immediately ſucceeding ſuch Fits throws out large Eruptions, is of a mild and favourable Kind, and ſeldom proves confluent. It may be proper to obſerve here, that in ſuch whoſe Blood is of a looſer Texture, and eaſily admits of a Change, it ſometimes happens, that the Courſe of Separation is performed by degrees, without any conſiderable Sickneſs previous to the Expulſion of the Matter, and Eruption of the Puſtules.

The *diſtinct* Small-pox come out moſtly on the fourth Day inclusive, from the Beginning of the Illneſs, and ſometimes a little

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little later, but very rarely sooner; at which time the Symptoms are usually much abated, or even entirely vanish, so that the Patient seems tolerably well; only Adults can scarcely be prevented from sweating, however thinly they are covered; and this Disposition continues till the Eruptions begin to ripen, and then disappear spontaneously. The Eruption proceeds nearly in the following manner: First, a kind of pale-red Pustules, as large as the Head of a small Pin, appear dispersed, first on the Head, Neck, and Breasts, and afterwards on the whole Body. During this Stage of the Disease, the Throat is affected with a Soreness, that increases proportionably as the Pustules rise, which, growing every Day larger, and sharper at the Top, diffuse a Redness and Inflammation over the Skin and Flesh of the Parts adjacent.

This happens about the eighth Day from the Beginning of the Disease, which time I always particularly observe; for then the Spaces between the Pustules, that appeared before of a pale White, begin to grow red, and swell in proportion to the Number of Pustules; and are affected with a Pain, and, as it were, a Laceration of the Parts, which continually increasing, promotes the Inflammation and Swelling; so that, in the Progress of the Disease, the Eye-lids are so distended, as sometimes to render the Patient blind; and they shine, and nearly resemble an inflated Bladder. Sometimes the Blindness is induced sooner, a great Number of Pustules fixing on the Eyes from the Beginning of the Eruption; next, the Face, the Hands, and Fingers swell in proportion to the Quantity of the Pustules. The Pustules on the Face, that till this Day were smooth and red, now grow rough and whitish, which is the first Sign of a beginning Suppuration; and they, also, gradually discharge a yellow Matter, in Colour resembling an Honey-comb. The Inflammation of the Hands and Face, being arrived at its Height, produces in the Spaces between the Eruptions, a florid Colour, like that of Damask-roses; and the more mild and genuine the Disorder is, the more the Eruptions, and their intermediate Spaces approach this Colour. As the Pustules in the Face appear rougher and yellower every Day as they ripen, those of the Hands, and other Parts, appear smoother and whiter.

On the eleventh Day, the Swelling and Inflammation manifestly abate, and the Eruptions both of the Face, and the rest of the Body, being come to their Maturity, and just Bigness, equal to that of a large Pea, dry and scale off; and, in this kind of Small-pox, they commonly disappear on the fourteenth and fifteenth Day. But the Eruptions of the Hands generally prove more obstinate than those of the other Parts; and, being yet fresh and white, remain a Day or two after the rest. Those of the Face and Body scale off, but these of the Hands burst, and so vanish. The Pustules of the Skin are succeeded by a Scurf, or branny Scales, and these sometimes by Pits, or Pock-marks; for when the Pustules first fall off, no Unevenness is perceived in the Skin; but these Scales often coming on, and falling off alternately, at length those Pits are produced, which frequently appear long after the Recovery of the Patient; tho' the distinct Small-pox very rarely leaves any Marks behind it. The Patient is either quite costive, or has few Stools, during the whole Course of the Distemper.

That Species of the Small pox, which we call the *confluent*, is attended with the same Symptoms in common as the *distinct*, only they prove more violent; and by that Sign the *confluent* Kind may be distinguished from the *distinct*, even before the Eruption. Nevertheless, the Patient is not so ready to sweat in the confluent Kind as in the other; and a Looseness sometimes precedes, and continues a Day or two after the Eruption; a Symptom which I have not hitherto met with in the distinct Small-pox.

The confluent Small-pox generally comes out on the third Day, sometimes earlier, but scarcely ever later; whereas the distinct appears on the fourth Day, or later; but very rarely before; and the sooner the Pustules come out before the fourth Day, the more they run together. However, though this be true in general, and the confluent Kind scarcely ever appears so late as the fourth Day; yet, sometimes, the Eruption is defer'd, by some violent Symptom, to the fourth or fifth Day. Thus, 1. Sometimes, by a sharp Pain in the Loins, resembling a Fit of the Stone. 2. Sometimes in the Side, like a Pleurisy. 3. Sometimes in the Limbs, as in a Rheumatism. Or, lastly, 4. In the Stomach, attended with great Sickness and Vomiting. In these Cases, which, however, are not common, I have observed the Small Pox to come out later than ordinary, as being retarded by the considerable Violence of the Symptoms, which, being more severe than usual, when they arise in the very Beginning, manifestly indicate the subsequent Small Pox to be of the *confluent* Kind, and not void of Danger.

Though the first Symptoms of the *distinct* Kind vanish immediately after the Eruption, yet, in the *confluent* Kind, they afflict the Patient several Days after the Pustules appear.

Sometimes this sort comes out like an *Erysipelas*, and sometimes like the Measles, from which they are difficult to be distinguished, without carefully attending to the different Times of the Eruption in these Diseases, and other Circumstances, in which they differ extremely. As the Distemper increases, the Pustules, especially of the Face, do not rise plump, as in the *distinct* Kind, but run together; and appear, at first, like a red Bladder, covering the whole Face, and making it swell sooner than in the *distinct* sort, till, at last, they appear like a thin white Pellicle, closely adhering to the Face, and rising little higher than the Surface of the Skin.

After the eighth Day, this Pellicle grows every Day gradually rougher, as appears by the Touch, and inclines to a brown, and not to a yellow Colour, as in the *distinct* Kind: The Roughness and Colour of the Skin daily increase, till, at length, the Pellicle falls off in large Scales; but, when the Disease has been very severe, it usually sticks to some Part of the Face, till after the twentieth Day. The more violent the Distemper proves, the nearer the Eruptions, as they ripen, incline to a dark-brown Colour; and the longer they are in falling off, if left to themselves; but the less they run together, the yellower they are, and the sooner they scale off. When this Pellicle, or Scab, which covers the Face, first falls off, it leaves no Roughness behind; but it is immediately succeeded with branny Scales, of a very corrosive Nature, which not only make larger Pits than the *distinct* Kind generally do, but, also, much disfigure the Face with unseemly Scars: And, in the *confluent* Kind, if the Disease has been very violent, the Skin of the Shoulders and Back sometimes scales off, leaving these Parts bare.

It must be observ'd, that this Disease is not to be esteem'd dangerous from the Number of Eruptions scatter'd over the Body, but only from that in the Face; for if they be very thick in the Face, though there are but few, and those of the *distinct* Kind, every-where else, the Patient is equally endangered, as if all the Limbs were extremely full. But, on the contrary, though every Part besides be full, if there be but few in the Face, the Danger is less. In this manner, therefore, must we judge of the Kind.

In the *confluent* Small Pox I have always observ'd, the Eruptions in the Hands and Feet were larger than those of the other Parts, and were gradually less and less, the nearer they approached the Body.

The *confluent* Small Pox is attended with two other considerable Symptoms: 1. A Salivation, or Spitting, in Adults. And, 2. A Looseness, in Children. The former is so constant an Attendant on this Disease, in Adults, that I never met with but one Patient who was free from it; but the Looseness does not so certainly affect Children. The Evacuation made by these Symptoms is as necessary as either the Eruptions, or the Swelling of the Face and Hands.

The Salivation sometimes begins as soon as the Eruptions appear, and sometimes not till a Day or two after: The Matter is for some time thin, easily and plentifully expectorated; and this Salivation resembles that raised by Mercury, only the *Saliva* is not so fetid: But, towards the eleventh Day, the *Saliva* now becomes more viscous, is raised with great Difficulty; the Patient is thirsty, coughs often whilst he drinks; and the Liquor flies out at the Nostrils; from this Day the Salivation generally stops; though sometimes but rarely, after it has ceased for a Day or two, it returns: At the same time, the Swelling of the Face begins to abate, but then the Hands commonly swell, or, at least, ought to do so.

The Looseness, in Children, appears not so soon as the Salivation in Adults; but, whenever it begins, unless it be stopt by Art, it attends the Distemper throughout.

In both Kinds of the Small Pox the Fever rages most from the Beginning to the time of the Eruption, after which, it abates, and continues much more moderate, till the Suppuration begins, which being finished, it ceases entirely.

I have always observed, when the Disease proved very violent, that the Patient had a Kind of Paroxysm towards Evening, at which time the more dangerous Symptoms arose, and raged most severely.

Irregular Symptoms, arising from unskilful Treatment.

The irregular Symptoms which happen on the eighth Day, in the *distinct* Kind, and on the eleventh, in the *confluent*, always calculating from the first Beginning of the Distemper, most eminently concern the Life or Death of the Patient, it being apparent, that most of those who perish by either Species, die on one of the above-mentioned Days.

In the *distinct* Kind, as the Patient, if an Adult, usually sweats freely, he conceives Hope of Recovery, thinking the Malignity of the Disease will thus be expelled through the Pores of the Skin; and therefore diligently promotes the Sweat, by a hot

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hot Regimen. But thoſe Particles being, at length, expelled by Sweat, which ſhould have ſerved to raiſe the Puſtules, and ſwell the Face, on the eighth Day; the Face, inſtead of being ſwelled, appears flaccid; and the intermediate Spaces, inſtead of being inflamed, appear white, or pale, whilſt the Puſtules look red, and continue elevated, even after the Death of the Patient. The Sweat, which had flowed freely to this Day, now ceaſes ſuddenly and ſpontaneouſly, and can't be raiſed again by the warmeſt Cordials. In the mean time, the Patient is ſeized with a Delirium, great Reſtleſſneſs and Sickneſs, a Frequency of making Urine in ſmall Quantities, and expires in a few Hours. But it muſt here be obſerved, that, if the Eruptions be few, the Diſeaſe happens in the Winter, and in a Perſon in Years, or if Bleeding has been previouſly uſed, this hot Regimen does not then ſo certainly hinder the Swelling of the Face, and, conſequently, haſten Death, as where the Eruptions are many, the Patients in the Prime of Life, and no Blood has been taken away.

But, in the *confluent* Kind, the Danger is greateſt, and the greateſt Number die on the eleventh Day: For as the Salivation, which had hitherto preſerved the Patient, commonly ceaſes ſpontaneouſly about this time, unleſs the Swelling of the Face continues longer, and that of the Hands, now manifeſtly beginning, ſupplies its Place, Death muſt certainly enſue. For it muſt be conſidered, that, in this Kind of Small Pox, where the Eruptions are ſo ſmall, not only the Salivation, but, alſo, the Swelling of the Face and Hands, is abſolutely required, in order to a proper Diſcharge of the morbific Matter; and if either be wanting, or diſappear too ſoon, the Patient muſt periſh immediately. But it happens too frequently, in this hot Diſtemper, that the Texture of the Blood is ſo much weaken'd, and broke, and ſo highly inflamed, by an over-hot Regimen, as to be no longer able to perform the Expulſion of the inflammatory Particles in a ſlow and gradual manner (not to mention now the Miſchiefs proceeding from forcing Sweat improperly); whence either the Face and Hands do not ſwell at all, or the Swelling vaniſhes with the Salivation. For though the Swelling of the Face ought to abate a little on this Day, yet it ſhould not go off entirely, till a Day or two after; the Swelling of the Hands, in the mean while, continuing, and increaſing, which is one of the moſt certain Signs of Recovery, as the contrary is of imminent Danger.

The *Saliva*, on this Day, becomes ſo viſcid, and tough, as to endanger Suffocation; and, when the Patient drinks, the Liquor falls down the Windpipe; whence it is thrown up through the Noſtrils with a violent Cough: He is ſeized with a Hoarſeneſs, a great Stupor, and Drowſineſs; and, being wholly oppreſſed by the Violence of the Diſeaſe, generally ſinks under the Difficulties on this Day.

There are, alſo, other Symptoms, which happen in any Stage of the Diſtemper, and which are equally common in the *diſtinct* and *confluent* Kinds of the Small Pox. Thus a *Delirium* ſometimes ſeizes the Patient, occaſioned by the exceſſive Ebullition of the Blood; and the Heat is ſo intolerable, that he endeavours furiouſly to get looſe from thoſe who confine him in Bed. Sometimes the ſame Cauſe produces a Kind of *Coma*, ſo that the Patient almoſt continually dozes, unleſs he be conſtantly roufed.

Sometimes, alſo, in this Diſeaſe, as in the Plague, the Texture of the Blood, being diſſolv'd by the Violence of the Inflammation, purple Spots appear in the Spaces between the Eruptions, which are generally Forerunners of Death: This Circumſtance happens oftener, when the Conſtitution of the Air chiefly favours this epidemic Diſeaſe. Sometimes black Spots, ſcarce ſo large as ſmall Pins Heads, and depreſſed in the Middle, appear on the Tops of the Eruptions, in different Places; which, as they proceed from too much Heat, at length, by the Uſe of a cooler Regimen, acquire a brown, and afterwards a yellow Colour, which naturally belongs to the genuine and regular Small Pox; and the nearer the Eruptions, when come to Suppuration, reſemble this Colour, all the Symptoms become proportionably milder, and *vice verſa*.

The Blood of young, and of vigorous Perſons, is ſometimes ſo much inflamed, in this Diſeaſe, eſpecially if too liberal an Uſe of Wine, or any ſpirituous Liquor, has preceded, as to break through the Arteries into the Bladder, and ſo occaſion bloody Urine; which is one of the moſt dangerous Symptoms of this Diſtemper.

Sometimes, but not ſo frequently, a Flux of Blood from the Lungs proceeds from the ſame Cauſe: But either of theſe Hæmorrhages uſually happen in the Beginning, before the Eruptions appear, which would prove particularly *confluent*.

Sometimes, alſo, eſpecially in young Perſons, there happens a total Suppreſſion of Urine, either at the Height or Declenſion of the *diſtinct* Kind.

Other Symptoms ariſe, when the Patient has been injured, 1. By too intenſe Cold. 2. Improper Bleeding in a very large

Quantity. Or, 3. Over-purging. Whence the Eruptions ſometimes ſuddenly ſink, and a Looſeneſs comes on, which, in Adults, proves highly dangerous, the variolous Matter being thereby ſtruck in, ſo that Nature is utterly unable to expel it: By theſe means, alſo, the Swelling of the Face and Hands is check'd.

But the Symptoms, which proceed from taking Cold, ſeldom appear, if compared with thoſe that ariſe from the hot Regimen: For as this Diſeaſe may deſervedly be reckon'd among thoſe of the moſt inflammatory Kind, a Miſtake, on this hand, happens much more frequently than on the other.

The Eſſence of this Diſeaſe ſeems to be an Inflammation of the Blood and Juices, (yet of a different Kind from other Inflammations) in removing which, Nature, during the firſt two or three Days, endeavours to correct and digeſt the inflamed Particles, which, being afterwards thrown out on the Surface of the Body, ſhe further ripens, and, at length, totally expels them, in the Form of ſmall Abſceſſes. Hence, in order to lay a Foundation for the Method of Cure, it muſt be remarked, that this Diſeaſe has two Stages; the firſt is that of the Separation, the ſecond that of the Expulſion.

1. The Separation is moſtly accompanied with a febrile Ebullition, and is ordinarily finiſhed in three or four Days, during which time, Nature is employed in collecting the inflamed Particles that diſturb the Blood, and, expelling them to the fleſhy Parts; which being over, the former Calm returns. 2. The Expulſion next ſucceeds, which is performed during the Remainder of the Diſeaſe, by means of thoſe ſmall Abſceſſes in the Fleſh, which, like other Abſceſſes, undergo the States of Crudity, Suppuration, and Exſiccation; and if theſe States are finiſhed in a ſuitable manner, the Danger is paſt; but, if otherwiſe, all is diſordered. The Expulſion requires a much longer time than the Separation, this being performed in a thin fluid Body, but that in a denſe Subſtance, at a greater Diſtance from the Fountain of Life.

Hence the Indications are, 1. That ſuch an equable Ebullition of the Blood be maintain'd, that it may neither finiſh the Separation too haſtily, by riſing too high; nor retard, or render it incomplete, by ſinking too low. 2. That the Abſceſſes or Eruptions be carefully kept up, ſo that, running through their proper States, they may, at length, entirely diſcharge the Matter they contain, and vaniſh.

With regard to the firſt Indication, great Caution is requir'd, eſpecially during the Separation, that the Ebullition may not riſe too high, either from heaping too many Cloaths on the Patient, over-heating the Air, by keeping too large a Fire in the Room, or uſing heating Medicines and Cardiacs, eſpecially if the Patient be in the Prime of Life, or if his Blood be too much enriched by ſpirituous Liquors, or if it be the Spring Seaſon, or, at leaſt, only the Beginning of Summer; otherwiſe, the Separation, which ſhould be carried on ſlowly, and gradually, for the better promoting an univerſal Deſpumation, will hence be hurried on too faſt, and thus either there will not be a ſufficient Number of Particles collected, or, perhaps, ſome Particles may be brought to Secretion, which Nature would not, otherwiſe, have ſecreted, were ſhe not forced beyond her juſt Limits, and made to injure herſelf: For when ſuch Particles are ſeparated, as are unfit for Separation, the Motion of others, that have a Tendency to it, is hindered, by their mixing with theſe; and thus they are rendered leſs fit for Expulſion.

It ſeems agreeable to Reaſon, that the more time Nature employs in perfecting the Separation, provided the Ebullition does not entirely ſubſide, ſo much the more certainly and univerſally it is completed; upon which the Succeſs of the ſubſequent Cure muſt needs principally depend, as a different Event muſt manifeſtly enſue from the contrary Method. For as over-early Fruit does not come to Perfection, ſo no Good ariſes from the hot Regimen, but it frequently produces an immediate Delirium, or profuſe Sweats ariſe, whereby ſuch Particles are ſeparated as are unfit for Secretion, and not agreeable to the Nature of *Pus*; or elſe the Eruptions, being driven out too much by Cardiacs, and a hot Regimen, become of a terrible and fatal *confluent* Kind.

From the other Method I have never obſerved any Miſchief; for Nature, left to herſelf, finiſhes her Work in a proper time and manner, ſo as to need no Aſſiſtance, at leaſt in the Young and Robuſt.

But the Danger of raiſing the Ebullition, by a hot Regimen, is not greater than the Danger of depreſſing it by Bleeding, Emetics, Cathartics, Clyſters, and the like Evacuations: For, by them, not only the Ebullition is too much diminiſhed, by means of which the Parts, intended for Deſpumation, ſhould have been carefully ſeparated; but the Matter, alſo, is waſted, which ſhould continually ſerve as Fuel to the Secretion once begun: Whence it frequently happens, that the Eruptions, which came out kindly in the Beginning, and, perhaps, ſo much the better from the previous Uſe of the above-mentioned Evacuations,

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cuations, ſink ſoon after, as if they were ſuddenly ſtruck in; occaſioned, principally, by a want of a freſh Supply of Matter to ſucceed the former, and finiſh the Separation. We ſhall, afterwards, ſhew, that Bleeding and Vomiting are neceſſary, in the *confluent* Kind.

To proceed to the ſecond Indication: As it has been ſhewn, that it is highly dangerous to keep the Patient over-warm, during the time of Separation, whilſt the Fever is preſent, and the Eruptions ſcarcely appear; ſo an Error of this Kind is equally dangerous, at any time of the Diſeaſe, and eſpecially towards the Beginning of the Expulſion, whilſt the Eruptions are yet in a State of Crudity. For though the tumultuary Motion of the Blood be conſiderably abated, upon the Separation and Tranſlation of the Matter to the fleſhy Parts; yet, being ſtill weak, and having ſcarcely acquired a new State and Texture, it is eaſily affected by the immoderate Heat ariſing from all Parts; and, upon the leaſt Occaſion given, becomes inflamed with a Tendency to a new Ebullition, which does not promote Separation, that Buſineſs being already finiſhed, but produces dangerous Symptoms, diſturbs the Eruption begun, and proves detrimental, by putting the Contents of the Puſtules into violent Motion. By theſe means, either the Particles, already ſecreted, and depoſited in the Habit, being hurried away by the violent and rapid Motion of the Blood, are abſorbed by it; or the fleſhy Parts, being heated beyond the Degree requiſite for Suppuration, do not finiſh it ſo completely: Or, laſtly, perhaps, upon the coming of this new Diſorder, the Texture of the Blood, and the Tone of the fleſhy Parts, ſuffer ſo great an Alteration, that they cannot overcome the Matter expelled, and digeſt it in the uſual Way of Abſceſſes.

But we muſt not be ſo intent upon preventing an immoderate Ebullition of the Blood, as to check the Eruption of the Puſtules, by expoſing the Patient to the Injuries of the Cold: The fitteſt Degree of Heat, to promote their Expulſion, is the natural one, as this is ſuitable to the Temper of the fleſhy Parts; and to exceed, or fall ſhort of it, is dangerous, on either hand.

From what has been deliver'd, it ſeems manifeſt, that this Diſeaſe is a very dangerous one, and the Method of Cure difficult to be aſcertained.

If the Eruptions recede, or the Swelling of the Face and Hands fall, either from unſeaſonable Bleeding, or taking Cold, recourſe muſt be had to Cardiacs; but we muſt be careful of giving them too freely, leſt a new Ebullition ſhould be ſuddenly raiſed; the Blood being, yet, weak, and eaſily affected by a hot Stimulus.

As ſoon as the Signs of the Diſeaſe appear, I confine the Patient within Doors, forbid the Uſe of Wine and Fleſh-meats, and allow Small Beer, moderately warm, with a Toaſt, for common Drink; and ſometimes ſuffer it to be drank at Pleaſure: I, alſo, direct Water-gruel, Barley-broth, roaſted Apples, and other Kinds of Aliment, that are neither remarkably heating, nor cooling, nor hard to digeſt; nor do I much diſapprove of Milk, with roaſt Apples bruiſed in it, provided it be given warm, and ſparingly. I immediately caution againſt a hotter Regimen, and the Uſe of all Cardiacs.

Bloody Urine, purple Spots, and other mortal Symptoms above ſpecified, happen only from a too early Confinement in Bed, eſpecially in young Perſons: I do not, therefore, direct the Patient to be put to Bed till the fourth Day; at which time, if the Eruption does not come kindly forward, it is proper to give ſome gentle Cardiac, at leaſt for once, to drive out the Puſtules. Among the Medicines that produce this Effect, thoſe called Paregorics, or Opiates, ſuch as Liquid Laudanum, Diaſcordium, and the like, given in a ſmall Quantity, mixed with ſome proper Cordial Water, are the moſt efficacious: For as they abate the Ebullition of the Blood, Nature expels the morbific Matter with greater Eaſe and Convenience. But I would not adviſe the giving a Cardiac before this Juncture, even though there be a Looſeneſs, that ſhould require ſuch a Remedy; for the Looſeneſs goes off ſpontaneouſly, as does a Vomiting, when Nature expels the variolous Matter by the Skin.

But if I am called to a ſtrong young Man, who, beſides, has been addicted to a free Uſe of Wine, or any other ſpirituous Liquor, I think, for him to keep from Bed, and refrain from Cordials, not ſufficient to check the Ebullition of the Blood, unleſs Bleeding in the Arm be, alſo, uſed: For the Motion of the Blood, being rendered ſo violent by its Inflammation, it frequently burſts through the Veſſels into the Bladder, or occaſions purple Spots, and other malignant Symptoms, which deſtroy the Patient.

As ſoon as the Puſtules appear, I examine carefully, whether they are of the *diſtinct* or *confluent* Kind, as they differ extremely from each other: If, therefore, upon conſidering the Symptoms above-enumerated, they appear of the *diſtinct* Kind, I take care, that the Patient be refreſhed with Small Beer, Water-gruel, Barley-water, or the like, in the manner above directed; and, if it be Summer, the Weather exceeding hot, and the Puſtules few, I ſee no Reaſon why the Patient ſhould be confined in Bed, but, rather, that he may riſe, and ſit up a few Hours every Day, provided the Injuries, ariſing from the Extremes of Heat or Cold, be prevented, both with reſpect to the Place where he lies, and the manner of Clothing: For when the Patient ſits up between-whiles, the Diſtemper finiſhes its Courſe with greater Eaſe, and, alſo, more expeditiouſly, than if he had been conſtantly kept in Bed; which not only prolongs the Illneſs, but, likewiſe, promotes the febrile Heat, and occaſions a painful Inflammation, upon the Riſing of the Puſtules: But if the Coldneſs of the Seaſon, or a numerous Eruption, makes it neceſſary for the Patient to keep his Bed conſtantly, I take care to prevent his lying warmer, or with more Cloaths on him, than he uſed to do whilſt in Health; and that only a moderate Fire be made in the Room, Morning and Night, unleſs it be the Winter Seaſon. Neither do I require, that he ſhould lie always in the ſame Place in Bed, leſt a Sweat ſhould be raiſed, which can't be promoted without very great Danger.

In the Declenſion of the Illneſs, when the free Exhalation of the *Effluvia*, proceeding from the Matter, now chang'd into *Pus*, is prevented by the Hardneſs and Dryneſs of the Puſtules, it will be proper to give five or ſix Spoonfuls of *Canary*, or ſome other mild Cardiac; leſt theſe putrid *Effluvia* return again into the Blood. At this time, alſo, and not before, Cardiacs, and a warmer, and more cordial Diet, may be allow'd; as Sugar-ſops, Oatmeal-caudle, and the like. Nor will any thing further be needful, in the kindly *diſtinct* Species, provided the Patient will conform to this temperate Method and Diet; unleſs, perhaps, Reſtleſſneſs, Watchings, or other Symptoms, threatening a Delirium, ſhould occaſionally require an Opiate.

This is the true and genuine Method of treating this Kind of Small Pox; but if, through the Prejudices or Obſtinacy of the Friends, or Diffidence of the Patient, this Regimen be oppoſed, I eſteem it ſafeſt to bleed; which though it is, in its own Nature, prejudicial in this Kind of Small Pox, as it diſturbs the Separation, and leſſens the Supplies intended to keep up the Eruptions and Swelling, yet it makes ſome little Amends for the Injuries of the ſubſequent hot Regimen; and therefore renders this Method, which I would not uſe without Compulſion, leſs dangerous.

Greater is the Danger in the *confluent* Small Pox, which proceeds from a greater Inflammation of the Blood, and therefore more Caution is required, not to heat the Patient. But though this Kind naturally demands greater Cooling than the other, yet, in order to promote the Swelling of the Face and Hands, (without which Death muſt enſue) and the Elevation and Increaſe of the Eruptions; and, alſo, becauſe the Patient, on account of the painful Ulcerations, cannot ſit up, it is proper he ſhould keep his Body, and even his Hands, in Bed, provided he be lightly covered, and allowed to turn himſelf therein, as he pleaſes: And, in the Declenſion of the Diſtemper, upon the Approach of the ſuppurative Fever, he muſt not only be allow'd this Liberty, but admoniſhed to make uſe of it; and muſt be turned often, Night and Day, to moderate the exceſſive Heat, and prevent Sweat, by which the Humour is diſcharged, wherewith the Small Pox ſhould be diluted, to render them mild.

As the Salivation, which conſtantly attends this Kind of Small Pox, is one of Nature's principal Evacuations, and is here ſubſtituted inſtead of that which ſhould have been made by Puſtules, (for the Evacuation by Puſtules does not proceed ſo well in this low and flat Sort, as in the other) we muſt diligently endeavour to keep it at its Height, and prevent its untimely Stoppage, either from the Uſe of heating Medicines, or by forbidding the free Uſe of Small Beer, or ſome ſuch Liquor. Now as the Spitting, in its natural Order, is to begin as ſoon as the Eruptions appear, and abate on the eleventh Day, but not entirely vaniſh till a Day or two after, ſo, if it ceaſes before that Day, the Danger is great: For as the Swelling of the Face, by which ſome Part of the morbific Matter is evacuated, always vaniſhes on that Day, if the Salivation ſtops at the ſame time, the Patient is infected by the variolous Matter, now become corrupt, as by a Poiſon; and there being no way left for it to paſs off, the Danger is imminent, unleſs, as it ſometimes happens, the Swelling of the Hands be ſo conſiderable, as to ſnatch the Patient from impending Death. This Salivation may be promoted by drinking Small Beer freely, or ſome other Liquor, that neither heats, nor excites Sweat.

Beſides theſe, in order to check the violent Ebullition, and promote the Spitting, Opiates are more proper than any other Remedies; and though, by their incraſſating Quality, they may ſeem, in ſome meaſure, to hinder the Expectoration, yet I have long ſhaken off that Prejudice, and given them in this Diſeaſe with great Succeſs, provided the Patient was above Fourteen. For

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For as the Blood of Infants and Children, who generally ſleep tolerably well throughout this Diſeaſe, ferments more gently, it ſtands leſs in need of ſuch a Check; beſides, by the Uſe of this Kind of Remedy, the Looſeneſs, which Nature appoints to be an Evacuation for Children in this Species of the Diſeaſe, is ſtopt, to the Detriment of the Patient.

In Adults, the frequent Uſe of Opiates is attended with the following Advantages: 1. By procuring moderate Reſt, they abate the violent Ebullition of the Blood, and prevent a Delirium. 2. They promote the Swelling of the Face and Hands. 3. They ſupport and prolong the Swelling to its natural Period. 4. They promote the Salivation, which, though it may be ſtopt in ſome Subjects for a few Hours, by means of ſo powerful an incraſſating Medicine; yet the Strength being increaſed by theſe new Helps, Nature reſumes freſh Vigour, and happily finiſhes the Work. 5. I have obſerved, that the Spitting, which uſually abates about the eleventh Day, and ſometimes earlier, to the great Detriment of the Patient, by giving Opiates a few times, has been raiſed anew, and not ceaſed before the fourteenth Day, and ſometimes later. I uſually give about fourteen Drops of liquid Laudanum, or an Ounce of Syrup of white Poppies, in a little Cowſlip-flower water, or ſome ſuch diſtil'd Water, to Adults, every Night after the Eruption is over, to the End of the Diſeaſe. And as in the worſt Kind of Small Pox a hot Fit, attended with Reſtleſſneſs, Anxiety, and other Symptoms, generally come on in the Evening; this may, in ſome meaſure, be prevented, by adminiſtering the Opiate at Six or Seven at Night.

As a Looſeneſs as certainly accompanies the *confluent* Small Pox in Children, as a Salivation in Adults, I take care by no means to check this Looſeneſs; and direct the Children to be kept ſometimes in the Cradle, and ſometimes taken up, allowing them the ſame Diet, if they be weaned, as I directed for Adults.

In the Declenſion of the Diſeaſe, when the Face is ſtiff, occaſioned by the Eruptions becoming cruſty, hard, and dry, I anoint it frequently with Oil of ſweet Almonds, as well to eaſe the Pain, as to promote a freer Exhalation of the hot *Effluvia*. I uſe no Endeavours to prevent the Pitting of the Face, as Oils, Liniments, and the like; theſe only cauſing the Scurf to ſcale off more ſlowly, which is gradually ſucceeded by unſeemly Scars: But the Patient need not be very anxious about theſe, when, by reaſon of a previous temperate Regimen, the Eruptions, having been little irritated, have contracted no cauſtic Quality.

Now though this Method, provided it be carefully and prudently ſuited to particular Circumſtances, will render the Diſeaſe very gentle and ſafe; yet, in ſome Caſes, I find it neceſſary to uſe a different Treatment.

Firſt, therefore, if in the *diſtinct* Kind, by means of an over-hot Regimen, and continual Sweats, the Face does not ſwell on the eighth Day, but is flaccid, and the Spaces between the Eruptions look pale, whilſt the Puſtules appear in great abundance; beſides uſing my utmoſt Endeavours by a more temperate Regimen, to check the violent Motion of the Blood, I immediately direct an Opiate to be given, which, by gently procuring Sleep, (unleſs the Brain be over-heated) and, conſequently, moderating the Tumult raiſed in the Blood, ſeaſonably determines it, together with the Heat, to the Face, as the Nature of the Diſeaſe demands.

But if the Miſchief, hence ariſing, has proceeded ſo far, that the Sweat, which had hitherto flowed plentifully, ceaſes ſpontaneouſly, the Patient is ſeized with a Delirium, complains of great Sickneſs, and makes Urine often in a ſmall Quantity; in this Caſe, the Danger of Death being imminent, I conceive he can only be reliev'd, either by giving Opiates freely, or taking away a large Quantity of Blood, and expoſing his Body to the open Air. Nor will what I have now propos'd ſeem imprudent, and unreaſonable, if we attend to thoſe who have eſcap'd imminent Death, by the plentiful Bleeding at the Noſe, ſuddenly ariſing: Beſides, it muſt be conſidered, that, in this dangerous Extremity, Death does not enſue, becauſe the Eruptions ſtrike in; for they appear red and plump, even when the Patient is expiring; but becauſe the Face does not ſwell. Now whatever tends to abate the Heat of the Blood, and I conceive, that none will deny that Bleeding, and moderate Cooling, have this Virtue, muſt neceſſarily help to promote the Swelling of the Face, as much as the Uſe of Opiates, and apparently for the ſame Reaſons.

But I would not be underſtood to adviſe Bleeding immediately, in every *Delirium* happening in the Small Pox, ſince no Symptom oftener occurs in this Diſeaſe: But, 1. In that only which happens becauſe the Face does not ſwell, that is, in the *diſtinct* kind, the Eruptions being, at the ſame time, pretty numerous; or, 2. Where the Motion of the Blood is become ſo violent and immoderate, by means of a very hot Regimen, and the Uſe of Cardiacs, as to render it unſafe to wait till it can be reduced to a due Temper, by Opiates, and other proper Medicines. In ſuch Caſes, alſo, it has frequently ſeemed ſufficient to me, for the Patient to riſe and ſit up awhile in his raving Fit; by which Expedient I have ſaved ſeveral from Death. And, beſides thoſe I have ſeen, there are numberleſs Inſtances of Perſons, who, by theſe means, have been ſnatched from imminent Danger. For ſome delirious Perſons, deceiving their Nurſes, and getting out of Bed, have remained expoſed to the cold Air, even in the Night-time; and others have ſecretly, or by Intreaty, procured cold Water to drink; and thus, by an happy Miſtake, ſaved their Lives, when deſpaired of.

I ſhall here ſet down the Hiſtory of a Caſe, which I had from the Perſon concerned: He told me, that when he was a young Man, he went to *Briſtol*, and was there ſeized with the Small Pox, about Midſummer, followed ſoon after with a Delirium: His Nurſe, going into the City, left him in the mean while to the Care of ſome other Perſons, intending to be back ſoon; but, making a pretty long Stay, the Patient in the mean while died, as the Attendants thought; who, conſidering the Heat of the Seaſon, and his Corpulence, that the Body might not ſmell, took it out of Bed, and laid it naked on a Table, throwing a Sheet over it. The Nurſe at length returning, and looking on his Face, ſhe imagined ſhe ſaw ſome ſmall Signs of Life, and, therefore, put him to Bed again directly, and brought him to himſelf; and he recovered in a few Days.

If the Saliva in the confluent Small Pox be render'd ſo hard and viſcid by the preceding Heat, as to endanger Suffocation, which commonly happens on the eleventh Day, a Gargariſm muſt abſolutely be uſed, and great Charge given, to ſyringe the Throat with it Night and Day. Small Beer, or Barley-water, mixed with Honey of Roſes, may be employed for this Purpoſe, or the following:

> Take of the Bark of Elm, ſix Drams; Liquorice-root, half an Ounce; twenty ſtoned Raiſins; red Roſes, two Pugils: Boil them together, in a ſufficient Quantity of Water, to leave a Pint and half; in which, when ſtrained off, diſſolve, of ſimple Oxymel, and Honey of Roſes, each two Ounces: Mix the Whole for a Gargariſm.

But, if the Patient has been treated in a proper manner, the Salivation, even though it has begun to abate, will ſo effectually anſwer its End, as to render this Remedy ſuperfluous. And, in reality, when the Patient is every moment in danger of Suffocation, oppreſſed with a *Stupor*, and breathes with the utmoſt Difficulty, it is not ſafe to truſt to this Remedy. In this Caſe I have ſometimes ſeaſonably and ſucceſsfully given a Vomit, of the Infuſion of *Crocus Metallorum*, in a larger Doſe than ordinary, to an Ounce and an half; becauſe the Stupor is ſo conſiderable, that a ſmaller Quantity will not operate, but by diſturbing thoſe Humours which it cannot eject, greatly endangers the Life of the Patient. Neither can we wholly truſt to this Remedy, and, which is truly to be regretted, we are hitherto unprovided with a more certain and effectual one, to conquer this dreadful Symptom, which alone deſtroys moſt of thoſe who die on the eleventh Day, in this kind of Small Pox.

As the other Symptoms happening in this Diſtemper are prevented, ſo, likewiſe, moſt of them are relieved, by a temperate Regimen. For Inſtance, as the Delirium above-mentioned, proceeding from the too great Heat of the Brain, is removed by cooling the Blood, ſo, by the ſame means, a Coma is eaſily remedied; which ſeems to be a quite different Symptom. By cooling the Blood in this manner, I have ſeen purple Spots removed; but have not yet been able, by this or any other Method, to ſtop bloody Urine, or a violent Flux of Blood from the Lungs; but ſo far as I have hitherto obſerved, both theſe Hæmorrhages prognoſticate certain Death.

In a Suppreſſion of Urine, which ſometimes happens in the Young and Vigorous, from the great Confuſion and Diſorder of the Spirits, ſubſervient to this Excretion, by reaſon of the immoderate Heat and Agitation of the Blood and Juices, I have had recourſe to all the Kinds of Diuretics; but nothing has ſucceeded ſo well with me as taking the Patient out of Bed, who, after walking twice or thrice croſs the Room, ſupported by the Attendants, has immediately voided Urine pretty plentifully, to his great Relief.

But the Symptoms proceeding from the Striking-in of the variolous Matter from intenſe Cold, or unſeaſonable Evacuations, muſt be remedied by Cardiacs, and a ſuitable Regimen; which, however, muſt not be continued longer than thoſe Symptoms laſt: The principal of theſe are a Depreſſion, or Sinking of the Puſtules, and a Looſeneſs, both in the *diſtinct* Kind; For, in the *confluent* Kind, neither the Depreſſion nor Sinking of the Puſtules, threaten Danger, this being the Nature of the Diſeaſe; nor a Looſeneſs in Children, becauſe it promotes their Recovery. In either Caſe, it is highly proper to give a cordial Draught, made of ſome proper diſtilled Waters, mixed with Diaſcordium, liquid Laudanum, and the like, not only to re-

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move the above-mentioned Symptoms, but at any time of the Diſeaſe, if the Patient complains of a Pain at the Heart and Sickneſs. I judge, that the Notion of the frequent Striking-in of the Eruptions, proceeds from hence, that ſuch as have obſerved the Depreſſion of them, in the *confluent* Kind, eſteemed it to be a Striking in of the variolous Matter from taking Cold; whereas here it is only the Nature of the Diſeaſe; and they ſuſpect the ſame in the diſtinct Kind, becauſe they look for the Eruption, and Increaſe of the Puſtules, before the due time; not having ſufficiently attended to the time wherein Nature uſually finiſhes the Suppuration of this Kind of Small Pox.

When the Patient begins to recover, and the Eruptions ſcale off, and he has eat Fleſh a few Days, for Example, the one-and-twentieth Day, I judge it requiſite to bleed in the Arm, if the Diſeaſe has been violent: For the Inflammation communicated to the Blood by the Small Pox, whether in Adults or Children, equally indicates Bleeding; as the Foulneſs collected in the Habit, does Purging; as appears ſufficiently both from the Colour of the Blood, taken away after a ſevere Small Pox, which exactly reſembles that of Pleurities; and, likewiſe, from the great Inflammations that fall on the Eyes, after it is gone off; and other pernicious Effects, ariſing from the Blood overheated, and vitiated thereby: Hence, alſo, it follows, that ſuch as enjoyed a good State before the Attack, are afterwards afflicted with a Defluxion of ſharp hot Humours upon the Lungs, or ſome other Part, for the Remainder of Life. But if the Puſtules were few, Bleeding is unneceſſary: After Bleeding I purge three or four times.

After the Patient has been long recovered from the confluent Small Pox, and riſes every Day, there ſometimes happens a troubleſome Swelling of the Legs; which either goes off ſpontaneouſly, after Bleeding and Purging; or is eaſily cured by the Uſe of Fomentations, made of emollient and diſcutient Herbs, boiled in Milk; as the Leaves of Mallows, Mullein, Elder, Laurel, and Chamomile and Melilot-flowers. *Sydenham.*

Theſe Species of Small Pox, adds Dr. *Sydenham*, prevailed in 1667. 1668. and Part of 1669. which he choſe to call *legitimate*, or *regular*, to diſtinguiſh them from the other Kinds that ſucceeded them, in the Years 1670. 1671. and 1672. which he denominated *anomalous*, or *irregular*; and gives us the following Account of them.

The irregular Species of Small Pox was introduced by the Meaſles, (ſee MORBILLI), and aroſe in the Beginning of *January*, 1670. much about the ſame time that the Meaſles did; and though it was not ſo epidemic, it, notwithſtanding, accompanied that Diſeaſe whilſt it prevailed, and continued after it went off, as long as this Conſtitution laſted. Nevertheleſs it yielded to the Dyſentery, which raged in Autumn, this Seaſon being peculiarly diſpoſed to favour it. But in the Winter this Kind of Small Pox returned again, the Dyſentery being overcome by the Cold. In this Order did theſe Diſtempers ſucceed each other, through all the Years of this Conſtitution, except that in Autumn 1672. the laſt Year it prevailed, the Conſtitution being then in its Decline, and ſlowly promoting the Dyſentery, which, at that time, was, alſo, declining, the Small Pox, contrary to Cuſtom, raged, alſo, at the ſame time, and prevailed ſo equally with the Dyſentery, that it was not eaſy to aſcertain, which of the two Diſeaſes were moſt predominant, though, to me, the Dyſentery ſeemed to prevail. This Small Pox, like other Epidemics, was very violent in the Beginning, and increaſed daily till it came to the Height; after which it gradually decreaſed, both with reſpect to the Violence of the Symptoms, and the Numbers it attacked.

I was very much ſurpriſed, upon the Riſe of this Small Pox, when I found that it differed, in ſeveral conſiderable Symptoms, from the Kind produced by the preceding Conſtitution, already deſcribed. Of theſe different Symptoms I ſhall now treat, omitting thoſe which were common to both Species.

The diſtinct Kind of this Small Pox differed from the common diſtinct one, of the preceding Conſtitution, only in the following Symptoms: 1. The Eruptions generally came out on the third Day, which indeed is uſual in the confluent Sort; whereas, in the diſtinct Kind of the former Conſtitution, they appeared not before the fourth Day. 2. They did not grow ſo big, in the Courſe of the Diſeaſe, as thoſe of that kind. But, 3. Were more inflamed; and, in their Declenſion, after their Suppuration, frequently looked black. 4. Sometimes, but very rarely, a Spitting happened, as in the confluent Kind, though the Eruptions were very few. Whence it appears, that the Small Pox of this Conſtitution greatly reſembled the confluent Kind; and was attended with a more violent Inflammation, than is uſual in the diſtinct Kind.

The confluent Species of this Conſtitution, differed from thoſe I had obſerved in other Years, in ſeveral Particulars: 1. The Eruptions ſometimes appeared on the ſecond Day; at others on the third, in Form of an equal rediſh Swelling, covering the whole Face, and thicker than an Eryſipelas; nor could any Spaces eaſily be perceived between the Eruptions. 2. The reſt of the Body ſeemed to be overſpread with an almoſt infinite Number of red inflamed Puſtules, joined together in one. 3. In the intermediate Spaces, eſpecially in the Thighs, little Bladders aroſe, like thoſe occaſioned by Burns, full of a limpid Serum, which flowed out plentifully, upon the Burſting of the Skin, the Fleſh underneath appearing black, and as if it were gangrened. This dreadful Symptom happened very rarely, and only in the firſt Month that this Species prevailed, but proved always mortal. 4. About the eleventh Day, a white ſhining Pellicle extended itſelf over the rediſh Humour, in ſeveral Parts of the Face; and, by degrees, over the Whole. 5. Soon after, this Pellicle diſcharged a ſhining cruſty Matter, not of a yellow or brown Colour, as in the other Small Pox; but of a deep-red, like congealed Blood, which, as the Puſtules ripened, grew every Day blacker, till at length the whole Face appeared as black as Soot. 6. And whereas, in the other Kind of confluent Small Pox, the Patient was in moſt Danger on the eleventh Day, which put an End to the Lives of the greateſt Part of thoſe that died; in this Sort, unleſs an extreme hot Regimen deſtroyed him in a ſhorter time, he generally lived to the fourteenth, and ſometimes to the ſeventeenth Day, after which the Danger was over. 7. But thoſe who had the Bladders with the Mortification, died in a few Days after the Eruption. 8. The Fever, and all other Symptoms, which either preceded or accompanied this Species of the Small Pox, were more violent, than in the foregoing Kind; and it had manifeſt Signs of greater Inflammation. 9. The Patient was more ſubject to a Spitting. 10. The Puſtules were conſiderably more inflamed, and much ſmaller; ſo that it was difficult, upon their firſt Appearance, to diſtinguiſh them from an *Eryſipelas*, or the Meaſles. 11. The Scales remained a long time after the Eruptions vaniſhed, and left more unſeemly Scars behind them. It is worthy of Notice, that during the whole three Years which this Conſtitution laſted, in which the Dyſentery raged ſo epidemically, the Small Pox, when exaſperated by an immoderate hot Regimen, ſometimes terminated in a Dyſentery.

But this Small Pox was not attended with ſuch fatal Symptoms during the whole time of its Continuance; for, after having prevailed two Years, it began to grow milder in 1672. and the Eruptions having loſt their Blackneſs, grew by degrees yellow, like an Honey-comb, which is peculiar to the regular Small Pox, during the Suppuration of the Puſtules; ſo that in the laſt Year of this Conſtitution, it proved very mild and gentle, conſidering its Kind. Nevertheleſs it is manifeſtly to be referred to a quite different Species, on account, 1. Of the remarkable Smalneſs of the Eruptions. 2. The Tendency to a Salivation: And, 3. Other concomitant Symptoms.

As this Species was attended with greater Inflammation than the other, the ſole Intention in the Cure muſt be, to give a greater Check to the violent Ebullition of the Blood. And this is chiefly effected by a temperate Regimen, after exhibiting Opiates, as above directed; and allowing the free Uſe of ſome Liquor that is not heating, but will rather immediately abate the violent Heat, wherewith this Diſeaſe is attended, eſpecially during the time of the Suppuration of the Puſtules. The white Decoction, made of Bread, and a ſmall Quantity of burnt Hartſhorn, boiled in a large Proportion of Water, and ſweetened with Sugar, is beneficial here: But Milk, boiled with thrice its Quantity of Water, is generally a more grateful Liquor, and better anſwers the End of Cooling: Nor is the Abundance of Liquor only proper to diminiſh the extreme Heat, which chiefly prevails during the ſecondary Fever, but it, alſo, promotes the Salivation, and keeps it up longer than it could be continued, if the Patient were over-heated. And further I have often obſerved, that cooling Liquors, drank plentifully, have ſucceeded ſo well, that, by the Uſe thereof, the Small Pox, which appeared at the Beginning with the worſt Signs of the confluent Kind, has, in the Courſe of the Diſeaſe, been rendered diſtinct; and the Eruptions, which, as they ripened, would otherwiſe have firſt diſcharged a red, and ſoon after a black Matter, have looked very yellow; and inſtead of being inflamed, and very ſmall, proved of a mild and good Kind.

Nor does the menſtrual Diſcharge, which frequently happens in this Diſeaſe, forbid, but rather encourage the free Uſe of theſe Liquors; eſpecially if it comes at an unuſual Time. For Women are endangered here from no other Cauſe but from the Blood's being too much attenuated, ſo that it eſcapes where it can find a Paſſage; eſpecially when unſkilful Nurſes add Oil to the Flame, by uſing an hot Regimen. Now whatever greatly dilutes and cools the Blood, as it checks this Flux, does neceſſarily, though not immediately, tend to preſerve the Eruptions, and the Swelling of the Face and Hands, in their due State; whereas heating Remedies, although they may ſeem better

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better suited to this Purpose, yet, as they promote this Discharge, they fall short of answering the End, even though Astringents be mixed with the Cardiacs.

I lately attended a Lady, who had this dangerous black Small Pox; and though I forbid every thing, at the Beginning, which might agitate the Blood, yet, as she was of a very sanguine Complexion, in the Flower of her Age, and of a lively Disposition, and the Weather, at the same time, very warm, she was suddenly seized, on the third Day after the Eruption, with so copious a menstrual Discharge, at an unusual time, that the Women about her suspected she had miscarried. Though this Symptom was very urgent for several Days, yet I did not, therefore, judge that the Use of the Milk and Water was to be discontinued, but rather esteemed it necessary to be drank plentifully now, and, also, through the whole Course of the Disease; particularly on the coming on of the Suppuratory Fever. This Liquor she often declared, was particularly grateful to her, promoted the Spitting, and both cooled and refreshed her. But, when the Face began to harden, lest the Patient should be injured by the putrid Vapours proceeding from the purulent Matter of the Eruptions, which had a very fetid Smell in this worst Kind of Small Pox, a few Spoonfuls of mulled Sack were directed to be taken once a Day, or as often as she perceived any Sickness at her Stomach. By the Use of these few Things, along with a quieting Draught every Night, she recovered, without having been attacked with a Delirium, or any other dangerous Symptom, except the Hæmorrhage. The Face and Hands swelled sufficiently; the Eruptions were as large as this Kind of Small Pox would permit; the Salivation was easy and copious to the End; and though the Eruptions in the Face, seemed blackish whilst they ripened, yet they were yellow in most other Parts.

But how much soever this Kind of Small Pox, peculiar to this Constitution, exceeded those of other Constitutions in point of Heat and Inflammation, yet, when the Eruptions were distinct, or few, Experience shewed it to be needless to drink so copiously of the above-mentioned Liquors. But it sufficed if the Patient drank Small Beer, as the Thirst required, and supped Water-gruel and Panada, and sometimes eat a roasted Apple; and if he exceeded Fourteen, took a Dose of *Diacodium*, when he was sick, or delirious for want of Rest: And I did nothing more, when the Pustules were few, except keeping the Patient in Bed.

The same excellent Physician, in his Epistle to Dr. *Cole*, dated *Jan.* 20. 1681-2. gives us farther Observations on the Small Pox; which, he informs us, are the Result of longer Experience.

Previous to these Remarks, says he, I must observe, that a Species of intermitting Fevers, which arose in 1677. still prevailed in 1681. These Fevers, throughout those Years in which they reigned, like all Epidemics, principally raged in those Seasons, that conspired most with their Nature; but, upon the Approach of another Season, yielded to such Epidemics, as that Season principally favoured. Thus, upon the coming in of Winter, they always yielded to the Cough, and peripneumonic Fevers, and, also, to the Small Pox; but, upon the Return of the Spring, they re-appeared. So, in the Year 1680. when these Intermittents had prevailed universally during the Autumn, the Small Pox succeeded them in the Winter, and spread much. But in 1681. the Intermittents returned, though they did not spread so epidemically, their Violence being abated; so that the Small Pox, in some Places, appeared along with them. But, at the Beginning of Summer, the Small Pox increased every Day, and, at length, became epidemical.

It now appeared to me manifestly improper to confine the Patient constantly in Bed, before the total Eruption of the Pustules; for the Spring and Summer having been the driest Season that any Person could remember, the Blood was, by these means, deprived of the greater Part of the Humidity, which the Air otherwise usually communicated to it: Whence the then reigning Small Pox was accompanied with a more considerable Inflammation than ordinary; and the other Symptoms thence arising were more violent. This I conceive was the Cause that purple Spots frequently preceded the total Eruption of the Pustules; and that the violent Inflammation which expelled them, by dissolving the Texture of the Blood, suddenly destroyed the Patient, before the due Expulsion of the morbific Matter. The Disease proved the more destructive, because the Eruptions more readily run together; the Intemperature of the Air now doing the same Mischief spontaneously, which ignorant Practitioners ordinarily occasion, by using an hot Regimen and Cardiacs, at the Beginning of the Distemper: For the Danger of the Small Pox is least, when the Eruptions are few; and greatest, when they are numerous; but the bloody Urine, and purple Spots, destroy the Patient, before the total Eruption of the Pustules.

It is easy to account for the Patient's being more or less endangered, in proportion to the Paucity or Number of the Eruptions; for as every Pustule is, at first, a Phlegmon, though of a very small Size, and soon impostumates, so a secondary Fever, which depends on the Matter hereafter to be produced, must needs be more or less violent, at the Height of the Disease, according to the Quantity of Matter to be suppurated, which is usually completed in the mildest Species of the confluent Small Pox, on the eleventh Day; in the middle Sort, on the fourteenth; and the worst, on the seventeenth Day.

Now a Phlegmon in the Arm, or any other Part, will occasion a Fever whilst it suppurates; the Blood being inflamed by the purulent Particles, which are received into the Mass from the Veins, according to the Laws of Circulation; and thus giving Rise to the Fever: Hence the Physician has more Reason to foretel Death, on one of the above-mentioned Days, when the Face, at the Beginning of the Disease, appears totally covered with small Eruptions, resembling the Filings of Steel, on account of the extreme Violence of the succeeding Fever, which necessarily rages in proportion to the Quantity of Matter thrown out of these innumerable Impostumes into the Blood. And it is easy to foresee the Destruction of the Patient some Days before it happens, though he think himself in a fair Way.

If, therefore, the Danger of the Patient proceeds only from the Abundance of the Eruptions, I use all my Endeavours to repress them, which is the Way to relieve the Patient; every thing being doubtful and dangerous, when this Species of the Disease is confirmed; so that, if the Patient should escape, it may rather be ascribed to some Bleeding at the Nose, or other accidental Alteration, happening in the Course of the Disease, than to the Care of the Physician. Now such an extraordinary Eruption of the Pustules proceeds from the too sudden Assimilation of the variolous Matter; which seems principally to arise, either from the over-hot and spirituous Constitution of the Patient, or from his having raised the Fermentation too high, by a too early Confinement in Bed; the Use of hot Cardiacs, or any spirituous Liquor.

The immoderate Assimilation of the variolous Matter, however, cannot be more effectually promoted, than by the Patient's confining himself in Bed unseasonably, that is, before the sixth Day from the Beginning of the Illness; or the fourth inclusive from the Eruption, when all the Pustules are come out, and no more are expected. And though the moderate Warmth of the Bed, even after this Time, does in some Measure contribute to the Rise of the Delirium, Watching, and other Symptoms, yet these are of such a Nature, that they readily yield to proper Remedies; whilst the imminent Danger of Death, that happens on the eleventh Day, from the great Abundance of the Pustules, cannot be prevented or removed by Medicine.

The Patient, therefore, is here to be diligently admonished, by no means to keep his Bed in the Day-time, till towards the Evening of the sixth Day; whereby the Eruptions will be fewer, and he will be greatly refreshed. But, after this time, if the Pustules be very numerous, he will scarce be able to leave his Bed at all, on account of the Pain thence arising, and a greater Disposition to Fainting, upon sitting up; so that having frequently remarked this, I imagined, that Nature, in the common Course of the Disease, first pointed out the Time, when a total Confinement in Bed becomes necessary.

For the Essence of this Disease seems to consist in a peculiar Inflammation of the Blood; in the Course of which, Nature is employed for some Days, in the Beginning, in preparing and moulding the inflamed Particles, for their readier Expulsion to the external Parts; at which time the Blood being disturbed, a Fever must needs be occasioned. For the agitated Particles, hurrying in a tumultuary manner through the Vessels, necessarily cause a Sickness at the Stomach, sharp Pains in the Head, and all the other Symptoms preceding the Expulsion, according as they are carried to this or that particular Part. But when the Eruption is over, the fleshy Part becomes the Seat of the Disease; and, as Nature has no other Method of expelling the peccant Matter from the Blood, but by raising a Fever, so, likewise, it does not free the fleshy Parts from any extraneous Body, but by Impostumation: Thus, if, by Accident, a Thorn, or the like sharp-pointed Body, be lodged in the Flesh, unless it be immediately extracted, the Parts around soon impostumate. Hence, when their Particles are lodged in the Flesh, they at first occasion very small Phlegmons, wherein they lie concealed; which increasing every Hour, and becoming more inflamed, at length come to Suppuration, when a Part of the Matter must needs be absorbed by the Blood, which returns by the Veins; and if too large a Quantity thereof be received into the Mass, it is not only productive of a Fever, which the debilitated Patient is unable to bear, but, also, taints the whole Mass. Besides, by the extreme Heat of the Fever,

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Fever, during the laſt Days of the Illneſs, the Salivation, which ought always to accompany the confluent Small Pox, is ſtopt too ſoon; whence immediate Death enſues. But, if only a ſmall Quantity of the purulent Matter be received into the Blood, the Violence of the ſecondary Fever is eaſily checked by the increaſing Strength of Nature, and, the Puſtules drying away gradually, the Patient ſoon recovers.

Hence it is manifeſt, that if theſe hot and ſpirituous Particles be quickened by hot Medicines, and eſpecially by a conſtant Confinement in Bed, the aſſimilating Virtue, which they already poſſeſs in too great a Degree, will neceſſarily be heightened and increaſed. Beſides, the Blood, and other Juices, being hereby heated, yield more readily to the ſtronger Impreſſion of the Particles; whence more Eruptions appear than ſhould. Whereas the moderate cooling Regimen, and the free Uſe of the Air, not only abate the Force of the hot tumultuary Particles; but, alſo, thicken and ſtrengthen the Juices; whence they are better enabled to reſiſt the morbific Spirits, and ſupport their Violence: And hence no greater Quantity of variolous Matter is prepared, than is natural in this Diſeaſe.

A too early Confinement in Bed produces, beſides the Aſſimilation of too large a Quantity of the morbific Matter, and the immoderate Exaltation of the Ferment of the Diſeaſe, bloody Urine, and purple Spots, eſpecially in Summer, and in Perſons in the Vigour of Life. I conceive, that both theſe Symptoms proceed from the Heat and Commotion raiſed in the Blood, by hot and ſpirituous Particles, by which it is exagitated, and conſiderably attenuated, ſo that it burſts the Veſſels, cauſing bloody Urine, when it forces its way through the Kidneys; and purple Spots, when it is ſtrained through the Extremities of the Arteries, terminating in the Muſcles and Skin, which reſemble ſo many Mortifications in thoſe Parts wherein the extravaſated Blood is coagulated. And though both theſe Symptoms might have been eaſily prevented by a cooling Regimen and Diet, yet, when they actually appear, all Remedies prove ineffectual.

It is not only unſafe to keep the Patient always in Bed the firſt Days of the Illneſs, but ſometimes neceſſary to expoſe him to the open Air; eſpecially if it be the Summer-ſeaſon, and he not paſt the Prime of Life, or if he has been accuſtomed to ſpirituous Liquors; and, particularly, if the Diſeaſe proceeds from hard drinking.

I have hitherto found, that Bleeding, though it be uſed early, does not ſo effectually check the over-haſty Aſſimilation of the variolous Matter, as cooling the Blood by the Air received by Inſpiration, eſpecially if the Patient be put to Bed immediately after the Operation, and injured by hot Cardiacs; the Blood being by theſe means, more diſpoſed to receive the Impreſſions of the adventitious Heat, than it was before Bleeding. And one of the worſt Caſes I ever met with in the confluent Small Pox, happened in a young Woman ſoon after her Recovery from a Rheumatiſm, by the uſual Method of copious and repeated Bleeding, who died on the eleventh Day. From this Inſtance I firſt learned, that Bleeding did not contribute ſo much to keep the Small Pox within its due Limits, as I had imagined; though I have frequently obſerved, that repeated Purging, while the Blood remains uninfected, generally renders the ſubſequent Small Pox of a mild and diſtinct Kind.

To this Method it is objected, that ſitting up in the firſt Days of the Diſeaſe hinders the Eruption of the Puſtules, and of courſe prolongs the Sickneſs, and other Symptoms, which indeed I own, and Experience confirms it. But then it muſt be inquired, whether it is moſt dangerous to give a little Check to the variolous Matter, and thus prolong the Sickneſs by keeping back the Eruption; or to urge the Ferment of the Diſeaſe, and aſſimilate ſo large a Quantity of variolous Matter, as to endanger the Life of the Patient by the ſecondary Fever. I conceive it will appear, upon duly conſidering the Matter, that very few have died merely becauſe the Small Pox did not come out ſooner or later; unleſs, perhaps, a few of thoſe, whoſe Blood, being inflamed by exceſſive Heat and Motion, circulated with ſuch Velocity, as not to allow ſufficient Time for the morbific Matter to be expelled ſlowly; which is an Argument in favour of my Opinion.

For we may be aſſured, though nothing be done, that the variolous Matter will at length be conquered by Nature, and driven to the Skin; eſpecially as the Coſtiveneſs of the Patient to this time, promiſes a certain, though a late Eruption of the Puſtules afterwards. But of the many dangerous Symptoms which enſue, when the Eruption is unſeaſonably promoted, I ſhall only mention the principal: 1. The Number of Eruptions is too much augmented; and thus the ſecondary Fever is proportionably increaſed. 2. Bloody Urine, and purple Spots are produced. 3. The immoderate Exaltation of the Ferment frequently increaſes the Force of the variolous Matter ſo much, that the Patient ſinks at the Beginning of the Diſeaſe; when the morbific Matter cannot diſentangle itſelf, and come out, by reaſon of the confuſed and irregular Motion raiſed in the Blood.

If it be demanded, why a proper Separation of the variolous Matter may not be as well promoted at the Beginning of the Diſeaſe, by refreſhing the Patient with the moderate Warmth of the Bed, as without it; I aſk, by way of Reply, whether Experience does not teſtify, that a Perſon in Winter, whilſt he lies in Bed moderately covered, without a Fire in the Room, is much warmer than when he ſits up in it well cloathed? And if the Difference here be remarkable, I next inquire, which of theſe Methods is beſt adapted to check the immoderate Motion of the variolous Ferment?

But what has principally impoſed upon the Unattentive in this Caſe is, their having obſerved a Tendency in the Patient to ſpontaneous Sweats; which continually flowing whilſt he remained in Bed, greatly abated the feveriſh Heats, otherwiſe than in thoſe who did not ſweat. Let us therefore conſider, why we ſo ſolicitouſly endeavour to check the Fever, ſince it is the Inſtrument which Nature ordinarily and principally uſes in preparing and expelling all kinds of noxious Matter, which lurk in the Blood. It is evident, that whilſt we carefully promote Sweat, in order to leſſen the Fever, we thus drive out a crude and indigeſted Humour, like unripe Fruit, and afterwards cauſe a Fever; the Serum of the Blood, with which the Blood itſelf, and thoſe newly generated hot variolous Particles are diluted, is expelled, whilſt the Particles, being freed from the Serum waſted by the Sweat, have their Violence and Activity increaſed.

But it is to be obſerved, that I injoin the Patient to refrain from Bed, on Suppoſition only, that the approaching Small Pox is of the confluent Kind. For in the diſtinct Species, if it can be certainly foreſeen, the Patient need neither be confined to Bed, nor injoined to ſit up, as the Paucity of the Eruptions prevents all Danger either way.

Hence, then, it appears to me from frequent Experience, that he who refrains from Bed in the Day-time, at the Beginning of the Diſeaſe, abſtains entirely from Fleſh, and drinks only ſmall Liquors, is abundantly ſafer than he who confines himſelf immediately in Bed, and takes hot Cardiacs. And the Patient finds a ſingular Refreſhment from the Admiſſion of freſh Air, every time he is taken out of his warm Bed; which all thoſe, whom I was ſuffered to treat in this manner, thankfully acknowledged. Whence it ſhould ſeem, that more regard is due to the Appetites and Longings of the Patient, if they be not very irregular, or immediately deſtructive, than is due to the more precarious and fallacious Rules of the Healing Art.

But, how advantageous ſoever it may be, in general, to keep the Patient from Bed at the Beginning of the Diſeaſe, yet ſometimes he muſt be wholly confined to it before the Eruption. Thus, when a Child, after Dentition, is ſuddenly ſeized with Convulſions, we are to conſider, that this probably ariſes from the Endeavour of Nature to drive out the Eruptions of the Small Pox, Meaſles, or Scarlet Fever, though they yet lie concealed in the Skin. In this dangerous Caſe, a Bliſter muſt be immediately applied to the Neck, and the Child put to Bed, and a Cordial exhibited with a ſmall Quantity of an Opiate; by which the Cauſe of the Diſeaſe may be more forcibly expelled, and the Diſturbance, alſo, quieted, which gave Riſe to the Fit. Thus, for a Child of three Years of Age, I preſcribe five Drops of Liquid Laudanum in a Spoonful of Plague-water, or the like. I ſuſpect, that Thouſands of Children, beſides ſome Adults, have been deſtroyed for want of conſidering, that theſe Convulſions are only the Forerunners of the above-mentioned Diſeaſes; whereas inconſiderate Practitioners, taking theſe Fits, which are really ſymptomatical, for eſſential Diſeaſes, and attempting the Cure by a frequent Repetition of Clyſters, and other Evacuations, hinder the Eruption of the Small Pox, and prolong the Fits, which they ſo ſolicitouſly endeavour to conquer, and which would otherwiſe aſſuredly vaniſh ſpontaneouſly, upon the Appearance of the Puſtules. Beſides, the Small Pox, that is preceded by Convulſions in Children, is generally diſtinct; ſo that the Patient may be put to Bed with much leſs Danger in the Beginning of the Diſeaſe.

But I have obſerved, that the Small Pox, which immediately ſucceeds comatous Diſorders, proves very confluent; in which Caſe I rather order a Bliſter, and the Opiate deſcribed above, than let the Patient keep his Bed before the Eruption. But ſometimes, though very rarely, I have known the Fits of Intermittents preceded by ſuch Convulſions; and have often ſeen them begun, and terminated, by comatous Diſorders, both in Children and Adults: But both theſe Symptoms require no particular Treatment, it being only neceſſary to oppoſe the Fever, which is the primary and eſſential Diſeaſe. For, if I were to attend principally to theſe comatous Diſorders accompanying the Fever, and accordingly endeavour to conquer them by Bleeding, Purging, and repeated Clyſters, I ſhould heighten the

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the Fever, and consequently increase the Coma, so as to convert it into a fatal Lethargy; whereas, if I use all my Efforts to cure the Fever, the other Symptoms proceeding from it will easily vanish.

Though the Patient may sometimes refrain from Bed in the Day-time, yet in extreme Sickness, an high Fever, enormous Vomiting, a Vertigo, rheumatic Pains of the Limbs, and the like Disorders, he cannot be indulged this Refreshment, these Symptoms indicating the contrary; which, if they be violent, especially in the young and sanguine, prognosticate, that a large Quantity of variolous Matter is generated in the Body, and threaten great Danger from the tumultuary Eruption of the Pustules, which will prove very confluent. In this Case, therefore, as all Endeavours must be used to check the immoderate Ferment, which will rage more by the continual Warmth of the Bed, and yet the Patient cannot be kept up by reason of extreme Sickness, it is indispensably necessary to bleed first in the Arm, and a few Hours after to give a Vomit of the Infusion of *Crocus Metallorum*, which not only expels the Matter occasioning this unusual Sickness, but refreshes the Patient so considerably, that being much relieved, he is able to refrain from Bed; and, in order to weaken the Force of the Ferment further, it will, also, be proper to give him a large Dose of Spirit of Vitriol in every Draught of Small Beer, till the Eruption be over. Notwithstanding these Evacuations, and the Use of the cooling Drink, the Patient must refrain from Bed in the Day-time, if he can bear to sit up; because these general Remedies do not check the Assimilation of the variolous Matter so effectually, as once cooling the Blood by drawing in the fresh Air, and breathing it out by the Lungs, which alone immediately abates the symptomatic Sickness, as I have often experienced. But this unusual Method is necessary in those only who are in the Prime of Life, whose Blood has been over-heated by Venery or Wine, and in others, (always excepting young Children) who, together with the Small Pox, struggle with the above-mentioned violent Symptoms. For, where the Blood is less inflamed, and the Symptoms milder, as there is much less Danger of assimilating the variolous Matter too hastily, neither the Evacuations, nor the Spirit of Vitriol, need be used.

The Eruption being completed, which happens on the sixth Day from the Beginning of the Illness, or the fourth, inclusive, from the first Appearance of the Pustules, the Patient is not to be longer detained from Bed, as the Case will scarcely admit of its being longer delay'd, if the Small Pox be of the confluent Kind. And let it be remembered, that this is the only Species of which I am now treating; for, if the Eruptions be few and distinct, there is naturally little Danger.

From this time, the Eruptions increase in Magnitude, and inflame the whole Body, especially the Head; so that the Patient, if not a Child, grows restless, and cannot sleep readily, which is next to be carefully attended to in this Disease; for the calmer the Motion of the Blood is, the better the Pustules fill, and come to their due Size; and, on the contrary, the more violent it is, the more the Eruptions sink, their farther Progress being checked; so that the Expulsion of the peccant Matter is not only obstructed, but the Order and natural Progress of every particular Phlegmon is, also, disturbed; whence the Eruptions either do not come to Suppuration in due time, or, instead of *Pus*, an *Ichor* is at length generated; and, instead of the yellow Matter, resembling the Colour of an Honeycomb, some black, or other preternatural Humour, unlike the genuine Eruptions of the Small Pox, is discharged. I conceive, therefore, that Opiates are as much indicated in the Small Pox, as any particular Remedy in any other Disease, as they quiet the tumultuary Motion of the Blood and Spirits, which always accompanies the confluent Small Pox. He, therefore, is not enough acquainted with the Nature of this Disease, who esteems these Symptoms to proceed only from the Watchings; for though it may sometimes happen, in Watchings, that the Patient's Spirits may be composed and calm, which frequently proceeds from taking Laudanum, so, also, the Spirits, being sometimes in violent Motion, check the laudable Eruption of the Pustules, though the Patient sleeps much, which is worthy of Observation.

Though I have given Laudanum several Years successfully in this Case, yet I give the Preference to Syrup of Poppies, because I esteem Laudanum more heating; but both may be used for the same Purpose. As to the Dose of this Syrup, it is to be proportioned to the Age of the Patient, and the Urgency of the Symptoms; for what might be too much for one whose Spirits are composed, would be too little for another, whose Spirits are greatly agitated. For Instance, suppose in general, that six Drams is a sufficient Dose, yet in the Small Pox, when the Medicine is required, near an Ounce must be given, in order to obtain the desired Effect; and as much must be prescribed for a Dose, throughout the Course of the Disease. We speak of Adults now; for in Children, the Dose must be lessened in proportion to their Age. Children, however, have not the same Occasion for Opiates in this Disease, as Adults, because they are more disposed to sleep during the Course thereof; yet, when they are much endangered by the Disease, I should be afraid to refrain from Opiates. But it is difficult to settle the Dose of Opiates; for whether they be required in a tumultuary Motion of the Spirits, a violent Vomiting and Purging, or severe Pain, these being the three Disorders in which Opiates are principally indicated, they are to be exhibited in such a manner, that if the first Dose avails not, it is to be repeated at proper Intervals, till it answers the Intention of the Physician, having less regard to the Quantity taken, than to the Effect it should produce; which being answered, it is to be administered less frequently and copiously. Nor must we forget to interpose such a Space between every Dose, that we may be able to learn, whether the last has taken Effect, before prescribing another; which being obtained, the Dose is to be diminished in the Course of the Disease, as there shall be Occasion.

This Method I shall illustrate by a Case: On *April* 13. 1681. a Neighbour of mine came to me in Tears, begging, that I would visit her Son about ten Years of Age, who having been ill four Days, she apprehended the Small Pox. The Mother had, by the Advice of some Woman, given him the Countess of *Kent*'s Powder, and other hot Medicines; and had besides, in a manner, buried him under the Cloaths, in order to raise a Sweat, to which the Women have recourse in this Disease, as an assured Remedy. She had, also, given him a large Quantity of Posset-drink, in which Marigold-flowers and Hartshorn had been boiled; which increased the Fever, and caused such a Disturbance of the Spirits, that the Child was very delirious, and could not be kept in Bed by the Attendants. The Pustules did not yet appear, at least very visibly, but lay very thick in the Skin, the Eruption being manifestly hindered by this violent Method, which was intended to promote it. I ordered him to be immediately taken out of Bed, and not to be laid in it again, excepting a-nights, till after the sixth Day: I, also, prescribed half an Ounce of *Diacodium* to be taken directly, which proving ineffectual, I ordered the same Dose to be repeated an Hour after, but unsuccessfully; for the Blood was so violently agitated, that it could not be quieted before he had taken two Ounces and an half; but such a Space was interposed between every Dose, that I might be certain what Effect the last had. Afterwards, I prescribed only half an Ounce, to be given every Night at Bed-time, to the End of the Disease; which proved sufficient to preserve the Calm, that had already been obtained, by a more frequent Use of it; and thus the Patient recovered.

If the Heat and Motion of the Blood and Spirits be extremely violent in the Beginning, an Opiate, though given in the largest Dose, and frequently repeated, will scarcely avail, unless the Patient quits his Bed; for the Warmth of the Bed increases the Heat of the Disease, so as to render it necessary to exhibit the Opiate in a larger Dose, than, perhaps, Nature is able to bear.

I would have this Remedy first exhibited in the Evening, when the Patient is wholly confined to his Bed, that is, the sixth from the Beginning of the Illness; and repeated afterwards, every Evening, till the seventeenth Day, or at least till the Danger be over. For on the sixth Day the fleshy Parts are inflamed; whence the Head begins to be disturbed by the Humours, which are, also, inflamed from this Cause.

But great Care must be had to give the Opiate earlier in this, than in other Diseases; because a kind of Fit of Heat, and Restlessness, always comes on towards Evening; at some times it happens, unless the Opiate be given early at the Decline of the Disease, that the Patient, becoming suddenly somewhat heavier, immediately grows hot, and afterwards complains of Sickness, which soon terminates in Death, to the Astonishment, and contrary to the Expectation of his Friends, who, a little before, conceived great Hopes of his Recovery; and his Death might, perhaps, have been prevented by giving an Opiate directly. On these Days, therefore, but especially on the eleventh Day, I order the Opiate to be given earlier, as at five or six o' Clock in the Afternoon; and a second Dose to be kept in Readiness, lest Sickness should come on suddenly.

Since, therefore, it is so dangerous, either to omit giving an Opiate soon enough, or on the other hand, to give it so early, that its quieting Virtue be spent before the Time comes for repeating it; it is safest, in this Uncertainty, to order an Opiate to be taken at a set Hour, every Morning and Night, at the Declension of the Disease, when there is most Danger. Nor is an Ounce of Diacodium always a sufficient Dose at these times; for this Quantity avails no more in a violent Inflammation of the Blood, and a very tumultuary Motion of the animal Spirits, than half an Ounce in a milder Disease. For I have learnt

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from repeated Experience, that an Ounce and half is required in the young and ſanguine, to mitigate the Violence of the Symptoms wherewith they are ſeized; and in ſuch Subjects, this Doſe may be repeated with Safety and great Advantage, at ſuch times, Morning and Night, till the Patient recovers.

Sometimes, alſo, I have found it neceſſary at the Decline of a bad Species of the confluent Small Pox, to exhibit an Opiate thrice in twenty-four Hours, that is, every eighth Hour, on account of the violent Motion, or Diſturbance of the Spirits, occaſioning ſome Sickneſs. But it is to be obſerved, that if the exhibiting Diacodium ſo frequently be nauſeous to the Patient, which often happens on the above-mentioned Days, Liquid Laudanum muſt be preſcribed inſtead of it; ſixteen Drops of which are equivalent to an Ounce of *Diacodium*.

I am well aware, that it will be objected by thoſe of a different Opinion, that the peccant Matter will be fixed, and the Salivation diminiſhed, by repeating the Opiate ſo often, and in ſo large a Doſe. But though the Ptyaliſm will indeed be in ſome meaſure abated, it will not, however, ceaſe ſo entirely, as not to riſe again in ſome Degree, after the Opiate has been taken a conſiderable time, and its Virtue is nearly ſpent. Beſides, the Patient, being ſtrengthened by the Opiate, will be better able to expectorate the Phlegm; and the Saliva, though leſs copious, will be better concocted; and the Want of Sputation is abundantly ſupplied by the Swelling of the Hands and Face, which happens more certainly, and riſes higher, from the repeated Uſe of the Opiate, on thoſe Days wherein theſe Parts uſually ſwell, that is, the Face from the eighth to the eleventh Day, when it commonly begins to fall; but the Hands from the eleventh Day, till the Puſtules upon theſe Parts be entirely ripe; and the Want of either of theſe Swellings, when they ought to appear, threatens more Danger than the Stoppage of the Salivation.

But I would not be underſtood to adviſe the daily Uſe of Diacodium, though in a ſuitable Doſe, in young Children afflicted with the confluent Small Pox, unleſs the Caſe appear very dangerous; becauſe Children are not ſo hot as Perſons in the Prime of Life; and their tender Age is leſs able to bear the continued Uſe of Opiates. Beſides Children, thus affected, ſleep moſt Part of the Time ſpontaneouſly, and are conſequently leſs ſenſible of the Tediouſneſs of the Diſeaſe. Yet when the Eruptions are of a bad Kind, or when they become delirious, Opiates are always indicated; theſe being certain Signs of the irregular Motion of the Blood, and animal Spirits.

The Method of preventing the over-haſty Aſſimilation of the variolous Matter, at the Beginning of the Diſeaſe, and the Manner of checking the inordinate Motion of the Spirits, ariſing from the Inflammation of the external Parts, are the two Points wherein the Cure of this Diſeaſe conſiſts; as the ill Accidents which ſucceed for want of preventing theſe two Dangers, ſufficiently occaſion thoſe fatal Symptoms, which deſtroy the Patient.

If there be Occaſion for a Bliſter, it ſhould be made very large, and ſufficiently ſharp, and applied to the Neck; but neither too early, that it may not ceaſe running before the eleventh Day, which is attended with moſt Danger; nor deferred to that Day, ſo as to prove prejudicial at this time, from being laid on too late, by increaſing the Heat of the Blood, which is then ſcarce able to ſtruggle with the ſecondary Fever. The fitteſt Time, therefore, to apply a Bliſter, is the Evening preceding the great *Criſis* of the Diſeaſe, preſently after the Opiate which is to be taken at this time. For, if it be applied now, the Pain it cauſes will go off before the critical Day; and there will then be a Diſcharge of the peccant Matter, which is neceſſary to conquer the violent Symptoms happening on this Day. For now the Swelling of the Face firſt begins to ſink, and the Salivation, which had hitherto been copious, to abate; the Humour which occaſioned it being thickened, and, with Difficulty, raiſed. Beſides, the Bliſter ſupplies, in ſome meaſure, the Sinking of the Swelling of the Face, and the Abatement of the Salivation; and, likewiſe, contributes ſomewhat to check the ſecondary Fever, which is then very high, the Blood being in a manner oppreſſed, and totally infected, with the Abundance of *Pus* abſorbed from ſuch a Multitude of little Impoſthumes; ſo that, in moſt of the Patients I have treated in this Diſeaſe, I have obſerved, that the Pulſe in the Wriſt could ſcarce be felt at this time, though it was eaſily felt the preceding, and following Day.

But, among all the Remedies that occaſion a Derivation, or Revulſion, from the Head, none, in my Opinion, ſeems to operate ſo efficaciouſly as Garlick applied to the Soles of the Feet. The Revulſion it occaſions is evident, by the Bliſters it frequently raiſes, and the intolerable Pain it ſometimes, though rarely, cauſes, by inviting the Humours to thoſe Parts, even without raiſing Bliſters; ſo that, to eaſe it, I have found it neceſſary to order a Cataplaſm, made of the Crumbs of white Bread, boiled in Milk, to be applied to the Part. In Adults, therefore, afflicted with the confluent Small Pox, I uſually apply Garlick ſliced, and included in Linen, to the Soles of the Feet, from the eighth Day, when the Face firſt begins to ſwell; and renew the Application every Day till the Danger be paſt.

I muſt further obſerve, that the Patient muſt be kept from Fleſh throughout the Courſe of the Diſeaſe, and only allowed Small Beer for his common Drink. In the mean time, it will be convenient for him to live on Water-gruel, roaſted Apples, and the like. But, upon the Approach of the Suppuration, when the purulent Particles return into the Blood, and taint the Maſs, it will be proper to give a few Spoonfuls of Wine every Morning and Night. As to the Coverings of the Bed, they are to be entirely the ſame he made uſe of in Health; and he is to be permitted to turn himſelf in Bed as he pleaſes, for the Reaſons already given.

I will ſubjoin a Caſe, as a Specimen of this whole Procedure: I was called this Winter, to attend a Gentleman of a very ſanguine Conſtitution, and in the Prime of Life. The Day before I came, he was ſeized with an high Fever, vomited a conſiderable Quantity of bilious Matter, and had a violent Pain in his Back. In order to mitigate theſe Symptoms, he went to Bed, and, by heaping on Cloaths, and taking hot Liquors, ſpent a Day to no Purpoſe in endeavouring to force Sweat; the great Tendency to vomiting, and the Purging, though moderate, rendering the Sudorifics ineffectual, and, in the mean time, increaſing the Fever. I ſuſpected the Small Pox would ſhortly appear, and, alſo, prove very confluent, both on account of his Youth, and the great Inflammation raiſed in his Blood by the fruitleſs Attempt to procure Sweat, which, if the Diſeaſe had happened in the Summer, would certainly have occaſioned bloody Urine, and purple Spots; but chiefly becauſe I have always obſerved, that in young Perſons attacked with exceſſive Vomiting, Sickneſs, and extraordinary Pain, the ſucceeding Small Pox proved highly confluent. For this Reaſon, judging it requiſite to uſe all Endeavours to prevent the too haſty Aſſimilation of the variolous Matter, I kept him up till his uſual time of going to Bed; and the next Day in the Morning, which was the third, the Small Pox not appearing, I directed eight Ounces of Blood to be taken away from the Right Arm. The Blood was good and florid, having as yet only received the ſpirituous Miaſma, and not that Putreſaction occaſioned by a longer Continuance of the Diſeaſe. The ſame Day at five in the Afternoon, I exhibited an Ounce of the Infuſion of *Crocus Metallorum*, which operated well, carrying off his Sickneſs, ſo that he ſeemed much better, and willingly refrained from Bed, which he did not care to quit before, by reaſon of his great Sickneſs and Giddineſs. On the fourth Day in the Morning, I found the Eruptions coming out ſo copiouſly, notwithſtanding the Endeavours I had uſed to prevent it, that they threatened the utmoſt Danger; I was therefore very cautious to keep him up in the Day-time; and adviſed the drinking of Small Beer acidulated with Spirit of Vitriol. This Advice he followed to the ſixth Day, when, though he was not ſick, but much refreſhed by the Air, yet his Belly was ſoluble between whiles; towards Night he was obliged to go to Bed, which is common in this Caſe; and therefore he continued therein, by my Conſent, during the whole Courſe of the Diſeaſe, the Eruption being now over. Though the Puſtules were fewer than I have obſerved in ſome that died of this Diſeaſe, yet they were more numerous than they generally are in moſt that recover. I firſt exhibited this Evening, an Ounce of *Diacodium*, in Cowſlip-flower-water, and directed it to be repeated every Night: I likewiſe adviſed, that he ſhould have no more Cloaths laid on him, than he was accuſtomed to in Health; and preſcribed for his Diet, Water-gruel, Barley-broth, and ſometimes a roaſted Apple; and, for his Drink, Small Beer. On the eighth Day I ordered ſliced Garlick, folded in Linen, to be applied to the Soles of the Feet, and renewed every Day, till the Danger was paſt. After this, the Puſtules ripened kindly to the tenth Day, when, viſiting him in the Morning, though I found him in a fair way, yet I perceived ſome Signs of the ſecondary Fever, along with ſome kind of Reſtleſneſs. Apprehending, therefore, the approaching Danger, I immediately exhibited the Opiate above-mentioned, which quieted all the Symptoms; and the ſame Evening I preſcribed an Ounce and half of Diacodium. The next Morning, which was the eleventh Day, (the Virtue of the Opiate, he had taken the Night before, being ſpent) he began to grow reſtleſs again; whereupon I gave him the ſame Quantity immediately, and repeated it in the Evening, and ordered it to be continued Morning and Night, till he was perfectly recovered. The Patient complied, and no dangerous Symptom afterwards appeared, except a Suppreſſion of Urine ſometimes, which frequently attacks young Perſons in this Diſeaſe; but he, however, made Water kneeling in Bed. With regard to the Salivation, though it was checked, in ſome meaſure, by the frequent Repetition of Opiates in ſo large a Doſe, yet at diſtant Intervals, from the Uſe of

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of them, he expectorated concocted Phlegm, and his Face and Hands ſwelled ſufficiently at the proper time. On the eighteenth Day he roſe from Bed, and then I firſt allowed him to ſup ſome Chicken-broth; and afterwards he returned by degrees to his uſual manner of Living. On the twenty-firſt Day, eight Ounces of Blood were taken away from his Arm, which reſembled pleuritic Blood, and differed little from *Pus*. Laſtly, he was purged four times at proper Intervals.

It is here to be noted, that as often as the Day, from the Beginning of the Illneſs, is here mentioned, for Inſtance, the ſixth, the eleventh, and the like, I would not be underſtood to inſinuate, that the confluent Small Pox always comes out on the third Day; becauſe I am well aware, that ſometimes, even in the worſt Species, the Puſtules do not appear till after the third Day. But in general the Eruption happens on the third Day, incluſive, from the Beginning of the Diſeaſe. Thus a Perſon who is ſeized with the confluent Small Pox on *Monday*, will find the Puſtules appear on the *Wedneſday* following; and the ſecond *Thurſday* after the firſt *Monday*, will be the eleventh Day, which is full of Danger, unleſs the Phyſician prevents it. And I repeat it once more, that theſe Obſervations relate only to the confluent Small Pox.

The ſame illuſtrious Author, in another Diſſertation, gives us ſome further Remarks on the putrid, or ſecondary Fever, happening in the Small Pox, to the following Effect:

I have already ſhewn wherein the great Difference conſiſts between the diſtinct and confluent Small Pox; that the diſtinct Kind is ſo void of Danger, as to ſtand in need of very little Aſſiſtance from Medicine, unleſs the Patient happens to promote Sweat in the Beginning, by lying always in Bed. But the youthful Part of Mankind chiefly periſh by the confluent Small Pox, when the Patient, who before ſeemed to be in no great Danger, is often ſeized on the eleventh Day, or one of the other dangerous Days already mentioned, with an high Fever, very difficult Reſpiration, and great Reſtleſneſs, which ſuddenly put an End to his Life, to the Aſtoniſhment of his Friends, who, till this fatal Period, had Hopes of his Recovery. In this Caſe it ought to be conſidered, that this adventitious Fever, which happens in the confluent Small Pox, is a Diſtemper entirely different from the Small Pox, and that Fever, which either precedes the Eruption, or ariſes ſometimes from the Inflammation of the Puſtules at the Beginning: For, properly ſpeaking, it is only a putrid Fever, proceeding from the Tranſmiſſion of the putrid Particles of the Puſtules, now in a State of Suppuration, into the Blood; which, being prejudicial to Nature, at the ſame time infect the Patient, and occaſion a very malignant Fever.

Thoſe, then, are the only proper Remedies, which will moſt effectually check this ſecondary, or putrid Fever; and nothing anſwers this Intention better, than plentiful Bleeding, which clears the Blood of the morbific Particles which nouriſh the Diſeaſe. Nor is this Practice, in my Opinion, in the leaſt contra-indicated by the Diſtemper, conſidering the preſent State of the Eruptions, ſince, if the Patient ſhould die at this Period, and be interred, yet the Eruptions, being cruſted, could not recede, nor grow leſs. And, in Effect, we have nothing to do now with the Small Pox, but with the putrid Fever, which is a very different Diſeaſe.

When, therefore, the Patient is threatened with immediate Death, from the uncommon Violence of the Symptoms, without ſpeedy Aſſiſtance, whether it be on the eleventh Day, or afterwards, I order ten or twelve Ounces of Blood to be immediately taken away from that Arm, which hath the feweſt Eruptions, as being the fitteſt for the Operation, for though Opiates, and refraining from Bed in the Day-time, may be ſufficient in the Beginning of the Diſeaſe without Bleeding, to conquer the Fit which comes moſtly towards Evening; yet on theſe Days of the ſecondary Fever, plentiful Bleeding alone can be ſafely depended on; this being the ſole Means of quieting the preſent Tumult. An Opiate is, therefore, to be exhibited in a large Doſe, in the Evening, as before; and it is to be repeated from this time, Morning and Night, and ſometimes oftener, as there is Occaſion: For it muſt be carefully noted, that the Symptoms in ſome Perſons are ſo extremely violent, that an Opiate given in a very large Quantity cannot overcome, nor even check them in leſs than twelve Hours; in which Caſe it is indiſpenſably neceſſary to repeat the Opiate in the ſame Doſe every ſix or eight Hours.

But, as it frequently happens in the Declenſion of the Diſtemper, partly from its Nature, and partly from the great Virtue of the Opiate, that the Patient becomes ſo very coſtive, as to be in Danger of Suffocation, and that the Fever riſes ſo high, as to leave little Hopes of Recovery, we muſt ſuit the Remedy to the preſent Exigency; and leſs Danger will enſue from taking a gentle Purge, than from the Fever much increaſed by the Retention of the Fæces. I have ſucceſsfully ordered here, an Ounce and half of lenitive Electuary to be diſſolved in four Ounces of ſome ſmall diſtilled Water, as of Succory, or Milk-water, and taken immediately; and, though this Draught may not operate ſpeedily, on account of the uſual Coſtiveneſs in this Diſeaſe, and, alſo, of the long-continued Uſe of Opiates, yet being adminiſtered in the Morning, it ordinarily gives a few Motions before Night; but, if it ſhould not, the Opiate muſt be exhibited in the Evening, and indeed earlier, notwithſtanding the Purge, if great Reſtleſneſs, or Sickneſs, threaten Danger, leſt the Patient, for want of this Aſſiſtance, ſhould periſh, whilſt the Operation of the Medicine is waited for. Nor will ſo mild a Purge occaſion the leaſt Miſchief, though it ſhould not work at all; ſo that, if it does not anſwer the Intention the firſt Day, repeat it the next, which will ſeldom fail to work. But, if it ſhould ſeem to have procured a ſufficient Diſcharge for the preſent, and the Patient grows better, the ſecond Draught may be deferred to another time.

In this manner, Bleeding and Purging may be repeated by Intervals, as the Fever and Reſtleſneſs ſeem to require, till the Patient be out of Danger. But, let it be carefully remembered, that a Purge is not to be exhibited till the Declenſion of the Diſeaſe, that is, on the thirteenth, or ſubſequent Day; and not then, unleſs ſome Blood has been taken away upon the firſt Appearance of the ſecondary Fever.

Though purple Spots may be removed by duly cooling the Blood, yet both bloody Urine, and a violent Flux of Blood from the Lungs, ordinarily foreſhew certain Death: Nevertheleſs, this dreadful Difficulty may, likewiſe, be overcome, and Life preſerved. For as both theſe Symptoms proceed from the vehement Inflammation, and of courſe, the exceeding Thinneſs, or diſſolved State of the Blood, ſuch Medicines as cool, and, alſo, thicken the Blood, by their binding and incraſſating Quality, admirably check theſe Bleedings. For this Reaſon, after Bleeding once plentifully, give an Opiate.

Take of diſtilled Water of red Poppies, two Ounces; Liquid Laudanum, fourteen Drops; diſtilled Vinegar, three Drams; Diacodium, half an Ounce: Mix them together for a Draught.

Then, let the following, or the like Remedies, be uſed till the Bleeding ſtops.

Take of the Troches of *Lemnian* Earth, and *Armenian* Bole, each a Dram; Seal'd Earth, Blood-ſtone, Dragons-blood, and prepared red Coral, each half a Dram; Maſtich, and Gum Arabic, each a Scruple: Make them into a fine Powder; of which, let half a Dram be taken every three Hours, in a Spoonful of Syrup of Comfrey, drinking after it four or five Spoonfuls of the following Julap:

Take of the beſt diſtilled Waters of Plantain, and Oak-buds, each three Ounces; Cinnamon-water without Spirit, two Ounces; Syrup of dryed Roſes, an Ounce; Spirit of Vitriol, enough to give it a moderate Tartneſs: Mix the Whole for a Julap.

In the mean time the Opiate above preſcribed muſt be given in the Evening: Emulſions, alſo, made of the four greater cold Seeds, and white Poppy-ſeeds, are very beneficial. But, after the Bleeding is ſtopped, the Diſtemper is to be treated in all other reſpects, according to the Method above delivered.

When I order Liquid Laudanum, I mean my own Laudanum, which is prepared in the following ſimple manner:

Take of *Spaniſh* Wine, one Pint; Opium, two Ounces; Saffron, one Ounce; Cinnamon and Cloves, reduced to Powder, each one Dram: Infuſe them together in a Bath-heat for two or three Days, till the Tincture becomes of a due Conſiſtence; and, after ſtraining it off, ſet it by for Uſe.

I would have the Syrup of Poppies, or Diacodium, thus made:

Take of the Heads of the white Poppy, well dry'd, fourteen Ounces; let them infuſe for twenty-four Hours in a Gallon of Spring-water; then boil them well, and preſs out the Remainder ſtrongly; to which add, twenty-four Ounces of Sugar, and boil them together into a Syrup.

I eſteem theſe two Preparations the beſt of their Kind, eſpecially the *Diacodium*, an Ounce of which will do more Service, than two of that which is made with green Poppy-heads, (without preſſing the Liquor out ſo ſtrongly) and a large Quantity ſometimes of the black Heads of the wild Poppy, which have little Virtue. Accordingly, whenever I am not ſatisfied about the Strength of any of theſe Opiates, I uſually order, in their ſtead, a Grain and half, or two Grains, of

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of ſolid *London Laudanum*, diſſolved in ſome proper diſtilled Water; by which means I avoid making any Miſtake, and injuring my Patient.

Helvetius, like other Authors, divides the Small Pox into diſtinct and confluent. Of the diſtinct Species he mentions two Sorts, the *ſimple*, and the *malignant*, which laſt, he again divides into two Species.

The confluent Small Pox he diſtinguiſhes into the *ſimple*, and the *malignant*; of which laſt he makes four Species.

The Simple Distinct.

The ſimple Diſtinct are diſtinguiſhed from the other by a Ceſſation of all the Symptoms after the Eruption. The Symptoms are, a briſk Fever, Drowſineſs, Delirioufneſs, convulſive Motions, Head-ach, Pains about the Region of the Kidneys, a Propenſity to vomit, and Vomitings. In this Caſe the Patient muſt be blooded in the firſt place. *Helvetius* recommends Bleeding in the Foot, if the Phyſician is called in late. The Patient muſt, alſo, drink a large Quantity of a light Ptiſan; and muſt have an emollient Clyſter, made purgative, if occaſion requires. He muſt be ſupported with Broths made of Veal and Fowls.

When the Violence of the Fever is a little over, he muſt take a Vomit, and be gently purged in caſe the Vomit do not work downwards. Nor need one to fear to purge the firſt or ſecond Day, in caſe the Symptoms require it.

The Patient's Regimen, after the Eruption, muſt be of Broths ſomewhat ſtronger, to which Beef may be added with Rice. He muſt, alſo, take twice or thrice a Day an abſorbent Potion, compoſed of ſimple Water, and ſome teſtaceous Powders, as Powder of Coral, Crabs-eyes, prepared Pearls, Species Confectionis Hyacinthinæ, the Counteſs of *Kent*'s Powder, and diaphoretic Antimony. In Children ſubject to Worms or Convulſions, or in caſe their Stools are greeniſh or ſlimy, the *Pulvis ad Guttetam*, Oyſter-ſhells, and calcined Egg-ſhells, are preferable to thoſe above-named.

If the Pock does not riſe, and the Circle at the Baſe becomes pale, the Patient ſhould take a larger Doſe of diaphoretic Antimony, or the Counteſs of *Kent*'s Powder; or with an Addition of Saffron, or Theriaca. In caſe the Belly is not relaxed, he muſt take a Clyſter, eſpecially if an Adult, as he may a gentle Narcotic, in caſe of Want of Sleep, proceeding from Pain and Uneaſineſs cauſed by the Pock. Theſe Narcotics ſhould be mixed with ſome Abſorbent, in order to hinder them from growing ſour on the Stomach. Whilſt the Puſtules ſuppurate, he muſt not drink ſuch large Quantities of Broths as before; but plentifully of ſome light Ptiſan, with ſome proper Apozem. When the Suppuration is over, he may come to a ſtronger Regimen, but continue his Ptiſan, and take a Clyſter every Day. As ſoon as ever the Pock falls off, the Patient muſt be purged, which muſt be often repeated to hinder ill Conſequences.

The Distinct Malignant.

In the *Diſtinct malignant*, the Patient has a burning and continued Fever; a great Oppreſſion; a dry and burning Skin; a conſiderable Pulſation in the Carotid Arteries; a Stiffneſs of the Tendons; the Eyes animated and ſparkling; and the Veſſels of the *Tunica Conjunctiva* red and diſtended; a conſiderable Pain in the Small of the Back and Head, oftenеſt without Delirioufneſs, and without Heavineſs or Inclination to ſleep. Theſe are the Symptoms before the Eruption. Theſe Symptoms generally ceaſe after the Eruption; but the Fever ſoon after returns, and brings on frightful Dreams, Delirioufneſs, Inquietudes, Bleeding at the Noſe, more particularly at the Increaſe of the Fever, often profuſe Sweats, notwithſtanding which, the Skin remains burning, and dry.

Frequently upon the Skin, between the Interſtices of the Pocks, red Spots appear, which make a ſort of univerſal Inflammation.

The Fever, and other Symptoms, increaſe at the Suppuration, as, great Agitations, violent Delirioufneſs, and convulſive Motions; notwithſtanding which, the Pock remains elevated, and of a good Kind. As the principal Danger in the Small Pox is the inflammatory Fever, ſo the greateſt Care ought to be taken to diminiſh this, eſpecially at the Suppuration, when there is the moſt Danger, the Symptoms then increaſing conſiderably. For anſwering this Intention, the Phyſician muſt order the Patient to be blooded in the Arm, if he is ſent for before the Eruption, or when the Eruption is but juſt begun. But in caſe he is called in too late, he muſt not neglect Veneſection immediately in the Foot. For this Species of Evacuation, beſides the Advantage common to it, and Veneſection in the Arm, which is diminiſhing the Quantity of the Blood, is excellently calculated for making a Revulſion, and by that means keeping the Brain, and Parts adjacent, free from Inflammation. But Bleeding in the Foot is never ſo effectual, unleſs the Blood-veſſels of the Body are firſt ſufficiently emptied. Mean while, Care muſt be taken to dilute the Humours, by a plentiful drinking ſome proper Ptiſan, and diluting Apozem, every third Hour, and to eaſe the Inteſtines by ſome proper Clyſter. But the principal Care muſt be to obſerve the Diminution of the Fever, and then exhibit a Purge, and, alſo, a Vomit. *Helvetius* prefers ſoluble Salt of Antimony; but the Emetic muſt not be given till the Veſſels are emptied enough; afterwards, if the Evacuation is not large enough, a Purge muſt be given; after which, ſome abſorbent Draughts every third Hour. If more Evacuation is required, a Purge, Vomit, or both, may be repeated, to hinder Returns of the Fever, colliquative Sweats, Hæmorrhages, Suppreſſion of Urine, &c. *Helvetius* orders a febrifuge Ptiſan of the *Peruvian* Bark, with the Leaves of Borrage and Bugloſs; but never when the Skin is burning, and the Tongue dry, nor continued paſt the fouth Day. Sometimes the Patient muſt be blooded twice or thrice in one Day, and be purged the next; and even ſometimes take a Vomit, or a Purge, ſome few Hours after the laſt Bleeding, according as the Symptoms are violent, the Quickneſs of their Increaſe, the Ardour of the Fever, and the quick Returns of it; ſo that there is but little Interval between. If all this ſhould have been neglected at firſt, before the Eruption, they muſt be put in Practice the three firſt Days of the Eruption. And though the Effects are more uncertain in this latter Caſe, yet all the Ill that happens from it is, that the Circles are paler, and the Eruption more ſlow. A gentle ſlow Eruption is better than a precipitated one. When the Symptoms do not demand the Ptiſan of the Bark, the principal Care muſt be to dilute the Blood, and evacuate its Salts by the urinary Paſſages, to keep up a free Tranſpiration, and to keep the Inteſtines relaxed. *Helvetius* recommends diaphoretic Antimony for this Purpoſe, and ſays, he uſes it in the *diſtinct ſimple* Small Pox, when, being called in too late to purge, he obſerves any Symptom, which ought to determine him to purge. In caſe diluting Apozems do not keep the Inteſtines relaxed enough, Clyſters muſt be uſed; or two, three, or four Grains of ſoluble Salt of Antimony, diſſolved in four Doſes of the Apozem, which he recommends, and ſays, it may be uſed from the Eruption to the Suppuration, the Fever of which it diminiſhes. If a Looſeneſs happens after the Eruption, and immediately before the Suppuration, or whilſt it laſt, if the Stools are crude, ſerous, and greeniſh, they muſt be corrected by Abſorbents. In caſe the Looſeneſs appears crude and ſerous before, or at the Beginning of the Eruption, Abſorbents muſt be deferred till after ſome proper Cathartic. But, if the Looſeneſs is bilious, and of a good Kind; if it do not ſtop the Eruption, or the Fever do not increaſe, it is very ſalutary, though it happens at the time of Suppuration: And ſhould it ceaſe too ſuddenly, it muſt be provoked again. But if the Evacuations are too large, they may be moderated. *Helvetius* thinks Clyſters very proper thro' the whole Courſe of the Diſeaſe, if the Patient has his Belly ſwelled, if he finds a Working of his Inteſtines, and Uneaſineſs. The Patient ought, alſo, to drink a large Quantity of Liquors. In caſe of Watchings and Inquietudes, a gentle Narcotic may be uſed, provided that there are no conſiderable Complaints of the Head, no Deliriums, Convulſions, Giddineſs, nor Heavineſs; provided, alſo, that the Watchings, *&c.* are not cauſed by the Violence of the Fever: In which Caſe only, Syrup of white Water-lily ſhould be tried. But in caſe they are ſo violent as to oblige to have recourſe to a Narcotic, *Sydenham*'s Liquid Laudanum, or ſome other Compoſition charged with Aromatics, which correct the Opium: For *Helvetius* has often remarked, that Opium, or the *Syrupus è Meconio*, by themſelves, have often cauſed troubleſome Drowſineſs, and increaſed the Delirium.

At the Suppuration the diaphoretic Antimony muſt be left off, and the Apozem taken alone, or with ſome teſtaceous Powder, and diluting Liquors muſt be drank in great Plenty; the Broths the ſame as preſcrib'd before. When theſe Deliria, Convulſions, *&c.* grow violent, they are mortal. In caſe an Epiſpaſtic can be applied twelve or fourteen Hours before theſe Symptoms are grown conſiderable, it is the beſt thing that can be applied, both to ſtop and prevent the ill Conſequences. In caſe the Fever returns, after the Suppuration is ended, Emetics and Cathartics ſucceed beſt; if the Pus is too thin, and hinders the Suppuration, the Pocks muſt all be cut, and, mean while, Cathartics and Lenients muſt be uſed.

The ſecond Sort of the *diſtinct Malignant* is, when there is a ſtrong Fever with Purples, and a Multitude of little Veſicles, fill'd with a limpid Serum, more particularly on the Breaſt, and very few Pocks: This muſt be treated after the manner of *malignant* Fevers.

The Confluent Simple.

In the *confluent Simple* the Fever ceaſes, for the moſt part, after the Eruption, but returns violently at the time of Suppuration;

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ration, and sometimes with an Inflammation. Though it is difficult to tell if the Lymphatics have been obstructed from the Beginning, or not; the following are, however, Signs of it, especially if they all, or most part of them, appear at once, though some separately may appear without any Obstruction.

If the Patient was not blooded at first, and has taken strong Cordials.

If he is too drowsy after the Eruption.

If he feels a continual Humming, and Noise, in his Ears.

If, during his Drowsiness, he has slight and frequent Wanderings.

If he is uneasy, and tosses about.

If his Belly remains puffed, and swelled, although it has been evacuated by Clysters.

If the Tongue is very dry.

If his Urine is made in a small Quantity, and that high-colour'd.

If the Pock is flat, and sunk in the Centre.

Though there is no Reason to suspect any Obstruction from the Beginning, yet there is great Danger at the Suppuration; and the only Reason one can have to hope for Recovery, is, the Management of the Patient from the Beginning. Convulsions and Raving are very bad Accidents; and, if they come on a sudden, at the latter End of the Suppuration, and after proper Evacuations by Bleeding and Cathartics, they almost always prognosticate a near and inevitable Death: But if proper Evacuants have not been us'd, they are less dangerous, there being a Possibility of preventing the ill Consequences by Bleeding, Cathartics, *&c.*

This Sort of Small Pox is not near so terrible as the *distinct malignant:* It is, however, very dangerous, about the Time of Suppuration. When the Patient is first seiz'd, he must be blooded in the Arm, once or twice, if he is past Twenty, and of a sanguine Constitution; and afterwards must be blooded in the Foot.

Afterwards, Cathartics and Emetics must be us'd, but with this Precaution, that as there is not now, as in those of the *malignant* Kind, any Fever independent and distinct from the Small Pox to combat, for that Reason the Evacuations must be less: After proper Evacuations, the three principal Views must be, to dilute the Blood; to promote a large Quantity of Urine; to attenuate the Bile, and make it fit for Secretion: For no Part of the Body is so subject to be disorder'd in this Sort of Small Pox, as the Glands of the Liver, which often causes irregular Fits of a Fever, Hæmorrhages, Vomiting, Weaknesses, *&c.* To satisfy these Intentions, the Patient must take fifteen or twenty Grains of diaphoretic Antimony, and half a Grain of soluble stibiated Salt, in four Ounces of some proper diluting Apozem. When the Suppuration begins, the diaphoretic Antimony and Salt must be discontinued, and the Apozem given alone, or with some simple testaceous Powders.

It sometimes happens, that, at the first Days of the Eruption, the Pock is not elevated as it ought, but is sunk at the Centre: In this Case, the diaphoretic Antimony must be us'd without the soluble stibiated Salt; and, if that is not sufficient, some Kermes Mineral, the Countess of *Kent*'s Powder, or the Species for the Confection of Hyacinth, may be join'd to it. If the Urine is thick, of an ardent or deep-colour'd Yellow; one must have recourse to *Glauber*'s *Sal Mirabile:* Clysters are, also, very useful: The Regimen must, also, tend to dilute and sweeten the Blood. Often, at the End of the Suppuration, arrive, a brisk Fever, Hæmorrhages, Convulsions, a profound Heaviness, Weaknesses, or Syncopes, and Inclination to vomit: In this Case, if the Patient has not had necessary Evacuations, and these Symptoms have not yet appear'd in the Course of the Disease, he must be immediately blooded in the Foot, even though the Pock is still suppurating. In case the Symptoms require it, it may be safely repeated, using, at the same time, diluting Apozems.

When these Symptoms are preceded by a distinct Fit of Shivering, a Ptisan, of the *Peruvian* Bark, must be us'd; but after Bleeding, and when the Fit is considerably diminish'd. In case the Patient has a Propension to vomit, or Weakness, Eructation, or a swell'd Stomach, he must take a Vomit after Bleeding; but not unless the Diminution of the Fever, and the End of the Fit, permit.

On the contrary, if the Symptoms have been eas'd by Bleeding and Diluters, the Patient must wait for his Cathartics and Emetics, till the Suppuration is entirely ended.

Sometimes these Accidents do not appear, till the Pock is dry'd, and the Suppuration ended: To avoid a Return of the Fever, the Patient must be purged, or vomited, immediately after Bleeding: This Practice has always succeeded perfectly well with *Helvetius.*

But if these Symptoms appear'd at first, or in the Course of the Distemper, one can expect no Success from these Methods, but must have recourse to Vesiccatories, the only Remedy that can be of Service; which will not avail, unless applied, at least, twelve or fourteen Hours before the Symptoms are at their Height. Bleeding, after the Suppuration, succeeds, in this Sort, oftener than in the *malignant* ones.

The Confluent Malignant, called Crystalline.

All the four Sorts of the *confluent malignant* Small Pox have this common Symptom; the Fever never ceases throughout the whole Course of the Distemper: The first Sort is distinguish'd by the Pocks, which are clear, transparent, and full of a limpid Serosity; wherefore they are call'd *crystalline.*

Though it is difficult to distinguish this Sort at first, yet it may be gues's'd at, by a brisk Fever, a considerable serous Looseness, a great Headach, and great Thirst; the Skin of a white pale, and all the Parts a little swell'd: At the Eruption, the Pock appears of a paler red, rises sooner, and higher, and becomes larger than in the other Sorts; the Circle at the Base remains always paler; the Pellicle, which contains the Humour, is very thin; often many Grains join, and form a Sort of Bladder full of Serosity, which, if pierced, and the Liquor let out, looks pale at Bottom: All the Parts, in general, have an extraordinary œdematous Swelling; and, at last, the *malignant* Fever manifests itself, by Symptoms proper to it, or a miliary Erysipelas. As the Blood, in this Sort of Small Pox, is too fluid, there is no Occasion to bleed so much as in the other Sorts: But as the Head is always disorder'd, there is a Necessity for bleeding in the Foot, which has seldom Occasion to be repeated. One of the principal Accidents is, a Flux of a crude, serous Matter, of a green or whitish Colour; in which Case the Patient must be gently vomited. *Helvetius* recommends one Ounce of the Magisterial Syrup, and ten or twelve Grains of Ipecacuanha, mix'd up with some spirituous Cordial; after which, some Bolus, of the testaceous Powders, must be given: The next Day, or Day after, some gentle and astringent Cathartic; after that, a Draught, with some testaceous Powders, or very gentle Astringents, and in a small Quantity; for the Flux must be moderated only, not stopt; insomuch, that, in case it should stop, or diminish so much that the Belly becomes swell'd, it must be promoted by proper Clysters. If there is any Occasion for Narcotics, only the *Syrupus de Nymphæa* must be us'd.

In case the Fever and Looseness return towards the End of the Suppuration, (for during the time of Suppuration the aforesaid Conduct must be observ'd) proper Cathartics must be us'd, but defer'd longer than in the other Sorts; because the Humour suppurates slower: When the Suppuration is entirely ended, the Pus should be let out of the Pock all over the Body, the Face excepted. During the whole Course of this Distemper, as the greatest Danger proceeds from a total Dissolution of the Juices, so the Design ought to be, to give them a Consistence. The Patient should never take, at the same time, Emulsions, or milky Liquors, and Acids; nor Acids, and testaceous Absorbents.

The second Sort of the Confluent Malignant.

The Accidents that appear before the second Sort of the *confluent malignant*, are much the same as those preceding the first Sort of the *distinct malignant*; but the Fever is generally brisker, and the Returns of it longer, and more violent; but it is not always attended with Vomitings, or a Propensity thereto, with Drowsiness, Wanderings, and other terrible Symptoms. The principal of the Symptoms are, a Beating of the Carotid Arteries, a Redness of the Eyes, and Stiffness of the Tendons.

The Eruption is often sudden, the Figure of the Pocks more irregular than in the other Sorts, are flat in the middle, and have their Circles of a deep Red: They rise but indifferently, especially on the Face, which puffs and swells from the very first Day of the Eruption; the Cuticle of the Face rises, and appears all one Pock, flat, and of an even Surface. If there is any Interval betwixt the Pocks, it is mark'd with erysipelatous, and, often, purple Spots; the Skin is dry, and very burning; sometimes there are abundant Sweats, though the Skin remains still very hot; the Urine is in a very small Quantity, and of a high-colour'd Yellow; the Pulse is either hard and small, or very large, and very much elevated; the Eyes sometimes are red, sparkling, and incapable of suffering the Light, sometimes very heavy, and the Pupil dilated more than usual: The Patient has violent Headachs, especially if he has neither Drowsiness nor Wanderings: Inflexibility of the Tendons, convulsive Motions, and Deliria, are more frequent, and considerable, than in the other Sorts; the Patient, in this, must be blooded, and purged, as soon as possible: If, after a sufficient Evacuation, the Fever remains still very strong and ardent, diluting Apozems must be given alone; if it remains brisk, but less violent, with diaphoretic Antimony, and soluble stibiated Salt; but if

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if the Fever is but moderate, and the Pock remain ſunk in the Centre, half a Grain or a Grain of Kermes Mineral muſt be given, inſtead of the Salt. If the Inteſtines are too much relax'd, ſome of the Species of the Confection of Hyacinth, or Confection of Kermes, muſt be added to the Apozem; or the Powders may be taken ſeparately, drinking a Glaſs of Ptiſan after it, in caſe there appears any Danger of too great a Relaxation of the Inteſtines. If, at the Suppuration, the Accidents return, notwithſtanding all theſe Precautions, the Effects of Bleeding and Cathartics would then be fatal; the only Things that can be of Service, are Veſiccatories.

About the End of Autumn, in the Year 1719, a Small Pox, of the *confluent* and *malignant* Kind, appear'd at *Paris*, and raged with ſuch Violence, that no Remedies could afford Relief to thoſe who labour'd under it: The Symptoms could not be hinder'd, either from appearing, or returning again in the very Beginning of the Suppuration; and though the Suppuration does not generally begin till the fifth, or End of the fourth Day, in this Species it often began on the End of the third. Nothing was capable of ſtopping the rapid Courſe of the Symptoms, and few Patients were ſo happy as to eſcape their Violence, in whatever Method they were treated, but generally died on the fifth or ſeventh Day of the Eruption, and, ſometimes, at the Beginning of the Suppuration. The only Difference we could then obſerve, was, that thoſe who were blooded and purged in the Beginning, were more calm, and leſs agitated, during the firſt Days of the Diſorder: But this was a fallacious Reſpite, always ſucceeded by fatal Conſequences, and only capable of impoſing on thoſe who had not had an Opportunity of obſerving a great Number of ſuch Patients. The Pain, and other Symptoms, were leſs violent, but the Death of the Patient was not leſs certain.

In reflecting upon the Cauſes of this terrible Diſorder, I imagin'd, that the exceſſive Heat and Drought, which had laſted, without Interruption, from the middle of the Spring, had induced a Change in the Blood, by depriving it of its moſt ſerous Parts; a Misfortune which may eaſily happen in *France*, where the Inhabitants generally neglect to defend themſelves from the Heat of the Sun, and to correct their Blood by proper Aliments.

The Characters and Obſtinacy of ſome other Diſeaſes, which then raged, made us conjecture, that all the Fluids of the Body, and eſpecially the Lymph, were much inſpiſſated, and wanted a ſufficient Quantity of that aqueous Vehicle which is ſo neceſſary for their free Circulation: We, alſo, obſerv'd, that, in this Pock, of the *confluent* and *malignant* Kind, the Spit diſcharg'd during the Ptyaliſm was more thick and viſcid, than at other Times. The Neck, the Face, the Hands and Arms of the Patients, were violently inflated, and far more firm and hard than they uſually are on the like Occaſions. When the Inflation was arriv'd at its greateſt Height, and the Fever of the Suppuration begun, the Spots diſappear'd gradually more and more, till, at laſt, nothing at all was expectorated; a Symptom which always prognoſticates a ſpeedy Death. Theſe Obſervations laid a Foundation for our ſuſpecting,

1. That Symptoms, ſo terrible and frequent, depended on the Inſpiſſation of the Lymph; which, being depriv'd of its Seroſity, circulated ſlowly in the Veſſels, and eſpecially in thoſe of the Head.

2. That this Lymph was very ſuſceptible of Rarefaction, and greatly diſpos'd to obſtruct the Veſſels; a Circumſtance which interrupted the Circulation of the Fluids, and, in a few Days, prov'd fatal to the Patient.

The Remedies generally us'd, on Occaſions of a like Nature, ſuch as ſpirituous Cordials, and others, ſeemingly calculated to attenuate the inſpiſſated Lymph, excited too great a Rarefaction in that Juice, and put all the Fluids into too violent a Motion; they augmented the Fever, threw all the ſolid Parts into a fatal Rigor, and, inſtead of rendering the Lymph fluid, they thicken'd it more, and often haſten'd the Death of the Patient.

As aqueous and diluting Medicines were incapable of penetrating this inſpiſſated Lymph, ſo neither could they ſubdue the Symptoms of the Diſeaſe; nor could a Cure be expected from any other mild and temperate Medicines, which were too weak to attenuate and colliquate the groſs tenacious Lymph. We, therefore, thought, we had Reaſon to have recourſe to Veſicatories, as ſeemingly beſt calculated to anſwer the ſeveral Intentions of Cure; and though the Succeſs of theſe Remedies, when us'd, did not anſwer our Expectation, yet we concluded, that the Error muſt have conſiſted in applying them too late: For both Reaſon and Experience evince, that Veſicatories generally evacuate but a ſmall Quantity of Serum; that they operate much leſs powerfully by their attractive Quality, than by their acrid Salts, which mix with the Blood, and effectually attenuate the Lymph, without exciting violent Commotions in the Fluids. Hence Veſicatories muſt be applied in the firſt Days of the Diſorder, to prevent, if poſſible, the Obſtruction of the Glands and Veſſels; for if ſuch an Obſtruction is once form'd, and arriv'd at a certain Height, Veſicatories do not operate efficaciouſly, even though they ſhould procure a Diſcharge of a large Quantity of Serum.

Theſe Reaſons influenced us to apply Veſicatories on the firſt, the ſecond, or the third Day of the Eruption; by which means, we found the Appearance of freſh Symptoms prevented: But, for fear of exciting a too violent Irritation, we always delay'd the Application of the Veſicatories, till the Operation of the Purgative was entirely over: And this Caution is ſo much the more neceſſary, becauſe the Veſicatories might be miſplaced by the Motion the Patient muſt neceſſarily uſe during the Operation of the Medicine. In order to hinder theſe Plaiſters from communicating a preternatural Heat to the Urine, the Patient muſt be order'd to uſe no other Kind of Drink than a Ptiſan prepar'd with Mallows, or Barley.

But the Uſe of Veſicatories ought not to ſuperſede that of ſimple Apozems, with which we may mix diaphoretic Antimony, or Abſorbents, or ſtibiated Salt, according as the State and Condition of the Patient ſhall require.

But if the Body is not kept ſufficiently ſoluble, Irritations of the Bladder are to be dreaded, and ſome other Symptoms, which, however, are of a far leſs dangerous Nature than thoſe intended to be remov'd by the Veſicatories.

It is to be obſerv'd, that, in the Small Pox, Veſicatories adhere with Difficulty, and act but ſlowly, on account of the Inflammation produced in the Skin by the Puſtules: For which Reaſon, the Plaiſters us'd in this Diſorder muſt be newly made, richly impregnated with Powder of Cantharides, ſufficiently moiſten'd with Vinegar, and ſecur'd by proper Bandages: Theſe Veſicatories ought to be left on the Part for about twenty-four Hours, after which, we are to cut off not only the Bliſters which are elevated, but, alſo, the Whole of the Epidermis, which is ſeparated from the Skin.

The Dreſſing is to be of the ordinary Kind, with freſh Butter and Beet-leaves.

It frequently happens, that the Part of the Skin from which the Epidermis is remov'd, becomes dry, in a very ſhort time, a ſure Proof of the ſmall and inconſiderable Effects the Veſicatories have produced on the Lymph.

To remove this Misfortune, inſtead of Beet-leaves, we are to apply a Plaiſter prepar'd of an Ounce of ſuppurative Ointment, and two Scruples or a Dram of the Powder of Cantharides. When a ſufficient Diſcharge is made from the Part, we are to remove the Plaiſter, and dreſs with freſh Butter and Beet-leaves.

If Veſicatories have been applied from the firſt, one may judge of their good Effects, by the following Symptoms:

If the Spitting is more abundant, and more fluid.

If the Pock, ſunk before, now riſes.

If the ſwell'd Parts grow leſs firm, and yield to the Touch.

Two Inconveniencies may happen from theſe Veſicatories: 1. That the Humour in the Pock remains too clear, and fluid. And, 2. That the Fever of the Suppuration is prolong'd. To prevent the firſt, all the Pocks, unleſs thoſe on the Face, muſt be cut; which Method, ſometimes alone, makes the Fever ceaſe; if it does not, gentle Cathartics muſt be us'd. The Regimen muſt be incraſſating. There is no Danger in uſing theſe Veſicatories, even to Women who have actually their Menſes.

The third Sort of the Confluent Malignant.

The third Sort of the *confluent malignant* is preceded by the ſame Symptoms as the other *malignant* Kind; but the Eruption begins on the ſecond Day. The Pock is of a black Colour, and but little elevated; when open'd, a black, and very livid, Blood iſſues out, and the Bottom appears gangren'd. The Patient generally makes bloody Urine; many render it by Stool, and ſome by the Noſe, others by the Mouth, in Spitting, Coughing, or Vomiting; ſome by the Eyes. The Intervals between the Pocks are of an obſcure Black, the Fever is briſk, and the Returns violent: They are almoſt always mortal.

If the Phyſician is call'd in time, he muſt begin the Cure by bleeding often in the Arm: If the Patient ſpits or vomits Blood; if he has with theſe a Bleeding at the Noſe, violent Headachs, Convulſions, Drowſineſs, and Wanderings, the Patient muſt be purged gently, as ſoon as poſſible: If there is no Evacuation of Blood by Stool, or Vomit, he muſt, alſo, be vomited: After the Effect of each Cathartic, or at the Interval betwixt each, he muſt take ſome acid Potion. *Sydenham* recommends Spirit of Vitriol. If, by theſe Methods, the Patient can be brought to the End of the Suppuration, which ſeldom happens, the Patient muſt take ſome gentle Cathartic, after which, he muſt conform to an incraſſating Regimen; and the Cure muſt be ended by ſome Antiſcorbutic.

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The fourth Sort of the Confluent Malignant Small Pox.

This Species of Small Pox partakes of the Nature both of the *confluent* and *diſtinct malignant* Kinds, though it has a greater Affinity to the latter Species, ſince it hardly differs from it, and ought to be treated in the ſame manner.

The following Symptoms are favourable, in the *malignant* Sort of Small Pox:

If the Fever, and all the Symptoms which preceded the Eruption, abate at the Eruption.

If the Eruption is gradual.

The Elevation of the Pock, and the Redneſs of the Circle at their Baſe.

The Whiteneſs and Conſiſtence of the Liquor contain'd in the Pock.

A Softneſs of the Skin and Tendons.

A gentle Tranſpiration.

A moiſt Heat.

A large Quantity of Urine, and that of a good Colour.

No Diſturbance in the Head, Breaſt, or Belly.

A Ceſſation of all the Symptoms which generally accompany the *malignant* Fever, join'd to the Small Pox.

Diviſion of the bad Symptoms which appear in the Small Pox, into thoſe before the Eruption, thoſe at the Eruption, and thoſe at the Suppuration.

Before the Eruption.

An Inflammation of the Eyes.

A violent Beating of the Carotid Arteries, if compar'd with the Pulſe.

A dry, hard, burning, and painful Skin.

At the Time of the Eruption.

A too ſudden Eruption of the Pocks, in which moſt of them appear in twenty Hours.

A conſiderable Swelling of the Face and Head.

A Stiffneſs of the Tendons, without Convulſions.

Profuſe Sweats.

A Depreſſure, and want of Elevation, of the Pock.

An eryſipelatous Inflammation in the Interſtices between the Pocks.

A ſmall Quantity of Urine, and that thick and cloudy.

A too large Quantity and Crudity of Urine.

An involuntary Fluxion of Tears, from one or both the Eyes, without any conſiderable Inflammation of the Eye-lids, or when the Patient winks with one Eye oftener than with the other, or can't endure the Light.

Such a *Confluence* of the Pocks, as the whole Face ſeems to be but one, is very dangerous.

When the Ptyaliſm, which happens at the Beginning of the Eruption, is thick and glutinous.

At the Suppuration.

If, at the Suppuration, all the Accidents, which ceas'd at the Eruption, return with Violence, the Patient is in great Danger.

When the Pus is clear; not ſo ill in the cryſtalline Sort, as the others.

The Blackneſs of the Pock is a very bad Sign, unleſs, upon Opening, ſome Drops of Blood are mix'd with the Pus, and the Skin at the Bottom appears of a vermilion Red; but if it is of a blackiſh deep Red, it is very bad.

When the Pock ſinks ſuddenly, or the ſwell'd Parts ſink.

When the Stools are greeniſh, and ſerous, it is bad; when thick, bilious, and like a Pus, it is a good Symptom, provided the Pock does not fall.

When the Ptyaliſm ceaſes ſuddenly, and, at the ſame time, the Glands of the Throat ſwell, there is no Hope.

A Pomatum, to be us'd in the Small Pox.

Take two Ounces of the Oil of the Four cold Seeds; of *Sperma Ceti*, two Drams; and of Virgin Wax, three Drams: Melt all in *Balneo Mariæ*, and ſtrain; then ſlice it down with a wooden Spoon, and put it, by ſmall Portions, into a marble Mortar: Beat the Whole, for three or four Hours, with a wooden Peſtle, pouring now-and-then upon it a little pure Spring-water: Then add ſome Drops of the Oil of Citron, or a few Spoonfuls of Orange-flower-water.

When this Pomatum is to be us'd, we are to take ſome of it on the Point of a Feather, and gently anoint all the Puſtules on the Face.

We may begin to uſe it when the greateſt Part of the Puſtules, being ſuppurated, appear white, which generally happens about the End of the ſeventh Day; though there would be no Danger in uſing it before the End of the Suppuration. This Liniment may be repeated frequently every Day, and ought to be applied as often as the Face becomes dry, in order to hinder, as much as poſſible, the exterior Pellicle of the Puſtules from becoming hard and dry too ſoon.

In preparing this Pomatum, it is abſolutely neceſſary to beat it very long, in order to procure an intimate Incorporation of its Ingredients, and render it as white and light as poſſible.

It may be preſerv'd for ſeveral Days, without Corruption, provided it is kept in a cool Place: If it ſhould become too thick, it muſt be again beaten in the Mortar, obſerving, now-and-then, to mix ſome Drops of Water with it. But if it ſhould become yellow, or contract a bad Smell, we muſt uſe it no more, but make a freſh Pomatum of the ſame Kind. *Helvetius.*

The Small Pox is a Diſorder very frequent among Infants; and though it is ſo accurately deſcrib'd by *Sydenham*, that his Account of it deſerves to be read with the greateſt Care, yet I ſhall ſpecify ſome Things which evince, that the Small Pox may be reduced to the ſame Simplicity with the other Diſeaſes, and that ſomething is, as yet, wanting, in the Method of Cure.

The Small Pox is generally epidemical, beginning firſt in the Spring, increaſing in the Summer, languiſhing in the Autumn, generally diſappearing in the ſubſequent Winter, and next Spring returning in the ſame Order. The ſooner it begins before the End of the Winter, the more malignant is its Nature; and, the later it begins, the more mild and benign the Diſorder is. Hence it is obvious at what particular Seaſon of the Year it is moſt dangerous.

It ſeizes Perſons of all Ages, and Sexes, but eſpecially Children, provided they have not before labour'd under it. The more Age has diſſipated the Fluids, and corroborated the Solids, the more violent the Diſorder: Hence the Small Pox is milder, and more eaſily cur'd, in Children, Women, and thoſe of ſoft or lax Habits, than in thoſe accuſtom'd to Labour, full-grown, and old Perſons.

Though this Diſorder is epidemical, it is, nevertheleſs, convey'd from an infected to a ſound Perſon, by a certain Contagion, which, being lodg'd in the Air, is with it communicated to the Lungs, Fauces, Noſtrils, Oeſophagus, Stomach, and Inteſtines; ſo that the Diſorder ſeems, at firſt, to ariſe from a ſmall Quantity of poiſonous, or peccant Matter.

This contagious Matter, when mix'd with the Fluids, immediately produces certain Effects, which mutually ſucceed each other, ſuch as Horripilation, Rigor, an acute Fever, an intenſe and perpetual Heat, a preternatural Splendor of the Eyes, ariſing from a Defluxion of a hot and ſubtil Liquor; an intenſe Pain of the Head and Limbs, but eſpecially about the Parts below the Pit of the Stomach; a Vomiting, and Nauſea; an inſupportable Inquietude; a Stupor; a Drowſineſs; and, in Infants, epileptic Fits.

In the Beginning of this Stage of the Diſeaſe, the Blood, taken from the Patient's Veins, is beautiful, and reſembling that of a ſound Perſon; but, on the third or fourth Day, it appears like pleuritic, or inflam'd Blood, and the more it aſſumes this Appearance, the longer, or more violent, the Diſorder has been.

This Stage continues in Proportion to the Variety of epidemical Cauſes, the Violence of the Diſeaſe, the Habit of the Patient, and the various Seaſons of the Year. The longer this Stage naturally is, the milder it will be, through all its Stages; and the ſhorter, the more violent.

Hence this Stage of the Small Pox ſeems to conſiſt in an increas'd Velocity of the Fluids, by means of an inflammatory Stimulus mix'd with all the Parts of the Blood.

The Small Pox, therefore, which bears an Affinity to all acute inflammatory Diſorders, is, in this Stage, with Difficulty diſtinguiſhed from them: A Knowledge that the Diſeaſe rages epidemically; that the Patient is diſpoſed to it; that there is a previous Contagion, and the Symptoms of it produced, evince, that the Small Pox is preſent, and that the Puſtules will ſucceed in its other Stage, to be afterwards deſcribed.

When the firſt Stage of the Diſeaſe is known, the ſole Intention of Cure ſeems to conſiſt in removing the inflammatory Stimulus, curing the preſent Diſorder, hindering its farther Progreſs, and preventing a future Suppuration and Gangrene.

The inflammatory Stimulus may be removed, by Correction with Specifics, or by an univerſal antiphlogiſtic Method.

The ſpecific Correction of the inflammatory Stimulus ought to be obtained by Remedies oppoſite to the contagious Poiſon, ſo ſmall a Quantity of which, admitted into the Body, produces all the other Symptoms of the Small Pox.

A ſtrict Compariſon of the Hiſtory of Antidotes, and the Nature of the Small Pox, afford ſome Reaſon to hope that ſuch a Remedy may be found, and that great Advantages may ariſe to Mankind from it.

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The Succeſs of Antimony and Mercury, by Art rendered highly penetrating, not corroſive with a too ſaline Acrimony, but duly mixed with each other, induces us to ſeek for ſuch a Remedy in theſe two Medicines. Thus,

Take of unwaſhed diaphoretic Antimony, ſix Drams; of *Mercurius Dulcis*, half a Dram; and of the beſt *Sal Polychreſtum*, one Dram: By long Trituration reduce to a fine Powder; to be divided into twenty-four equal Doſes; one of which is to be taken every three Hours, drinking after it four Ounces of recent Whey. Or,

Take of the Flowers of Sulphur, one Dram; of Cinnabar of Antimony, one Scruple; and of nitrated diaphoretic Antimony, and *Sal Polychreſtum*, each one Dram and an half: Reduce to a fine Powder; to be divided and taken in the ſame manner with the former.

In the Small Pox we may, alſo, uſe the univerſal antiphlogiſtic Method, and take thoſe Meaſures which, in all inflammatory Diſorders, are found effectual for hindering the Inflammation from degenerating into *Pus*, or a Gangrene. Nor, as theſe Meaſures prove ſucceſsful in other Diſorders, is it to be doubted, but they would, alſo, do ſo in this. Hence it is not impoſſible that a variolous Fever may be often preſent, without the Small Pox.

That the univerſal antiphlogiſtic Method may be obſerved, it is neceſſary, firſt, that the Patient ſhould have a ſufficient Quantity of Blood taken from him. Secondly, That the whole Skin, Fauces, Oeſophagus, and Inteſtines, ſhould be frequently relaxed with Clyſters and Fomentations. Thus,

Take of the Flowers of Mallows, Marſhmallows, Dandelion, Mullein, and Soapwort, each half an Ounce; and of Linſeed-meal, two Drams: Boil in twelve Ounces of Water, for a Clyſter; to be injected every twelve Hours.

Woollen Cloaths, alſo, wet in the ſame Decoction, are to be applied warm to the inferior Parts of the Body; ſuch as the Feet, Hams, Groin, Thighs, and Legs: The Mouth, Fauces, and Noſtrils, are, alſo, to be waſhed and moiſtened with the ſame Decoction. Thirdly, The Patient muſt drink large Quantities of thin, acidulated, or nitrated farinaceous Water; he muſt, alſo, drink antimoniated Nitre, or the *Sal Polychreſtus*, in Milk and Water. Thus,

Take of the recent Flowers of the wild Poppy, and Elder, each one Ounce; and of entire Oats, half an Ounce: Boil in a ſufficient Quantity of Water, with each twenty Ounces of which mix, of ſtibiated Nitre, that is, ſuch as has been ſeparated from diaphoretic Antimony by waſhing and Cryſtallization, half an Ounce; of recent Citron-juice, one Ounce; and of the Syrup of Violets, one Ounce and an half: Of which Preparation the Patient may drink as much as he pleaſes.

Fourthly, The Patient's Aliments ought to be light, the Air drawn into his Lungs pretty cool, and his Body muſt be kept well covered, and perſpirable. For Aliments of this Kind, ſee the Article FIBRA.

Though in the Small Pox the Intention of Cure, and eſpecially the Method of obtaining it, already mentioned, are rarely thought of; yet ſuch Meaſures have accidentally proved ſucceſsful, even when Phyſicians have been ignorant of the Diſeaſe.

When this Diſorder finiſhes its firſt Stage, which is that of Contagion, it enters upon another, which may be deſcribed thus: The Skin, firſt, of the Head and Face, then of the Hands and Arms, and, laſtly, of the Trunk and interior Parts of the Body, is infected with ſmall red Specks, like thoſe produced by the Bites of Gnats; ſoon after, all the Symptoms are mitigated, and every Hour the red Puſtules are continually enlarged in Bulk, and Number: They are, alſo, more elevated and inflamed, till, at laſt, the Skin becomes tenſe: Heat and Pain are produced, and the Circulation of the Blood, and Perſpiration of the Humours, are retarded. Hence ariſe the greater Repulſion of the Humours to the internal Parts; the Fever; the Anxiety; the Difficulty of Breathing; the Pain of the Fauces; the Quinſey; the *Diarrhœa*; the Dyſentery; the Diſcharge of bloody Urine; the Spitting of Blood; and the hot, red, and painful Inflammation of the Skin lying between the Puſtules; which, when they have continued four, five, or ſix Days, are abſolutely ſuppurated, and converted into as many ſmall Apoſtems. I call this Stage of the Diſeaſe the Progreſs of the Inflammation into an Abſceſs: This Stage laſts, according to the Variety of epidemical Cauſes, the Temperature of the Patient, the Violence of the Diſeaſe, the Regimen, and the various Seaſons of the Year, for the moſt part, four or five Days; ſo that on the eighth Day, from the Beginning, there is generally a Suppuration, at which time the Blood is highly inflamed.

If the Contagion is violent, the Puſtules numerous, adjacent to each other, and, as it were, intermixed, all the Signs of the Inflammation great, the Patient of a ſaline oleous Temperament, in the Vigor of his Age, and accuſtomed to delicate Living; if the Regimen and Remedies greatly increaſe the Circulation of the Humours, and if the Summer is very hot; then, towards the End of the Inflammation, red Veſicles, diſtended with Lymph, appear, and are Marks of a gangrenous State of the Juices. Hence the Skin becomes unfit for the Circulation and Exhalation of the Fluids, which are, for that Reaſon, more repelled to the internal Parts. Hence ariſes the exceſſive Saliyation, and the Swellings of the Hands and Feet.

From what has been ſaid, we may learn the Diagnoſtics and Prognoſtics of the ſecond Stage of the Small Pox; as, alſo, the Nature of the Diſeaſe, and its Symptoms, which are generally circumſcribed within theſe Rules.

The milder the Stage of the Contagion is, the gentler, alſo, that of the Inflammation will be.

The more ſlowly the Puſtules make their Eruption, and, conſequently, the longer the State of the Contagion is, the Diſorder is proportionably ſlighter.

The larger, fewer, more diſtant, more remote from the Face, the whiter, and, at laſt, yellower the Puſtules are, or the more ſlowly they proceed, the better, and more favourable, they are.

The more numerous, ſmall, and intricate, the Puſtules are, the more there are on the Face, the more brown or black, or the quicker their Progreſs, the worſe they are.

The more the Matter of the Puſtules reſembles mild and perfect *Pus*, the better it is.

The more the Matter of Puſtules reſembles a gangrenous Ichor, the worſe it is.

The redder the Interſtices between the Puſtules are, and the more hot, tenſe, and tumid, about the Time of Suppuration, it is ſo much the better, on account of the Circulation ſtill remaining in theſe Parts.

The more the Parts lying between the Puſtules are pale, or blackiſh, the worſe; ſince theſe Signs prognoſticate a mortal Quinſy, or a Peripneumony, unleſs a copious Salivation, or an exceſſive Tumor of the Hands, ſhould come on: For the Circulation of the Blood is retarded here, and, conſequently, increaſed towards the internal Parts.

If, in the Places between the Puſtules, purple-coloured Spots appear, a mortal Gangrene is denoted.

The Intentions of Cure to be purſued in this Stage of the Small Pox, are various, according to the Degrees and Duration of the Diſeaſe: For, in the firſt Beginning of the apparent external Inflammation, Care ſeems requiſite, to prevent degenerating into a Suppuration, concerning which, we have already treated: Or, if this Caution is neglected, we are to take care that the Suppuration be as ſmall as poſſible, far from the Head, and ſlow; which End is obtained, firſt, by the lighteſt Aliments, and ſuch as reſiſt Putrefaction. See FIBRA. Secondly, By diluting, mild, and ſomewhat acid Liquors, ſuch as thoſe already mentioned. Thirdly, By deobſtruent, aperient, and diluting Liquors, continually drank in large Quantities. Thus,

Take of the recently extracted Juices of Succory, Lettuce, Dandelion, and Fumitory, each two Ounces; of the Roots of Vipers Graſs, four Ounces; and of pure Nitre, one Dram and a half: Mix all together, and let the Patient take one Ounce every Hour of the Day. Or,

Take of *China* Root, and the Roots of Sarſaparilla, and Graſs, each two Ounces; of the Roots of Vipers-graſs, eight Ounces; and of Elder-flowers, one Ounce: Boil for an Hour, in a ſufficient Quantity of Water, to ſix Pints; of which let the Patient take five Ounces every Hour.

Fourthly, By bathing the Feet twice a Day, and continually fomenting them with a tepid Fomentation; applying, at the ſame time, epiſpaſtic Plaiſters to the Soles of the Feet, and the Hams. Thus,

Take of the Melilot Plaiſter, of *Galbanum*, and *Sagapenum*, each one Ounce: Mix all, ſpread upon a Piece of Leather, and apply to the Soles of the Feet. Or,

Take of the Crums of ſtale Bread, ſix Ounces; of Rue, a Handful; of bruiſed Muſtard-ſeed, ſix Drams; and of Salt, and Vinegar, each four Drams: Mix all together, and apply to the Soles of the Feet, and the Hams.

Fifthly, By a ſomewhat cold Regimen, and eſpecially by the Admiſſion of a pretty pure and cool Air; taking care, particularly, to guard the inferior Parts of the Body from Cold.

Sixthly,

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Fifthly, These Measures are to be taken in the very Beginning of the Disorder. And, sixthly, If the Disease is intolerably violent, Opiates are to be used in the Afternoon, at Five o'Clock; taking care not to neglect the other Circumstances prescribed. Thus,

Take of the Syrup of white Poppies, one Ounce: Make into a Draught. Or,

Take of pure *Laudanum*, one Grain: Reduce to the Form of a Pill. Or,

Take of pure *Laudanum*, one Grain; and of distil'd Mint-water, half an Ounce: Mix for a Draught.

After this second Stage of the Small Pox, there succeeds a third, which is that of the Suppuration; in which the Disease is gradually increased, and perfected. During this Stage, the purulent Pustules are daily increased, and then, being maturated, become white, or yellow, and break on the third or fourth Day of this Stage: Then the whole Fat and Skin abound with a moveable *Pus*, whilst the external Parts are dry'd, and such of them as are disengaged from Pustules, inflamed. Hence, by the Obstruction of the Circulation and Perspiration, by the Irritation of the nervous and membranous Systems, and the Absorption of the *Pus* into the Veins, a malignant Fever, accompanied with the most terrible Symptoms, is produced. If this purulent Matter is mixed, and circulates long with the Blood, hence, according to its Congestion in various Parts of the Body, it produces various, and hardly surmountable Effects, such as a *Delirium*, a *Phrenitis*, a Peripneumony, a Pleurisy, a Vomiting, a Dysentery, an *Hepatitis*, Apostems, Carbuncles, Tumors of the Joints, Abscesses, Stagnations of the Fluids, a tabid Disposition, a Phthisis, and many other terrible Disorders.

But if the variolous Matter is subtile and acrid, and the Disease violent, the Skin, Fat, and Muscles, are corroded, whilst broad malignant Ulcers are formed, which often penetrate to the Bone, and leave unseemly Cicatrices behind them.

In this Stage of the Small Pox, a Discharge of the *Pus* to the external, and a Repulsion of it from the internal Parts, are to be obtained; which Ends are best answered by relaxing the Skin with tepid and relaxing Fomentations, carefully and constantly renewed; by frequently washing and gargarizing the Mouth and Fauces; by liberal Draughts of warm, cardiac, detergent, aperient, and antiseptic Liquors; by mild, diluting, emollient, and laxative Clysters, daily injected, and long retained; by living upon Broths prepared of Flesh, and seasoned with Salt and Acids; and by the moderate, though not too frequent, Use of generous Wines; exhibiting, at the same time, proper Doses of Opium, against the violent Shocks of the Disorder. The Liquors and Medicines proper for these Intentions are already specified under this Article.

If the Disease is violent; if there is a gangrenous Ichor, instead of *Pus*; if almost the whole Skin is covered with Pustules; it is sufficiently obvious, why the Small Pox is productive of so unhappy Effects, and even of Death: But this will be best understood by him, who, from Anatomy, knows, that not only the external Skin, but, also, the Eyes, all the Membranes of the Nostrils and Mouth, the *Aspera Arteria*, the *Bronchia*, the *Oesophagus*, the Stomach, the Intestines, the Liver, the Spleen, and the Lungs, are full of these Pustules: For the Person who knows this, understands the Reasons of what has been said, perceives what is necessary to the Cure, and whether the Violence of the Disease, and the Death of so many Patients, always happening after the Use of common Means, are not Circumstances which ought to excite the Care and Industry of the Physician in the Beginning of the Disease, since, by the common Method, accidental Cures are only produced, by the Force of Nature. Inoculation seems to be a Practice sufficiently certain and safe. *Boerhaave.*

Boerhaave's Judgment, with respect to the ordinary Method of treating the Small Pox, is very remarkable. His Words are, "Vulgata quippe Methodo nullus nisi sponte emergit:" *By the common Method, accidental Cures are only produced, spontaneously, that is, by the Force of Nature.* I will not presume to determine how far this Assertion is true; though I should sooner believe it of this Distemper, than of almost any other I am acquainted with; and candid Physicians are sensible that it is not entirely without Foundation. Whoever, therefore, proposes a more certain, and less exceptionable Method, deserves, at least, that his Sentiments should be examin'd with Candor; and, if Experience gives a Sanction to the Novelty, the Inventor merits all Kinds of Acknowledgments from Mankind, for the important Discovery.

As I had heard of considerable Successes in the Treatment of the Small Pox, attending a Method within these few Years introduced by Dr. *Thompson*, I judg'd it my Duty to enquire of himself what that Method was, and upon what Observation, it was founded. The *Doctor* has been so obliging to me, and the World, as to communicate what I ask'd, without Reserve; and has given me Leave to make publick the following Treatise on this hitherto invincible Distemper; which I hope and believe will be agreeable to all those who consider Truth as the End of their Researches, and prefer the Welfare of Mankind, and Improvement of Physic, to all less generous Considerations.

The Small Pox is a Disease, that, at this time, is spread, in a manner, over all the known World, seizing, first or last, all Sorts of People, not sparing either Sex, Constitution, Climate, or Age; and whether it be from a Violence peculiar to the Disease, or from the various or improper Methods of Treatment, I cannot say, but, at least, every Day's Experience shews us, that it is, at this time, more universal than the Plague, and not much inferior to it in Danger. The many Authors who have treated expressly upon this Subject, the many Revolutions which have happen'd, both in the Theory and Practice, the Controversies yet subsisting, and the Points in Debate of such Consequence, their Opinions being so extremely wide from each other, that any Physician, who attempts the Cure of this Disease, should he not be entirely in the Right, would be so far from relieving the Patient, that he must rather join with the Disease, and render it more fatal, are the Motives that have induced me to give the Observations I have made in the Course of my Practice, concerning the Small Pox, which was, as it appears from History, unknown till the seventh Century, but now has taken such Root in the World, that it is even become hereditary to us.

The Small Pox, not being described by any of our *Greek* or *Roman* Physicians, proves almost to a Demonstration, that it never appeared either in the *Greek* or *Roman* World. Such Authors as *Hippocrates*, *Aretæus*, *Celsus*, and *Cœlius* the *African*, (rather *Soranus* the *Ephesian*) who were so excellent in the descriptive Part of Physic; insomuch that I might say, we have rather the most finished Pictures of Diseases than Histories (for they excelled in Description, as they did in Poetry, Sculptures, and Painting); it was impossible this Disease, had it then existed, could have escaped their Attention: Yet it is not impossible, but it might have then existed, in some other Parts of the World: And there have been those Physicians, who have endeavoured to trace it from *India*, from thence to *Arabia*; but we all know it appeared in *Egypt*, brought there by the *Arabians*, when they conquered that Kingdom, during the Caliphat of *Omer*; from thence it spread where-ever they carried their Arms, their Religion, and their Commerce; through *Egypt*, *Syria*, *Palestine*, *Persia*, *Lycia*, along the maritime Parts of *Africa*, from thence into *Spain*, and afterwards diffused itself, by the Progress of our *European* Discoveries, Wars, and Trade, over almost all the known Parts of the World. *Rhases*, who flourished in the Ninth Century, a *Syrian* by Birth, *Arabian* by Extraction, and *Mahometan* by Religion, appears to be the first Writer we have extant, who treats of this Disease.

We have had, at least, a thousand Authors, who have treated of the Small Pox: Those for the first five hundred Years varied but very little; neither can I say there have appeared any controversial Writings, among Physicians, of Moment, till *Sydenham*, the great Observer, arose. The Practice for a Century or two before his Time was a common beaten Path, supported only by some foolish *Hypotheses*, or empirical Receipts. They aimed chiefly, with Cordials, and other means, to promote the Eruption: Hence they imagined a kind of Poison expelled from the vital Parts to the Circumference. In the Course of Maturation, or the Filling of the Small Pox, the same Method was continued, lest the Poison should revert again to the noble Parts. The Reasons which induced Physicians to this Comportment in their Practice, seem to me to be these: They observed, during the first Stage of this Distemper, that is, till the last Day of the Eruption, their Patients to be agitated with great Inquietudes, and the Symptoms to be extremely high, which generally abated, when the Small Pox was entirely out: Wherefore, by promoting the Eruption (which they thought could not be done, but by Warmth, and hot Medicines) they imagined the Poison expelled; and expected the Symptoms would abate, which appeared to them a Demonstration of an Expulsion of morbid Matter. But how great will *Sydenham* appear, when we shew the Motives which led that great Man to a Method of Practice, which entirely overthrew the vicious Practice that then prevailed with respect to this Distemper? He took Nature for his Guide, depending chiefly upon Observation and Experience, supported by Reason. He observed, that, among common People, where nothing was done, that the flower, and the later the Eruptions appeared, the more favourable was the Sort; and laid down this as a kind of Aphorism, that if the Small Pox appears the first Day of the Sickness, it might be looked upon as a kind of Plague; if it came

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out on the ſecond Day, extremely dangerous; if on the third, leſs ſo; if on the fourth, the diſtinct Sort, and generally without any Danger. From whence he juſtly concluded, that the Phyſicians were entirely in the wrong to haſten the Eruption, which a prudent Man would dread to ſee till the fourth Day.

Sydenham had his Followers: The Populace, who think they have a Right to give their Opinions in Phyſic, made this Diſtinction; the cool Regimen, and the hot; obſerving one Set of Phyſicians confining their Patients immediately to their Beds, and giving them Medicines of the warmeſt Kind, in order to drive out the Small Pox; the others leaving, as it were, the Eruption to Nature alone; and ſometimes taking a little Blood away, as their great Maſter *Sydenham* directed. We ſhall omit ſpeaking of the Variety of empirical or quack Medicines, ſince they generally were of the ſtimulating and heating Kind, that were given, in order to promote either the Eruption, or, after they were out, to ripen and carry on Maturation; for I allow of no peculiar Virtues in any Medicines, but in the Application, according to the Intention of an underſtanding Phyſician. *Sydenham*, then, made no farther Diſcoveries in the Small Pox, if we except the elegant Deſcription he gives of the Diſeaſe, than during the firſt Period, that is, till the ſixth or ſeventh Day, when the ſecondary Fever begins to ariſe. At this Period he took Notice, that towards the ſeventh Day, at Night, all of a ſudden, notwithſtanding the Symptoms were appeaſed, the Pulſe became regular, and all the Small Pox out over the whole Body; the Water well coloured, or thick; the Eyes cool, and not with that fiery Luſtre as before; the whole Storm allayed, that agitated the Sick, during this firſt Stage of the Small Pox: He obſerved, and, perhaps, this Obſervation may be looked upon as one of the moſt important in Phyſic, that, upon the coming on of the ſecondary Fever, it came not on by degrees, but like a Storm, which begins at once like a violent Hurricane; the Patient becomes ſuddenly light-headed; the Eyes blood-ſhot, ſtreaming with Water; the Urine pale; the Pulſe quick and hard, a ſore Throat, *&c.* Here again he departs from former Phyſicians: He orders his Patient to be taken out of Bed, to be kept cool; the Feet bathed in warm Water, and Opiates repeated from time to time, till this Kind of Phrenſy, and other violent Symptoms, ceaſe. He then falls into the Practice of the Phyſicians he oppoſed, from this Time to the next remarkable Stage of the Small Pox, by allowing ſome cordial Medicines to keep up, as they term it, the Pock; but upon the Face ſubſiding, the Spitting growing more viſcid, and, at laſt, ſtopping, on the tenth or eleventh Day, he falls into the moſt fatal Miſtake, as well as others, and thinks there can be no Safety, if the Spitting returns not again, and the Hands ſwell, unleſs theſe Points are obtained by the Adminiſtration of the ſtrongeſt and moſt powerful Medicines; and this fatal Miſtake is owing to an *Hypotheſis*, which involved at that time all the World, and even *Sydenham* himſelf. For they ſuppoſed an eſſential Poiſon peculiar to the Small Pox, which, till this time, ſpent itſelf by Salivation, and the Swelling of the Face, reverted back to the nobler Parts; that Nature being weak and debilitated, unable to expel this morbific Matter, falls under the Weight, and the poor Patient expires. Notwithſtanding he was unable to obviate this laſt terrible Stage of the Diſeaſe, and reaſoned and acted but as others did, however, like an able Mariner, who had made many Diſcoveries, and wanted ſtill more to complete his Voyage, announces, like a Prophet, thoſe Dangers he was unable to ſhun; and points out thoſe Rocks, againſt which he and the reſt had been ſhipwrecked. He ſays, and, in this Part, he even excels the *Greeks* in Deſcription, that if the Spittle grows thick and ropy, and ſtops entirely, the Face, which was elevated and ſwelled before, ſuddenly falling, and the Hands not ſwelling, the Patient neceſſarily dies: But if the Face continues elevated beyond ſuch a time, the Spitting continuing, alſo, beyond ſuch a Period, the Patient certainly lives.

We may compare what *Sydenham* did, to what my Lord *Verulam*, that noble and illuſtrious Obſerver of Nature, did on another Occaſion: He not only made ſurpriſing Diſcoveries himſelf, but he laid down a Plan, and recommended a Continuation of Natural Hiſtory to Poſterity to trace out, it being impoſſible for the ſhort Life of one Man to compile ſo immenſe an Hiſtory, as the boundleſs Field of Nature affords. The Honourable Mr. *Boyle* began where the other left off, and happily executed the Plan the other great Philoſopher had laid down.

Sydenham then, having made many Diſcoveries, in regard to the Small Pox, looked upon it as a true inflammatory Fever; every Puſtule he conſidered as a phlegmonous Tumor; he conducted his Patient extremely well to the Beginning of the ſecondary Fever; but when that roſe too high; when the Matter was ill concocted; the Face ſinking; the Spit growing viſcid, and, at laſt, ſtopping; like a Prophet indeed, he announces the Danger, though his incomparable Skill in Phyſic, great as it was, could not avert it.

Thus Phyſic ſtood, after his Death, with regard to the Small Pox, till *Helvetius* appeared, who found, that, at the Turn of the Pox, when thoſe fatal Symptoms, which *Sydenham* took Notice of, preſaged certain Death, there had been no other Means uſed than by giving the Patient the ſtrongeſt Cordials, which always failed; he introduced, therefore, Purging; a Method as eſſentially different from the then eſtabliſhed Doctrine in the laſt Stage of the Small Pox, as *Sydenham*'s was, with reſpect to the firſt: Here, then, they promoted, and raiſed a Fever, which was too high already; there he reſtrains it by Purging. But *Helvetius* being led through a kind of Hypotheſis to theſe Motives, and not from any Experience or Reaſon, no Wonder he remained ſtill in the Dark, unable to unveil the Difficulties attending this Diſeaſe. He divides the Small Pox into ſeveral Species, and notwithſtanding his being ſenſible of its being an Inflammation *ſui Generis*, yet is very far from treating it always as ſuch. I can find nothing remarkable in what he has done, unleſs the Purging at the Turn of the Small Pox. This Method Dr. *Freind*, in *England*, followed, and took a great deal of Pains to eſtabliſh this Doctrine here among us. It was with the utmoſt Difficulty he carried his Point: This Practice being ſo extremely wide of what was then ſo firmly eſtabliſhed for many Ages, the giving of Cordials to promote the Eruption; as the Patient ſunk under the Load, ſtill the more Cordials were given: And thus they continued augmenting their Doſes, till the Patient was burnt up. This was the Doctrine and Style of the Phyſicians, which the Standers by, and the Women, came readily into. Nurſes, then, found it no hard matter to conceive the Force of their Doctrine: They ſaw it only conſiſted in confining a Perſon to a warm Room, always in Bed; and with the greateſt Diligence taking Care, that the Patient might not be expoſed to the Air; and all this, leſt the Eruption ſhould fall back; and giving the Patient continually a Set of Cordials, to ſtrengthen, ſupport, and keep the Diſeaſe from the Heart. This Jargon ſquared with the common People; and, as they found one half of the Cure depended upon Nurſing, they claimed ſoon the Province of being Doctors in this Diſtemper. No Wonder, when *Freind* introduced this *French* Cuſtom of Purging, and at a Period of the Diſeaſe, when they imagined, that, if ever, Cordials were of Uſe, they were at that time, when the Patient was languiſhing, and dying, on the eleventh Day, that his Method of Purging was ſo great a Contradiction to their Method, that they thought it downright Murdering the Sick. *Friend* wrote to ſupport this new Practice; and the Drs. *Mead*, *Frewin*, and *Cade* came into it. As a Controverſy aroſe, *Woodward* and others oppoſed it. However, the Phyſicians, from that time to this, have ventured, in extreme Danger, in the laſt Stage, to give a Doſe of purging Phyſic; and ſometimes to take away a little Blood. But as *Freind* reaſoned, alſo, on an Hypotheſis, and conſidered a Poiſon to be carried off by Purging, he ventured not to give ſuch a Medicine as long as there was any Swelling, and till the Spitting was in a manner over. Thus he ſtayed till the Patient was upon the Point of expiring, before he began this Method, which was generally too late. Beſides, this Hypotheſis detained him in a moſt profound Ignorance of the Nature and Cure of this Diſeaſe; for he reaſoned thus: While there is any of the morbid Matter paſſing off the uſual Way, by the Swelling of the Face, however little, as well as by the Spit, however viſcid and decreaſing, we are to expect no farther Aſſiſtance this Way, when we once begin Purging: For the Whole depends, then, upon carrying off the morbid Matter by Stool: He conſidered the Patient in a depreſſed State; not depreſſed by the Violence of a Fever: For, if he had conſidered this Caſe, as that of a Perſon ſinking in a common Pleuriſy, from the Height of the Inflammation, he would have avoided this Error. While he purges, he fears his Patient may ſink, and ſo ſupports him with Cordials. By theſe means he is loſt and puzzled, not acting rationally, as in an Inflammation well known, ſuch as a Pleuriſy; where Phyſicians conſider a depreſſed and undulating Pulſe, clammy Sweats, great Weakneſs, *&c.* as Signs of the Effect of an high Inflammation; they conſider the Patient oppreſſed by the Violence of the Fever: Nay, ſhould a Looſeneſs appear, it alters not the Caſe, their whole Aim is at curing the Inflammation by Evacuations, whence they juſtly expect the Pulſe to riſe, become fuller and more diſtinct, which, in Reality, if the Patient be recoverable, always happens. *Freind*, and his Followers, then reaſoned not in the Small Pox, as *Sydenham* did in a Pleuriſy; but the Expulſion of the morbid Matter was what he chiefly aimed at; which Hypotheſis kept him from the true Knowledge of the Nature of this Diſeaſe. And, notwithſtanding he followed *Helvetius*, in Purging in the laſt Stage of the Small Pox, which Evacuation, I muſt own, is one of the proper Means

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Means to limit the Fever: Yet, as what he did, proceeded from Hypotheſis, and not from Reaſon, he deſerves no juſt Praiſe, becauſe Hypotheſis kept him in the Dark, from knowing at what Time a Medicine ſhould be given; how often it ſhould be repeated; or what kind of Purges were preferable; or what other Means would more effectually oppoſe that Fever, which, if not checked betimes, moſt certainly deſtroys the Patient. His conſidering Purging in the Small Pox, without knowing the Reaſon for acting ſo, is, after all, but a kind of Empiriciſm; for he depends upon the ſpecific Force of one Medicine: Whereas, had he been led by Reaſon, he would have known, that, by ſubduing the Fever, he obtains his Ends; and that this Point may be obtained by various Means: For whatever Medicine that has Power to effect this, will both prolong the Spitting, and the Swelling of the Face, the two principal Objects, in the laſt Stage of the Small Pox, deſerving the Attention of the Phyſician: For, if theſe two Circumſtances ſucceed, the Patient certainly lives.

Boerhaave is the next Author who has wrote expreſsly on this Diſeaſe; an Author of the moſt profound Erudition, and extenſive Practice, who, after having read, as he ſays, a thouſand Authors, gives it as his Opinion, that there are ſcarce any worthy to be read, unleſs the ſecond *Hippocrates*, *Sydenham*.

Boerhaave has gone farther towards a Diſcovery of the Nature and Cure of the Diſeaſe, than all the Phyſicians who preceded him: He conſiders the Diſeaſe as a true Inflammation: He not only thought it improper to force the Small Pox out; for he very well knew, the ſooner the Eruption appeared, the more fatal: But he, alſo, ventured to reſtrain a too ſudden Eruption: And he even ventures farther, and recommends it to Phyſicians hereafter, to attempt to cure this Diſeaſe in the very firſt Stage, by preventing even a Suppuration of the Puſtules. And he reaſoned thus: In a Pleuriſy, in a Quinſey, and other inflammatory Fevers, is not the Phyſicians Attention principally to reſolve the Tumors; and do not they labour all they can to prevent the Formation of Matter; why then do we ſuffer Matter to be formed in this Diſtemper? And is not the Reſolution of ſuch Tumors, by the Power of Medicines, in other Words, the curing of ſuch Diſtempers?

Although *Boerhaave* reaſoned ſo juſtly, yet he either was not capable of bringing this to bear, or the Diſeaſe is impoſſible to be ſubdued, without taking its uſual Courſe, that is, by Suppuration: Yet this Advantage accrued from ſuch Reflections, by endeavouring to prevent the Eruption, which could not be retarded, generally, beyond the fourth Day; yet the Violence of the Fever was ſo far abated, though not to be extinguiſhed, that it produced the Eruption later, and, of conſequence, with fewer Puſtules; and for the ſame Reaſon, the Suppuration was kinder; and, therefore, the Diſeaſe leſs dangerous.

It ſeems wonderful to me, that ſo great a Man, who reaſoned with ſuch Preciſion, and practiſed with ſo much Judgment, had not thoroughly comprehended this Diſeaſe.

Upon the Riſe of the ſecondary Fever, as that increaſed, and the Spit became more viſcid, the Face ſubſiding, he abandons, as it were, his former Reaſons and Method of Practice; his Views are now entirely for promoting Salivation: And, in order to promote this great End, he thinks ſome Means may be found out. Antimonial Medicines he ſeems to think the moſt probable to effect it. Although he mentions no morbid Matter, yet what he propoſes, implies as much. He muſt ſuppoſe, that the Spitting carries off ſome Poiſon, or morbific Matter, as People think a Salivation anſwers the ſame Purpoſe in the Venereal Diſeaſe.

Here then he falls into an Hypotheſis, which points out to him the Uſe of an empirical Medicine; for had he reaſoned as juſtly on this Stage of the Diſeaſe, as he did on the firſt, he would have found, that the limiting the Violence of the Fever, let the Medicines or Methods be what they will, that controul it, would have carried on the Salivation, and anſwered this Point, as it did in the firſt Stage of the Diſeaſe, when the Inflammation being abated, the Puſtules roſe higher, and ſuppurated with kinder Matter.

Authors, who have wrote ſince, as they have ſaid nothing worth our Notice, but what they have gleaned, and generally miſapplied, from the Writers I have already mentioned, we ſhall paſs over in Silence; and come to the Hiſtory of this kind of univerſal Diſeaſe.

The Small Pox, in general, is of the inflammatory Kind, having all the Signs in common with other Inflammations; but in Species it differs eſſentially from all theſe Diſeaſes. But in order to prove that it is an Inflammation, it will be proper here to determine the true Signification of the Word *Inflammation*, by giving as clear a Notion of it as the Nature of the Thing requires: Beſides, it will be neceſſary to lay this down as a kind of Theorem, agreeable to the Cuſtom of Mathematicians; becauſe, when we have a perfect Notion of an Inflammation in general, we ſhall then proceed, by way of Analogy, to treat of the Nature and Cure of this particular Species of inflammatory Fever.

A Tumor, from whatever Cauſe, that ariſes upon an human Body, attended with Pain, Pulſation, Heat; the Part being, alſo, diſcoloured; the Blood, at the ſame time, ſized; the Urine generally higher coloured; the Pulſe quicker than ordinary, and often harder: Theſe Symptoms ariſing ſtill higher, ſuch a Tumor, if not oppoſed, paſſes on to Matter, or ends in Sphacelation, which is an entire Corruption of the Part affected: Such a Tumor is called by Surgeons *Phlegmonous*, a Term imported into our *Engliſh* Tongue, that ſignifies burning or inflammatory. As there is always a Fever attending the Progreſs of ſuch Tumors, ſuch Fevers are called *inflammatory*; and as the Blood is always ſized, in proportion to the State of ſuch Tumors, ſuch Blood may be properly called *inflammatory*. And as the Blood is one of the moſt diſtinguiſhing Signs of an Inflammation, it will be proper to ſhew the various Changes in this vital Fluid, during the Courſe of ſuch Tumors. Whether a Tumor ariſes from a Contuſion, fractured Bones, from the Poiſon of Serpents, from Contagion, or from whatever internal or external Quality or Cauſe, the Moment it begins to be formed, that Moment the Blood begins to be changed. If ten thouſand Men were let Blood, and not one of them had the leaſt Appearance of Size in their Blood, and preſently after, if ſome Cauſe or other ſhould produce an inflammatory Tumor, the Blood ſoon becomes ſized, and, as that Tumor haſtens on to Matter, or Sphacelation, that Size increaſes according to the Progreſs and State of the Tumor: So that in the time of Suppuration, the Size of the Blood will be more in Quantity than it was the Day before; and more that Day than the firſt of its Beginning. But, in a State of Mortification, the Quantity of the Size will ſtill be in proportion equal to that calamitous State of an Inflammation. As to the Colour of the Size, there is, alſo, ſomething neceſſary to be obſerved: The yellow Colour ſhews more of Heat, or Fire, or Inflammation, than the pale; the green, more than the yellow; and the dark, more than any. The Conſiſtence of the Size, which is always upon the Surface of the *Craſſamentum*, or Cake, which ſwims in the Serum, the more viſcid and tenacious, the leſs Fire; the more diſſolved (which ſometimes is like a Jelly half boiled) infinitely the more Danger: For when it is thus in a State of Diſſolution, the Parts inflamed always mortify; and, when it is in this State, the inferior Parts of the *Craſſamentum* are a black putrid Gore, and, alſo, in a State of Diſſolution. What I have here ſaid, with reſpect to the Blood, is the Reſult of above a thouſand Obſervations, on all Kinds of Inflammations in general.

This is the cleareſt Notion I am able to give of an Inflammation; and I may venture to ſay, is what may be the moſt certainly known in the whole Practice of Phyſic. I have fixed this, as it were a Baſis, to build the whole Superſtructure upon; and what I thought abſolutely neceſſary, becauſe I ſhall have perpetual Recourſe to it, in order to prove what I am about to treat of.

The Small Pox, then, anſwers, in general, to theſe Signs of an Inflammation; and, therefore, ought to be looked upon, and treated, in general, as ſuch: But as it differs, alſo, ſpecifically from all other Diſeaſes, it, alſo, requires a particular Hiſtory, and Method of Cure.

The Small Pox being an inflammatory Diſeaſe, it is certain that the Body muſt be diſpoſed to receive an Inflammation; and whatever Cauſe hath Power to produce an Inflammation, may poſſibly produce this Species of it. The Diſeaſe, then, may be produced from violent Exerciſe, Change of Air, particular Climates, drinking ſpirituous Liquors: For thoſe Cauſes productive of Inflammations, in ſuch as have had the Diſtemper, alſo, produce the Small Pox inſtead of ſuch Inflammations in thoſe who have not had this Diſtemper: Hiſtory proves this to be true; and daily Obſervation ſtill confirms it the more. Who has not obſerved, that, upon hard Drinking, upon Change of Air, upon violent Exerciſe, People have fallen into the Small Pox, Pleuriſies, Quinſeys, or other Inflammations? But why theſe Cauſes ſhould produce the Small Pox in ſome Subjects, and not in others, is, I muſt confeſs, as yet inexplicable to me; and will, perhaps, be for ever a Secret to others. When there is ſome particular Conſtitution of Air producing Inflammations, in general, it, alſo, produces the Small Pox at thoſe Seaſons; and as theſe are epidemical, ſo are, alſo, thoſe: This explains the Reaſon, why the Small Pox begins at thoſe Times of the Year, which the Phyſicians call *an irregular Seaſon*; I mean in the Winter, the very Beginning of the Spring, or even in the Autumn; for we ſhould naturally expect it from the Middle of the Spring to the latter End of the Summer; for, at this Seaſon of the Year, we obſerve Fevers to be generally of the inflammatory Kind. In thoſe Countries where the Plague, and malignant Fevers, are ſtationary, according to the Climate and Diſpoſition of the Air in thoſe Countries, we obſerve

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ſerve the Small Pox to be, alſo, epidemical, and generally fatal. And, perhaps, under the Appearance of the Small Pox, they ſometimes have the Plague.

Sydenham obſerved this in our own Kingdom; and *Proſper Alpinus*, in *Egypt*. We have had many Phyſicians, who have labour'd to ſolve the Phenomena, and to ſhew what there is in Man which diſpoſes him to the Infection of this Diſeaſe, which, when he has once had it, returns no more. *Fuller*, *Drake*, *Helvetius*, and many more, have ventured to aſſign ſuch phyſical and mechanical Reaſons, that, out of pure Reſpect to their Characters, I am even aſhamed to mention. And what they have ſaid, with reſpect to the morbific Matter, ſeems, in my Opinion, to be juſt as much to the Purpoſe. What we have here taken Notice of, enables us to prognoſticate, what Seaſons, and what Conſtitutions, are moſt probable to produce this Diſeaſe, and to whom the Small Pox is generally moſt fatal.

Since every Perſon in the World that is ſeized with the Small Pox, although his Blood was not inflamed before, muſt neceſſarily now undergo a State of Inflammation; and which generally begins to appear ſo upon the ſecond or third Day; therefore, all ſuch as are of an inflammatory Habit of Body, whether hereditary or acquired, muſt, of conſequence, be diſpoſed to have this Malady in an higher Degree than thoſe of a contrary Diſpoſition. Such People, who labour under any inflammatory Diſeaſe, muſt, of courſe, be ſtill in greater Danger; becauſe, if the Small Pox ſeizes upon ſuch, before ſuch Maladies are ſpent, they muſt expect the moſt fatal Sort, becauſe then, the Patients muſt ſtruggle with two Diſeaſes; the former, and the Small Pox, both at the ſame time: For upon the ſecond or third Day, the Blood, that was inflamed by the preceding Diſeaſe, now begins to acquire another Degree of Inflammation, peculiar to the Small Pox, which will then be as Fire added to Fire. But there are ſome again, in more danger on account of the Parts of the Body, that were before in a State of Inflammation before the Small Pox begins, that is, ſuch whoſe Lungs or Brain, or Throat, are particularly inflamed, when this Malady firſt ſeizes: For as no Perſon dies of an Inflammation, till the Throat, Lungs, or Brain become affected; and, as no Perſon paſſes through the Small Pox, without theſe noble Parts being, in a moſt particular manner, inflamed more or leſs, ſo ſuch muſt be expoſed to the greateſt Danger, ſince, beſides undergoing the Small Pox, they muſt, alſo, undergo at the ſame time, a true Peripneumony, a true Quinſey, or a true Phrenſy; that is, they will have the Small Pox complicated with an Inflammation of the Throat, Lungs, or Brain. And I believe no one ever died of the Small Pox, but of one or other of theſe Diſeaſes.

In the latter Stages of Life, or in ſuch Conſtitutions, with whom Contuſions, Fractures, Diſlocations, and Ulcers, are more ſubject to inflame; in theſe, phlegmonous Tumors are more difficult to reſolve; which, of conſequence, proves, that in ſuch the Small Pox muſt be raiſed to an high Degree: Therefore, Women, before the Menſes are over, have it more favourable than after; Women, than Men; and Children, than Men or Women: And this is ſo, generally ſpeaking; not but particular Caſes are Exceptions to this Rule.

Occupations of Life, attended with Labour, as Watching, Fatigue, Encampments, Sieges, bad Air, Diet, or whatever Accidents attending War, provided they excite Heat, inflame. If the Small Pox ſeizes at ſuch times, and ſuch Conſtitutions, it muſt be of a bad Kind. Such Seaſons of the Year, ſuch Climates, ſuch Diſpoſitions of Air, producing malignant Fevers; if the Small Pox comes on at ſuch Times, in ſuch Climates, it always runs very high.

Sydenham, as I ſaid before, obſerved, that to thoſe who had the Small Pox during the Years 1639 and 1669, when malignant Fevers raged in *London*, it was very fatal. And *Proſper Alpinus* ſays, that, in *Grand Cairo*, in *Egypt*, during the time of the Year, when the Plague rages in that populous City, the Small Pox is commonly attended with purple and livid Spots, emulating even the Plague in Degree of Inflammation and Putrefaction. From hence we may certainly conclude, that all ſuch People who are ſubject to Diſeaſes, not attended with fized and inflamed Blood, ſuch as the aguiſh, hyſterical, or flatulent Conſtitutions; thoſe who have ſuffered the Loſs of much Blood, either from Wounds, the Menſes, Hæmorrhoids, Miſcarriages; or thoſe whoſe Blood is impoveriſhed by too low a Diet, can never have the Small Pox to an high Degree, provided ſuch Cauſes juſt precede the Diſeaſe. We ſhall now ſhew the Signs and State of the Diſeaſe which precede the Eruption.

The Fever preceding the Eruption we will call *variolous*, (for, till the Eruption appears, it cannot properly be called the *Small Pox*), ariſing from ſome Infection, communicated by the Air, or the Touch of a variolous Subject, Fear, or ſome other Cauſe, which hath Power to produce this Species of Inflammation, which begins generally with Shiverings, Rigors, Paleneſs of the Lips, Lividneſs of the Nails, with other inflammatory Symptoms. Sometimes this Diſeaſe ariſes by way of Revolution, from ſome other Diſeaſe to this, as a common Cold, a ſlight Pleuriſy, or Quinſey, the Meaſles, the Chicken Pox: And if it comes on before theſe Diſeaſes have ſpent themſelves, yet are we able to diſtinguiſh the Origin of the variolous Fever: Suppoſe a Perſon ſome Days ill of ſome one or other of theſe preceding Maladies, notwithſtanding the uſual Symptoms peculiar to theſe continuing, eſpecially Heat, and a feveriſh quick Pulſe, the Patient is ſuddenly ſeized with Shiverings, Rigors, or a violent cold Fit, like an Ague, the Lips and Nails are pale or livid; and although the Hands and Feet are extremely cold and chilled, yet is the Pulſe, although quick before, now become much more ſo, inſomuch that we might plainly perceive the Addition of a new Fever. Theſe following Symptoms preſage a future Eruption of the Small Pox; Headach, Laſſitude, the Limbs cramped, painful, heavy; the Patient is thirſty, extremely ſick, or vomits; if Women or Children, the Matter thrown up is generally green, reſembling an hyſteric Caſe; the Eyes glaring, the Lids edged round with an Inflammation, reſembling a Perſon who had drank much, unable to bear the Light; the Face glowing, great Heat and Dryneſs over the whole Body, Coſtiveneſs. But if the Inflammation runs very high, the Patient purges; the Stools are generally dark and fetid; Pains in the Small of the Back, acroſs the Loins, and an unuſual Weight; Oppreſſion at the Pit of the Stomach. Theſe laſt Symptoms, when attended with Nauſeas, with a drowſy ſoporiferous Aſpect, are the moſt diſtinguiſhing Signs, which Signs Phyſicians call *Pathognomonic*, diſtinguiſhing eſſentially this variolous Fever from all others; unleſs we except the Meaſles and Chicken Pox, where indeed the Symptoms are ſomewhat equivocal: But the Violence and particular Duration of theſe Symptoms will always diſtinguiſh the Small Pox from theſe.

There is one Symptom yet, which *Sydenham* obſerved, but that is peculiar to Children, I mean, a Convulſion Fit; but an extraordinary Drowſineſs muſt precede the Fit, and a more than ordinary Luſtre in the Eyes; ſuch a Fit announces the Eruption to be near at hand. During the variolous Fever, if the Patient is inclined to ſweat, it rather preſages the diſtinct Kind. But we are not to depend too much on this Symptom; for the confluent Kind hath ſometimes followed.

Theſe are the Symptoms which precede the Eruption, and, alſo, continue increaſing, and riſing higher, till the Small Pox be, in a manner, entirely out; and the Pulſe is remarkably quicker the laſt Day but one of the Eruption, than at any other time.

There is no Diſeaſe demands ſo much of the Phyſician's Attention, in obſerving the Time, Circumſtances, and peculiar Stages, ſo remarkable as they really are in the Small Pox. Hence the moſt certain Indications ariſe, pointing out when we are to act, and when we are not. From hence we, alſo, may attain to a degree of Knowledge, ſo as to prognoſticate either the Life or Death of the Patient.

The time of its firſt Appearance is, of all, the moſt important, and, therefore, firſt to be well conſider'd; and as it is a Point of the greateſt Moment, I wonder Authors have been ſo looſe in the Calculation of the Time. If the Small Pox appears the firſt Day of Sickneſs, it is mortal; if on the ſecond, not much ſafer; if on the third, dangerous; if on the fourth, or a little later, the Small Pox is generally of the *diſtinct* Sort, and without Danger. The ſumming up, and dating the Time of the Eruption, we will illuſtrate, by this Example.

A Man is ſeiz'd with a variolous Fever at three, five, ſix, or eight in the Morning, at Noon, or at ſix at Night, or at any time between twelve in the Morning and twelve at Night; the Day conſiſting of twenty-four Hours, or a natural Day. If the Small Pox begins to appear at Ten at Night, and the Patient ſicken'd at Three, Five, or Eight, in the Morning, Phyſicians ſay, the Small Pox came out the firſt Day; but if the Patient ſicken'd at Noon, Six in the Evening, or Eleven at Night, and the Small Pox begins to appear at Six the next Morning, at Noon, or at Eleven at Night, Phyſicians ſay, it broke out upon the ſecond Day. If the Patient ſickens, for Example, *April* 1. at Three in the Morning, Six in the Evening, or Eleven at Night, and the Small Pox appears *April* 3. at One in the Morning, Four in the Afternoon, or Ten at Night, they ſtill ſay, the Small Pox came out on the third Day. If a Patient ſickens on *Monday* Morning at Two, One in the Afternoon, or Eleven at Night, and the Small Pox makes its Appearance on *Thurſday*, about Two in the Morning, Five in the Afternoon, or Ten or Eleven at Night, we fix the Eruption to the fourth Day. Any one may ſee how looſe and equivocal theſe Calculations, hitherto eſtabliſh'd by Phyſicians, are. Hence, their not having fix'd the Time of the Eruption exactly enough, has been the Occaſion of the prognoſticating the Small Pox to be a kind Sort, when it was not; to be the *confluent*, when

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when ſometimes it happen'd to be the *diſtinct*: And as, therefore, fixing the Time of Eruption with great Preciſion, is one of the greateſt and moſt certain Indications in our Practice, the Omiſſion of this hath too often been the Occaſion of fatal Miſtakes in Practice: Let us now ſhew the Incertitude of this rambling Method of reckoning the Eruption, and eſtabliſh as exact an Account of the Time of the Eruption, as the Nature of the Thing will bear. In order to this, we muſt come to a Calculation by Hours.

A Patient ſickens at Two in the Morning; the Small Pox appears at Eleven at Night; it comes out the firſt Day, the Patient having been ſick twenty-one Hours, and no more, before the Eruption: Suppoſe, again, he ſicken'd at Six in the Evening, and the next Morning it appear'd at Five; Phyſicians will tell you, it came out on the ſecond Day; yet the Patient, all the while, was only ſick eleven Hours before the Erup ion; and, conſequently, the Eruption appear'd ſooner by ten Hours, in this Caſe, than in the other; which Caſe was call'd Eruption on the firſt Day. Again, a Man is ſeiz'd with the Small Pox about Eleven, for Example, on *Monday* Night; it makes its Appearance on *Wedneſday* Morning, about Two; the Small Pox, in the common way of reckoning, appear'd on the third Day; yet, after all, the Perſon was ill of the variolous Fever but three Hours above one natural Day. Suppoſe one ſicken'd of the Small Pox at Two on *Tueſday* Morning, and it made its Appearance on *Thurſday* Night at Eleven, it is ſaid to come out on the third Day; in this Caſe, the Patient labours under a variolous Fever the Space of ſixty-nine Hours, in the former only twenty-ſeven Hours; and, conſequently, there is forty-two Hours Difference: We may from hence conclude, how uncertainly Phyſicians muſt prognoſticate from ſuch an erroneous manner of calculating the Time of the Eruption.

Let us fix this as a Truth in general, to be regarded, that by how much the later the Small Pox makes its Appearance, by ſo much the kinder, and more diſtinct; and that the former manner, of calculating by Days, is too equivocal to be depended upon: We will, alſo, fix upon this for ſuch a Compaſs of time, to be call'd late or early: If the Small Pox makes its Appearance before the firſt twenty-four Hours of Illneſs are expir'd, we are to expect the Diſeaſe to prove as fatal as the Plague: If from thirty to thirty-five Hours after the firſt Illneſs, extremely dangerous: After forty, to forty-ſeven or forty-eight Hours, leſs ſo, but rather the Flux Sort, than not: If it appear after ſeventy to eighty Hours, commonly the *diſtinct* Sort.

Having now fix'd the Time of the Eruption, and ſhewn the Signs or Symptoms which precede this Stage; we ſhall now give a Hiſtory of the Signs and Symptoms attending the whole Courſe of the Eruption. According to the Violence of the variolous Fever, the Eruptions appear ſooner or later, and they are of the *diſtinct* or the *confluent* Kind; that is, they are more or leſs in Number; or they are ſo few, that they are ſcatter'd over the Body, like ſo many Grains of Corn ſown and ſpringing up diſtinct from each other; or, otherwiſe, in Heaps, or Cluſters, the Roots being entangled together. Now the Small Pox, in the thick Sort, when they firſt appear, are extremely ſmall; but, as they grow, their Baſes enlarge; ſo that, as theſe ſpread, ſeveral Pimples, that were diſtinct Yeſterday, To-day become complicated; as ſo many ſmall Grains of Quickſilver ſtrew'd thick upon a Table, if each Globule was to ſwell and extend, they muſt run into one another. After this manner, we ſay, the Small Pox runs together; hence we call it the *diſtinct* Sort, or the *confluent*; and as it is impoſſible for a very great Number of theſe Puſtules to be upon the Body, without running together, becauſe they are all in a State of growing and extending at the Baſis, after four or five Days, they muſt take up greater Spaces: We may conclude, then, the Fluxing is but the Effect of the Number of the Eruptions. But there is, indeed, ſomething here worthy a Diſtinction (for I think we cannot be too exact in the Deſcription of this Diſeaſe); although we are principally to depend on the Number of the Puſtules, yet the Diſtribution of them over the Body deſerves ſome Attention: In one Subject there may be a greater Number of Eruptions, and thoſe, by their Situation, diſtinct from each other; in another Caſe fewer, and yet they run together, are complicated, or flux, *viz.* as, in the Field ſown by a ſkilful Farmer, a greater Quantity of Wheat ariſes diſtinct; in that ſown careleſly, and in Heaps, it ariſes in Parcels entangled and matted together, with great Spaces between. Now ſhould the Small Pox on the Face, or Body, appear in this *confluent* manner, it ſhould be call'd the flux Sort. It is of much Importance what Parts of the Body are infected more or leſs: The Small Pox fluxing upon the Face and Head, although the other Parts of the Body were exempt from the Diſeaſe, yet is the Caſe not without Danger: But if the Face be entirely cover'd, and the Body too, the Danger muſt be ſtill the greater. We are not to be ſurpris'd at the Danger being greater, when the Face and Head are principally affected; becauſe all Phyſicians very well know, that a Turgency of the Veſſels about the Brain muſt give us juſt Cauſe to fear a fatal Event.

Having thus given an Idea of what the *diſtinct* and *confluent* Sorts are, let us trace and deſcribe theſe Eruptions from their firſt Appearance, till they are entirely out, and ſpread over the whole Body. This Period of Time, hitherto, has been ſaid to take up the Space of three Days; but this demands as ſcrupulous an Inquiry as the variolous Fever did: For Example, the Eruptions begin to appear this Day at Three in the Morning; Phyſicians tell you, they will be all come out on the third Day, dating the firſt Day of their beginning to maturate, the fourth Day after the Appearance of the Small Pox; they, therefore, allow three Days for the Eruption.

The following Example will ſufficiently ſhew the Fallacy of this way of calculating, as well as the Neceſſity of a more exact Hiſtory of the Breaking-out of the Pox: Suppoſe a Phyſician attends a Patient on *Monday* Night, about Eleven of the Clock, and diſcovers the Small Pox juſt appearing; he returns again on *Wedneſday*, no matter what Hour, whether in the Morning, or Eleven at Night; he declares the Eruption entirely over, aſſigning this Reaſon, it appear'd on *Monday*; and this being the third Day, the Eruption muſt be complete. How equivocal is this, as to Time? As if the Appearance of the Small Pox at One in the Morning, Two in the Afternoon, or Eleven at Night, his viſiting on *Wedneſday*, early in the Morning, or late at Night, made no Difference! when it is viſible that there may be even twenty-three Hours taken out of the firſt Day, and as many out of the third Day, which, together, make up forty-ſix Hours: Therefore their aſſerting, that the Small Pox is three Days in coming out, concludes as equivocally, as to Time, as if ſeventy-two Hours and twenty-ſix Hours differ'd not at all. Now there is nothing more uncertain, or, rather, impoſſible, than to fix one certain Period of time for the Eruption; becauſe it is an Effect flowing from a peculiar Cauſe, which varies perpetually, and therefore the Eruption muſt vary accordingly. An inflammatory Fever is that Cauſe which runs higher, or not, and acts with more Force in one Conſtitution than another. A Man may, with as much Propriety, aſk how long it will be before this Tree buds, when it will bloſſom, or the Fruit ripen? And although there muſt be neceſſarily a certain time, yet that time will vary, and be circumſcrib'd, according to the Climate it flouriſhes in, and the Soil that nouriſhes it, added to the Culture and Skill of the Gardener. As the Violence of the variolous Fever caus'd the Eruption of the Puſtules ſooner or later, according to the Degree of its Inflammation; ſo the ſame Cauſe either forces it out by Degrees, or ſuddenly: Thus ſome little hard Pimples appear on the Forehead, Noſe, Cheeks, then upon the Breaſt, the Hips, Thighs, over the Trunk of the Body, and, laſt of all, upon the Legs, eſpecially about the Feet: Or this Cauſe acts with more Energy; and then they break out over the whole Body, like a Raſh; or the Fever being rais'd to an immenſe Degree, either from ſome peculiar Habit of Body, peſtiferous Air, or hot Medicines, and then the reverſe appears, the Pimples are few in Appearance, rather a Bluſh upon the Face, the Skin arid and dry, and, upon a cloſer Inſpection, there appear Numbers ſticking in the Skin, unable to break forth; purple or livid Spots are ſprinkled over the Body, but more about the Breaſt, Neck, Loins, and Hips, than any-where elſe: The Patient often makes bloody Water, and theſe two laſt Symptoms may be foretold by another Symptom, which is this, an exceſſive Pain acroſs the Small of the Back.

As the Fever is higher in ſome Conſtitutions than others, and therefore occaſions the Appearance of the Small Pox ſooner or later; ſo, alſo, there are ſome Parts of the Body where this Inflammation exerts itſelf with greater Force, which is the Occaſion of the Eruptions appearing ſooner or later, in greater Numbers, or not, according to the Situation of that Fire, or Inflammation. We can compare the Time and Courſe of the Eruption to nothing more aptly, than to a Field ſown with Corn; although ſown at the ſame time, yet the Grain comes up, or is retarded, ripens, or is backward, according to the Situation, the Soil, or Manure, of the different Parts of the Field.

The fixing the Courſe of the Eruption to three Days, indiſcriminately, in all Conſtitutions, as hath been done hitherto, is, for the Reaſons I have given, without any ſolid Foundation; but, nevertheleſs, there is a certain Period of time neceſſary for an entire Eruption: Yet that varies, according to the Force of the Fever, and which Time, alſo, may be calculated: But, certainly, ſuch Calculation, by Days, would render this Part of the Hiſtory of the Small Pox as obſcure, and equivocal, as Phyſicians have been in calculating that Period of time from the firſt Attack of the variolous Fever, to the firſt Appearance of the Small Pox.

In the *confluent* Sort, we may look upon the Eruption to be entirely over between the fifth and the ſixth Day, counting from the firſt Day of Sickneſs; the *diſtinct* Sort demands ſix

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natural Days. We muſt expect ſome Caſes where the Small Pox is retarded, or a new Eruption added to the former, occaſion'd by ſome Accidents, or improper or raſh Methods purſu'd. The Fever, and other variolous Symptoms, which ran very high before the Eruption, and, riſing with greater Violence till the midſt of the Eruption, now begin to relax, and entirely abate upon the total Eruption of the Pock, I mean in the *diſtinct* Sort, and ought, alſo, to be ſo in the *confluent*, if the Phyſician does his Duty. The Equality of the Pulſe, upon the ſixth Day, reſembling that of Health, will be the diſtinguiſhing Sign of this ſecond Stage, which may be look'd upon as the moſt remarkable Stage in the Small Pox: Here, then, is a Pauſe; the Patient ſeems to reſt, for a time; he is eaſy; the firſt Fever, which was without Intermiſſion, ceaſes now, and is the only time of Intermiſſion Nature has allotted, till the Diſeaſe be entirely over; it may be look'd upon as a Calm between two Storms; but this Calm precedes the moſt violent Storm, which is to come: The Patient repoſes thus for ſix, ten, or twenty Hours; and then, ſooner or later, according to the Violence of the Diſeaſe, all on a ſudden, the ſecondary Fever comes on, by ſlow Degrees, if it be a benign Sort; or it burſts out, like a Hurricane, if the Inflammation be high; the Eyes becoming ſuddenly bloodſhot, or ſtreaming with Water; the Pulſe quick; the Throat ſore; the Urine crude, pale, or of a Straw-colour; the Patient, agitated with great Reſtleſſneſs and Inquietude, burning with Heat, ſtarts from the Bed; unable to bear Confinement, he ſeeks the Air; endeavours all he can to free himſelf from this ardent Heat; he becomes delirious, and often even phrenetic.

This laſt Symptom is the moſt violent during the Courſe of the Diſeaſe, as well as the moſt obſtinate: The ſecondary Fever, which is the Fever of Maturation, begins, as I have ſaid, about the ſixth or ſeventh Day; and, according to the Violence and State of the Inflammation, the ſeveral Eruptions begin to ſpread, grow redder, riſe with a Point, elevated or depreſs'd; they haſten on to Matter ſooner or later; the Matter is benign, well-concocted, or ſanious, or full of Water, like a Bliſter rais'd by Fire; they bleed; or, laſtly, if the Inflammation be carried to the higheſt Degree, theſe ſmall Tumors, or Eruptions, paſs beyond the State of Suppuration; they are burnt at top, as if ſear'd with an Iron; the Skin, or Spaces between the Cluſters, is no longer florid, of a Roſe-colour, but dark, purpled, or black, or cover'd over with innumerable ſmall Pimples, or eryſipelatous; the Skin arid, ſtretch'd, or diſtended, like a Piece of Parchment; or a conſiderable Tumor ariſes, cover'd over with Numbers of the Eruptions, reſembling a true Anthrax, or peſtiferous Boil. No Wonder *Sydenham* call'd every Eruption a phlegmonous Tumor, ſince, moſt certainly, it is ſo; and all the Phenomena correſpond, in every Degree, with a Tumor of that Species.

The Eruptions in the Small Pox ariſe, take their Courſe, and are ſubject to all the Variations, ſeveral Appearances, and Terminations, agreeable to all common inflammatory Tumors in general: Now all theſe Changes and Variations are purely the Effects of the Cauſe I mention'd before; the Fervor, Inflammation, or Fire of this Fever.

Phyſicians, not apprehending that an Inflammation was the Cauſe of the ſeveral Changes and Appearances of the Symptoms in this Diſeaſe, and not diſcovering that ſuch *Phænomena* only ſhew'd that the Diſeaſe differ'd more or leſs, as to Heat, Inflammation, or Fire, but differ'd not at all in Nature or Kind, divided the Small Pox, as it were, into different Diſeaſes: For Inſtance, *Helvetius* diſtinguiſhes many Kinds of this Diſeaſe; one, whilſt they have a Spotted Fever attending; another, a Quinſey, or an Intermittent, *&c.* Their not knowing the Nature of the Small Pox, but dividing it eſſentially into different Claſſes, their conceiving a Complication of Diſeaſes with the Small Pox, differing eſſentially from it, led them to a Practice extremely dangerous, and often, I fear, fatal: But, above all, they err'd moſt in not diſtinguiſhing the Nature of the Small Pox: For although many knew this Diſeaſe to be an Inflammation, yet, led by ſome Hypotheſis or other, they conſider'd a Pleuriſy, or Quinſey, as Diſeaſes differing in Kind from that of the Small Pox; and this one Example of their Practice proves the Fallacy of their Theory, as well as the Danger of their Practice. Let one of theſe Phyſicians attend a Patient in the Small Pox, complicated with an Inflammation of the Throat, Lungs, or Pleura; if the Small Pox be paſt the Eruption, would they venture to cure that Inflammation of the Lungs, or Pleura, by the uſual means? No, they dare not: For ſhould they bleed, or purge, they imagine the morbid Matter, peculiar to the Small Pox, would be ſtruck in from the Circumference to the nobler Parts; which is a Demonſtration, that they are entirely ignorant of the Nature of the Diſeaſe.

The Small Pox, in its Nature, then, is wholly of the inflammatory Kind, and can only differ, according to the ſeveral Conſtitutions, Air, and Climate, of People: Wherefore we will go on with a Hiſtory of this Diſeaſe, conſidering all the Accidents and different Appearances of this Diſtemper, as the Effect of more or leſs of the Degree of Inflammation, in the ſame manner as if we were treating of a Pleuriſy, or common Tumor. We do not ſay theſe differ in any other manner than this: If the Inflammation be very high, ſuch a Tumor will be hard to reſolve; and thoſe Tumors which are hard to reſolve, rather incline to mortify, than ſuppurate kindly. Upon this Foundation, and no other, I ſhall go on to deſcribe the Small Pox, and attempt the Method of Cure. I ſhall conſider every Puſtule as a common inflammatory Tumor, ſubject to all theſe ſeveral Stages, in common with ſuch Inflammations, which are all the Diſtinctions this Diſeaſe admits of.

Now we are got to the total Eruption of the Small Pox, from henceforth we are to look upon the Progreſs of the Eruptions, and their ſeveral Changes and Appearances, as the moſt diſtinguiſhing and pathognomonic Signs, enabling us to preſage either a fortunate or fatal Event.

Let us firſt deſcribe the *diſtinct* Sort, where the Inflammation is not high, where the Eruptions paſs gradually to a proper State of Maturation. As, even in this, they make their Appearance not all at the ſame time, ſo they riſe, and go on to Suppuration, in the ſame Order, and Succeſſion of Time: So thoſe on the Face neceſſarily are ripe two or three Days before thoſe on the Feet. When they come to the higheſt State of Maturation, they begin to dry, and therefore muſt begin to ſink, of courſe; thoſe on the Face come to this State about the ninth or tenth Day, dating the time from the firſt Day of Sickneſs; of courſe, thoſe about the Feet and Legs arrive not to that State till the eleventh, twelfth, or thirteenth Day. What, then, have Authors hitherto meant, in fixing the Turn to one certain Day? When, it is viſible, the Small Pox is as long in turning, as in coming out. That Period of the Diſeaſe, call'd the Turn, is a Point of the higheſt Importance, becauſe it is, at that time, thoſe who periſh by the Small Pox generally die, unleſs it be when bloody Urine is made, and then they generally die on the ſeventh Day; but the Turn of the Small Pox cannot be limited to any one Day, unleſs they all made their Appearance on the ſame Day; here is another Circumſtance which alters the Turn, and makes it impoſſible to fix this Change to a certain Day, any more than they could the Day of the Eruption: For the Eruption appears ſooner or later, as the Fever is more or leſs violent; ſo, alſo, the Eruptions turn ſooner or later, according to the Force of the Inflammation.

The Order, and ſeveral Stages, of theſe Eruptions, through which they paſs, will be beſt underſtood by the following Deſcription, which will illuſtrate that Period of the Small Pox call'd the *Change*, a Time more equivocally and uncertainly deſcrib'd than any other Stage of the Diſeaſe. To do this, we muſt deſcribe the Courſe of one ſingle Eruption; for it would be impoſſible to deſcribe the Whole at the ſame time, becauſe ſome are juſt appearing, when others begin to maturate; ſome in the higheſt State of Maturation, while others are drying; theſe drying, and others are ſcabbing, and falling away.

Firſt, they are ſmall, upon the Eruption, red, watery, and hard; to be felt, rather than ſeen; the pathognomonic Diſtinction, with reſpect to the Meaſles, which are an Efflorescence. It grows larger, riſes ſharper, and ſpreads at the Baſis, making ſo little a Progreſs for two or three Days, that one would ſcarcely think it would ever come to any thing; but, on the fourth Day after its firſt Appearance, it begins to look white, is much larger, but often depreſs'd, and flattiſh at the Top: It grows now larger, whiter, and very much inflam'd at the Bottom; the Skin round it, for ſome Diſtance, is extremely florid, like a red Roſe-leaf: The Matter now ſeems to be perfect Pus, but white and thin, and this in ſix Days from its firſt Appearance; it is then ſwell'd, and comes to the higheſt State of Inflammation: The Matter now begins to grow thicker, and ſomething yellower, and that in the middle of the Puſtule; and, at laſt, thickens into a yelloviſh Scab, the Inflammation ſtill continuing about the Baſis of the Eruption; and this, alſo, takes up about three Days time; and, when it is thus ſcab'd, the Puſtule can be no longer in a State of Inflammation; and, of courſe, the Swelling ſubſides, which puts a Period to the Diſeaſe.

The ſecondary Fever, that began with the Maturation of the Eruption, riſes gradually, and is a concomitant Symptom with the ſeveral Stages of the Puſtules, as the Puſtules are of the Fever. We are but to ſuppoſe all the Eruptions, in any particular Caſe, to reſemble this I have deſcrib'd, and we have an Idea of a diſtinct and kind Sort.

In ſuch a diſtinct Sort as this, the ſecondary Fever ariſing about the ſeventh Day, the Small Pox, alſo, beginning to fill at the ſame time, the Fever ſtill increaſing as the Eruptions go on to Maturation, the Fever, of conſequence, will be rais'd to the higheſt Degree at that time the greateſt Number of the

Eruptions

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Eruptions are at the higheſt State of Maturation: So that if all the Eruptions of the Body were to come out at one and the ſame time, and all the ſeveral Parts of the Body were of equal Heat and Warmth, the Puſtules would then, on the ninth Day, be all in the higheſt State of Maturation; that is, they would begin to dry all at the ſame time, and we could then fix the Turn not only to one certain Day; but, as it happens quite otherwiſe, we cannot fix the Time of the Turn to ſuch or ſuch a Day, much leſs ſuch an Hour of a Day, as ſome pretend to do. As the Small Pox even takes up two or three Days in coming out on the Face, ſo ſome of theſe begin to turn two or three Days before others do; henceforth I would lay down this as a Maxim; as ſoon as ever any of the Eruptions begin to dry, I ſay, the Small Pox begins to turn, and that the Turn of the Small Pox continues two, three, or four Days; and that the Height of the Turn will be about a Day and a half after the Beginning of the Turn; and at this time the Fever aſcends to the higheſt Pitch.

From the Hiſtory I have now given of the *diſtinct* Kind, we find ourſelves no longer puzzled about fixing the Time of the Turn, even in the *confluent* Kind, or the Time of its Eruption: For as the Eruption takes up two or three Days, ſo, alſo, does the Turn: But the Eruption, the Maturation, and Turn, are all controul'd and govern'd by the Inflammation, Fire, or Heat, peculiar to the Conſtitution, as will be illuſtrated by the Hiſtory of the *confluent* Kind.

Let us now deſcribe the *confluent* Sort, and by it will be ſhewn all the Variations, Changes, and Diſtinctions, peculiar to the Small Pox in general.

The Fever not running very high, yet high enough to produce the *confluent* Sort, the Symptoms attending this Stage of Maturation, in that Caſe, with reſpect to the Eruptions and the Fever, reſemble, exactly, thoſe of the *diſtinct* Sort, (only they begin to turn rather ſooner on the Face, becauſe the Fever, or Inflammation, was ſomething higher; but they take up a much longer time in turning, becauſe there are a much greater Number of the Eruptions) if we except a Looſeneſs in Children, and the Spitting in grown People.

Spitting, or Salivation, is the moſt extraordinary Symptom: It begins, generally, with the ſecondary Fever, and, ſometimes, before the Eruption be over: It is more fluid, and copious, the firſt two or three Days, than afterwards; for as Maturation goes on, the Fever, alſo, aſcending, the Spittle becomes thicker, more viſcid, decreaſing daily; but if the ſecondary Fever be carried immenſely high, the Spitting ceaſes, and the Patient dies: But if the Fever of Maturation becomes not higher than neceſſary to produce a laudable and kind Suppuration, the Spitting goes on to the thirteenth, fourteenth, fifteenth, and, ſometimes, to the twentieth Day; that is, till the Small Pox is entirely dry over the whole Body.

It will be neceſſary here to give three diſtinct Hiſtories of three different Subjects labouring under this Diſeaſe, from the coming on of the ſecondary Fever; as, alſo, the Beginning, Progreſs, State, and Declenſion, of the Eruption.

The firſt ſhews the kind and *diſtinct* Sort; the ſecond a benign, but flux'd Pox; the third the flux'd or *confluent*, the moſt fatal; with all the ſeveral Accidents and Variations this Diſeaſe admits of.

About the ſixth Day of the Diſeaſe, in the *diſtinct* Sort, the ſecondary Fever comes on; the Pulſe begins to quicken, and becomes harder; the Face begins to look more florid and red, the Urine ſomething higher colour'd than natural, with a Cloud ſuſpended in the Middle, or ſubſiding to the Bottom. This Night, that is, the firſt Night of Maturation, the Patient is reſtleſs, and ſleeps with more Difficulty than at any other time in the Diſeaſe; the Eyes often water, or are bloodſhot. The ſeventh or eighth Day the Face ſwells more than at any other time, the Eyelids ſwelling firſt of all, and are generally blown up, and ſhining like a Bladder, and are generally clos'd, at this time. The Puſtules on the Face are large, and begin to look white on the Top; the Interſtices, that is, the Skin between the Puſtules, ſeems to be extended, inflamed, of a red florid Colour; and ſome few Puſtules, even now, begin to dry about the Noſe, Cheeks, or Forehead; the Pulſe ſtill quickens, and grows harder; the Voice ſomething alter'd, as if the Patient had a Cold; the Mind dejected, and ſometimes Sighs break out; the Urine rather paler, and leſs turbid: The Eruptions on the Breaſt, which are fewer than on any other Parts of the Body, are as forward, very near, as thoſe on the Face; thoſe on the Arms are now very large, whitiſh a-top, and very much inflam'd at the Bottom; thoſe on the Hands and Feet come on but ſlowly. On the ninth Day the Face appears to be ſwell'd to the utmoſt; the Eruptions are now larger, and the Matter extremely white, and the Skin, or Interſtices, ſtill more inflam'd, and redder, many on the Face drying on this Day, and ſome few beginning to dry on the Breaſt; the Eyelids of a darkiſh red; the Pulſe now extremely quick, and very hard; the Water paler, thinner, and clearer, than at any other time: Thoſe on the Arms very much inflam'd, and the Interſtices, or Skin, between the Puſtules, almoſt as much inflam'd as on the Face; and, if there are many Eruptions, the whole Arms ſeem to ſwell. At this time, ſome little Rigors appear, now-and-then. On the tenth, the Symptoms are much the ſame as the Day before; the Pulſe as high, and as quick; the Water as clear, the Face as much ſwell'd, only the Eye-lids begin to ſubſide a little; many more drying on the Face, and turning to a yelloviſh Scab. Sometimes the Face ſinks a little on this Day, which, if it does, the Hands begin to puff up, and ſwell on the Back. On the eleventh, the Face begins to fall, eſpecially about the Cheeks and Eyes, the Hands ſwelling more; thoſe on the Hands are quite green, but full ripe, as they were on the Face, on the eighth and ninth Day; the Pulſe now begins to become more regular, not ſo quick, nor hard, as on the two preceding Days; the Urine not ſo thin, or ſo pale, but with a Cloud ſuſpended, turbid, or with a Sediment. On the twelfth the Face continues ſinking, drying, ſcabbing; the Patient has, perhaps, the Eyes ſtill clos'd up, not ſo much of the Swelling, which now ſeems to be gone, as the Matter's gluing up the Lids; as the Face ſinks, the Hands continue ſwell'd; the Interſtices between the Eruptions not ſo florid; the Skin not ſo much extended, not ſo hard, more pliable and ſoft to the Touch; that is, the Inflammation remits round the Baſis of each Puſtule; thoſe on the Hands are ſtill full and white, but the Matter begins to thicken; the Pulſe more regular, even than the Day before. On the thirteenth the Hands fall; and if the Feet, as ſometimes they do, that is, if there are many Eruptions on the Inſtep, puff up, and ſwell, as the Hands ſubſide, and at this time the Eruptions on the Feet are at the higheſt State of Maturation: And as thoſe Puſtules on the Face, after they came to Maturation, turn'd and dry'd into a yellow Scab, theſe, upon the Body, break, and dry away: Upon this Day they are generally turn'd all over the Body, unleſs ſome few on the Hands, and thoſe on the Feet: So that here we may ſay, the Diſtemper ends; inſomuch that the ſecondary Fever, which began about the ſixth or ſeventh Day, and continued riſing gradually till the tenth, when it came to the higheſt Pitch, and continued, as it were, ſo for about twenty Hours, and afterwards ſunk by Degrees, upon the thirteenth or fourteenth vaniſhes entirely. As there is no more Matter to be form'd now in any Puſtules, ſo all the Eruptions take the ſame Courſe, ending in Matter, unleſs thoſe at the Bottoms of the Feet, where the Skin, being thick, hard, and callous, reſiſts the Eruption of the Puſtules, and is the Cauſe of their ending in yelloviſh or dark Warts, reſembling ſo many Corns. There is this Diſtinction to be made between Children and grown People: In thoſe the Urine is more turbid, not ſtraw-colour'd, but rather white, the Body not ſo coſtive; in theſe, when the Fever is higheſt, the Water is clear, of a Flame or Straw-colour; in both, at the Declenſion of the Diſeaſe, the Urine becomes thick and turbid.

The *confluent*, when it is kind, differs not at all from the *diſtinct* Sort, if we except the Spitting, or Salivation, which continues during the whole Courſe of the ſecondary Fever. As the Fever, in this *confluent* Sort, aſcends from Day to Day, and comes to the higheſt State about the tenth or eleventh Day; ſo the Spitting, which began with the ſecondary Fever, every Day, as the Fever increaſes, leſſens in Quantity, and becomes conſtantly more and more viſcid; of courſe, as the Fever, on the eleventh Day, is at the higheſt Pitch, the Spittle muſt be, alſo, at this time, extremely viſcid, and therefore hard to be brought up. If it ceaſes at this time, the Patient generally dies. The Pulſe, the Urine, and the Eruptions, were the only Signs we could form Predictions from in the *diſtinct* Sort; but they are not the only Signs in the *confluent*, ſince the Spitting, a Symptom the moſt conſiderable, always attends the Maturation of the Puſtules in the flux Sort, which is over either on the thirteenth, fourteenth, or fifteenth Day.

We have deſcrib'd the ſecond Stage of a regular and kind Small Pox; but it will be neceſſary here to ſhew the various Symptoms. We ſhall now give the Hiſtory of this.

The Eruptions, and other Circumſtances, of this Diſeaſe vary according to the Force of the Fever, the Inflammation, or Fire, in the Conſtitution; ſo that it is impoſſible for any Man in the World to have the Small Pox, if ſome Cauſe or other did not inflame his Blood. Neither is it poſſible for any of theſe Eruptions, Symptoms, Circumſtances, or Variations, during the Courſe of the ſecondary Fever, to exiſt, but what are natural to the Diſtemper, and which are equally eſſential to all phlegmonous Tumors in general. Therefore all theſe Phænomena ariſe, change, or fall, according to the Degree of Inflammation, in ſuch a particular Man, at ſuch a particular Time, whether his Diet be high or low; whether he is an *Egyptian* or *Indian*; let the Medicines, Regimen, Diet, Air, be whatever they will; neither will Conſtitution, Sex, Age, or Climate, avail; the Small Pox will be always the ſame; it can only

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only differ as to Degree of Inflammation: So that, the Phyſician, who had known this, might have given an Hiſtory of the Small Pox, that would have taken in People of all Degrees, Countries, Ages, Sexes, and Conſtitutions. Let us return back to the Beginning of the ſecondary Fever in the confluent Sort, of an higher Degree than what we have already deſcribed. This Fever coming on, as I ſhew'd before, not ariſing by Degrees, but all at once, like a Storm or Hurricane, altho' the whole Body at this time labours under an Inflammation, yet this Inflammation, as a real Fire, burns and deſtroys, and acts with greater Violence on ſome Parts of the Body than others. About the ſixth Day of the Diſeaſe, the Head ſeems to be the principal Seat of the Inflammation; for the Patient ſuddenly becomes furiouſly light-headed, the Eyes ſtreaming with Water, blood-ſhot, glaring; the Sick has a fierce Aſpect; the Spitting, the conſtant Attendant on Maturation in the Flux Sort, more copious, and more fluid in the Beginning, than afterwards; but if the Inflammation be very high, it is even viſcid at this time; a Quinſey, alſo, attends, a Strangury, and ſometimes bloody Water, which is the moſt fatal Symptom of any in this Diſeaſe, and, therefore, a Mark of the higheſt Inflammation; a ſhort dry Cough, with Stitches, and what is ſpit up from the Lungs, not ſeldom ſtreaked with Blood. For when the Lungs are much inflamed, the Patient, alſo, ſpits the Matter flowing from the Lungs, as in a common Cold, Pleuriſy, or Peripneumony, and the Spittle varies, is cruder, or more digeſted, or tinged with Blood, agreeable to the ſeveral Stages of theſe Diſeaſes; or from the ſalival Glands, or Parts peculiar to a common Salivation raiſed by Mercury, or produced by the Small Pox. This Spittle is, alſo, more or leſs fluid, or extremely viſcid, juſt agreeable to the State of the Inflammation. Another Mark of high Inflammation at this time are, profuſe Sweats: If the Fever is not extremely high, the Patient is coſtive; otherwiſe has a Looſeneſs, the Stools black and fetid; if the Fever, or Inflammation, be ſtill higher, they are tinged with Blood; or the Inflammation aſcending ſtill higher, a Bloody-flux may be produced. The Pulſe, if the Inflammation be tolerable, is quick, hard, and full; if raiſed higher, it quickens more, is ſtill hard, but not ſo full. If the Lungs be principally inflamed, the Pulſe undulates; if the Brain, depreſs'd, ſmall, and threading; the higher the Inflammation is, the colder and paler are the external and extreme Parts; and even ſometimes to that Degree as to produce a cold clammy Sweat: The Tongue and Voice faultering, the Lips trembling, or convulſed, as, alſo, what Phyſicians call *Subſultus Tendinum*. The Urine being of a Flame-colour, is a Mark of high Inflammation; but the crude Straw-colour marks an higher Degree; and, that the Head will be principally affected. Next to the making of bloody Urine, there is no Symptom more fatal than Spots appearing between the Eruptions of the Small Pox; the Red leſs dangerous than the Purple; and the Purple leſs than the Black: For, if the Patient recovers, theſe Spots return from Black to Purple, from Purple to Red, and from Red to the natural Colour of the Skin. Although theſe *Purples*, as they are called, are Marks of the higheſt Degree of Inflammation, yet, if it is poſſible for any Symptom to exceed theſe, it is when the Skin, upon ſeveral Parts of the Body, eſpecially the Legs and Thighs, in great Patches, is black and hard, as if burnt with a hot Iron, or Lightning. If the Inflammation in the flux Sort, on the ſixth or ſeventh Day, be higher than it ſhould be, the Face begins to ſwell ſoon, the Pulſe is quicker on that Day than it ought to be, and the Spittle too viſcid: If the Inflammation be in an higher Degree at this time, the Puſtules, that came on and ripened ſlowly, are now many of them even paſſed Maturation; many of them ſcorched or burnt at Top, as if ſeared with an Iron: The Skin of the Forehead, Arms, and other Parts, either hard, ſtretched, of a darkiſh red, and ſometimes covered between the Puſtules, with very ſmall Eruptions like a Raſh; or elſe, the Skin is of a paliſh, livid, cadaverous Aſpect. With theſe Symptoms the Patient may live from Day to Day, that is, from the ſixth to the ſeventh, from the ſeventh to the eighth, and ſo on, always in Danger, but does not die till the Face begins to ſink; and then, if it ſinks ſuddenly, the Spitting ceaſes, the Voice alters, he grows hoarſe, unable to ſwallow, and then he dies; or ſhould the Face not ſwell at all, as ſometimes it happens, yet he ſtruggles through theſe horrid Symptoms, as long as the Pulſe continues any thing full, and the Spitting, however viſcid and decreaſing, perſeveres; but, whenever the Pulſe quickens exceſſively, and ſinks, and the Spitting ſtops, then he periſhes, which generally happens about the eleventh Day. If the Patient ſurvives beyond this Day, as the Face dries, it turns not, as in the kinder Sort, to a yellowiſh Scab, but a black dark Cruſt. If the Patient dies upon the tenth, twelfth, or even later, on the fifteenth, or twentieth Day, a Looſeneſs, profuſe Sweats, or an intolerable Smell, or Stench, reſembling a putrefied Carcaſe, precedes the fatal Event.

It will be proper to mention here the Diſpoſition of Mind in the Courſe of the Diſeaſe: If the Patient appears to be lively, far from dejected, but ſpeaks with Alacrity, and ſome Degree of Boldneſs, it is a Mark of the Height of the Fever, and very near allied to Lightheadedneſs; on the other hand, a Sighing and great Dejection of Mind, a ſorrowful, mournful, and weeping Aſpect, are Marks of the higheſt Degree of Inflammation.

Thus have we given an Hiſtory of the ſeveral Stages of the Small Pox; and it appears from this Hiſtory, there can be no Changes or Variations, but what flow from one Cauſe, that is, Fire, Inflammation, or Heat, however produced; that there can be no Diſeaſes complicated with the Small Pox, but of the inflammatory Kind; ſo that this Diſeaſe will be the ſame in all Countries, and have the like Nature and Symptoms, in all Ages, Conſtitutions, and Sexes. The Eruptions of the Small Pox may be not improperly compared to ſome particular Kind of Fruit; the Maturation of this Fruit depending upon a certain Degree of Heat, it will be ripened gradually, or very ſoon, or not at all; it may be blighted or burnt up, juſt according to the Diſpoſition of the Climate, the Soil, or Culture, or Skill of the Planter, whether it be planted, inoculated, or grows ſpontaneouſly.

We come now to treat of the Cure of this Diſeaſe; and, as we have endeavoured to ſhew the ſeveral evident Cauſes that produce the Small Pox, or have Power to raiſe it to an high Degree, ſo as to render the Diſtemper fatal to many; and, if it be true, that ſuch Cauſes, which I have mentioned, are found to have that Force or Power to diſpoſe an human Body to Inflammation, Fire, or Putrefaction, the Conſequence of theſe; and, if it be certain, that the Small Pox is a Diſeaſe founded upon an Inflammation, and one of the moſt eminent among the Diſeaſes of the inflammatory Kind, which I am convinced it is, and of which, the Hiſtory I have given is a full Demonſtration; it neceſſarily follows, that if we could evade thoſe Cauſes productive of Inflammations, in general, we evade the Small Pox; or, ſhould we not be able to evade thoſe Cauſes, could we at leaſt find means to reſiſt and oppoſe ſuch Cauſes, that is, prevent ſuch Cauſes to produce their uſual Effects; could we obtain this, could we prevent this, an human Body would not ſuffer an Inflammation; and, therefore, we prevent the Small Pox. But ſhould the Art of Phyſic, or the Sagacity of the Phyſician, not always extend ſo far as to avert ſuch Cauſes, or ſo far oppoſe them, as entirely to deſtroy their Effects, yet if we prevail ſo far as to leſſen thoſe Cauſes productive of Inflammations, or conſiderably leſſen their Effects, we ſhould then have Power to diſpoſe an human Body to a leſs Degree of Inflammation; and of conſequence, to render People leſs ſubject to the Small Pox; or, ſhould they have it, leſs fatal. To be able to effect this, and lay down ſuch Rules that are certain, either to prevent People from falling into the Diſtemper, or to controul the Violence of it, and render it more ſupportable, and more benign, it was neceſſary for us to collect ſuch Obſervations as were ſufficient to prove, that ſuch evident Cauſes would always produce, raiſe, and exaſperate this Diſeaſe; and, that it was only an Inflammation, tho' *ſui Generis*: It will be now neceſſary to ſhew, what are thoſe Means that have, alſo, Power to avert, oppoſe, or controul this Diſeaſe; which, if we are able to do, we are able to cure the Small Pox.

Whether the Phyſician obtains his Ends by the Uſe of Medicines, Choice of Air, Diet, Exerciſe, Repoſe, indulging of Sleep, Watching, or manual Operation, or ſome, or all of theſe together, it matters not. For by whatever Means the Phyſician obtains his Point in View, they are juſt and neceſſary, and are all confined within the Verge of his Preſcription. Whatever there be within the whole Compaſs of Nature, that can poſſibly affect an human Body, ought, if poſſible, by the Phyſician, to be taken Notice of and obſerved; becauſe, every Moment there may be ſomething that offends, and, therefore, to be oppoſed. Of what Extent then are the Phyſician's Views? How can he be confined to one Medicine, or ſuch a particular Method of Cure? Curing then does not conſiſt perpetually in preſcribing this or that Medicine; not but they are ſometimes neceſſary. The Phyſician as often preſcribes happily, and gains his Ends, by forbidding the Uſe of ſuch Medicines, or ordering ſuch and ſuch things to be avoided, which were injudiciouſly directed. Suppoſe an ignorant Perſon confined to the Bed in a ſmall Room, covered with a Load of Cloaths, and a great Fire, taking every Moment ſtrong Broths, or Wine; his Pulſe becomes quick, and the Man is all on Fire, as well he may be: A Phyſician comes; he orders the Fire to be put out, the Cloaths to be taken off; he ſuffers him to cool by Degrees, and the Man is well. I mention this, becauſe I would be rightly underſtood, that I am not going to lay any Streſs upon particular empirical Medicines; for that would be Quackery: I would endeavour to ſhew a rational Comportment, a

Conduct

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Conduct to be obſerved by all Phyſicians, the various Methods, Regimen, and Medicines, to be uſed in all Conſtitutions, Climates, Ages, and Sexes. We inſiſt rather on ſuch Rules as direct us what not to do, than on thoſe which ſhew us what to do.

But, before we come to thoſe particular Precepts concerning the curative Part, it will be neceſſary for me to lay down ſome Rules concerning the Effect of Medicines, as well as the Motives a Phyſician acts from in the Choice of his Medicines: For unleſs the Phyſician acts by Motives that are rational and juſt, he can never judge and determine on the real Virtue and Force of a Medicine. The preſent State of Phyſic, built unhappily upon the ſandy Foundation of *Hypotheſis*, and the general Propenſity to Empiriciſm, that is, the Uſe of Quack-medicines, deſerves a more exact Scrutiny into the Efficacy of Medicines.

Thus have I hitherto confined myſelf, before the Cure, to a bare hiſtorical Account of the Small Pox, and divided the Hiſtory of it into ſeveral Stages; having, alſo, given my Opinion concerning the Nature of the Diſeaſe, as well as the ſeveral Maladies that are often complicated with it: Hence the Nature of the Diſeaſe (or, at leaſt, as I imagine) appears to be fully proved to be an Inflammation *ſui Generis*; yet we have an Opportunity to confirm and illuſtrate this eſſential Point, I mean, the Nature of the Diſeaſe, in conſidering the Regimen, Medicines, Diet, *&c.* which I propoſe; the Reſult of which will ſtill add a greater Weight, if poſſible, to the Doctrine I have already laid down, concerning the Nature of this Diſeaſe in particular, as well as all other Inflammations in general. This will be then proving *a poſteriori*, what I have aſſerted; and I may venture to ſay, there cannot be a more certain Method found out to diſcover the Nature of a Diſeaſe, than by that of obſerving, with the greateſt Attention, the Power and Efficacy, as well as various Effects of Medicines on human Bodies; which cannot be determined, unleſs the State and Circumſtances of the Sick, exiſting at thoſe particular Times, are duly conſidered, when ſuch or ſuch Medicines were adminiſtered. The Operations then of ſuch Medicines will beſt ſhew the Nature of the Diſeaſe.

As the deſcriptive Part, then, of this Treatiſe on the Small Pox took in an Account of the Seaſons of the Year, the Climates, Ages, Sexes, and Conſtitutions of People, which have an Influence ſo as to raiſe or oppoſe this Diſeaſe; as, alſo, what thoſe Diſeaſes were which diſpoſe Men to imminent Danger, ſhould they then have the Diſtemper, as well as the various apparent Cauſes productive of the Small Pox; this may be ſaid to regard what precedes the Diſtemper. Next to this, we deſcribed what preceded the Eruption; then, whatever relates to the Small Pox, during the whole Courſe of the Eruption, till that Period of the Diſeaſe be over.

I have next deſcribed the Riſe of the ſecondary Fever, the Maturation of the Puſtules, till they are fully ripe, till they dry and fall away, which is the laſt Stage.

This Order then ſhould be obſerved in the curative Part, and ſuch Precepts propoſed concerning thoſe Medicines, as well as Regimen and Diet, that may have Power ſufficient to reſiſt, or mitigate, to controul, or conquer, a Diſeaſe hitherto, in a manner irreſiſtible.

But, to obtain the End we have in View, let the Means or Method be whatever it will, (whether by Diet, by Regimen, by Medicine; whether by Exerciſe, Repoſe, the Change of Air or Climate, by Watching, or indulging of Sleep, or, laſtly, by what other Means ſoever) provided they are found to have Power to prevent, to reſtrain, or ſubdue an Inflammation, they are certainly neceſſary: If it be true, that the Small Pox is nothing but one of the Species of Inflammations, of conſequence, all ſuch Methods and Means are abſolutely neceſſary to be put in Execution.

But we are forced by Neceſſity to prove what thoſe things are that raiſe an Inflammation, as, alſo, what thoſe things are which produce contrary Effects; or we prove nothing certain to our Point. And there is nothing ſo uncertain in Phyſic, as the Knowledge of the real Effect of that almoſt infinite Number of Medicines we have of late Years introduced among us, concerning which there are many things very confidently and falſely aſſerted.

Boerhaave himſelf laments this deplorable Branch of our Art, and is even unwilling himſelf to give particular Receipts when he treats of Diſeaſes. And well he might: For the Effects of Medicines rather ariſe and take their Force from the Judgment of a Phyſician in their juſt Application, than from any Virtues inherent in themſelves. An Example will illuſtrate this, and confound all the Empirics in the World. A Diſpenſatory will tell you, that Opium will put a Man to ſleep; that a Tincture of *Hiera Picra* will purge; that *Mercurius Dulcis* will abate the Inflammation of a Wound; that Broom-aſhes will promote Urine; that the Bark is an Aſtringent: It is true, theſe Medicines are found to have ſuch Effects; but that is, when they are applied in ſuch particular Caſes, in ſuch particular Conſtitutions, in ſuch particular Diſeaſes; nay, limited to ſuch particular Stages of Diſeaſes. Let but ſuch Caſes, ſuch Conſtitutions, ſuch Stages of a Diſeaſe vary, behold theſe Effects of Medicines vaniſh in a Moment, and quite the contrary ariſe. Half a Grain, or a Grain of Opium, given to a Man upon his coming out of a tepid Bath, having been cupped or bled, the Body not coſtive, will diſpoſe that Man to ſleep: But where the Body is coſtive, the Conſtitution aduſt, inflammatory, being heated with Exerciſe in an hot Summer's Day, in ſuch a Caſe the ſame Quantity of Opium will be found to have a quite contrary Effect; the Perſon, inſtead of being drowſy, and inclined to ſleep, watches, and becomes delirious, for want of Sleep. *Aloes*, infuſed in Wine, purges eaſily a Perſon of a cold flatulent Conſtitution, where there is no Inflammation: But with ſuch whoſe Blood is much inflamed, who are coſtive, and whoſe Urine is high-coloured, ſhould Aloes infuſed in Wine, or Brandy, be given in ſuch a Caſe, it would not purge at all; and the oftener this Medicine is repeated, the more it would act as an Aſtringent, and the more obſtinately coſtive would the Body be rendered; the Perſon muſt certainly die of an Inflammation of the Bowels before the Medicine will be found to have the Effect of Purging. The Bark given after the hot Fit of an Ague is ſpent, is an Aſtringent; but given during the hot Fit, it generally purges: When it binds, or is an Aſtringent, it puts a Stop to the Diſtemper; when it purges, it has no ſuch Effect. A Wound growing foul, and obſtinate to heal, requires the Adminiſtration of ſome Medicines, in order to lower the Inflammation, and bring it to digeſt: If you bleed ſuch a Man, and give him fifteen or twenty Grains of *Mercurius Dulcis*, preſcribing a low Regimen, and let the Mercury purge freely, as it generally will, if there be not an high Inflammation in his Blood, and no great Coſtiveneſs preceding, the Mercury will be found to check the Inflammation of ſuch a Wound: But ſhould it be given where there is a great Inflammation in the Blood, the Body very much bound, the Perſon expoſed to the cold Air, or ſhut up in an hot Room, the Mercury will then have a quite contrary Effect; it will be found to add not only a new Degree of Inflammation to the Wound, but may, alſo, inflame the Bowels, Stomach, the Throat, or the Mouth, and even to ſuch a Degree as if burnt with an Iron. Who has not obſerved the Mouth ulcerated deeply, and in a very little Time, by Mercury's being given injudiciouſly? Broom-aſhes, being given to an hydropical Woman, of a cold phlegmatic Conſtitution, no Fever or Inflammation attending, would promote Urine to a great Degree, that is, would be, as the Apothecaries call it, *diuretic*; but given in a Dropſy, where the Liver, or any other Part of the Bowels is ulcerated, tabid, or highly inflamed, if ſo, there muſt then be a Fever, and the Blood will be, alſo, much inflamed; this Medicine will then have no ſuch Effect, but quite the reverſe; the Urine will be leſs and leſs, higher coloured one Day than another, as the Fever riſes from this alcaline Medicine, till the Patient dies of a Mortification.

This I think ſufficiently proves, that the Effect and Property of Medicines, as the *Subject* varies upon which they act, vary alſo; and as this Subject, or particular Body admits of infinite Variations, ſo do Medicines. Who is there then that can limit the Effects and Properties of Medicines? Or who is there, that can tell how far their Virtues may extend? We can only determine their Powers and Efficacy, in ſome particular Caſes, at ſuch particular Times, and in ſuch particular Conſtitutions.

The more we conſider Phyſic in this Light, the more we ſtill recede from Empyriſm: For rational Phyſic and Empyriſm are as inconſiſtent, as common Senſe and Reaſon are with Enthuſiaſm.

We ſhall now proceed to point out a certain Method of Cure: But the Means, or Inſtruments, neceſſary to effect this End, muſt be proved to have ſuch Force and Efficacy, that may avert, reſtrain, or conquer, an Inflammation; ſince thoſe Accidents and Changes in the Small Pox depend upon an Inflammation, and are the neceſſary Conſequences thereof: And, at the ſame time that we prove ſuch Medicines, Regimen, Diet, *&c.* to have ſuch Virtues, being applied at ſuch particular Times and Circumſtances of the Diſeaſe, we ſhall, alſo, demonſtrate what thoſe Medicines, Regimen, and Diet are, that act upon an human Body ſo as to create, raiſe, and exaſperate an inflammatory Diſeaſe. This a Phyſician ought to know, becauſe it is as incumbent upon him, and of as much Conſequence in the Cure of his Patient, what to forbid him not to do, as what he is to do; that is, to know what to forbid him the Uſe of, as well as what to preſcribe: For that Phyſician often happily directs, who only prohibits the Uſe of ſuch and ſuch things, and preſcribes nothing.

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First, then, in order to prevent the Small Pox, could we propoſe ſomething that hath Power to deſtroy the Infection exciting this Species of Inflammation, we prevent the Small Pox. Or, could we find out ſome Means or other, that hath Power over an human Body, ſo as to prevent the uſual Effects flowing from ſuch a Cauſe, we then reſiſt that Cauſe: Altho' the Cauſe be not deſtroyed, nevertheleſs the Effects can never ariſe: If ſo, we equally obtain our Ends. We obſerve the Waters of a ſmooth and tranquil Sea ſoon ariſe, and ſwell, and roll, from a ſudden Storm of Wind. Were it in the Power of any to ſtay that Storm of Wind, the Sea would be calm and not agitated: Or, ſuppoſe there were ſome Means to add a vaſt Weight to thoſe Waters, ſuperior to the Force of a Storm of Wind; if ſo, that Sea would be ſtill and calm, notwithſtanding the Winds were uncontroulable, yet they would blow without Effect, and have no more Power over the Waters, than if they blew over a dry barren Piece of Land. Cauſes exciting the Small Pox are infinite. Some are evident, but many more unknown to us as yet; but whatever they are, they muſt firſt raiſe an Inflammation in the Blood before this Diſeaſe can appear, ſince all Mankind have their Blood inflamed before the fourth Day.

Since many then of theſe Cauſes which produce the Small Pox are hidden Cauſes, it is impoſſible to endeavour at any Means to deſtroy thoſe Cauſes: Yet could we propoſe ſuch Means that have Power to prevent the Body's being ſubject to an Inflammation, we could then reſiſt thoſe Cauſes productive of the Small Pox, by hindering thoſe Cauſes to have their uſual Effects. Hence then, we have Indications ſufficient for our Conduct in avoiding this Diſtemper. The Diet ſhould be cooling, diluting, and ſubacid, *&c.*

In ſhort, every Method muſt be tried that can lower and impoveriſh the Blood: Or, were it poſſible even to give a Diſeaſe, ſuch as a true intermittent Fever, or any Diſtemper of a contrary Nature from that of the Small Pox; for two Diſeaſes, differing eſſentially in Kind, cannot exiſt at one and the ſame time. A Perſon who would avoid the Small Pox, ought to chooſe ſuch Air, or Climate, where inflammatory Diſeaſes are leſs frequent, for I believe there is not a Climate wholly exempt, eſpecially ſuch Places where inflammatory Diſeaſes are epidemic, and at that Time ſtationary. A Man would be moſt likely at ſuch Times, and in ſuch Places, to be ſubject to the Small Pox, and that Conſtitution of Air productive of the Plague, ſpotted Fevers, or whatever other Fever of the inflammatory Kind at that Time epidemic, whether in a Camp, a beſieged Town, in the hot Months of *June*, *July* and *Auguſt*, will add ſo much Fever, or Inflammation, to the Small Pox, as to render it fatal. Neither will it be ſufficient to avoid violent Exerciſe, an high Regimen, ſtrong ſpirituous Liquors, the Mind's being agitated with Paſſions, or depreſſed by too recluſe a Life, intenſe Thought, Application to Buſineſs, or hard Study; the Conſtitution is even to be lowered from that of a vigorous State of Health: For a florid healthy State is very nearly allied to what we may call the *firſt Degree of Inflammation*. A Man who would avoid the Small Pox, ſhould betake himſelf to a lower and more cooling Regimen in his Diet than uſual; the Liquors, ſmall, diluting, and of the acid Kind; Repletion prevented by Bleeding, and cooling Phyſic; the Mind kept in a profound Repoſe; gentle Exerciſe: By theſe Means the Conſtitution will be reduced, as I would have it, rather to the State of a convaleſcent, than one in a perfect State of Health. The cold Bath, in this Part of the World, hath been eſteemed of late Years, by Phyſicians of Eminence, as a powerful Means to prevent the Return of inflammatory Diſeaſes: Therefore it muſt be of Force, to oppoſe, in ſome Degree, the coming on of this Diſeaſe, ſince it is of the inflammatory Kind; even a perfect State of Health is thought to be too near a State of Inflammation to receive the Small Pox, either by Inoculation, or Infection. With how much Attention, then, ought we not to examine, whether a Patient, who would avoid the Small Pox, or have it in a favourable manner, is not already affected with ſome inflammatory Diſeaſe or other? And, if there ſhould be any ſuch Diſeaſes, they are inſtantly, if poſſible, to be cured, leſt the Small Pox ſhould come on, and affect the Patient with a Complication of Diſeaſes, which would be, in ſuch a Caſe, as ſo many Fires multiplied by one another.

Now there are a thouſand Medicines that will raiſe an Inflammation in the Blood; and the Cauſe, the morbific Matter, whatever it be, acts as theſe Medicines, by raiſing an Inflammation: Why then ſhould there not be ſome Medicines, or Means, powerful enough to prevent an Inflammation? Certainly there are; altho' not always powerful enough to prevent, yet they are always found powerful enough to reſtrain or lower an Inflammation: Therefore, it is in our Power to prevent many rom falling into this Diſeaſe; and even thoſe that do, by obſerving proper Rules and Methods, will ſeldom be expoſed to Danger, the Diſeaſe not aſcending to an high Degree of Malignity.

In Diſeaſes, ſuch as the Plague, Small Pox, or ſpotted Fever, it is not ſufficient to begin to oppoſe the Diſeaſe, when the Diſeaſe begins; we are, if poſſible, to prepare the Body, and prevent the Diſeaſe: For ſuch as theſe, in ſome particular Climates, Seaſons of the Year, and Conſtitutions, concur in ſuch a manner, that Inflammations of ſo high a Degree ſtrike inſtantaneouſly like Lightning; they conſume and burn with ſuch Rapidity, that the Body is wounded, and ſome Parts deſtroyed on the firſt Attack. Whoever, then, ſtays till the Diſeaſe begins, generally comes too late. It is with us often as with thoſe at Sea: A good Sailor, from what he has diligently obſerved, can by certain Signs foretel an approaching Storm: He lies by, furls his Sails, and prepares himſelf for the Reception of a furious Blaſt of Wind, which might otherwiſe, in an Inſtant, ſhatter and tear his Veſſel to Pieces. Thus then, the Means I have propoſed, in order to avert or prevent the Small Pox, or, at leaſt, prepare the Body, ſo that the Diſeaſe may be more gentle and benign, ſeem not to be very extraordinary, particularly to thoſe, who have great Confidence in the Pomp of Medicine. Could we perſuade Mankind to believe, that the Virtues of Medicines depend wholly on the Judgment of the Phyſician, we ſhould have no Empirics. What, can living lower than uſual, changing of Air, a little Blood taken away, or a little gentle Phyſic; can ſuch common Means as theſe have ſuch powerful Effects? Thoſe who are well acquainted with Phyſic know, that they have. But theſe Powers and Virtues depend upon the particular Circumſtances of Time. There is nothing more eaſy than to prove this. Suppoſe the Sagacity of a Phyſician extended ſo far as to know, that ſuch a Man would in ten Minutes fall down in an Apoplexy from a Fulneſs of Blood might not the Loſs of only eight or ten Ounces of Blood from the Arm, or the Feet, preſerve that Man? After the Veſſels of the Brain are lacerated and broke with a Profuſion of Blood pent up, the Bleeding to fifty Ounces would have no Effect. What, if a Man were ſeized with a Shortneſs of Breath, a Suffocation with an unuſual Heat in the Cheſt, the Cheeks more than uſually florid, Signs marking the Diſtention of the Lungs, from too great a Fulneſs of Blood? At this time the poor Man, being ignorant of the State he is in, finds himſelf diſpirited, drinks a Glaſs of ſtrong Wine, or Brandy, or a Glaſs of Water, with perhaps forty or fifty Drops of Spirit of Hartſhorn, or ſome ſuch fiery Medicine: Upon this he vomits Blood, he is ſeized with a cold ſhivering Fit like an Ague, he ſpits Matter, and at laſt dies of a Conſumption. Had a Phyſician, in ſuch a Caſe, directed only a Glaſs of Water, and the abſtaining from every thing that could heat or inflame, it is not improbable but that Nature alone, unoppoſed by Medicine ill applied, having only the Diſeaſe at that time to ſtruggle with, might free herſelf. It is then the Timing and the Application of Medicines, or the Means we have propoſed, that gives the Force and Efficacy. Bleeding a few Ounces, a Cordial, a few Drops of Hartſhorn, a Fire in the ſick Man's Room, may be ſaid to be of no great Conſequence: There are ſuch Circumſtances of a Diſeaſe, there are ſuch Times, and ſuch Occaſions, when they are not of any great Moment, nay, of no Effect: But there are Times, when ſuch things will abſolutely kill, or abſolutely cure.

We are every Moment to conſider Nature, and the Diſeaſe, oppoſing each other, as Weights in a Scale: We are to add, to her Side, that ſhe may preponderate; and there are ſuch Times, when the leaſt Weight is of the greateſt Moment, and will turn the Scale. A Cypher in Arithmetic, placed among Figures, affects thoſe Figures juſt according to the Poſition or Application of that Cypher; the Value ſtill riſing, or decreaſing, according as it is placed: So do Medicines, Diet, Exerciſe, Regimen, *&c.*

As I have already, under the Article INFLAMMATIO, treated largely of the Treatment due to an Inflammation; a Repetition of what is ſaid there would be ſuperfluous: The prudent Phyſician, upon whoſe Conduct and Abilities much depends, will judge the Occaſions of preventing and checking a threatening Degree of Inflammation, and will diſcern the Seaſons when Remedies are to be applied, and of what Sort they ought to be.

OF INOCULATION.

As Inoculation for the Small Pox has raiſed the Attention of all Nations, it cannot be thought improper, for the ſake of young Beginners, to deſcribe the Method of this Operation, which may be ſo beneficial to Mankind.

The Deſign, then, of Inoculation, is, to communicate a mild Species of the Small Pox to Infants, or Adults; and the Method is, to make a ſmall Inciſion in the Arm, or Leg, with a Knife, and therein inſert ſome of the purulent Matter, taken from

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from Patients labouring under a mild Kind; then dreſs the Wound with Lint, and a Plaiſter. Dr. *Harris*, in *Diſſert. Chirurg.* orders only the *Cuticula* to be abraded, and the Matter to be ſpread on the naked Skin. After the Operation, the Patient ſhould keep himſelf moderately warm, and obſerve a proper Regimen; by which means, the Diſorder will appear in about ſeven Days, without any dangerous Symptoms; and, if aſſiſted by a regular Diet, and moderate Warmth, generally goes through all its Stages with Succeſs. Experience evinces, that this Diſtemper is never caught a ſecond time after Inoculation; which is a ſufficient Reaſon for the Opinion of thoſe who aſſert, that this Operation might be of univerſal Benefit to Mankind, by ſaving the Lives of ſome, and preſerving a Beauty of Countenance, and Strength of Sight, in others.

We learn, from Hiſtory, that *Inoculation* has, for a long time, been practis'd by the *Greeks* and *Turks*, though it is of modern Date in *Europe*; and was firſt encourag'd by the *Engliſh*, who met with ſo much Succeſs, that King *George* II. without any Heſitation, had the Operation perform'd on all his Children: So that the *Germans*, eſpecially the Inhabitants of *Hanover*, *Onolsbac*, and *Pyrmont*, came very readily into it.

Some, I confeſs, amongſt the *French* and *Engliſh*, have, in their Writings, condemned this Practice, as fatal to Mankind, and unbecoming a Chriſtian; but theſe Objections have been long ago fully anſwered by Men of great Learning. If the Reader deſires a more particular Account of this Operation, he may conſult *Pylarinus* an *Italian*, *Maitland* an *Engliſhman*, and the celebrated *Vaterus* of *Wirtemberg*; and the *Acta Erudit. Lipſ. An.* 1723, 1725, *&c. Act. Natur. curioſ. Vol.* I. *Obſ.* 75. and the *Acta Uratiſlavienſia*; where this Subject is handled at greater Length. The Practice of *Inoculation* has, alſo, the Sanction of Experience, the beſt Maſter and Inſtructor in every Science. For my own Part, I am ſo far from thinking *Inoculation* fatal, that I am convinced it might be thoroughly beneficial to Mankind: For, in my Opinion, the Small Pox proceeds from a peſtilential Matter intermixed with the Blood from the very Day of our Birth, and which generally breaks out in every Perſon ſooner or later; and the ſooner, generally the better; for this Diſtemper is often fatal to Perſons advanced in Years: So that the *Virus* ſeems to increaſe with the Patient's Age. And this ſeems the very Reaſon why the Small Pox is more favourable to Infants than Adults. If, therefore, the Diſorder be procured from a mild Kind, and the Venom diſcharged from the Blood, while it is ſmall in Quantity, and the Infant young, I make no doubt but many Children, eſpecially thoſe of Princes and Noblemen, might be preſerved, not only from the moſt malignant Symptoms, but even from Death. When this Diſtemper is received from a natural Infection, it often proves very mortal; on the contrary, if procured by Art, the Patient is prepared by a proper Diet and Medicines, and uſually finds it leſs ſevere. It is unneceſſary to produce any further Reaſons in Juſtification of this Practice, as theſe muſt be ſufficient to convince every reaſonable Man. *Heiſter. Chirurg.*

VARIUS, *ſeu Phozinus levis.* J. Jonſt. Is a ſmall River-Fiſh, which the *Italians* call *Morella*, and the *French petite Truite*, "a ſmall Trout." It is ſcarce above a Digit in Length, its Skin even, ſmooth, and poliſhed. It is of various Colours, whence it has its Name; yellow on the Back, ſilver-coloured on the Belly, purple on the Sides, and marked all over with black Spots; the Fleſh is ſoft, tender, and good to eat.

As to its medicinal Virtues, it is pectoral, reſtorative, and aperitive. *Lemery des Drogues.*

VARIX, *plur.* VARICES.

By the Name *Varices*, among Phyſicians, are meant thoſe unequal, nodous, and blackiſh Tubercles of the Veins *, which are ſubject to riſe in any Part of the Body; but moſt frequently in the Feet, about the Ancles; though ſometimes higher, as about the Legs, Thighs, and other Places, as the *Scrotum*; and even in the Head and Belly, as *Celſus* obſerves, *Lib.* 7. *Cap.* 31. This Diſeaſe moſt frequently infeſts pregnant Women, but is incident to any other Perſons, eſpecially thoſe who abound with thick Blood, or are affected with a Pain of the *Hypochondria*, an Obſtruction of the Liver, or a *Scirrhus*. The more the *Varices* increaſe, the more painful and troubleſome they become, on account of the more violent Tenſion of the Membranes; and, ſometimes, they even come to a Rupture, and diſcharge Plenty of Blood, or degenerate into malignant Ulcers, as I have ſometimes obſerved. The ſmaller Kinds of *Varices* uſually create but little Uneaſineſs; and are, therefore, neglected by the Patient, as not requiring the Aſſiſtance of the Surgeon.

In order, however, to prevent a ſmall, and, at firſt, inconſiderable Evil, from increaſing by degrees, and growing formidable, to the great Detriment and Annoyance of the Patient, it will be adviſeable to open a Vein, with all Speed, and take away a Quantity of Blood; and, after that, to preſcribe a proper Regimen of Diet: This done, it will be convenient to ſecure the diſeaſed Feet in the moſt careful and exact manner, with a repellent, or, as it is commonly called, expulſive Bandage [*Tab.* XXIV. *Fig.* 1. F]; and whenever you perceive it to ſlacken, in any meaſure, or become looſe, to ſtraiten it anew, and never to remove, or throw it off, while you are under the leaſt Apprehenſions of an Increaſe of the Diſorder. The Antients, as we learn from *Celſus*, freed their Patients from the *Varices* by a ſpeedy Cauteriſation, or Exciſion; but we Moderns uſe a milder way of proceeding: If the *Varices*, then, are increaſed to a conſiderable Bigneſs, we apply the Bandage beforementioned for the Conſtriction and Strengthening of the Veins, which are dilated beyond their juſt Meaſure, moiſtening the Fillet with red Wine warm, or a Decoction of Aſtringents, or of Vinegar and Alum; and binding, alſo, a thin Plate of Lead upon the Part affected. *Dionis* aſſures us, that there is no Method more effectual for repreſſing the *Varices*, than by Stockings made of Dog-ſkins, or other Skins fit for the Purpoſe, and ſo contrived, as, by Help of a Cord, to be ſtraitened, and drawn as cloſe as the Patient can well ſuffer it; by which means, the Legs may be kept under a cloſe and exact Conſtriction, both Day and Night. The Form of thoſe directed by *Dionis*, is repreſented *Tab.* LVII. *Fig.* 11. Such Spatterdaſhes may, alſo, be made, in the ſame Faſhion, of grey linen Cloth, which is ſtrong enough, as I have ſeen them myſelf. The moſt effectual Remedy againſt the *Varices*, in the Opinion of *Harris*, *Diſſertat. Chirurg.* 8. is Tincture of Myrrh, if the Part affected be frequently anointed with it, and then covered with *Rulandus*'s *Emplaſtrum Diaſulphuris*: And if there be, afterwards, a Bandage applied, or a Conſtriction of the Place effected, by means of Stockings, in the manner before deſcribed, the greater is the Succeſs to be expected from this Remedy.

Where the *Varices* are increaſed beyond Meaſure, and ſwelled to ſo enormous a Degree, as to threaten a Rupture, and a dangerous Hæmorrhage is to be feared, or if they grow intolerable to the Patient on any other Account, recourſe muſt be had to the Knife, and Section muſt be uſed. In this Operation we make a longitudinal Inciſion into thoſe Tubercles of the Veins which are moſt ſwelled, or which excite the greateſt Pain; and after evacuating the thick Blood, to the Quantity of eight, ten, or twelve Ounces, according to the various Habits of the Patient, we dextrouſly cover the Wound with Lint dipt in Bole Armoniac and Vinegar; and upon this applying a leaden Plate, we ſecure the Whole with a Bandage. If the Operation be rightly performed, there generally ſucceeds a Coalition of the Veins, in much the ſame manner as after Phlebotomy, and the Veſicles are ſtregthen'd by their Cicatrices; ſo that the ſame Place is ſcarce ever infeſted with *Varices* afterwards. The antient Surgeons, as we ſaid, cured *Varices* by Cautery or Exciſion. See *Celſus*, *Lib.* 7. *Cap.* 31. The Method in which the latter was performed, was thus: Firſt, They cut the Skin upon the diſtended Vein; then took hold of the vitiated Part of the Vein with an Hook, and with a Kniſe cut it quite off, and ſeparated it entirely from the Body, after which they healed up the Wound with a Plaiſter. *Govey*, in *Chirurgie veritable*, declares himſelf of Opinion, that the quickeſt, and, at the ſame time, the ſafeſt Method of curing *Varices*, is to paſs a crooked Needle with a double waxed Thread, quite under the diſtended Vein; and by drawing the ſame into a Knot, to make a firm Ligature upon the Vein, then immediately to make an Inciſion with the Knife into the tumid Vein, and diſcharge a ſufficient Quantity of the thick Blood: This done, the Wound is to be treated with ſome digeſtive Ointment, and the Patient is to keep his Bed, till the Wound is almoſt conglutinated. The antient Method by Cautery was firſt to cut the Skin, then lay open the Vein; and this done, gently to preſs the ſame with a ſlender, blunt, red-hot Iron; the Lips of the Wound being held aſunder with Hooks, to prevent their being burnt, (*Celſus*, in the Place before-quoted): When this was over, they treated the Wound with Remedies adapted to Combuſtions. *Harris*, indeed, judges all Methods of Exciſion and Burning not only raſh, but cruel; it muſt, however, be confeſſed, that the Moleſtations and Pains, created by the *Varices*, are ſometimes ſo violent, that a Rupture may be dreaded, and that in the Night, (of which I know a very remarkable Inſtance) with Danger of Death; for which Reaſons the Aſſiſtance of ſuch potent Remedies, as the Knife and Needle, is on ſuch Occaſions neceſſarily required.

But by whatever means the *Varices* are cured, it ſeems highly neceſſary, in order to prevent the Return of ſo troubleſome a Diſorder, to uſe the proper Cautions of avoiding too groſs and plentiful Feeding, and to drink ſmaller Liquors; ſuch as Water, Water-gruel, Tea, Coffee, or Infuſions of other proper Vegetables. The Body, alſo, is very frequently to be exerciſed; the Feet are every Day to be well rubbed; and Phlebotomy is to be adminiſtered at leaſt twice in the Year, that is, in Spring and Autumn. The ſame Precautions are to be obſerved

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ſerved by thoſe who are but newly or ſlightly affected, and are willing to avoid greater Inconveniencies, not to be removed but by the Knife and Fire. *Muys* has a ſingular Inſtance of a Varix, combined with Ulcers, which he opened once every Year, and diſcharged a Pound of Blood; by which Means the Eruption of the Ulcers was prevented. See his *Chirurg. Rational. Dec.* 1. *Obſ.* 6. *Heiſteri Chirurg.*

VANUS. A Pimple on the Face. See FURUNCULUS.

VAS. A Veſſel either for mechanical, chymical, culinary, or any other Uſes. In Anatomy, all the Parts which convey a Fluid are called *Veſſels*, as the Veins, Arteries, and Lymphatics.

VASTUS EXTERNUS.

This is a very large fleſhy Muſcle, almoſt as long as the Os Femoris, broad at the Extremities, and thick in the Middle, lying on the Outſide of the Thigh.

Its upper Inſertion being ſomething tendinous, is in the poſterior, or convex rough Surface, of the great *Trochanter*: It is, alſo, fixed by a fleſhy Inſertion along the Outſide of the Os Femoris, for above two Thirds of its Length downward, in the correſponding Part of the *Linea Aſpera*, and in the neighbouring Portion of the *Faſcia Lata*.

From all this Extent, the fleſhy Fibres running downward, and a little obliquely forward toward the *Rectus Anterior*, terminate inſenſibly in a kind of ſhort Aponeuroſis, which is fixed in all the neareſt Edge of the Tendon of the *Rectus*, in the Side of the Patella, in the Edge of the Ligament of that Bone, and in the neighbouring lateral Part of the Head of the Tibia.

The Body or Belly of this Muſcle grows bigger gradually, from its upper Extremity to the Middle; and from thence diminiſhes again by Degrees. Its loweſt Fibres run in a little behind the *Rectus*, and are inſerted there.

VASTUS INTERNUS.

This Muſcle is very like the former, and ſituated in the ſame manner, on the Inſide of the Os Femoris.

It is fixed above by a ſhort flat Tendon, in the anterior rough Surface of the great *Trochanter*, and, by fleſhy Fibres, in that oblique Line which terminates the Baſis of the Collum Femoris anteriorly, on the Foreſide of the Inſertions of the *Pſoas* and *Iliacus*; in the whole Inſide of the *Os Femoris*; and in the *Linea Aſpera* on one Side of the Inſertions of the three *Tricipites*, almoſt down to the internal Condyle.

From all this Extent the Fibres run downward, and a little obliquely forward; and the Body of the Muſcle increaſes, in the ſame manner as the *Vaſtus Externus*. It terminates below in an Aponeuroſis, which is fixed in the Edge of the Tendon of the *Rectus Anterior*, in the Side of the Patella, and of its tendinous Ligament; and in the Side of the Head, or upper Extremity of the Tibia.

The two Vaſti and Crureus ought to be looked upon as a true Triceps; the Uſes of which, in relation to the Bones, are only to extend the Tibia on the Os Femoris, and the Os Femoris on the Tibia. The Extenſion of the Tibia on the Os Femoris happens, principally, when we ſit or lie, and that of the Os Femoris on the Tibia, when we ſtand or walk. All the three Muſcles move the Patella uniformly, in the Direction of the Os Femoris, on the Pulley at the lower Extremity of that Bone. The external or broad Portion of this Pulley, and of the Patella, anſwers to this Direction, and ſeems to be more expoſed to the Action of theſe Muſcles, than the internal and narrow Portion, on which the neceſſary Obliquity of that Pulley depends.

The Inſertion of both the Vaſti immediately in the Head of the Tibia, prevents the Patella from being luxated laterally on ſome Occaſions, in which the Muſcles may act with more Force on one Side than on the other, or remain without Action, in which Caſe the Patella is looſe and floating.

To be convinced of this Inaction, and of the Moveableneſs of the Patella at the ſame time, let us either in Sitting or Standing, with the Leg extended, reſt the Leg only upon the Backſide of the Heel, ſo as that the whole lower Extremity may be ſupported on the Heel, and on the Head of the Os Femoris, the Knee, and the Body of the Os Femoris, reſting on nothing, and the Extenſion being made only by the Weight of the Bones, without any Aſſiſtance from the Muſcles. If in this Situation we lay the Thumb on the Baſis of the Patella, and the fore Finger on the Apex, and preſs theſe two Parts alternately, the Patella will be perceived to be raiſed and depreſſed.

In the Deſcription of theſe Muſcles, I forgot an Obſervation which I have made on the Inſertion of ſeveral Fibres immediately in the Capſular Ligament of the Joint of the Knee. I have ſeen theſe Fibres run down, as if they came principally from the Crureus; and their Inſertion in the Ligament was oblique, and made by degrees.

By the Inſertion of theſe Muſcles in the Patella, their Line of Direction is removed to a greater Diſtance from the Centre or Axis of Motion of the Joint, which facilitates their Action, and defends their common Tendon from Compreſſion and Contuſions. *Winſlow.*

VASUM, in *Scribonius Largus*, is a Veſſel.

VATICANÆ PILULÆ. The Name of ſome purging Pills, deſcribed in the Old *London* Diſpenſatory, thus:

Take of Calamus Aromaticus, Aniſe, Maſtich, Ginger, Cinnamon, Zedoary, the leſſer Cardamoms, Mace, Nutmegs, Cloves, Saffron, Cubebs, Aloes-wood, Turbith, Manna, Agaric, Sena-leaves, Caſſia-wood, and all the Species of Myrobalans, each one Scruple; of the Leaves of Scordium, and Carduus Benedictus, each half a Dram; and of the beſt Rhubarb, one Ounce, two Scruples: Reduce to a fine Powder: To which add of the beſt Aloes, two Ounces, four Scruples; and of the Solutive Syrups of Roſes, and Violets, each a ſufficient Quantity: Make into a Maſs of Pills, according to Art.

VAYNILLAS. The ſame as VANILIA.

UCAUNA. A Sort of Cray-fiſh of an olive Colour, mentioned by *Lemery*, in his Treatiſe on Drugs, which, he ſays, is pectoral and aperient.

VEEL-GUTTA is, according to *Blancard*, a Name for the OREOSELINUM.

VEGETATIO. Vegetation. See BOTANY.

VEHICULUM. A Vehicle, in Pharmacy, is any Liquor in which a Medicine is given to a Patient, in order to render the Exhibition more grateful and commodious.

VELONÆ. Certain Fiſhes mentioned by *Oribaſius*, *Collect. Medic. Lib.* 2. *Cap.* 58. whoſe Beaks, he ſays, are horny, and that they afford a very bad Juice.

VENÆ. The Veins.

The Veins are only a Continuation of the extreme Capillary Arteries, reflected back again towards the Heart, and uniting their Chanels as they approach it, till at laſt they all form three large Veins; the *Cava Deſcendens*, which brings the Blood back from all the Parts above the Heart; the *Cava Aſcendens*, which brings the Blood from all the Parts below the Heart; and the *Porta*, which carries the Blood to the Liver.

The Coats of the Veins are the ſame with thoſe of the Arteries, only the muſcular Coat is as thin in all the Veins, as it is in the Capillary Arteries; the Preſſure of the Blood againſt the Sides of the Veins being leſs than that againſt the Sides of the Arteries.

In the Veins there is no Pulſe, becauſe the Blood is thrown into them with a continued Stream; and becauſe it moves from a narrow Channel to a wider.

The Capillary Veins unite with one another, as has been ſaid of the Capillary Arteries.

In all the Veins which are prependicular to the Horizon, excepting thoſe of the Uterus, and of the *Porta*, there are ſmall Membranes or Valves; ſometimes there is only one; ſometimes there are two, and ſometimes three placed together, like ſo many half Thimbles ſtuck to the Sides of the Veins, with their Mouths towards the Heart. In the Motion of the Blood towards the Heart, they are preſſed cloſe to the Sides of the Vein; but if Blood ſhould fall back, it muſt fill the Valves; and they, being diſtended, ſtop up the Channel, ſo that no Blood can repaſs them. *Keil's Anatomy.*

The Blood, diſtributed to all Parts of the Body by two Kinds of Arteries, the Aorta, and Pulmonary Artery, returns by three Kinds of Veins, called by Anatomiſts *Vena Cava*, *Vena Portæ*, and the *Pulmonary Vein*.

The *Vena Cava* carries back, to the Right Auricle of the Heart, the Blood conveyed by the Aorta to all the Parts of the Body, except what goes by the Coronary Arteries of the Heart: It receives all this Blood from the arterial Ramifications, in Part directly, and in Part indirectly.

The *Vena Portæ* receives the Blood carried to the floating Viſcera of the Abdomen, by the Cœliac Artery, and the two Meſenteric Arteries; and conveys it to the Hepatic Vein, and from thence to the *Vena Cava*.

The Pulmonary Vein conveys to the Pulmonary Sinus, or Left Auricle of the Heart, the Blood carried to the Lungs by the Pulmonary Artery.

To theſe three Veins two others might be added: Thoſe which belong particularly to the Heart, and to its Auricles, and the Sinuſes of the Dura Mater.

In deſcribing the general Courſe of the Veins, we may either begin by their Extremities in all the Parts of the Body, and end by the Trunks carried all the Way to the Heart, according to the Courſe of the Blood; or we may begin by the great Trunks, and end by the Ramifications, and Capillary Extremities, according to their ſeveral Diviſions and Subdiviſions.

This

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This last Method is most convenient, and makes it a very easy Matter to pursue the first, whenever we think it proper to do it; and, for these Reasons, I have chosen to follow it, in this Description.

We commonly talk of the *Vena Cava* in general, as if it were but one Vein at its Origin, or had but one common Trunk; whereas it goes out from the Right Auricle of the Heart, by two large separate Trunks, in a Direction almost perpendicularly opposite to each other, one running upward, called *Vena Cava superior*; the other downward, called *Vena Cava inferior*.

It may, however, be said, that these two Veins have a Sort of Continuity, or a small Portion of a common Trunk, fixed to the Edges of the Right Auricle, as if three Quarters of the Circumference of a large strait Tube were cut off, and the Edges of a small Bladder applied to the Edges of the Opening, thus made in the Tube.

The Right Auricle may, also, be looked upon as a muscular Trunk common to these two large Veins, and may be called the Sinus of the *Vena Cava*; but, in this respect, the Name of *Sinus Pulmonaris* agrees still better to the Left Auricle.

The superior *Vena Cava* is distributed, principally, to the Thorax, Head, and upper Extremities, and but very little to the Parts below the Diaphragm.

The inferior *Vena Cava* is distributed, principally, to the Abdomen and lower Extremities, and but very little to the Parts above the Diaphragm.

The Antients called the superior *Vena Cava*, *Ascendens*; and the inferior, *Descendens*; having regard only to the great Tubes, and to their Division into Trunks and Branches. Several Moderns have retained those Names, but in a contrary Signification, to accommodate them to the Motion of the Blood, which descends by the *Cava Superior*, and ascends by the *Cava Inferior*.

But to avoid the Mistakes that may happen in Reports made of Wounds, or other Diseases, and of what is observed in opening dead Bodies, and in other Cases of these Kinds, it is best to retain the Distinction of *Vena Cava superior* and *inferior*.

The Trunk of each of these two Veins sends off, much in the same manner with the Arteries, a certain Number of principal or capital Branches, which are afterwards ramified in different manners. Each Trunk terminates afterwards by a Bifurcation, or a Division into two subordinate Trunks, each of which gives off other principal Branches, ending in a great Number of small Trunks, Branches, and Ramifications.

They have, also, this common to them with the Arteries, that the greatest Part of the capital Branches are in Pairs; as well as the subordinate Trunks. The Ramifications of each subaltern Trunk, taken by itself, are in uneven Numbers; but they make even Numbers with those of the other like Trunk. The *Vena Azygos*, and some other small Veins, are Exceptions from this Rule.

Before I go on to the particular Description of each of these Veins, many of which have proper Names, I shall give a general Idea of their Distribution, and an Enumeration of their principal Ramifications. But I shall say nothing of the Coronary Veins of the Heart, because they are not immediately joined to any other Vein. I begin by the superior *Vena Cava*.

Vena Cava superior.

The superior *Vena Cava* runs up from the Right Auricle of the Heart, almost in a direct Course, for about two Fingers-breadth, lying within the Pericardium, in the Right Side of the Trunk of the Aorta, but a little more anteriorly.

As it goes out of the Pericardium, it is inclined a little to the Left Hand, and then runs up about an Inch, that is, as high as the Cartilage of the first true Rib, and a little higher than the Curvature of the Aorta. At this Place it terminates by a Bifurcation, or Division into two large Branches, or subordinate Trunks; one of which runs toward the Left Hand, the other towards the Right.

These two Branches are named *Subclaviæ*, as lying behind, and, in some measure, under, the *Claviculæ*, both in the same manner. They are of unequal Lengths, because the Trunk of the *Vena Cava* does not lie in the Middle of the Thorax, but toward the Right Side, where the Left Subclavian arises as well as the Right, and is, consequently, longest.

The Trunk of the superior Cava, from where it leaves the *Pericardium* to the Bifurcation, sends out anteriorly several small Branches, which sometimes arise separately, and sometimes by small common Trunks: These Branches are, the *Vena Mediastina*, *Pericardia*, *Diaphragmatica superior*, *Thymica*, *Mammaria Interna*, and *Trachealis*, the last of which go out sometimes behind the Bifurcation.

All these small Branches from the Trunk of the *Cava superior* are termed *Dextræ*; and their Fellows on the other Side, called *Sinistræ*, do not arise from the Trunk, because of its lateral Situation, but from the Left *Subclavia*.

Posteriorly, a little above the *Pericardium*, the Trunk of the superior *Cava* sends out a capital Branch, called *Vena Azygos*, or *Vena sine Pari*, which runs down on the Right Side of the Bodies of the Vertebræ Dorsi, almost to the Diaphragm; giving off the greatest Part of the *Venæ Intercostales*, and *Lumbares Superiores*.

The two *Subclaviæ* run laterally, or toward each Side, and terminate as they go out of the Thorax, between the first Rib and Clavicula, immediately before the anterior Insertion of the *Musculus Scalenus*.

The Right Subclavian, which is the shortest of the two, commonly sends out four capital Branches; the *Jugularis externa* and *interna*, the *Vertebralis*, and *Axillaris*, which last is rather a Continuation than a Branch of the *Subclavian*.

The Left Subclavian, being longer than the Right, gives off, first of all, the small Veins on the Left Side, answering those on the Right Side, that come from the Trunk of the superior Cava; as the *Mediastina*, *Pericardia*, *Diaphragmatica superior*, *Thymica*, *Mammaria Interna*, and *Trachealis*.

Next to these small Veins, called *Sinistræ*, it detaches another small Branch, called *Intercostalis Superior Sinistra*, and then four large Branches, like those on the Right Subclavian, as the *Jugularis Externa* and *Interna*, *Vertebralis*, and *Axillaris*, which are all termed *Sinistræ*.

The external Jugular Veins are distributed principally to the outer Parts of the Throat, Neck, and Head; and send a small Vein to the Arm, named *Cephalica*, which assists in forming a large one of the same Name.

The internal Jugular Veins go to the internal Parts of the Neck and Head, communicating with the Sinuses of the Dura Mater, and in several Places, with the external Jugular Veins.

The Vertebral Veins pass through the Holes in the transverse Apophyses of the Vertebræ of the Neck, sending Branches to the Neck and Occiput, they form the *Sinus Venales* of these Vertebræ, and communicate with the Sinuses of the *Dura Mater*.

The Axillary Veins are Continuations of the *Subclaviæ*, from where these leave the Thorax, to the Axillæ: They produce the *Mammariæ Internæ*, *Thoracicæ*, *Scapulares*, or *Humerales*, and a Branch to each Arm, which, together with that from the external *Jugularis*, forms the *Vena Cephalica*.

Afterwards the Axillary Vein terminates in the principal Vein of the Arm, called *Basilica*; which, together with the *Cephalica*, is distributed, by numerous Ramifications, to all the Parts of the Arm, fore Arm, and Hand.

Vena Cava inferior.

The Portion of the inferior *Vena Cava* contained in the *Pericardium* is very small, being scarcely the twelfth Part of an Inch on the fore Part, and not above a Quarter of an Inch on the back Part. From thence it immediately perforates the Diaphragm; to which it gives the *Venæ Diaphragmaticæ Inferiores*, or *Phrenicæ*.

It passes next behind the Liver, through the great Sinus of that Viscus, to which it furnishes several Branches, termed *Venæ Hepaticæ*.

In this Course it inclines a little toward the *Spina Dorsi* and *Aorta Inferior*, the Trunk and Ramifications of which it afterwards accompanies in the Abdomen, all the Way to the *Os Sacrum*; the *Arteria Cœliaca*, and the two *Mesentericæ*, only excepted.

Thus the inferior *Cava* sends out on each Side, in the same manner with the Aorta, the *Venæ Adiposæ Renales*, *Spermaticæ*, *Lumbares*, and *Sacræ*. Having reached to the *Os Sacrum*, it loses the Name of *Cava*; and, terminating by a Bifurcation, like that of the descending Aorta, it forms the two *Venæ Iliacæ*.

These Iliac Veins having given off the Hypogastricæ, with all their Ramifications, to the Viscera of the *Pelvis*, and to some other external and internal neighbouring Parts, go out of the Abdomen, under the *Ligamentum Fallopii*, and there take the Name of *Venæ Crurales*.

Each Crural Vein sends off numerous Ramifications to all the lower Extremities; besides the *Vena Saphena*, which goes out near the Origin of the *Cruralis*, and, running along this whole Extremity, detaches many Ramifications, all the Way to the Foot.

Vena Azygos and Venæ Intercostales.

The *Vena Azygos*, or *sine Pari*, is very considerable, and arises posteriorly from the superior *Cava*, a little above the *Pericardium*.

It is immediately afterwards bent backward over the Origin of the Right Lung, forming an Arch which surrounds the great Pulmonary Vessels on that Side, as the Arch of the Aorta does

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those of the Left Side; with this Difference only, that the Curvature of the *Azygos* is almost directly backward; whereas that of the Aorta is oblique. From thence it runs down on the Right Side of the *Vertebræ Dorsi*, on one Side of the Aorta, and before the Intercostal Arteries; and, getting behind the Diaphragm, it terminates by a very sensible Anastomosis; sometimes with the *Vena Renalis*, sometimes with a neighbouring Lumbar Vein, sometimes immediately with the Trunk of the *Cava Inferior*, and sometimes otherwise.

I have seen this Vein extremely large, resembling the Trunk of the inferior Cava, from the Diaphragm, to the Origin of the *Renales*, the true Cava being through all this Space very narrow, or of the Size of an ordinary *Azygos*.

The *Vena Azygos* sends out, first of all, two or three small Veins from the Top of the Arch, one of which goes to the Aspera Arteria; the others partly to the Aspera Arteria, and, partly, to the Bronchia, by the Name of *Venæ Bronchiales*, accompanying the Ramifications of the Bronchial Artery.

Afterwards the *Azygos* detaches from the Extremity of the Arch, a small Trunk common to two or three small Veins, called *Intercostales Superiores Dextræ*, which bring back the Blood from the first three Series of Intercostal Muscles, and from the neighbouring Part of the Pleura.

These Intercostal Veins send Branches through the Intercostal Muscles to the *Serratus Superior Posticus*, and to the *Serratus Major*, and afterwards they run along the Interstices between the Ribs, communicating with the *Venæ Mammaria*.

They, also, send small Branches backward to the Vertebral Muscles, and Canal of the Spine, where they communicate with the Venal Circles, or Sinuses, which bring back the Blood from the *Medulla Spinalis*.

As the *Azygos* runs down, it sends off the inferior Intercostal Veins on the Right Side, one going to each Series of Intercostal Muscles: These Veins run along the lower Edges of the Ribs, and perforate the Muscles by Branches, which go to the posterior and external Part of the Thorax.

They communicate with the *Venæ Thoracicæ*, and most commonly with the *Mammaria Interna*; and, lastly, more or less with each other, by perpendicular Branches, near the posterior Extremities of the Ribs.

The *Azygos* sends off, likewise, the Left Intercostal Veins, but seldom the whole Number; for the superior Veins come often from the Left Subclavian. The inferior Intercostal Veins, to the Number of six or seven, sometimes more, sometimes fewer, come often from the Trunk of the *Azygos*; and running between the Aorta and Vertebræ, to the Substance of which they give small capillary Twigs, they send off almost the same Ramifications with the Veins on the Right Side, and likewise some to the *Oesophagus*.

Sometimes these Intercostal Veins come from a small common Trunk, which goes out from that of the *Azygos*, and, passing between the Aorta and Vertebræ, is bent downward along the Left Side of the Vertebræ: In which Course it detaches the Intercostals laterally. This small Trunk is in some Subjects bifurcated upwards and downward, as it sends off the Intercostals; and, in others, there are two small common Trunks.

Lastly, There is sometimes an entire *Azygos* on the Left Side, which proceeding from the Arch of the ordinary *Azygos*, is afterwards distributed in the same manner as the other, on the Right Side: But this Disposition, likewise, varies very much.

The *Azygos*, having reached below the last Rib, sends off a large Branch, which, bending outward, perforates the Muscles of the Abdomen, is ramified between their different Planes, and communicates with the like Ramifications of the last, or last two Intercostal Veins.

Sometimes it sends off the *Vena Diaphragmatica Inferior*, and, also, gives downward to the first, or first two transverse Apophyses of the *Vertebræ Lumbares*, a Branch which forms the first *Venæ Lumbares Dextræ*.

These Communications between the last Intercostal, and first Lumbar Veins, are very irregular, being sometimes by a Series of opposite Angles, sometimes by Areolæ, and sometimes by a reticular Texture. Sometimes the Extremity of the *Vena Azygos* communicates either mediately, or immediately, with the *Vena Adiposa*, and even with the *Vena Spermatica*.

Venæ Pectorales Internæ.

The *Pectorales Internæ* are small Veins disposed in Pairs, towards the Right and Left Hand, behind the *Sternum*, and Parts near it, including the *Diaphragmaticæ Superiores*, or *Pericardio-diaphragmaticæ*, *Mediastinæ*, *Mammariæ Internæ*, *Thymicæ*, *Pericardiæ*, and *Gutturales*, or *Tracheales*.

All these small Veins are divided into Right and Left; and these are both distributed much in the same manner; but they differ in their Origin, because of the Inequality in the Bifurcation of the *Cava Superior*.

The Right *Vena Mediastina* goes out anteriorly from the Trunk of the superior Cava, a little above the Origin of the *Azygos*; the Left comes from the *Subclavia*.

The Right superior *Diaphragmatica*, or *Pericardia Diaphragmatica*, comes anteriorly from the Root of the Bifurcation near the *Mediastina*; and is distributed by several Branches to the upper, fore, and back Parts of the *Pericardium*, communicating with those of the Left *Diaphragmatica*, and accompanying the Nerve of the same Name. The Left superior *Diaphragmatica* comes from the Left *Subclavian*, a little below the Origin of the *Mammaria*.

The Right internal *Mammaria* arises anteriorly from the *Vena Cava*, a little below the Angle of the Bifurcation: It runs along the nearest internal or posterior Edge of the *Sternum*; and on the cartilaginous Extremities of the Right Ribs, together with the Artery of the same Name. Having reached near the Diaphragm, it sends it a Branch, which runs toward the tendinous Plane, and communicates with the common diaphragmatic Veins.

Afterwards this Mammary Vein gives small Branches to the *Mediastinum*; and others, between the Ribs, to the Integuments; of which those that pass between, and under, the Cartilages of the last true Ribs, run down on the inner or posterior Side of the *Musculi Recti Abdominis*, being ramified among their fleshy Fibres, and communicating, really, with the Epigastric Veins, by several small Twigs.

The Left internal *Mammaria* arises anteriorly from the Left *Subclavian*, opposite to the Cartilage, or anterior Extremity of the first true Rib.

The Right *Vena Thymica*, when it arises separately, goes out from the Bifurcation; and when it is wanting, the *Thymus*, from whence it takes its Name, is furnished by the *Gutturalis*, or some other neighbouring Vein: This Vein often reaches no lower than the inferior Part of the *Thymus*; and the Left Vein of the same Name comes from the Left Subclavian, almost opposite to the Sternum.

The Right *Pericardia* seems to go out rather from the Origin of the Right Subclavian, than from the Trunk of the superior Cava; but in this there are many Varieties. It goes to the upper Side of the Pericardium, and other neighbouring Parts. The Left Pericardia comes sometimes from the Left Subclavian, before the *Mammaria*; and sometimes from the *Mammaria*, or *Diaphragmatica Superior*, on the same Side.

The Right *Gutturalis*, or *Trachealis*, goes out from the upper Part of the Bifurcation, above the *Mammaria* of the same Side, sometimes more backward, and sometimes from the *Subclavia*: It is distributed to the *Glandulæ Thyroïdææ*, *Trachea Arteria*, *Musculi Sterno-hyoidæi*, *Thymus*, and *Glandulæ Bronchiales*: It communicates by lateral Branches, more or less contorted, with the internal Jugular Vein, and sometimes by another Branch, with a small Vein, which the internal Jugular sends to the *Glandula Thyroides*. The Left *Gutturalis* comes from the upper or posterior Part of the Left Subclavian, near its Origin.

The smallest internal Pectoral Veins do not always arise separately, but have sometimes a small common Trunk, especially on the Right Side; and, of all these small Veins, the *Mammaria Interna* is the most considerable.

Venae Subclaviae.

The Right Subclavian Vein is very short, and its Course very oblique; so that it appears to arise higher than the Left Vein: It sends off, first of all, four large Branches, the *Vertebralis*, which is the first and most posterior; the *Jugularis Interna* and *Externa*, and the *Axillaris*.

The Left *Subclavian* seems to ascend but very little, after the Bifurcation; because it runs farther, and more transversely, than the Right: And in this Course it covers the Origin of three large Arteries, which come from the Curvature of the Aorta: It sends off four large Branches, besides the small Pectoral Veins, and receives the *Ductus Thoracicus*.

It, also, gives off, before its principal Division, a small Trunk for the Left superior Intercostals, which are sometimes six in Number, and communicate with the inferior Intercostals, and with a Branch of the *Vena Azygos*. This small common Intercostal Trunk furnishes, also, the Left *Bronchialis*.

Each Subclavian Vein, near the Middle of the *Clavicula*, sends off a Branch, called *Cephalica*, which descends near the Surface of the Body, between the *Deltoides* and *Pectoralis Major*, and reaches the Arm.

Venae Jugulares Externae.

Each external Jugular Vein arises from the Subclavian, on the same Side; sometimes from the *Axillaris*, and sometimes from the Union of these two Veins. The Right and Left do not always arise in the same manner; for sometimes the Right comes from the Subclavian, and the Left from the internal Jugular,

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gular, on the ſame Side: They run up between the *Muſculus Cutaneus*, and *Sterno-maſtoidæus*, being covered by the former, and croſſing over the latter.

Sometimes they are double from their very Origins; and when they are ſingle, each of them divides afterwards into two, one anterior, and the other poſterior, or rather ſuperior. The anterior Vein goes to the Throat and Face, running up toward the Angle of the lower Jaw; and the poſterior goes to the Temples and Occiput.

Vena Jugularis Externa anterior.

The anterior external Jugular Vein is often a Branch of the *Jugularis Interna*; and ſometimes ariſes from the Communications of the two *Jugulares*, in ſuch a manner as that it cannot be ſaid to belong more to the one than to the other. Sometimes, but very rarely, it comes from the *Vena Axillaris*.

It runs up toward the lateral Part of the lower Jaw, between the Angle and the Chin, like a *Vena Maxillaris*; and ſends ſeveral Branches forwards, backwards, and inwards.

Poſteriorly it gives, 1. A large Branch on the Side of the upper Part of the Larynx, which communicates with the *Jugularis Interna*; and, likewiſe, with a large ſhort Branch of the poſterior external Jugular. 2. A ſmall Branch which has the ſame Communication, but which is not always to be found. 3. Another ſmall Branch, a little below the lower Jaw, which communicates with the poſterior external Jugular.

Anteriorly it ſends ſeveral Branches to the Muſcles of the *Larynx*, *Sterno-hyoidæi*, *Thyro-hyoidæi*, and to the Integuments; and below the *Larynx*, it ſends communicating Branches to the anterior external Jugular of the other Side.

A little higher, oppoſite to the *Cartilago Thyroides*, it gives off a tranſverſe Branch, which runs on the anterior and lower Part of the *Muſculi Sterno-maſtoidæi*; and communicates with the Jugular of the other Side, though not always by a Vein of the ſame Kind.

The ſuperior and inferior tranſverſe Branches communicate on each Side, by Branches more or leſs perpendicular; and ſend a ſmall Branch to the *Muſculus Quadratus* of the Chin, to the *Muſculus Cutaneus*, and Integuments.

It ſends another large Branch anteriorly towards the Symphyſis of the lower Jaw, which, after having ſupplied the Maxillary Glands, is diſtributed to the Digaſtric Muſcle, to the Chin and under Lip.

Interiorly at the ſame Place, it ſends out a large Branch, which furniſhes the *Glandulæ Sublinguales*, runs down toward the *Cornua* of the *Os Hyoides*, to communicate with ſome Branches of the *Jugularis Interna*, and ſends ſeveral Branches to the Tongue, called *Venæ Raninæ*: It gives off, alſo, a ſmall Branch, which running upon the *Muſculus Labiorum Triangularis*, to the Commiſſure of the Lips, is diſtributed to the neighbouring Parts.

The ſame Branch which gives out the *Venæ Raninæ*, detaches another to the lateral Parts of the *Septum Palati*, which is diſtributed to the *Amygdalæ*, and to the Uvula; and ſends Branches forward to the Membrane, which lines the Arch of the Palate. Another Branch goes out from it to the *Pterygoidæus Internus*, *Periſtaphylini*, and *Cephalo-pharyngæi*.

Afterwards the Trunk of the anterior external Jugular Vein runs up on the *Muſculus Triangularis*, where it receives the Name of *Vena Triangularis*, in a winding Courſe, from the Angle of the lower Jaw to the great or internal Angle of the Orbit, ſending Branches on each Side to the Muſcles and Integuments.

Theſe Branches communicate with each other, eſpecially one which paſſes under the *Zygoma*, behind the *Os Malæ*, to the inferior Orbitary or *Spheno-maxillary* Fiſſure; and another ſmall Branch, which runs along the inferior Portion of the orbitary Muſcle, to the ſmall or external Angle of the Eye, where it communicates with the Temporal and Frontal Ramifications.

It is here to be obſerved, that, under the Angle of the lower Jaw, there is a great Variety of Communications between the external and internal jugular Veins; and, alſo, a great Variety in the Diſtribution of theſe Veins.

Almoſt all the Ramifications, which, at this Place, go from the external jugular Vein, to be diſtributed on the upper Part of the Throat, and on the Face, in ſome Subjects, ariſe, in other Subjects, from the internal Jugular; and, ſometimes, one Part of them comes from the external Jugular, the reſt from the internal.

The Trunk of the *Vena Angularis*, having reached the Bones of the Noſe, ſends out a Branch through the lateral Cartilages of the Noſe, which is diſtributed to the *Nares*; and another, which runs down, in a winding Courſe, to the upper Lip.

At the great, or inner Angle of the Eye, the ſame Trunk ſends off ſeveral other Branches; the firſt of which goes to the Root of the Noſe, and communicating with its Fellow, from the other Side, gives ſeveral ſmall Veins to the Holes of the *Oſſa Naſi*.

The ſecond Branch runs up on the Forehead, by the Name of *Vena Frontalis*, antiently *Præparata*; and is diſtributed to each Side, communicating with its Fellow, when any ſuch Vein is found.

The third Branch enters the Orbit, in a winding Courſe, on one Side of the cartilaginous Pulley, and communicates with the Sinuſes of the *Dura Mater*, by the orbitary Sinus of the Eye.

The fourth Branch goes along the *Muſculus Superciliaris*, and the upper Part of the *Orbicularis*, to the ſmall, or external Angle of the Eye, to communicate with the *Vena Temporalis*, and with that Vein which runs along the lower Part of the orbicular Muſcle, with which it forms a kind of Circle.

Vena Jugularis externa posterior, sive superior.

The poſterior, or ſuperior external jugular Vein, runs up toward the parotid Gland, and lower anterior Part of the Eye, giving out ſeveral conſiderable Branches toward each Side.

At its Origin it ſends out, poſteriorly, a principal Branch, with its Ramifications, to the Muſcles which cover the *Scapula*, and Joint of the *Humerus*, commonly called *Vena Muſcularis*, and which might be named *Superhumeralis*.

A little higher, it gives off the *Vena Cervicalis*, which goes to the vertebral Muſcles of the Neck; this Vein communicates with the *Humeralis*, by ſeveral *Areolæ*, or venous Maſhes, and they are both ramified in different manners.

Theſe Ramifications and Communications are, in Part, covered by the *Muſculus Trapezius*, and communicate, alſo, with ſome Branches of the *Vena Occipitalis*, and with a Branch of the ſuperior intercoſtal Vein, which perforates the firſt intercoſtal Muſcle.

Near the cervical Vein, but a little more outward, it gives off, ſometimes, the ſmall *Vena Cephalica*, which runs down between the *Pectoralis major* and *Deltoides*, and unites with the *Vena Cephalica* of the Arm.

Backward it detaches the *Vena Occipitalis*, which is diſtributed on the *Occiput*, and, ſometimes, comes from the *Vena Vertebralis*, or *Axillaris*. It, alſo, ſends out a ſmall Vein, which enters the *Cranium* by the poſterior maſtoide Hole, and terminates in one of the lateral Sinuſes of the *Dura Mater*. This Branch comes, ſometimes, from another Vein.

Having reached as far as the parotid Gland, it forms Communications with the anterior external Jugular, under the Angle of the lower Jaw, and then paſſes through the parotid Gland, between that Angle and the Condyle, giving off a large Branch which communicates with another Branch common to the internal and anterior external Jugulars.

Sometimes there are ſeveral Branches, which, having run a very little Way, unite together, and repreſent the ſhort large Branch, forming *Areolæ*, or Maſhes, through which the Nerves paſs.

Afterwards, it paſſes before the Ear, taking the Name of *Vena Temporalis*, which is diſtributed to the Temples, and lateral Parts of the Head, towards the *Occiput* and Forehead. Sometimes the temporal Vein has two Origins, whereof one is from the *Jugularis interna*.

The temporal Vein of one Side communicates above, with its Fellow on the other Side; before, with the *Vena Frontalis*; and behind, with the *Vena Occipitalis*. Oppoſite to the Ear it gives out a large Branch, one Ramification of which runs under the lower Edge of the *Zygoma*; and, then returning, communicates with another Ramification from the ſame Jugular, a little below the Condyle of the lower Jaw, forming a kind of Iſland irregularly round.

Behind this Condyle, it gives Branches to the Temporal Muſcle, to the neighbouring Parts of the upper Jaw, and to the Inſide of the lower Jaw, almoſt in the ſame manner as is done by the Arteries.

Only one of theſe Branches runs from without inward, between the Condyloide and Coronoide Apophyſes, to be diſtributed to the *Muſculus Temporalis* and *Pterygoidæi*, ſending off a Ramification to the Maſſeter, in its Paſſage.

Vena Jugularis interna.

The internal Jugular Vein is the largeſt of all thoſe that go to the Head, though not ſo large as it ſeems to be when injected.

It runs up behind the *Sterno-maſtoidæus*, and *Omo-hyoidæus*, which it croſſes, along the Sides of the *Vertebræ* of the Neck, by the Edge of the *Longus Colli*, to the *Foſſula* in the *Foramen Lacerum* of the *Baſis Cranii*.

The firſt Branches which it ſends off, are ſmall, and go to the *Thyroide* Glands: About two Fingers-breadth, higher up, it detaches a middle-ſized Branch, which runs laterally toward the *Larynx*, and may be named *Vena Gutturalis*.

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This guttural Vein divides, principally, into three Branches, the loweſt of which goes to the *Thyroide* Gland, and neighbouring Muſcles; the middle Branch to the *Larynx*, and *Muſculi Thyroidæi*, and the third runs upward, to the great Communication between the two *Jugulares*. In this, however, there is ſome Variety, and I have ſeen the Left guttural Vein go out from the *Axillaris*.

About the ſame Diſtance upward, almoſt oppoſite to the *Os Hyoides*, the internal Jugular gives another Branch, which ſends Ramifications to the Muſcles belonging to that Bone, and others, which communicate with the foregoing Branch: This other Branch runs upward toward the Parotid Gland, and Angle of the lower Jaw, where it ſends communicating Branches forward and backward, to the two external Jugulars.

It is at this Place, alſo, that the internal Jugular ſometimes produces the *Vena Maxillaris Interna*, and all its Ramifications.

The internal Jugular ſends another Branch backward, which is diſtributed to the *Occiput*, where it communicates with a Branch of the *Vertebralis*, and through the poſterior *Maſtoide* Hole, with the lateral *Sinus* of the *Dura Mater*: This Communication is ſometimes by an *Anaſtomoſis*, with a Branch of the external Jugular, or of the *Cervicalis*, which goes thither.

Afterwards it reaches the *Foramen Lacerum* of the *Baſis Cranii*, bending a little, and ſending off ſmall Twigs to the *Pharynx*, and neighbouring Muſcles.

Vena Vertebralis.

The vertebral Vein ariſes poſteriorly from the *Subclavia*, or *Axillaris*, ſometimes by two Stems, ſometimes by one, which ſoon afterwards divides into two.

The firſt and principal Stem gives out a Branch called *Vena Cervicalis*, which is diſtributed to the neighbouring Muſcles, and afterwards runs up through the Holes of the tranſverſe Apophyſes of the *Vertebræ Colli*. This cervical Branch comes ſometimes from the *Axillaris*.

The other Stem of the vertebral Vein runs up on the Side of the *Vertebræ*, and, having reached the fourth, or, ſometimes, higher, it runs in between the tranſverſe Apophyſes of that *Vertebra*, and of the fifth, to join the firſt or principal Stem.

Thus the vertebral Vein accompanies the Artery of the ſame Name, ſometimes in one Trunk, ſometimes in ſeveral Stems, through all the Holes of the tranſverſe Apophyſes of the *Vertebræ Colli*, all the way to the great *Foramen Occipitale*, communicating with the occipital Veins, and ſmall occipital Sinuſes of the *Dura Mater*.

In its Paſſage it gives off one Branch, which enters by the poſterior *condyloide* Hole of the *Os Occipitis*, and communicates with the lateral *Sinus* of the *Dura Mater*; but it is not always to be met with.

As theſe Veins run through the Holes in the tranſverſe Apophyſes, they ſend Branches forward to the anterior Muſcles of the Neck, and to the ſmall interior Muſcles of the Head.

Other Branches go, alſo, outward, and backward, to the *Muſculi Tranſverſales*, and *Vertebrales Colli*, and inward to the great Canal of the ſpinal Marrow, where they form Sinuſes, which communicate with thoſe on the other Side.

Theſe vertebral Sinuſes are pretty numerous, and placed one above another, all the way to the *Occiput*; the lower communicate with the upper, and at the great Foramen of the *Os Occipitis* there is a Communication between them and the occipital Sinuſes of the *Dura Mater*.

Vena Axillaris.

The Subclavian Vein, having ſent off the Branches already deſcribed, goes out of the Thorax, and paſſes before the anterior Portion of the *Muſculus Scalenus*, and between the firſt Rib and the Clavicle, to the *Axilla*: Through this Courſe it takes the Name of *Vena Axillaris*, and gives off ſeveral Branches, the principal of which are, the *Venæ Muſculares*, *Thoracicæ*, and *Vena Cephalica*, which is ſometimes double.

The firſt Veins which it ſends off, are the *Muſculares*, diſtributed to the middle Portion of the *Muſculus Trapezius*, to the *Angularis*, *Infraſpinatus* and *Subſcapularis*; and as ſome of theſe Branches go to the Shoulder exteriorly, others interiorly, the *Venæ Scapulares* are diſtinguiſhed into external and internal.

A little before the *Axillaris* reaches the *Axilla*, it ſends out the *Venæ Thoracicæ*, one of which is ſuperior, called, alſo, *Mammaria Externa*, and the other inferior: It likewiſe ſends Ramifications to the *Muſculus Subſcapularis*, *Teres major*, *Teres minor*, *Supraſpinatus*, *Latiſſimus Dorſi*, *Serratus major*, *Pectoralis minor*, *Pectoralis major*, and to the Glands of the *Axilla*; and, ſometimes, gives a communicating Branch to the *Vena Baſilica*.

The *Axillaris*, having reached the Side of the Head of the *Os Humeri*, produces a very conſiderable Branch, named *Vena Cephalica*; and afterwards runs along the Arm, by the Name of *Vena Baſilica*, which, however, appears, ſometimes, to be rather a Branch, than a Continuation, of the Trunk of the *Axillaris*; in which Caſe, the *Cephalica* and *Baſilica* might be look'd upon as two principal Branches of the axillary Vein.

Vena Cephalica.

The cephalic Vein, which is a Branch of the *Axillaris*, at a ſmall Diſtance from its Origin, joins the ſmall *Cephalica*, which runs down from the *Subclavia*, or *Jugularis externa*, having till then, run near the Surface of the Body between the *Deltoides* and *Pectoralis major*, and, ſometimes, theſe two Veins communicate before their Union.

The great *Cephalica* runs down between the Tendons of the laſt-mentioned Muſcles, and along the outer Edge of the external Portion of the *Biceps*, communicating ſeveral times with the *Vena Baſilica*, and ſending ſmall Ramifications, on each Side, to the neighbouring Muſcles, Fat, and Skin. Some Branches go out from its upper Part, which, lower down, unite again with the Trunk.

A little below the external Condyle of the *Os Humeri* it detaches a Branch backward, which runs up between the *Muſculus Brachialis* and the upper Portion of the *Supinator Longus*; and afterwards bends back between the *Os Humeri* and *Anconæus Externus*, where it communicates with ſome Branches of the *Baſilica*.

Having reached very near the Fold of the Arm, it is divided into two principal Branches, one long, the other ſhort: The long Branch is named *Radialis Externa*, and the ſhort one may be called *Mediana Cephalica*, to diſtinguiſh it from another *Mediana*, which is a ſhort Branch of the *Baſilica*, and therefore ought to be called *Vena Mediana Baſilica*.

The external radial Vein runs along the *Radius* between the Muſcles and Integuments, giving off Branches toward both Sides, which communicate with other Branches of the ſame Vein, and with ſome from the *Baſilica*, forming *Areolæ*, much in the ſame manner as the *Saphena* does in the lower Extremity.

The *Mediana Cephalica* runs down obliquely toward the middle of the Fold of the Arm, under the Integuments, and over the Tendon of the Biceps, where it joins a ſhort Branch of the ſame Kind from the *Baſilica*, which I have already named *Mediana Baſilica*. Theſe two *Medianæ* unite in an Angle, the Apex of which is turned downward.

From this angular Union, or Anaſtomoſis, a conſiderable Branch goes out, which runs down on the fore Arm, uniting on one Side with the *Vena Cephalica*, and communicating, on the other, with the *Baſilica*, by ſeveral irregular *Areolæ*. The Name of *Mediana* is given to this large Branch, as well as to the two other ſhort ones, by the Union of which it is formed; but, that they may not be confounded, this large Branch may be termed *Mediana major*, or *media*, the Names already given to the other two being retained.

From this Union of the two lateral *Medianæ*, and, ſometimes, from the Origin of the *Mediana Media*, which is the true *Mediana* of *Riolanus*, a Branch goes out, which runs down on the Inſide of the fore Arm, oppoſite to the interoſſeous Ligament, and is called *Vena Cubiti Profunda*. It goes to the neighbouring Muſcles, and communicates with the other Veins of the fore Arms. The *Mediana Cephalica* ſometimes ſends down a long Branch, called *Radialis Interna*, which lies almoſt parallel to the *Radialis Externa*.

Afterwards, the *Cephalica*, having reached the Extremity of the *Radius*, is diſtributed, by numerous *Areolæ*, almoſt in the ſame Courſe with the radial Artery.

A particular Branch goes out from it, which runs more or leſs ſuperficially between the Thumb and *Metacarpus*, by the Name of *Cephalica Pollicis*. The *Areolæ* furniſh the interoſſeous Muſcles and Integuments, and communicate with a ſmall Branch from the *Baſilica*, called, by the Antients, *Salvatella*.

Vena Basilica.

The Antients termed the baſilic Vein of the Right Arm the Vein of the Liver, or *Vena Hepatica Brachii*; and that of the Left Arm the Vein of the Spleen, or *Vena Splenica Brachii*: It has ſometimes a double Origin, by a Branch of Communication with the Trunk of the *Axillaris*.

It ſends off, firſt of all, under the Head of the *Os Humeri*, a pretty large Branch, which paſſes almoſt tranſverſly round the Neck of that Bone, from within backward, and from behind outward, running up on the *Scapula*, where it is ramified on the *Deltoides*, and communicates with the *Venæ Scapulares externæ*. This Branch may be named *Vena Subhumeralis*, or *Articularis*, as the Artery which lies in the ſame Place, they both having much the ſame Courſe.

This articular Vein ſends down two principal Branches, one of which runs along the Inſide of the Bone, to which, and to the

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the *Periosteum*, it gives small Veins: The other turns forward, toward the middle of the Arm, between the Bone and the *Biceps*, and communicates with the *Cephalica*.

Below the Neck of the *Os Humeri*, near the Hollow of the *Axilla*, and behind the Tendon of the *Pectoralis major*, the *Basilica* sends out a considerable Branch, which runs down on the Side of the brachial Artery, and furnishes the neighbouring Muscles on both Sides. This Vein is named *Profunda Brachii*, or *Profunda superior*.

Immediately afterwards, the *Basilica* detaches two or three small Veins, which run down very closely joined to the brachial Artery, surrounding it, at different Distances, by small Twigs, which communicate with each other: These Veins might be named *Venæ Satellites Arteriæ Brachiales*.

These small Veins, which often arise from the *Profunda Superior*, communicate with the *Basilica* and *Cephalica*; and, having reached the Fold of the Arm, they divide like the Artery; and the same Divisions are continued along the whole fore Arm, through all which Space they accompany and surround the arterial Branches, in the manner already said.

Afterwards the *Basilica* continues its Course along the Inside of the *Os Humeri*, between the Muscles and Integuments, forming many Communications with the *Vena Profunda*, *Satellites*, and *Cephalica*, and supplying the Muscles and Integuments.

Having reached the inner Condyle, and having sent off obliquely, in the Fold of the Arm, the *Mediana Basilica*, it runs along the *Ulna*, between the Integuments and Muscles, a little toward the Outside, by the Name of *Cubitalis Externa*, still communicating with the *Profunda*, *Satellites*, and *Cephalica*.

Having detached the *Mediana Basilica*, it sends out another Branch, which runs down along the Inside of the fore Arm near the *Ulna*, and communicates with the *Mediana major*. This Branch may be named *Cubitalis Interna*.

The *Basilica*, having, at length, reached the Extremity of the *Ulna*, sends several Branches to the convex Side of the *Carpus*; one of which, named *Salvatella*, goes to that Side of the little Finger next the Ring Finger, having first communicated with the *Cephalica*, by means of the venal *Areolæ*, conspicuous on the Back of the Hand: In the other Fingers this Vein follows nearly the same Course with the Artery.

In general, the external or superficial Veins of the fore Arm are larger than the internal, but they are accompanied only by small Arteries; whereas the deep Veins accompany large Arteries.

Vena Cava Inferior.

The inferior *Vena Cava*, having run down about a quarter of an Inch from the Right Auricle of the Heart, within the *Pericardium*, as has been already said, pierces that Membrane, and the tendinous Portion of the Diaphragm, which adhere very closely to each other.

At this Place it gives off the *Venæ Diaphragmaticæ*, or *Phrenicæ*, which are distributed to the Diaphragm, and appear principally on its lower Side, one toward the Right Hand, and one toward the Left: The right Vein is more backward, and lower, than the left; the left is distributed partly to the *Pericardium*, and partly to the Diaphragm; and sometimes they send Ramifications to the *Capsulæ Renales*, much in the same manner as the *Arteriæ Phrenicæ*.

The inferior *Cava*, having perforated the Diaphragm, passes through the posterior Part of the great Fissure of the Liver, penetrating a little into the Substance of that *Viscus*, between the great Lobe and the *Lobulus Spigelii*, being, however, covered but very little, on the back Side, by the Substance of the Liver, till it reaches the *Lobulus*.

In its Passage it sends off, commonly, three large Branches, called *Venæ Hepaticæ*, which are ramified in the Liver. Sometimes there are only two, and sometimes four.

Besides these large Branches, it sends out some other small ones, either before, or immediately after, it goes out of the Liver; which, according to some Anatomists, answer to the Branches of the hepatic Artery, as the large Branches do to those of the *Venæ Portæ*.

In the *Fœtus*, as the *Vena Cava* passes by the Liver, it gives off the *Ductus Venosus*, which communicates with the *Sinus* of the *Vena Porta*, and, in Adults, is changed to a flat Ligament.

After its Passage through the Liver, the *Vena Cava* turns from before backward, and from right to left, toward the *Spina Dorsi*, placing itself on the right Side of the *Aorta*, which it accompanies from thence downward.

Having got as low as the *Arteriæ Renales*, it gives off the Veins of the same Name, termed, formerly, *Venæ Emulgentes*, and which are the largest of all the Veins that go from the *Cava Inferiar*, from the Liver to the Bifurcation.

The right renal Vein is the shortest, and runs down a little obliquely, because of the Situation of the Kidney: The left Vein, which is the longest, crosses on the fore Side of the Trunk of the *Aorta*, immediately above the superior mesenteric Artery; and both Veins accompany the renal Arteries.

They send up the *Venæ Capsulares*, which go to the *Glandulæ Renales*; and downward, the *Venæ Adiposæ*, which go to the pinguious Covering of the Kidneys; and, ordinarily, the left renal Vein furnishes the left spermatic Vein: Afterward, they run to the *Sinus*, or Cavity of the Kidneys, in the Substance of which they are distributed, by numerous Ramifications.

A little below the renal Veins, the Trunk of the *Cava* sends out anteriorly, toward the right Side, the right *Vena Spermatica*. The left spermatic Vein comes, commonly, though not always, from the left *Renalis*; both Veins accompany the spermatic Arteries to the Parts to be mentioned hereafter.

In their Passage they send several small Branches, on each Side, to the *Peritonæum* and *Mesentery*; where they seem to be joined, by *Anastomoses*, with the *Venæ Mesaraicæ*, and, consequently, with the *Venæ Portæ*.

They sometimes send a considerable Branch over the iliac Muscle, which, afterwards, dividing into two, one Branch runs up to the *Membrana Adiposa* of the Kidneys, the other runs down on the last-mentioned Muscle.

About the same Height with the spermatic Vein, the inferior *Cava* sends off posteriorly, in some Subjects, a Branch which runs upward, and communicates with the *Vena Azygos*. Sometimes this Branch goes out from one or other of the *Renales*, and appears to be a true Continuation of the Extremity of the *Azygos*.

The *Cava* sends, also, off posteriorly, the *Venæ Lumbares*, which commonly arise in Pairs, in the same manner as the Arteries of the same Name go out from the *Aorta*. These may be divided into superior and inferior Veins.

Their Origins vary in different manners: Sometimes the *Cava* gives off a Branch to each Side below the first *Vertebra* of the Loins, which, like a common Trunk, furnishes the lumbar Veins: This Branch communicates with the *Azygos*.

Sometimes a considerable Branch goes out from the lower Extremity of the *Cava*, near the Bifurcation, principally on the right Side; which, afterwards, running up between the Bodies and transverse *Apophyses* of the *Vertebræ*, detaches the *Venæ Lumbares*, and communicates with the *Azygos*.

Sometimes a like Branch comes from the Beginning of the left *Vena Iliaca*, and, running upon that Side in the same manner, produces the *Lumbares*. This Branch, also, communicates with the *Azygos*, and with the superior or descending *Ramus Lumbaris*.

The *Venæ Lumbares*, on one Side, communicate, by transverse Branches, with those of the other Side, and, also, with each other, by Branches more or less longitudinal. The first and second often go from the *Azygos*, and thereby they communicate with the intercostal Veins.

The lumbar Veins send small Capillaries, in their Passage, to the Substance of the Bodies of the *Vertebræ*; and they are distributed to the Muscles of the Abdomen, *Quadratus Lumborum*, *Psoas*, and *Iliacus*. They send Branches, also, to the neighbouring vertebral Muscles, and to the Canal of the Spine; and communicate with the venous Sinuses, in the same manner as the Intercostals.

The inferior *Cava*, having reached as low as the last *Vertebra* of the Loins, and near the Bifurcation of the *Aorta*, runs in behind the right iliac Artery, and there is divided into two subaltern Trunks, called the right and left iliac Veins.

The Extremity of the Trunk of the *Vena Cava* passes, in some Subjects, behind the Origin of the right iliac Artery; in others, it is the left iliac Vein which passes there, and, consequently, crosses the right iliac Artery: Afterward, the left iliac Vein accompanies the inside of the left Artery, till it goes out of the Abdomen: Therefore the iliac Veins lie on the Insides of the Arteries at this Place.

From this Bifurcation of the *Vena Cava*, and, often, from the Origin of the left *Iliaca*, the *Vena Sacra* goes out, and accompanies the Artery of the same Name in its Distribution to the *Os Sacrum*, to the Nerves which lie there, and to the Membranes which cover both Sides of that Bone.

Venæ Iliacæ.

Each original iliac Vein is divided, on the Side of the *Os Sacrum*, much after the same manner as the Arteries, into two large Trunks, or secondary iliac Veins: This second Bifurcation is about a Finger's-breadth below that of the iliac Arteries.

One of these Trunks is named *Vena Iliaca Externa*, or anterior; the other *Interna*, or posterior. The external Vein is, also, named, simply, *Iliaca*; and the internal, *Hypogastrica*. The external Vein seems to be the true Continuation of the

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Trunk, and the *Hypogaſtrica* only a Branch. I here ſpeak of adult Bodies; becauſe, in the *Fœtus*, there is a conſiderable Variation.

Theſe Veins follow nearly the Courſe and Diſtribution of the iliac Arteries, except that the hypogaſtric Vein does not ſend off the *Vena Umbilicalis*. The external iliac Veins lie more or leſs on the inſide of the Arteries, in the manner already ſaid; but the hypogaſtric Veins, in the Bottom of the *Pelvis*, lie almoſt behind the Arteries, on the ſame Side.

From the common Trunk of the iliac Veins, and, ſometimes, from the Origin of the *Iliaca Externa*, a particular Branch goes out, which is diſtributed to the *Muſculus Pſoas*, *Iliacus*, and *Quadratus Lumborum*; and, afterwards, ſends a Branch on the fore Side of the laſt tranſverſe *Apophyſis* of the Loins, to communicate with the laſt lumbar Vein.

The external Iliac, a little before it leaves the Abdomen, near the *Ligamentum Fallopii*, lying upon the *Pſoas* and iliac Muſcles, gives off almoſt the ſame Branches with the Artery of the ſame Name, and follows the ſame Courſe: The principal Branches are theſe:

A little before it goes out of the Abdomen, it ſends off, from the Outſide, a ſmall Branch, which runs up along the *Criſta* of the *Os Ilium*, and gives Branches, on each Side, to the lateral and poſterior lower Portions of the *Muſculi Abdominis*, and to the *Muſculus Iliacus*.

From the inſide, before it leaves the Abdomen, it ſends off the *Vena Epigaſtrica*, which, having furniſhed ſome ſmall Ramifications to the neighbouring conglobated Glands, runs up along the inſide of the *Muſculi Recti*, on which it is ramified both ways; as, alſo, on the broad Muſcles of the Abdomen, by other ſmall Branches, which penetrate, from within, outwards.

Afterwards, the *Vena Epigaſtrica* runs upward, and joins the Ramifications of the *Mammaria*, by an equal Number, accompanying the epigaſtric Artery; from the inſide of the epigaſtric Vein a Branch is, ſometimes, detached to the *Muſculus Obturator Internus*, where it joins another Branch, named *Vena Obturatrix*.

Before the iliac Vein gets from under the *Ligamentum Fallopii*, it ſends ſeveral ſmall Ramifications to the neighbouring lymphatic Glands; and, immediately afterwards, loſing the Name of *Iliaca*, it takes that of the *Cruralis*.

Vena Hypogastrica.

The hypogaſtric, or internal iliac Vein, runs behind the Artery of the ſame Name, making the ſame kind of Arch, from which the following Branches go out.

From the poſterior, or convex Part of the Arch, it gives a Branch to the ſuperior lateral Part of the *Os Sacrum*, which is diſtributed to the *Muſculus Sacer*, or *Tranſverſo-ſpinalis Lumborum*, and other Muſcles thereabouts, and to the Cavity of the Bone, which it enters through the firſt great Hole.

A little lower, on the ſame Side, it ſends out another, which is diſtributed much in the ſame manner with the former, and enters the ſecond Hole.

From the external lateral Part of the ſame Arch, a little anteriorly, it ſends out a large Branch, which runs behind the great ſciatic *Sinus*, and is diſtributed to the *Muſculi Glutæi*, *Pyriformis*, and *Gemelli*.

Lower down, the ſame lateral Part of the hypogaſtric Vein gives out another large Branch, which, having run a little way, detaches ſeveral Ramifications; and, afterward, reaching the *Foramen Ovale* of the *Os Innominatum*, perforates the obturator Muſcles, communicates with the crural Vein, and is diſtributed to the *Muſculus Pectineus*, *Triceps*, and neighbouring Parts. This Vein is termed *Obturatrix*, from its paſſing through the Muſcles of that Name.

Among the Branches ſent off by the *Vena Obturatrix*, before it perforates the Muſcles, one is ſituated exteriorly, which runs toward the ſciatic *Sinus* to the *Muſculus Iliacus*, the ſuperior Part of the *Obturator Internus*, and to the *Os Ilium*, near its Symphyſis with the *Os Iſchium*.

Interiorly, the ſame obturator Vein ſends off another Branch, which is diſtributed to the Ureters, Bladder, and internal Parts of Generation in both Sexes. It communicates with the ſpermatic Veins, and is more conſiderable in Women than in Men.

Laſtly, The hypogaſtric Vein runs backward, and goes out of the *Pelvis*, above the Ligament which lies between the inferior lateral Part of the *Os Sacrum*, and Spine of the *Iſchium*; and, as it goes out, it is ramified, principally, upward and downward.

It ſends a large Branch upward, to the lower Part of the *Os Sacrum*, and two, or more, downward; which, running behind the ſame Ligament, are diſtributed to the Buttocks, *Anus*, neighbouring Portion of the *Muſculus Pectineus*, and to the external Parts of Generation, nearly in the ſame manner with the Artery which accompanies them.

The Veins that go to the *Anus*, are termed *Hæmorrhoidales Externæ*; and they that go to the Parts of Generation, *Pudicæ Internæ*. The external *Hæmorrhoidales* communicate with the internal Veins of the ſame Name, which come from the ſmall *Vena Meſaraica*, one of the Branches of the *Vena Portæ*, as we ſhall ſee hereafter.

Vena Cruralis.

The crural Vein goes out under the *Ligamentum Fallopii*, on the inſide of the crural Artery, and immediately gives ſmall Branches to the inguinal Glands, the *Muſculus Pectineus*, and Parts of Generation: Theſe laſt are named *Pudicæ Externæ*, and evidently communicate with the internal Veins of the ſame Name.

About an Inch below, where it leaves the Abdomen, the crural Vein produces a large Branch, which runs down anteriorly between the Integuments and the *Sartorius*, following the Direction of that Muſcle, almoſt all the way to the inſide of the Thigh.

This Branch, having afterwards got beyond the Condyles of the *Os Femoris*, runs down between the Integuments and inner Angle of the *Tibia*, to the fore Part of the inner Ancle, and is diſtributed to the Foot: All this large Branch is named *Vena Saphena*, or *Saphena major*.

After the Origin of the *Saphena*, as the Trunk of the crural Vein runs down, it ſinks in between the Muſcles, and is diſtributed to all the inner or deep Parts of the lower Extremity, accompanying the crural Artery to the very Extremity of the Foot, being all along more conſiderable than the Artery, both for Capacity, and Ramifications, a Thing very common in the Veins.

As the *Saphena* is a Vein of very large Extent, I ſhall here deſcribe it all together, and afterwards return to the *Vena Cruralis*.

Vena Saphena.

The *Vena Saphena*, in its Paſſage from the Inguen to the Foot, is covered only by the Skin and Fat; immediately after its Riſe, it gives ſmall Veins to the inferior inguinal Glands; and then it gives out others more anteriorly, which, running under the Integuments, communicate with each other by numerous *Areolæ*, or Maſhes: Sometimes theſe Communications come all from the Ramifications of one Branch.

The *Saphena*, having run down on the Thigh, as low as the Middle of the *Sartorius*, ſends off to the ſame Side ſeveral Branches, which communicate with each other, and with the ſuperior Branches already mentioned; and, as they run down, they communicate again with the Trunk of the *Saphena*.

Theſe two Sorts of Communications furniſh a third collateral Kind; from which, alſo, particular Branches are detached, which communicate with each other at different Diſtances all the Way to the Knee.

Between theſe upper and lower Branches, the *Saphena* ſends backward a particular Branch, which, after being diſtributed to the Integuments which cover the *Gracilis internus* and *Triceps*, runs backward; and, a little below the Ham, runs in among the Muſcles ſituated there, and communicates with another Branch, which may be termed *Saphena minor*.

Afterwards the Trunk of the great *Saphena* runs down on the Inſide of the Tibia, lying always near the Skin; and, at the upper Part of that Bone, it ſends Branches forward, outward, and backward.

The anterior Branches go to the Integuments on the upper Part of the Leg; the poſterior, to thoſe which cover the *Gaſtrocnemii*, and communicate with the little *Saphena*; and the external Branches are, alſo, diſtributed to the Fat and Integuments; and, having reached as low as the Middle of the Tibia, it ſends a communicating Branch to the Trunk of the great *Saphena*.

From this Communication, a Branch goes out anteriorly, which runs along the Integuments of the Tibia all the Way to the outer Ancle, having in its Paſſage communicated again with the great *Saphena*.

As the *Saphena* runs down on the Inſide of the Tibia, it ſends out a Branch near the Middle of that Bone, which runs up behind the Tendons of the *Sartorius*, *Gracilis Internus*, and *Semi-nervoſus*, then between the Tibia and upper End of the *Soleus*, and is joined by an Anaſtomoſis with the Crural Vein.

It, alſo, detaches to the fore Part of the Tibia ſome Branches irregularly tranſverſe, which, having been diſtributed to the *Perioſteum* and Bone, communicate with other Branches already mentioned.

At the lower Part of the Tibia, the *Saphena* produces a conſiderable Branch, which runs obliquely forward over the Joint of the Tarſus toward the outer Ancle, ſending off ſeveral Ramifications, which communicate with each other, and with the Trunk of the *Saphena*.

Laſtly,

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Laſtly, the Extremity of this Trunk paſſes on the fore Side of the inner Ancle, and runs irregularly under the Skin, along the Interſtice between the firſt two metatarſal Bones toward the great Toe, where this Vein terminates.

Having got below the inner Ancle, it ſends a Branch outward and forward, which runs under, and, in ſome meaſure, accompanies the anterior Tibial Artery. Interiorly it ſends another Branch, almoſt from the ſame Place, which paſſes under the Foot, communicating with the external Tibial Vein by irregular Arches, from which Veins are ſent to the Toes.

Laſtly, before the *Saphena* terminates at the great Toe, it detaches a kind of tranſverſe Arch over the *Metatarſus*, which communicates by ſeveral Branches with that Arch which lies on the Joint of the Tarſus, and ſends others to the Toes. This Arch gives off, alſo, another Branch, which runs up behind the outer Ancle, and communicates with the *Vena Tibialis externa*.

Continuation of the Vena Cruralis.

The Crural Vein having ſent off the *Saphena*, and the ſmall Branches for the *Pectineus*, as has been ſaid, runs down on the Thigh behind the Crural Artery. Oppoſite to the little Trochanter, it produces two large ſhort Branches, or one which afterwards divides into two, whereof one is anterior, the other poſterior.

The anterior Branch runs more or leſs tranſverſly forward, to be diſtributed to the *Vaſtus Internus*, lower Part of the *Pectineus*, and of the ſecond *Triceps*, and to the other two Muſcles of the ſame Name, running in between them as it goes from one to the other.

The poſterior Branch, runs more or leſs tranſverſly backward, and furniſhes the *Glutæi*, *Vaſtus Externus*, and Beginning of the Biceps.

A little below theſe two Branches, about the upper Extremity of the *Vaſtus Internus*, the Crural Vein produces a Branch, which runs down on the Side of the Trunk, covering the Crural Artery, almoſt as low as the Ham, where it is again united to the Trunk by an Anaſtomoſis; and ſometimes it is continued ſeparate a little Way down on the Leg. It has the Name of *Vena Sciatica*, from the Sciatic Nerve which it accompanies.

On the Outſide of this Anaſtomoſis, the Crural Vein gives off a Branch, which runs backward between the Biceps and neighbouring Muſcles, and ſo downward on the back Side of the Leg a little exteriorly, and very near the Skin, all the Way to the outer Ancle. This Vein is termed *Saphena minor*, or *externa*.

Saphena minor.

The little *Saphena*, having got near the Integuments in its Courſe downward, gives out a Branch, which runs backward, and communicates with the great *Saphena* about the Middle of the back Side of the Thigh.

Immediately above and below the Ham, this Vein ſends out other Branches, which, alſo, communicate with the *Saphena major*; and, having run down about one third Part of the back Side of the Tibia, it ſends off another Branch, which is afterwards reunited to the Trunk.

About the Beginning of the *Tendo Achillis*, the little *Saphena* runs outward in the Integuments, toward the outer Ancles, where it terminates in cutaneous Ramifications ſent to every Side.

Vena Poplitea.

The Crural Vein having detached the little *Saphena*, runs down between the *Biceps* and the other Flexors of the Leg, cloſely accompanied by the Crural Artery, between which and the inner Condyle of the *Os Femoris* it is ſituated.

A little above the Ham, it takes the Name of *Vena Poplitea*, and, as it runs down betwixt the two Condyles, it gives Branches to the Flexor Muſcles above-mentioned, to the lower and poſterior Parts of both *Vaſti*, and to the Fat which lies above the Interſtice of the two Condyles.

It, alſo, gives off ſeveral other Branches, one of which runs up laterally between the outer Condyle and the Biceps, and then turning forward, is ramified in the ſame manner with the Artery. Another Branch goes backward, ſending Ramifications to the Beginning of the *Gaſtrocnemii*; after which, it runs down on the back Side of theſe Muſcles, to the *Tendo Achillis*.

Near the internal Condyle, the *Poplitea* ſends ſome lateral Branches to the Extremities of the neighbouring Muſcles, eſpecially thoſe of the *Semi-nervoſus*, and *Semi-membranoſus*. Laſtly, it ſends a Branch toward the external Condyle, which having run for a ſmall Space on the *Peronæus Longus*, goes back again into the Trunk.

The *Vena Poplitea* runs down immediately behind the Muſcle of the ſame Name, at the lower Part of which it ſends off ſeveral Ramifications to each Side, which divide and unite again in different Ways and Degrees, and afterwards it loſes its Name, being divided into three conſiderable Branches, called *Tibialis anterior*, *Tibialis poſterior*, and *Peronæa*, of which the *Tibialis poſterior* is moſt frequently a Continuation of the Trunk, and the other two like Branches.

Vena Tibialis anterior.

The anterior Tibial Vein, having diſtributed ſome ſmall Branches from its very Beginning, to the Muſcles behind the Heads of the two Bones of the Leg, perforates the interoſſeous Ligament from behind, forward, and runs between the ſuperior Portions of the *Muſculus Tibialis Anticus*, and *Extenſor Digitorum communis*.

As ſoon as it pierces the interoſſeous Ligament, it diſtributes ſmall ſuperficial Branches to the Head of the Tibia and Fibula, which run to the Joint of the Knee, and communicate with the lateral Branches of the *Vena Poplitea*.

Afterwards it divides into two or three Branches, which run down together on the fore Side of the interoſſeous Ligament in Company with the anterior Tibial Artery, which they ſurround at different Diſtances, by ſmall communicating Circles.

Theſe Branches, having reached the lower Extremity of the Leg, unite in one, which afterwards divides into ſeveral, the Ramifications of which are diſtributed to the Foot.

A particular Branch goes out from the reunited Portion, which at the lower Part of the Leg, perforates the interoſſeous Ligament from before backward, and communicates with the *Vena Tibialis poſterior*.

Vena Tibialis posterior.

The poſterior Tibial Vein gives off, from its Beginning, a Branch toward the Inſide, which is diſtributed to the *Gaſtrocnemii* and *Soleus*. This Vein is named *Suralis*.

Afterward the poſterior *Tibialis* runs down between the *Soleus* and *Tibialis poſticus*, giving Branches to each of them. It is divided in the ſame manner as the *Tibialis anterior*, into two or three Branches, which as they run, ſurround the correſponding Artery, by ſmall communicating Circles formed at different Diſtances.

It continues this Courſe in Company with the Artery as low as the outer Ancle, furniſhing the *Muſculus Tibialis poſticus*, and the long Flexors of the Toes. At the lower Part of the Leg, it communicates with a tranſverſe Branch of the *Saphena*, and with the anterior Tibial Vein, in the manner already ſaid.

Laſtly, it paſſes on the Inſide of the Os Calcis, under the Sole of the Foot, where it forms the *Venæ Plantares*, by dividing into ſeveral tranſverſe Arches, which communicate with each other, and with the *Saphena*, and ſend Ramifications to the Toes, nearly in the ſame manner as the *Arteria Plantaris*.

Vena Peronæa.

The *Vena Peroæa* is, alſo, double, and ſometimes triple. It runs down on the Inſide of the Fibula, almoſt in the ſame Direction with the *Arteria Peronæa*, which it, alſo, ſurrounds at different Diſtances, by communicating Branches, after the manner of the *Tibialis poſterior*.

It runs down as low as the outer Ancle, communicating ſeveral times with the *Tibialis poſterior*, and ſending Ramifications to the neighbouring Portions of the *Muſculi Peronæi*, and long Flexors of the Toes.

The laſt of theſe Communications makes the *Venæ Plantares* in ſome Subjects, to appear rather to come from this Vein, than from the *Tibialis poſterior*, from which they commonly riſe.

Vena Portæ.

The *Vena Portæ* is a large Vein; the Trunk, which is ſituated principally between the Eminences on the lower or concave Side of the Liver, called *Portæ* by Anatomiſts; and from thence this Vein has got the general Name of *Vena Portæ*, or *Vena Portarum*.

It may be conſidered as made up of two large Veins, joined almoſt endwiſe by their Trunks; from each of which, the Branches and Ramifications go out in contrary or oppoſite Directions. One of theſe Trunks adheres to the Liver, and is ramified in that Viſcus, its Branches accompanying the whole Diſtribution of the Hepatic Artery.

The other Trunk is without the Liver, and ſends its Branches to the Viſcera, ſupplied by the reſt of the *Arteria Cœliaca*, and by the two *Meſentericæ*, that is, to the Stomach, Inteſtines, Pancreas, Spleen, Meſentery, and Omentum.

The firſt Portion of this Vein may be termed *Vena Portæ Hepatica*, *ſuperior*, or *minor*, the Trunk of which is commonly known by the Name of *Sinus Venæ Portarum*. The other Portion may be called *Vena Portæ Ventralis*, *inferior*, or *major*; and this is what I am now to deſcribe.

The

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The large Trunk of the *Vena Portæ Inferior*, or *Ventralis*, is situated under the lower or concave Side of the Liver, and joined by an Anastomosis to the Sinus of the *Vena Portæ Hepatica*, between the Middle and Right Extremity of that Sinus, and consequently at a good Distance from the Left Extremity. From thence it runs down a little obliquely from Right to Left, behind or under the Trunk of the *Arteria Hepatica*, bending behind the Beginning of the *Duodenum*, and under the Head of the Pancreas, its Length being about five Fingers Breadth.

Having reached to the Head of the *Pancreas*, this Trunk loses the general Name of *Vena Portæ*, and terminates in three large principal Branches, which are distributed by numerous Ramifications to the Viscera already named. The first Branch is termed *Vena Mesaraica*, or *Mesaraica major*; the second, *Splenica*; and the third, *Hæmorrhoidalis interna*, or *Mesaraica minor*.

The *Vena Mesaraica major* appears to be a Continuation of the Trunk of the *Vena Portæ inferior*. The *Splenica* is a capital Branch of that Trunk; and the *Hæmorrhoidalis Interna* has sometimes a common Origin with the *Splenica*, and sometimes is no more than a Branch of that Vein. In some Subjects the *Mesaraica major*, and *Splenica*, appear to arise by an equal Bifurcation of the Trunk of the inferior *Vena Portæ*, and in others, the *Hæmorrhoidalis* arises from the very Angle of that Bifurcation.

The inferior *Vena Portæ*, before the Formation of these three Branches, sends off from the Trunk several small Ramifications, which are commonly the *Venæ Cysticæ*, *Hepatica minor*, *Pylorica*, *Duodenalis*, and sometimes the *Gastrica recta*, and *Coronaria Ventriculi*.

All these small Veins sometimes arise separately; and in other Subjects, some of them go out by small common Trunks. It sometimes happens, that several of them do not come immediately from the Trunk of the *Vena Portæ*, but from one of its great Branches.

The Cystic Veins run along the *Vesicula Fellis* from its Neck to the Bottom; and as they are often no more than two in Number, they are called *Cysticæ Gemellæ*, a Name given, also, to the Arteries which accompany them. They go out from the Right Side of the great Trunk near its Beginning, sometimes separately, sometimes by a small and very short common Trunk.

The small Hepatic Vein is commonly a Branch of one of the Cysticæ, or of their common Trunk.

The *Vena Pylorica* arises from the great Trunk, almost opposite to the Origin of the *Cysticæ*, and sometimes is only a Branch of the Right *Gastrica*. It passes over the *Pylorus* to the short Arch of the Stomach, where it is joined by Anastomosis with the *Coronaria Ventriculi*.

The Duodenal Vein, commonly called *Vena Intestinalis*, goes out from the great Trunk near the *Cysticæ*, and sometimes from the small common Trunk of these Veins. It is distributed principally to the *Intestinum Duodenum*, and sends, also, some Ramifications to the *Pancreas*. There is another Vein called, also, *Duodenalis*, which is a Branch of the *Gastrica* of the same Side.

The *Vena Gastrica*, or *Gastro-epiploica Dextra*, and the *Coronaria Ventriculi*, come more seldom from the Trunk of the *Vena Portæ*, than from its great Branches, with which I therefore choose to describe them.

Vena Mesaraica major.

The inferior *Vena Portæ*, having given off the *Splenica*, changes its Name to that of *Mesaraica*, or *Mesaraica major*, which often appears to be rather a Continuation of the Trunk, than one of the great Branches.

It bends towards the superior Mesenteric Artery, sending off two Veins; and, afterwards running up over that Artery, it accompanies it in those Portions of the Mesentery and Mesocolon, which belong to the small Intestines, the *Cæcum*, and Right Portion of the Colon. As it runs down, it forms an oblique Arch, almost like that of the Artery, which is, also, ramified on both the convex and concave Sides, but not so regularly.

The first particular Branch from this Trunk is called by *Riolanus*, *Vena Colica*. it goes out from the anterior Part of the Trunk, before it joins the Artery, and runs directly to the Middle of the Colon, where it divides to the Right and Left, and forms Arches. On the Left-hand it communicates with the superior or ascending Branch of the *Hæmorrhoidalis*; and, on the Right, with the second Branch of the *Mesaraica*.

This second Branch is a little under the first, or *Colica anterior*, and something more toward the Right-hand. It may be named *Gastro-colica*, and is soon divided into two Branches, one superior, the other inferior.

The superior Branch of the *Vena Gastro-colica*, sends small Veins to the Head of the Pancreas, and forms the *Vena Gastrica*, or *Gastro-epiploica dextra*, which goes from the *Pylorus* to the great Curvature of the Stomach, and communicates with the *Gastrica Sinistra*. In its Passage it supplies the Stomach and Omentum, and communicates with the *Pylorica*, *Coronaria Ventriculi*, &c. and sometimes it forms the *Pylorica*.

The inferior Branch of the *Vena Gastro-colica*, which may be called *Colica dextra*, goes to the Right Portion of the Colon; and from thence to the upper Part of that Intestine, where it is divided archwise, and communicates with the Right Branch of the *Colica anterior*, and with a Branch of the *Vena Cæcalis*, as we shall see hereafter.

The Trunk of the great Mesaraic Vein sends out sometimes, opposite to the *Gastrica*, a particular Branch to the Omentum, called *Epiploica dextra*. But almost immediately before it ascends over the Mesenteric Artery, it produces two large Branches very near each other, which pass behind and under the Artery, being distributed to the *Jejunum*, and Part of the *Ileum*, by numerous Ramifications, which form Arches and Areolæ like those of the Artery.

Afterwards the Trunk of the *Mesaraica* passes over the superior Mesenteric Artery, to which it adheres very closely, and from the convex Side of its Arch sends out several Branches almost in the same manner with the Artery; but with this Difference, that oftentimes the Branches do not arise immediately from the Vein in so great Numbers; and each of them sends out many more Ramifications.

From the concave Side of the Mesaraic Vein, a little below the Origin of the second Branch from the convex Side, arises a Branch called by *Riolanus*, *Vena Cæcalis*, which runs to the Beginning of the Colon, crossing one of the Branches of the superior Mesenteric Artery.

This Cæcal Vein divides by two Arches, the uppermost of which communicates with the lower Branch of the *Vena Gastro-colica*; the other, after having sent Ramifications to the *Intestinum Cæcum*, and *Appendicula Vermiformis*, communicates below, with the Extremity of the great Mesaraic Vein.

Vena Splenica.

The Splenic Vein is one of the three great Branches of the *Vena Portæ*, and may be said, in some measure, to be a subordinate Trunk of that Vein. It runs transversly from the Right to the Left, first under the Duodenum, and then along the lower Side of the Pancreas, near the posterior Edge.

In this Course it gives off several Veins, *viz.* the *Vena Coronaria*, *Ventriculi*, *Pancreaticæ*, *Gastrica*, or *Gastro-epiploica Sinistra*, and *Epiploica Sinistra*. It, also, often gives Origin to the *Hæmorrhoidalis Interna*, the third capital Branch of the *Vena Portæ*.

It terminates afterwards by a winding Course, being divided into several Branches that go to the Spleen; one of which produces the small Veins, called by the Antients *Vasa Brevia*.

The *Coronaria Ventriculi*, so called, because it surrounds, more or less, the upper Orifice of the Stomach, runs along the small Arch of that Viscus toward the *Pylorus*, where it joins and becomes continuous with the *Vena Pylorica*. In its Passage it gives several Ramifications to the Sides of the Stomach, which there form numerous Areolæ, and communicate with the Veins of the great Arch.

It arises pretty often from the Beginning of the *Splenica*, and sometimes from the Left Side of the Extremity of the great Trunk of the *Vena Portæ*, behind the Hepatic Artery; and, in that case, it is the most considerable of all the small Veins that go out from the great Trunk.

The *Venæ Pancreaticæ* are several small Branches sent by the *Splenica* to the Pancreas, along its lower Side. There are other small Pancreatic Veins, which do not arise from the *Splenica*, as has been said in the Description of the *Gastro-colica*, one of the Branches of the great Mesaraic Trunk.

The Left Gastric, or Gastro-epiploic Vein, goes out from the *Splenica* at the Left Extremity of the *Pancreas*; from whence it runs to the great Extremity of the Stomach, and along the great Arch, till it meets the *Gastrica dextra*, which is continuous with the *Sinistra*.

In its Passage, it gives several Branches to both Sides of the Stomach, which are distributed by numerous Ramifications, form many Areolæ; and communicate with the Branches of the *Coronaria Ventriculi*.

At a small Distance from its Origin, this Gastric Vein sends out a Branch, which is distributed to the Omentum; and on this Account it has been called *Gastro-epiploica*. This Branch seems to communicate with the *Hæmorrhoidalis interna*.

The *Vena Epiploica Sinistra* arises at the small Extremity of the Pancreas, and is ramified on the Omentum all the Way to the Colon, where it communicates with the *Hæmorrhoidalis interna*. When this Vein is wanting, the Branch of the Left *Gastrica* supplies its Place. It sometimes comes from the most anterior Branch, which the *Splenica* sends to the Spleen.

Lastly,

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Laſtly, The *Vena Splenica* reaches the Fiſſure of the Spleen, which it enters, through its whole Length, by ſeveral Branches, almoſt in the ſame manner as the ſplenic Artery. It is from the moſt poſterior of theſe Branches that the Veins are ſent off to the great Extremity of the Stomach, formerly known by the Name of *Vaſa Brevia*, which communicate with the *Coronaria Ventriculi* and *Gaſtrica Siniſtra*.

VENA HÆMORRHOIDALIS INTERNA, SIVE MESARAICA MINOR.

The internal hæmorrhoidal Vein is one of the three great Branches of the *Vena Portæ*, coming ordinarily from the Beginning of the *Vena Splenica*, and ſometimes from the Extremity or Angle of the Biſurcation of the great Trunk of the *Vena Portæ*.

At a ſmall Diſtance from its Beginning, it gives to the *Duodenum* a ſecond *Vena Duodenalis*, which is ſometimes more conſiderable than the firſt, or that which comes from the great Trunk of the *Vena Portæ*.

Afterwards it is divided into two Branches, one ſuperior, or aſcending; the other inferior, or deſcending: The firſt runs to the upper Part of the Arch of the Colon, where, after many Ramifications, it communicates with a Branch of the great *Meſaraica*, with the Ramifications of the *Gaſtro-epiploica ſiniſtra*, and with thoſe of the neighbouring *Epiploica*.

The inferior Branch runs down on the left Portion of the Colon, on the lower Incurvations of that Inteſtine, and on the *Rectum*, all the way to the *Anus*. In this Courſe it ſupplies the Meſocolon, and forms Arches, which ſend out numerous ſmall Ramifications, which ſurround theſe Inteſtines: It ſeems, alſo, to communicate, by ſome capillary Twigs, with the left ſpermatic Vein.

This Vein has been named *Hæmorrhoidalis*, from the Tumors often found at its Extremity next the *Anus*, which are called *Hæmorrhoides*. The Word *Interna* is added to diſtinguiſh this Vein, from the *Hæmorrhoidalis externa*, which comes from the *Vena Hypogaſtrica*, and with which this Vein communicates by capillary Ramifications. The Name of *Meſaraica minor* agrees to it very well, becauſe of its Situation, with reſpect to the inferior meſenteric Artery, which is, alſo, leſs than the ſuperior. *Winſlow.*

VENA MEDINENSIS. See DRACUNCULI.

VENÆ SECTIO. See PHLEBOTOMIA.

VENATIO. Hunting. This, conſidered as an Exerciſe, is, perhaps, the beſt that can poſſibly be contrived, for ſtrengthening the general Habit, and procuring Health and Vigor. The Seaſon of the Year, the Time of the Day deſtined for this Amuſement, and the Motion neceſſary on this Occaſion, are all admirably adapted to the Reſtoration and long Continuance of Health: It is, beſides, of no ſmall Importance, to have the Mind recreated, at the time the Body is exerciſed; for this admirably aſſiſts the due Circulation of the Fluids through the minute Canals deſtined for their Conveyance: And, I believe, there are few People not utterly abandoned to Idleneſs and Debauchery, of ſome Kind or other, who do not perceive a ſpontaneous Flow of Spirits, when they ride on Horſeback at or about the riſing of the Sun, when they reſpire the pureſt Air, when Variety of perpetually changing Scenes preſent themſelves, and when the Mind is agreeably agitated concerning the Event of the Chace.

——— *Vocat ingenti Clamore Cithæron,*
Taygetique Canes, Domitrixque Epidaurus Equorum,
Et Vox Aſſenſu Nemorum ingeminata remugit. Virgil.

I am ſenſible, that, by ſaying thus much in favour of Hunting, I may, poſſibly, expoſe myſelf to the Ridicule of thoſe who eſteem it meritorious to laugh at every thing laudable and manly. But I preſume I may, without Offence, remind theſe, that it is more prudent to make uſe of the moſt delightful Means of preſerving entire, the vital, animal, and, in conſequence of this, even the intellectual Faculties, than to undermine the Pillars of Health, by Indolence, Taverns, Brothels, and Phyſic.

VENEN *Sinenſium*. Martin. Atl. Sinenſ. *Luſitanis* Jambos. This is a thorny Tree, bigger than the Lemon-tree, and which bears white Flowers, of a very pleaſant Smell. The Fruit is as big as a Man's Head, with a Rind like that of a Quince, and a reddiſh Pulp, which has the Taſte of Grapes before they are quite ripe. This Fruit, hung up in a Houſe, or under Covert, will keep good for a Year.

The Tree grows in the Province of *Fokien* in *China*. They extract a very fragrant Water from the Flowers, and from the expreſſed Juice of the Fruit they prepare a Liquor which ſerves them for Drink. *Raii Hiſt. Plant.*

VENENUM. Poiſon.

Quick *Poiſons*, when, by Ingeſtion, or Application, they become the Cauſes of Diſeaſes, either through their own proper Force, or by firſt inducing a Corruption of the infected Parts, indicate, 1. A Removal of the *poiſonous Cauſe*. 2. A Correction of the *Poiſon* already received, or unavoidably to be received. Or, 3. An Expulſion of it from the Body. 4. A Mitigation of the Symptoms. And, 5. A fortifying of the Body againſt the Force of any future Ingeſtion, or Application of the *Poiſon*.

The Cauſe which propagates the *Poiſon*, and communicates it to the Body, or which mixes its *Miaſmata* (contagious Taint) with the Atmoſphere, or conveys them, when applied to the Body, within the ſame, if ſenſible, and known, is eaſily removed,

1. By taking out of the way the poiſonous Matter, either, (α) Firſt, by Combuſtion, in kindling large and clear Fires; or (β) by correcting the Air, the Vehicle of thoſe *Miaſmata*, which is generally beſt effected by the thick Vapours that proceed from the kindling or heating of ſuch Things as have a Virtue oppoſite to the known *Poiſon*. Thus, for Inſtance, in the Peſtilence, againſt the cauſtic, alcaline, and putrid Exhalations, proper Remedies are, Fumes of Vinegar, Spirit of Salt, and Gunpowder; againſt *poiſonous* acid Exhalations, the diſperſed Odours of oleous alcaline Spirits are a good Preſervative. Another way (γ) is, by altering, diſſipating, renewing the Air by a Wind procured by Art, eſpecially if ſuch Wind could, at the ſame time, by the Method of *Hippocrates*, be tranſmitted through great Fires, kindled up for the Purpoſe. The laſt Means (δ), to be mentioned under this Head, is, by flying the Contagion, or removing our Habitation to the other Side of ſome high Mountain.

2. The Cauſe is removed by expelling or correcting the *poiſonous* Matter, which, either by Ingeſtion, or Application, infeſts the Body.

The *Poiſon* itſelf, when known to be preſent, is corrected by the Application of ſuch Things as render unactive thoſe Qualities by which it injures the Body.

Theſe Qualities, (1.) in many *Poiſons*, are ſcarce hitherto known, but only by their deleterious Faculty, which hardly diſcovers itſelf but by the Death of the infected Subject. The ſame noxious Qualities, (2.) in other *Poiſons*, manifeſt themſelves by their ſurpriſing, and hardly explicable Effects; (3.) in ſome *Poiſons* by Effects which occur in other known Diſeaſes; and (4.) in ſome others theſe Qualities are underſtood *a priori*, as they call it, being very eaſily foreſeen from a Knowledge of the Nature of the *Poiſon*.

The firſt Sort of theſe *Poiſons* juſt mentioned, and which are ſaid to be *hurtful to the whole Subſtance*, indicate ſuch Remedies as are exactly oppoſite to them, and as little underſtood, with regard to the Reaſon of their Effects, as the *Poiſons* themſelves: Theſe Remedies go by the Names of *Antidota*, *Antidotoi*, *Alexicaca*, *Alexipharmaca*, and *Theriaca*; and being known only by Experience, are to be learnt from the Accounts of *Poiſons*.

The ſecond Kind of *Poiſons*, which are ſaid to be pernicious from an occult Quality, require Remedies, equally unaccountable, called *Specifics*, ſcarce to be found, unleſs by mere Chance: The beſt Account we have of theſe Medicines, alſo, is to be met with in the Hiſtory of particular *Poiſons*.

The third Sort of *Poiſons*, which, before they kill, produce ſuch morbous Effects as corrupt the Fabric of the Body after the manner of ſome known Diſeaſes, require ſuch Remedies as are obſerved to be effectual for the Cure of ſuch Diſeaſes as diſtinguiſh themſelves by the like Effects.

Poiſons of the fourth Kind, which are known as applied, or to be applied to the Body, neceſſarily require ſuch Medicines as are of preſent and ready Efficacy in ſubduing the known Malignity: Thoſe Medicines, for the moſt part, owe their Virtue to an oppoſite Malignity, which would render them quite pernicious to the Body, if it were not for the *Poiſon* before received.

Hence we ſee, that the Nature and Properties of *Poiſons* are learnt from natural and medicinal Hiſtory, in Conjunction with the Knowledge of Mechanics and Chymiſtry, not omitting Anatomy, which repreſents to our View the Effects of *Poiſons*. From the Knowledge acquir'd by theſe Studies, are we furniſh'd with Indications, in ſuch Caſes.

From theſe Indications, thus ſupplied, we come to know the Matter, Preparation, Doſe, Application, and Management, of the Corrective.

Primary, and almoſt general, or univerſal Antidotes, againſt all Sorts of *Poiſons*, and, for that Reaſon, highly uſeful, where it is known that *Poiſon* is given, but not what particular *Poiſon*, are, principally, pure Water, a very little hotter than our Blood in its healthy State, plentifully, ſpeedily, and for a good while together, received by the Mouth, injected in Clyſters, and properly applied; a mild Lixivium, compoſed of common Water, and *Venice* Soap, uſed in the ſame Manner, Quantity, and Time, with the Water before-mentioned; or pure Water, rendered ſaponaceous with Oxymel, and uſed as before; mild, recent Oils, expreſſed

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expreſſed from ſmooth, fat, and farinaceous Seeds, ſpeedily, copiouſly, for a long time together, ſwallowed, injected, applied; or the Oils of freſh-kill'd Animals, boil'd with all the Speed poſſible, in Plenty of Water, and uſed in like manner; Vinegar, alſo, which is of general Uſe in many ſudden Caſes; and, in the laſt Place, Opium. As for an univerſal Prophylactic, or Preſervative, againſt all Sorts of *Poiſons*, none has been hitherto diſcovered; and it is even inconſiſtent with the Nature of Things.

In exhibiting a ſpecial, or ſingular Antidote, the higheſt Prudence is requir'd: For ſince every particular Antidote is endow'd with a peculiar Virtue of correcting this or that *Poiſon* only, they have, for the moſt part, as much Violence, or rather more, than the Thing they are to ſubdue: When theſe two Things, therefore, the *Poiſon* and the Antidote, enter into Conflict within the Body, they deſtroy one another, and, being render'd unactive, cannot do much Miſchief; but if Antidotes are found alone, or in a ſeparate State from the Matter on which they are to act, they often prove equally noxious with the *Poiſons* againſt which they are exhibited.

All theſe Antidotes, whether univerſal or ſingular, may and ought to be prepared, applied, and directed, in ſuch a manner, that they may be enabled, ſpeedily, conſtantly, and without Diminution of Strength, to make their way to the Places where the *Poiſon* is lodged, and there ſubdue it. The Phyſician, therefore, ought, on all Occaſions, to have ready preſent to his Mind a general Liſt, comprehending all the Diverſities of Applications, of which the primary are, Suffumigations of the Air, dry or moiſt Vapours for the Lungs, Potions, Clyſters, Epithems, Baths, Fomentations, Injections for the Uterus, Bladder, Fauces, and other Parts.

Poiſon received is expelled out of the Body, 1. By diminiſhing the Reſiſtance at the Place by which it may, with moſt Safety, be diſcharged, where it does leaſt Miſchief, where it is neareſt to an Outlet, where it is leaſt hurtful to the vital *Viſcera*; for then it will, either by the vital Forces, or the Strength of the Medicines, be propelled to the Place required, and thence be diſcharged. This, in former Times, was effected by what was then eſteemed very ſtrange, and unaccountable; but is now, through the Induſtry of M. *Redi*, eaſily underſtood, the Suction of the *Marſi* and *Pſylli* (two Nations famous for extracting *Poiſons* by Suction with the Mouth); but is now performed by means of large and ſtrong Cupping-glaſſes, applied with much Flame, and often renewed; by warm, and highly-emollient Fomentations; by Leeches, Scarifications, Frictions, Heatings, Plaiſters. 2. By magnetic Attraction, in which a certain Subſtance attracts *Poiſon* by a ſingular Virtue, and relieves the Patient; as we find it recorded of the Fleſh of the venomous Beaſt, the Stone of the Ceraſtes, and of other Serpents, and the like. 3. By ſuch Medicines as are very potent Diluents and Movers: Of this Nature are quick Emetics, and Cathartics, very ſtrong Sudorifics, and, perhaps, diuretic Diluents. Hence, Diaſcordium, Mithridate, Theriaca, Orvietan, and Opiates, are of Service, though not entirely to be depended on, either as univerſal Therapeutics, or Prophylactics. 4. By a Separation of the affected Part, with as much Speed as poſſible, to prevent the Spreading of the Infection; and this is beſt effected by a Cautery of a hot Iron.

Thoſe ſevere Symptoms, which are the ſenſible Effects of *Poiſons*, are, according to the Doctrine of Pathology, eaſily enough reduced under proper Claſſes, and, in that Caſe, may be cured, as if they were each of them ſome ſingle Diſeaſe.

The Body is fortified againſt the Application of *Poiſons*, 1. By a free Uſe of Antidotes univerſal and ſingular, which may ſometimes be ſafe, when the Nature of the *Poiſon*, againſt which they are given as Preſervatives, is foreknown. 2. By anointing the Part of the Body which is expoſed, with oleous Lenitives. 3. By preſerving all the Parts of the Body in equable Perſpiration. But, as yet, we are acquainted with no univerſal Prophylactic, as we obſerved before, tho' there are ſeveral extolled as ſuch.

What has been ſpoken, hitherto, of *Poiſons*, is applicable, alſo, to the Peſtilence, and other contagious Diſorders; and may, probably, be beſt underſtood from the following, perhaps, not ill-compoſed Synopſis of *Poiſons* and Antidotes.

Firſt, then, ſome *Poiſons* are manifeſtly to be reduced under Acrids, but ſuch as have a peculiar Acrimony, which is phlogiſtic, cauſtic, effective of a Gangrene, and ſeptic: The chief of theſe are, Cobalt, yellow and red Arſenic, white Arſenic Sublimate, Realgar, *Lapis Armenus*, *Lapis Lazuli*: Theſe, by Application, either internal or external, inflame, corrode, excite Pains, burning Heats, Dryneſſes, firſt, in the Parts firſt injur'd; and, ſoon after, in the whole Body. Hence, they create very acute inflammatory Diſorders in the Mouth, Fauces, Oeſophagus, Stomach, and Inteſtines; excite Nauſea, Vomiting, Dyſentery, Cholera Morbus, and the Ileos; and produce a Paleneſs, and Lividneſs; whence proceed Vertigos, Convulſions, and Death; or, if this be eſcaped, a Wanneſs of Colour, Palſies, and Contractions. Remedies, here indicated, are, warm, acidith, honey'd Water, moſt ſpeedily, copiouſly, and for a long time uſed, in Potions, Clyſters, and Baths. If the *Poiſon* can be expelled by Stool and Vomiting, it is ſo much the better, and the Remedy is to be the oftener repeated. Fat Broths, Milk, Oil, oleous Subſtances, Butter, are of Service here; and, after that, we muſt, for a long time, employ relaxing, ſoft, fat, acidulated Subſtances, both by Ingeſtion, and in Baths.

Among Vegetables of this Quality, the principal are, *Aconitum*, *Anacardium*, *Anemone*, *Apium Riſus*, (the Herb which excites the *Riſus Sardonicus*) *Apocynum*, *Arum*, *Azedarach*, *Cataputia*, *Chamælæa tricoccos*, *Chamæleon niger*, *Clematitis*, *Colchicum*, *Corona Imperialis*, *Cyclamen*, *Dracontium*, *Elaterium*, *Eſula*, *Euphorbium*, *Flos Africanus*, *Grana Nubiæ*, *Helleborus albus*, *niger*, *viridis*, *Hermodactyli*, *Hyacinthi*, *Laureola*, *Mezereæum*, *Mel venenatum*, *Napellus*, *Nigella Sylveſtris*, *Oleander*, *Ranunculi*, *Ricinus*, *Scammonium*, oleous Seeds by long Corruption become acrimoniouſly rancid, *Tithymali*, *Thapſia*: The Effects of theſe Simples are like thoſe of the Subſtances before-mentioned, and the Indications are exactly the ſame.

There are, 2. Other violent and acrimonious *Poiſons*, but which are, at the ſame time, of a ſort of viſcid Quality, by which they ſtick in the Stomach, and thence affect the Brain and Nerves after a ſingular manner. Of this Kind are, the *Chryſomela*, the *Cicuta major*, the *Cicuta minor Petroſelino ſimilis*, the *Cicuta aquatica Geſneri*, *Crocus*, *Datura*, *Hyoſcyamus*, *Nux Vomica*, *Oenanthe Apii Folio Succo viroſo*, *Opium*, *Solanum*, *Melanoceraſos*. The Effects of theſe are, Vertigo, *Scotomia*, *Delirium*, Madneſs, Nauſea, Vomiting, Dyſentery, terrible Convulſions, Apoplexy, and Death. The Indications here are, the moſt ſpeedy Exhibition of a very quick Emetic, an immediate Ingeſtion of vaſt Quantities of aqueous, oleous, honey'd, acidulated Liquors, by Potion, Clyſters, Baths, and continually repeated. The Diſorder being mitigated, and repreſſed, Sweating is ſtrongly to be provoked by theriacal Medicines, and the ſame is to be frequently repeated; and this muſt be followed by a ſoft and thin Diet.

In the third Place (3.) There are acrid Poiſons, which have a manifeſt Acidity; for Inſtance, (α) Spirit of Salt, Spirit of Nitre, Aqua-regia, Aqua-fortis, Spirit of Sulphur, Spirit of Vitriol. (β) The ſame Acids, united with metallic Bodies, and by that means extremely powerful, as are, for Example, a Solution of Gold, and of its Cryſtal; a Solution of Silver, its Vitriol, and Lapis Infernalis; a Solution of Copper, and the Salt thence proceeding; a Solution of Quickſilver in Spirit of Nitre, in Spirit of Salt, in Aqua-fortis, in Aqua-regia, or its Calcination with Oil of Vitriol, red, white, green Precipitate, corroſive and ſweet Sublimate, Calx, Turpeth; an Impregnation of Antimony with Aqua-regia, and the eſcharotic Calx hence produced: Theſe Kinds of Poiſons produce abominable Taſtes in the Mouth, acid Fetors, Inflammations, gangrenous Eſchars, Nauſea, Vomiting, Dyſentery, Cholera Morbus, moſt ſevere Gripes, Cardialgia, Ileos, Colic, Tumors of the Glands, a cadaverous Smell, Salivation, Syncope, and Death. In theſe Caſes are required Dilutions by aqueous Liquors; Obtundents, as Oils; Alteratives, as ſaponaceous or highly alcaline Lixivia; the ſtrongeſt Abſorbents of Acids; and, laſtly, when the Violence of the Diſorder is abated, the frequent Uſe of Oil, fat Broth, and the like Emulſions.

Fourthly, (4.) There are Poiſons manifeſtly acrid, which are known to be alcaline: Such are the Aſhes of burnt Vegetables; the Alcali thence produced; the ſame render'd igneous with the Calx of burnt Stone; Eggs, Humours, Fleſh quite putrefy'd; the Salts thence ſeparated; the ſame render'd igneous by Sublimation with a fixed Alcali, Lime, Lapis Calaminaris, Chalk, Iron, and the like. The Symptoms proceeding from thoſe Poiſons, are, a very quick, violent, and igneous Inflammation, Eroſion, Gangrene, very burning Pains in all Parts, unquenchable Thirſt, Convulſions, very high Fevers, a cadaverous Smell, an intimate Diſſolution of the Humours, a Putrefaction of the ſame, and of the Viſcera, and, laſtly, Death. The Cure is effected by aqueous relaxing Diluents, oleous Obtundents, pinguious and earthy Subſtances, by Inverſion, or Alteration, by means of diluted, volatile, and eaſily moveable Acids. After theſe the Diet muſt for a long time conſiſt of acidulous, oleous, and emollient Foods.

Some Poiſons there are, (5.) Which are frequently mortal, by their ſingular Acrimony; yet ſo as that this Acrimony ſhall ſcarce manifeſt itſelf otherwiſe than by its deleterious Effects on the human Body: Such are Copper, burnt Calx of Copper, Calx of Copper by Corroſives, Flos Æris, Squama Æris, Crocus of Antimony, Calx of the ſame prepared by burning, and the Glaſs made of it; the pure Flower of Antimony, prepared by Fire alone, or by the Help of Sal Ammoniac, and

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and then washed. By these Kinds of Poisons are excited a Nausea, Vomiting, Dysentery, Cholera Morbus, excessive Purgation, severe Pains in the Viscera, Spasms, Tetanus, Syncope, dreadful Anxiety, and Death. The Cure is performed by an immediate Ingestion of Diluents, Emollients, Obtundents, Acids, and honied Substances, above, and below, and the same externally applied; and the Use of them continued in this manner for a long time together: After these, Opiates and oleous Substances are of Service.

Among acrid Poisons may be reckoned (6.) Those which are merely mechanical, as the Diamond, Mountain Crystal, Filings of Iron, Filings of Brass, feathered Alum, pounded Glass, and the like. These prick the Nerves, and wound the Vessels, and, by so doing, excite Convulsions and Hæmorrhages, whence proceed Ulcers, and the like Mischiefs. In these Cases the Indication is a speedy and copious Use of Oil and Butter.

In the seventh Place (7.) There are Poisons which kill in a quick or slow manner, by Constriction, Incrustation, Obstruction, or Exsiccation: Of this Nature are, perhaps, Quicklime, and Lime slak'd; also, Gypsum, Lead in the Ore, the Filings, Scales, Calx, Glass, of the same; White-lead, Red-lead, Litharge, the Ashes of burnt Tin, Earth of Sinope, the Seed of Psyllium, the Sponge of the Cynosbatos, Funguses, Agaric, Misleto: These Substances conglutinate, and cause a Constriction and Strangulation; by which means they excite terrible Disorders, which, after long and miserable Languishing, terminate in Death. Remedies here indicated as necessary, are Emetics, Cathartics, Diluents, spirituous Acids, spirituous oily Alcalis, with all manner of saponaceous Things, to be immediately, and for a long Time, used.

Eighthly, (8.) There are some Poisons of an heteroclite Sort, directly destructive of all the vital Functions, whose Efficacies and Effects have not as yet been well explained; these prove mortal, whether inwardly taken, or outwardly applied, or by a Stroke inflicted. Under this Class are to be reduced Cantharides, the Spider, Tarantula, Asp, Viper, Cerastes, Prestes, Seps, Scorpion, mad Dog, Toad, Bupresis, Stellio or Lizard, Salamander, Lepus Marinus, Pastinaca Marina, and the like: The Poisons of these Animals produce various, surprising, and scarce explicable Effects, which end at last in Death. Indications on this Head are, if the Poison be taken inwardly, to evacuate the same immediately by Vomiting; to dilute it, in an extraordinary measure, by aqueous Ingestions; to mollify it, in an high degree, by relaxing, emollient, and oleous Remedies; and to resist the Putrefaction by spirituous and saline Acids. If the Poisons are communicated by external Stroke, Bite, or Application, Extraction of the same is indicated at the Place affected by means of Suction, Scarification, Cauterising, Mollifying, Fomenting; also, Sweat is to be powerfully provoked by penetrating diluent Antidotes, which resist Putrefaction; and the Force of the Venom is to be weaken'd by acid saline Medicines, or by specific Antidotes.

In the last Place (9.) There are Substances which suffocate in a Moment under the Form of an Exhalation. Such are, the confined Vapour of Coals, subterraneous Air long confined, Exhalations of Wine under Fermentation, the volatile Farina of a poisonous Fungus, the Fume of Sulphur, and many others of the like Nature, which are best passed over in Silence. These Poisons appear, from what has been said, to apply themselves to the Lungs or Nerves, and will scarce admit of a Cure.

The more remote Causes of Diseases, which come under the Cognisance of the Senses, are easily altered or removed; for they indicate a Change in the Non-naturals.

But if these Causes are less manifest, yet, as they discover themselves by their sensible Effects, they indicate, by these very Phenomena, proper Remedies.

The Course of those Phenomena carefully observed, directs us to the Use of proper Means, Seasons, Order, Manner, and Way, either for the Correction or Expulsion of the proximate Cause of the Disease in the human Body.

The accurate Observation of the same Phenomena teaches us what is wanting, and what Supplements are necessary.

As, also, what Motions are to be excited, continued, suppressed, diminished, with a View to the same End.

An orderly, therefore, and exact Knowledge of Effects in such Cases, directs us in the best manner how to correct or remove the Cause.

Hence we, also, learn, that there are but two Ways as yet known, by which we arrive at the Knowledge of the Cause, and these are what we call the *methodic*, and the *specific*.

The *methodic* Way, in order to attain to the Knowledge of the proximate Cause, that the same may be removed, makes Use of the following Means and Assistances. First, (1.) It is very careful and exact in examining and digesting into Order the Phenomenon before-mentioned, and attentive in observing the Course of Nature. Secondly, (2.) If it observes a Failure of the vital Powers, under the Operation of such Remedies as are required for subduing of the Disease, it comes in to their Relief, by the Administration of Cardiacs, or by a Removal of the Impediments which obstruct the Operation of the Medicines designed to evacuate the morbific Matter. But, in the third Place, (3.) When it observes the vital Actions too much exalted; and by that means more likely to perplex Matters, and intangle rather than disengage the Cause of the Disease, it has recourse to moderating means, till their Impetus is restrained, and their Forces reduced within the Bounds required. This Intention is answered by aqueous Diluents, gentle Relaxants, soft glutinous Remedies, such as evacuate the material Cause of the immoderate Exaltation, Opiates, Anodynes. And, lastly, (4) By neither doing nor changing any thing but what appears necessary from the clearest Indications.

The *specific* Way, as it is called, removes the Cause of the Disease, by a simple Application of something which is known to be effectual for the Purpose, merely by Use, without attending to the four methodical means just mentioned. In this Case you have only to inquire the Name of the Disease, and then administer the *Specific*. Thus it is, for Example, in the Cure of an intermittent Fever by the *Peruvian* Bark, of Pain by Opium, and of every particular Poison, by its known, particular, proper, corrective, attractive, or expulsive Antidote. *Boerhaav. Institut. Med.*

VENER. Mercury. *Rulandus.*

VENEREA LUES. See LUES VENEREA.

VENERIS OESTRUM. See CLITORIS.

VENETICUS, *Venetus*, ἐνετός. An Epithet importing a glaucous or faint Sky-colour. Hence *Oculi Veneti* are Eyes affected with a Cataract. *Castellus.*

VENOSA ARTERIA. The same as VENA PULMONALIS. See PULMO.

VENTER, κοιλία, is taken in several Senses. With the more modern Anatomists it signifies, in the most extensive Acceptation, a remarkable Cavity, in which any one of the principal *Viscera* is contained. In this respect the whole Body is divided into three *Ventres*, the lowermost, commonly call'd the *Abdomen*; the middle *Venter*, call'd the *Thorax*; and the highest, or the Cavity of the Head. *Hippocrates* sometimes uses the Word κοιλίη, in a more restrained Sense, for the *Abdomen*, and the Cavity of the *Thorax*; and, sometimes, by way of Distinction, he calls the latter ἡ ἄνω κοιλίη, the upper *Venter*; and the *Abdomen* ἡ κάτω κοιλίη, the lower *Venter*. See 7 *Aph.* 38. with *Galen*, 1 *Com.* and *Lib.* 1. *de Morb.* But the Term *Venter*, κοιλίη, is most frequently to be understood, in a still stricter Sense, for the *Abdomen*, or Region between the Diaphragm and Pudenda. Instances of this are needless, as being every-where to be met with. And, in the last, and strictest Acceptation, it is sometimes restrained to the *Ventriculus*, or Stomach, and sometimes to the Intestines: As where we find *Hippocrates* speaking of the Laxness or Astriction of the *Venter*, κοιλίη, which are Affections chiefly regarding the Intestines, and, particularly, the great Intestines; whence some, as *Galen*, *Com.* 4. *in R. V. I. A.* and *Com. in* 7 *Aph.* 38. tells us, give the Name of *Venter*, κοιλίη, to the *Colon Intestinum*. The *Greek* κοιλίη (*Cœlie*), in a Passage 4 *Epidem.* signifies no more than the Excrements of the Belly; and the *Latin Venter* will bear the same Sense.

With the Chymists, *Venter* is the same as *Terra*, Earth; and *Venter equi* is *Fimus equinus*, Horse-dung. *Theat. Chym.* Vol. 1. p. 201, 378. *Rulandus. Castellus.*

VENTININA. A *Paracelsic* Term to signify the Art of Divining, or knowing by the Winds, the Courses and Dispositions of the Heavens and Stars, with respect to their good or bad Effects upon Mankind.

VENTOSÆ, from *Ventus*, Wind, Cupping-glasses applied without Scarification, so called. *Ventosa* is, also, an Epithet of a Disease, called, by *Avicenna*, *Spina ventosa*, or *Spinæ ventositas*, being a carious Affection of the Bones, attended with a Putridness. *M. A. Severinus* has an entire Book on this Subject, in his Treatise *de Pædarthrocace*. See Os.

Ventositas, Ventosity, is a Word often put for *Flatulentia*, Flatulence. *Castellus.*

VENTRALIS *Dispositio*, κοιλιακὴ διάθεσις. The *Cœliaca Passio*.

VENTRES, in the Language of some Authors, the same as *Cavitates*, Cavities. *Blancard.*

VENTRICULATIO, in *Cœlius Aurelianus*, *Lib.* 3. *Acut. Cap.* 17. is supposed to be the same as that he calls *Ventriculosa Passio*, *Lib.* 4. *Chron. Cap.* 3. that is, the κοιλιακὴ of the *Greeks*, or *Cœliaca Passio*.

VENTRICOSUS, VENTRICULOSUS, is either one with a great Belly, and the same with μεγαλόκοιλος (*megalocœlus*) or one labouring under the *Passio Cœliaca*.

VENTRICULUS. The Stomach. See COELIA, and INTESTINA.

VENTRILOQUUS, ἐγγαστρίμυθος, a Ventriloquist. See ÆSCULAPIUS.

VENTUS.

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VENTUS. The Wind. The Knowledge of the Nature, Properties, and Virtues of the Winds, is often inculcated by *Hippocrates* as neceſſary for a Phyſician. *Ventus* is, alſo, a Word frequently occurring in the Works of the Chymiſts: Thus *Ventus albus* is Mercury; *Ventus rubens* is red Orpiment; *Ventus citrinus* is Sulphur; and *Ventus Hermetis*, in *Libavius*, is the Philoſophers Stone. *Caſtellus.*

VENULA, φλεβίον, a Diminutive of *Vena*, a Vein, is a ſmall Vein. The Term φλεβίον, in 6 *Epid. Sect.* 6. *Aph.* 2. ſignifies an Artery. See *Galen*, *Com. in Locum.*

VENUS.

Tho' the Word *Venus* was originally the Name of a heathen Goddeſs, celebrated as the Queen of Beauty and Love, yet it afterwards came to ſignify what we commonly call Venery; an Action which may either promote or deſtroy Health, according as it is regulated: For it is certain, from Experience, that too great a Retention of the Semen induces a Torpor and languid State of the Body, and often lays a Foundation for terrible nervous Diſorders. And whereas the Semen is, as it were, the Flower, and choiceſt Part of the Blood, and nervous Fluid, ſo Venery ought to be only moderately uſed, leſt too great an Evacuation of this Subſtance ſhould prove prejudicial to Health. An Ejection of the Semen requires a ſound and vigorous Habit of Body, becauſe it exhauſts the Strength, and weakens the Perſon. Hence *Pythagoras*, when aſk'd when Coition was to be uſed, wiſely anſwer'd, "When you have an Inclination to render "yourſelf weaker." For this Reaſon, weak Perſons, thoſe who are either too young or too old, and thoſe lately recover'd from a Diſeaſe, ought to abſtain from Venery: Nor ſhould Perſons indulge themſelves in Venery after ſtrong Application of Mind, or long Watchings; becauſe theſe Things have a Tendency to weaken the Body. As Venery only agrees with robuſt and vigorous Conſtitutions, ſo the Uſe of it is principally beneficial to Health after the Stomach is empty, and Perſpiration duly performed, eſpecially if the Perſon has ſlept well, us'd the Bath, and taken Aliments of a nutritive Quality, and eaſy Digeſtion. It is, alſo, to be obſerved, that Venery is more ſalutary in the Spring, than at any other Seaſon of the Year. All theſe Things are of ſuch a Nature, as to increaſe the Strength and Vigour of the Body, and, conſequently, favour Venery, or, at leaſt, prevent the bad Effects it might otherwiſe have. The Perſon who would often engage in Venery, ought to guard againſt all Surfeits, Hunger, Labours, exceſſive Study, Veneſections, Watchings, Purges, and every thing which can in the leaſt impair and deſtroy the Strength. Venery, according to *Celſus*, is beneficial, when it is neither ſucceeded by Languor nor Pain, but, inſtead of oppreſſing, augments the Strength. But it is by no means to be uſed after Meals, Labour, or Watching. But as Moderation, in every thing, contributes to Health; ſo, likewiſe, does temperate Venery: And every one ought carefully to conſider what his Conſtitution can bear. For a very robuſt Perſon may ſafely indulge himſelf in a Degree of Venery which would remarkably weaken one who has a worſe Conſtitution. Venery, according to *Celſus*, is to be abſtained from in the Summer; becauſe, at that time, it is ſubject to throw the Humours into too violent Commotions. It is, alſo, found, from Experience, that immoderate Venery weakens the Force and Tone of the Solids, and brings on Colics and Cardialgias. It is, alſo, certain, from Experience, that Venery both alleviates and removes various Diſorders incident to Women: For the male Semen, conſiſting of a fine elaſtic Lymph, rareſies and expands not only the Eggs, but, alſo, the Blood and Juices in the Veſſels of the Uterus, the Fibres of which it likewiſe ſtrengthens. Hence the Reaſon is obvious, why Venery, or Coition, cures Women, rendered cachectic by a Suppreſſion of the Menſes, and generally reſtores that ſalutary Evacuation. "For, ſays *Hippocrates*, in his Book *de Genitura*, Coition "warms the Blood, and renders the menſtrual Diſcharge "eaſier:" For a Defect of the Menſes frequently happens on account of the Narrowneſs and Contraction of the Veſſels of the Uterus. *Heffman.*

VER, ἔαρ, the Spring. Diſeaſes moſt incident to this Seaſon of the Year, are Lippitudes, Puſtules, Hæmorrhages, Abſceſſes, Melancholy, Madneſs, Epilepſies, Quinſies, cold Rheums in the Head, and Diſtillations: Thoſe Diſeaſes, alſo, which affect the Joints and Nerves, and have their Paroxyſms and Remiſſions, begin and repeat their Attacks chiefly at this Seaſon. *Celſus*, *Lib.* 2. *Cap.* 1.

The moſt healthy Seaſon of the Year is the Spring; next to that the Winter; the Summer is more dangerous; but the moſt dangerous of all the four, by many Degrees, is the Autumn. *Ibid. in Init.*

In Spring we muſt ſomewhat diminiſh the Quantity of Food uſed in Winter, and increaſe that of our Drink, which, however, muſt be more diluted, or ſmaller, than before: We are to eat more freely of Fleſh and Greens, and we are to paſs from boiled to roaſt Meat, by Degrees: Venery may moſt ſafely be indulged in this Seaſon. *Ibid. Lib.* 1. *Cap.* 3.

VERATRUM.

The Characters are;

The Leaves are fibrous, and complicated, as it were, into Folds: The Flowers are roſaceous, hexapetalous, naked, furniſhed with ſix Stamina, and collected into Spikes: The Ovary grows in the Placenta, and conſiſts of three Pods, each furniſhed with its Tube, and becomes a Fruit, conſiſting of three Sheaths, collected into an Head, and full of oblong Seeds, much like Grains of Wheat, marginated, and ſurrounded with a foliaceous Wing.

Boerhaave mentions two Sorts of Veratrum; which are,

1. Veratrum; flore ſubviridi. *Tourn. Inſt.* 272. *Boerh. Ind. alt.* 296. *Helleborus albus*, *Elleborus.* Offic. *Helleborus albus.* Ger. 356. Emac. 440. Raii Hiſt. 1. 168. *Helleborus albus flore ſubviridi.* C. B. P. 186. *Helleborus albus flore ex viridi albeſcente.* J. B. 3. 634. *Helleborus albus vulgaris.* Park. Theat. 217. Parad. 346. WHITE HELLEBORE.

The Roots of white Hellebore are thick at the Head, of a white Colour on the Inſide, and very full of Fibres all round, of an hot nauſeous Taſte; from which ſpring many large nervous Leaves, of a long oval Form, and a bright-green Colour, encompaſſing the Stalk, which grows to be two or three Feet high, having ſmaller and narrower Leaves growing on it, and branching out into ſeveral Spikes of imperfect Flowers, each cut into ſix Segments of greeniſh, and, in ſome Plants, of darkiſh-purple Leaves, ſucceeded by triangular Seed: It grows in the mountainous Parts of *Swiſſerland*, *Auſtria*, and *Stiria*; and flowers in *June* and *July*.

The Roots of this Hellebore, which are the only Parts in Uſe, are a ſtrong Cathartic, working upwards and downwards with great Violence; and, therefore, but rarely uſed inwardly now-a-days, though frequently given by the Antients, eſpecially to ſtrong robuſt Bodies, and in Diſtempers that needed forcible Evacuations. It is more uſed as a Sternutatory; it cauſing violent Sneeſing, and, therefore, to be uſed with Caution, and mixed with milder Ingredients: They are of Service outwardly, in all Diſtempers of the Skin, as Tetters, Scabs, Itch, and other Deformities thereof.

The only Officinal Preparation is the *Electuarium ex Helleboro. Miller's Bot. Off.*

The Root of white Hellebore, which is the only Part uſed in Medicine, purges ſo violently, both upwards and downwards, that it is rarely uſed internally; but the black Hellebore takes its Place. However, as *Tragus* ſays, if it be macerated four-and-twenty Hours in Wine or Oxymel, and afterwards dried, it may be given to the Weight of half a Dram, in Wine, to mad and melancholy Perſons. Both Hellebores, ſays *Geſner*, tempered with Vinegar and Honey, and boiled to a Syrup, are an harmleſs Medicine, and ſays, he has often found them, ſo uſed, very ſerviceable in moſt phlegmatic Diſorders, eſpecially of the Head and Thorax, as the Aſthma, Dyſpnœa, and Epilepſy; for they purge admirably, both by Stool and Urine, and by Diaphoreſis, without Perturbation.

In the Uſe of white Hellebore, ſays *C. Heffman*, two things are principally to be regarded; the firſt is, that the Diſeaſe be very obſtinate; the other, that the Patient be very ſtrong; for which Reaſons, this Root is not to be exhibited to old Perſons, or Children; nor to Women of a tender Conſtitution: A third Requiſite might be added, which is, that nothing ought to be done with it till after a careful Preparation, both of the Body and of the Hellebore.

The moſt antient Way of exhibiting it was with Radiſh, and this was done three Ways; the firſt was, by thruſting a Radiſh through the Root of the Hellebore, and ſuffering it to remain therein four-and-twenty Hours; after which they threw away the Root, and gave the Radiſh; or, ſecondly, they infuſed the Radiſh, after it was pulled out of the Root of the Hellebore, in Oxymel, and only gave the Patient the Oxymel; or, laſtly, left the Radiſh in the Root only for a Night, and the next Morning, throwing away the Hellebore, infuſed it in Oxymel, and gave the Infuſion to the Patient. The beſt Way of preparing it, according to *Parkinſon*, is to infuſe it in the Juice of a Quince; or put it in a Quince, and ſo bake it in an Oven, or under the Aſhes: For if the Patient be in danger of Suffocation from taking of Hellebore, eating of Quinces, or the Juice or Syrup of Quinces, are a preſent Remedy. The Root boiled in Vinegar, and held for ſome time in the Mouth, eaſes the Tooth-ach: Boiled in a Lixivium, and the Head waſhed with it, it kills and abſterges Lice and Scurf, and has the ſame Effect, if mixed with ſome Ointment: It cures the Itch, Tetters, and creeping Ulcers: And, given in Food, is mortal to many Kinds of Animals, as Moles, Mice, Lizards, Birds, and others. The Powder, ſnuffed up the Noſtrils, cauſes Sneezing, whence it is called in *Engliſh Sneezewort.*

The *Spaniards* have a Method of preparing a Poiſon of the Juice of the Roots, fermented in an earthen Pot, with which they

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they poiſon their Arrows, in order to make the Wounds they inflict with them incurable. What is remarkable in this Poiſon, is, that, being drank, it is harmleſs, or, at leaſt, not deadly; but is ſo only when infuſed into a Wound, and mixed with the Blood; but the ſame is true of the Poiſon of the Viper, which, taken inwardly, is ſucceeded by no pernicious Symptom, but conveyed to the Blood, through the Orifice of a Wound, or a Puncture, immediately excites moſt formidable Symptoms, which, if not remedied, will, in a ſhort time, deſtroy the Patient.

Both Kinds of Hellebore were highly celebrated by the Antients, for curing Maniacs; and at preſent they are never uſed but in great and difficult Caſes, as the Epilepſy, Vertigo, Mania, Dropſy, Sciatica, Convulſions, and the like. *Raii Hiſt. Plant.*

2. Veratrum; flore atro-rubente. *T.* 272. *Helleborus, albus, flore atro-rubente.* C. B. P. 186. *Boerh. Ind. alt. Plant. Vol.* 1.

The Leaves, Roots, Stalks, or Flowers of white Hellebore, applied to the Skin of a living Perſon, excoriate the Part, and produce an Exulceration: They, alſo, burn the Tongue. The true Veratrum of *Hippocrates* is celebrated on many Accounts. This Plant has a cauſtic and burning Juice, which attracted into the Noſtrils, after the manner of Snuff, excites an invincible Sneezing; whence it appears to be a Ptarmic in the higheſt Degree. Taken into the Stomach it purges upwards and downwards, with ſevere Gripings. *Hippocrates* ſays, that it purges the moſt remote Parts of the Blood, and, therefore, before its Adminiſtration, he cauſed his Patients to bathe; and ordered them to drink Oil and Honey for ſome Days; by which means all the Parts being relaxed, he then adminiſtered Veratrum, and directed Geſtation, either on Horſeback, or in a Ship: When the Medicine began to work, he ordered his Patients Reſt. The ſame Effect would indeed, in ſome meaſure, follow from a right Uſe of our Veratrum: But *Salmaſius*, writing of the *Veratrum*, ſays, that its Leaves are very finely jagged, which makes me doubt whether it be the ſame with ours. White Hellebore is much ſtronger than black Hellebore, and ſometimes excites Convulſions, unleſs exhibited with great Prudence: Hence it is never given in Subſtance but to Perſons of the moſt robuſt Conſtitutions; and in melancholy and maniac Caſes; and then with great Caution: It is, alſo, exhibited in Quartan Fevers; in which an Ounce of the Decoction, taken inwardly, has often had ſurpriſing Effects. It is a Plant, however, more adapted to Horſes than Men; though uſed as a Sternutatory in ſoporous Diſeaſes, as the Apoplexy and Lethargy. *Hiſt. Plant. adſcript. Boerhaav.*

Hippocrates purged with white Hellebore, in an immoderate Flux of the Menſes, before the Uſe of Aſtringents and Sweeteners: He, alſo, uſed white Hellebore as a Vomit; and gave it to thoſe that were melancholy, or mad.

He, alſo, gave it in Fluxions, which fell upon the Noſe, the Ears, or the Mouth, or cauſed obſtinate Pains of the Head; an unuſual Laſſitude and Heavineſs; a Weakneſs of the Knees, or Swelling of the whole Body: He gave it, alſo, to phthiſical Patients, with a Decoction of Lentils.

He gave white Hellebore, in a Leucophlegmatia, and in the Cholera Morbus.

To ſome he directed it faſting; but to moſt, after Supper. *Le Clerc* thinks, becauſe the Hellebore being mixed with the Aliment in the Stomach, would loſe a Part of its Stimulus. Sometimes he gave the Herb Seſamoides, and Hellebore, together.

In ſome Caſes he gave the μαλθακὸς ἑλλέβορος. This *Le Clerc* thinks was ſome particular Preparation of Hellebore, which took off, in ſome degree, the Violence of its Operation.

Celſus, Lib. 3. *Cap.* 26. recommends white Hellebore in an Apoplexy.

It is ſaid by ſome, that the Uſe of Hellebore was firſt diſcovered by a Man of *Anticyra*, who made an Experiment with it upon *Hercules*, who was mad; and who was cured by it.

Herophylus had a great Eſteem for white Hellebore.

Aretæus ſometimes purged with Hellebore, and was extremely fond of it.

He ſays it is not only a Vomit, but, alſo, the moſt efficacious and powerful Purge of all others: This good Service it does, he ſays, is not owing to the great Diſcharge of Humours it makes; for in the Cholera Morbus, there is the ſame Sort of Evacuation; nor is it owing to the violent Efforts it cauſes; for Sailing upon the Sea cauſes more violent Efforts: But it is owing to a particular Virtue in it, which cannot be enough admired; for though ſometimes it purges but little, yet it, nevertheleſs, cures. In old Diſorders, where all other Remedies have failed, Hellebore has ſucceeded. To thoſe that breathe difficultly, it renders Reſpiration eaſy: To ſuch as are pale it gives Colour; and makes thoſe plump that were before lean.

Alexander prefers the *Armenian* Stone to Hellebore, as a Purge, in Melancholy; becauſe it does it ſafely and effectually, without any ill Conſequence, or Danger, which the other rough Medicine too often occaſions.

This Medicine, ſo famous amongſt the Antients, was grown into utter Diſuſe, till *Aſclepiadotus* revived it, about the Year 500, and did many wonderful Cures with it, in the moſt obſtinate Caſes and Diſeaſes.

Cophon gives a very extraordinary Receipt, to feed a Chicken with white Hellebore, and after eight Days to kill it, and make Broth of it, which, he tells us, is a very good gentle Purge.

Gilbertus Anglicus orders Hellebore, Sena, and Spurge, to be diſtilled with Wine, for a Purge in a Vertigo.

VERATRUM NIGRUM. See ASTRANTIA NIGRA. It is, alſo, a Name for ſeveral Sorts of HELLEBORUS; which ſee.

VERBASCULUM CYANOIDES. A Name in *Boerhaave* for the *Cyanus*; *montanus*; *latifolius*.

VERBASCULUM SALVIFOLIUM. A Name for the *Phlomis*; *fruticoſa*; *folio ſubrotundo, breviore*; *flore luteo*.

VERBASCULUM is, alſo, a Name for ſeveral Sorts of PRIMULA VERIS; which ſee.

VERBASCUM.

The Characters are;

The Leaves are alternate, and hoary, or of a ſmutty Green, and large: The Flower is monopetalous, rotated, pentapetaloidal, diſpoſed in a long Spike, and growing very cloſely to a Stalk, ſhorter than the Pedicle: The Fruit is ovated, acuminated, and divided by an Interciſure into two Capſules, or Cells.

Boerhaave mentions eleven Sorts of Verbaſculum; which are,

1. Verbaſcum; mas; latifolium; luteum. *C. B. P.* 239. *Raii Hiſt.* 2. 1094. *Synop.* 3. 287. *Tourn. Inſt.* 146. *Boerh. Ind. alt.* 227. *Verbaſcum, Tapſus Barbatus.* Offic. *Verbaſcum vulgare flore luteo magno, folio maximo.* J. B. 3. 871. *Verbaſcum album vulgare ſive Tapſus Barbatus communis.* Park. Theat. 60. *Tapſus Barbatus.* Ger. 629. Emac. 773. MULLEIN.

The Stalk of Mullein is round and hoary, ariſing, uſually, ſingle, about as tall as a Man: The lower Leaves are large, about a Foot long, and three or four Inches broad, ſharp-pointed at the End, ſlightly indented about the Edges, covered with an hoary Down, or Woolineſs: Thoſe which grow upon the Stalk, have their middle Ribs affixed to it for half their Length, which make the Stalk appear winged: The Flowers grow in a long Thyrſus, ſet thick and cloſe together, each conſiſting of one Leaf, cut into five Segments, of a yellow Colour, with as many woolly Stamina, having purple Apices: The Seed-veſſels are oblong and pointed, opening in two, when ripe, and ſhewing the ſmall browniſh Seed: The Root is generally ſingle, with many Fibres, but not very large, for the Tallneſs and Bigneſs of ſuch a Plant. It grows in Highways, and by Hedge-ſides; and flowers in *July*. The Leaves are uſed.

They are accounted pectoral, and good for Coughs, Spitting of Blood, and other Affections of the Breaſt: They are, likewiſe, good for Griping and Colic Pains, ariſing from ſharp Humours. Outwardly uſed, in Fomentations or Fumigations, they are reckoned a Specific againſt the Pains and Swelling of the Hæmorrhoids, or Piles. *Miller's Bot. Off.*

The Leaves of Mullein are of an herby Taſte, a little ſaltiſh and ſtyptic; the Smell like Elder; and give a pretty deep Tincture of Red to the blue Paper: The Flowers give it a deeper: They are, alſo, ſtyptic, but ſweet. It is likely that the Salt of this Plant, in ſome meaſure, reſembles that of Coral. That of the white Mullein contains a great deal of Acid, and a little Sal Ammoniac; but is united with a great Quantity of Sulphur and Earth; ſo that it is very lenifying and vulnerary. The Decoction of this Plant is given to drink for the Colic, Dyſentery, and Looſeneſs. *Tragus* made uſe of the Root, boiled in Red-wine. *Matthiolus* made a Gargariſm for the Throat, with a Decoction of its Leaves and Flowers, and preſcribed it for a violent Cough. Mullein is boiled in Cows-milk, for the Teneſmus and Hæmorrhoids: The Patient muſt drink two Glaſſes of it every Day: Take it in a Glyſter, and bathe the Fundament with it: Some add to it the Leaves of Oak and wild Tanſy. To ſtop the Flux of the Piles, and cure the Dyſentery, the white Mullein muſt be boiled in the Water which the Smiths uſe to quench their Iron in. For the Gout and Inflammation of the Piles, the Juice of the white Mullein is prepared after the following manner:

Bruiſe the Leaves and Flowers of this Plant; let them rot in wooden Tubs, well covered and plaiſtered: After three Months Digeſtion, collect the Juice, and expreſs the Fæces, and keep it in Bottles well ſtopped.

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Some leave the Flowers only to rot in Bottles. *Tragus* would have them expoſed to the powerful Heat of the Sun: Some bury them in a great Dunghil. It is affirmed that Aloes, diſſolved in the Juice of Mullein, and thicken'd to the Conſiſtence of an Extract, do not irritate the Piles, nor cauſe any Hæmorrhage; but it is more ſafe to correct it, by diſſolving it in Water, and ſeparating the reſinous Part that remains upon the grey Paper, by Filtration, and cauſes the Irritations and Hæmorrhages. They evaporate, afterwards, the filtrated Solution to the Conſiſtence of an Extract. *Tragus* and *Matthiolus* ſay, that the diſtilled Water of the Flowers of the white Mullein is good for Burns; for the Gout, St. *Anthony*'s Fire, and all cutaneous Diſeaſes. This laſt Author preſcribed for the Piles, a Cataplaſm made with the Leaves of Mullein, and Leeks, together with ſome Yolks of Eggs, and Crums of Bread. *Martyn's Tournefort.*

2. Verbaſcum; fœmina; flore luteo, magno. *C. B. P.* 239.

3. Verbaſcum; fœmina; flore albo. *C. B. P.* 239.

4. Verbaſcum; mas; anguſtioribus foliis; floribus pallidis. *C. B. P.* 239.

5. Verbaſcum; Lychnitis; flore albo; parvo. *C. B. P.* 240. *Tourn. Inſt.* 147. *Boerh. Ind. alt.* 228. *Verbaſcum album.* Offic. *Verbaſcum mas foliis longioribus.* Park. Theat. 60. *Verbaſcum flore albo parvo.* J. B. 3. 873. Raii Hiſt. 2. 1095. Synop. 3. 287. *Verbaſcum Lychnitis Matthioli.* Ger. Emac. 775.

MULLEIN WITH WHITE FLOWERS.

It grows by the Sides of Paths in ſeveral Parts, and propagates itſelf yearly from ſhedding its Seed. The firſt Year it bears no Stalk, but only Leaves ſcattered on the Ground: When the Stalk is grown it periſhes. The Virtues are the ſame with thoſe of the common and black Mullein. *Ray. Dale.*

6. Verbaſcum; nigrum; folio Papaveris corniculati. *C. B. P.* 240.

7. Verbaſcum; nigrum; flore ex luteo purpuraſcente. *C. B. P.* 240. *Tourn. Inſt.* 147. *Boerh. Ind. alt.* 228. *Verbaſcum nigrum.* Offic. Ger. 631. Emac. 775. *Verbaſcum nigrum vulgare.* Park. Theat. 61. *Verbaſcum nigrum flore parvo apicibus purpureis.* J. B. 3. 873. Raii Hiſt. 2. 1095. Synop. 3. 288.

BLACK MULLEIN.

This has a Root and Stalk, like thoſe of the common Mullein; only the Stalk is leſs hairy: The Leaves, alſo, are leſs, more rare, and placed alternately: They, alſo, reſemble thoſe of Sage; but are much larger, and fetid.

It grows in ſeveral Places in *Cambridgeſhire*. And *J. Bauhine* tells us, that it is very frequently to be met with about *Baſil* and *Pompelgard*, on the upper *Rhine*. It flowers in *July* and *Auguſt*, and the Root, Leaves, and Flowers are uſed. The Root is aſtringent, and of Service in a Looſeneſs. The Leaves and Flowers have the ſame Virtues with thoſe of the common Mullein. *Ray. Dale.*

8. Verbaſcum; Blattariæ foliis; nigrum; amplioribus foliis aluteis apicibus purpuraſcentibus. *Flor.* 2. 98.

9. Verbaſcum; foliis nigris; amplis; floſculis albis; apicibus purpureis; perenne.

10. Verbaſcum; humile; Alpinum; villoſum; Borraginis folio & flore. *H. L.* 619. *T.* 147. *Sanicula, Alpina, foliis Borraginis, villoſa.* C. B. P. 243. *Auricula Urſi, Myconi, piloſa, cærulea.* J. B. 3. App. 869.

11. Verbaſcum; Orientale; Sophiæ folio. *T. Cor.* 8. *Boer. Ind. alt. Plant. Vol.* 1.

The firſt, ſecond, third, and fourth Species are reckoned among emollient Herbs. The Leaves bruiſed, and applied to any Part affected with Pain, remove the ſame: They are of a demulcent Quality; for which Reaſon they are an Ingredient in Decoctions, Clyſters, and Cataplaſms, in all Diſorders where Acrimony offends; being of great Service by their inſipid, viſcous, emollient, and ſmegmatic Juice. Of the Flowers, with a Solution of Oil of Olives, is prepared Oil of Verbaſcum, which is very good to conſolidate Wounds, and to mitigate Pains; and taken inwardly it is a Laxative. The Flowers are made into a Conſerve, which is excellent againſt all Hæmorrhages, Spitting of Blood from Contuſions, bloody Urine, immoderate Fluxes of the Menſes, or Lochia, the Teneſmus, Dyſentery, and the Falling down of the Uterus and Anus. The Decoction of the Leaves is effectual in the Colic, Diarrhœa, and Dyſentery; and a Decoction of the Flowers makes a good Gargariſm in the Quinſey, and a violent Cough: The Leaves boiled in Milk, are effectual in the Teneſmus and Hæmorrhoids. The Juice of this Plant is of great Efficacy in the Gout. The Decoction of the Leaves in Water is uſed in Clyſters, as an Emollient for the Hæmorrhoids; and may, alſo, be injected into the Uterus, for the Purpoſe of mollifying. The Plant, in ſhort, is emollient, aperient, and relaxing; and therefore enters the Compoſition of all emollient Clyſters and Cataplaſms. Outwardly the Leaves and Flowers are uſeful Topics, in mitigating all Kinds of Pain, particularly in Tumors of the Anus, and in the Hæmorrhoids. *Hiſt. Plant. adſcript. Boerhaav.*

VERBASCUM SYLVESTRE. A Name for the *Phlomis fruticoſa*; *Salviæ folio latiore & rotundiore*; and for the *Phlomis*; *fruticoſa*; *Salviæ folio longiore & anguſtiore.*

VERBASCUM TURCICUM. A Name for the *Primula veris*; *Conſtantinopolitana*; *flore albo.*

VERBENA.

The Characters are;

The Calyx is long, tubulous, and quinqueſid; the Flower, alſo, quinqueſid. The Seeds fill the whole Pericarpium: And the Flowers grow in Heads, or Spikes, and not in Whorles.

Boerhaave mentions eight Sorts of *Verbena*; which are,

1. Verbena; Americana; altiſſima; Urticæ foliis anguſtioribus; ſpicis brevioribus; floribus cœruleis. *Flor.* 2. 80. *M. H.* 3. 408.

2. Verbena; Americana; altiſſima; Urticæ foliis anguſtioribus; ſpicis brevioribus; floribus purpureis. *Flor.* 2. 81.

3. Verbena; Americana; altiſſima; Urticæ foliis anguſtioribus; floribus albis. *Flor.* 2. 81.

4. Verbena; Canadenſis; folio Urticæ. *Zanon.* 203. *H. R. Par. Flor.* 2. 81. *M. H.* 3. 408.

5. Verbena; Luſitanica; latifolia; procerior. *T.* 200.

6. Verbena; communis; flore cœruleo. *C. B. P.* 269. *Boerh. Ind. alt.* 187. *Tourn. Inſt.* 200. *Verbena.* Offic. *Verbena communis.* Ger. 580. Emac. 718. *Verbena vulgaris.* J. B. 3. 443. Raii Hiſt. 1. 535. Synop. 3. 236. *Verbena mas ſive recta & vulgaris.* Park. Theat. 678.

VERVAIN.

The Root of Vervain is white, ſlender, and full of Fibres, and ſpreading much about: The Stalk is ſquare and firm, ſomewhat hairy, and often of a purpliſh-brown Colour: The Leaves are long, narrow, and ſharp-pointed, cut into ſeveral Laciniæ, ſomewhat rough and wrinkled, growing two at a Joint: The Flower grows towards the Top, in ſlender Spikes, being ſmall, and of a whitiſh-purple Colour, of one Leaf, cut into five Segments; the two uppermoſt ſupplying the Place of the Galea; and the three lower, that of the Labella: It being reckoned among the verticillate Plants, having four ſmall longiſh Seeds, ſet together in a ſmall Calyx. It grows in Highways near Towns and Villages; and flowers in *July.*

The whole Herb is uſed, being accounted cephalic, and good againſt Diſeaſes from cold and phlegmatic Cauſes: It opens Obſtructions of the Liver and Spleen; helps the Jaundice and Gout; and, applied outwardly, is reckoned vulnerary, and good for ſore, watery, inflamed Eyes. *Miller's Bot. Off.*

This Plant yields, by the chymical Analyſis, ſeveral acrid Liquors, a great deal of Oil, and a pretty deal of volatile concrete Salt and Earth: Thus it may contain ſome Sal Ammoniac, united with a great deal of Sulphur. Vervain is vulnerary, deterſive, aperitive, and febrifugous. For the Green-ſickneſs, drink a Night's Infuſion of it in Wine. *Cæſalpinus* recommends the Powder of it for the Dropſy. The Extract or Juice of Vervain cures intermitting Fevers: A Tea of it is good for the Vapours: The diſtilled Water, or depurated Juice, cleanſes the Eyes, and clears the Sight. A Gargariſm of it is good for the Diſeaſes of the Throat. The Cataplaſm of its Leaves, bruiſed with Rye-meal, and the Whites of Eggs, is reſolving: The Juice and Infuſion of its Tops in Oil cure Wounds. *Martyn's Tournefort.*

The Antients aſcribe very many Virtues to Vervain, which are ſummed up by *Schroder*, as follows: Vervain is cephalic and vulnerary; its principal Uſes are in Pains, and other Affections of the Head, from cold Humours, in Affections of the Eyes and Breaſt, in old Coughs, and the like: In Obſtructions of the Liver and Spleen, the Jaundice, Gripes of the Belly, and the Dyſentery: It is an excellent Lithontriptic, reſtrains libidinous Deſires, cures a tertian Fever, mitigates the Pain of the Gout, cures Wounds, and facilitates the Birth: Externally it is effectual in the Head-ach, Tooth-ach, Alopecia, Melancholy, Lippitude, Weakneſs or Redneſs of the Eyes: In the Quinſey and Hoarſeneſs, a Cataplaſm thereof being applied round the Neck: In a Tumor of the Glands of the Fauces, being uſed in a Gargariſm: In Pains of the Spleen, being applied with Hogs Fat; alſo, in mitigating the Gout, in Aſtriction of Wounds, and Abſterſion of putrid Ulcers, in the Falling down of the Anus, the Mariſcæ, and the like.

Vervain being endued with ſo many Virtues, it is no Wonder that it was thought by the Antients, to deſerve the Name of ἱερὰ βοτάνη (*Hiera Botane*), the *Holy Herb.* For a Tumor of the Spleen, pound Vervain with the Whites of Eggs, and Barley, or wheaten Meal, and make them into a Cataplaſm, which being wrapt in a thin Linen Cloth, apply to the Part affected upon the Tumor, where it attracts, as it were, the thinner Part of the Blood: Some add Betony. This is a popular Remedy. *Cheſneau.*

Vervain, applied upon the Head, or laid under the Pillow, or made into a Plaiſter, with very ſtrong Vinegar, and Oil of Roſes, eaſes the Pain of the Head proceeding from Wine. *D. Soame. Raii Hiſt. Plant.*

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The Root of Vervain is accounted by ſome as an effectual Amulet againſt ſtrumous Tumors; and hung about the Neck, by ſome old Women, as an efficacious Medicine for thoſe Purpoſes. *Dale.*

7. Verbena; tenuifolia. *C. B. P.* 269. *M. H.* 3. 419. *Verbenaca ſupina.* J. B. 3. 444. Dod. p. 250.

8. Verbena; nodiflora. *C. B. Prodr.* 125. *Ic. & Deſcr. Boerh. Ind. alt. Plant. Vol.* 1.

It is called *Verbena*, from *Verrere*, to ſweep, becauſe it formerly ſerved to ſweep the Altar; and *Periſtereum*, from περιστερὰ *(Periſtera)* a Dove, becauſe the Doves are delighted with it. There is no Herb ſo much commended by the Antients as this for vulnerary Purpoſes, becauſe it expels heterogeneous Particles, whence it is called *Herba Vulneraria*, or a Species of *Siderites:* There is no Plant on which the Poets have more exerciſed their Talent of Fiction; and none more uſed in Sacrifices, whence it was called the *Holy Herb*, and *Menſa Jovis*, or *Jupiter's Table*, with which they ſtrewed as well as ſwept their Altars: Whence the Servant in *Terence* ſays, *Tolle Verbenam ab Ara*, "Take off the Vervain from the Altar." There is, alſo, no Plant of which the Magi have related more ridiculous Fables; for Inſtance, they ſay, that if any Perſon deſcribe a Circle about it, and then pluck it with his Left Hand, before he has ſeen either Sun or Moon, he ſhall be proſperous in whatever he undertakes; but if he pulls it with his Right Hand, all Things ſhall happen croſs, and contrary to his Deſires. Theſe Superſtitions are not yet quite eradicated from the Minds of Men; for there are Authors who ſtill ſay, that Children, by chewing this Herb, will breed their Teeth without Pain; and it is ſaid to be effectual againſt Convulſions and Inchantments.

Vervain is aperitive, deterſive, depurating, corroborating, and a Febrifuge. The Leaves infuſed in Wine, are ſerviceable in the Chloroſis and Jaundice. The Powder of the Leaves is good for the Dropſy; and the Juice cures intermittent Fevers. An Infuſion of the Leaves, after the manner of Tea, is good in the hyſteric Paſſion: The Leaves bruiſed, and applied in the Form of a Cataplaſm, are a very good Reſolvent in Pains of the Sides, and the Pleuriſy. The diſtilled Water, as well as the Juice, cure Inflammations of the Eyes, and all Sorts of Wounds, increaſe Milk in Women who give Suck, break and expel the Stone in the Kidneys and Bladder, and give Relief under a flatulent Colic. *Hiſt. Plant. adſcript. Boerhaav.*

VERBENACA RECTA. A Name for the *Verbena*; *communis*; *flore cæruleo.*

VERBENACA SUPINA. A Name for the *Verbena*; *tenuifolia.*

VERBERA, *Plagæ*, *Percuſſiones*. Blows, Stripes, Percuſſions. They are reckoned among the Cauſes of Diſeaſes; and ſometimes find a Place among Remedies. Thus we are aſſured by *Rolfinkius*, that a certain Empiric cured mad and melancholy Perſons, merely by the Uſe of Whips and Cudgels.

VERBESINA. See BIDENS.

VERDETUM is a green Colour, produced from the Vapour of ſtrong Vinegar, poured on Copper-Plates.

VEREDARII, *Vermes*, Worms. The ſame as CUTAMBULI; which ſee.

VERETRUM. The ſame as PENIS.

VERGILIÆ. See PLEIAS.

VERMES. Worms.

Worms are living Animals, of various Figures, Structures, and Bulks, which are formed in the Inteſtines, from the Seeds of ſome Inſects, taken with the Aliments. Theſe Animals are nouriſhed and enlarged by a certain putrid Juice, and greatly weaken and injure the Body, and its ſeveral Functions.

Tho' Perſons at no Period of Life are abſolutely free from Worms, yet they are moſt incident to Infants, and Children between Ablactation and the fourteenth Year of their Age.

We find from Experience, that, in the human Body, there are various Species of Worms, which, by the antient, as well as modern Phyſicians, are divided into three principal Kinds: The firſt are round, ſmooth, and hardly a Span in Length, by which Marks they are diſtinguiſhed from other Worms. Theſe have their principal Seat in the ſuperior ſmall Parts of the *Jejunum* and the *Ileum*; thence proceeding, ſometimes, to the Stomach, they go as far as the Mouth, or are vomited up: Theſe are generally the Worms which, according to *Hildanus*, *in Cap.* 1. *Obſ.* 57. are principally form'd in Children, and are ſometimes found conglomerated in a large Ball, and ſecurely lodg'd in the *Ileum*, whoſe Membranes they often corrode, ſo as to penetrate into the Cavity of the Abdomen.

The ſecond Species are thoſe which, on account of their broad Figure, like a Bandage, are call'd Long Worms, or *Taniæ*. They are ſo long, as to exceed two, and, ſometimes, ten Feet in Length. *Platerus*, in Adults, obſerved them forty Feet long. See *M. N. C. An.* 3. *Obſ.* 29. and *Bartholin. Hiſtor. Anatom. Cent.* 3. *Obſ.* 14. Theſe generally poſſeſs the whole Tract of the Inteſtines, but eſpecially the *Ileum*, and are frequently obſerved without Heads and Tails; for they are not evacuated whole, but in Pieces reſembling the Seeds of Gourds, or Cucumbers, which, according to *Spigelius*, *in Cap.* 15. are nothing but the middle groſs Nodes of the Worms remaining, after their lateral and membranaceous Parts are conſum'd by the Putrefaction.

The third Species of Worms are the *Aſcarides*, or ſmall ſlender Animals, which, lodging in the large Inteſtines, eſpecially the *Rectum*, generally ſo vellicate it, as to produce a *Teneſmus.* They are, alſo, frequently diſcharged, in incredible Numbers, with the Excrements.

Worms in the Inteſtines are known, if Children ſtart in their Sleep, and are affrighted when waked out of it; if there is an Itching of the Noſtrils, a fetid Breath, a Thirſt, a Diſcharge of the *Saliva*, a Paleneſs of the Countenance, with intermediate Fluſhings, Coldneſs of the Extremities, a turbid Urine, an Inflation of the Belly, ſometimes an exceſſive, and at other Times a languid Appetite, irregular Fluxes, and other Symptoms of a like Nature: But as theſe Signs are common to other Diſeaſes, ſo there can be no better, nor more infallible Criterion, than the Worms themſelves, diſcharged by Stool.

The Symptoms familiar to Patients of this Kind, are generally very different, according to the Parts where the Worms are lodg'd; but they are frequently ſo very violent, and ſometimes ſuch Convulſions of the Limbs are excited, that the Country People often think the Patient bewitched: But, more particularly, if the Worms are lodged in the Stomach, they produce Nauſeas, Cardialgias, Syncopes, Toſſings of the Body, Grindings of the Teeth, Deliriums, and even Death itſelf, at laſt. When they are lodged in the ſmall Inteſtines, they excite Gripes, biting Pains about the Navel, a voracious Appetite, a Swelling of the Belly, and Fluxes; and when they are lodged in the *Inteſtinum Rectum*, they produce uneaſy Titillations, Corroſion, and an almoſt perpetual Teneſmus.

Worms are frequently accompanied with putrid, anomalous, and ſlow Fevers, like thoſe of the quotidian Kind; but theſe Animals more frequently accompany or follow other Diſorders, ſuch as the Meaſles, and Small Pox; and not only increaſe the Symptoms, and impair the Strength, but, alſo, render the Diagnoſtic, Prognoſtic, and Method of Cure, highly difficult.

At certain Seaſons of the Year, eſpecially in the Autumn, when, under a moiſt and unequal State of the Air, catarrhal Fevers, Meaſles, and Small Pox, rage epidemically, Worms are generally moſt copiouſly generated; becauſe, at that time, the Strength of the Solids being impaired, more peccant and viſcid Humidity, diſpoſed to Corruption, is accumulated in the Body; by which means, the verminous Seed receives more Nouriſhment and Supply. This is, alſo, the Reaſon why Infants, Children, and Women, eſpecially if habituated to a ſedentary Life, and a bad Regimen, are more terribly afflicted with Worms than young Perſons, Adults, and Men; whoſe Solids being ſtronger, and their Circulation briſker, do not ſo eaſily generate peccant and viſcid Juices.

As for the Cauſes, certain Aliments favour the Generation of Worms; and theſe are ſuch as partly produce peccant and pituitous Juices; and partly ſuch as contain the Eggs and Seeds of Inſects, which are, with them, conveyed into the Body. Of this Kind are Milk-meats, Cheeſe, ripe Fruits, Sweetmeats prepared with Sugar and Honey, Pulſe, farinaceous Subſtances, and others of the ſame Kind; which, above other Subſtances, contain in them the hurtful Eggs of Animals; without which there can be no Generation of Animalcules in Nature. This is ſufficiently proved by the Experiments of *Redi* and *Malpighi*; who, in the middle of Summer, put Things ſubject to Corruption, ſuch as Fiſhes and Fleſhes, into different Veſſels, one of which was cloſe ſhut, and the other left open: In a ſhort time they found the Subſtances left in the Veſſel, to which the Flies and Inſects had free Acceſs, full of Worms; whereas, in the Veſſel which was ſhut, they found not ſo much as one Worm. *Malpighi*, alſo, informs us, that tho' he frequently buried Pieces of Fleſh under the Ground, and ſuffered them to remain there for a long time, yet he never found Animalcules in them. Now if it is ſo, the Reaſon ſeems plain, why Infants, living upon Milk alone, are not afflicted with Worms till they begin to eat other Aliments contaminated by the Seeds and Eggs of Animals and Inſects.

The Symptoms, as we have already obſerved, differ, according to the Vigor or Tenderneſs of the Patients, and according to the different Nature of the corrupted Matter, and the Worms. I have, however, often obſerved, that if exanthematous Fevers, Purples, Meaſles, or Small Pox, are accompanied with Worms, theſe Animals not only generally diſturb the calm and regular Progreſs of ſuch Diſorders, but, alſo, induce a Coldneſs of the Extremities, a Weakneſs and Inequality of the Pulſe, Deliquiums, and, often, Death. But

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this happens more frequently in Children than in Adults and young Persons. Round Worms, of a variegated Colour, are almost always a bad Sign; for they often ascend to the Stomach, and, by lancinating its Orifices, and sometimes perforating it, produce epileptic Fits, Danger of Suffocation, and even sudden Death. The *Tæniæ*, or long Worms, produce chronical Disorders, and sometimes prove mortal, before it is discovered that the Patient is afflicted with them. The *Ascarides* are less dangerous; because, being lodged in the large Intestines, which are not possessed of such a quick Sense as the others, they do less Harm by their Corrosion. The Symptoms of Patients afflicted with Worms are observed to be increased about Noon, and towards the Evening; because, at these times, the Worms more strongly corrode and bite the nervous Canal of the Intestines, which they find free from Aliments. If dead Worms are evacuated by Stool, they portend Danger, on account of the Putrefaction they discover; but it is otherwise, if they are killed and expelled by Medicines. In violent Disorders, Worms coming from the Mouth indicate that the Patient will die, especially if his Breathing is frequent and cold: Nor do they absolutely predict the Death of the Patient; because there are various Examples of Fevers of all Kinds terminated by the Expulsion of Worms. Thus in *M. N. C. Vol. 3. in Append. Obs.* 4. we are informed, that a tertian and continual Fever were cured by a Discharge of many Worms from the Mouth.

The Cure.

Tho' Infants afflicted with Worms are in great Danger, yet we are never to despair, provided Remedies proportioned to the Diversity of Symptoms, Constitutions, and Circumstances, are exhibited seasonably, and in a proper Order. But in scarce any Disease are so different and active Medicines extolled, and used by Physicians, as in Disorders where Worms are to be expelled, or killed; for which Reason, I shall briefly shew what Caution, Prudence, and Circumspection, the Physician ought to use in exhibiting them.

First, then, among the Anthelminthics are generally reckon'd Acids; such as the Juices of Citrons, Oranges, Lemons, Currants, Barberries, and Pomgranates, Phlegm and Spirit of Vitriol, Cream of Tartar, Wine, especially tartish Rhenish Wine, and Vinegar: All these may be commodiously exhibited, where Heat, preternatural Warmth, and febrile Commotions, are complicated; for they not only correct the Heat, but, also, excellently resist the Putrefaction, and avert the dangerous Malignity of the Symptoms.

Among the Anthelminthics are, also, reckoned Bitters; such as Wormwood, the lesser Centaury, Scordium, Marsh Trefoil, Rue, and still more, Bitters possessed of a purgative Quality; such as Aloes, Rhubarb, Coloquintida, and the Troches of Alhandal prepared of it. Tho' these Medicines are not absolutely destructive of Worms, since Animals are not only generated in Rhubarb and Wormwood, but, also, according to *Hildanus*, *Cent.* 1. *Obs.* 160. in the Gall-bladder; yet it cannot be denied, that Bitters are very effectual against these Animals; because, by their balsamic Quality, they partly correct the crude and viscid Matter with which they are nourish'd; and, by stimulating the Fibres of the Intestines, they sometimes evacuate the corrupted Humours, together with the Worms: They, also, partly correct the Inactivity of the Bile, which, in Children, and moist Patients, is frequently the immediate Cause of Worms.

Among Anthelminthics, great Efficacy is ascribed to oleous Substances, which seems to be confirmed by an Experiment of *Rhedi*; who tells us, that Flies, and other Insects, remained alive after they were immersed in various Liquors; but that such as were immersed in Oil died, and did not recover Life, tho' they were exposed to the Solar Rays. I willingly grant, that all this is consonant to Truth; and that oleous Substances, such as Olive-oil, Rape-oil, and Oil of sweet Almonds, may, with great Success, be exhibited. But it is to be observed, that they are by no means to be exhibited with an Intention to kill the Worms; since a very large Quantity of Oil would be requisite, to reach all the Worms in the whole Volume of the Intestines. Oleous Substances, therefore, are much rather to be exhibited in violent Symptoms arising from Worms; because they relax the spasmodically-constricted Coats of the Intestines, and, as it were, defend and line them with a Mucilage, that afterwards more acrid and purgative Medicines may be exhibited with more Safety. Thus, in order to kill Worms, and mitigate the Symptoms, I have, with Success, in Children, prescribed two or three Spoonfuls, or even an Ounce or two, of the Oil of sweet Almonds, to be taken at Bed-time, or early in the Morning, exhibiting, a few Hours after, Pills prepared of the *Extractum Panchymagogum Crollii*, Resin of Jalap, and *Mercurius Dulcis*.

Saline Substances are greatly celebrated as Anthelminthics, both because they are fatal to the tender Structure of these Animals, and because by stimulating the Intestines, they promote their Discharge, especially if dissolved in a sufficient Quantity of Water. This principally holds with respect to the neutral bitter Salts, especially that of *Glauber*, *Epsom*, *Sedlitz*, *Egra*, and the *Caroline* Salt, which when taken in a proper Vehicle, and used for a considerable time, produce an excellent Effect, especially if Children and young Persons labour under that Species of Worms they call *Tæniæ*, and the *broad Kind*, because these are not so happily exterminated by Purgatives, which produce Spasms, as by Salts, and saline Springs. Hence the *Sedlitz* Waters, which abound with bitter Salt, are justly extolled for killing Worms. And the same anthelminthic Virtue is ascribed to the saline Springs at *Hall*, by the common People, who now-and-then give their Children large Draughts of that Water against Worms. Nor can we condemn the Practice of the People on the Sea-coast, who, for the same Purpose, drink Sea-water, or, if they are rich, the Broth of recent Oysters, with the Addition of Lemon-juice and Pepper, by which means they expel the Worms, and prevent a Consumption, and various other Disorders incident to Children. It is certain, that Salts, especially of the vitriolic Kind, have long been justly celebrated as Anthelminthics; and the *Pyrmont* Waters, which partake of a subtile Vitriol of *Mars*, are so effectual for the Cure of *Tæniæ*, and turbinated or spiral Worms, that the Patients are in a short time totally freed from all the Symptoms.

If any Disorder admits of Specifics, these are certainly required in killing and eliminating Worms. For these Purposes then, the best Specifics are, among Gums, Asa-fœtida, Sagapenum, Opopanax, and Myrrh. Among Herbs, Tansey, Scordium, and Wormwood. Among bulbous Roots, the various Kinds of Onions, and Garlick. Among Fruits, bitter Almonds, and their expressed Oil. Wormseed, the Seeds of the Caiputia, and others of a like Nature. All which by their sulphureous and fetid Smell, are so peculiarly hurtful to Worms as to kill them. And these Specifics are so necessary, that unless they are, in a due Dose, mixed with the above-mentioned Medicines, the desired Effect is rarely produced.

There still remains another not less efficacious Specific taken from the Mineral Kingdom, which is Quicksilver; which being in a peculiar manner fatal to Worms, destroys their vital Motion, tho' the Method in which it produces this Effect, cannot be accurately deduced from mechanical Principles. There have already been various Methods of exhibiting this Anthelminthic, which we shall briefly consider. *Helmont* was the first who made an Experiment with this Medicine, whilst he boiled it either in pure Water, or some distilled Water, and with great Success gave the Water thus impregnated with the subtile Particles of the Mercury, to Patients afflicted with Worms. *Henricus Meibomius* followed another Method; for he let *Rhenish* Wine, poured upon Quicksilver, stand in a gentle Digestion without any boiling, for twenty-four Hours, and he found his Medicine produce more speedy Effects than the former. The Chymists rather approve of *Mercurius Dulcis* duly prepared: A few Grains of which, according to the State of the Patient, they exhibit with some Purgative, such as sulphurated Scammony, Resin of Jalap, and the *Extractum Panchymagogum Crollii*, made up in the Form of Pills; and this Method they have found attended with Success; or they exhibited it mixed with Coralline, either with or without a Purgative. Others, as *Harris*, falling on a safer Method, successfully exhibited Æthiops Mineral, prepared of an accurate Mixture of Sulphur and Quicksilver. But I intimately mix in a Mortar the well depurated Quicksilver with Sugar-candy, and premising the things requisite, I have found, that under a good Regimen, this Preparation was far more efficacious than any others, especially if the Patients, in order to prevent a Relapse, abstain from Flesh, Fish, Milk-meats, sweet Substances, Cheese, and other hurtful Aliments, and use for Drink a Decoction of pure Water, and calcined Hartshorn.

Among other Medicines I have with Success used the following Pills against Worms:

> Take of Asa-fœtida, Extract of Rhubarb, Tansy, depurated Aloes, the best Myrrh, and *Mercurius Dulcis*, each one Scruple; and of the Extracts of Saffron, and Castor, each four Grains; reduce to a Mass: From every Scruple of which make fifteen Pills: By taking five, six, or eight of which, according to the Age, and other Circumstances of the Patient, I have known many throughly cured, though before they were miserably tormented.

They who abhor Pills, may have them exhibited in a Syrup, or twice a Day a proper Dose of the following Medicine may be exhibited:

Take

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Take of the Liquor of the *Terra foliata Tartari*, one Ounce; and of the Extracts of Rhubarb, Tanſey, and Wormwood, each half a Dram: Mix all together.

Nor have I ſeen leſs happy Effects produced by the following Powder:

Take of recent white Mechoacan, Wormſeed, Coralline, Rhubarb, *Mercurius Dulcis*, Scordium, calcined Hartſhorn, and purified Nitre, each half a Dram; and of Camphire, ſix Grains: Make into a Powder, which is to be diſtributed into Doſes, according to the Age of the Patient; or reduce it to an Electuary.

But it is to be obſerved, that acrid Purgatives, or hot Remedies, are never to be uſed where there is a febrile Heat, unleſs we intend to augment it. We are, alſo, to abſtain from Mercurials, and all draſtic Medicines, when the Duodenum is full of a cauſtic and acrid Bile; for by theſe means I have not only known the Symptoms augmented, but, alſo, Inflammations of the Inteſtines brought on.

Before expelling the Worms from the ſmall Inteſtines, by Purgatives and Specifics, it is expedient to inject a Clyſter of Milk and Honey, that the Worms, being allured by the Sweetneſs, may quit their Lodgings, and deſcend more eaſily to the ſmall Inteſtines.

If Aſcarides are lodged in the Rectum, detergent milky Clyſters, in which Tanſey, Garlick, or the Leaves of Scordium, have been boiled, produce an excellent Effect; as do, alſo, the Clyſters of Brine, prepared by boiling in it Horehound, the Leſſer Centaury, and Scordium, adding to it a ſufficient Quantity of the compound Electuary of Hiera.

Emetics are, alſo, proper, if, after Purging, the Worms are not duly evacuated, becauſe if they are lodged in the Inteſtinum Cæcum, the Purge cannot always reach them.

Anthelminthics are, alſo, commodiouſly exhibited in Electuaries or Syrups, ſuch as that of Succory with Rhubarb. This is ſufficiently known to Nurſes, who to Children afflicted with Worm, give about a Scruple of Wormſeed mixed with Honey in Milk, before the Changes of the growing or decreaſing Moon. Nor is this Practice without Succeſs, provided the Wormſeed is not rotten.

Sometimes Topics may be uſefully joined with internal Medicines: The beſt Topics are, Epithems prepared of Wormwood, Bulls-galls, Aloes, Coloquintida, the Juice of the Leſſer Centaury, and Oil of the Flowers of Spike, and applied to the epigaſtric and umbilical Regions. The Ointment of Sow-bread, alſo, anſwers the ſame End.

But the Phyſician ought, above all things, to be certain of the Preſence of Worms by infallible Signs, if he intends to exhibit Medicines for killing and evacuating them, leſt the Patient labouring, perhaps, under another Diſeaſe, ariſing from a different Cauſe, ſhould receive more Harm than Good, from his Preſcriptions. *F. Hoffman.*

VERMICATA, a Word uſed by ſome, who mean by it the ſame as *Lentigines.*

VERMICELLI, *Vermicelli*, *Tagliarini*, *Millefanti*; in *French*, *Vermichel.*

It is a Paſte made with the fineſt Flour and Water, and reduced into Threads of the Figure of Worms, by means of Syringes bored full of ſmall Holes. Theſe Threads, or Filaments, are afterwards dry'd and kept; they are generally white, tho' they are, alſo, prepared of a yellow Colour, by mixing Saffron, or Yolks of Eggs, in the Paſte; ſometimes they add Sugar, to make them the more agreeable. This Compoſition is principally prepared in *Italy*, where it is much more in Uſe than in *France*. They eat it in their Soop.

They reduce this Paſte of *Vermicelli* to ſeveral other Forms; for they flatten and widen it to the Thinneſs of a Ribband, two Inches broad. This is what the *Italians* call *Vagne*; they make it into Sticks of the Bigneſs of a Quill, which they call *Mecaton*; and into ſmall Grains of the Bigneſs of Muſtard-ſeed, which the *Italians* call *Semoule*, that is to ſay, *fine Flour*; they reduce it, alſo, into the Form of Beads, and this is what the *Italians* call *Patres.*

Vermicelli ought to be choſen new, well dry'd, and of a beautiful Colour; the white is moſt in Uſe. It is a Pectoral, and of a ſweetening, reſtorative, and ſtrengthening Quality.

All the Names of the *Vermicelli* are *Italian*, becauſe this Sort of Paſte was invented in *Italy*; and it takes the Name of *Vermicelli*, that is to ſay, ſmall Worms, becauſe it is reduced into Filaments reſembling thoſe Animals. *Lemery des Drogues.*

VERMICULANS, σκωληκίζων, vermiculating, an Epithet of a ſort of creeping Pulſe. See PULSUS.

VERMICULARIS. A Name for the *Sedum*; *minus*; *tertiſolium*; *album.*

VERMICULARIS CRUSTA. The interior villous, and gyrous, or rugous Coat of the Inteſtines. *Blancard.*

VERMICULATUM. Something in a Plant, which appears red, and glittering like a Roſe.

VERMICULUM. Elixir, Tincture. *Rulandus.*

VERMICULUS. A ſmall Worm.

VERMIFORMIS, σκωληκοειδὴς, Vermiform, or Worm-like, is an Epithet of a Proceſs in the *Cerebellum*, called *Proteſſus vermiformis.* See CEREBRUM.

Vermiformis Appendicula. See APPENDICULA, and COELIA.

VERMIFUGA. The ſame as ANTHELMINTICA; which ſee.

VERMILION, Cinnnabar, or Minium. *Rulandus.*

VERMINA, *Verminatio*, *Verminoſus*, σφόρος, the Gripes. *Vermina*, in *Feſtus*, are the griping Pains of the Inteſtines: Pain is, alſo, called *Verminatio.* See STROPHOS. *Verminoſus* is properly ſpoken of the Matter in which Worms are generated.

VERMIS *Cerebri.* The Worm of the Brain, that is, the Epidemical *Hungarian* Fever.

VERNACULUS. The ſame as ENDEMIUS; which ſee.

VERNICE. Dry, guttous *Vernix.* *Rulandus.*

VERNIMBOCK. A ſort of Wood, like *Braſil* Wood, uſed in Dying; and ſuſpected to be what we call *Redwood.* It takes its Name from *Fernambuca*, a Town of the *Portugueſe*, in *Braſil*, whence it is exported. *Raii Hiſt. Plant.*

VERNISIUM. The ſame as,

VERNIX, otherwiſe *Sandaraca*, *Sandarache*, and *Gummi Juniperinum.* *Vernix*, Varniſh, is, alſo, a Name given to a certain liquid Compoſition, which induces a Cruſt over Wood, which preſerves it from Putrefaction. Thus, a Vernix is prepared of Lacca, Maſtich, Copal, Succinum, either ſimple or mixed, and boiled and diſſolved in Alcohol of Wine, Oil of Turpentine, or Linſeed-oil. *Blancard.*

VERONICA.

The Characters are;

The Leaves, for the moſt part, grow oppoſite by Pairs; the Calyx is monophyllous, quinquefid, and expands in form of a Star. The Flower is monopetalous, generally quadrifid, and expands in a circular Order. When the Flower decays, the Ovary becomes a membranaceous Fruit, divided into two Cells, which are ſhaped like an Heart, and full of Seeds, ſometimes ſmall, ſometimes of a good Largeneſs and Thickneſs.

Boerhaave mentions twenty-ſix Sorts of *Veronica*; which are,

1. Veronica; major; latifolia; erecta. *M. H.* 2. 317. *Ic.* 2.

2. Veronica; maxima; latifolia; erecta; cœrulea ſpica longiſſima.

3. Veronica; ſpicata; longifolia. *T.* 143. *Lyſimachia, ſpicata, cœrulea.* C. B. P. 246. *Pſeudo-lyſimachium, cœruleum.* Dod.

4. Veronica; ſpicata; anguſtifolia. C. B. P. 246.

5. Veronica; ſpicata; anguſtifolia; flore incarnato. *Flor.* 2. 104.

6. Veronica; mas; ſupina; & vulgatiſſima. *C. B. P. Raii Hiſt.* 1. 851. *Synop.* 3. 281. *Boerh. Ind. A.* 224. *Veronica mas*, *Betonica Pauli.* Offic. *Veronica mas vulgaris ſupina.* Park. Theat. 550. *Veronica vulgatior folio rotundiore.* J. B. 3. 282. *Veronica vera & major.* Ger. 502. Emac. 626.

MALE SPEEDWELL.

This is a low creeping Plant, whoſe Stalks generally lie on the Ground, ſhooting out Fibres at the lower Joints. The Leaves grow by Pairs, on ſhort Foot-ſtalks; they are oval, about an Inch long, hairy, and crenated about the Edges, of a pale-green Colour. The Flowers grow on the upper Part of the Stalks among the Leaves, in ſhort Spikes, each of one ſmall bluiſh purple Leaf, cut into four Parts; to each of which ſucceeds a Seed-veſſel, in Shape of that of Shepherd's-pouch, full of very ſmall Seeds. The Root is a Buſh of Fibres; grows in Woods and ſhady Places, and flowers in *June.* The whole Herb is uſed.

This is reckoned among the vulnerary Plants, both uſed inwardly and outwardly; it is, likewiſe, pectoral, and good for Coughs and Conſumptions; and is helpful againſt the Stone and Strangury, as, alſo, againſt peſtilential Fevers. *Miller's Bot. Off.*

The Leaves of Speedwell are bitter, and give a pretty deep-red Colour to the blue Paper, which gives us Reaſon to believe, that their Salt very much reſembles that of Coral; but that of the Speedwell is charged with a great deal more Acid than the ordinary Salt of Coral, and is joined beſides with a great deal of Sulphur: For,

By the chymical Analyſis, we obtain from this Plant a great deal of Earth, Acid, and Oil.

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These Principles render the Speedwell sudorific, vulnerary, detersive, diuretic, and proper to discharge the Lungs of glutinous and purulent Matter. *Tragus* affirms, that in malignant Fevers, two Ounces of the Spirit of Speedwell, mixed with a little Treacle, provoke Sweat copiously. This Spirit is made by distilling Speedwell infused in Wine for some Days.

Take two Ounces and an half of the distilled Water, infuse in it one Dram of the Leaves, and as much of the middle Bark of *Solanum Scandens*, *sive Dulcamara Pin.* and give it as an excellent Remedy for Ulcers in the Lungs, Stone, and Vapours.

The Syrup and Extract of Speedwell purify the Blood, and are good for cutaneous Diseases; but the affected Parts must be washed at the same time with the Water of Speedwell, in which some Vitriol has been dissolved. The frequent Use of Clysters, made with one Pound of the Decoction of this Plant, an Ounce of Butter, and as much Sugar, are wonderfully praised for the Colic. Some boil Speedwell and Chamomile in Milk, and afterward add some Sugar. Speedwell is used now-a-days after the manner of Tea. It is mixed, also, with the vulnerary Plants in Broths, Potions, and Ptisans. *Martyn's Tournefort.*

Veronica is an excellent Vulnerary and Sudorific; its principal Uses are in Erosions and Obstructions of the Lungs and Spleen, whence it is of extraordinary Service in the Colic, Phthisis, Scabies, Pruritus, Pestilence, and Wounds. Externally it is much celebrated for absterging Wounds, in Hardness of the Spleen, and the Colic. *Schroder.*

Taken inwardly, it is good against the Cough, and other pulmonic Disorders, and against the Pestilence and contagious Diseases; outwardly, it is effectual in Wounds, Ulcers, Itch, and cutaneous Diseases.

A Decoction of *Veronica*, taken in a good large Dose, freed a Woman from a Stone in the Left Kidney, with which she had been afflicted sixteen Years; the Stone was first protruded into the Ureters, through which it was convey'd to the Bladder, whence by the continued Use of the same Decoction, it was at last ejected by the urinary Passage. *Eph. Germ.*

Veronica is of singular Use in Barrenness. A Lady of the first Rank, after seven Years Barrenness, took, by my Advice, the Powder of *Veronica* in the Water of the same, for many Days together, and very soon after conceived. After this, she advised some others, who were thought barren, to use the same Remedy, which had the desired Success upon ten or twelve of them. The Syrup of *Veronica* is an admirable Remedy in Ulcers of the Lungs. *C. Hoffman.*

The most illustrious *Guntherus* had for some Years laboured under an incurable Ulcer of the Legs, attended with periodical Pains, for which he found no better or speedier Help than Linen Cloths dipt in Water of *Veronica*, and applied to the Place; for the Inflammation, and other Symptoms, usually consequent, immediately ceased.

The Herb is, also, very remarkable for its vulnerary Virtue: A Fistula of the Thorax, which had eluded the Force of Bathing, Fomentation, and all other Kinds of Remedies, was at length perfectly healed by the internal Use of the Water of *Veronica* alone. *Eph. Germ.*

The Extract of *Veronica*, mixed with the Extract of Juniper, is a most efficacious Medicine in Obstructions of the Viscera, and pectoral Diseases; I have often try'd it with extraordinary Success. It expels the morbific Matter by Urine; but Laxatives and Aperitives are first to be premised. *D. Tancred Robinson e Fabr. Hildano.*

I must ingenuously confess, says *S. Pauli*, that after I had in vain try'd various Medicines against the crusty Scabies of Children, I have at last, in Imitation of the Example before related, (of *Guntherus*) directed the Parents to apply Linen Cloths dipt in the Water of *Veronica*, and first compressed to prevent their dropping, to the Arms, and Calves of the Legs of the Children, and by that means have perfectly cured them; but I advised, that the Nurse should, at the same time, drink the Decoction of Fumitory boiled in Whey.

Cato had an extraordinary Esteem for this Herb in the Colic, Stone, and the Pestilence itself; and he prefers the mere simple Decoction of *Veronica* far before all other more generous Medicines for the Stone. *S. Pauli.*

The Use of a Clyster, prepared only of a Decoction of *Veronica* and Sugar, is of more Efficacy than any thing taken at the Mouth. In the Decoction, let there be mixed some Fat of a Sheep's Kidney, or some Fat of a Rabbet, or of a Capon, in order to give it a Lubricity; if these are wanting, a little fresh Butter may be added. *Idem.*

I can safely affirm, that many Persons labouring under the tormenting Pain of the Colic, or Stone in the Kidneys, have often received more Benefit and Relief from the Use of a simple Clyster, prepared of Cows Milk, and Sugar, in which, after the Example of *Crato*, I have only boiled *Veronica*, or the Flowers of Chamomile, not the *Roman*, but the common, and more temperate Species, than from those prepared with a greater Apparatus; as, for Instance, with Penyroyal, Origanum, Rue, Calamint, and other Ingredients, which often exagitate the Humours. *Idem.*

7. Veronica; major; frutescens; altera. *M. H.* 2. 319. *Chamædrys*, *spuria*, *major*, *altera*, *sive frutescens.* C. B. P. 248. *Teucrium*, IV. Clus. H. 349.

8. Veronica; major; frutescens; altera; foliis constanter & eleganter variegatis.

9. Veronica; minor; virgulosa, seu multicaulis; Pannonica. *M. H.* 2. 320. *Chamædrys*, *spuria*, *minor*, *latifolia.* C. B. P. 249. *Teucrium* V. Clus. H. 350.

10. Veronica; minor; foliis imis rotundioribus. *Tourn. Inst.* 144. *Boerh. Ind. A.* 225. *Chamædrys spuria latifolia.* Offic. J. B. 3. 286. *Chamædrys spuria minor rotundifolia.* C. B. P. 249. BASTARD GERMANDER.

Cæsalpinus, *Pena*, and *Lobel*, affirm, that it is excellent to open the Bowels, and cure the Green-sickness: It may be used in aperitive Ptisans and Broths, or after the manner of Tea. *Martyn's Tournefort.*

11. Veronica; maxima; latifolia; seu folio Quercus. *M. H.* 2. 322. *Chamædrys*, *spuria*, *latifolia*, *major.* C. B. P. 248.

12. Veronica; tenuissime laciniata; minor. *M. H.* 2. 321. *Chamædrys*, *spuria*, *tenuissime laciniata.* C. B. P. 248.

13. Veronica; aquatica; major; folio subrotundo. See ANAGALLIS AQUATICA.

14. Veronica; aquatica; minor; folio subrotundo. *T.* 145. *Anagallis aquatica*, *minor*, *folio subrotundo.* C. B. P. 252.

15. Veronica; aquatica; major; folio oblongo. *M. H.* 2. 323. *Anagallis*, *aquatica*, *major*, *folio oblongo.* C. B. P. 252. *Berula major.* Tab. Ic. 719.

16. Veronica; aquatica; minor; folio oblongo. *T.* 145. *Anagallis*, *aquatica*, *minor*, *folio oblongo.* C. B. P. 252.

17. Veronica; terrestris; annua; folio Polygoni: flore albo. *M. H.* 2. 322.

18. Veronica; pratensis; Serpyllifolia. C. B. P. 247. *M. H.* 2. 319.

19. Veronica; floseulis; caulibus adhærescentibus. *M. H.* 2. 322. *Alsine*, *Veronicæ folio*, *floseulis caulibus adhærescentibus.* C. B. P. 250. *Alysson.* Col. Phytob.

20. Veronica; Hederulæ folio. *M. H.* 2. 322. *Alsine*, *Hederulæ folio.* C. B. P. 250.

21. Veronica; floseulis oblongis pediculis insidentibus; Chamædryos folio. *M. H.* 2. 322. *Alsine Chamædryfolia*, *floseulis pediculis oblongis insidentibus.* C. B. P. 250.

22. Veronica; floseulis oblongis pediculis insidentibus, Chamædryos foliis alternis. *H. L.* 622.

23. Veronica; cœrulea; trifido, aut quinquefido, folio. *Flor.* 2. 105. *Alsine triphyllos cærulea.* C. B. P. 250.

24. Veronica; Virginiana; altissima; spica multiplici; floribus candidis. *Flor.* 2. 104.

25. Veronica; Chia; folio Cymbalariæ; verna; flore albo, umbilico virescente. *T. Cor.* 7.

26. Veronica; Orientalis; minima; foliis laciniatis. *T. Cor.* 7. *H. R. D. Boerh. Ind. alt. Plant.*

Veronica is commended for subduing Phlegm, for deterging the first Passages, for pulmonic Diseases, the Scurvy, Phthisis, and Stone, being boiled with Liquorice. Infused in Water, it impregnates it with the Smell, Taste, and all the Virtues of the *Chinese* Tea, and has the same Effects. It relaxes with a moderate Astriction, whence it is recommended in a Scurvy proceeding from Relaxation; thus it is proper, also, in a Pissing or Spitting of Blood, because it has an astringent and somewhat of an aromatic Virtue; it heats, dries, strengthens, and resists Putrefaction.

The thirteenth, fourteenth, fifteenth, and sixteenth Species are scarce inferior to any in Virtues; they are very succulent and bitterish, their expressed Juice absterges and deterges in manner of Soap, and liquefies, not by its aromatic, but saponaceous Quality. Thus it purges Water, and renders the Blood aqueous without Acrimony; and by this means opens, dilutes, and is a Demulcent. Hence it becomes of Service in all Obstructions, and in all Sorts of Scurvy; and, where-ever Opening is required, without inducing a great Heat. For the same Reason it affords us an excellent Remedy against the Stone and Gravel in the Kidneys, and is of Service in the Jaundice, Stoppages of the Liver, and all inveterate Obstructions.

This Plant is very penetrating; for, if it be tasted, it penetrates the whole Mouth, as if it were set on Fire. It affords not much Salt, but a very copious Humour; and has the Virtue, also, of resolving Humours. The Decoction of the Herb in Whey, daily drank, cures the Scurvy, as we are assured by *Eugalenus* and *Sennertus*, and resolves scorbutic Tumors; it is good, also, against the Scabies. The Juice drank for

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or a long time together, is effectual againſt the Gout; for let the Patient take but two or three Ounces every Day for a Month together, and all the morbific Matter will be diſcharged out of the Blood by Urine. The Juice may be preſerved a long time in Winter, if to the Quantity of one Ounce you put four Drops of the Spirit of Sulphur by the Bell. It incides viſcid Phlegm moleſting the Lungs, and is good in Coughs, Colic, Nephritis, Phthiſis, and the Itch; it is excellent in Clyſters for the Colic. The Infuſion of it in Wine is effectual in the Chloroſis; and the Powder, according to *Cæſalpinus*, cures the Dropſy. The Juice cures intermittent Fevers; the diſtilled Water depurates the Eyes; and a Gargariſm, prepared of a Decoction of the Leaves, cures the Quinſey.

Francus has written a whole Book of the Virtues of this Plant. The Uſe of it, after the manner of Tea, is effectual in Obſtructions of the Spleen, Pancreas, and Meſentery; it is of excellent Uſe in the Head-ach and Vertigo, is of Service in the Fluor Albus, and all cutaneous Diſeaſes, as well as a Cancer. I have cured an hundred Diſeaſes with this Plant; for it has the Virtue of diſſolving pituitous, viſcous, oleous, and almoſt all other Kinds of Humours. *Hiſt. Plant. adſcript. Boerhaav.*

An Infuſion of *Veronica* is recommended by *Heiſter* to be uſed warm, as a Reſolvent in an *Epiphora*, or *Oculus Lacrymans*; he obſerves further, in his Note at the Bottom of the Page, that this Infuſion of *Veronica* is highly commended by *Schobinger*, a Diſciple of M. *St. Yves*, for an incipient *Fiſtula Lacrymalis*, in his Treatiſe *de Fiſt. Lacr.*

Beſides the foregoing Sorts of *Veronica*, *Dale* mentions the following;

CHAMÆDRYS SPURIA ANGUSTIFOLIA. Offic. J. B. 3. 285. Raii Hiſt. 1. 847. *Chamædrys ſpuria major anguſtifolia.* C. B. Pin. 249. *Veronica ſupina.* Ger. 503. Emac. 628. *Veronica Teucrii facie.* Park. Theat. 551. *Veronica ſupina facie Teucrii, pratenſis.* Tourn. Inſt. 144. GERMANDER-SPEEDWELL.

It grows in the Gardens of Botaniſts, and flowers in *June*. The Herb is in Uſe; it agrees in Virtues with the *Veronica*; *mas*; *ſupina*; & *vulgatiſſima*; or male Speedwell. An Infuſion of its Leaves, is called the *Europee*. *Dale.*

VERONICA AQUATICA FOLIO SUBROTUNDO. See SAMOLUS VALERANDI.

VERONICA FŒMINA. A Name for the *Linaria*; *hirſuto folio, ſubrotundo*; *flore ex herbido flaveſcente.*

VERRES. A Male Swine. *Verres ſylvaticus*, the ſame as APER, a wild Boar.

VERRICULARIS, ἀμφιβληστροειδής, a Coat of the Eye ſo called. See AMPHIBLESTROIDES, and OCULUS.

VERRISTA, a Name given by *Paracelſus*, to what he calls his *Summum Arcanum*, in Conjunction with his *Granagrana*, in the Cure of an Epilepſy; but he no-where tells us what they are. *Tract. de Caduc. Matric.*

VERRUCA. A Wart.

A Wart begins in the *Cutis*, and ſeems to be either an Efflorescence of the Serum of the Blood, which hardening in the Surface of the Skin, makes a dry Tumor, or elſe ſome ſmall Luxuriancy of the little Arteries of the *Cutis*, which thruſt out themſelves, making a petty Sarcoma, which we call a *ſoft Wart*. According to the Variety of the Tumor, it is ſometimes whole with a ſmooth Surface, ſometimes chapt and uneven. According to the manner of their Production, ſometimes they ariſe by a general Exſudation out of the *Cutis*, with a broad Baſis, and are called *Verrucæ ſeſſiles*; ſometimes a few Capillaries putting out together do, after they have grown to a ſmall Length, enlarge themſelves into a greater Compaſs, and make the penſile Tumor we call *Acrochordon.*

There need no Signs to be given of Warts, they being ſo apparent.

Warts often fall away of themſelves.

The Medicines commended in the Cure of Warts are many. Thoſe which are moſt eaſy to be had in the Country are, the green Rinds of Willows beaten, the Juice of Marigolds, Celandine, all the Spurges, a Garden-ſnail ſprinkled with Salt. If you rub them with any of theſe, they will fall off. Oil of Vitriol, or of Sulphur, will certainly deſtroy them. I have ſeen ſome burn them out, by running an hot Needle into the Roots of them. There are other ways, as by rubbing them with raw Beef, and burying it. But when any great one falls into my Hands, I make a ſpeedier Riddance of it by Ligature, or Cauſtic. Where it is capable of being tied, I make a Ligature; in others, where it is not, the Cauſtic-ſtone alone will do it.

A young Lady, having been long vexed with an unſeemly overgrown Wart upon one of her fore Fingers, deſired my Help. I rubbed the chapt Head of it with a Cauſtic-ſtone, till it was ſoft and black; then ſcraped it off, and rubbed the remaining Root with ſome of the ſame, till I judged it was eradicated; then waſhed out the Salts, and dreſſed it with *Defenſivum Baſilicon*, with a few Drops of Oil of Turpentine, which made, Separation of the Eſchar, and cured it.

In another young Perſon, where they were ſmall in the Baſis, I tied ſome of them cloſe by the Roots with a Silk; others I ſnipt off with a Pair of Sciſſars, not regarding the Dropping of the Blood upon the neighbouring Parts, which is thought to infect them, and beget others. Then I rubbed the Roots of them all with a Cauſtic-ſtone, and digeſted the Sloughs out as aboveſaid, and they cicatrized of themſelves.

Yet you ought to be cautious how you meddle with thoſe growing upon the Knuckles; for Warts there, being, for the moſt part, near the Tendons, cannot well be extirpated without offending them; and ſo are conſequently ſubject to Fluxions, and to corrupt the Cartilages, or Bone.

This was the Caſe of a Lady of Quality, aged about fifty Years, of a plethoric Body, who had a Wart upon the firſt Joint of one of her fore Fingers. It was imprudently undertaken by ſome Pretender to Surgery, and treated as ill; ſo that, after many Months Endeavours, he was diſmiſſed, and a more knowing Surgeon entertained, who found much Difficulty in the Cure, yet made ſhift to cicatrize it; but it ſwelled again, and diſcharged Part of its Matter by the Side of that Nail. Upon Sight whereof I was conſulted, and ſaw a thin Ichor weeping through the old Cicatrix, at an Opening not bigger than a ſmall Pin-hole. The Lady importuning me to undertake the Cure, I ſprinkled the Orifice with Precipitate, whereby I cruſted in the Matter to thin the Skin, which the next Day I opened, and, by Search of a Probe, felt the Cartilages rotted. I informed the Patient of the Neceſſity of making an Inciſion proportionably large, in order to the Exfoliation, and withal repreſented the Difficulty; and, offered to her Conſideration, the more certain and ſpeedy way, by cutting off that Joint. She with little Demur conſented to it. All things being immediately prepared, I chopt off that Joint, dreſſed it up with Pulvis *Galeni*, and afterwards digeſted it, and cured it, as hath been ſhewed in ſuch like Extirpations. *Wiſeman's Surgery.*

Warts are known to be ſmall browniſh Excreſcences in the Skin, and are incident to moſt Parts of the Body; but moſt frequently affect the Face and Hands. In their Shape and Size there is a ſurpriſing Variety; ſome are large and depreſſed, others ſlender; ſome again reſemble the Figure of a Pear hanging by its Stem. And, indeed, it is not ſo much on account of any Pain or Danger from them, that they are uſually extirpated, as becauſe they are a kind of Deformity and Deſœdation; and moſt remarkably ſo, when conſpicuous on the Face, Neck, and Hands, of fair and fine Women. And here, tho' there are various Kinds of Remedies, ſome ſympathetic, and others ſuperſtitious and inſignificant, which are uſed by Women, and even by ſome profeſſing Medicine, for the Removal of *Warts*; yet, after all, the moſt expeditious Cure is to be expected from the Hands of the Surgeon.

We, therefore, think it moſt proper briefly to deſcribe the principal Means, which Surgery employs in extirpating this Kind of cutaneous Deſœdation. And the Method, which deſerves to be firſt mentioned is, by *Ligature*, or *Vincture*; this is performed upon ſuch of theſe Excreſcences as are ſlender about the Root, and, in a manner, pendent; by firmly tying about them an Horſe's Hair, or a Silken or Linen Thread. The *Warts* being deprived of the Juices which nouriſh them, through a Conſtriction of the Veſſels by the Ligature, gradually wither and fall away.

Another Method of Cure is, by the Surgeon's Inſtrument, in which the *Wart* is taken up with an Hook, or Forceps, and then very nicely ſeparated with the Sciſſars. The Wound is treated for ſome time with an Application of the *Lapis infernalis*, or ſome other corroding Medicine, that if any Part of a Root ſhould remain, from which a new Tubercle might ariſe, it might be conſumed and deſtroyed.

If the *Warts* are of a larger than ordinary Size, recourſe muſt be had to Corroſives. And, that theſe Medicines may the ſooner work their Effect, and conſume the prominent Part, it will be convenient, firſt, to cut off the hard Top of the Tubercle with a Penknife, Razor, or a ſharp Pair of Sciſſars; which done, the Wound is to be every now-and-then treated with Applications of Oil of Tartar *per Deliquium*, or ſome acid Spirit, of which the mildeſt is Spirit of Salt. If theſe prove too weak for the Purpoſe, it will be proper to ſubſtitute ſome ſtronger Medicine in their room; for Inſtance, Spirit, or Oil of Vitriol, Aqua-fortis, or Butter of Antimony. On the other hand, the ſofter and tenderer Sorts of *Warts* are ſometimes removed only by often rubbing them with the yellow Juice of the Chelidonium majus, or the Milk of the Euula. But, by way of Caution, the greateſt Circumſpection is required in the Uſe of Corroſives about the Eyelids or Eyes, that nothing thereof may enter the Eye, and by that means induce Blindneſs;

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Blindneſs: Care, alſo, is to be taken, that the Parts adjacent to the Tubercle be not injured by the Corroſive. For this End it will be convenient enough to ſurround the *Wart* with a waxen Ring, or a perforated Plaiſter, in which the *Wart* may appear as an Eminence, and thus be corroded with Safety to the covered Parts. The Corroſive may be applied ſeveral times in a Day; and, by the ſame Method, other Tubercles, and the like Kinds of cutaneous Deſedations, may be removed.

A fourth Method of extirpating *Warts* is, by the Application of a red-hot Iron adapted to the Size of the Tubercle, in ſuch a manner, as to penetrate to the very Bottom of its Root. If there be any other violent Means of extirpating *Warts*, certainly there can be nothing more violent than red-hot Iron, which, tho' it excites indeed a very acute Pain, yet the ſame is but for a Moment. To the cauterized Place muſt be applied ſome Portion of Baſilicum, or digeſtive Ointment, and over that a cooling Plaiſter; ſuch as, for Inſtance, the *Emplaſtrum de Spermate Ranarum*. It can hardly be expreſſed how happily this Method of Cure ſucceeds in moſt Parts of the Body, except the Eyes; for theſe Excreſcences, thus removed, are ſure never to return.

There is a fifth Method, which is peculiar to Stage-quacks, and conſiſts in, firſt, well rubbing and chafing the Tubercle with ſome emollient Ointment, and afterwards taking it between the Nails of the Thumb and fore Finger, and with great Violence pulling or tearing it off. But as this way of Cure is very troubleſome, ſo it has been found in many Caſes to be quite uſeleſs. For this Method, by Avulſion, thus practiſed by theſe Strollers, ſeldom ſucceeds ſo well, but that the *Wart* pullulates afreſh, and grows again out of the Place affected, as from a Root left behind.

In the laſt place, it ought not wholly to be omitted, that ſometimes may be obſerved, eſpecially in the Face, on the Lips, and near the Eyes, a kind of livid and bluiſh *Warts*, which in their Tendency, are next to a Carcinoma, or Cancer; for which Reaſon it is much ſafer to let them alone, than endeavour their Extirpation. For no ſooner are they irritated by the Hand of the Surgeon, than they degenerate into a Carcinoma; and, after an Eroſion of the Face and Eyes, in a miſerable manner deſtroy the Patient. *Heiſter Chirurg.*

Of WARTS, *and other Tubercles of that Kind, growing on the* PENIS.

Tubercles, of what Kind ſoever, infeſting the Penis, are almoſt conſtantly the Product of ſome Venereal Diſtemper: Their Seat is not always in one Place, but ſometimes in the Prepuce, ſometimes in the Corona Glandis, and ſometimes in the Glans itſelf. Many of them appear like fungous or ſpongy Fleſh, increaſe very faſt, and now-and-then excite Pains. Remedies beſt adapted to their Extirpation are gentle Corroſives, ſuch as Powder of Savine, either by itſelf, or mixed with red Precipitate, and burnt Alum, and twice or thrice ſprinkled on the Parts, or worked up with Unguentum Baſilicum, or Mundificativum, and then applied. If the Tubercles are harder than ordinary, there ſeems to be no better Way than gently touching or rubbing them with the Lapis Infernalis, till they quite diſappear. If the Root of the prominent Part be but ſlender, it will be convenient to uſe the Sciſſars, or a Ligature, in the manner as was directed for the Extirpation of Warts, and all other Kinds of Tubercles. But if the Tubercles will not conveniently admit of a Ligature, on account of the Wideneſs of their Root or Baſe, and their Extremity be remarkably hard, the prominent Parts are to be all cut off with the Sciſſars, and after ſuffering the Blood to flow for ſome time, the Wound is to be cleanſed and fomented with warm Wine; and the Root is to be every Day rubbed with the Lapis Infernalis, till it appears to be quite extirpated. *Scultetus* indeed is ſaid, *Obſ.* 65. to have uſed a red-hot Iron in the Extirpation of theſe Kinds of Tubercles of the Penis. And *Fabricius ab Aquapendente*, and ſome others, adviſe the ſame: But to me this Method of Cure ſeems too cruel. We are not, however, to omit this one neceſſary Obſervation, that not external Means only, but internal Medicines, and theſe in the firſt and principal Place, are to be employed, in order to expel the virulent Venereal Matter; for otherwiſe, by what outward Means ſoever the Tubercles are removed, they generally return in a ſhort Time. *Heiſter. Chirurg.*

VERRUCARIA. A Name for the HELIOTROPIUM, becauſe it removes Warts; and, alſo, for a Species of TITHYMALUS, by whoſe lacteous Juice Warts are extirpated. *Blancard.*

VERSIO *Chymica* is a Change wrought by Chymiſtry, of manifeſt Forms into occult ones, which is done by a Corruption of the ſpecific Form, and the Generation of a more general one, that is, by a Converſion of decompounded Elements into compounded ones; and of impure into pure. *Theat. Chym. Vol.* I.

VERTEBRÆ, *Σπόνδυλοι*. The Vertebræ.

VERTEBRALES MUSCULI. The Vertebral Muſcles, that is, the Muſcles which aſſiſt in moving the *Vertebræ*. Among theſe are reckoned the *Longus Colli*, *Tranſverſalis Colli major*, *Tranſverſalis Gracilis ſive Collateralis Colli*, *Semi-ſpinalis ſive Tranſverſo-ſpinales Colli*, *Spinales Colli parvi ſive Inter-ſpinales*, *Tranſverſales Colli minores ſive Inter-tranſverſales*, *Obliquus major*, *Rectus minor*, *Sacro-lumbaris*, *Longiſſimus Dorſi*, *Spinalis Dorſi major*, *Spinales Dorſi minores*, *Tranſverſalis Dorſi major*, *Tranſverſales Dorſi minores*, *Semi-ſpinalis ſive Tranſverſo-ſpinalis Dorſi*, *Semi-ſpinalis ſive Tranſverſo-ſpinalis Lumborum*, *Sacer Veterum*, *Spinales & Tranſverſales Lumborum*, *Quadratus Lumborum ſive Lumbaris externus*, and the *Coccygæi*; which ſee, under the reſpective Articles of their Names.

VERTEX. See CORYPHE.

VERTIBULUM, from *verto*, to turn, is the round or globous Head of a Bone, which, in Articulation, is inſerted into the Sinus, or Cavity, of another Bone adapted to it.

VERTICELLI *marini*, *Σπόνδυλοι θαλάττιοι*, are tuberous Zoophytes, which are, alſo, called *Vertibula*, and *Tethyia*.

VERTICILLUM, in *Botany*, is the Whorle, or Circle of Flowers or Leaves, which ſurrounds the Stalks or Branches of Plants, ſo called from its Reſemblance to the *Verticillum*, or Whorle of a Spindle. See the Article BOTANY.

VERTICILLUM and VERTICULUM, are, alſo, Names for the Vertebræ.

VERTICILLUM ANI, in *M. Aurel. Severinus*, is a Tubercle on the Extremity of the Anus, reſembling the *Verticillum*, or Whorle on a Spindle. *Caſtellus.*

VERTIGO, *ἴλιγξ*, the Vertigo, is a Diſeaſe in which the Head ſeems to turn round. When a Miſt, alſo, ſeems to be caſt before the Eyes, it is called *Scotidinos*, *Σκοτιδινῶ*, or *Scotedinos*, *Σκοτηδινῶ*. *Galen*, *Com.* 4. *in Lib. de R. V. I. A. Erotian* expounds *ἴλιγξ*, by *Σκότωσις, ὡς φέρεσθαι δοκεῖν τὰ ὁρώμενα*, "An Obtenebration, in ſuch a manner that Objects "ſeem to turn round." The Cauſe of this Affection is, by *Galen*, in the forecited Place, aſcribed to a diſorderly Motion of the Spirits, which are generated and reſide in the Brain; or of thoſe which aſcend thither from the lower Parts. *Caſtellus.*

This, according to *Willis*, is a Diſorder in which viſible Objects ſeem continually to turn round, whilſt the Patients are affected with a Perturbation or Confuſion of the animal Spirits in the Brain, which hinders their Influx into the Nerves. Hence it is, that the viſive and locomotive Faculties often fail to ſuch a Degree, that the Patient is ready to drop down, and complains of Darkneſs. *Ettmuller* divides it into three Kinds; the firſt of which is a ſimple Vertigo, in which there is only a tranſient and ſhort-continued Gyration of Objects. The ſecond is a dark Vertigo, or Scotomia, when the Eyes are darkened, or ſo affected, as if ſeveral Colours were before them: And the third is, the Vertigo Caduca, in which the Patient preſently falls down.

A Vertigo may be produced by every Cauſe which can diſtend, preſs, and contract the Arteries; ſuch as ſudden Fear, Surprize, Ebriety, and Voracity, by which the regular Influx and Reflux of the Animal Spirits into the Optic Nerves, and Retina, are prevented. Sometimes, alſo, it may be produced by an Acid, or any other peccant Humour, lodged in the Stomach, and vellicating its Nerves, which communicate with the Retina; for which Reaſon the hypochondriac and hyſteric Paſſions may produce a Vertigo.

With reſpect to the Prognoſtics. If a Vertigo is recent, if it happens ſeldom, and the Patient is young, the Cure is eaſy: But if it is original and confirmed; if it happens frequently, or is apoplectic or epileptic; if it ſeizes old Perſons, and is accompanied with great Dimneſs of Sight, and Inability to ſtand, the Cure is difficult. According to *Ettmuller*, a ſevere and long-continued Vertigo, in old Perſons, foretels an Apoplexy; and in ſuch as are young, an Epilepſy. Sometimes a Vertigo afflicts the fore Part, and at others the back Part of the Head. The former Species is more eaſily cured than the later, which is very dangerous.

With reſpect to the Cure, the Regimen in general ought to be the ſame with that in an Apoplexy, or Epilepſy. If the Patient is plethoric, a due Quantity of Blood is to be taken away; and if a Nauſea, Loſs of Appetite, or any other Diſorder of the Stomach remain, an Emetic is to be preſcribed; then Cathartics and Specifics are to be ordered. According to *Mayerne*, Calamus Aromaticus, in whatever Form, is good for a Vertigo, and eſteemed a Secret for that Diſorder. The ſame Author informs us, that a *German* Phyſician cured a great many of Vertigos, by Pills made of Sugar of Lead, and *Cypreſs* Turpentine; four or five Grains of which were to be taken for a Doſe; and their Uſe perſiſted in for ſome Days. *Gliſſon*, as *Bates* informs us, after all other Medicines had failed,

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failed, was cured of a ſevere Vertigo, of three Weeks Continuance, by ſhaving his Head, and applying to it a Plaiſter, made of the Flowers of Sulphur, and Whites of Eggs. Some order a Cauſtic, or a Seton, to be applied to the back Part of the Neck; a Cautery to the Bregma; and *Bates*'s Epileptic Electuary, or *Fuller*'s *Peruvian* Epileptic Electuary, to be uſed internally. *Willis* informs us, that, after he had in vain tried all other Medicines, he with Succeſs preſcribed the following Powder.

Take of the Powder of the Roots of Male Piony, two Ounces; of the Flowers of Male Piony, one Ounce; of Peacocks Dung, of the whiteſt Kind, half a Pound; and of white Sugar, two Ounces: Reduce to a Powder, the Doſe of which is to be about the Quantity of a Spoonful, twice a Day, drinking after it a Draught of a Decoction of Sage and Roſemary, impregnated with Coffee.

VERTO, in *Dornæus*, *Rulandus*, and *Johnſon*, is the fourth Part of a Pound.

VERVA, in *Scribonius Largus*, N° 16. is the Name of an Amulet of Ivory, to be worn on the Arm for the Epilepſy.

VERUCLA is the ſame as the preceding. *Rhodius, in Scrib. Largum*, N° 16.

VERVEX. A caſtrated Sheep.

VERUTA *Sectio*, ὀβελαῖα διαίρεσις, from *Veru*, ὀβελὸς, a Spit, is a Chirurgical Operation, or Section; ſo called, and directed by *P. Ægineta*, *Lib.* 6. *Cap.* 8. in the Cure of a *Diſtichiaſis*, to be performed with a σμηλιον ἀναῤῥαφικὸν, a Knife adapted to Sutures.

VESANIA, according to *Blancard*, is a Species of Madneſs proceeding from Love.

VESANUS, according to *Paracelſus*, *Tract.* 1. *de Morb. Ament. Cap.* 5. is one who has contracted Madneſs from a bad Regimen, or improper Medicines: But *Inſanus*, he ſays, is the proper Denomination of one mad from the Birth; or whoſe Madneſs is hereditary. *Caſtellus.*

VESICA. The Bladder. See CALCULUS, and RENES.

VESICARIA is a Name for the *Alcea Veneta*; and, alſo, for the *Alkekengi*; either becauſe its Fruit and Seed are contain'd in Bladders, or becauſe they are good for the Stone in the Bladder. *Blancard.*

VESICATIO. A Veſication, or raiſing of Veſicles, a Symptom ſucceeding Combuſtions by Fire or Water. The Effects of a veſicatory Remedy are, alſo, called *Veſicatio. Caſtellus.*

VESICATORIUM. A Veſicatory. See CANTHARIDES.

VESICULA. A Veſicle, or little Bladder; a Diminutive of *Veſica*; it is often appropriated to the Gall-bladder.

VESICULÆ SEMINALES.

The *Veſiculæ Seminales* are ſoft, whitiſh, knotted Bodies, about three or four Fingers-breadth in Length, one in Breadth, and about three times as broad as thick, ſituated obliquely between the *Rectum* and lower part of the Bladder, in ſuch a manner, as that their ſuperior Extremities are at a Diſtance from each other, and their lower Extremities united between thoſe of the *Vaſa Deferentia*; of which they imitate both the Obliquity and the Incurvation.

They are irregularly round on the upper Part, and their Breadth decreaſes gradually from thence. By the Union of their lower Extremities they form a kind of Fork, the Branches of which are broad, and bent like Rams Horns: Theſe Extremities are very narrow, and form a ſmall Neck, which runs behind the Bladder, toward its Orifice, and continues its Courſe in the Groove of the *Proſtates*, through the Subſtance of the contiguous Portion of the Urethra, till its Extremities pierce the *Caruncula.*

The inner Subſtance of the *Veſiculæ* is plaited, and in a manner diſtinguiſhed into ſeveral *Capſulæ*, by contorted Folds: Their external Surface is covered by a fine Membrane, which ſerves for a Border and Frænum to the Folds, and is a true Continuation of the Cellular Subſtance of the *Peritonæum.* The *Veſiculæ* may eaſily be unfolded, and all their Contorſions ſtraitened; and, by this means, they become much longer than in their natural State.

Their inner Surface is villous and glandular, and continually furniſhes a particular Fluid, which exalts, refines, and perfects the Semen, which they receive from the *Vaſa Deferentia*, and of which they are the Reſervatories for a certain time. *Winſlow's Anatomy.*

VESPA. Offic. Mer. Pin. 196. Raii Inſect. 250. Jonſ. de Inſect. 17. Aldrov. de Inſect. 198. Mouff. Inſect. 41. Charlt. Exer. 37. THE WASP.

The whole Inſect is uſed, and is ſuppoſed to open Obſtructions of the Kidneys and Bladder, to break the Stone; and is thought by ſome to agree in Virtues with the *Aſellus*, or Woodlouſe. *Dale.*

VESPA ICHNEUMON.

This is a Fly, with a ſlender Body, four Wings, and arm'd with a Sting.

It has been obſerved of the *Grana Radicum Breynii*, or the *Coccus Polonicus*, [ſee the Article KNAWEL]; and of the *Grana Kermes*, or *Coccus Baphicus* Offic. [See CHERMES]; that they are Neſts of Inſects, and not generated of the Plants in which they are found. But ſince we omitted, under thoſe Articles, to inform the Reader to what Tribe of Inſects they ought to be reduced, it is here thought proper to obſerve, that both of them ariſe from Eggs depoſited, by the Parent Inſect, in a Wound they make in the Plant, ſo as to raiſe a Tumor: From this Tumor, maturated by the Heat of the Sun, ariſe Inſects with ſix Legs, which are, by degrees, metamorphoſed into Waſps, called *Ichneumones.* This I am induced to believe by two Reaſons: The firſt is, that *Breynius* himſelf obſerves, that Animals of this Tribe are found in the Places where theſe Cocci grow. Secondly, The Waſps of this Tribe lay their Eggs not only in the Bark of Trees, and the Roots and Stalks, but in the Bodies of Animals, as appears from a Multitude of Obſervations in Authors, who have written of Inſects. We have an Example in *Goedartius*'s *Metamorphoſis of Inſects*, in the *Eruca Braſicaria*, or Caterpiller, which infeſts Cabbages, where writing of this Sort of Inſects, the Author ſays, that, "After they had lain four Days without Motion, you may "ſee forty or more Worms breaking out of the Skin, on both "Sides of every ſingle Inſect, which afterwards became ſo "many ſmall Flies." *Ray*, in his Hiſtory of *Inſects*, takes notice of the ſame; and I myſelf have made the like Obſervation on the Caterpiller, and other Inſects, which become Neſts not only of *Ichneumon Waſps*, but, alſo, of other Flies.

Some think the Worms hermaphrodite: Of this Opinion was *Cheſton*, becauſe he could never diſcover any Difference of Sex in them, or obſerve them joined in Copulation. The Minuteneſs of the Animalcula might, indeed, be an Hindrance to any Obſervation of thoſe Parts and Actions; whereas, in Earthworms, Houſe-ſnails, and the Limax, which are, alſo, Hermaphodrite, the Manner of their Generation, as being larger Animals, is plain and evident.

Garidellus, in his *Hiſtoire des Plantes qui naiſſent en Provence*, has written largely of the *Coccus Baphicus*, but not ſo accurately as there was Reaſon to expect, from a Perſon who had ſuch Opportunities of making Obſervations. What the very learned *Breynius* has written of the Matter, in his *Hiſt. Nat. Cocci Radic. Tinct.* I ſhall relate in his own Words, obſerving firſt, that the *Coccus Polonicus* is to be ranked with the *Coccus Radicum*; as we are aſſured by *Breynius* himſelf, who, in the Concluſion of his Work, writes thus:

"The *Coccus Radicum* is an Inſect, deſtitute of Wings, "furniſhed with ſix Feet, of no diſtinct Sex, as far as it ap"pears; which, faſtening itſelf to the Tops of the Roots of the "Polygonum, and being deprived of local Motion and Senſe, "under the Appearance of a ſpherical Grain, ſeems to acquire "the Nature of Vegetables, and increaſes in Bulk; out of "which, after a determinate Time, there comes forth another "Worm, or Inſect, different from the former, though re"ſembling it in many Properties: This Worm receives no "Nouriſhment, nor Increaſe, nor appears of a diſtinct Sex, "but brings Eggs to Perfection within itſelf; and, after a cer"tain Time, is covered with a Down; and, being again de"prived of local Motion, is contracted, and expels its Seeds "or Eggs, from which, after another determinate Time, by "Virtue of the Sun's Heat, are hatched, or produced Worms "like thoſe firſt-mentioned."

Now, though I have not the leaſt Doubt of the Veracity of *Breynius*, and the Truth of his Obſervations, yet, ſince he confeſſes, that Multitudes of the Ichneumon Waſps, are to be found near the Neſts of theſe Animals, I cannot but ſuſpect, that they owe their Original to them. *Garidellus*, alſo, owns that after the Hexaped, or ſix-legged Inſects, periſh, theſe ſmall Flies are produced in the Grains of *Chermes. Dale.*

VESPERNA, the fourth Meal, or fourth time of Eating, in a Day, and next after the *Merenda*, or Afternoon's Collation. *Caſtellus.*

VESPERTILIO. Offic. Aldrov. Ornith. 1. 571. Bellon. des Oyſe. 147. Geſn. de Avib. 694. Jonſ. de Avib. 34. Charlt. Exer. 80. Raii Synop. A. 243. Sloan. Hiſt. Jam. 2. 330. *Andira.* Piſ. (Ed. 1658.) 290. *Andira acu.* Mareg. 213. *Andhura.* De Laet. Ind. Occid. 615. THE BAT, or FLITTER-MOUSE.

It appears in Summer Evenings; but in the Winter lies hid in Rocks and Caverns. The Fleſh and Blood of this Animal are uſed; the firſt of which, being prepared, is good for a Scirrhus, and the Gout; and the Blood cures an Alopecia. *Dale* from *Galen.*

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Ray juſtly obſerves, that this Animal is, by ſome, erroneouſly reckoned among Birds, becauſe of its Wings and Flight, ſince it has neither Feathers nor Beak, nor lays Eggs. *Dale.*

VESTIBULUM. A Part belonging to the Ear, ſo called. See AURIS.

VETERINARIA, κτηνιατρικὴ, is that Part of Medicine which treats of the Diſeaſes incident to Horſes and Cattle.

VETERNUM. The ſame as LETHARGUS.

VETERNUS. The ſame as LETHARGUS.

VETONICA. The ſame as BETONICA: Betony. It is, alſo, a Name of the *Caryophyllus altilis major.*

VETTADAGOU, H. M. is a low, bacciferous, *Indian* Shrub, bearing a whitiſh, pentapetalous, and ſcentleſs Flower, and a round black-purple Berry, containing five ſolid triangular Seeds, which are firſt white, then reddiſh, and at laſt blackiſh. It is an Evergreen, and bears Fruit twice in the Year, that is, in *March* and *September.*

Of the Leaves bruiſed, and boiled in Oil of Seſamum, is prepared a Liquid, which, applied to the Abdomen, is ſaid to give Relief under difficult Labour; and to expel the Secundines, when retained.

The *Kal Vettadagou*, H. M. very much reſembles the preceding, only its Leaves are leſſer and rounder; the Flowers are red, and the Berries of an Orange-colour, and have an acid Taſte. *Raii Hiſt. Plant.*

VETTI TALI. See AMVETTI.

VEXATA, in the Language of *Celſus*, are Contuſions or Colliſions. Of the Cure of *Vexata* he treats, *Lib.* 7. *Cap.* 1. See CONTUSIO.

UHEBEHASON *Theveti.* J. B. Arbor Braſſicæ Folio excelſiſſima Americana. C. B.

This is a Tree of ſurpriſing Talneſs, with Branches ſtooping one under another, and Leaves like Cabbage-leaves. The Branches are loaded with Fruit, a Foot in Length. The Tree yields, alſo, a red Gum. When *Thevet* was in *America*, he obſerved this Tree at the Diſtance of ſix Miles, when he looked upon it, he ſays, as ſomething artificial, and not as a natural Product.

Innumerable Multitudes of Bees have their Aliment from the Fruit, and their Neſts in the Holes or Cavities of the Tree, where they raiſe their Combs, and prepare their Honey. He deſcribes two Sorts of theſe Bees; the firſt are of the Size of our ordinary Bees, and make a very good Honey, and a yellow Wax; the other Sort of Bees is leſs by half, and makes a Honey which excels in Goodneſs, but a Wax as black as a Charcoal. The Fruit *Uhebaſo*, though coveted by the Bees, is not eatable by human Creatures, becauſe it is not eaſily brought to Maturity. *Raii Hiſt. Plant.*

VIA. This Word, which imports a Path, or Way, has no peculiar Senſe in Medicine, except that the Stomach, Inteſtines, and their Appendages, are called the *Primæ Viæ.*

VIBEX. A livid, or black Mark, on the Skin, from a Contuſion. It is the ſame as an ECCHYMOSIS.

VIBRISSÆ, or VIBRISCI. The Hairs which grow in the Noſtrils.

VIBURNUM.

The Characters are;

The Flower is monopetalous, rotated, quinquefid, furniſhed with five Stamina, growing on the Inſide of the loweſt Part of the Flower, diſpoſed in Umbellæ, and growing on the Ovary. The Ovary has its upper Margin ſurrounded with a quinquefid Calyx; is furniſhed with an erect, and, in a manner, triglobular Tube, and becomes a ſoft ſucculent Berry, which is compreſſed, ſtriated, and full of a ſingle ſtony Seed.

Boerhaave mentions nine Sorts of *Viburnum*; which are,

1. Viburnum. *Offic. Parkinſon. Theat.* 1448. *Raii Hiſt.* 2. 1590. *Synop.* 3. 460. *Tourn. Inſt.* 407. *Boerh. Ind. a.* 2. 224. *Viburnum vulgo.* C. B. P. 429. *Lantana, ſive Viburnum.* Ger. 1305. Emac. 1490. *Lantana vulgo, aliis Viburnum.* J. B. 1. 557. THE WAYFARING TREE.

Matthiolus, who has given the beſt Figure of this Tree, affirms, that its Leaves are aſtringent, and good to ſtrengthen the Gums; that its Fruit, reduced to Powder, ſtop a Looſeneſs; and that Birdlime is made of its Roots macerated in the Ground, and bruiſed. *Martyn's Tournefort.*

This is an arboreſcent Shrub, ſometimes pretty large, though rather ſpreading than tall, and conſiſting of a fungous and medullous Wood. From the Root, cloſe to the Ground, ſhoot ſcattering ſpriggy Branches, an Inch in Thickneſs, and two Cubits, or more, in Length, covered with a reddiſh Baſe, ſprinkled with a farinaceous Powder, and conſiſting of but little Wood, and that green, but of a very large white medullary Subſtance. The Leaves much reſemble thoſe of the *Alnus*, or, rather, of the *Sorbus Alpina*, and are oppoſite, broad, ſomewhat long, and thick, crenated, hairy, and ſprinkled with a white Powder, eſpecially in the lower Part, which, for that Reaſon, is whiter than the reſt, and of an aſtringent Taſte. The Flowers grow in Umbellas, ſmell like Elder-flowers, and are white, caducous, and conſiſting of five Petals moderately reflexed outwards, in the midſt of which ariſe five long whitiſh Stamina. The Flowers are ſucceeded by Berries, which are firſt green, then red, and, when ripe, black, flattiſh, ſweet, and viſcous, and not very grateful, at leaſt, ſays *J. Bauhine*, to my Palate, tho' many in the Country feed on them, and, in order to haſten their Maturity, ſtrew them upon Hey, or Straw, Layer upon Layer, alternately. The Berries contain a broad, compreſs'd, and ſtriated Seed, cover'd with a ſtony Cortex, or Shell.

It grows frequently in Hedges, eſpecially in a clayey and uncultivated Soil; and flowers in the Summer, earlier or later, according to the Weather, and the Temper and Condition of the Soil. The Berries are generally red in *July*, and ripe in the End of *Auguſt*, or Beginning of *September*, as we are told by *J. Bauhine.*

The Leaves and Berries are drying, and aſtringent; whence they are commended for Inflammations of the Tonſils and Throat, the Falling-down of the *Columella*, the Looſening of the Teeth, and Fluxes of the Belly. The Leaves, boiled in a Lixivium, blacken the Hair, and repel an *Alopecia.* Of the Bark of the Roots, macerated under Ground, and now-and-then boiled, and pounded for a long time together, is prepared a Birdlime, which is none of the worſt for Fowling. *Matthiol. Dodon.* We doubt, with *J. Bauhine*, that *Matthiolus* has aſcribed many Things to the *Viburnum*, which belong to the *Rhos*; becauſe he once thought them, with *Ruellius*, the ſame.

Of the ſmall Branches is prepared a very good Water for the Eyes. *Camerarius.*

Our Country People, ſays *Ruellius*, call it *Viurna*, and uſe it for binding of Faggots, becauſe of its invincible Toughneſs. It is applied to the ſame Uſes where-ever it grows, whence ſkilful Botaniſts take it to be the *Spiræa* of *Theophraſtus.*

It is called *Viburnum à viendo*, "from binding; for *Viburnum* is not a Name given by the Antients to any particular Shrub, but is appropriated, by the Moderns, to the above deſcribed, becauſe of the Flexibility or Pliancy of its Branches; whence it is, alſo, called *Lantana. Hiſt. Plant. adſcript. Boerhaav.*

2. Viburnum, Americanum; odoratum; Urticæ foliis latioribus; ſpinoſum; floribus miniatis. *P. B. Prodr.*

3. Viburnum; Americanum; odoratum; foliis Urticæ; floribus miniatis. *H. L. App.* 698. *Camarâ*, Piſo 177. *& Camara-Tinga.* Id. Ib.

4. Viburnum; Americanum; odoratum; folio parvo, orbiculato; floribus & baccis foliolis interceptis. *C. P. B. Prodr.*

5. Viburnum; Ciſti fœminæ, ſive Salviæ foliis mucronatis; Americanum; odoratum; minus; floribus incarnatis. *P. B. Prodr.*

6. Viburnum; Americanum; Salviæ foliis obtuſis; floribus albis. *P. B. Prodr.*

7. Viburnum; Americanum; Ciſti fœminæ, ſeu Salviæ, foliis mucronatis; floribus luteis. *Par. Bat. Prodr.*

8. Viburnum; Americanum; folio Urticæ latiſſimo; floribus aureis in globum congeſtis. *H. R. D.*

9. Viburnum; Americanum; folio Urticæ; floribus ex aureo & roſeo miſtis. *H. R. D. Boerh. Ind. alt. Plant.*

VICIA.

The Characters are;

The Pod is full of roundiſh, or angulated Seeds; the Leaves are numerous, pinnated, and generally conjugated, by Pairs, to a Rib, which ends in a Tendril.

Boerhaave mentions twenty-two Sorts of *Vicia*, which are;

1. Vicia; ſupina; latiſſima; folio non ſerrato. *T.* 397. *Faba, ſylveſtris, fructu rotundo atro.* C. B. 338. *Bona ſylveſtris.* Dod. p. 516. *Aracus, fabaceus, & Faba kairina, cui ſemina minora.* J. B. 2. 286.

2. Vicia; ſativa vulgaris; ſemine nigro. *C. B. P.* 344. *Tourn. Inſt.* 396. *Boerh. Ind. A.* 2. 43. *Vicia.* Offic. Ger. 1052. Emac. 1227. Raii Hiſt. 1. 900. Synop. 3. 320. *Vicia vulgaris ſativa*, Park. Theat. 1072. J. B. 2. 310. *Aphaca, Vicia*, Chab. 146. COMMON TARE.

The Stalks of Tares are angular, weak, and leaning, beſet alternately at the Joints with long Leaves, having a Tendril at their End, made of ten or a dozen ſmall roundiſh Pinnæ, a little hollowed in with a Spinula at the End: They are ſometimes a little hairy. The Flowers grow uſually two together, upright, and leſs than Pea-bloſſoms, of a purpliſh Colour; after which follow ſmall flattiſh Pods, containing three or four ſmall round black Seeds, leſs than Peaſe. Tares are ſown in the Fields, flowering in *May*, the Seed being ripe in *Auguſt* and *September.*

Tares are rarely uſed in Medicines, though the Vulgar boil them in Milk, and give the Decoction to drive out the Small Pox, and Meaſles. *Miller's Bot. Off.*

Common

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Common Tares are heating, drying, cleanſing, abſterſive, and aſtringent: They agree in Virtues with the APHACA, which ſee.

3. Vicia; ſativa; alba. *C. B. P.* 344. *Tourn. Inſt.* 397. *Boerh. Ind. A.* 2. 43. *Vicia alba.* Offic. *Vicia alba ſemine.* J. B. 2. 311. Raii Hiſt. 1. 900. Park. Theat. 1072. WHITE TARE.

This Species is diſtinguiſhed by a remarkable Variety in its Leaves, ſome of which are almoſt round, others long and narrow; the Flower is ſingle or double, with many purple Spots, and growing on a ſhort Pedicle; the Pods, alſo, are different from the common Tare, being full of Seeds, ſometimes nine in a Pod, which are altogether white, or purpliſh, or various, or of a pale green, reſembling, in Shape and Colour, green Peaſe, to which they are equal, alſo, in Bigneſs, but diſtinguiſhed from them in that they are not blackiſh in the Part where they are connected to the Pod, as Peaſe are.

The *Vicia Indica fructu albo* of *Gerard* differs not from the common *Vicia*, except that it is taller, and bears a larger and rounder Grain, which, in Colour, Shape, and Size, is equal and like to the common white Pea. *Raii Hiſt. Plant.*

It agrees in Virtue with the common Tare, but is not uſed in the Shops.

4. Vicia; vulgaris; acutiori folio; ſemine parvo, nigro. See ARACUS.

5. Vicia; flore albo; ſiliqua longa, glabra. *Ind.* 160.

6. Vicia; folio, & ſiliqua latis, ſiliqua hirſuta. *Ind.* 160.

7. Vicia; flore purpureo; ſiliquis brevibus, craſſis, pendentibus. *M. H. Deſcr.* 2. 62.

8. Vicia; folio magno, atroviridi, apice aculeato; ſiliqua ſingulari, quaſi articulata, ſemine nigreſcente cinereo.

9. Vicia; arvenſis; folio ſupremo emarginato, aculeato; flore & ſemine, albo.

10. Vicia; Orientalis; flore ſuave rubente; ſiliquis breviſſimus. *Niſſole.*

The twelve following Species of *Vicia* have Flowers growing thicker together, and in Spikes.

1. Vicia; Orientalis; flore maximo, palleſcente, macula lutea notato. *T. C.* 270.

2. Vicia; perennis; maxima dumetorum; flore obſcure rubente. *M. H.* 2. 61.

3. Vicia; luteo flore; ſylveſtris. *J. B.* 2. 313.

4. Vicia; multiflora. *C. B. P.* 345.

5. Vicia; Bengalenſis hirſuta, incana; ſiliqua Piſi. *H. L.*

6. Vicia; anguſtifolia; purpuro-violacea; ſiliqua lata, glabra. *Magnol. Botan.*

7. Vicia; multiflora; Caſſubica; fruteſcens; ſiliqua lentis. *Breyn. Prodr.*

8. Vicia; major; folio cordato; flore rubro; fructu albo, Piſi minoris inſtar. *M. H.* 2. 63.

9. Vicia; ſegetum; ſingularibus ſiliquis glabris. *C. B. P.* 345.

10. Vicia; minima; cum ſiliquis glabris. *T.* 397.

11. Vicia; maxima; tetraphylla, vel pentaphylla. *H. C.* 229.

12. Vicia; maritima; flore albo oblongo. *Bobart. Boerh. Ind. alt. Plant.*

Vicia, according to *Varro de R. R.* is derived *à Vinciendo*, from binding; becauſe, by its Tendrils, like the *Vitis*, or Vine, it climbs, and binds itſelf about other Plants. But we are rather of Opinion, with *Voſſius, in Etymolog.* that *Vicia* comes from the *Greek*; for thoſe of *Aſia* call this Plant βίκιον, (*Bicion*) as we are told by *Galen*, *Lib.* 1. *de Alim. Fac. Cap. penult. Raii Hiſt. Plant.*

This Plant affords good Fodder for Cattle; for its Seed ſupplies the Place of Oats; and the Herb ſerves inſtead of Graſs. Men have, alſo, eaten the Grain, in Times of Scarcity, and found themſelves never the worſe for it. The Meal of Tares is like the Meal of the Seed of Fenugreek. *Hiſt. Plant. aſcript. Boerhaav.*

VICIA LUTEA. See APHACA.

VICIÆ SIMILIS. A Name for the *Lathyrus*; ἀμφίκαρπος; *ſupra & infra terram ſiliquas gerens.*

VICINITRAHA, or VICINITRACTUS. *Caſtellus* informs us, that *Felicianus* makes Uſe of the firſt, and *Ingraſſias* of the ſecond, to expreſs an *Eryſipelas*. But this muſt have happened through a groſs Blunder, with reſpect to the Derivation of the Word *Eryſipelas.*

VICTICELLÆ, or VITICELLÆ LIQUOR, in *Paracelſus*, is a Sort of Wine.

VICTORIALIS. See ALLIUM.

VICTORIATUS DENARIUS, in *Marcellus Empiricus*, is half a Dram. As a Coin, it is half a *Denarius.*

VICTORIOLA. A Name for the *Laurus Alexandrina. Blancard.* See RUSCUS; *latifolius*; *fructu folio inſidente.*

VICTUS. Imports the ſame as DIÆTA.

VIGILIÆ. See *Pervigilium*, under the Article PYRETOS.

VIGO (*Johannes de*). A celebrated Surgeon of *Genoa*, about the Year 1517. There are ſome Compoſitions called by his Name. Thus the *Emplaſtrum de Ranis cum Mercurio* is called the *Emplaſtrum de Vigo cum Mercurio*; and without the Mercury, *Emplaſtrum de Vigo ſimplex.* Some Troches are, alſo, called *Trochiſci de Minio Vigonis.* See CORRODENTIA.

The *Emplaſtrum de Minio Vigonis* is thus prepared:

Take of Turpentine, ten Ounces; of Hogs Lard, ſeven Ounces; of the Suets of Mutton, and Beef, and of Oil of Roſes, each half a Pint; of the Oil of Myrtle, of the Ointment of Poplar, and of Ceruſs, each four Ounces; of the Litharges of Gold, and Silver, each three Ounces and a half; of red Lead, three Ounces; of the Fat of Fowls, two Ounces; and of white Wax, eight Ounces: Make into a Plaiſter, according to Art.

After the Litharges, the red Lead, and the Ceruſs, are reduced to a fine Powder, they are to be mixed, in a Baſon, with the Oils, the Fats, and the Ointment of Poplar: To theſe add two Pints of common Water, and boil the Mixture, conſtantly ſtirring it with a wooden Spatula, till it has acquired the Conſiſtence of a Plaiſter, and the Water is quite conſumed, which is known when it ceaſes to boil: Then melt in it the eight Ounces of white Wax, broken in ſmall Pieces, and the Turpentine, to make a Plaiſter, to be kept for Uſe. This Plaiſter is of a drying, cicatriſing, and reſolvent Nature. *Lemery, Pharmacopée univerſelle.*

VIGOR, with reſpect to Diſeaſes, is the ſame as ACME.

VILLI. Small Hairs, or Fibres, or the Nap of Cloth. Hence, from the Similitude, the ſhaggy Fibres on the Inſide of the Inteſtines, and many other Parts of the Body, are called *Villi.*

VILTRUM. The ſame as FILTRUM. *Viltrum Philoſophorum* is an Alembic.

VINCA PERVINCA. See PERVINCA.

VINCETOXICUM. See ASCLEPIAS.

VINCULUM. A Bandage. *Vinculum Soſtrati* is a Species of Bandage deſcribed by *Galen*, in his Treatiſe of Bandages, Number 81.

VINDICIANUS. *Marcellus Empiricus*, in *Cap.* 16. gives a Remedy for a Cough, which he aſcribes to *Vindicianus.* Rub, ſays he, live Sulphur, mix it with very old Hogs Lard, and make them up into Pills, of ſuch a Size, that they may be eaſily ſwallowed: Give three the firſt Day, two the ſecond, and one the third. This Medicine, he informs us, is excellent for Horſes, as well as for Men.

VINUM. Wine.

The Principles, or Elements, of which Wine is compoſed, are, firſt, An inflammable Spirit: Secondly, A Phlegm: Thirdly, An acid tartareous Salt: And, fourthly, A certain ſulphureous and oleous Subſtance.

Wines, therefore, differ from each other, with reſpect to Taſte, Smell, and Virtues, according to the Mixture and Proportion of theſe Elements. Such Wines as contain a large Quantity of inflammable Spirit, ſoon intoxicate, and heat the Body; but Wines in which the phlegmatic or tartareous acidulated Parts predominate, are of a laxative and diuretic Quality; nor do they eaſily affect the Head. Wines which contain a great deal of an oleous and ſulphureous Subſtance, ſuch as old Wines, are of a deep yellow Colour, of a ſtrong Taſte, and Smell; and as they are not eaſily tranſpired, ſo they remain long in the Blood, and dry the Body.

There is, alſo, another eſſential Element, or Principle, in Wines, which is a certain ſweet, oleous, temperate, and viſcid Subſtance, diſcoverable in Wines which are not ſufficiently fermented, or gently boiled; and ſuch a Principle is, particularly, obſerved in ſtrong Sack, Frontignac, and Hungarian Wine. This Principle not only renders Wines grateful to the Taſte, but, alſo, of a nutritive and demulcent Quality.

Tho' all Wines may be reſolved into their conſtituent Principles, that is, a Spirit, an Oil, a Phlegm, a ſweet Subſtance, and an acid tartareous Part; yet they differ in this, that ſome contain a ſweet and ſubtil Sulphur, whereas others have a coarſer Sulphur, which is not ſo grateful to the Taſte.

Thus Rheniſh and Hungarian Wines contain a far more grateful Spirit, and a more ſweet and ſubtil Sulphur than the Wines of *France*, *Turin*, and *Meiſſen*, in which the Spirit and Sulphur is ſomewhat harſh, and diſagreeable to Nature. Hence it is, that the Smell, only, of old and generous Rheniſh Wine, ſurpriſingly refreſhes the Strength; which Effect is not to be expected from other Wines. The tartareous Principle of Wines is, alſo, different; ſince ſome contain a large Quantity of coarſe Tartar, ſuch as the Provencial Wines; and others a more ſubtil Tartar, ſuch as the Rheniſh Wines. Some Wines, ſuch as thoſe

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thoſe of the *Moſelle*, contain a tartareous nitrous Salt, of a ſomewhat bitteriſh Taſte, on which Circumſtance depends their laxative and diuretic Quality.

In order to ſuch an Analyſis of Wines as may diſcover their Principles, a due and careful Diſtillation is of great Importance.

Three Pints of the beſt Rheniſh Wine, diſtilled in a glaſs Cucurbit, yielded thirteen Ounces of Spirit, with which, however, was mixed almoſt half that Quantity of Phlegm.

Three Pints of Franconian Wine yielded eight Ounces of Spirit, of the like Nature with the former. A Pint and three quarters of ſtrong Hungarian Wine, ſubjected to Diſtillation in a Cucurbit, yielded eight Ounces and a half of a Spirit far ſtronger than the former; ſo that there was hardly a third Part of Phlegm mixed with it.

From a Pint and ſix Ounces of Burgundian Wine, ſubjected to Diſtillation in the ſame manner with the others, I obtained eight Ounces of Spirit, mixed with half that Quantity of Phlegm. Hence it is obvious, that Hungarian Wine is far more ſpirituous than Burgundian Wine, which is more ſpirituous than Rheniſh Wine, which is more generous than Franconian Wine.

After abſtracting the Spirit from the Wine, by Diſtillation, what remains in the Cucurbit acquires a deeper Colour, and is of an highly acid Taſte; only with this Difference, that the Remainder of the Hungarian Wine is of a ſomewhat ſweetiſh acid Taſte, that of the Burgundian of an aſtringent acid Taſte, that of the old Rheniſh Wine of a more acid Taſte, and that of the Franconian Wine moſt acid of all.

When the Spirit, abſtracted from the Rheniſh Wine, is again poured to the Part remaining after Diſtillation, or the acid tartareous Phlegm, its penetrating acid Taſte is, by this means, greatly corrected, and leſſened; but its former Taſte and Smell of Rheniſh Wine does not return, becauſe the ſpecific Taſte of any thing depends upon a particular Mixture and Texture of the Parts, which are diſſolved and deſtroyed by the Diſtillation. And becauſe, by the new and mutual Confuſion of the Liquors, the Particles are not ſo united as they were before, hence, alſo, the Taſte is changed.

Since a vinous Spirit corrects and infringes Acidity; and ſince Hungarian and Burgundian Wines contain more Spirit than any other Kinds of Wines, we may juſtly conclude, that theſe Wines are proper for thoſe whoſe Stomachs generate large Quantities of Acids; ſuch as old Perſons, thoſe ſubject to hypochondriac Diſorders, and Quartan Fevers: And that they are principally beneficial, when Chylification is over, and many acid Crudities of the digeſted Aliments remain in the Stomach.

As the Remainder of the Burgundian Wine is an acid and auſtere aſtringent Phlegm, we may juſtly conclude, that this Wine is proper for corroborating the Tone of the Stomach and Inteſtines; and that the Uſe of it is more expedient when the Body is preternaturally ſoluble, than when the Patient is coſtive.

The Colours of Wines depend on the ſulphureous oleous Principle, which, by the inteſtine fermentative Motion, is intimately reſolved and mixed with the Parts of the Wine: The deeper the Colour, therefore, of Wine is, the larger Quantity of Oil they contain. When, therefore, the Spirit is abſtracted from the Wine, the ſpirituous, aqueous, and acid Parts, are carried off, and there is left in the Veſſel a thick Maſs, of a darkiſh and very deep Colour; to which, if a conſiderable Quantity of Water is poured, it is immediately tinged with the ſame Colour the Wine had in its natural State; which is a ſure Proof that the Wine derived its Colour from the thick, ſulphureous, and oleous Maſs, which remains in the Veſſel after Diſtillation.

Red Wines receive their Colour from the red Pellicles of the Grapes, upon which they ſtand long infuſed; the Acid, therefore, which is in Muſts, alſo, extracts and exalts the Colour which is contained in theſe Pellicles; for which Reaſon, that Colour is purely adventitious. All red Wines are poſſeſſed of an aſtringent Taſte and Virtue, becauſe they ſtand long infuſed not only with the red Pellicles of the Grapes, but, alſo, with their ſmall Stones, which are of a manifeſtly aſtringent Taſte. Hence they extract the aſtringent Principle from theſe two Subſtances, and receive it into themſelves.

Red Wines, eſpecially of the Burgundian Kind, when diſtilled, and afterwards reduced to a thick Conſiſtence, by Evaporation, in a proper Glaſs, are of a deep-red Colour, and a ſtrongly-aſtringent Taſte; and a Portion of the Wine, thus inſpiſſated, when poured into a conſiderable Quantity of Water, not only tinges it with a red Colour, but, alſo, gives it an aſtringent Taſte.

When to red Wine, or the Extract of it which remains after Evaporation, there is poured a ſufficient Quantity of the Oil of Tartar *per Deliquium*, the grateful red Colour of the Wine is deſtroyed, and changed into one of a browniſh Kind; the Mixture becomes turbid, and depoſits a certain Sediment at the Bottom; a certain Proof that the beautiful rediſh Colour does, in a great meaſure, proceed from the Acid exalting the red Colour.

The yellow Colour of Rheniſh Wines, alſo, proceeds from a ſulphureous and oleous Principle; and as the Sulphurs, which are, as it were, the Matrixes of Colours, are exalted, by the Admixture of alcaline Salts; ſo the like happens in Rheniſh and French Wines, the yellow Colour of which is changed into brown, by the Affuſion of a ſufficient Quantity of Oil of Tartar *per Deliquium*, or urinous Spirit of *Sal Ammoniac*.

When an alcaline Liquor is mixed with Wines of a conſiderably acid Taſte, the Colour is not only changed, but, alſo, a gentle Effervеſcence excited; and the Acid of the Wine, meeting with the alcaline Salt, paſſes into a neutral tartareous Salt, ſuch as tartariſed Tartar, or the *Terra foliata Tartari*, which is generally prepared of Wine Vinegar, and the Salt of Tartar.

Since neutral Salts, conſiſting of a ſubtil Acid, and an alcaline Salt, ſuch as the dry *Terra foliata Tartari*, or the *Arcanum Tartari*, which is only the *Terra foliata Tartari* diſſolved, are of a remarkably abſtergent, aperient, and reſolvent Quality, and promote the Excretions by Stool and Urine, they are, therefore, highly beneficial in removing chronical Diſorders. And ſince from the beſt Rheniſh Wine, mixed with Oil of Tartar *per Deliquium*, the ſame Salt may be extemporaneouſly prepared, it is obvious, that Rheniſh Wine may, by this ſimple means, be rendered highly medicinal.

The Acid remaining after the Abſtraction and Evaporation of Rheniſh Wine, if mixed with Oil of Tartar *per Deliquium*, produces ſo violent an Ebullition, that the Froth comes over the Lips of a pretty high Veſſel; the Mixture becomes of a deep-brown Colour; and, a few Hours after, the Froth ſubſides and vaniſhes; and a Liquor highly ſimilar to the *Arcanum Tartari*, both in its ſaline Taſte, Colour, and Virtues, ſubſides to the Bottom. The Reaſon why, during the Effervеſcence, ſo great a Quantity of Froth is raiſed, ſeems to be this, that the Extract of Wine, beſides an Acid, contains a large Quantity of Sulphur, and a viſcid Principle: Hence the Affuſion of the Alcali excites a great Effervеſcence, from which ariſe numerous vaporous and aereo-ethereal Particles, which, being ſheathed up in the viſcid Principle, cannot fly freely off into the Air, but raiſe the viſcid Particles into Bubbles.

The Countries lying between the fortieth and fiftieth Degrees of Elevation of the Pole, ſuch as *Hungary*, *Spain*, *Portugal*, *Italy*, *France*, a great Part of *Germany*, *Auſtria*, *Tranſylvania*, and a great Part of *Greece*, produce the beſt Wines; becauſe, in theſe Parts, the Influence of the Sun is greater than in others.

It is, alſo, certain, from Experience, that mountainous ſteep Places, with Rivers at their Roots, produce the beſt Wines; for, beſides the Influence of the Sun, the Goodneſs of Wines, in a great meaſure, depends on the fine and ſubtil Nouriſhment of the Grapes. Now becauſe the Mountains are expoſed to the Night Dews, which abound about the Rivers, and contain a ſubtil Water intermix'd with an ethereal Principle, it is not to be wondered at, if Dew ſhould be the beſt Nouriſhment for the fineſt Vines. But Dew alone is not ſufficient for the Nouriſhment of Vines, which, alſo, requires Rains.

The Nature of the Soil, alſo, contributes much to the Production of good Wine; for we obſerve, that the beſt Wines grow not in fat, clayey, groſs, and black Soils; but rather in ſuch as are ſtony, ſandy, or chalky; which Kinds of Earths, though apparently barren, are yet very proper for Vines; becauſe they long retain the ſolar Rays, which, by cheriſhing the Roots, make the Nouriſhment paſs through all the Pores of the Plant. Beſides, the Waters, paſſing through ſuch Earths, are attenuated, and ſtrained, and their groſſer Parts ſeparated, and retained; ſo that the nutritive Juice of the Plant muſt be the more pure and ſubtil. The Cauſes of the different Taſtes, Salubrity, and Inſalubrity of Wines, are, without doubt, placed in the different Nature of the Soil; ſince Tracts of Ground, lying on the ſame Mountain, with equal Aſpects to the Sun, and bearing Vines of the ſame Species, yet yield Wines greatly different, with reſpect to Salubrity, Taſte, and a penetrating Quality. The ſuperior Virtues of the *Tokay* Wine, are, by the Inhabitants of that Part of the Country, aſcribed to the Gold there produced, but more juſtly to the large Quantity of corroborating Sulphur contained in the Earth; ſince neither Gold, nor any other Metal, can contribute to the Fruitfulneſs of the Earth, much leſs to exalt the Juices of Vegetables, or render them more ſalutary. But the Reaſon why all the *Hungarian* Wines are more ſalutary than others, depends on the Subtilty and Fineneſs of the Nouriſhment with which the Vines are nouriſhed, and the large Quantity of the aereal and ethereal Principle, which is intimately mixed with their Juices, and which renders both Aliments and Medicines far more ſalubrious than they would otherwiſe be.

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The more ſubtil and light Waters are, and the more they abound with an aereo-ethereal Matter, the more wholſome they are. Medicinal Waters are only efficacious in curing Diſeaſes, on account of the Salts, together with the ſpirituous ethereal Element, which they contain; and if, by Heat, and the free Acceſs of the Air, they are deprived of theſe, their ſalutary Virtue immediately is forthwith rendered languid, and deſtroyed. In like manner, an aereo-claſtic Spirit, in the Wines, impels and promotes the Motion not only of the Solids, but, alſo, of the Fluids, and ſtimulates the moving Fibres to gentle Contractions; ſo that the Circulation of the Blood and Humours, together with the Work of Secretion and Excretion, ſo neceſſary to Life, are facilitated, and promoted: And, for this Reaſon, becauſe the Hungarian Wines conſiſt of highly ſubtil and ſpirituous Parts, they excellently reſtore the Strength, and, by promoting a gentle *Diaphoreſis*, eliminate the crude and ſuperfluous Juices from the Body. But we ſhall, for the Reader's Satisfaction, enumerate the moſt conſiderable Wines in *Europe*, and ſpecify their medicinal Virtues and Qualities.

Italy, then, affords generous and delicious Wines; among which, we ſhall firſt mention that Wine produced at the Foot of Mount *Veſuvius*, call'd, by ſome, *Lachryma Chriſti*, and, by others, the *Virgin Wine*, becauſe it flows ſpontaneouſly, like Tears, from the beſt Grapes, before they are trod. This is a ſtrong Wine, of a ſplendid red Colour, a grateful Smell, a ſweetiſh Taſte, and a ſalutary Quality; for it ſoon proves a ſafe and effectual Diuretic, on account of its Thinneſs.

Alban Wine, ſo call'd from its growing at the City *Alba*, is beneficial, as well for thoſe who are, as thoſe who are not ſound, ſince it gently promotes Perſpiration and Urine. This Wine is of two Kinds, Red, and White.

Among the beſt Wines we may, alſo, reckon the *Tuſcan* Muſcadel, or the Wine of *Monte Fiaſcone*. This Wine is highly palatable, and grateful to the Taſte.

The Red Wine of *Monte Bolzano*, and the Moſcadel Wine of *Peruſa*, are both highly celebrated, and yearly exported in great Quantities, from theſe two Cities.

The *Punic* Wine was ſufficiently known to the Antients: It is produced on the rocky Mountain called *Pforce*, ſituated in *Capo d'Iſtria*, in the *Adriatic* Gulph. This is a ſweet Wine, of a fragrant Smell, and does not ſoon affect the Head, and Operations of the Mind. *Pliny* affirms, that, by the Uſe of this Wine alone, *Livia Auguſta* lived to be eighty-two Years of Age.

Near *Vincentia* there is an excellent Wine produced, called *Marciminian* Wine, which is ſaid to be leſs hurtful to gouty Patients than any other Wine whatever.

In the Diſtrict of *Aquila* is produced a noble Wine, called *Roſazer*, from a City of that Name in the *Julian* Forum.

The *Vernaccan* Wine, ſo called from a red Mountain, known, at preſent, by the Name of *Vernacia*, is a rich and generous Wine, and ſufficiently known, not only in *Italy*, but through *France* and *Britain*.

The *Rhetian* Wines, produced in the *Telinian* Valley, are, alſo, very rich, and delicious; ſo that *Auguſtus* is ſaid to have delighted in them. They are red, like Blood, ſweet, and leave a ſomewhat auſtere Taſte on the Tongue.

Though the Wines in *Italy* are generally ſweet, yet there are auſtere Wines prepared in the northerly Parts; and theſe are uſed with great Succeſs, in hot Weather, as, alſo, in hot Diſeaſes, in order to extinguiſh the exceſſive Heat.

In *Greece*, the Wines of *Crete* and *Cyprus*, formerly known by the Name *Punic*, are every-where greatly eſteemed.

Among the *French* Wines, *Champaign* is generally held in moſt Eſteem: It is grateful to the Stomach, friendly to the Nerves and Head, and ſoon paſſes off by Urine. It is of a delicious Taſte, on account of the Admixture of a ſubtil and ſpirituous Acid.

Next to this are the *Burgundian* Wines. Theſe are generous, in Colour reſembling the Eye of a Partridge, of a grateful Taſte, leſs volatile, and better able to bear an Admixture of Water, than *Champaign*.

Paris Wine, eſpecially if made of ripe Grapes, is thin, but grateful to the Taſte, and not proper for being mixed with Water.

In *Bourdeaux* is produced Claret, which is a Wine of a ſomewhat auſtere Taſte, does not affect the Head, and Operations of the Mind, and excellently corroborates the Tone of the Stomach and Inteſtines. The beſt *Bourdeaux* Wine is that call'd *Pontac*.

The *Orleans* Wines, both of the red and white Kinds, are very generous, and beneficial to the Stomach; but they generally affect the Head.

The white Wines of *Poitou* are, alſo, well known, and greatly reſemble Rheniſh Wines, only they are more crude.

Among the beſt of the *French* Wines we may, alſo, reckon *Frontignac*, and Muſcadine, which is red, highly generous, of a ſweetiſh ſubauſtere Taſte, and, on account of its Richneſs, requires an Admixture of Water.

Among the good *French* Wines, we may, alſo, reckon *Hermitage*, produced between *Valence* and *St. Valiere*. This is a rediſh ſubauſtere Wine, reſembling the Taſte of Myrtle-berries.

Spain, alſo, furniſhes excellent Vines, which, on account of the due Maturity of their Grapes, yield excellent Wines.

Canary, at preſent brought from the *Canary* Iſlands, eſpecially the *Great Canaries*, is produced of the moſt rich and generous Kind about *Palma*.

Malmſey Wine is expreſſed from large round Grapes, of the beſt Kind; and laſts ſo long, that it may be tranſported to any Part of the World.

Malaga Wine, or Sack, is fatter than Canary. The *Petriſmont* Wine grows, principally, near the Town *Gwaldaclazar*, on the Vines long ago tranſplanted by *Petrus Simon* from *Germany* to *Spain*; for a Tranſplantation from one Climate to another will produce Fruit different in Taſte, Sweetneſs, and other Qualities, according to the different Influence of the Sun, Nature of the Soil, and other Circumſtances.

The Country near *Henes*, of *Andaluſia*, is very fertile in Wine, which, however, is ſomewhat auſtere, and ſoon becomes acid in warm Places. Of the ſame Kind are the Wines produced about *Madrid*.

Alicant Wine, produced in *Valentia*, is red, but thick, grateful to the Palate, but hurtful to the Stomach. What we commonly call *Tent*, is not unlike this Wine.

Wine, in general, is poſſeſſed of many Virtues, both for the Purpoſes of Prevention, and Cure: By means of this Liquor, moderately and duly uſed, Longevity is procured, and the Body preſerved robuſt, and in good Plight: Beſides, Wine has a happy Influence, not only on the Body, but, alſo, on the Mind, whoſe Powers and Faculties it invigorates beyond all other Liquors, or Medicines, hitherto known. For, as *Gryllus*, *de Sap. dulc. Lib.* 1. informs us, the *Greeks*, on account of the Excellence of their Wines, were the glorious Sources from which Learning diffuſed itſelf through all the other Parts of the World; but that they loſt, at once, their Genius, and Reputation for Literature and Science, when the *Turks* extirpated their Vines: And it is certain, from Experience, that the *Italians*, *French*, and *Germans*, in whoſe Countries good Wines are produced, are more ingenious and acute, than the Inhabitants of other northern Nations, who uſe Malt Liquors. The Heathens were ſo ſenſible of the happy Influences of Wine, that they placed *Pallas* and *Bacchus* in one Temple, in order to intimate that Prudence was increaſed by Wine. And the antient Poets have repreſented their Gods as wiſer than Mortals, for no other Reaſon than that they uſed Nectar for their Drink, and Ambroſia for their Food. The Fire of the Poets, and all the happy Flights of *Homer*, *Ennius*, *Horace*, and *Ovid*, are the glorious Effects of Wine. Nor is this all; for this Liquor baniſhes Cowardice, eradicates a daſtardly Turn of Mind, and inſpires the Soul with Courage, Intrepidity, and Alacrity. Beſides, Wine is an univerſal Preſervative of Health, and long Life; for ſuch as is the Circulation of the Blood, ſuch the State of the Health will be. Now it is certain, from Experience, that when the Humours are groſs, and their Circulation ſlow, from a want of due Force in the Heart, or any other Cauſe, the animal Functions, and, conſequently, Health, are greatly impaired. But theſe Misfortunes are prevented by Wine, the due Uſe of which augments the Heat of the Body, renders the Pulſe ſtronger, and quicker, forces the Blood from the Centre to the Circumference, increaſes the Tranſpiration, promotes a Diſcharge of Urine, renders the Face red, and the Veins turgid, and, in a Word, refreſhes the whole Body and Mind.

The Antients were ſo ſenſible of all this, that they recommended Drunkenneſs, not of the intenſe and habitual, but of the rare and moderate Kind; for exceſſive drinking of Wine, like the Abuſe of other Remedies, inſtead of good, produces bad Effects: And this Liquor is at proper Intervals only to be drank in greater Quantities than ordinary, with a View to rouſe the Spirits, and animate the Soul, depurate the Blood, and remove Obſtructions. Nor, for theſe Reaſons, is it to be doubted, but Wine is an excellent Preſervative againſt hypochondriac Diſorders, Weakneſs of the Stomach, Cachexies, Suppreſſions of the Hæmorrhoids, Tumors and Obſtructions of the Liver and Spleen, the Stone in the Kidneys and Bladder, the Gout proceeding from a cold Cauſe, catarrhous and other Defluxions, Rheumatiſms, Laſſitude and Heavineſs of Body, Loſs of Memory, Dulneſs of Hearing, Dimneſs of Sight, Weakneſs of Senſation and Motion from a Fault of the Spirits and Nerves, Impotence in Men, and Sterility in Women: So that we

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may justly affirm, that if Mankind knew what salutary Virtues were implanted in Wine, they would not be subject to so many Disorders, nor stand in need of so many Drugs and Physicians.

Having already considered the preservative Effects of Wine, we now come to inquire in what particular Disorders the Use of it is proper.

In malignant Fevers, then, nothing is more excellent than Wine. The Malignity of these Disorders is known from a Defect of Motion and Strength, and from a want of a due spirituous Quality in the Blood, arising from a slow Circulation of the same; all which indicate a certain Dispositon of the Fluids to Putrefaction. It is, therefore, expedient, in all these Disorders, to restore the Strength, rouse the Spirits, increase the Circulation of the Blood, and promote Perspiration. These are the Designs of all Alexipharmics. But all these Intentions are answered by Wine, as is obvious, not only from the Authorities of practical Writers, but, also, from Experience: For I myself have known many cured of malignant Disorders, only by the moderate Use of Wine.

In those Disorders where the peccant Matter is to be expel'd to the Surface of the Body, such as the Measles, Small Pox, and *Petechiæ*, when Nature is weak, and the Motion of the Heart insufficient for the Expulsion, or when, through Weakness, there is a Retrocession of the Eruptions, Wine is highly proper; but we are to abstain from its Use, when these Disorders are accompanied with an excessive Heat, an Ebullition of the Humours, and a quick Pulse.

In continual Fevers, *Hippocrates*, *in Lib.* 2. *de Morb. acut. Sect.* 61. recommends White-wine, both alone, and mix'd with Water. Numberless Practitioners are of the same Opinion. Thus *Forestus*, *Lib. Observat.* 1. *Obs.* 1. recommends fine small Rhenish White-wine; and *Helmont*, *de Feb. Cap.* 12. tells us, "that they who moderately use Wine in continual Fevers, "easily recover, preserve their Strength, and sooner recover "their former State and Condition."

Wine is still more proper in Intermittents, which generally arise from Crudities, an Obstruction of the Evacuations, and especially a Suppression of Transpiration. This Liquor is to be exhibited pretty liberally, on the Days of Intermission; but sparingly, or not at all, during the Paroxysm, unless in the Decline of the Disease, and when the Body is disposed to sweat.

The Reason why Wine ought not to be prohibited in almost all Fevers, is this: A Fever is an intense Commotion of Blood, excited in order to remove and expel what threatens the Destruction of the Body. Now it is sufficiently obvious, that where this Motion is intense, and too strong, Wine is to be sparingly used; but if this Motion is so weak and languid, that Nature seems ready to sink, it is to be quickened by a proper Dose of White-wine, in order to restore languid Nature.

In Syncopes, and Loss of Strength, nothing is more excellent than Wine. *Galen*, *in Lib.* 3. *de Medic. Facult.* orders those afflicted with a Syncope to drink Wine which is thin, of a yellow Colour, and old, rather than such as is new, or of a middle Age: Because the first not only restores the Strength, and recruits the Spirits; but, also, by its Smell, or when applied to the Heart and Wrists, far surpasses all other Cordials, and Analeptics.

In Nauseas, Weakness, Indigestion, and Inflation of the Stomach, nothing is more beneficial than Wine. Hence St. *Paul*, as we see in 1 *Timothy* v. 23. advises *Timothy* to use Wine for a certain Disorder of his Stomach. *Galen*, *in Lib.* 4. *de Sanitate tuenda*, *Cap.* 6. tells us, that the Wines which are yellow or white, fragrant and thin, are excellent Stomachics, especially if they are gently astringent; and such are the Rhenish Wines, which, on account of their subtil, acid, spirituous, and astringent Principle, are highly beneficial, in exciting the Appetite, strengthening the Stomach, and promoting the Digestion of the Aliments.

In a *Fames Canina*, or preternatural Voracity, *Hippocrates*, in *Sect.* 6. *Aphor.* 21. recommends the drinking of Wine; and his Advice is founded on Reason: But that Author did not, in this Passage, mean every Wine, but only such as is generous, pure, and old. For the Cause of this Disorder is an acid corrosive Humour in the Stomach, which, by such Wine, is excellently corrected, just as the corrosive Nature of Spirit of Nitre, or Vitriol, is corrected by the Admixture of Spirit of Wine; or as the Acidity of Tartar, so long as it is in Conjunction with the Wine, is so corrected, as to prove grateful to the Palate.

In order to allay Thirst, nothing is more effectual than Wine mixed with Water; for, by this means, it far sooner extinguishes Thirst, than if Water had been exhibited alone; since Thirst arises from an Obstruction and Constriction of those Glands which discharge the Saliva into the Fauces, for moistening them, and the Oesophagus; but these Glands are better opened by Wine and Water, than by pure Water; for which Reason, *Hippocrates*, in acute Fevers, was not afraid to prescribe a Mixture of Water and Wine.

In Vomitings, of the idiopathic Kind, or such as accompany Fevers as a Symptom, thin Wine is preferable to all other Liquors.

In Colics, especially those arising from Flatulencies, or viscid Crudities, nothing is more beneficial than old Rhenish Wine. For this Purpose, *Hippocrates*, *Lib.* 2. *Epidem.* 6. recommends rich Wine, because it renders crude Matter fit for Concoction, attenuates what is thick, and discusses Flatulencies. *Crato*, also, *in Conf.* 169. recommends Rhenish Wine in Colics, but forbids the Use of *Moravian* and *Austrian* Wines; as, also, the Malmsey Wines, which are sweet, thick, and turbid.

In Diarrhœas, and Dysenteries, which appear as the Symptoms of acute Distempers, small Rhenish-wine, either alone, or mixed with a Ptisan, produces excellent Effects, since it is possessed of a subastringent Quality, by which the Tone of the Intestines, and their relaxed glandular Coats, are greatly strengthened: And as, in these Disorders, it is highly expedient to move the Humours from the Centre to the Circumference, to augment Perspiration, and provoke Urine, hence Wine is excellent, because it produces such Effects. Red Wines, on account of their greater Astringency, are generally recommended; and, if they are good, they may be used for that Purpose.

In Obstructions of the Liver and Spleen, in the Jaundice, and Cachexy, Wine produces excellent Effects. *Solenander*, a celebrated Practitioner, recommends a Mixture of chalybeate Water with a Wine which is white, pure, ripe, not strong, but pellucid, such as the Rhenish and Moselle Wines, as highly grateful to the Liver; and asserts, that, by their astringent Quality, they corroborate the Viscera. But sweet Wines, because they increase the Quantity of the Blood, are greatly condemned, not only by *Hippocrates*, *Lib.* 2. *de Morb.* but, also, by *Guarinonius*, *in Conf.* 117.

In Dropsies, *Hippocrates*, *in Lib. de intern. Affect.* extols austere Wines; and aqueous Wines, in *Lib.* 3. *Epidem. Sect.* 37. And *Epiphan. Ferdinand. Hist. Med.* informs us, that Persons labouring under an Ascites have been cured by the Use of Malmsey Wine alone.

It is justly to be doubted, whether Wine is proper in hypochondriac Disorders; for I have frequently observed in Practice, that the Symptoms were exasperated by acid Wines, especially of the rough Kind. The Reason why hypochondriac Patients cannot bear Wines inclining to Acidity, seems to be this: On account of the slow peristaltic Motion of the Intestines, their Contents are not promoted, hypochondriac Patients being generally costive, but become stagnant; and, by their Continuance, contract an Acrimony. Hence Wine, in such Patients, is by the Stagnation of the Fæces, converted into a strong Vinegar, which stimulates the nervous Parts to Spasms. But, since hypochondriac Patients require a Reinforcement of Strength, and call for additional Force and Heat in their Stomach, Wine is not to be absolutely denied them. Hence *Brunnerus*, in *Conf.* 9. in hypochondriac Disorders, prefers old *Rhenish*, or good *Hungarian* Wines, moderately used at Meals. But those afflicted with Disorders of this Kind, ought to abstain from red, austere, and sweet Wines, and from the excessive Use of all.

In a Scurvy, which generates a large Quantity of fixed tartareous Salts, *Rhenish* Wine is excellent, because it is diuretic. Hence *Sachsius*, in *Tract. de Vite Vinifera*, informs us, that *Rhenish* Wines are highly beneficial in a Scurvy, because they, by Urine, evacuate the tartareous Sordes; and that, in scorbutic Patients, he has observed an Evacuation of thick Urine, abounding with Tartar, procured by *Rhenish* Wine. *Reisner*, in *Lib. de Scorb.* recommends strong, generous, and unmixed Wines, for scorbutic Patients; but orders them to be drank in a small Quantity; and, if the Patient's Heat is increased, to be diluted with Water mixed with Raisins.

In the Stone of the Kidneys, sweet, generous, and oleous Wines are by *Crato*, in *Conf.* 53. justly condemned, because the Stone is generally formed by a Redundance of Blood obstructing the abdominal Viscera and Kidneys, and producing, first, an Inflammation, and then an Ulceration of the Kidneys, and then the Stone. But that a Plethora is augmented by sweet Wines, we have already observed. The Stone is, also, generated in the Kidneys, by turbid and austere Wines, such as those of *Numburgen* in *Germany*. But *Rhenish* Wines are good against the Stone, because they are highly diuretic. *Schulzius*, in *Conf.* 111. recommends the *Neccarine* Wines. *Unzerus de Nephrit. Cap.* 23. extols rich Wines, moderately drank, after due Evacuation of the Body. *Montanus*, in *Conf.* 229. greatly recommends pure, ripe, and rich Wines of a white Colour, in nephritic Disorders. A Strangury, according to *Hippocrates*, in *Sect.* 7. *Aph.* 28. is removed by drinking Wine; but this Aphorism is to be understood principally of generous Wine, because the Disorder treated of generally

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rally arises from a Suppression of Transpiration, which is restored by Wine of this Kind.

It is a Question of great Moment, Whether Wine is proper in arthritic and gouty Disorders? It is a common Persuasion, that these Diseases are produced by Wine, and that they are only to be cured by drinking Water, and abstaining from Wine. It is certain, that these Disorders arise from a subtile Tartar, which lacerates the Membranes. Hence Wines, which contain a large Quantity of Tartar, seem to be prejudicial in them. But these tartareous Diseases proceed from an Obstruction of the Emunctories, and a Viscidity and Density of the Humours. But Wine excellently conveys the morbific Matter through the Kidneys, which are the proper Emunctories of the Tartar. Hence, there is no Reason why Wines should not be admitted, especially since the Gout generally derives its Origin from a Weakness of the Stomach, a Defect of a spirituous Quality in the Blood, and a slow Circulation of the Humours. Hence, Wine exhibited with a proper Regimen, and by the Direction of a Physician, may prove a Preservative against the Gout, if it is used out of the Paroxysm. But as there are great Differences, not only between Wines, but, also, between Constitutions, so the Physician ought to be very circumspect. Generous Wines that are not acid, such as the *Hungarian* Wines, agree with some Patients. *Crato*, in *Consil.* 253. orders gouty Patients to drink a little *Hungarian*, or *Malmsey* Wines, at Meals. And *Solenander*, in *Consil.* recommends the moderate Use of Wine for gouty Patients, on account of the Weakness of their Stomachs. The same Author in *Sect.* 4. *Consil.* 24. speaks in the following manner: "We are to observe what "the State of the Stomach, and of the rest of the Body, can "bear. Nor is absolute Abstinence to be injoined Patients of "every Temperament, Constitution, Age, and Method of "Life, because there are great Varieties of Patients. If Wine, "especially of the gently astringent Kind, is drank moderate"ly, and at a proper Time, its Use will be beneficial, instead "of hurtful. Thus we see, that by the Exhibition of a little "Wine in the Decline of the Paroxysm, gouty Pains are "alleviated, because by the Heat and Spirits excited, the pec"cant Humour is discussed; only the Patient must abstain "from Wine in the Beginning of the Paroxysm."

Nor must we forget a singular Method of Cure, used by *Hippocrates* in the very Beginning of sciatic Pains, and a fixed and wandering Gout. His Words on this Occasion, are found in *Tract. de intern. Affect.* and are so memorable, that we shall here translate them: "From any Disorder of the Kidneys "arises a proportionable Disorder of the larger Veins: But "the Veins, when full of Blood, are indisposed by the Ap"proach of any thing foreign to them. If the Disorder is "in the Right Kidney, a Pain begins to reach to the Aceta"bulum of the Coxendix: The longer this Disorder has lasted, "and the farther it has proceeded, the more intense Pain de"scends to the inferior Parts. And when this Pain has reach"ed the external Malleolus of the Foot, and the Joint of the "great Toe, it is again convey'd to the Head; and, when it "has there formed an Ulcer, the Head seems as if it would "burst, and the Eyes, and all the Body, are filled with "Phlegm." A little after he speaks in the following Manner: "If you are called in the Beginning of such a Disorder, you "must order a great Quantity of diluted *Mendean* White"wine every Day; and let the Patient be intoxicated till the "Blood bursts from his Nose; and, when the Blood once be"gins to flow, there is some Discharge of it made, for at "least thirteen Days. But, when these thirteen Days are "past, the Patient is no longer to be intoxicated; nor is such "an Attempt to be made after the Blood begins to flow; but "let him at Meals drink a little more Wine than usual, "that the Blood may continue to flow." *Hippocrates* deduces these Disorders from a Plethora, which is confirmed by Experience; and this Plethora he endeavours to remove by an Hæmorrhage from the Nose, which he excites by copious drinking of Wine. But, whether it would not be more expedient to lessen the Plethora by Venesection, or procuring an Evacuation of Blood from the hæmorrhoidal Veins, I leave it to others to judge.

Having thus considered the Efficacy of Wine for the Cure of internal Disorders, we shall now treat of the Injuries arising from its preposterous Use in some Disorders. It is, therefore, certain from Reason and Experience, that in all Disorders, where a great Quantity of Blood is congested, as in Inflammations, and most Disorders of the Head, especially an Headach arising from an hot Cause, a Phrenitis, Madness, Vertigo, Epilepsies, Lethargies, and all drowsy Disorders, Wines of every Kind are prejudicial; for since in these Disorders the Blood is impetuously convey'd to the Part affected, and congested there, it must circulate slowly. Hence Wine, which by its Spirit ascends to the Head, and produces a greater Rarefaction of the Blood, which it forces more copiously and impetuously from the Heart, to the Part obstructed, must produce an Exasperation of these Disorders. *Hippocrates*, also, in *Lib.* 2. *de Morbis*, in a painful Repletion of the Brain, orders Abstinence from Wine; and, in the same Part asserts, that apoplectic Patients, ought totally to abstain from Wine; and in *Lib.* 4. *de Morb.* he tells us, that in a Sphacelus of the Brain, and a Lethargy, the Patient is totally to abstain from Wine. A phrenitic Patient, says he, should be warmed with warming Liquors, and Potions; but Wine must not be used for this Purpose. And, in his Book *de Insomniis*, he tells us, that mad Persons ought not to drink Wine.

Wine is, also, hurtful in a Cough and Phthisis, because the Aspera Arteria cannot bear its acrid stimulating Quality. But since sweet Wine assists Expectoration, the moderate Use of it is not injurious; nor when the Cough is on the Decline, is old *Rhenish* Wine to be prohibited, but rather prescribed.

Tirellus, in *Hist. Vini*, tells us, that Wines support the Sound, recover the Sick, revive the languid, and perform Miracles. Extracts, Quintescences, Stones, Boluses, and Pills, are to be despised in Comparison of Wines, which are the true Support of the innate Heat; and ought, therefore, to be celebrated with Praises, proportioned to the Advantages Mankind reap from them. *F. Hoffman.*

In *Spanish* Wine, of that Kind which in our Country *(Holland)* we call *Sireese Sek*, and very excellent of the Sort, I discovered the like saline Figures, as I had before observed in the *French* Wine, represented *Tab.* I. *Fig.* S, [See under ACETUM] and others besides, which were of a kind of oblong Form, *Fig.* T. The Number of these, however, was very small, in Comparison of what appeared in the *French* Wine, or Vinegar. But I did not doubt of discovering more saline Figures, had this Wine been as thin as the *French*; for I perceived Multitudes of minute Particles subsiding in the Wine, of whose Figures I could have no exact View, because of the thick Matter which surrounded them. However, after I had kept the Wine three Days in my Repository, without a Cover, I perceived great Numbers of very minute Particles, some of which uniting together by their mutual Connexion, resembled the dry small Branches of some Tree; others floated about promiscuously, as soon as the Wine was stirred. These last did not appear to me at first of any Figure; but afterwards I found, upon a more accurate Inspection, that they were endowed with certain Forms and Shapes, and, indeed, the same as those of the saline Particles, which I had observed before in the Vinegar. Among them were many representing little Planes, partly inflected roundwise, but of such Minuteness, that, as far as I could judge by my Eyes, ten Millions of them together were not so big as a Grain of Sand. Of these saline Atoms, which presented themselves to my View, many were large and flat, others thick and sharp-pointed, and these had not yet attained their due Perfection. The Contemplation of these Figures confirmed me in the Opinion which I had entertained of the Formation of the acute, or sharp-pointed Atoms of Salts; and convinced me, that all the acute saline Parts of Wine, as well as Vinegar, were at first but as so many little thin Planes, and that, by an Inflection of the few Angles, they assumed the Form of those saline Figures, which I had before observed in the Wine and Vinegar. For Example, the *French* Wine, and what we call *Sek*, exhibited to my View the little thin plane Figures, represented *Tab.* I. *Fig. a b c d, e f g h:* The Sides of one of these Figures have a Roundness with an Irregularity, while the Sides of the other are those of a Plane; and these are all represented bigger than the Life, that their Position may the better appear, and that you may conceive how the Angles *a* and *d* are incurvated in the manner as is represented in the Figure *i k l*; and how the Angles *a* and *b* unite, and form an acute Angle at *i*, in the same Figure, and how, from a like Incurvation of the other two Angles *c* and *d*, there results a perfect saline Figure. But where these little Planes are but short, they have but two Angles incurvated, and assume the Forms represented by the Figures *q* or *r*, or those of V and W, *Tab.* I. relating to the Wine of *Orleans*, under the Article ACETUM. I had as clear a View of the Figures represented *i k l, m n o p*, as I should have of half a Sheet of Paper rolled up at the two adjacent, or all the four Corners, and reduced to an acute Angle *i*, or two acute Angles *m*, *o*, with an interjacent Plane, tho' a Figure so exquisitely perfect, as that of these saline Particles, cannot be ascribed to Paper, or any thing of that Kind, however modelled: I could, also, plainly and fully discern, not only the Angles, but the interjacent Cavity, which seemed to resemble the Cavity in a Paper rolled up, in the manner before-mentioned.

These Experiments gave me Occasion of considering whether or no these saline Atoms, existing in Planes, changed their Figure when pressed in the Mouth, and passed from a Plane to a Body furnished with two acute Angles; and because they are hollow, by the Cuvity of their Angles, pricked the sensible

Parts

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Parts of the Mouth, and lacerated them with their Edges, and so produced those uneasy Sensations on the Tongue and Palate, which we call an *Acid*, or the *Sense of an Acid*.

I placed some *Moselle* Wine in an open Vessel, and letting it stand in my Summer-room for some Days, I afterwards discerned swimming in it Multitudes of saline Figures, of the same Kind as those I had before observed in the Wine, Vinegar, and *Sek*, with only this Difference, that in many of them I not only observed a Cavity and Thickness, but could clearly perceive, that they consisted of from seven to ten Scales, lying one upon another, which I took care to delineate at first myself in a coarse manner, and afterwards had them delineated by a skilful Painter, as they were exposed to his View through a Microscope, and are represented *Tab.* I. *Fig. s.* I saw, also, swimming saline Figures of different Sorts, from which again arose those half-form'd Figures, represented by the Figures in the Table under *t*. In the Wine of *Orleans*, I perceivd some of these little Figures, but not in so great Numbers as in the *Moselle* Wine. I observed, also, some saline Particles, which were perforated by others, as in the Figures *u*; and, besides these, a few saline Planes, some of which had their Sides incurvated, or circumvolved, as you see in Figure *w*. There were, also, among them a few, which had their shorter Sides, as it were, gradually indented, as in the Figures under *x*. I took Notice, also, of a few, which made no more than half of the Figure *s*, as you see them under the Letter *y* in the Table, and a few others, which were flat at their Extremities, as you see under *z*. But what I highly wondered at was, that in the open Vessel reposited in my Summer-room, I could discover none of the smallest of these little Figures after four-and-twenty Hours; but after another four-and-twenty Hours, I discerned saline Figuees, which were less than any before observed, and whose Position, on account of their extreme Minuteness, I could not come to the Knowledge of, as they were besides, hidden under the Covert of some gross Matter in the Wine.

I took *Rhenish* Wine, commonly called *Hochmar*, one Year old, well tasted and generous, before its Fermentation was quite ceased, and placing it aside in an open Vessel, after three Hours, I discovered in it the like saline Figures, which terminated at both Ends in an acute Angle, and had many of them an Eminence, in manner of a Back, or the Keel of a Boat turned upwards, being in other Parts very pellucid. These you see represented *Tab.* I. *Fig.* 1. The same Figures I had before observed in the *French* Wine. But after I had reposited the same Wine for two Days, I perceived some much larger Figures, with different Circumferences, some having two, others three or four, and others innumerable Circumferences, so closely united, that it was very difficult to determine how far these Circumferences extended, which were many of them so beautiful to the Eye, that nothing in the Sea, whether Coral, or Shells, though the fairest that can be seen, deserves to be compared with them; these you see under Number 2. Among these Figures were very many pellucid ones, which were destitute of any visible Circumference, except a few, which consisted of various minute Figures, of the same Position with those others. I discovered, also, Numbers of Figures, whose both Extremities were obtuse: The one Figure had more of a Plane, or was more obtuse than another; others there were which had only one blunt, or obtuse End, as under Number 3. In another Place I saw swimming in the Wine saline Figures, which had not only Circumferences, but were furnished with Steps or Furrows, as you see them represented under Number 4. Besides the Figures aforesaid, there was a great Number of lesser saline Figures, of different Sizes, and not only furnished with Peripheries, or Circumferences, after the manner of the Figures just mentioned; but constituted of various Forms, some of them exactly resembling a well-made Wine-hogshead, others a *Rhenish* Wine-vessel, which the *Dutch* call *Rhijns-wijnvoeder*, others a long Vessel, which they call *Lange-toelast*, as in Figures 5. Some of them were of such Minuteness, that I was obliged to use the utmost Diligence to discover them; and when I had marked the Places, whence the more subtile Part of the Wine was almost exhaled, I, besides, observed lying various Kinds of ramous or branched Figures, some of which seemed to proceed from some saline Figure; and, when I had attentively contemplated those ramous Figures, I found they consisted only of the most minute saline Figures connected to one another, and some of them very irregularly disposed, being often united by the Ends of their Branches to the largest saline Figures, in the manner represented under Numbers 6, 7, 8, 9.

In the Beginning of *December* 1684. I tried Experiments upon that Kind of *Rhenish* Wine, which we call *Hochmar*, of the Growth of the Year 1678. if we may believe our Wine-merchants, who import this Sort of Wine from *Germany*, after I had made the Inspections into the like Wine, of which I have given an Account. In this Wine I discovered at first but very few saline Particles; but after I had kept the same Wine three or four Days in my Repository uncovered, I perceived a far greater Number of saline Particles, but in much less Abundance than I had before discovered in the same Wine, when but one Year old. I was very well pleased, however, that I could observe very distinctly, as I thought, most of the largest Particles to consist of a Multitude of minute ones, an hundred of which I imagined, if I could have numbered them, might enter the Composition of one large Particle. These I have represented as well as I could, *Fig.* 10. But, after further Consideration, and close Observations, I concluded, that the larger saline Particles were first concreted, and that afterwards, the lesser ones, which were big enough to come within my Cognizance, became united with the larger by Appulsion; since no small Particles appeared in the Wine about these saline Parts, nor any thing like unto Salt, whereas in the rest of my Observations (for I made a Dozen Experiments upon these Wines, neglecting the rest) I had found saline Particles almost of the same Magnitude, very shining, Multitudes of small saline Particles lying near them. I discovered, also, sometimes a small saline Figure, which seemed to be no more than half the Figure mentioned, and is here delineated under Number 11. Near these were many remarkable small Figures, shining and pellucid, whose Apices, or Points, were not so acute as those of the large Figures; they are represented under 12. I, also, saw some few saline Figures larger than the last-mentioned, which in their Middle contained another Figure, No. 13. Beyond these, in the same Place, appeared some small pellucid saline Figures, whose Extremities were plane, (not pointed) No. 14. There were, moreover, some very few small Figures, representing the dry Sprags, or small Branches of Trees, as was before observed in the same Wine but one Year old; which ramous Figures consisted of many minute saline Figures united, as in the other. These Experiments shewed me the Reason, not only why *Rhenish* Wine included in a large Vessel, filled full, and well stopped, will keep many Years without losing its Strength, but why, also, in Process of Time, it loses its *Rhenish* or acidish Taste, and acquires a milder and sweetish one; which is, because the saline Particles in this Wine come together, and are coagulated; and partly subside to the Bottom, partly adhere to the Sides of the Vessel; and these coagulated Parts we call the Tartar of Wine. Hence it follows, that the older the *Rhenish* Wine is, the fewer saline Particles it contains. In *French* Wines the contrary happens, because the saline Particles, as far as I have observed, in a full and well-closed Vessel, are less concentrated, especially in the Wines imported from *Bourdeaux*, for which Reason they never become milder or sweeter; but in those Wines, which are imported from *Nantes*, the Salts are more congregated, tho' their Sweetness, however, goes off at the same time.

In *Rhenish* Wine sold for *Rhingow*, (tho' I understood afterwards, that it was only *Palatine*) of the Growth of the Year 1683. and of a very grateful Taste, I observed at first very few saline Figures; but after I had set it aside in an open Vessel for four-and-twenty Hours, I discovered Multitudes of saline Figures acuminated about both Ends, as in No. 15. many of which had an oblique and transverse Eminence, others were very pellucid. There was, also, so vast and inconceivable a Number of saline Figures of the same Position, that they could by no means be observed by Help of that Microscope, through which all these Figures appeared of the same Size as you see them delineated. I, also, met with great Quantities of saline Figures, which appeared at first Sight, like handsome and well fabricated Wine-hogsheads; but, upon a more accurate Inspection, I discovered that two of their Sides were incurvated, as under No. 16. From these Observations I learned, that the saline Figures, which I had discovered in the preceding Wines, and which I said were like Wine-hogsheads, were of one and the same Position with these Figures, and that I had not view'd them on the convolved Side, nor made so exquisite an Observation of them, as I did of these. Besides these saline Figures, which I observed to be flat at one or both Ends, all the rest resembled the Figures, No. 16, 17. With these I saw small saline Figures, represented No. 15. with both their sharp or acute Ends rolled up, as in No. 17. I observed other saline Figures, which had only one Side incurvated, as No. 18. Sometimes I took Notice of a small saline Figure, resembling a Pyramid on a quadrilateral Base, or a Diamond cut in that Form, No. 19. but there were so few of these Figures, that sometimes I could perceive no more than one or two in a Drop of Wine. With these I could sometimes perceive an oblong saline Figure, furnished in the Middle with another Figure, of the Form just mentioned, as you see represented, also, No. 19. I met with the same Figures in other Wines, but did not judge them worth recording. Besides these, I often met with saline Figures, whose Angles, or Apices, about the Contortion, or Incurvation, were not closed, and which had a conspicuous Aperture

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Aperture reaching lengthwiſe, N° 20. tho' many others, which were cloſer, ſeem'd only to have a Mark, diſtinguiſh'd by its Eminence, or Elevation. Sometimes I could, alſo, diſcern ſome little, long, and narrow Figures, as repreſented N° 21. About theſe laſt I began to exerciſe my Speculations, whether they were only the Rudiments, or Materials, of ſome larger Figure to be formed, the Cauſe of whoſe Imperfection conſiſted only in the want of ſufficient Matter to complete thoſe ſaline Particles; for I ſaw but a few of them ſwimming in the Wine, but the greateſt Part lay at the Bottom, when the Wine was in part evaporated: Beſides all the ſaline Particles beforementioned, I diſcovered, in all the Kinds of Wine, an infinite Number of minute and delicate Particles, to which I could aſcribe no other Figure than that of Globules; and their Numbers were ſo great, as to make one believe, that the whole Subſtance of the Wine, except the ſaline Atoms, conſiſted of Globules; and I am perſuaded, that they contribute, chiefly, to the Sweetneſs of the Wine.

I drew a ſmall Quantity of that *Rheniſh-wine* which our People call *Rijn-hauwer Cavelwijn*, from a full Hogſhead, which had fermented almoſt during the whole Summer, and had been drawn off the Lees for ſome Weeks, retaining a good laudable Taſte: I placed this Wine in an open Veſſel, in four different Places of my Summer-room, and in little leſs than an Hour diſcovered in it Multitudes of ſaline Figures; but, after almoſt ſixteen Hours, I diſcerned many Figures of a great Thickneſs, having a Cavity like a Cockboat, ſuch as I had before related that I had ſeen in Vinegar, [ſee ACETUM] and are here repreſented N° 22. I could obſerve, alſo, different Sorts of ſaline Figures, which, about their Centre, repreſented other ſmall, darkiſh, and oblong Figures, ſome of which had two, others three, and others four Circumferences, N° 23. Others, again, were marked with a Line, or Seam, thro' the Centre, N° 24. I ſaw, beſides, ſeveral ſaline Figures, with only one Apex, the other End being obtuſe; the Cauſe of which ſeemed to be, that their conſtituent Particles were not yet complete, as we ſaid before, and, conſequently, neither the Figures themſelves of this Sort, which were only pellucid, and are here repreſented N° 25. I perceived, alſo, a few ſaline Figures, reſembling thoſe under N° 26. And when I inſpected the thinner Parts of the Wine, which had almoſt evaporated, I diſcovered innumerable Multitudes of ſaline Particles, moſt of which had two acute Angles, but were ſo extremely minute, that I cannot but think ten Millions of them, in Conjunction, to be leſs than a Grain of Sand. I, alſo, perceived other Figures ſwimming about, in the Shape of a well-fabricated Wine-hogſhead, as I mentioned before; but tho' I examined theſe laſt ſaline Particles with all the Accuracy I was capable of, I could never diſtinguiſh them by Parts, or Lines; they were, alſo, thinner than all the reſt, and pellucid: I ſaw, afterwards, many oblong, quadrilateral, ſaline Particles, which were, alſo, thin, in the higheſt Degree, and pellucid, as well as extremely minute; and are here repreſented N° 29. but a little too big; the Reaſon of which was, that, with the ſame Microſcope, which diſtinctly exhibited to View the Figures under N° 22, 23, 24, 25, 26, and 28. I could not diſcover thoſe which you ſee under N° 27. 29. and this is the Cauſe that the Proportion could not be obſerved. I perceived, alſo, about the thinner Parts of the Wine, various ramous ſaline Figures, which were again compoſed of other ſaline Figures, ſo extremely minute, that I diſtinguiſh'd the Shapes of but very few of them; others, of the like ramous Kind, conſiſted of ſuch irregular Figures, that I could diſtinguiſh them by no Poſition.

I made the ſame Experiments, as before, upon another Sort of Wine, which our People call *Ceronce-wijn*; and I obſerved moſt of its ſaline Figures to agree with thoſe repreſented under N° 30. ſome of them appearing, as it were, convolved, others very thin and pellucid; others, again, when the Wine had been ſuffered to reſt for ſome time, were become ſo thick, as to ſhew a darkiſh or browniſh Periphery round about, as in *Fig.* N° 31. others there were which made but half N° 30, 31. and are repreſented N° 32. I began, alſo, to examine that Kind of French-wine which we call *Coteau*, and diſcovered in it Multitudes of ſaline Figures, like thoſe N° 30, 31, 32. beſides others whoſe Sides were convolved, as N° 33. and others like Planes, whoſe longeſt Sides were right Lines, and both their Extremities round, N° 34. ſome, alſo, had one acute Angle, as N° 35. I diſcerned, alſo, many ſaline Figures, reſembling, in a very lively manner, a flat-bottom'd Boat turn'd over, N° 36. in others, of the ſame Structure, there appear'd, as it were, a Cavern; near the forementioned I could diſcern various minute longiſh Figures, as N° 37. which I ſuppoſed, had there been more Matter, would have aſſumed the Figure N° 34. Beſides theſe, I ſaw ſome ſaline Figures in the Form of N° 38.

I made a full Examination and Inſpection, alſo, into that Sort of French-wine which our People call *Touſecan-wijn*, which was rich, and, at the ſame time, very ſweet, tho' many among us believe the Sweetneſs of this Wine, which it acquires after four Years, not to be natural, but artificial, and procured by means of Sulphur, or the Wine called *Hogeland*, or Honey, or Syrup of Sugarcandy. I obſerved in this Wine all the ſaline Figures which I had diſcovered in the Wine called *Coteau*, but in this of *Touſaan* there were not ſo many ſaline Particles as in the other; and there was, beſides, ſome Difference, in that I could diſcern in this Wine of *Touſaan*, at ſeveral Times, ſaline Figures cut, as it were, into Steps, or Degrees, as you ſee repreſented N° 39.

I took, for further Examination, ſome *Touſaan* Wine, accounted the pureſt, and obſerved in it all the ſaline Figures which I had diſcovered in the *Coteau* and the *Touſaan*; but I judged the Number of the Figures contained in this laſt, called the *acidiſh Touſaan*, to be twenty-five times as great as thoſe in the ſweet *Touſaan*, but leſſer: Beſides, I could ſee in this laſt, or acidiſh *Touſaan*, the ſaline Figures floating, after a few Hours; but in the ſweet *Touſaan* the ſaline Particles were ſlow in Appearance.

In the Wine called *Citerne* I ſaw all the ſaline Figures which I had obſerved in the *Touſaan* and the *Coteau*, and thoſe very numerous.

I made Inſpections, alſo, into *Hogeland* Wine, of the richeſt Sort, and found but very few Figures floating in it, tho' I had ſet it aſide for three Days and Nights; but theſe Figures were much larger than thoſe in the *Coteau* and the ſweet *Touſaan*; and reſembled thoſe under N° 30, 31, 33, 36.

I made an Infuſion of Tartar of Rheniſh-wine, pulverized in pure Water; and, when the Water was become limpid, I obſerved in it many of the ſaline Figures, which I ſaid I had diſcovered in Wine-vinegar; among them ſome very clear Figures armed with two acute Angles, as in N° 40. but moſt of them were irregular; the Reaſon of which, in my Opinion, was, the want of a Mixture of ſweet or oily Matter, and becauſe the ſaline Parts, eſpecially where was little or no Water, ſeparated and ſell off on all Sides.

After this, I took under Examination ſome Tartar, as it was ſaid to be, of French-wine, in the ſame manner as was deſcribed before; and diſcovered in it, alſo, ſome ſaline Figures, which agreed with thoſe of the Wine; but the other Figures were even more irregular than thoſe obſerved in the Rheniſh-wine.

I took ſome of the pureſt Wine of *Orleans*, and with every Drop, as near as I could conjecture, mixed a Bit of Crabs-eye, of the Thickneſs of the Back of a Knife, becauſe the Powder of the ſame hinders a clear View, when put in the Wine: After three Hours I examined it, and could ſee nothing at all, as I may ſay, in the Wine, which had any Reſemblance to ſuch ſaline Figures as I had ſeen in the Wine which had no Crabs-eyes mixed with it: I perceived, alſo, innumerable ſaline Particles with an oblong quadrangular Baſe, and the Sides aſcending pyramidically, and ending in a kind of Ridge, or Back; in others I could only ſee a plain Figure. See both repreſented N° 41. Some were Hexahedra, or Figures with ſix Sides, N° 42. There were, alſo, various ſaline Figures, which had two oblique Sides, N° 43. and a few quadrilateral Figures, containing within them a ſmaller quadrilateral one, as repreſented N° 44. but others of theſe Figures had very ſhort, and, in ſome meaſure, irregular Sides: I, alſo, happened on ſome ſaline Particles of the Figure N° 45. in theſe laſt Particles I could perceive no Gibboſity, or Eminence; which was owing, I ſuppoſe, to their extreme Shortneſs; and when I took a View of a Bit of the Crabs-eyes, I obſerved in, perhaps, fifty Places, a Multitude of ſlender Tubes, proceeding, or formed, as it were, out of an Angle, or Apex, ſhining like Cryſtal, and one longer than another, tho' all nearly of the ſame Thickneſs, N° 46.

In the ſame Quantity of Wine I infuſed white Chalk, and diſpoſed it at four Places together in my Summer-room: When I had ſtayed about a Quarter of an Hour, I inſpected the Wine, and obſerved in it a vaſt Multitude of the above-mentioned ſaline Figures, but much inferior in Bigneſs to thoſe in the Wine with the Crabs-eyes: But when I had left the Wine with the Chalk for twelve or fourteen Hours, I found all the aforeſaid ſaline Figures not only larger, but I perceived in various Places a great Multitude of little Tubes, emerging, as it were, from a Point of the Chalk, and like thoſe repreſented N° 46. but larger, and one thicker than another: And as the Wine which had contained the Crabs-eyes was covered with a Sort of Cuticle, the Cauſe of which I ſuppoſed to be a Kind of Coagulation of the Sweetneſs of the Wine, the contrary happened in the Wine with the Chalk, which was fine, and ſo continued.

Some time after I infuſed in the Wine before-mentioned, commonly called *Rijn-hauwer, Kavel-wijn*, ſome Bits of Crabs-eyes, and after twelve or fifteen Minutes I found in it ſome few ſaline Figures: But when I had let this Wine ſtand for ſome Hours, I obſerved in it not only a vaſt Number of all the ſaline

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Figures represented under Nº 41, 42, 43, 44, 45, 46. but perceived, also, that the Figures which offered themselves to my first Inspection were increased in Magnitude, tho' I could discern none of those Figures, which are found in the Wine in which no Crabs-eyes are infused.

Now since it so plainly appears, from every one of these Experiments, that none of the before-mentioned Rhenish or French Wines produces any saline Figures which have any Affinity or Similitude to the Salt of the Gout commonly called *Calx*; we may, with more Safety, and greater Certainty, affirm, that the Salt of Wine is not instrumental in generating the Gout: And the same is affirmed by daily Experience. For we may everywhere observe Persons, who are great Drinkers of French and Rhenish Wines, and yet are never infested with the Gout. On the other Hand, we see many who never tasted either French or Rhenish Wine, all their Lives, miserably afflicted with arthritic Pains and Disorders. From this Coagulation, or Transmutation of saline Figures in Wine, we, also, confirm those Arguments by which we would prove, that, in a well-constituted Body, none of the saline Particles of Wine penetrate into the Mass of Blood, especially since we hold, and are well assured, that our Stomach and Intestines were made for no other Ends than, in the first Place, for Contrition of the Aliments: Secondly, For Coagulation of the grosser Parts: And, thirdly, For the Distribution of the most subtil Part of the Aliments, after they have undergone the Operations of Contrition and Coagulation, into all Parts, for the common Nourishment of the Body.

And tho' I am sensible that Men of Judgment and Learning are more inclined to embrace and approve a single, good, and useful Experiment, than fond of applauding a whole Volume of well-written Speculations, or Ratiocinations, because these last are the work of the Brain alone; yet I have presumed frequently to interpose my own Thoughts and Reasonings on the Subject, from a Persuasion, if I might have Liberty to judge, that I could draw more Light from my own Observations, than it was possible for those, who had never seen or heard of such Experiments or Matters. *Leeuwenhoeck. Oper.*

Vinum Amarum pro Oenopolis.

Bitter Wine for Vintners.

Take Tops of Centory, twelve Handfuls; Gentian-root sliced, one Pound; Juniper-berries, one Pound and an half; Sevil Orange outer Peels, and their Juice, Number twelve; Lemon-peels, and Juice, Number six: Steep in a Bag, for fourteen or twenty Days, in white Port Wine, twenty Gallons; Canary, four Gallons.

Our common Taverns do not make a Bitter by much so good as this; and nothing can be more grateful, wholsome, or easier made. But this is to be said, in general, against that Whetting, as it is usually called, in a Morning, which some accustom themselves to; for tho' one Glass, when the Stomach has, by Debauch, or any other Accident from Distemper, been pall'd, or weaken'd, is of Service, by warming its Fibres, and giving them a due Tensity, in which, principally, consists a good Appetite, and Digestion; yet, when the Stomach is, perhaps, already too warm, from a high Diet, and frequent Tipling, this Practice helps to destroy the true Sense and Springyness of the Stomach, and, in Process of Time, will disable it from doing its proper Offices. After a great Debauch, indeed, there is somewhat to be said in Favour of the *English* Proverb, *A Hair of the same Dog*; because the undigested Remains at the Stomach, and the Quantity of slimy Juice which drains into it, during Sleep in the Night, cannot better be got off, than by raising it with a small Glass or two next Morning; but that ought not to be carried any farther.

Vinum Arthriticum.

Wine against the Gout.

Take Sarsaparilla, and Guaiacum, of each an Ounce; Misletoe of the Oak, six Drams; Germander, Ground Pine, and dried Sage, of each three Ounces; Cowslip-flowers, Flowers of Rosemary, and of Lilies of the Valley, of each half an Ounce; St. John's-wort, six Drams; White-wine, five Quarts.

These are ordered to stand in Maceration three or four Days, and then the Wine to be strained for Use, and two Ounces drank twice a Day, for forty Days together. Its Title denotes its principal Intention to be against the Gout; besides which, it is, also, recommended for all nervous Weaknesses, and Decays from cold pituitous Humours, and the Rheums of Age, and said to warm and invigorate the whole nervous System.

Vinum Arthriticum alterum.

Another Wine against the Gout.

Take Guaiacum, two Ounces; yellow Sanders, one Ounce; Cinnamon, *Spanish* Angelica-root, *Calamus Aromaticus*, of each two Drams; the outer Peels of Oranges dried, one Ounce; Flowers of Rosemary, Lavender, and Tops of Marjoram, of each half an Ounce; Germander, Sage, and Ground-pine, picked from all the Stalks, and dried, of each two Ounces; the lesser Cardamoms, two Drams: Bruise all into a gross Powder, and infuse in three Gallons of Mountain-wine, for two or three Weeks; and then strain, and bottle close, for Use.

This is an admirable warm Restorative in all nervous Decays, and cannot miss of Success, if continued for some time: For about two Ounces, or a common Wine-glass, taken two or three times a Day, will raise the most languishing Constitution, and preserve it against all Disorders of the Head and Joints, arising from nervous Decays. In most hydropic Habits, also, Medicines of this Kind are of great Service, as they not only help to absorb and evacuate all superfluous Humidities, but, also, to fortify the Solids, so as to prevent, by a brisk Circulation and Digestion, their future Increase.

Vinum Arthriticum purgans.

A purging Wine, against the Gout.

Take China, and Sarsaparilla, of each two Ounces; Polypody, three Ounces; Rhubarb, and Sena, of each one Ounce; Hog-lice, six Drams: Cloves, one Dram; White-wine, three Quarts: Infuse, and strain, *f. a.*

This is not a very judicious Prescription: For the China and Sarsaparilla are of no Use in it, whatsoever their Virtues may be elsewhere, which are much suspected; because the cathartic Ingredients carry them downwards without having any Effect, the Bowels not being a proper Scene of Action for Alteratives, and Things of that Tribe.

Vinum Arthriticum Purgans alterum.

Another purging Wine against the Gout.

Take Turpeth, Hermodactyls, of each two Ounces; Jalap, and black Hellebore, of each one Ounce; Cinnamon, two Drams; Ginger, half an Ounce; Lavender-flowers, one Ounce: Infuse in two Quarts of strong White-wine, in a Vessel well stopped for fourteen Days; then strain for Use.

This is a most pleasant and excellent Purge for all Distempers that have their Seat in the remote Parts, and nervous Cells. It is best to be taken over Night, in such small Doses as will not work off before Morning; because all of this Intention ought to pass into the Blood, and exert themselves much beyond the first Passages, else they can do little good: By sleeping, therefore, upon them, they better soak thro' the Lacteals, and, as it were, transpire into the most minute Recesses, where they are most fitted for Operation. The Patient may begin with three or four Spoonfuls, and increase the Quantity at Discretion; but it ought to be often repeated: For the Matter to be worked upon hereby is too remote, and closely lodged, to give way to a little Force: And a frequent Repetition hereof cannot but greatly cut off, as well as take away the Supply of those Humours which lodge upon the Joints, and do so much Mischief. So that, with Care, that dreadful Affliction, the Gout, may herewith be, in a great measure, kept off. And, in these Cases, Medicines of this Intention operate with much more Efficacy and Certainty upon the destined Humours, than when they are given in dry Forms; because the Subtilty of the Menstruum, by which their Virtues are extracted, conduces prodigiously to convey them to the proper Scene of Action, which they could never so well arrive at by any other Management.

Vinum Benedictum.

The Blessed Wine.

Take of *Crocus Metallorum*, one Ounce; Mace, one Dram; Canary, one Pint and an half: Let them stand several Days in Infusion, and pour off the Wine, as it is used.

This has been a celebrated Emetic, but is now almost out of Use, for its Roughness. Its Dose is from two Drams to one Ounce. If its Use is at all justifiable, it is in apoplectic Cases, where some Violence is wanting, and the Shock upon the Nerves cannot

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cannot be too great; and for such Purposes it is yet somewhat retained in the present Practice.

Vinum Chalybeatum.

Steel Wine.

Take Filings of Steel, one Ounce; Saffron, in Powder, two Drams; Mountain-wine, one Pint: Let them stand in Infusion three Days; frequently shaking them, and then filtre and keep for Use.

This is an admirably good Medicine in the Green Sickness, where Chalybeates are proper; it, also, wonderfully conduces, with Bitters, to remove all ill Habits that proceed from obstructed Viscera; and nothing is preferable to it in the Jaundice. It may be taken from two to four Ounces, once or twice a Day, when the Stomach is most empty: And the more Exercise is used with it, the more Good will it do.

Another Steel Wine.

Take of the Filings of Iron, eight Ounces; Roots of Eryngo, Elecampane, of each one Ounce and an half; yellow Sanders, one Ounce; Raspings of Ivory, red Coral, in Powder, of each six Drams; Cloves, Mace, Cinnamon, Ginger, of each three Drams; Ceterach, Flowers of Rosemary, of Broom, Epithymum, of each two Pugils; White-wine, three Quarts: Digest all together six or eight Days, and then filtre for Use.

It is good in all Uterine Obstructions; as, also, in Cachexies, and Foulnesses of the Liver and Spleen; but as, at the best, it is no elegant Composition; we shall therefore, in its room, substitute the following *Steel Wine*, which is, also, easier made.

Take Filings of Steel, four Ounces; Rue, Penyroyal, of each two Handfuls; Peony, and Cassummunair Roots, of each one Ounce; Saffron, two Drams: Infuse in two Quarts of Sherry, for fourteen Days, and then filter for Use.

This makes not an irksome Remedy, farther than what the rusty Taste of the Steel will give it; and it wonderfully promotes the menstrual Discharges; and of all that obstructs and raises Disorders in the Womb: For which Reason many Kinds of Fits and Convulsions are removed by it; and after a continued Use of it some time, it so cleanses the Organs of Generation, and fortifies the Tone of the Blood, that it wonderfully disposes to Conception; but then it is by all means to be left off, lest it destroys what it has been so instrumental in procuring. The Quantity of two or three Ounces, twice every Day, is sufficient, if continued some Weeks.

Vinum Chalybeatum Restaurativum.

Restorative Steel Wine.

Take clean Filings of Needles, two Ounces; the Juice of eight four Oranges: Let them stand twenty-four Hours, then add White-wine, two Quarts; Cinnamon, half an Ounce; Cloves, two Drams; Mace, four Scruples. After some Days Digestion cold, strain, and filtre for Use.

This is a very serviceable Composition for many Purposes, and will infallibly cure a Green Sickness, or any Tendency of the Constitution that Way; which is manifest from a pale Complexion, Debility, or Listlessness to Action, and short Breath. In hypochondriacal Melancholy, and all Affections of the Spleen, it will do much good; and, after Fevers, or any Distemper that spoils the Juices, this will greatly again restore them to their due Warmth and Vigour; and is much better than any of the mineral Steel Waters, how much soever they stand recommended in all such Cases: For the Spices, in this, warm and strengthen the Fibres of the Stomach, which otherwise would not so well receive and bear the Twitches and Corrugations of the Iron, without Ejectment by Vomiting. It may be given from two to three Ounces, every Morning and Afternoon, when the Stomach is most empty.

Vinum Chalybeatum Restaurativum alterum.

Another Restorative Steel Wine.

Take Filings of Iron, two Ounces; squeeze upon them the Juice of three or four *Seville* Oranges, and one Lemon: After twenty-four Hours standing together, and being sometimes stirred, pour upon the Mixture, in a Glass Bottle, two Quarts of White *Port* Wine, and one Pint of *Canary*; in which infuse the Ingredients of the Viper-wine, in proper Proportion, or so much of the Viper-wine itself, without the Sweets. After fourteen Days strain for Use.

This is a noble Medicine to recruit with, after the Constitution has been almost torn to-pieces with the Fury of a Fever, or any acute Diseases; and particularly for Women who have much suffered in Child-bed, and are reduced almost to a Consumption: For this will not only promote the necessary Cleansings, but, also, raise the Blood with new Warmth and Nourishment. This indeed is an expensive Medicine; but, then, it may be considered, that its wonderful Efficacy makes some Amends; for two Ounces, twice in a Day, will certainly, in a little time, be attended with Amendment, in the most languishing Circumstances.

Vinum Enulatum.

Elecampane Wine.

Take green Elecampane-root, white Sugar, and Currants cut small, of each four Ounces: Infuse them fourteen Days cold, in two Quarts of White *Port*.

This is an easy Liquor both to make and take, and will do Service in such who have weak Lungs, which are often subject to be stuffed with Phlegm, which it deterges, and prevents Ulcerations, and such Injuries as would bring on a Consumption. All asthmatic Persons, therefore, would do well to use this in Plenty, especially in the Winter-time, when the external Cold lessening the Quantity of perspirable Matter, by the Pores of the Skin, causes a much greater Pressure of the Fluids upon the Viscera, of which the Lungs have their Share, and, therefore, stand in need of such gentle Fortifiers and Cleansers as this makes. The Elicampane has, also, that detersive Power by which it keeps open other Viscera; whence they better perform their Offices, and leave less Force to protrude upon the Lungs. It is therefore of Use in all Cachexies, and Tendencies towards a Dropsy. Some, also, will have there to be a Property in this of destroying Worms. Drink a Glass of it twice a Day.

Vinum Hippocraticum. See Claretum.

Vinum Hydropicum.

Wine against the Dropsy.

Take blue Flower-de-Luce Root, one Ounce; Elecampane, and Squills prepared, of each half an Ounce; Horehound, one Handful; Bark of Elder-roots, and Dwarf-elder, of each one Ounce; Sena, one Ounce and an half; Agaric, two Drams; Ginger, one Dram; White-wine, two Quarts: Infuse all for fourteen Days, and then strain for Use.

Or thus:

Take Ashes of Broom, and Juniper, of each one Ounce; *Rhenish* Wine, three Pints: Mix, and make a Lixivium; to which add, blue Flower-de-Luce Roots, one Ounce and an half; the inner Bark of Elder-root, and Dwarf-elder, of each one Ounce; Bark of Bitter-sweet, half an Ounce; Rhubarb, two Drams; Mechoacan, half an Ounce; Sena, one Ounce; Caraway-seeds, six Drams; Bark of Sassafras, and Winter Cinnamon, of each four Scruples: Infuse warm for twelve Hours; then strain, and add white Sugar, four Ounces; Damask Rose-leaves, two Handfuls: After due Infusion, strain again for Use.

If the Sena be left out, it is a better Diuretic; for the more it goes off by Stool, the more will it get into the Blood, and discharge its serous Parts by Urine. It is therefore designed for hydropic Constitutions, and will do Service where there is a Tendency that Way, if begun with in time, and closely followed. The Dose is three Ounces every Morning fasting.

Vinum Ictericum.

Wine against the Jaundice.

Take Turmeric, in gross Powder, two Ounces; Saffron, two Scruples; Cochineal, four Scruples; Millepedes, N° 320; Canary, one Quart: Infuse all for six or seven Days; then strain for Use.

It is very good for what its Title expresses, and may be drank two Ounces, three or four times in a Day; but the following we recommend as the most efficacious.

Vinum Millepedum.

Hog-lice Wine.

Take Hog-lice, half a Pound: Put them alive into one Quart of White *Port* Wine; and after some Days Infusion,

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ſion, ſtrain and preſs out very hard: Then put Saffron, two Drams; Salt of Steel, one Dram; and Salt of Amber, two Scruples; and after three or four Days ſtrain, and filtre for Uſe.

This is an admirable Medicine againſt the Jaundice, Dropſy, or any cachectic Habit: It greatly deterges all the Viſcera, and throws off a great deal of ſuperfluous Humours by Urine. It may be given twice a Day, two Ounces at a time.

Another VINUM MILLEPEDUM.

Take four Ounces, or a Quarter of a Pint of Millepedes alive: Infuſe them in one Quart of White-wine, with one Dram of *Engliſh* Saffron; ſhake them often, and let them ſtand two or three Weeks, then filtre the Wine for Uſe.

It is an admirable Cleanſer of all the Viſcera; and gives Place to nothing in a Jaundice; or any Obſtructions of the Kidneys, or Urinary Paſſages: Which makes it a great Pity, that it is not more in Uſe; for there is hardly any chronic Diſtemper wherein it will not do Service; and even in ſcrophulous and ſtrumous Swellings, a Courſe of it will greatly waſte them, if not quite carry them away: And in Defluxions of Rheum upon the Eyes, it will do Wonders, by turning downwards thoſe hot Salts, by their natural Outlets, the Kidneys, which had forced their Way through the Glands about the Eyes. It may be given from half an Ounce to two Ounces in a Doſe.

VINUM MIRABILE.

The Wonderful Wine.

Take Cloves, Mace, Nutmegs, Cubebs, Cardamoms, Galangals, Cochineal, Saffron, of each one Dram: Infuſe in one Quart of *Canary*, and Spirit of Cinnamon, four Ounces, for fourteen Days; then ſtrain for Uſe.

This makes a better Cordial than the *Aqua Mirabilis* of the College, without Diſtillation; which will yet be much higher, if Ambergriſe or Muſk be added. A Dram of it now-and-then, in moiſt cold Conſtitutions, is of good Service; for it warms, and prevents the Blood from running into thoſe Rheums, and pituitous Juices, which ſtuff up the principal Parts of the Machine, and obſtruct them in their Offices; occaſioning Lethargies, Apoplexies, Palſies, Rheumatiſms, and all that Train which are the frequent Attendants upon a declining Age, when the Vigour of Youth begins to wear off. But in choleric and ſanguine Conſtitutions, ſuch Cardiacs as theſe are highly to be condemned, becauſe they inflame the Blood, and do much Miſchief that way; the contrary Regimen, ſuch as Acids and Diluters, being there more neceſſary.

VINUM PECTORALE.

Pectoral Wine.

Take Juice of Liquorice, one Ounce; Saffron, one Scruple; Seeds of Coriander, Caraway, Aniſe, of each two Drams; Salt of Tartar, half an Ounce; Penyroyal, and Hyſſop-waters, of each four Ounces; *Canary*, one Quart: Let them all digeſt cold for ſome Days: Then ſtrain for Uſe.

This aſſiſts in Expectoration, and helps to deterge and cleanſe the Glands of the Bronchia, and neighbouring Parts: This may be drank two or three times a Day, or almoſt at Pleaſure: Warm is the beſt.

VINUM SCELOTYRBICUM.

Wine againſt the Scurvy.

Take Sorrel, Brook-lime, and Water-creſſes, Garden Scurvy-graſs, of each three Handfuls; Roots of Elecampane, blue Flower-de-Luce, Horſe-radiſh, of each one Ounce and an half; Seeds of Scurvy-graſs, one Ounce; White-wine, two Quarts: Let all digeſt two Days together, and then preſs out hard for Settling and Uſe.

A Wine Glaſs of it may be drank twice a Day, for ſome Weeks together, and will do good in any ſcorbutic Diſpoſition: Theſe kind of Medicines, uſed in the Spring, may be a Means to prevent many from falling into Fevers in the Summer-time, becauſe they rince the principal Emunctories, and waſh off ſuch beginning Obſtructions, as lay a Foundation for Fevers.

VINUM SCILLITICUM. See SCILLA.

VINUM SCORBUTICUM.

Wine againſt the Scurvy.

Take Garden Scurvy-graſs (gathered dry and unbruiſed) one Handful; Horſe-radiſh Root ſcraped, half an Ounce; Winters-bark, groſsly powder'd, two Drams; Arum-water, and White-wine, of each one Pint: Infuſe them cold for three Days.

The Whole makes a warm biting Medicine, and a good Antiſcorbutic: It helps to diſſolve ſizy and viſcid Humours, which entangle the Salts, and ſtick with them in the ſecretory Orifices, whereby they are eroded; eſpecially the ſmall ones upon the Skin. It quickens the Motions of the Fluids, and promotes the thinner Secretion; whence, in Dropſies, and all Cachexies from ſluggiſh watry Humours, it will be of good Service. It may be drank at Diſcretion.

VINUM STOMACHICUM.

Stomach Wine.

Take Roots of *Virginia* Snakeweed, and Gentian, of each three Drams; Galangal, Cloves, Cubebs, Mace, Nutmegs, Saffron, of each one Dram; Cochineal, half a Dram; *Canary*, three Pints: Infuſe for ſome Days, and then ſtrain for Uſe.

This is a warm Compoſition, and may be of Service to cold Stomachs, and ſuch as are troubled with Wind and Flatulencies: But it is too hot for many, and will be ſubject to breed Choler, and aduſt Humours; wherefore we prefer the following Stomach Wine.

Take of Gentian-root, half an Ounce, Galangal, Calamus Aromaticus, *Spaniſh* Angelica-root, of each two Drams; Centory-tops, one Ounce; the outer Peel of three *Seville* Oranges, with their Juice; Saffron, one Dram: Infuſe in two Quarts of Sherry for fourteen Days, ſhaking the Veſſel often; then ſtrain and filtre for Uſe.

This is a moſt grateful Stomachic, and greatly mends a bad Appetite: It is a wonderful Help to cold Conſtitutions, and ſuch as are inclining to Dropſies and Cachexies from Corpulency. The acid Juice of the Oranges mightily takes off both the Heat and Taſte of the Bitters; and the Whole is worth every one's keeping in Readineſs by them, to take upon Occaſion, in any ſudden Diſorders of the Stomach, from Intemperance, or any other Cauſe. It may be drank twice or three times a Day: When the Stomach is moſt empty it is the beſt.

VINUM VIPERINUM.

Viper Wine.

Take of dried Vipers, cut into Pieces, N° ſix: Digeſt them three Days, with a gentle Heat, in one Quart of *Canary*, and then ſtrain out the Wine for Uſe.

Another VINUM VIPERINUM.

Take live Female Vipers in the Spring-time, N° ſix: Put them alive into three Quarts of *Canary*; and let them ſtand cloſe ſtopt, without any Heat, for ſix Months.

It is a wonderful Reſtorative, and greatly invigorates the whole Conſtitution, ſo as to provoke much to Venery, as well as other Actions of Vigour; but it much more contributes to this latter Purpoſe, if it be warmed with ſome Aromatics, eſpecially the Sweets, as Muſk and Ambergriſe. It is almoſt an infallible Remedy in cutaneous Eruptions, and even in a confirmed Leproſy.

Another VIPER WINE.

Take Vipers, N° twelve; fine picked Flowers of Lavender, and Roſemary, green, of each four Ounces; ſix Nutmegs; Satyrion-root, half a Pound, ſliced ſmall; Gum-Benjamin, and Storax, of each two Ounces; Muſk, and Ambergriſe, of each half a Dram: Put all together, the Vipers alive, and the reſt as freſh as can be got, into ſix Quarts of *Canary*; and after three or four Months Maceration, and ſometimes in the Warmth of the Sun, but cloſe covered: Strain the Wine, and let it ſettle fine, which decant for Uſe.

This is, perhaps, as ſtimulating a Reſtorative as Medicine can produce; and, in the laſt Decays of Life, will ſtill ſupply the vital Lamp with ſome Recruits. It is an admirable Remedy for thoſe who have been almoſt wore out with Venereal Engagements;

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Engagements, especially if their Pleasures have been purchased at the Expence of a few Salivations, or a frequent Use of Mercurial Medicines; and it will revive any Constitution that is not quite mouldered into Rottenness. But they much best deserve such a Restorative, who by acute Diseases, as malignant Fevers, Small Pox, or the like, have been so broke, or shattered, in their Constitutions, as hardly to be within a Possibility of Recovery: For in such, it will to Admiration, repair the decay'd Juices, and fill again the Veins with a warm, generous, nutritive Blood. In scrophulous Habits, also, which are frequently leaning towards Consumptions, it will do great Service. And where youngPersons are not so early happy in their conjugal Embraces as some wish to be, and it be suspected from a Coldness, or Insufficiency upon that Account on either Side, the Use of this cannot fail to render their Intercourse prolific: But the Use of it is warily to be indulged, lest with it be kindled an Heat, which reasonable Coition cannot asswage. And let such, also, who indulge themselves too lavishly in those Enjoyments, be careful how they prompt with such Helps, lest they run off their Strength and Life too precipitately; for the best Constitutions in the World wear out, and sink under the frequent Repetition of such Profusion; as the frequent straining any elastic Body whatsoever will weaken more and more its Spring, till it is quite lost, notwithstanding all the Helps of Art to preserve it.

VIOLA.

The Characters are;

The Leaves are alternate; the Calyx is quinquefid, expanded, firm, and has its Segments reflexed backwards. The Flower is pentapetalous, and anomalous, as consisting of a dipetalous Standard, two Wings, and a Tail representing a Keel; it is furnished with five Stamina. The Ovary in the Bottom of the Calyx, becomes a conic, triangular Fruit, which bursts asunder into three Keels, unfolding themselves into a Circle, and full of Multitudes of round Seeds.

Boerhaave mentions eighteen Sorts of *Viola*; which are,

1. Viola Martia; purpurea; flore simplici, odoro. *C. B. P.* 199. *Tourn. Inst.* 419. *Boerh. Ind. A.* 243. *Viola.* Offic. *Viola Martia purpurea.* J. B. 2. 542. Raii Hist. 2. 1049. Synop. 3. 364. *Viola nigra sive purpurea.* Ger. 699. Emac. 850. *Viola simplex Martia.* Park. Parad. 282. PURPLE VIOLETS.

The ordinary purple Violet has a thick fibrous Root, sending forth long, creeping Strings, which again take Root, and increase. The Leaves grow on pretty long Foot-stalks, somewhat hairy, and in Shape of an Heart inversed, being hollowed next the Stalk, and indented about the Edges. The Flowers stand on slender Foot-stalks, of an irregular Form, consisting of five sweet-smelling purple Leaves, with an Hood, or Heel, of the same Colour. The Seed-vessels are long, of an hexagonal Figure, when ripe, bursting into three Parts, containing Rows of round brown Seed.

Violets are found frequently wild in the Hedges, flowering in *March*, though what are made use of in the Shops, are cultivated in Gardens. The Flowers, which are principally used, are one of the Four cordial Flowers.

They are cooling, moistening, and laxative, good in Affections of the Breast and Lungs, helping Coughs, and pleuritic Pains. The Syrup is given to Children to open and cool their Bodies. The Leaves are cooling and opening, and frequently put into Clysters, as well as into Ointments, against Inflammations. The Seed is reckoned good for the Stone and Gravel.

Officinal Preparations are only the *Syrupus Violarum. Miller's Bot. Off.*

The Root of this Plant is a little saltish, glutinous, and detersive; neither it, nor the Leaves, which are insipid, and pretty glutinous, give any Tincture of Red to the blue Paper; the fresh Seeds give it a little, and are salter than the Roots. There is a glutinous Sap in the Violets, which clogs the other Principles, and hinders their Motion: For,

By the chymical Analysis, we obtain from this Plant several acid Liquors, a great deal of Oil, a pretty deal of volatile, concrete, and fixed lixivial Salt.

Thus it is no Wonder, that it should lenify by its Phlegm and Oil, and be diuretic and laxative, by the Mixture of the other Principles. The Salt of the Violet partakes of the Nature of the Sal Ammoniac, in that it is composed of an urinous Part. The Infusion of two Ounces of the Root of this Plant purges upwards and downwards. Some prescribe it to three Ounces, and add twenty Grains of Salt of Wormwood, to draw a strong Tincture from it. The Leaves are emollient and laxative; they are continually used in Clysters, Fomentations, and Cataplasms. The Flowers loosen the Belly: *Poterius* affirms, that a Dram of their Powder purges well enough: There are three Sorts of Syrup prepared with these Flowers; the simple, which has a very fine Colour, provided it does not boil; the Compound, which is the Invention of *Mesue*; and the Purgative, of which M. *Lemery* has given the Description: The Simple and the Compound are very good for the Diseases of the Breast, occasioned by acrid and saltish Humours.

The Purgative Syrup of Violets is good, also, for the same Diseases, when it is necessary to purge; for the Seeds and Empalements of the Flowers, which are used to make this Syrup, are very purgative; the Roots, also, might be added. *Ettmuller* relates, that *Timæus* prepared an excellent laxative Conserve with Violets, by giving the Consistence of a Conserve to Manna, with the Juice of these Flowers: This Conserve keeps the Belly open, if taken from two Drams to half an Ounce.

There is an excellent Sort of Cordial made after the following Manner, which is very good for those that are usually bound:

In six Pounds of the Juice of Flowers of Violets not picked, dilute over a clear gentle Fire, one Pound and an half of Manna; strain it all thro' a Cloth; and add a Pint of very good Spirit of Wine: Take a Spoonful or two of it Morning and Evening, if it is necessary.

The following Emulsion is prepared for the Nephritic Colic, and Retention of Urine:

Grind an Ounce, or an Ounce and half of Violet-seeds in a Marble Mortar, adding, by Degrees, six Ounces of the Water of Dogs-grass: Strain the Emulsion through a Cloth, and dilute in it one Ounce of Syrup of Violets. *Martyn's Tournefort.*

In the sweet-scented Violet, as well as in many other Plants, there are several Parts, which have their distinct Virtues: For the Root, Umbilicus, and Seed, are of a cathartic Quality; and three Ounces of the Root cut in Slices, and put into boiling Water just removed from the Fire, or infused a Night in Wine, communicate to them a purgative Virtue. The Seed pulverized, and a Dram and half thereof mixed in any Liquor, has the same Effect. The Umbilicus is much weaker, and communicates the same Quality to the Water in which it is infused; from whence they prepare what they call *Syrup of Violets by Infusion.* They purge bilious and serous Humours, which are not very stubborn.

The Leaves abound in a coldish and watry Substance; whence they mitigate a Phlegmon, and cool the immoderate Heat affecting the Stomach or Eyes; and, eaten among Greens, loosen the Belly.

The fresh Flowers refrigerate, moisten, mollify, and render the Belly soluble; they are in the Number of the Four celebrated cordial Flowers, and a Pectoral. Their principal Uses are in mitigating the violent Heat in Fevers, and the Pain of the Head thence proceeding, in Coughs, Asperities of the Throat, and the Pleurisy. The Syrup of the Flowers is very frequently prescribed to allay Thirst in Fevers, and gently to loosen the Belly.

The Seed of Violets is an excellent Lithontriptic, and was one of the Secrets of Dr. *Butler*, formerly a very celebrated Physician of *Cambridge*.

Dioscorides and *Pliny* assert, that the purple Part of the Flower, taken in Water, cures the Quinsey, and the Epilepsy, especially in Children. As to the Epilepsy, says *P. Renealmus*, we are taught by Experience, that it is an Imposture; but he had better, and with more Decency, have said, that the Writings of the Antients have not been transmitted to us without Corruptions. *Raii Hist. Plant.*

2. Viola Martia; multiplici flore. *C. B. P.* 199.
3. Viola Martia; alba. *C. B. P.* 199.
4. Viola Martia; flore multiplici, candido. *C. B. P.* 199.
5. Viola Martia; major; hirsuta; inodora. *M. H.* 2. 475.
6. Viola Martia; folio eleganter variegato; flore purpureo.
7. Viola Martia; inodora; sylvestris. *C. B. P.* 199. *M. H.* 2. 474.
8. Viola Alpina; folio in plures Lacinias dissecto. *C. B. P.* 199.
9. Viola Martia; arborescens; purpurea. *C. B. P.* 199. *Jacea tricolor, surrectis caulibus, quibusdam arborea dicta.* J. B. 3. 547.
10. Viola; montana; lutea; glandiflora. *C. B. P.* 200. *M. H.* 2. 476. *Jaceæ tricoloris genus, flore luteo, magno, repens; non annuum.* J. B. 3. 548.
11. Viola; tricolor; hortensis; repens. *C. B. P.* 199. *Tourn. Inst.* 420. *Boerh. Ind. A.* 244. *Viola tricolor.* Offic. Ger. 703. Emac. 854. Raii Hist. 2. 1052. Synop. 365.

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Viola tricolor major & vulgaris. Park. Theat. 756. *Jacea.* Schrod. Pharm. 4. 84. *Jacea tricolor ſive Trinitatis Flos.* J. B. 3. 546. HEARTS-EASE.

This does not creep ſo much as the common Violets, but grows more erect, having roundiſh crenated Leaves ſet alternately on the Stalks, with two ſmaller and more jagged one, ſet on by them, without Foot-ſtalks. Among theſe ariſe the Flowers on long Stalks, in Shape of the common Violet; but, having the Leaves more erect and open, but differ from them in their Colour, ſome having the two upper Leaves of a full Yellow, with a purple Spot on each; the two Middle of a paler Yellow, with a deep Yellow in each; and the lower Leaf of a Velvet-purple, in ſome Plants, having more of the Yellow, in others more of the Purple, the many Varieties rendering it very beautiful. The Seed-veſſel is longer than the Purple Violet, but full of the like Seed: It is found wild ſometimes in the Borders of Fields, and is frequently planted in Gardens, flowering a good Part of the Summer.

The Leaves only are uſed, though but ſeldom: Yet they are accounted mucilaginous and vulnerary, good to take off the Gripes in Children, and to prevent Fits ariſing from thence. *Miller's Bot. Off.*

It grows in the Northern Parts of *England* among the Corn, and by Walls, and Banks of Hedges, ſpontaneouſly; but the Beauty and Variety of its Flowers have occaſioned its being tranſplanted and cultivated in Gardens. It is ſuppoſed to have the ſame Virtues with the common purple Violet. *Ray. Dale.*

Dr. *Baynard* ſays, that many have been cured of Madneſs by the Uſe of the *Viola Tricolor.*

12. Eadem (11.); flore albo, & luteo.

13. Eadem (11.); flore pallide cœruleo, purpureo, & luteo. *Flos Trinitatis, major, violaceus.* H. Eyſt. Æſt. o. 12. *F.* 6. *F.* 2.

14. Eadem (11.); flore violaceo, holoſerico, purpureo, & aureo.

15. Eadem (11.); flore magno, duplo majore, coloris unius, purpureo, holoſerico.

16. Eadem (11.); flore pallido. *Flos Trinitatis, pallidus, major.* H. Eyſt. Æſt. o. 12. *F.* 6. *F.* 3.

17. Eadem (11.); flore ex aureo & pallido.

18. Viola; bicolor; arvenſis. *C. B. P.* 200. *M. H.* 2. 476. *Jacea, bicolor, frugum & hortorum vitium.* J. B. 3. 548. *Boerh. Ind. alt. Plant.*

Viola is by Diminution from the *Greek*, ἰον, (*Ion*) the *Spiritus lenis*, being converted into the Letter *V*, as in abundance of Inſtances. *Ray.*

The firſt ſix Species are officinal, pectoral, and cordial, and proper in Coughs, Dryneſs of the Tongue, and Aſperities of the Fauces, as, alſo, in Catarrhs, Phthiſis, and the Pleuriſy. The Flowers have an anodyne, demulcent, and antiphlogiſtic Virtue; they are infuſed in the pureſt Rain-water, from whence, by often repeating the ſame, is prepare the incomparable what they call *Syrupus Violarum ſine Coctione*, "Syrup of Violets "without boiling," by adding four times the Weight of Sugar. This Syrup is very palatable, gently opening, corrects every thing acrimonious, and looſens the Belly. The Leaves have much the ſame Virtues as thoſe of *Acanthus.* The Flowers, which are ranked with the Four Cardiac Sorts, as well on account of their grateful Smell, or pleaſing volatile Spice, as the fine Viſcoſity of their Particles, which diſſolve and leniſy whatever is earthy and rigid, are to be gathered in the Morning while the Dew is upon them. The Leaves are emollient and laxative, and uſed in Fomentations, Cataplaſms, and Clyſters. The Seeds are ſeldom uſed, except in Obſtructions of the Kidneys, and the nephritic Colic. The Root purges upwards and downwards; the Calyces, which have a nauſeating Quality, are to be rejected, unleſs you would have a pretty laxative Medicine; for then the Calyces are to be taken with the Flowers; the Seeds are potent Hydragogues. *Hiſt. Plant. adſcript. Boerhaav.*

VIOLA AQUATICA, *aquatilis*, or *paluſtris.* Names given to the HOTTONIA; which ſee.

VIOLA HYEMALIS, A Name for the *Heſperis*; *hortenſis*; *flore*; *purpureo*; and for the *Heſperis*; *hortenſis*; *flore candido.*

VIOLA INDICA, SCANDENS. A Name for the *Acriviola*, and for the *Acriviola*; *maxima*; *odorata.*

VIOLA LUNARIA, or LUNARIS. Names given to ſeveral Sorts of LUNARIA; which ſee.

VIOLA MARIANA. Offic. Ger. 362. Emac. 447. *Viola Mariana flore purpureo.* Park. Parad. 354. *Viola Mariana Donæi, quibuſdam Medium.* J. B. 2. 804. *Campanula hortenſis folio & flore oblongo.* C. B. P. 94. Raii Hiſt. 1. 732. Boerh. Ind. A. 249. Tourn. Inſt. 109. COVENTRY BELLS.

In foreign Countries this grows in Hedges, and on mountainous Places; but, with us, is only cultivated in Gardens. The Root, which is ſeldom uſed in Medicine, is, as a Food, eſteemed refrigerating, drying, and aſtringent. *Dale.*

VIOLA MATRONALIS. A Name for ſeveral Sorts of HESPERIS; which ſee.

VIPERA. The Viper, or, as it is commonly called by the Vulgar, the Adder.

With reſpect to the Virtues of this Animal, one of the firſt, whom we find in Antiquity to have made uſe of the Fleſh of this Creature to medicinal Purpoſes was, I think, *Antonius Muſa*, the famous Phyſician to *Octavius Cæſar*; of whom *Pliny* tells us, that when he met with incurable Ulcers, he ordered the eating of Vipers; and, by this means, they were quickly healed.

It is not improbable, that he might have learned this from the great *Greek* Phyſician *Craterus*, mentioned often by *Cicero*, in his Epiſtles to *Atticus*; who, as *Porphyrius* relates, very happily cured a very miſerable Slave, whoſe Skin in a ſtrange manner fell off from his Bones, by adviſing him to feed upon Vipers, dreſſed after the manner of Fiſh.

Be this as it will, in *Galen*'s time, the profitable Qualities of the Viper were very commonly known, himſelf relating very remarkable Stories of the Cures of the *Elephantiaſis*, or *Lepra*, done by the Viper-wine.

Aretæus, who moſt probably lived about the ſame Time with *Galen*, and, of all the Antients, has moſt accurately deſcribed the *Elephantiaſis*, commends, as *Craterus* did, the eating of Vipers, inſtead of Fiſh, in the ſame Diſeaſes. And to this Purpoſe I remember, that as *Lopez*, in his Relations of the Kingdom of *Congo*, in *Africa*, takes notice how greedily the Negroes eat Adders, roaſting them, and eſteeming them as the moſt delicious Food; ſo *Dampier*, alſo, informs us, that the Natives of *Tonquin*, in the *Eaſt-Indies*, treat their Friends with Arrack, in which Snakes and Scorpions have been infuſed, accounting this, not only a great Cordial, but, alſo, an Antidote againſt the Leproſy, and all other Sorts of Poiſon.

The Phyſicians in *Italy* and *France*, very commonly preſcribe the Broth and Jelly of Vipers Fleſh, for much the ſame Uſes, that is, to invigorate and purify the Maſs of Blood exhauſted with Diſeaſes, or tainted with ſome vicious and obſtinate Ferment.

From all this it appears, that the main Efficacy of the viperine Fleſh is, to quicken the Circulation of the Blood, promote its due Mixture, and by this means cleanſe and ſcour the Glands of thoſe ſtagnating Juices, which, turning to Acidity, are the Origin of many, at leaſt, of thoſe troubleſome Diſtempers in the Surface of the Body, which go under the Names of *ſcrophulous*, and *leprous.*

Theſe good Effects are owing to that penetrating, ſtrong Salt, with which the Subſtance of theſe Creatures does, in a very great Proportion, abound; and the Reaſon of this is from the Food they live on, which we have obſerved before to be Lizards, and Moles, whoſe Nature every one knows to be ſuch as muſt neceſſarily, when they are diſſolved in the Stomach, ſupply the Blood with a great Quantity of active and volatile Parts. And herein lies the Difference between the Fleſh of Vipers, and that of other innocent Serpents, which, feeding upon Graſs and Herbs, do not recommend themſelves to us by any of thoſe Properties, which are in ſo eminent a Degree found in the former.

Whoſoever reflects on what has been ſaid on this Head, will very readily acknowledge, that our Phyſicians deal too cautiouſly or ſparingly with a Remedy, which may be applied to very good Purpoſes, when they preſcribe a few Grains of the Powder of dried Vipers, or make up a ſmall Quantity of their Fleſh into Troches; whereas, if Service be really to be done this way, the Patient ought to eat frequently of Viper-jelly, or Broth; or rather, as the antient Manner was, to boil Vipers, and eat them like Fiſh; if this Food will not go down, (tho' really very good and delicious Fare) to make uſe at leaſt of Wine, in which Vipers have for a long time been infuſed, by which I know a very obſtinate *Lepra* has been removed; or, laſtly, in ſome Caſes, eſpecially where Wine is not convenient, to take good Quantities of their volatile Salt, in which alone the Virtue of the before-named Medicines principally reſide.

As for the Teeth, they are of two Sorts, the great, or poiſonous Fangs, and the ſmall.

The great, being fixed in the firſt Bone of the upper Jaw, are crooked and bent, like the *Dentes canini*, in moſt carnivorous Animals. They are manifeſtly hollow from their Root a conſiderable Way, not to the very Apex, or Point, (which is ſolid and ſharp, the better to pierce the Skin) but to a ſmall Diſtance from it, as is plainly ſeen by ſplitting the Tooth thro' the Middle. This Cavity ends at the convex Part in a viſible Slit, very well reſembling the Nip or Cut of a Pen, which is the Emiſſary or Outlet to the Poiſon.

Galen has given us a conſiderable Hint of this Make of the Tooth: For, the Mountebanks, (he ſays) uſed to ſuffer themſelves to be bit with Vipers, having, firſt, with ſome Paſtes, ſtopt the Holes of their Teeth, that the Venom being thus kept

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kept in, the Spectators might think they did by their Antidote, ſecure themſelves from its dangerous Effects.

The Reaſon why theſe Teeth are crooked is, that the Point of the Tooth, when the Viper bites, may be perpendicular to the Part to be wounded; for the Head being raiſed back, in the Time of Biting, and the Tooth erected, if this were ſtrait, it would not, by reaſon of its oblique Situation to the Part, enter with ſo much Force, nor ſo deep into the Fleſh.

As for the Number of the poiſonous Fangs, I have obſerved, that there are, for the moſt part, beſides one, two, or three on each Side, fixed perpendicularly to the firſt Bone of the upper Jaw, ſome others which are young, and of a ſmaller Size, adhering to the ſame Bone: Their Points are harden'd, and they have their Fiſſures formed as in the other; but their Roots are ſoft and mucilaginous, like the Roots of the Teeth in Infants; and ſo they lie always depreſſed at the Bottoms of the former.

They drop off from the Bone at the leaſt Touch; and therefore, ſome Anatomiſts have imagined them to be faſtened to Muſcles or Tendons, which would have rendered them altogether uſeleſs: For they are made to ſupply the Place of the greater, when they fall away, or are pulled out by Accident, and in order to do this, they do by degrees harden, and riſe more and more, till at laſt they ſtand upright, and come to a perpendicular Situation in the Bone.

They are not all of the ſame Growth; for in ſome we can only diſcern the Shape of a Tooth, without any Hardneſs, in others the Point, and in the next ſomewhat more is harden'd, and ſo on, to the greateſt Fang.

Their Number is very uncertain; there being ſometimes ſix or ſeven in each Side of the Jaw, ſometimes fewer.

Theſe ſeem to have occaſioned the Diſputes among the Antients, concerning the Number of the viperine Teeth.

The poiſonous Fangs have ſmall Holes at the internal Part of their Root, through which the Veſſels paſs, which carry their Nouriſhment.

It is remarkable, that Nature has provided young Vipers with poiſonous Teeth, grown to their Perfection, that ſo they may kill their Prey as ſoon as they come into the World.

The ſecond Kind of Teeth, or the ſmall, are hooked, and bent, as well as the former, but without any Slit or Opening: Of theſe there are four Rows, two on each Side of the Mouth: They are fixed in the third Bone of the upper Jaw, and in the ſecond in the lower.

Their Uſe is to hold the Prey faſt, while Execution is done by the Bite, leſt, in ſtruggling to get away, it ſhould pull out the Fangs.

The Inſtruments that emit the Venom being thus deſcribed; we come next to thoſe which ſerve to prepare and contain it.

This Liquor is ſeparated from the Blood by a Gland on each Side of the Head, placed in the anterior and lateral Part of the *Os Sincipitis*, juſt behind the Orbit of the Eye: It lies immediately under that Muſcle which helps to depreſs the Fangs, ſo that by the Action of this it is preſſed; which is an admirable Contrivance, to forward the Secretion of the Juice out of it.

It is a conglomerated Gland, compoſed of many ſmaller ones, contained in a common Membrane: Each of theſe ſends off an excretory Veſſel, all which do afterwards unite and form one Duct, which running towards the Roots of the Fangs, diſcharges the yellow Liquor into a Bag.

This Bag is fixed to the Baſis of the firſt Bone of the upper Jaw, and, alſo, to the Extremity of the ſecond, covering the Fangs near the Root. To the upper Part of this Veſicula there is joined another, in the anterior Part of which there is a Paſſage for the poiſonous Teeth.

This conſiſts of muſcular Fibres, both longitudinal and circular, by means of which it can contract itſelf when the Fangs are erected; and by this Contraction the Venom is preſſed into the Hole at the Root of the Tooth, and forced out at the Fiſſure near the Point.

That this is ſo done, I have frequently obſerved with the naked Eye, having cut off the Head of a Viper, and immediately pinching the Neck, to make it open the Mouth wide; for by this means the Venom was ſquirted out as from a Syringe.

When the Viper lies quiet, with its Mouth ſhut, the Fangs are depreſſed and covered with the external Bag; when it intends to bite, it opens the Mouth very wide, at the ſame time the lower Extremity of the ſecond of the common Bones is moved forwards by proper Muſcles, and turns, as it were, upon a fixt Centre, thus puſhing forward the upper and lower Jaws, whoſe Extremes are united. By this means the lower Part of the firſt Bone of the upper Jaw is thruſt forwards, the other Extremity turning in the Cavity of its Articulation, where it is faſtened by Ligaments. The Fangs being, by this Mechaniſm, erected, the Bags which covered them, by the Contraction of their longitudinal Fibres, are pulled back; and the Action of the circular ones does, at the ſame time, ſtraiten the internal Bag, and force the Juice into the Teeth.

Beſides this, when the Viper bites, it ſtrikes in the Fangs to the very Root; and thus the *Veſiculæ* are ſtill more ſqueezed, for the Diſcharge of the Liquor.

It is worthy our Obſervation, that the Viper can move the Jaw-bones on one Side, without moving thoſe on the other; for they are not joined together at the Extremes, as in other Animals; which Contrivance is very beneficial to it in the ſwallowing its Prey; in that, while the Teeth on one Side ſtand unmoved, and fixed in the Fleſh to hold it, thoſe on the other Side are brought forward, to draw it in farther; then they keep it faſt till the former Jaws advance again in their Turn: Thus they act ſucceſſively, and force the Animal entire (there being no *Dentes Inciſivi*, or *Molares*, to divide it) into the *Oeſophagus*, whoſe muſcular Fibres are very weak, and can help but little in the Buſineſs.

The Symptoms which follow upon the Bite of a Viper, when it faſtens either one or both its greater Teeth, in any Part of the Body, are an acute Pain in the Place wounded, with a Swelling, at firſt red, but afterwards livid, which, by degrees, ſpreads farther to the neighbouring Parts with great Faintneſs, and a quick, though low, and ſometimes interrupted Pulſe, great Sickneſs at the Stomach, with bilious convulſive Vomitings, cold Sweats, and ſometimes Pains about the Navel; and if the Cure be not ſpeedy, Death itſelf, unleſs the Strength of Nature prove ſufficient to overcome theſe Diſorders; and though it does, the Swelling ſtill continues inflamed for ſome time; nay, in ſome Caſes more conſiderably upon the abating of the other Symptoms, than at the Beginning; and often, from the ſmall Wound, runs a ſanious Liquor, and little Puſtules are raiſed about it; the Colour of the whole Skin is changed yellow, as if the Patient had the Jaundice.

Theſe Miſchiefs, although different Climates, Seaſon of the Year more or leſs hot, the greater or leſſer Rage of the Viper, the Beaſt itſelf, of a larger or ſmaller Size, and, conſequently, able to communicate more or leſs Venom, and the like Circumſtances, may variouſly heighten or abate them, yet uſually diſcover themſelves much after the ſame manner in all; unleſs the Bite happen not to be accompanied with the Effuſion of that Liquor, which is the main Inſtrument and Cauſe of this violent and ſhocking Diſturbance.

But before I proceed to inquire into the Nature and Manner of acting of this Juice, it may be worth the while to take notice, that this is not made on Purpoſe to be deadly and deſtructive to Mankind; but that the true Deſign of it is (tho' Authors have not regarded it) to perform an Office and Service of ſo great Moment to the Preſervation of the Individual, that without it this Creature could not ſubſiſt.

For Vipers live principally upon Lizards, Frogs, Toads, Mice, Moles, and the like Animals, which they do not chew, but ſwallow down whole, and they lie in the Stomach; or if that be not big enough to receive them, partly in that, and partly in the *Oeſophagus*, which is membranous, and capable of great Diſtention, till by the ſalival Juices of thoſe Parts, together with the Help of the Fibres of the Stomach, and the Contraction of the Muſcles of the Abdomen, they are gradually diſſolved into a fluid Subſtance, fit for the Nouriſhment of their Bodies, which is the Work of many Days: This is one Reaſon why theſe Creatures can live ſo long without taking any freſh Food, which I have known them to do three or four Months; as another is, that their Blood is a groſſer and more viſcid Fluid than that of moſt other Animals; ſo that there is but a very little Expence of it, by Tranſpiration, and, conſequently, leſs need of Recruit; this not only Microſcopes diſcover, but Reaſon teaches; becauſe there is but very little muſcular Force in the Stomach to comminute the Food, and make a Chyle of fine Parts; and therefore the Blood muſt accordingly be of a tough and clammy Conſiſtence. Beſides, the Heart of a Viper has properly but one Ventricle, and the Circulation of the Blood is performed after the ſame manner as it is in a Frog and Tortoiſe, in which not above one Third of it paſſes through the Lungs; upon which Account its Comminution in them by the Air is proportionably leſſer than in other Animals. Now ſuch a manner of Feeding as this, does neceſſarily require, that the Prey ſhould, upon the firſt Catching, be immediately killed, otherwiſe it were by no means fit to be let into the Stomach; for we are not to think, that the Force of this Part would be alone ſufficient to deſtroy it, the Subtilty of a living Creature (beſides the Conſideration of the Weakneſs of the Fibres) being in a great meaſure able to elude that, as indeed we do every Day find live Animals in the Stomachs of others: And therefore to do this, is the proper Uſe both of the Teeth, and their Poiſon; for which being deſigned and adapted, it is no Wonder if the Viper, this ſame way by which it deſtroys its Prey, proves ſometimes miſchievous to any other Creature beſides,

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beſides, when it happens to be enraged, or by any Provocation ſtirred up to bite.

This venomous Juice itſelf is of ſo inconſiderable a Quantity, that it is no more than one good Drop that does the Execution; and for this Reaſon Authors have contented themſelves with Trials of the Bite upon ſeveral Animals, never eſſaying to examine the Texture and Make of the Liquor itſelf; for which Purpoſe I have oftentimes, by holding a Viper advantageouſly, and enraging it till it ſtruck out its Teeth, made it to bite upon ſomewhat ſolid, ſo as to void its Poiſon, which carefully putting upon a Glaſs Plate, I have with a Microſcope, as nicely as I could, viewed its Parts and Compoſition.

Upon the firſt Sight I could diſcover nothing, but a Parcel of ſmall Salts nimbly floating in the Liquor; but in a very ſhort time the Appearance was changed, and theſe ſaline Particles were now ſhot out, as it were, into Cryſtals of an incredible Tenuity and Sharpneſs, with ſomething like Knots here-and-there, from which they ſeemed to proceed, ſo that the whole Texture did in a manner repreſent a Spider's Web, tho' infinitely finer, and more minute; and yet withal ſo rigid were theſe pellucid Spicula, or Darts, that they remained unaltered upon my Glaſs for ſeveral Months.

I have made ſeveral Trials with this Juice, in order to find out under what Tribe of Salts theſe Cryſtals are to be ranged; and not without ſome Difficulty, by reaſon of the minute Quantity of the Liquor, and the Hazard of Experiments of this Nature, have plainly ſeen that it does, as an Acid, turn the blue Tincture of Heliotropium to a red Colour.

I did not ſucceed ſo well in mixing it with Syrup of Violets, and yet it did really ſeem to induce in this a reddiſh Hue; but I am very certain it did not at all change it to a greeniſh Colour, as it would have done, if any ways alcalious.

This may ſuffice, in their own Way of arguing, to convince thoſe Gentlemen, who, without the Aſſiſtance of any Experiments, merely to ſerve an Hypotheſis, which they have too fondly taken up, have with great Aſſurance told the World, that the Viperine Venom is an Alcali, and conſequently to be cured by acid Remedies. But it is by far more eaſy to ſpin out a falſe Notion into precarious Reaſonings, than to make faithful Experiments, and fairly improve them by juſt and neceſſary Conſequences.

To proceed, this Diſcovery agrees very well with a Relation communicated by an ingenious Perſon to Dr. *Tyſon*; which does ſo much illuſtrate this Matter, that I ſhall tranſcribe it in his own Words, out of the *Philoſophical Tranſactions*: He ſays then, that being in the *Indies*, there came to him an *Indian*, with ſeveral Sorts of Serpents, offering to ſhew him ſome Experiments about the Force of their Poiſon: Having therefore, firſt pulled out a large one, the *Indian* told him this would do no Harm; and making a Ligature on his Arm, as in letting Blood, he expoſed it naked to the Serpent, being firſt irritated to make him bite it; the Blood that came out of the Wound, made by his Teeth, he gathered with his Finger, and laid it on his Thigh, till he had got near a Spoonful: After this he takes out another, called *Cobra de Capelo*, which was leſſer, and enlarges much upon the Greatneſs of his Poiſon. To ſhew an Inſtance of it, graſping it about the Neck, he expreſſes ſome of the Liquor in the Bags of the Gums, about the Quantity of half a Grain, and this he puts to the coagulated Blood on his Thigh, which immediately put it into a great Fermentation, and working like Barm, changed it into a yellowiſh Liquor.

This, I ſay, does well enough accord with what we have been advancing, concerning the Nature of this Juice: For *Boyle* hath long ſince proved by Experiments, that there is nothing of Acid in human Blood; and *Pitcairn* has demonſtrated, that the acid Subſtances of Vegetables, taken into the Stomach, are, by the Action of this Part, the Lungs and Heart, when they come into the Blood-veſſels, turned to alcalious; ſo that the arterial Fluid muſt neceſſarily be conſidered as an Alcali; and therefore, according to the known Principles of Chymiſtry, its Mixture with ſuch a Liquor as we have diſcovered the viperine Sanies to be, will always exhibit ſome ſuch Appearance as this now related.

But not to engage any farther in this Sort of Controverſies, we may, perhaps, from the foregoing Obſervations, receive ſome Light, in order to underſtand the Nature and Reaſon of all thoſe Symptoms which attend the Bite of this Creature: For the pungent Salts of this Venom, when with Force thrown into the Wound, will not only, as ſo many Stimuli, irritate and fret the ſenſible Membranes, whereupon there neceſſarily follows a greater Afflux than ordinary of the animal Juices that Way, (as is manifeſt from the *Bellinian* Doctrine *de Stimulis*) ſo that the wounded Part muſt be ſwelled, inflamed, and livid; but, alſo, theſe Spicula, being mixed with the Blood, will ſo disjoin and diſunite the Parts of it, that its Mixture muſt be quite altered; and from the various Coheſion of its Globules will ariſe ſuch different Degrees of Fluidity and Impulſe towards the Parts, from what this Liquor had before, that its very Nature will be changed.

It is worth the while, in the next Place, to conſider the Cure of this Miſchief, which, without all Doubt, ought to be by ſuch external Management of the Wound as may immediately deſtroy the infuſed Venom.

Boyle experienced an hot Iron, held as near the Place as the Patient could poſſibly endure it very effectual to this Purpoſe: But the ſame Method did not anſwer Expectation, in the famous Caſe related by *Charas*.

An extraordinary Virtue againſt this and other venomous Bites, is aſcribed to the Snake-ſtones brought from the *Eaſt-Indies*, one of which is to be preſently applied to the Part, and let ſtick till it drop off: Theſe are ſaid to be taken out of the Head of the Serpent, called by the *Portugueſe*, *Cobra de Capelo*, and to ſuck the Poiſon out of the Wound. *Redi* made Trials with ſeveral of them, but found no Service from any: Yet *Baglivi* tells us, of a terrible Bite of a Scorpion cured this Way. Monſieur *Charas*'s Pigeons all died, though theſe were immediately clapped on, and ſtuck cloſe to the Wound: But *Havers* ſaw a good Effect of one upon a Dog, who, though ſeverely bitten, ſuffered no Harm; nor any farther Mark of the Poiſon, than a livid Circle round the Place.

In plain Truth, as theſe celebrated Stones do not ſeem to be what it is pretended they are, but rather factitious Bodies, compounded, it may be, of calcined Bones, and ſome teſtaceous Matters mixt together; ſo, by reaſon of their ſpongy and porous Texture, they do very readily adhere to any moiſtened Part of the Fleſh, and imbibe whatſoever Humidity they meet with: This their Quality any one may experience, by holding one of them to the Roof of his Mouth: And it is upon this ſcore that, when put into Water, Bubbles are raiſed by the Air in their Interſtices, which ſome have too fondly thought to be the Effects of their throwing out the Venom they had ſucked in.

Their Make being thus, ſome Part at leaſt of the poiſonous Juice may eaſily be drawn out of the Wound, by ſuch an Application; and yet ſo much of it may ſometimes happen to remain in the Fleſh, as may make the Bite however to prove mortal. And thus it fared with a Pigeon, to the Thigh of which, firſt bitten by a Viper, I applied one of the Stones; for though it ſtuck faſt to the Wound, and thus ſaved the Life for about four Hours (whereas others uſually died in about half an Hour), yet, after this, the Mortification of the Part prevailed to that Degree as to become fatal to the tender Creature.

But our Viper-catchers have a Remedy far beyond all theſe, in which they place ſo great Confidence, as to be no more afraid of a Bite than of a common Puncture, immediately curing themſelves by the Application of their Specific.

This, though they keep as a great Secret, I have, however, upon ſtrict Inquiry, found out to be no other than the *Axungia Viperina* preſently rubbed into the Wound. And to convince myſelf of its good Effects, I enraged a Viper to bite a young Dog in the Noſe; both the Teeth were ſtruck deep in; he howled bitterly, and the Part began to ſwell. I diligently applied ſome of the *Axungia* I had ready at hand, and he was very well the next Day.

But becauſe ſome Gentlemen who ſaw this Experiment were apt to impute the Cure rather to the Dog's Spittle (he licking the Wound) than to the Virtue of the Fat, we made him to be bit again in the Tongue, forbearing the Uſe of our Remedy, and he died within four or five Hours.

At another Time I made the like Trial with the ſame Succeſs.

As this *Axungia* conſiſts of clammy and viſcid Parts, which are withal more penetrating and active than moſt other oily Subſtances, ſo theſe, without all Doubt, involve, and, as it were, ſheath the volatile Salts of the venomous Liquor, and thus prevent their ſhooting out into thoſe cryſtalline Spicula, which we have obſerved to be the main Inſtruments of that deadly Miſchief which attends the Bite.

By this means it comes to paſs, that this Cure, if rightly managed, is ſo eaſy and certain, as not to need the Help of any internal Medicines to forward it; but theſe however muſt take Place where, through want of the other, the Poiſon is ſpread farther, and has tainted the whole Maſs of Blood.

Nor yet is it neceſſary, even in this Caſe, to fatigue the Patient with a Farrago of Theriacas and Antidotes; for the volatile Salt of Vipers is alone ſufficient to do the Work, if given in juſt Quantities, and duly repeated; provided moderate Sweats be encouraged in Bed: Thus it ſucceeded with Monſieur *Charas*, and in ſome others I could relate; in one of which the Miſchief had gone ſo far as to induce an univerſal *Iterus*.

I muſt remark, that ſince Dr. *Mead* wrote the Treatiſe of Poiſons, from which theſe Particulars relative to the Viper are extracted,

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extracted, a Man and his Wife, who made it their Business to catch Vipers, came from *Bath* to *Oxford*, and from thence to *London*; and, after having shewn a great Number of Experiments, with respect to the Bite of this Animal, at last discovered an effectual Remedy, which consists in nothing more, than chafing the Part wounded with Olive-oil, before the Fire; and, if the Case should be extremely bad, wrapping the entire affected Limb in a Cerate, made of White-lead, and the same Oil.

I must further observe, that as the viperine Poison acts by inducing a Coagulation of the Blood, which spreads gradually from the wounded Part to the Heart, of which I have seen an hundred incontestable Instances; and as rubbing in the Oil, prevents the Coagulation, and resolves the Blood already coagulated; hence, perhaps, we may account for the Efficacy of Unctions, so much practised by the antient Physicians, especially those of the Methodic Sect.

And, farther, may we not presume, that the Oil of Animals, so exquisitely treasured up in the Reservoirs of the Cellular Membrane, may, upon some Occasions, by mixing with the Blood, prevent Coagulations, and consequently Distempers, from such a Cause?

VIPERARIA. The same as SCORZONERA.

VIPERINA. The same as SCORZONERA.

VIRGA AUREA.

The Characters are;

The Root is fibrous; the Leaves are alternate and entire, and the Calyx is squamous. The Flowers are produced on the Tops of the Stalks and Branches, in a long Series like a Rod, are less than those of the Aster, have shorter Pedicles, and are generally of a golden Colour.

Boerhaave mentions fourteen Sorts of *Virga aurea*; which are,

1. Virga aurea; folio amplissimo; dentato. *An*, Virga aurea, Canadensis, latissimo folio, glabro. *T.* 485.

2. Virga aurea; montana; latiore folio, glabro. *H. R. Par.* 186.

3. Virga aurea; annua. *Zanon.* 205. *T.* 484. *Conyza Canadensis, annua, acris, alba, folio Linariæ.* Bocc. 86. *Aster Canadensis, annuus, flore papposo.* H. R. Par.

4. Virga aurea; Canadensis; hirsuta; panicula minus speciosa. *H. R. Par.*

5. Virga aurea; Novæ Angliæ; altissima; paniculis nonnunquam reflexis. *Flor.* 2. 34.

6. Virga aurea; angustifolia; panicula speciosa; Canadensis. *H. R. Par. M. H.* 3. 125.

7. Virga aurea; Novæ Angliæ; foliis longissimis, glabris. *Flor.* 2. 35.

8. Virga aurea; foliis angustis; lævibus; non serratis; panicula speciosa; floribus magnis.

9. Virga aurea; Noveboracensis; glabra; caulibus rubentibus; foliis angustis, glabris. *Flor.* 1. 26.

10. Virga aurea; angustifolia; minus serrata. *C. B. P.* 268. *Boerh. Ind. A.* 97. *Virga aurea.* Offic. Ger. 348. Emac. 430. Raii Hist. 1. 278. Synop. 81. *Virga aurea vulgaris.* Park. 542. *Virga aurea vulgaris latifolia.* J. B. 2. 1062. *Tourn. Inst.* 484. GOLDEN-ROD.

The common Golden-rod grows to be two or three Feet high, having round hairy Stalks, full of a fungous Pith; the lower Leaves grow on pretty long Foot-stalks; they are three or four Inches long, broadest in the Middle, and narrow at both Ends, indented about the Edges, and hairy on both Sides; those, which grow on the Stalks, are less, and stand on shorter Foot-stalks, and sometimes without any. The Flowers grow thick together, in small Spikes, on the upper Parts of the Branches; they are composed of small yellow Petals, set about a little fistular Thrum, which afterwards turn into Down. The Root is long, running aslant with many Fibres; it grows in Woods and Hedges, and flowers in *July*.

The Leaves and Tops are used, this being accounted one of the best vulnerary Plants, and much used inwardly in Traumatic Apozems, and Wound-drinks; and, outwardly, in Cataplasms, and Fomentations.

It is somewhat restringent, and useful against Spitting of Blood, and other Hæmorrhages; and is of great Service against the Stone. *Miller's Bot. Off.*

Golden-rod is styptic, bitter, and gives no Tincture of Red to the blue Paper. It is likely, that its Salt resembles that which is natural in the Earth; but it is mixed with a great deal of Oil, and terrestrial Parts. Thus this Plant is vulnerary, and diuretic. It is prescribed in Ptisans, and Broths, for the Dysentery, and for all Sorts of Hæmorrhages. These Medicines are lenitive, also, and provoke Urine: The distilled Water of the Tops, and the Extract of the whole Plant, have the same Virtues. The Leaves and Flowers of the Golden-rod, are taken after the manner of Tea. It is used in the *Eau d'Arquebusade*, and vulnerary Potions. *Martyn's Tournefort.*

It is a most celebrated Vulnerary, both for internal and external Use, and even to be preferred before the *Solidago Saracenica*. For internal Wounds, says *C. Hoffman*, it is effectual, by carrying off the Ichor with the Urine; which agrees with the Observation of the most celebrated Physicians, that almost all vulnerary Potions are diuretic; and it was customary for the Combatants at Wrestling and Boxing, in their ordinary Drink, to take *Valerian*, which is a prime Diuretic. In external Wounds, this Plant is of Efficacy by Exsiccation and Absterson; for which Purposes it is highly qualified.

That it is none of the least Lithontriptics and Diuretics, is agreed by all: It was first experienced by *Arnold. Villanovanus*, in the Stone, who used it in Powder; and it is celebrated for this Disease by *Barclay*, in his *Argenis*, and in his *Euphormio*. The Dose is two Drams of the Powder every Morning in warm White-wine.

C. Hoffman says, it is endued with a remarkable absterfive Virtue; whence it is so much celebrated in Obstructions of the Viscera, where there is a Tendency to a Dropsy; for which Intention, the Decoction of it was a long time kept as a Secret, tho' it be, also, commended against all Fluxes of the Belly and Uterus, and internal Hæmorrhages, which proves it to be rather astringent than absterfory, unless, perhaps, it performs those Effects by its desiccative, or drying Quality, which all ascribe to it. *Raii Hist. Plant.*

11. Virga aurea; Mexicana. *C. B. P. App.* 517.

12. Virga aurea; folio hirsuto salicis raro & levissime serrato; caulibus atropurpureis.

13. Virga aurea; major; foliis glutinosis & graveolentibus. *T.* 484.

This *Boerhaave*, by Mistake, has taken notice of already, under *Conyza*; *mas*; *Theophrasti*; *major Dioscoridis*; for which I refer the Reader to CONYZA.

14. Virga aurea; omnium minima. *H. R. Par. Boerh. Ind. alt. Plant.*

The *Virga Aurea* is so acrimonious, that no Pepper can be compared with it, tho' it leaves not the least Relish of Acridness in the Mouth, but proceeds through the whole Body. It is like the *Ranunculus urens* of the Shops, and is of a moderately, or somewhat astringent Taste, which at first is not unpleasant, but leaves an ungrateful Relish in the Mouth. The Leaves are gathered in *May*, and dry'd for Use. *Barclay*, in his *Satyricon*, says, that he cured a Person of Quality, to whom he was sent on an Embassy, of the Stone, and a Suppuration of the Kidneys, with the Powder of the dry'd Leaves. Three or four Ounces of the Plant macerated in Water, are a good vulnerary Dose, and proper for internal Hæmorrhages, the Dysentery, and Diarrhœa. Externally it depurates Wounds, absterges Putridness of the Gums, fastens loose Teeth, and cleanses malignant Ulcers, and Fistulas. I have often exhibited it with great Success in all Sorts of putrid, viscid, and cold Indispositions. The Leaves duly dry'd, and infused after the manner of Tea, and drank with an Addition of Honey, are highly corroborative and deterfive, and of extraordinary Efficacy in Ulcers of the Lungs, and Wounds of the Breasts, and other Parts.

The *Virga aurea*, as we are told by *Tournefort*, is a Plant of *Canada*, but is now common throughout *Europe*, because the Seeds brought from that Country have diffused themselves through all the *European* Regions, and grow without Difficulty; for the Seeds are agitated and dispersed into all Parts by the Winds, and where-ever they fall, easily take Root, and spring up. *Hist. Plant. adscript. Boerhaav.*

VIRGA AUREA is, also, a Name for several Sorts of DORIA; which see.

VIRGA AUREA, *Linariæ foliis.* A Name for the *Coma aurea, Germanica.*

VIRGA PASTORIS. A Name for the *Dipsacus*; *sylvestris*; *capitulo minore*; *vel Virga Pastoris, minor.*

VIRGA SANGUINEA. A Name in *Boerhaave* for the *Cornus*; *fœmina.*

VIRGATA SUTURA is the *Sutura Sagittalis*, Sagittal Suture of the *Cranium.*

VIRGINALE CLAUSTRUM. The HYMEN.

VIRGO. Besides the various Kinds of acute and chronical Diseases, there are, also, some Disorders incident to Virgins, pregnant, and Child-bed Women, as, also, to Children.

When the Body of a Woman has arrived at its full Growth, if her Constitution is good, more Blood is generally prepared than can be contained in the Vessels; for which Reason it is eliminated from the Uterine Arteries, under the Name of the *Menses.*

If, in such a State and Condition of Body, this Blood is retained, a Plethora, Slowness, a Sense of Weight, Paleness, a Pain of the Loins, and Groin, and a Depravation of almost all the Functions, whether natural, vital, or animal, are produced, and may be easily accounted for from the too great

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Preſſure upon the Veſſels, by the redundant, ſtagnant, and ſuffocated Blood.

The Blood, when thus accumulated, often finds ſurpriſing Ways, not known in the natural Diſcharge of the Menſes, ſince Phyſicians have ſometimes ſeen it eliminated by the Eyes, the Ears, the Gums, the Salival Ducts, and the Oeſophagus, by Stool and Urine, by the Breaſts and Skin, as, alſo, by Wounds and Ulcers.

By this means all the Viſcera are often weakened, and a ſurpriſing Number of Diſorders produced, partly by the conceived Putrefaction, and partly by the Injury done to the Veſſels.

This Diſorder is known, firſt, by the Age of the Patient; ſecondly, from her full Growth; thirdly, from a Plethora; and, fourthly, from the Signs of the Diſeaſe, ſubſequent to this Plethora.

It is cured by various Remedies adapted to the different Cauſes from which it proceeds.

Thus it may proceed either from a natural or accidental Concretion of the Pudenda, in which Caſe the Surgeon is, with a proper Inſtrument, to make a due Inciſion.

But, when it proceeds from a Stagnation of the Humours, theſe are to be rendered fluid; firſt, by Fomentations, and Frictions of the Feet; ſecondly, by Veneſection in the Feet; thirdly, by the Exhibition of uterine Purgatives, ſuch as Aloes, Myrrh, Betony, Coloquintida, Gum Ammoniac, Bdellium, Sagapenum, Opopanax, Galbanum, Aſa-fœtida, and the Elixir Proprietatis; fourthly, by Emmenagogues, which beſides theſe already enumerated, are Birthwort, Mug-wort, Motherwort, Chamomile, Juniper, Marjoram, Marum, Feverfew, Penyroyal, Rue, Savin, Sage, Elder, Mother of Thyme, Tanſey, the Tree of Life, and Thyme; fifthly, by Plaiſters, Fomentations, Liniments, Vapours, and Heat. The Plaiſters proper for this Purpoſe are, thoſe of Cumin, Melilot, Galbanum, Bay-berries, Labdanum, and Oxycroceum, applied to the Soles of the Feet, the Navel and Groin. The Fomentations may conſiſt of *Venice* Soap, and a Decoction of the above-mentioned Herbs. The Liniments are to be prepared of Soldiers Oinment, nervine Ointment, that of Elecampane without Mercury, that of Agrippa, and that of Sowbread; diſtil'd, aromatic Oils, and eſpecially the diſtil'd Oils of Juniper-berries, Hyſſop, Mace, Marjoram, Origanum of *Crete*, Roſemary, Savin, Spike, Tanſey, and Amber; the Oils by Infuſion of Wormwood, Dill, Chamomile, Catmint, Rue, Caſtor, Saffron, Orris, and Earth-worms. Thus,

Take of Soldiers Ointment, and nervine Ointment, each one Ounce; of the diſtilled Oil of Juniper-berries, one Dram; of the diſtilled Oil of Savin, and of the Oils of Rue and Caſtor by Infuſion, each half an Ounce: Make into a Liniment, to be applied to the Navel, Pubes, and Groin.

As for the Vapours, thoſe ariſing from a Decoction of the Herbs already mentioned, and received into the Uterus, are moſt proper. And, ſixthly, by corroborating the Veſſels weakened by the Plethora, by means of Chalybeates and Aſtringents: Thus,

Take of the Filings of new and unruſty Iron, two Ounces; of *Peruvian* Bark, and Winter's Cinnamon, each two Ounces; of dried Rhubarb, half an Ounce; and of generous *Rheniſh* Wine, two Pints: Make into a medicated Wine, of which two Ounces may be taken thrice a Day upon an empty Stomach.

When the Cauſe of the Diſorder is by theſe means removed, the Symptoms already mentioned either ſpontaneouſly ceaſe, or are to be cured in the ſame manner with the Diſorder they moſt nearly reſemble, which may be eaſily done from what has been ſaid. *Boerh. Aph. & Mat. Med.*

VIRIÆ, or VIRIOLÆ. Rings worn upon the Arms as Amulets.

VIRIDE ÆRIS. Verdegriſe.

VIRIDELLUS. Vitriol; or the Epilepſy.

VISCAGO. A Name for the *Lychnis*; *facie Auriculæ Urſi.*

VISCAGO. Mucilage.

VISCALEUS. The ſame as Viſcum. *Johnſon.*

VISCARIA. A Name for the *Muſcipula*, Catch-fly.

VISCERA. The Bowels.

VISCERALIA.

Viſceral Remedies in general are, thoſe which impart Strength and Firmneſs to the ſanguineous Viſcera, ſuch as the Liver, Spleen, Uterus, Kidneys, and Lungs; by which means they are qualified for a more happy and expeditious Performance of their reſpective Functions. To this Claſs we may, therefore, commodiouſly refer hepatic, ſplenetic, pneumonic, uterine, anti-cachectic, anti-hydropic, anti-icteric, anti-hyſteric, and anti-phthiſical Medicines: But the moſt conſiderable Viſcerals are, the Roots of red Gentian, long and round Birthwort, Succory, Zedoary, Fern, true Rhubarb, and Rhapontic, Turmeric, and Reſt-harrow, *Peruvian* Bark, Winter's Bark, the Barks of Tamariſks, the Aſh, and Capers, together with Cloves; the Herbs Wormwood, the Leſſer Centory, Fumitory, Carduus Benedictus, Marſh-trefoil, Golden-trefoil, Baum, ſpotted Lungwort, Spleenwort, Agrimony, Horehound, Dodder, *Paul's* Betony, Scabious, Spurge, Maiden-hair, and Mouſe-ear. The Viſcera are, alſo, excellently ſtrengthened by ſome of the reſinous Gums, ſuch as Myrrh, Aloes, Bdellium, the Gum of the Ivy-tree, Gum Ammoniac, Olibanum, Sagapenum, Opopanax, and Aſa-fœdida. Some Minerals are, alſo, excellent Viſcerals, ſuch as the Flowers of pure common Sulphur, Filings of Steel, and all Preparations of that Metal. Some chymical Preparations are, alſo, powerful Viſcerals, ſuch as the Salts of Herbs obtained by Incineration, the Arcanum Tartari, the Terra foliata Tartari, Cream of Tartar, Sal Polychreſtum, antimoniated Nitre, Spirit of Sal Ammoniac, Tincture of *Mars* extracted with Spirit of Wine from the Flowers of Sal Ammoniac prepared with Blood-ſtone, the Tincture of Tartar, the Tinctura Antimonii Alcaliſata, the Elixir Proprietatis prepared with a Lixivium, the Eſſence of Soot, the Viſceral Elixir prepared with an aqueous ſaline Menſtruum, the Antimonium Martiale Cachecticum, *Beccher's* Maſs of Pills, and others of a like Nature. To the Claſs of Viſceral Medicines, alſo, belong Mineral Waters, eſpecially ſuch as contain a certain ſubtile chalybeate Principle, ſuch as thoſe of *Pyrmont*, *Spaw*, and *Swalbacen*; and much more thoſe which contain a larger Quantity of a chalybeate Principle, ſuch as thoſe of *Lauchſtad*, *Radeberg*, *Bebra*, and *Frayenwald.*

Theſe balſamic Viſcerals, partly by a ſulphureous, balſamic, and ſomewhat fixed earthy Principle, and partly by their alcaline, ſulphureous, ſaponaceous, and bitter Quality, perform their Operation upon the Viſcera, whoſe Veſſels are obſtructed and infarcted by groſs and viſcid Humours, by inciding and diſſolving the tenacious Juices, and, at the ſame time, procuring a due contractile and elaſtic Force to the Veſſels and Fibres of the Viſcera, which had loſt their Strength and Tone. Hence they are of great Efficacy, both for the Prevention and Cure of thoſe chronical Diſeaſes, which ariſe from any Diſorder of the Viſcera.

Though all Viſcerals agree in this, that they ſtrengthen the Tone of the Viſcera, and remove Infarctions and Obſtructions, yet it is neceſſary to vary them, according to the Diverſity of Viſcera affected, and the Diſeaſes thereby produced. Thus, for Inſtance, if the Liver is obſtructed, and a Jaundice, Cachexy, or Scurvy, produced by that means, the moſt efficacious Viſcerals are thoſe poſſeſſed of a certain ſaponaceous and deterſive Bitterneſs, ſuch as the Five aperient Roots, Rhubarb, Turmeric, Opopanax, Bdellium, *Venice* Soap, Elixir Proprietatis without an Acid, Eſſence of Rhubarb prepared with Salt of Tartar, Eſſence of Trefoil, and all good Preparations of Steel. When there are too great a Relaxation and Infarction of the Lungs, and the Diſeaſes by that means produced are preſent, Myrrh, Gum Ammoniac, Flowers of Sulphur, *Paul's* Betony, Scabious, Chervil, Lungwort, Mouſe-ear, Horehound, and Maiden-hair, are generally thought moſt efficacious. When the Spleen being preternaturally large, and infarcted with Blood, favours the Generation of an unpure Blood, and eſpecially of a Cachexy, the Barks of Tamariſks and Capers, Fumitory, Spleen-wort, Dodder, Spurge, the Roots of Reſt-harrow, and Chalybeates, are preferable to other Remedies. When from a weak, and too much relaxed Tone of the Kidneys, nephritic Pains and Stones are formed, the Bark of the *Egyptian* Thorn-root, and an Infuſion of it; as, alſo, the Robs of Hounds-tongue and Juniper, are, in a peculiar manner, efficacious. From a weak State of the Uterus, and its Veſſels, and a ſlow Circulation of the Blood and Humours, ariſe numberleſs chronical Diſeaſes, which are efficaciouſly cured by long and round Birthwort, Mugwort, Myrrh, Feverfew, Galbanum, Bdellium, Opopanax, Amber, *Beccher's* Maſs of Pills, and others, prepared in the ſame manner. If the Inteſtines, and their Glands, the ſecretory, excretory, biliary, panreeatic, and lacteal Ducts, are ſo deprived of Strength, that by a copious Defluxion of Humours, exceſſive Fluxes are produced; or, if the Humours ſtagnating in the Veſſels lay a Foundation for febrile Motions and Paroxyſms, Rhubarb, *Peruvian* Bark, Winter's Bark, Caſcarilla Bark, and the moſt ſubtile Crocus, and Eſſences of *Mars*, are found more efficacious than any other Remedies.

But, with reſpect to Corroboratives in general, it is to be obſerved, that they produce far better Effects, if not only before their Exhibition the redundant Blood is leſſened, and the Sordes of the *Primæ Viæ* evacuated by proper Laxatives; but, alſo, if, in order to render the Humours more fluid, they are exhibited in Decoctions or Infuſions, or which is ſtill better, with Medicinal

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dicinal Waters, or Whey; by which means, the Operation of these Corroboratives, which are of an aſtringent Nature, is greatly aſſiſted in removing violent chronical and inveterate Diſorders; eſpecially when their Uſe is for a conſiderable time perſiſted in, and proper Exerciſe, whether by Riding or Walking, uſed. *Fred. Hoffman.*

VISCIDITAS. See LENTOR.

VISCUM, VISCUS, ἰξός.

The Characters are;

The Leaves are conjugated, narrow, and oblong; the Flower is monopetalous, ſhaped like a Baſon, quadrifid, ſprinkled with Warts, and male; the Ovary grows in a different Place from the Flower, and is of a tender Subſtance, ſurrounded with four ſmall Leaves; and becomes a roundiſh Berry, full of a Glue, and containing a flat Heart-ſhaped Seed.

Boerhaave mentions but one Sort of *Viſcum*; which is,

1. Viſcum; baccis albis. *C. B. P.* 423. *Boerh. Ind. A.* 228. *Viſcum.* Offic. Ger. 1168. Emac. 135. Raii Hiſt. 2. 1583. Synop. 3. 464. *Viſcum vulgare*, Park. Theat. 1392. *Viſcus vel Viſcum arborum.* Merc. Bot. 1. 77. *Viſcus Quercus, & aliarum arborum.* J. B. 1. 89. MISSEL AND MISSELTO.

This Plant is never found upon the Earth; it grows upon the Oak, Apple, Plum, Pear, Acacia of *America*, and ſeveral other Trees. That which is found in the Wood of *Vincennes*, occupies the beſt Branches of the White-thorn, on whoſe Branches neither Earth, nor any other Matter, is to be found, which may ſeem proper to make the Seeds of this Plant chit. There is firſt diſcovered only a Tumor in thoſe Parts to which the Miſſelto has faſtened itſelf; its Flowers grow by threes, at the Diviſion and Extremities of the Branches; each Flower is a yellowiſh Baſon, of about three Lines Diameter, of the Thickneſs of *Spaniſh* Leather, cut into four Segments, rounded in three Points, and oppoſite to each other, in Form of a Croſs, in ſuch manner, that thoſe which are oppoſite, are equal between themſelves, but unequal with reſpect to the others; each Segment is raiſed with a little Bump, paler than the reſt, and divided into Apartments full of little oval Holes, filled with Duſt reſembling Flour of Sulphur, or that which flows from the Summit, of other Plants.

The Flowers of Miſſelto produce nothing; the Fruits grow upon different Branches from thoſe which bear the Flowers; theſe Branches are found, ſometimes, upon the ſmall Plant that bears the Flowers; and ſometimes, alſo, upon Plants which bear only Fruit.

Theſe Fruits are diſpoſed, alſo, by Threes, at the Extremities of the Branches; each Fruit begins by a little oval Embryon, encompaſſed with four thick yellowiſh Leaves, half a Line long, pointed, and eaſily falling off; this Embryon thickens inſenſibly, and forms an oval Berry, three Lines long, like a little Pearl, filled with a flat Seed ſhaped like a Heart, covered with a ſilver-coloured Membrane, very fine, and full of Glue, that is to ſay, a very viſcid, whitiſh, and ſweetiſh Subſtance, in which the Seed naturally germinates, and puſhes forth two Radicles out of the Side of its Notch.

This Seed, in all Appearance, produces the young Plants of Miſſelto to be ſeen upon the Branches of the Trees now mentioned; for ſome do but juſt peep, (if I may ſo ſay) and have only the Radicles which began to appear in the Berries. Nevertheleſs, we cannot ſay, that this Seed paſſes thro' the Root of the Oak, and the other Trees, and aſcends into the Branches by the Sap-veſſels; for each Seed is two Lines diameter, and the Texture of theſe Veſſels cannot be perceived by our naked Eyes. It follows, then, that this Seed muſt be applied, by ſome external Cauſe, to the Branches of the Trees: Theſe Cauſes may be reduced to two principal ones.

The Birds, perhaps, by cruſhing theſe Berries with their Feet or Bills, may give them an Opportunity of faſtening themſelves to the Branches, by their Glue: As we ſee the Magpies and Jackdaws contribute to the multiplying of ſeveral Plants, by carrying about their Kernels, and burying them. It may happen, alſo, that the Birds which have ſwallowed the Miſſelto-berries may void them upon the Branches of the Trees on which they perch; which made *Plautus* ſay, *Ipſa ſibi avis mortem cacat*; tho' it is not very eaſy to comprehend how the Seeds which paſs thro' the Gizzards of the Birds ſhould eſcape being bruiſed, and ground to Pieces.

It may happen, alſo, that theſe Berries, falling, either of their own Accord, or by the Violence of the Winds, may ſtick, ſometimes, againſt the Branches of the neighbouring Trees, eſpecially if they happen to be applied by that Part by which they hung upon the Miſſelto; for this torn Part eaſily faſtens itſelf to any Body on which it falls: But in what manner ſoever theſe Berries ſtick, we have Reaſon to believe, that the Glue, which they are filled with, inſenſibly ſoftens the Bark to which it is fixed; and then the Seed, which had germinated before in its Berry, as we obſerved above, pierces it eaſily, by its Radicle. Perhaps this Glue, tho' it appears ſo mild and inſipid to us, ferments with the Sap of the Trees, and tears the Fibres of their Bark, which favours the Paſſage of the Fibres of the Radicle conſiderably. Thus the *Ova fœminea*, falling into the Body of the *Uterus*, faſten themſelves to it, by means of the *Placenta*; the Juice of which, fermenting with that of the Glands of the Bottom of the *Uterus*, makes a little Inflammation, by means of which theſe two Parts ſtick together.

The Radicle, then, of the Seed of the Miſſelto, finding it eaſy to pierce the Bark of the Branches, lengthens into greeniſh Fibres, which run, at firſt, thro' the parenchymous, and piercing, afterwards, the ligneous Part, interlace themſelves with the Fibres of the Branches, and inſinuate themſelves into their Veſicles, out of which they draw a Juice proper for their Nouriſhment. One may eaſily diſtinguiſh theſe Fibres, if one take the Pains to trace them, after having diſcovered the firſt Bark. It is no wonder, that the Place where they inſinuate themſelves ſhould ſwell, ſince they increaſe the Bulk of it; and, beſides, theſe Roots, by taking hold, preſs the Veſſels of the Branches in ſome Places, ſtrangle them, and make them burſt into others, which cauſes the Interception and Extravaſation.

Miſſeltoe can live only upon Trees, becauſe, perhaps, its Radicle, not having a Structure proper to ſeparate from the Earth, and prepare the Nouriſhment neceſſary to the Vegetation of this Plant, it is neceſſary that this Preparation ſhould be made in the Root of another Plant, which is to it as a Nurſe; in the ſame manner as, the Stomachs of Children being too weak to prepare their Nouriſhment, they muſt either have a Nurſe, or it muſt be accommodated to the Weakneſs of their Stomachs. To ſatisfy myſelf concerning the Production of Miſſeltoe, I have ſown the Seeds of it for three Years together; but I have never ſeen any of them come up: I have faſtened, alſo, ſeveral Berries, in *March* and *April*, upon young Branches of the Apple-tree and White-thorn; but the Violence of the Winds, and the frequent Rains which uſually fall in that Seaſon, have not permitted me to ſatisfy myſelf entirely concerning this Matter: So that I only propoſe Conjectures, which have Probability enough to be received in Natural Philoſophy.

The Wild Pear-trees are covered over with Miſſeltoe, and I obſerved upon their Trunks, tho' the Bark was hard, the firſt Shootings of the Seed, which I had long ſought, but could never find, in *France*, where this Plant is ſo common. Theſe Seeds, which are of the Shape of a Heart, were out of their Caſes, and ſtuck, by their Clammineſs, to the Trunks and Branches of theſe Trees, when the Wind, or any other Cauſe, ſhook them out: Each Seed was laid in ſuch manner, that the Point of the Root began to pierce into the Bark, whilſt the Eye of the Seed ſhot out, and unfolded itſelf. All this confirmed me in my Opinion which I had mentioned concerning the Multiplication of Miſſeltoe, in my Hiſtory of Plants which grow about *Paris*. *Tourn. Voyage into the Levant.*

The Fruits of the Miſſeltoe begin by Embryons crowned with four little Leaves, or charged with a radiated Crown, compoſed of four little yellowiſh Leaves, articulated about the Head of each Embryon; theſe Embryons proceed out of a yellowiſh round Maſs, articulated with the Extremity of the Branch, and two oppoſite Leaves, which terminate it on the Sides. This Obſervation ſhews, that M. *Tournefort* was miſtaken in the Deſcription which he has given us of theſe Embryons. The Berries of Miſſeltoe, each of them, often incloſe two Seeds; the Flowers of the male Plants are monopetalous, cut into four equal Parts, each charged, on its inner Surface, with a Summit, which is ſtrongly faſtened to it: It flowers at the ſame time with the female. *Vaill.*

Miſſeltoe is accounted a cephalic and nervine Medicine, particularly uſeful for all Kinds of Convulſion-fits, for the Apoplexy, Palſy, and Vertigo; for which Purpoſes, ſome prefer the Miſſeltoe of the Haſel to that of the Oak. They who have a mind to know all the Virtues of this Plant, may conſult Sir *John Colbatch*'s Diſcourſe of the Miſſeltoe.

Of the Berry of this Plant was formerly made the *Viſcus Aucupum*, or Birdlime, by boiling the Berries in Water till they burſt, when they are well beaten in a Mortar, and afterwards waſhed in Water, till all the branny Huſk was cleared away; but with us, in *England*, Birdlime is made of the Holly-tree, which they ſtrip off about *Midſummer*, boiling a good Quantity of it in Water for about twelve Hours, till the whitiſh outward Bark is ſeparated from the green; this they lay in a cool Vault, or Cellar, covering it with Fern, or ſuch-like Matter, letting it lie for a Fortnight, by which time the Bark will be turned into a Jelly, which they afterwards beat in a Stone Mortar, till it becomes a tough Paſte; this they waſh well in running Water, till all the Sordes are cleared away, and then put it into earthen Veſſels.

Birdlime is a powerful Attractive, and good to ripen hard Tumors and Swellings: It is an Ingredient in the *Emplaſtrum Diachylon magnum. Miller's Bot. Off.*

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The Birdlime, or Glue, used for Fowling, was much used, by the Antients, in Medicine. It has the Virtue of mollifying and discussing Tumors, the Parotides, and Abscesses, being mixed with Rosin, and an equal Quantity of Wax; it, also, cures the *Epinyctides*, and, as *Pliny* says, dries up strumous Ulcers, and cures the Epilepsy. It is good for many other Things, which may be found in *Dioscorides*, *Pliny*, and *Galen*.

The Wood is of principal and specific Use in the Epilepsy; it is, also, prescribed for the Apoplexy and Vertigo, taken inwardly, or hung about the Neck: For these Disorders it is acknowledged to be effectual, by the unanimous Consent of antient and modern Physicians. We know some, says *J. Bauhine*, who have made use of the Wood of *Viscum*, macerated in Wine, with Success, against the Vertigo. The Powder of *Viscum*, especially what grows upon Oaks, not only cures the Epilepsy, but provokes the Menses: It is, also, an *Arcanum* against a Pleurisy, being taken once and again, and a third time, in Water of Carduus and Poppy. D. *Bowles*.

J. Bauhine writes, that he has several times advised the Use of *Viscum*, bruised and macerated in proper Waters, against Worms of the Intestines in Children.

The Powder of the *Viscum* which grows on the *Oxyacanthus*, being infused in White or *Spanish* Wine, and given two Hours before the Paroxysm, or Fit, and the Dose repeated, if necessary, has often removed, and perfectly cured a Quartan.

The Leaves, after they have been chewed, and ground by the Teeth of labouring Beasts, and Cows, are, by our rustic People, esteemed effectual for expelling the Secundines.

Viscum is a parasitic Plant, or Shrub, which grows on other Plants or Shrubs.

It is much controverted whether the Seed of this Plant, which is perfect and mature, ever produces a Plant of the same Kind. *Aristotle*, *Pliny*, and all the Antients, with one Consent, hold the Affirmative, and that *Viscum* is propagated from the Seed of the Berries passing thro' the Bodies of Thrushes, Wood-pigeons, and other Birds of that Kind, after the pulpous Substance, involving the Grains, is concocted. Such is the Nature of the Seed, says *Pliny*, that, unless it be maturated in the Bellies of Birds, it will not shoot. But *Julius Scaliger*, and, after him, *J. Bauhine*, and most of the Moderns, assert the contrary, and endeavour to prove the same, by a Multitude of Arguments; some of which, however, are easily answered. It is more difficult to answer the Argument drawn from the Situation of the *Viscum* on the Branches: For how is it possible for the Seed of the *Viscum* to settle on slender, erect Sprays, on which the Birds themselves can hardly rest, and those, too, agitated by the Winds, and washed with frequent Showers? Or, what is more, how can the Seed lodge itself on the prone Part of the Branches, or that Side of them which faces the Ground? To this Objection, however, it may, with some Shew of Probability, be answer'd, that the Excrements of the Birds, fed with *Viscum*, participate of its Nature; and therefore the Seed, besmeared with that viscid Matter, may be so firmly agglutinated to the Branches, as not easily to be separated from them by the Force of Wind or Weather. We, indeed, for our Part, are not free to admit of spontaneous or equivocal Generation; and since all Seed, as *Theophrastus* truly says, is for the Sake of Generation, it seems to us absurd, and by no means probable, that Nature should have created any perfect Seed, and that too in great abundance, which yet, in all its Species, is wholly useless, and unfit for the Propagation of its Kind. *Raii Hist. Plant.*

Pliny tells us, *Lib.* 16. *Cap.* 30. that, among other Products of the *Buxus*, it bears *Viscum* on that Part of it which looks towards the North, and *Hyphear* on its South Side. And *Lib.* 17. *Cap.* 44. he further says, that there are three Kinds of *Viscum*; for what grows on Firs, and Larch-trees, in *Eubœa*, is called *Stelis*; in *Arcadia*, *Hyphear*; and that the *Viscum* [properly so called] grows on the *Quercus*, *Robur*, *Ilex*, especially the *Ilex Sylvestris*, and the *Terebinthus*, and on several other Trees, but most plentifully on the *Quercus*, whence it is called *Dryos Hyphear*, "the *Hyphear* of the Oak:" And a little after he says, that the *Hyphear* is fittest to feed Cattle.

Theophrastus, whom *Pliny* transcribes with some Variations, and, perhaps, Mistakes, in the Beginning of *Cap.* 23. *Lib.* 2. *de Caus. Plant.* tells us, that it is very surprising, and looks quite odd, and unaccountable, that some Seeds and Plants will not shoot or grow in the Earth: Of this Nature are the *Viscum* [*Ixia*], *Stelis*, and *Hyphear*. *Stelis* is a Word they use in *Eubœa*, but *Hyphear* is an *Arcadian* Term, and *Ixia* [*Viscum*] is a Name they use in common. Some will have these three to be of the same Nature; but there seems to be some Difference between them, in that they grow on different Plants; for the *Hyphear* and *Stelis* grow on Firs and Pines, but the *Ixia* on the *Quercus* and *Terebinthus*, and many other Sorts of Trees. Others allege, as a good Argument for their being distinct, if the Observation be right, that not only each of these is produced on homogeneous Trees, as, for Instance, the Pine and Fir, but more than one are to be found growing on different Parts of the same Tree, where on one Side you may observe the *Stelis* or *Ixia*, and on the other the *Hyphear*.

Here *Theophrastus*, and his Transcriber *Pliny*, seem to make the *Hyphear* and *Stelis* distinct Species from the *Viscum*, but, says *Ray*, erroneously; for if they were really different, how comes it to pass that, in so many Ages, and among such a Multitude of Authors since the Time of *Theophrastus*, this Distinction could never be discovered, but has hitherto escaped the diligent Search, and curious Eyes, of the most sagacious Botanists? Nor do we approve those Distinctions of *Viscum* which are taken from the different Kinds of Trees on which it grows; as if what grew on Trees of different Species were itself, also, specifically different. And what *Theophrastus* has written, that it always preserves its Leaves on Evergreens, but loses them on Plants which shed their Leaves, is contrary to Matter of Fact; for what grows on Pear-trees, Apple-trees, Almond-trees, and many others, whose Leaves are caducous, is perpetually green, and never loses its Leaves. As to what *Matthiolus* says of the *Viscum* growing on the *Quercus*, *Robur*, and *Castanea*, that all its Leaves fall off at the Approach of Winter, let him answer for himself: For my Part, I could never make the like Observation on any Tree, at any time of the Year. *Raii Hist. Plant.*

VISIO. Vision.

Light, which is an Aggregate of all Colours collected together, sends forth Rays on all Sides: These Rays, tho' very subtile, are, in like manner, compounded of all Kinds of Colours; whence they are again divisible into simple Rays, which, collected separately, or of one Sort, or of different Sorts together, represent Variety of Colours; but, all united, form a very splendid lucid Beam, or very white Brightness. These Rays proceed from a lucid Point, as from a Centre, towards all Points without it, in strait Lines, thro' an homogeneous Medium, in no estimable Space of Time, passing thro' pellucid, and falling upon opake Objects. Hence, all Points of the Cornea are struck by Rays contained within a Cone whose Vertex is the lucid Point, and its Base the Plane of the Cornea, if there be no Impediment interposed between the radiating Point and the Cornea.

The same Rays, approaching denser Bodies, are there incurvated, some more, some less: Hence they are separated, and being separated, and reflected, exhibit Variety of Colours, falsly ascribed to the reflecting or refracting Body, unless so far as they are separated by its means: The Reflexion, then, is here various, according to the Variety of the Colour latent in the Ray; the Angle, however, which the reflected Ray makes with a Perpendicular erected at the Place of Incidence, seems to be the same as that made by the falling Ray with the same Perpendicular; and in other Respects there seems to be no Alteration at all.

If these Rays pass out of one Medium into another, in their Approach to the latter they are incurvated, and, in that Condition, pass on thro' that Medium; and the more dense this is, the nearer incurvated are they towards a Perpendicular, and so on the contrary: And the same is, also, owing to a singular Cause latent in some Fluids, not to be determined but by Experiments. This Inclination is called *Refraction*.

This Refraction, with regard to Sense, is regulated by one certain Law, which is as follows: If the same Ray falls into the same pellucid Medium in Variety of Angles, the Sines of the Angles of Incidence will bear the same Proportion to one another, as the Sines of the refracted Angles.

Hence it follows, that Rays proceeding from a radiating or reflecting Point to the pellucid Cornea, are there refracted towards a Perpendicular, with almost the same Alteration of Course as in Water; so they pass on thro' the aqueous Humour, and have their Course determined through the Perforation of the Pupil to the Superficies of the crystalline Lens; but those Rays which enter with so great Obliquity as to fall on the Iris, are thence reflected, and fall out of the Eye again, that they might not, by their Reflexion and Ingress into the Eye, disturb the Distinctness of Vision; and those other Rays, which, on account of their Obliquity, fall between the lower Part of the Uvea and the vitreous Body, or on the Superficies of the vitreous Body, are immediately suffocated in the black Pigment of the same, and lost, as if they had never been, that so no Rays might be transmitted thro' the Vitreous Humour, but such as, after penetrating the Pupil, fall upon the crystalline Lens; the Iris, in the mean time, being contracted, or dilated, admits more or fewer Rays, in proportion as the Object is nearer, and more vivid, or more remote and languid; under this Law, or Regulation, that the nearer, or more luminous, the Object, the narrower, or more contracted, the Pupil. This happens from a Mechanism peculiar to that Part, and defends that

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that very tender Membrane, the Retina, from being offended, dried, or scorched.

The flatter, therefore, the Cornea, the less it collects the Rays which fall upon it from one lucid Point, and the more it disperses them, so that the fewer in Number arrive at the crystalline Lens, and even those very divergent, unless they come from a very remote Object: On the contrary, the rounder the Figure of the Cornea, the more it will unite the Rays which strike upon it from one radiating Point, and the greater Number will it collect in the crystalline Lens, and those very divergent. And hence you may assign one Reason for the Vision of short-sighted and aged Persons.

The crystalline Lens, after receiving the determined Rays from the Pupil, unites them still more by a new Refraction, and renders them convergent, under the following Law, or Regulation, that those Rays which proceed from one Point without the Eye, being here collected into one Point not far remote, are thence conveyed thro' the vitreous Humour to the Retina, on which they paint only that one Point precisely from which those Rays proceeded. If the crystalline Lens be very dense, or round, the Point of Collection [the Focus] is too near the Lens, which creates Confusion; if, on the other Hand, the Lens be too rare, or flat, the Point of Collection is too remote, whence a Confusion is again occasioned; and this affords us another Reason for the Vision of old Persons, and *Myopes*, or such as are short-sighted.

From the two last Paragraphs we may account, or assign the Reasons why short-sighted Persons have their Sight helped by a concave dioptric Glass, or moving the Object nearer; and why aged Persons see more distinctly thro' a convex dioptric Glass, or when the Object is more remote.

Both these Defects in the Persons just mentioned, are, also, remedied by bringing the crystalline Lens to the Cornea, or removing it at a Distance; which Purposes seem to be answered two different Ways; as by compressing the Bulb of the Eye by a strong Contraction of all the four Muscles [See OCULUS] at once, whence the Bulb is lengthened; or by a Contraction of the Fibres which compress the vitreous Body, and elevate the Lens. There appears no other Method of answering these Intentions.

The Refraction which a Ray suffers in passing out of the Air into the Cornea, is nearly equal to what it suffers in passing out of Air into Water; and the Refraction of a Ray, passing from the aqueous Humour into the Lens, is equal to what happens to a Ray passing out of Water into Glass; whence the Alteration is inconsiderable: And, in the last Place, a Ray, passing from the crystalline Lens to the vitreous Body, suffers but little Alteration by Refraction, and, perhaps, none at all, when the vitreous Humor is pretty closely compressed; by which means, that Part becomes more dense. Hence the principal, and most necessary Use of the vitreous Humor seems to be, that the Lens, by having free Space to move, might adjust and accommodate the Eye to different Distances, being itself a Substance of a less mutable Figure than the vitreous Body.

The End, or Design, of all this Apparatus, [of Humors and Refractions] is, that there may be a distinct and vivid Collection of those Rays, which, proceeding from one Point of the Object, enter the Eye, and penetrate the crystalline Lens, in the Bottom of the Eye, directly under the Pupil, and that so there may be painted in this Bottom as many Points as were conspicuous in the Image: Hence, the Picture, or Image, in Miniature, formed on the Retina, resembles the Object.

And since the mucous Medulla of the optic Nerve has its Seat precisely in this Place, directly under the Pupil and the Lens, it appears, that this is the Part which receives the Pictures, and, by a Continuation of the Impression, presents them to the common Sensory, and excites in the Mind the Idea of the Thing seen.

It appears, also, from what has been said, that the Experiment of *Picard* and *Mariotte* is so far from disproving what has been advanced in the preceding Paragraph, as some Authors have thought, that it is a clear Confirmation of it; and we have even Occasion hence given us, to break forth into Praises of infinite Wisdom in placing the Entrance of the Optic Nerve not in the Axis of Vision, nor towards the exterior Angle of the Eye, but towards the Nose, in a middle Altitude.

The Perfection, therefore, of Vision, depends on such a Figure, Transparency, Fabric, and Energy of the Solids, and such a Denseness and Transparency of the colourless Humors, as are qualified for collecting Multitudes of Rays from every visible Point of an Object, unmixed with others, upon one distinct Point of the Retina, this Focus being formed neither too near, nor remote; and, in the next Place, on such a Mobility of these Solids and Humors, in Conjunction, as is necessary for a clear and distinct painting of Objects placed at different Distances; for, with these Requisites, their Size, Figure, Distance, Situation, Motion, Rest, Light, and Colour, are very well represented. In the Retina there is, besides, required such a Situation, Expansion, Quickness of Sense, Tenderness, and Justness of Proportion, between the medullary, arterial, venous, and lymphatic Substance, as dispose it for transmitting, by a free and sound Optic Nerve, pure and perfect Images to the common Sensory.

There is, then, no Emanation of Rays from us, nor are they reflected from Objects back again upon us, as the *Stoics* asserted; nor is Sight performed by Emission of a visible Species from the Object towards us, as the *Pythagoreans* thought; nor by Emission of Effluvia from the Object and the Eye meeting together, and, after mutual Embraces, reflected, as the *Platonists*, by an extraordinary Way of Ratiocination, endeavoured to prove; nor, lastly, is it owing to a material Emanation of corporeal Images, as was the Opinion of *Epicurus*; but is performed in that simple and mechanic Way which we have above explained.

Queries on this Subject are such as the following:

Why Objects placed at the least Distance, in which the Eye can bear to see distinctly, appear most plainly?

Why, when removed thence to a great Distance, they appear distinctly, but affect us in a more languid manner? Why, also, when placed too near, they seem confused? What is necessary to a distinct, what to a strong Vision? And the like. Which are all easily answered, from the Premises. *Boerhaav. Institut. Medic.*

VISNAGA.

The Characters are;

The Root is fibrous, and annual; the Leaves are broader, shorter, and blunter, than those of Fennel. The Umbella is generally contracted, and closed; and the Seeds are much smaller than those of Fennel.

Boerhaave mentions but one Sort of *Visnaga*; which is,

Visnaga. *Offic. J. B.* 3. 31. *Raii Hist.* 1. 456. *Boerh. Ind. A.* 49. *Gingidium umbella longa.* C. B. P. 151. *Gingidium Hispanicum.* Ger. 885. Emac. 1042. *Visnaga Gingidium appellatum.* Park. Theat. 890. *Fœniculum annuum, umbella contracta oblonga.* Tourn. Inst. 311. SPANISH PICKTOOTH.

This is a Plant of about a Cubit and an half in Growth, with the striated, glabrous, and geniculated Stalk of the *Anethum*, and the smooth Leaf of the *Pastinaca erratica*, but divided into larger Segments: The Umbellas of the Flowers are white, and their Pedicles, especially the external ones, are above a Palm in Length, and are hard, and stiff; and each Pedicle, both internal and external, bears on its Top a new Umbella of numerous small Pedicles; every Umbella, also, as well as every Top of a Branch, has small Leaves subjacent at its Base; the Seed is small, like that of the *Apium* of the Shops, and acrimonious.

It grows in *Italy*, *Sicily*, and the southern Parts of *France*, spontaneously, but is cultivated, with us, in Gardens; and flowers in the Summer.

J. Bauhine mentions a *Gingidium Ægyptium* with larger and firmer Umbellas and Pedicles than those which grow in our Gardens; and we, also, remember to have observed such.

The Description of the *Daucus Campestris*, in *Cæsalpinus*, agrees, in all Respects, with that which he had before given of the *Visnaga* in the same Book; so that it seems quite the same Plant.

The Pedicles, or Footstalks, of the Umbellas, on account of their Stiffness, and sweet Scent, serve for Toothpicks with many Persons, especially among the *Spaniards*; whence we call it *Spanish Picktooth. Raii Hist. Plant.*

The Virtues, according to *Bauhine*, are the same with those of *Fœniculum*, or Fennel. *Hist. Plant. adscript. Boerhaav.*

VISQUEIRO. The Name of a *Brasilian* Tree, which affords a soft viscous Resin, used for Birdlime. *Raii Hist. Plant.*

VISUMARUS. A Name for the *Trifolium*, in *Marcellus Empiricus*, C. 3.

VITÆ BALSAMUM. See ELIXIR BALSAMICUM HOFFMANNI.

I have, by Mistake, made a Reference to this Article, from BUSSII SPIRITUS BEZOARDICUS, and from many other Articles, which ought to have been to LIQUOR MINERALIS ANODYNUS. This the Reader is desired to take Notice of.

VITALBA. A Name for the *Clematitis*; *sylvestris*; *latifolia*.

VITALIA. Cardiacs. *Blancard.*

VITALIS ACTIO. See ACTIO.

VITALIS FUNCTIO. See ACTIO.

VITEALIS CONVOLVULUS. A Name for the *Convolvulus*; *minor*; *arvensis*; *flore roseo.*

VITELLUS. The Yolk of an Egg. See OVUM.

VITEX.

The Characters are;

The Leaves run, as it were, into five Divisions; and, in

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European Plants, are caducous. The Flower is monopetalous, tubulous in the lower Part; in the upper, as it were, bilabiated, and disposed in Spikes: The Ovary, which is seated in the Centre of an indented Calyx, becomes a globous Fruit, divided into four Capsules, containing oblong Seeds.

Boerhaave mentions six Sorts of *Vitex*; which are,

1. Vitex; foliis angustioribus, Cannabis modo dispositis. See AGNUS CASTUS.

2. Vitex; foliis angustioribus; Cannabis modo dispositis; floribus cœruleis. *H. L.*

3. Vitex; sive Agnus; flore albido. *H. R. Par.*

4. Vitex; sive Agnus minor; foliis angustissimis. *H. R. Par.*

5. Vitex; trifolia; minor; Indica; rotundifolia. *Breyn. Prodr.* 2. *Cara Nosi.* H. Mal. 2. *Negundo fœmina*, *Acostæ.* H. A. 1. 181.

This is a Shrub about a Man's Height, of the Bigness of a Peach-tree, according to *Garcias*; or of an Almond-tree, according to *Acosta*; and growing in sandy Places: The Root is fibrous, of a browniſh Colour without, and whitish within, with a thin Bark, of a bitterish, but when chewed awhile, of a somewhat acrimonious Taste; the Leaves are generally three on one Pedicle, two opposite, and the third at the End of the Rib larger than the others; they are of an oblong-round Figure, cuspidated in the fore Part, with an even Margin, moderately thick, soft, smooth, with their upper Face of a dark Green, but paler beneath, of a bitter and acrimonious Taste, and a grateful Smell, much like Lavender: According to *Acosta*, the Leaves have the Taste and Smell of Sage: The Flowers grow many together on common Pedicles, out of Nodules, which are produced by Pairs in a decussated Order above the Origin of the Leaves; these Flowers adhere to short Pedicles, are of a purple-ceruleous Colour, and have the same Smell as the Leaves, only brisker: They consist of five shapeless Petals, with a Bell-shaped Neck; one of the Petals is erect and broad, but concave and hairy in the interior Part; the Neck of the Flower towards that Part of the Leaf has, also, its interior Part hairy; the other four Petals are expanded to almost their Breadth, and more like one another, only those next the erect Petal are somewhat broader and rounder, the others towards the anterior Parts. The Flower is furnished with four erect, purple-ceruleous Stamina, which have blackish and arched Apices, and in the Middle a slender, purple-cæruleous Stile [Pointal], with a bifid Cuspis, inflected towards a ceruleous Leaf, and taking its Original from the Rudiment of the Fruit [the Ovary] within the Calyx; the Calyx, which straitly embraces the lower Neck of the Flower, consists of five short, faint-green, cuspidated Leaves, and is striated with slender Ribs, or Fibres, lengthwise: The Fruits are round, and somewhat oblong Berries, of the same Smell with the Flower, the greatest Part of the Berry comprehended within the Calyx, and of a faint-green Colour; but the upper Part, which appears above the Calyx, is at first reddish and shining, but afterwards, when dry, of a black Colour, like Ink: In the Middle is an oblong-round Stone, under a green and hard Pulp, which is not thoroughly softened with Maturity; the Stone contains a whitish, tasteless Kernel.

The Oil of the Root, by Distillation, is clear, somewhat greenish, of a sweet, acrid, penetrating Taste, and void of Smell.

This Tree, says *Acosta*, is of such frequent Use in Medicine in these Countries [*Malabar*, and the adjacent Parts], that unless it had pleased God that a manifold Increase of young Shoots should succeed in the Room of those Branches which are cut off, the Trees had long ago been consumed, or, at least, been extremely dear and scarce; but the more the Branches are lopped, the thicker they grow, and are always green.

The tender Branches, Leaves, Flowers, and Fruits, bruised, and boiled in Water, or fried or boiled in Oil, are successfully applied to all Pains, proceeding from what Cause soever, but especially to Pains of the Joints from a cold Cause; and in Tumors and Contusions they have surprising Effects. Some apply the same to Wounds, and affirm, that in one Night it has removed the Pain, and digested the Matter,

The bruised Leaves are applied to old Ulcers with good Success; for they digest the contained Matter, cleanse the Ulcer, and cicatrize it; and they are really found to be of such Use in Wounds, Abscesses, and Contusions, as to render the Assistance of a Surgeon unnecessary. The Women wash their whole Bodies at all Seasons with the Decoction of the Leaves, and are so firmly persuaded that the Flowers, Leaves, and Fruit of the *Negundo*, have a Virtue of promoting Conception, that they would stone any Person who should endeavour to convince them of the contrary. The Leaves used in Mastication amend a fetid Breath. Thus far *Garcias* and *Acosta*. *Raii Hist. Plant.*

6. Vitex; trifolia; minor; Indica; serrata. *Breyn. Prodr.* 2. *Bemnosi.* H. Mal. 2. Raii Hist. 2. 1575. *Negundo mas Acostæ.* H. A. 1. 179. *Boerh. Ind. alt. Plant.*

The Leaves of this Species grow by Threes and Fives on Pedicles, and are of an oblong and pretty narrow Figure, and contracted into an acute Point, but rounder and broadest at the Pedicle: In their fore Part they are more or less finely crenated, of a darkish-green Colour, but clearer in the upper Part; the largest Leaf is at the Extremity of a Rib; the two next, which are larger than the others, adhere to the Middle of the Rib by Pedicles not an Inch in Length; the other two Leaves are very small, and seated on the common Pedicle: In its other Characters it agrees with the preceding; its serrated Leaves, resembling those of the *Sambucus*, shew it to be the *Negundo mas* of *Garcias* and *Acosta*. *Raii Hist. Plant.*

The Seeds of the Vitex are effectual in the Hysteric Passion; and provoke Urine, and the Menses. *Hist. Plant. adscript. Boerhaav.*

VITICELLA. A Name for the *Bryonia alba*.

VITILIGO. A Species of white Leprosy. See LEPRA.

VITIS.

The Characters are;

At the Joints of the Branches shoot forth Tendrils which clasp and twine themselves about whatever lies in their Way; the Flower is rosaceous, pentapetalous, and furnished with five Stamina; the Ovary grows in the Bottom of the Flower, is furnished with a short, hairy Tube, and becomes a soft, succulent Berry, containing several Seeds, generally four; the Flowers and Fruit are disposed in Clusters.

Boerhaave mentions twelve Sorts of *Vitis*; which are,

1. Vitis; sylvestris; Labrusca. *C. B. P.* 299. *Labrusca. Lemery's Hist. des Drogues.*

This is a Species of Vine which grows, without cultivating, by the Sides of Highways, and near Hedges; it bears a very small Grape, which, when ripe, becomes black, and sometimes ripens not at all.

The Plant is detersive and aperitive, and its Fruit is astringent. *Lemery des Drogues.*

2. Vitis; vinifera; ex cujus Uvis acerbis, immaturis, Omphacium exprimitur. *Boerh. Ind. A.* 2. 232. *Vitis.* Offic. Ind. Med. 124. *Vitis Vinifera.* Mont. Ind. 55. THE VINE.

The Vine is so well known to every Body, that it would be needless to spend time in describing it: With us it generally runs up the Sides of Houses, or Walls; in the Wine Countries it is planted in Vineyards, as a Standard Tree. The Differences of the Grapes, which grow on them, are almost as many as the Countries they grow in, as to their Colour, Taste, and Largeness; and there is as great a Diversity in the Wines produced from them. Amongst these, the Canary, the Malaga Sack, and the Alicant, for sweet Wines, are reckoned best; the Sherry and Mountain, for dry Stomach Wines; the Red and White Port, and the French, to drink with Food, are most in Esteem; and to these, for their Excellency, and grateful Taste, may be added the Muscadine, the Smyrna, and Cyprus Wines.

As to the Nature and Use of Wine, there have been so many Volumes written about them, that it would be superfluous to say much here: Moderately used, it is very cordial, and of great Service to Mankind. It strengthens the Stomach, helps Digestion, comforts the Bowels, and is the best Preservative against the Plague. *Miller's Bot. Off.*

The Vine is reckoned, by *Theophrastus* and *Varro*, among Trees; but because it stands in need of Assistance, and must be forced to trail on the Ground unless it meets with something to lay hold of, in order to support itself, it can hardly deserve the Name of a Tree, tho' its Trunk sometimes grows to the Size of a Man's Leg, or, perhaps, Thigh. The Antients numbered it among Trees, with respect to its Bigness, in which it really exceeds some Trees, according to *Pliny*'s Account of it, *Lib.* 14. *Cap.* 1. There is to be seen, he says, in the City *Populonia*, an Image of *Jupiter*, made out of one Vine, which has stood uncorrupted for many Ages. At *Massilia* [*Marseilles*] is a public Drinking-bowl, of the same Wood; and at *Metapontum* the Temple of *Juno* is supported by Pillars made of the Wood of the Vine. The Staircase by which you ascend to the Temple of *Diana*, at *Ephesus*, is made, as they say, of the Wood of a single Vine, in the Isle of *Cyprus*, where Vines grow to an extraordinary Bigness: Nor is there any Wood of a more durable Nature. There is no End of the Growth of this Plant; a whole House, or Villa, has been incompassed and overspread with the Branches and sequacious Tendrils of a single Vine. At *Rome*, in the Portico of *Livia*, one Vine, extending itself upon Poles, overshades the whole open Walk; and the same Vine has yielded twelve Amphoras of Must: They over-top the Elms in every Place; and it is reported, that *Cyneas*, the Ambassador of King *Pyrrhus*, admiring the Height of the Vines at *Aricia*, but disliking the austere

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auſtere Taſte of the Wine, merrily ſaid of it, that its Mother deſerved to hang on ſo high a Gibbet. Thus *Pliny*.

C. Bauhine divides the *Vitis* into the *Sativa* and *Sylveſtris*; or cultivated and wild: Of the *Sativa*, or cultivated, there is the *greater* Sort, of which there are very many Species, and the *leſs*. The Grapes of the larger differ in Colour and Size; for in ſome they are green, in others whitiſh, or of a deep yellow, or a deep black-red, or ceruleous, or a light-red. As to Form and Size in ſome Species, the Grapes are oblong, and of the Size and Shape of Prunes, and this Sort may be called *Pergulana* (perched, or ſtaked up); of others the Grapes are round, and bigger or ſmaller; ſome again have no Grain, or Stones, others a ſingle one, or perhaps two; a bearded Grape is more rarely to be met with. The leſſer Sort of *Vitis* bears a black Grape, very ſeldom white or yellow, with a very ſmall ſoft Kernel; they differ, alſo, in Taſte; ſome are ſweet, others ſharp, others of a muſky Taſte, ſuch as the *Vitis Apiana* of *Pliny*.

There is a Difference, alſo, in the Leaves; for ſome are larger, and more deeply cut, as the *Italica*, the Leaves being cut home to the Pedicle, and divided into acute Lobes; others are of a leſs Size. Some again are thinner, others thicker; ſome green, others red; others ſpotted; ſome hard to the Touch, others ſoft; ſome ſmooth, others a little hairy. Thus *C. Bauhine*.

Of the Kinds of Grapes *Pliny* thus briefly ſpeaks: The Kinds of Grapes, in reſpect of Size, Colour, Taſte, and Kernels, are innumerable, and they are ſtill multiplying upon us; here they glitter in Purple, there they ſparkle in Roſe-colour, or ſhine in Green; the whitiſh and the black Sort are common; the *Bumaſti* ſwell like turgid Breaſts, and others run into Length with long Kernels like thoſe of Dates, and ſo on.

That the Kinds of the *Vitis*, as well as of the Pear-tree and Apple-tree, are innumerable, was acknowledged by the Antients; ſince, as *Pliny* truly ſays, they are almoſt as many as the Differences of Soil, and new Sorts are produced every Day, and ever will be produced; but it would be extremely difficult, not to ſay impoſſible, to accommodate the antient Names of Vines to the moſt noted and cultivated modern Species, and, therefore, we ſhall not attempt it. as having neither Means nor Leiſure for ſuch an Undertaking.

3. Vitis; Corinthiacæ; ſive Apyrina. *J. B.* 2. 72. *Boerh. Ind. A.* 2. 232. *Uvæ paſſæ minores, Paſſulæ.* Offic. *Uvæ paſſæ minores, vel Paſſulæ Corinthiacæ.* C. B. P. 299. *Corinthiacæ.* Park. Theat. THE CURRANT VINE.

Theſe are a ſmaller Sort of Grapes, which took their Name from their growing in Plenty about *Corinth*, though we have them principally from *Zant* and *Cephalonia*; theſe they only gather off the Bunches, and lay them to dry in the Sun, and ſo put them up in large Buts.

Both theſe, and the *Uvæ paſſæ majores*, are opening and pectoral, helpful againſt Coughs and Conſumptions.

The Currants are more uſed in the Kitchen, than in Medicine. *Miller's Bot. Off.*

Currants are of a temperate Quality, mitigate the Heat in Fevers, allay Thirſt, and looſen the Belly. *Dale.*

4. Vitis; Apiana; Plinio. *C. B. P.* 298. *Uva Muſchatella.* Car. Step. Præd. Ruſt. 342.

5. Vitis; Pergulana; acinis Prunorum magnitudine & forma. *C. B. P.* 298.

6. Vitis; folio Apii. *J. B.* 2. 73.

7. Vitis; alba; dulcis. *J. B.* 2. 73.

8. Vitis; Frontiniaca. *C. B. P.* 299.

9. Vitis; nigra; dulcis; Vintint dicta.

10. Vitis; multiplex; alia; pro diverſitate, quæ obtinet in acinis ratione coloris, ſaporis, magnitudinis, admodum vari cultuque induſtrii Vindemiatoris ſemper novâ.

11. Vitis; quinquefolia; Canadenſis; ſcandens. *T.* 613. *Edera, quinquefolia Canadenſis.* Corn. 100.

12. Vitis; vulpina dicta; Virginiana; alba. *Plukn. Alm.* 392. *Boerh. Ind. alt. Plant.*

The Leaves, with the Tendrils of the Vine, being bruiſed, and applied, mitigate Pains of the Head, and with Polenta, cool the burning Heat and Inflammation of the Stomach. The Leaves applied alone have the ſame Effect, as being of a refrigerating and aſtringent Quality. The Juice of the ſame drank, is effectual in the Dyſentery, Spitting of Blood, the Stomachic Paſſion, and the Green-ſickneſs. The Tear of the Vine, which is a ſort of Gum, and concretes about the Stock, taken in Wine, expels the Stone, and uſed by way of Unction, cures the Lichen, Pſora, and Leproſy, firſt prepared by an Affriction of the Parts with Nitre. The ſame with Oil, frequently uſed to anoint the Hair, has the Effect of a Piſlothrum; but the moſt efficacious for that Purpoſe is, the Liquor diſcharged from the green Sprays by Exudation when burning, which, alſo, removes *Myrmecia* [a kind of little black Warts]. The Aſhes of the Sprays, with the expreſſed Huſks of the Grapes in Vinegar, cure a Condyloma and Thymus, affecting the Parts about the Anus, being anointed with it. The ſame is effectual in Luxations, and the Bites of Vipers, and applied with Oil of Roſes, Rue, and Vinegar, is good for an Inflammation of the Spleen. Botaniſts aſcribe ſtill more Virtues to the Aſhes and Lixivium prepared of them; but there ſeems to be but little Difference between the Aſhes of Woods and their Lixivia, except in their containing more or fewer Salts to emit them.

Grapes, in the Opinion of *Galen*, are the chief of all autumnal Fruit, more nutritive than any of the fugacious Sort, or ſuch as will not keep, and have leaſt of a bad Juice, eſpecially when perfectly ripe.

All freſh Grapes diſturb the Belly, and inflate the Stomach, for which Reaſon they are forbidden to be eaten in Fevers; but after they have been gathered and hung awhile, they are more innocent, and not only good for the Stomach, but reſtore a loſt Appetite, and conſequently are of Service in Languiſhings; they, alſo, render the Body ſoluble. But there is a very conſiderable Difference in Grapes: The ſweet are moſt nutritive, and fatten the Body, cauſe Inflations in the Stomach, and provoke to Stool; auſtere Grapes, on the contrary, nouriſh but little, and bind the Belly. *J. B.*

I remember to have read ſomewhere of a *German* Matron, who, during the whole Time of Vintage, which laſted a Month or two, in which ſhe lived upon Grapes, never uſed to drink, which ſhews that Grapes are good to quench Thirſt.

Every body knows, ſays *Palladius*, that the larger Grapes, which make the fineſt Shew, and are of an hard and dry Grain, are brought to the Table; but the moſt fruitful, which have the tendereſt Skin, and the richeſt Taſte, and eſpecially ſuch as ſooneſt fade, are ſet aſide for the Preſs.

Vitis, according to *Donatus*, in *Eunuch.* comes from *Veo*, which *Feſtus* expounds by *alligare*, to tye; and *Nonius*, by *vincire*, to bind about; and *inflectere*, to inflect or bend. *Raii Hiſt. Plant.*

The diſtilled Water of the Tops of Vines cut in the Spring, is aperient, deterſive, and of Service in the Stone, and Nephritis; and, uſed externally, is good to deterge the Eyes. The Leaves and Tendrils are aſtringent and refrigerating, and proper in a Diarrhœa and Hæmorrhages, and are uſed in Fomentations of the Feet; the young Branches or Sprays, are aperitive. The immature Fruits of the Vitis are called *Agreſtæ*, and the mature *Uvæ*, which increaſe an Appetite, and provoke to Stool. The Fruits dried in the Sun, are called *Uvæ paſſæ*, or *Paſſulæ*, the largeſt of which are the *Uvæ Damaſcenæ*, the ſmaller *Uvæ Corinthiacæ*, which latter are ſerviceable in Coughs, and to expectorate Phlegm, and to render the Body ſoluble. The Leaves boiled, are aſtringent; the Water, which diſtils ſpontaneouſly from the Plant, deterges cutaneous Defedations of the Face. The Tartar extracted from *French* Wines, is red; from *German* Wines, white. *Hiſt. Plant. adſcript. Boerhaav.*

There are ſeveral Sorts of Raiſins uſed, though *Dale* mentions only the two following:

1. *Paſſulæ Damaſcenæ.* Offic. *Paſſulæ maximæ; ſive Damaſcenæ, Zibebæ dictæ.* Schrod. IV. p. 172. *Vitis Damaſcena.* Hort. Reg. Par. 186. Tourn. Inſt. 613.

The *Zibebæ* ſtoned, and infuſed in a convenient Quantity of Spring-water, or a proper diſtilled Water, make a grateful Sort of Drink for ſick Perſons, and good to quench Thirſt. The Stones have an aſtringent Virtue, and are proper in Vomitings and Fluxes of the Belly, whether uſed internally or externally; they are roaſted and triturated for theſe Purpoſes. *Schrod.*

2. UVA PASSA MAJOR. Offic. *Uva paſſa major βᾶμας & Græcis forte. C. B. P.* 299. RAISINS OF THE SUN.

Raiſins of the Sun are made of the Grapes after the following manner: Cut the Stalks off the Bunches they deſign for that Uſe almoſt in two in the Middle, and by that means hinder the Sap from coming to them in any Quantity; and let them hang thus on the Branches, till by Defect of Nouriſhment, and the Heat of the Sun, they are ſufficiently cured; when they are put up into Caſks for Uſe. The *Malaga* Raiſins are managed another Way: They dip the Bunches of ripe Grapes in a boiling-hot Lye, made of the Aſhes of Vine-ſtalks, taking them out preſently, and then lay them on Boards in the Sun to dry, and afterwards they are packed up in Frails. *Miller's Bot. Off.*

Raiſins of the Sun, as well as the *Zibebæ*, and Currants, are all hot or temperate, lenient, looſen the Belly, correct Acrimony, are grateful to the Stomach, Lungs, and Liver, and mitigate a Cough. *Schroder.*

Raiſins, by their acrimonious and penetrating Heat, vellicate the Teeth and Gums, and do them no ſmall Injury, by diſpoſing them, when frequently eaten, to Putrefaction. *Raii Hiſt. Plant.*

VITIS ALBA. See BRYONIA ALBA.

VITIS

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VITIS IDÆA.

The Characters are;

The Flower is monopetalous, Bell-shaped, and has growing in it a globous Ovary, which becomes a soft umbilicated Berry, full of Juice, and containing small Seeds.

Boerhaave mentions five Sorts of *Vitis Idæa*; which are,

1. Vitis Idæa; foliis oblongis; crenatis; fructu nigricante. *C. B. P.* 470. *Tourn. Inst.* 608. *Boerh. Ind. A.* 2. 71. *Myrtillus.* Offic. *Vitis Idæa anguloſa.* J. B. 1. 520. *Raii Hiſt.* 2. 1488. Synop. 3. 457. *Vaccinia nigra.* Ger. 1229. Emac. 1415. BLACK WORTLES, or BILL-BERRIES.

The Bill-berry Bush is a small low Shrub about a Foot high or more, with many tough, flexible, angular green Twigs, bearing small, oblong, round-pointed Leaves, crenated about the Edges, among which the Flowers grow singly on short Foot-stalks, of a red dull Colour, in Shape of a Bottle, which are succeeded by round umbilicated Fruit, as big as Juniper-berries, and much of their Colour, full of a pleasant sweet purple Juice. It grows in Heaths among Fern, in a boggy Soil, and in thin woody Places; and flowers in *May*, and the Fruit is ripe in *July*. The Fruit only is used, and that but seldom in the Shops.

Bill-berries are cooling, binding, and grateful to the Stomach, and of use in Fluxes or Hæmorrhages. *Simon Paulli* says, they are much used against the Scurvy in *Norway*, and other Northern Countries. An agreeable Syrup may be made of the Juice, and used in all the fore-named Intentions. *Miller's Bot. Off.*

These Berries, according to *Dodonæus*, are cold and drying, with a manifest Astriction. They are good for an hot Stomach, quench Thirst, mitigate the Heat of burning Fevers, bind the Belly, stop Vomiting, cure a Dysentery proceeding from yellow Bile, and are effectual in the Cholera Morbus. But for these Purposes the Rob or Juice, inspissated with Sugar or Honey, is far preferable to the Berries, because these being of a cold Nature, being eaten crude, are offensive to a cold and weak Stomach, and disturb rather than bind the Belly. But *Casp. Hoffman* thinks, that the Berries which grow in the Sunshine, and are throughly ripe, are by no means of so cold a Nature as to injure a cold Stomach by their Crudeness.

The same Author is of Opinion, that the black Wortle-berries may rightly and regularly be substituted in the room of Myrtle-berries with these Conditions: First, that you take such as grow in Northern Countries, and not in *Italy* or *Spain:* Secondly, that they be not perfectly ripe: Thirdly, that they be not green or fresh gathered, but dry'd: Lastly, that you take not the crude Juice, which is considerably refrigerating from its immoderate Aqueousness, and somewhat astringent, but inspissated into a Rob.

That this Juice is of fine Parts, and vehemently astringent, is evident from the Marks or Stains which it leaves on the Hands and Mouths of those who eat the Berries, and which can hardly be washed out; hence it is used to dye Linen and Paper of a cerulean or sky-blue Colour.

The Shepherds and Peasants, who are Inhabitants of mountainous Countries, delight to eat the Berries; for their Sweetness is accompanied with an Acidity, which is very grateful to the Palate. *Raii Hiſt. Plant.*

2. Vitis Idæa; Zeylanica; odoratissima. *T.* 608. *Myrtus Zeylanica, odoratiſſima, Baccis niveis, monococcis.* H. L. 435.

3. Vitis Idæa; Æthiopica; Buxi minoris folio; floribus albicantibus. *H. A.* 1. 125. *Buxus, Africana, folio oblongiori, non ſerrato.* Indic. 238. H. R. D.

4. *An* Vitis Idæa; foliis Myrti angustissimis; longis; alternis?

5. *An* Vitis Idæa? *Quæ Buxus, Africana, rotundifolia, ſerrata. P. B. Prodr.? Plukn. Phyt. T.* 18. *H. R. D. Boerh. Ind. alt. Plant.*

It is called *Vitis* from its tough flexible Branches, with the Epithet of *Idæa*, because in former Times it grew plentifully on Mount *Ida*.

The Berries are astringent, and useful in the Diarrhœa and Dysentery: Of the expressed Juice is prepared a Rob, which is excellent for these Distempers. *Hiſt. Plant. adſcript. Boerhaav.*

Besides the foregoing Species of *Vitis Idæa*, *Dale* mentions the following;

VACCINIA. Offic. *Vaccinia nigra fructu majore.* Park. Theat. 1455. *Vitis Idæa magna quibuſdam, ſive Myrtillus grandis.* J. B. 1. 518. Raii Hist. 2. 1487. Synop. 3. 457. Tourn. Inst. 608. *Vitis Idæa foliis ſubrotundis exalbidis.* C. B. P. 470. *Vitis Idæa foliis ſubrotundis.* Ger. 129. Emac. 1416. THE GREAT BILL-BERRY.

This Plant is pretty shrubby, with a Multitude of round, ramous Branches, a Cubit and half in Length, covered with a light-red Bark, and of a pretty solid and close Substance. *Clusius* says the Branches sometimes spread on the Ground, are tough, and covered sometimes with an ash-coloured, sometimes a reddish Bark. The Leaves are of the Size of those of the common *Vitis Idæa anguloſa*, oblong, but round, glabrous, and not at all serrated like those of the other, somewhat glaucous in the lower Part, or, according to *Clusius*, whitish and venous, of an astringent and somewhat acid Taste, and caducous. The Flower is like that of the common Sort, White inclining to Purple, concave, the Lips being cut into five Lobes, reflexed outwards, and furnished with its proper Stamina. The Berries, which are equal to those of the Juniper, or *Myrtus Tarentina*, have a broader Umbilicus, whence proceeds an Apex; whence it happens, that the Berries are not so round as those of the common *Vitis Idæa*. They adhere to pretty long Pedicles, are of a grateful, subacid, and vinous Taste, and contain some minute yellowish Grains. The Root is hard, ligneous, and abounds with capillary Fibres.

It delights in cold and mountainous Places: *Clusius* found it among the *Austrian* and *Stirian* Alps; and *John Bauhine* in the Mountains of *Burgundy*, and other like Places. We have observ'd it in the mountainous Parts of *Cumberland*, and in great Plenty near *Gambleſby* six Miles from *Perith*, in the marshy Pastures on both Sides of the Road.

The Hunters and Ploughmen ascribe an inebriating Quality to the Berries, as we are assured by *Du Choul*, *Camerarius*, and others, especially when eaten pretty freely. The Leaves and Branches are of the same Use to the *Silesian* Dyers, as the *Sedum Alpinum* to those who live in the Countries amongst the *Alps*. *Raii Hiſt. Plant.*

VITIS MARINA. See FUCUS MARINA.

VITIS NIGRA. See BRYONIA NIGRA.

VITIS SYLVESTRIS, *trifolia*. A Name for the *Toxicodendron*; *triphyllum*; *glabrum*.

VITIS VINIFERA. See VITIS.

VITISALTUS. The same as CHOREA SANCTI VITI.

VITREA TABULA. The internal Table of the *Cranium*. See CAPUT.

VITREUS HUMOR. The vitreous Humour of the Eye. See OCULUS.

VITRIFICATIO. Vitrification; that is, the Conversion of any Body into Glass.

VITRIOLUM. Vitriol.

Dale mentions three Sorts of Vitriol; which are,

1. *Vitriolum cæruleum ſeu Romanum.* Offic. *Vitriolum cæruleum.* Charlt. Foss. 11. *Vitriolum Cyprinum cæruleum.* Worm. 25. *Chalcanthum Cyprinum.* Aldrov. Mus. Metall. 339. Matth. 1363. *Atramentum cæruleum Romanum coctum.* Kentm. 14. BLUE, or ROMAN VITRIOL, and CELESTIAL STONE.

It is a chrstalline Substance, ceruleous, or resembling the Sapphire, compact like Sugar-candy, and of an acid, austere, acrid, and astringent Taste. It is either made of a Solution and Crystallization of Copper, or imported from *Cyprus* and the *East-Indies*.

Roman Vitriol is heating, drying, highly astringent, and constipating, provokes Vomiting, and expels Worms. *Schroder.* This Sort is esteemed the best for Medicinal Use, and is very much commended for the Scabies and Ulcers contracted from the *Lues Venerea*. *Worm.* It is the Basis of *Digby's* sympathetic Powder, and cures the Scabies and Lepra.

2. *Vitriolum viride.* Offic. Charlt. Foss. 11. *Vitriolum viride ſeu Romanum.* Tourn. Matth. Med. 185. *Chalcanthum viride factitium*; *Atramentum Sutorium Officinarum.* Schw. 373. *Atramentum viride durum ſolide coctum.* 13. GREEN VITRIOL, or COPPERAS.

This, also, is a crystalline Substance, but of an herbaceous Colour, and more granulated and grumous like common Salt: It has the Taste of the preceding.

There are two Sorts of *Green Vitriol.*

3. VITRIOLUM ALBUM. Offic. Worm. 25. Geof. Prælect. 106. Charlt. Foss. 11. *Chalcanthum candidum.* Aldrov. Mus. Metall. 339. *Atramentum album durum ſaſſile.* Kentm. 13. WHITE COPPERAS.

White Copperas is a white granulous Substance, concreted like white Sugar, of the Taste of *Green Vitriol*; it is imported to us from *Germany*, being found in the Mines of *Goſſelaer*, of the Figure of Icicles, and transparent.

It agrees in Virtues with *Green Vitriol*; but is more used in Collyria than the other Vitriols. There is, also, prepared an excellent Emetic of *White Copperas* dissolved in Water, and coagulated by boiling to the Consistence of White Sugar, as we are informed by *Geoffroy Prælect.* 106. who thinks *Tournefort* mistaken in affirming, that it is made of *English Vitriol* dissolved in Water, and boiled till the Water is evaporated; what remains consisting of pretty large grumous Masses resembling White Sugar, which being exposed to the Air, assume a yel-

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a yellowiſh Colour on the Outſide. This *Vitriol* is of great Uſe in Styptic Waters, in Dying, and in making Ink. *Dale.*

Some derive the Name *Vitriol* from *Vitrum*, becauſe it has the Colour and Tranſparency of Glaſs; in *Greek* it is named Χαλκανθὸν, as if it were an Efflorescence of Braſs; and in *Latin Atramentum Sutorium*, becauſe it is uſed in blacking Leather. Vitriol is either natural or factitious. The former is found in Cryſtals, or Striæ, ſticking to the Roofs of Mines; and the latter is made by boiling the vitriolic Veins of ſome mineral Ores in Water, and afterwards letting them ſtand in the Cold to cryſtallize; or by corrupting and fermenting the *Pyrites*, or Marcaſite, and then mixing it with Water, from which Vitriol is afterwards obtained by Coction and Cryſtallization. This Way of making Vitriol ſeems to have been unknown to the *Greeks*.

White Vitriol is brought from *Germany*, made up in Loaves, like Sugar, and is of a ſweetiſh aſtringent Taſte: They are miſtaken who think that white Vitriol of *Goſlar* is only the Green, calcined by the greateſt Degree of Fire; for it is found in proper Mines, like a downy Efflorescence, which being diſſolved in Water, to a due Conſiſtence, is afterwards boiled till it concretes into a white Maſs, like Sugar. Sometimes little Pieces of it are found in the ſame Mines, tranſparent like Cryſtal. This Vitriol contains an imperfect Iron Ore, or, perhaps, an Iron Ore mixed with Calamine or Lead. Blue Vitriol is dry to the Touch, and concreted into blue Cryſtals, like Sapphires, of a rhomboidal Figure, flattened, and conſiſting of ten Sides. It is brought from ſeveral Places, eſpecially from *Hungary* and *Cyprus*; and its beautiful blue Colour is owing to the Copper which it contains. The Taſte of it is very acrid and auſtere. Green Vitriol has different Names, from the different Places where it is found; as *Roman*, *Swediſh*, *Engliſh*, and *French*. It contains a large Portion of Iron, from whence its green Colour is derived: It is kept in the Shops, either in large rhomboidal Cryſtals, or in Heaps of ſmall cryſtal Grains, ſometimes a little unctuous, and ſticking to the Hands. It is of an acid ſtyptic Taſte; and indeed it cannot well be ſuppoſed to have any other, Vitriol being an acrid Salt, which having corroded Iron or Braſs coagulates with them, and concretes into a pellucid Maſs, either of a green or blue Colour, according to the Metal which it has diſſolved. Some Authors mention likewiſe red Vitriol; but I have not been able to learn what it is.

Vitriol is obtained by various Arts from Waters, Earths, vitriolic Stones, and eſpecially from the *Pyrites*. In *Galen*'s Time, blue Vitriol was made in *Cyprus*, by the Heat of the Sun exhaling the Humidity of a vitriolic Water. In ſome Places of *Hungary*, the ſame Vitriol is now made by boiling and evaporating a Water of the ſame Kind, and the green Vitriol is made by a Method not much different, in other Places of *Germany*. In ſome Places it is made by frequent Ablutions of an Aſh-coloured Earth, marked with Spots of different Colours; ſome of which look like the Ruſt of Iron, others like Verdegriſe, with a ſtrong ſulphureous Smell, and an unpleaſant bitter Taſte: This Vitriol is therefore compoſed of a Mixture of Iron and Copper; and accordingly its Colour is a Mixture of Blue and Green. In *England*, at the Diſtance of about a League from *London*, green Vitriol is made from the *Pyrites*, which are heavy denſe Stones of a dark Colour on the Outſide, but their inner Surface is radiated from the Centre to the Circumference, the Rays ſhining like *Bath* Metal: They are perfectly inſipid to the Taſte, and by being expoſed to the open Air, for a ſufficient Length of Time, they acquire an inward Kind of Fermentation, and ſpontaneouſly fall to Pieces. In the Cracks or Openings, we obſerve a certain Sort of white, ſaline, downy Efflorescence, of an acid ſtyptic Taſte. Afterwards the whole Subſtance of the Stone is diſſolved, and falls into a fine Powder of a ſaline and vitriolic Taſte, and ſulphureous Smell. If freſh *Pyrites* be burned, and calcined in the Fire, the Fumes which they emit ſmell like Brimſtone, and a red Calx remains, which contains ſome Iron and Copper. The Way of extracting Vitriol from the *Pyrites* is this:

The entire Stones are ſpread about in a large Area, the Height of about three Feet; and there they lie expoſed to the Air for three Years, being turned one in ſix Months, that the Rays of the Sun may calcine them the better, and the Rains penetrate them more eaſily. By this means they are reduced to a vitriolic Earth, which being well waſhed with Rain-water, the Liquor is afterwards conveyed by Pipes into Ciſterns: Then they boil it to a due Conſiſtence, in large leaden Veſſels, throwing in a Quantity of old Iron, which is preſently conſumed by the Lixivium. Afterwards the Liquor is ſet to cool in other Leaden Veſſels, with Sticks fixed a-croſs, about which the Vitriol cryſtallizes.

The *Pyrites* of *Sweden* and *Liege* are very full of Sulphur, and the Way of preparing Vitriol from them, ſhall be related in ſpeaking of that Mineral. Sulphur is obtained from theſe *Pyrites*, *per Deſcenſum*, and then the remaining Maſs is calcined, and afterwards made into a Lixivium; which being ſtrained, is boiled in leaden Veſſels, and then ſet to cryſtallize, as before, in a cold Place.

A Solution of Vitriol turns the Tincture of *Heliotropium* into a faint purple Colour, coagulates Milk, turns Syrup of Violets to a greeniſh Colour, but does not change a Solution of corroſive Sublimate. When it is mixed with a Solution of Salt of Tartar, or Lime-water, the Colour becomes a little yellowiſh, and it communicates a black or dark-purple Tincture to the Infuſion of Galls, which indeed is peculiar to Vitriol.

By Diſtillation an acid Spirit is obtained from Vitriol, by a very great degree of Fire, called by the Name of the *Spirit* or *Oil of Vitriol*, which turns the Tincture of *Heliotropium*, and Syrup of Violets, to the Colour of Fire, coagulates Milk and Blood, and raiſes a ſtrong Fermentation and Heat with any alcaline Salt. The Oil of Vitriol, or that ſtrong acid Liquor obtained from it by Diſtillation, when mixed with common Water, raiſes an intenſe Heat; with Sal Ammoniac it raiſes an Effervescence, but generates Cold, though the Fumes that ariſe feel hot.

After this Diſtillation is over, a blackiſh or red Earth remains in the Retort, called *Colcothar*, and it is the Calx or Crocus of either Iron or Copper, according to the Nature of the Vitriol that hath been diſtilled. From this Proceſs it is evident, that Vitriol is compoſed of an acid Salt, ſubdued by metallic Parts; which is, alſo, eaſily demonſtrated from the artificial Ways of producing Vitriol. If Spirit of Vitriol be poured on the Filings of Iron, a very good Vitriol is obtained; and if Copper Plates, ſtratified with Sulphur, be calcined in a Crucible, the Water in which this Calx is made to boil for ſome time, if evaporated, will leave behind a true blue Vitriol.

The Virtues aſcribed by Chymiſts to Vitriol are paſt Belief; neither do we find the Event to anſwer their Promiſes. *Dioſcorides* mentions an emetic Quality of it; and ſays, that, diſſolved in Water, it is good againſt Worms in the Inteſtines, and after eating poiſonous *Fungi*. He tells us farther, that this Solution, ſnuffed up the Noſe, purges the Head, and reckons it among the aſtringent, heating, and cauſtic Medicines. *Pliny* commends it in Diſeaſes of the Eyes, Fluxes of the Blood, and for the Cure of Ulcers, and *Galen* made Uſe of it in Collyriums. At preſent it is uſed as an Emetic, Vermifuge, Styptic, Detergent, and Antiphlogiſtic; but is ſeldom given inwardly without Preparation. Externally, white Vitriol is principally uſed in Collyriums, to allay an Inflammation of the Eyes, and ſtop their Running; and it is thus preſcribed:

Take of white Vitriol, one Scruple; of Roſe or Plantain-water, one Ounce: Let the Vitriol be diſſolved in the Water, and ſtrain the Solution, which, if it be too acrid, may be made milder, by the Addition of more Water. Or,

Take of the common or *Florentine* Orris, a Scruple; Roſe and Plantain-water, of each three Ounces: Boil them over a gentle Fire till a third Part be conſumed; and in the ſtrained Liquor diſſolve eight Grains of Vitriol for a Collyrium.

Powder of blue Vitriol is applied to the Extremities of the bleeding Veſſels in Wounds, and ſtops the Bleeding, by cauterizing the Veſſels, and coagulating the Blood.

Among the Preparations of Vitriol, the firſt is Purification, called *Gilla* of Vitriol, in which white Vitriol is moſtly made uſe of; it is purified by Solutions, ſtraining and drying, twice or thrice repeated; and then being taken, from a Scruple to a Dram at a Doſe, in a proper Vehicle, will excite Vomiting: This is recommended by *Paracelſus*, and other Chymiſts, as an excellent Emetic, as not only cleanſing the Stomach, by gentle Vomiting, but, alſo, ſtrengthening both Stomach and Inteſtines afterward, by its Aſtringency: Whence it is given with Succeſs in Diarrhœas and Dyſenteries. This *Gilla* was very much in Uſe before antimonial Emetics were known, and the Uſe of Ipecacuanha was diſcovered, but is now almoſt left off. *Geoffrey.*

The Analysis of Vitriol into Spirit, Oil, and Colcothar.

1. Take eight Pounds of the common green Vitriol of *Goſelar*, put it into two earthen Long-necks, each containing four Pounds; cover them with a Tile; ſet them upon an Hearth, and ſurround them with Fire, that the Whole may grow gradually hot: The Vitriol will then begin to fume, and, upon increaſing the Fire, and bringing it nearer, to melt; and, upon making the Fire ſtill ſtronger, to thicken and turn grey: Then ſurround the Long-necks on all Sides ſo with Fire, that the Matter may grow yellow, and begin to appear red

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at the Sides of the Veſſels. Now let all cool: The Long-necks will be cracked: Take out the Matter, and beat it to Powder; it will be of a yellow Colour. This is the Calcination of Vitriol, in order for diſtilling the Spirit, and Oil thereof. This Operation ought to precede, otherwiſe the Diſtillation would be tedious, on account of the Time required to draw over the aqueous Phlegm, or elſe the Receivers would crack, on account of that Phlegm ariſing hot into them; and the Diſtilling-veſſels, alſo, burſt, as being forced by the melted Matter. Hence the Matter is to be calcined only ſo long as till it ceaſes to melt in the Fire. In this firſt Part of the Operation the eight Pounds of Vitriol are reduced to five.

2. Put theſe five Pounds of calcined Vitriol, firſt bruiſed, into a ſtrong Long-neck. Let the Long-neck be large enough to hold double the Quantity; ſet it in a Furnace; when properly placed in the Furnace, and the Wall is built up, apply an Adapter to the Mouth of the Long-neck, luting it on carefully, with a Mixture of Clay and Lime; wrap a wet Linen Rag about the other End of the Adapter, and apply thereto a very capacious Glaſs Receiver, ſo as exactly to fit, and ſo as the Adapter may not reach above two Inches into it. Let this Receiver reſt horizontally upon a Bench, ſo that the Axis both of the Receiver, the Adapter, and the Long-neck, may lie in the ſame horizontal Plane, leſt otherwiſe the Neck of the Adapter, or the Receiver, ſhould be preſſed upon. Lute the ſecond Juncture in the ſame manner as the firſt, and put Linen Rags about it, ſpread with the ſame Luting; and thus leave the Veſſels for twenty-four Hours, that the Luting may grow dry.

3. Make the Fire with proper Cautions; a white Fume will firſt riſe, and the Receiver grow warm; keep the Fire up in this State for ſix Hours; oily Veins will afterwards run down the Sides of the Receiver; and in this State again continue the Fire for ſix Hours; then for ſix Hours longer keep it up to its utmoſt Height, that the Long-neck may be thoroughly red-hot; a thick Oil will thus come over. If the Vapour ſhould paſs through the Luting, put a Linen Rag, ſpread with the ſame, and well heated upon the Crack; and thus it will be ſtopped: Though the Fire ſhould be ever ſo long continued, the Vapour would not ceaſe to riſe, but the Produce would not defray the Coſt; ſo that I judge eighteen Hours ſufficient. Now, therefore, let all cool, till the Adapter is but juſt warm, and the Receiver grown quite cold.

4. Have then ready at hand a Bottle with a narrow Neck, and fitted with a wide Glaſs-funnel; then carefully moiſten the Rags, and the Luting applied to the Mouth of the Receiver, and take them away gently, with Care to prevent the Dirt from falling in, the Fume from coming out ſo as to prove offenſive, and the Glaſs from cracking, by being moved obliquely. Take it therefore away in a ſtrait Line, and avoid the noxious Fumes. Cleanſe the Mouth of the Receiver, that no Luting may drop in; then pour the Liquor out of the Funnel into the Bottle, ſtop it up, and ſet by the Receiver for the like Purpoſes. I have uſually thus obtained one-and-twenty Ounces of thick, black, ſtrong, and ſmoking Oil of Vitriol. A red, blackiſh, light, powdery, auſtere Calx, remains in the Long-neck, to the Quantity of fifty-two Ounces; ſo that five Ounces are loſt in the Operation.

REMARKS.

And thus the Oil or Spirit of Vitriol is prepared, which has numerous Uſes in Chymiſtry and Medicine; for it is a moſt powerful ponderous Acid, and a great Preſervative, though itſelf a Cauſtic; and hence Vitriol conſiſts of this, and Colcothar, and Phlegm. This Oil of Vitriol will ſcarce boil without a Fire of ſix hundred Degrees. If put into a Glaſs Body, and urged with a Sand-heat of five hundred Degrees, it yields its wild ſuffocating Spirit and Water, then changes from black to limpid, and becomes exceeding ponderous and fiery; and if poured into a Glaſs wet with Water, it produces ſuch a Heat as inſtantly to crack the Glaſs: It attracts Water out of the Air. If four Ounces of this Oil be, by a Sand-heat, diſtilled in a little Retort, with a long and very curved Neck, ſo as that one Drop may follow another at the Diſtance of ſix Seconds, and fall into fair Water, contained at the Bottom of the Retort, as pure and perfect an acid Spirit will be thus obtained, as Oil of Sulphur by the Bell: But this requires a ſkilful Operator. Each Drop, when it falls into the Water, makes an Hiſſing, as if Fire had fallen therein: But if a falling Drop touches the Glaſs, it immediately cracks it, as if it were cut with a Diamond. If a ſtronger Fire be uſed, the Neck of the Retort cracks, the Labour is loſt, and a pernicious ſuffocating Fume exhales, which ought to be cautiouſly avoided. This Proceſs is otherwiſe noble, and of excellent Uſe, at may be learnt from a prudent Exerciſe of Chymiſtry and Medicine. *Paracelſus* deſcribes the beſt Method of preparing this Spirit to be by diſtilling recent Vitriol to Dryneſs, in a Veſſel of *Heſſian* Earth, and cohobating the Liquor upon the Remainder, the oftener the better, at laſt uſing the utmoſt Violence of Fire; and by this means he promiſes a Liquor ſerviceable in many Caſes. The Direction is ingenuous, and Artiſt-like, provided the Veſſel be kept from burſting by too large a Quantity of the dry Vitriol. The Caution is to uſe a little Quantity at once, in a Proportion to the Veſſel. *Boerhaave's Chymiſtry.*

The Maſs that remains after the Diſtillation of Vitriol, called *Colcothar*, is a red martial Earth, ſtill impregnated with ſome Quantity of acid Salt, and by often waſhing and drying, it becomes an Aſtringent, which is uſed externally to ſtop Bleeding in Wounds; and from the Water in which it is waſhed, a Salt is obtained, called the *fixed Salt of Vitriol*, or *Salt of Colcothar*. When the Colcothar has not been much calcined, it remains white and pellucid, not emetic, but diuretic, and aperient. Though this Salt is ſo much fixed as not to riſe by a very great Degree of Heat, continued for ſeveral Days, yet it is eaſily made volatile by means of Borax, and is ſublimated in the Form of ſilver-coloured ſaline Flowers. This is the ſedative Salt of the great *Homberg*, and is thus prepared:

Take the fixed Salt of Vitriol well calcined, and Borax, of each two Ounces: Diſſolve them ſeparately in four Pints of warm Water; and then, having mixed the Solutions, paſs the turbid Liquor through Cap-paper, and then diſtil it in a Glaſs Alembic, to Dryneſs; which being done, white ſaline ſilver-coloured Flowers will be ſublimed. Theſe are to be gathered, and kept for Uſe. The fixed Salt that remains in the Bottom of the Alembic, by a new Affuſion of Water, may be fitted for a new Diſtillation, which being continued to Dryneſs, freſh Flowers will ariſe; and this Operation may be repeated till all the Salt is ſublimed. The ſame Preparation may be obtained by taking Oil of Vitriol inſtead of the fixed Salt, and mixing it with twice its Weight of Borax. In this Caſe there is no Precipitation; but nevertheleſs Flowers are raiſed of the very ſame Kind with the former.

Theſe Flowers are almoſt inſipid to the Taſte, and not eaſily diſſolved in Water. They calm the feveriſh Heat of the Blood, and eſpecially in burning Fevers, they prevent or remove delirious Symptoms, and allay ſpaſmodic Affections, whether hypochondriacal or hyſterical, at leaſt for a time. In a Word, this Salt is an excellent Anodyne, and has a juſt Title to all the Virtues aſcribed by Chymiſts to Vitriol, Sulphur, or what they call the *Archæus Sedator*. The Doſe is from one to ten Grains, in any proper Liquor. It is however unſafe to order this Salt in Inflammations of the Lungs, Spitting of Blood, and other Inflammations of the Thorax; for though it be inſipid to the Taſte, yet it contains latent *Spicula*, which being gradually diſengaged in the Body, may irritate and vellicate the Membranes of the Lungs, and ſo bring on a Cough.

Vitriol is, alſo, the Baſis of the famous ſympathetic Powder, to make which they calcine *Roman* Vitriol by the Rays of the Sun in the Dog-days, to a white and yellowiſh Powder, and keep that Powder for Uſe in Veſſels cloſe ſtopped. *Digby*, and others, have ſaid wonderful things of this Preparation, which are not confirmed by Experience. However, it certainly ſtops Bleeding, when applied immediately to the open Extremities of the Veſſels; and hence ſome have endeavoured to cure Wounds by the Uſe of it, mixing only a ſmall Quantity of Gum Tragacanth in caſe of a purulent Diſcharge. *Geoffroy.*

The dulcify'd Oil of Vitriol.

Ever ſince Chymiſtry began to be cultivated and improved, the Diſtillation of a ſweet Oil from Vitriol has been known. *Baſil Valentine*, and *Paracelſus*, make Mention of it; for as the antient Chymiſts endeavoured, beſides their own Secrets, to find a Subſtance for converting the more ignoble Metals into Gold, ſo they were perſuaded, that the Matter of this Subſtance was to be ſought for in Vitriol; for which Reaſon they have ſubjected this Salt to various Analyſes by Fire, and obtained ſeveral Preparations from it, as may be ſeen in the Writings of the moſt celebrated Chymiſts, who accounted Vitriol the Matter of the true Philoſophers Stone, as is evident from that remarkable Canon of the Chymiſts: *Viſita Interiora Terræ, Reperies Ibi Occultum Lapidem Verum Metallorum.* Viſit the interior Parts of the Earth, and you will there find the true ſecret

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ſecret Stone of Metals. The initial Letters of the *Latin* Canon expreſs the Name of *Vitriol*, from which various Preparations have been obtained; but none more remarkable than that Proceſs by which Oil of Vitriol is rendered ſweet. This is mentioned by *Valerius Cordus*, from whom *Conradus Geſner* has taken the Proceſs, which in *Euonymus*'s *Theſaurus de Remediis Secretis*, is ordered to be carried on in the following Manner:

Take of the moſt acrid burning Wine thrice ſublimated, five Ounces; and as much of the auſtere Oil of Vitriol: Mix in a *Venetian* Glaſs; put it in a ſmall Cucurbit with a narrow Mouth, and lute up the Orifice cloſe, and let it ſtand thus for a Month or two: Then pour it into a Cucurbit with an annexed Alembic; then put it in a ſmall Furnace, and cover the Half of it with Aſhes; then apply a Receiver, lute the Joinings well, and extract the five Ounces of burning Wine which you have poured in: But that this may be more ſafely done, place the Cucurbit in *Balneo Mariæ*; for thus the Wine will aſcend without the Oil. When you have extracted the Wine, place what remains in a Furnace, ſo that the Sand may reach the Middle of the Cucurbit; then applying another ſmall Receiver, lute the Joining carefully; then apply a moderate Fire, and gradually extract the Moiſture till none appears left at the Bottom, always taking care ſo to regulate the Fire, that the Liquor may not boil up to the Pipe of the Alembic; for if ſuch a Boiling ſhould happen, you cannot check it, nor hinder it from going over into the Receiver, ſo that all the Oil is loſt; for it boils very eaſily. Then you will ſee, that an aqueous and pinguious Humour are contained in it. You muſt ſeparate the one from the other, ſo that nothing aqueous may be left in the Oil; for the Water corrupts the Oil, which, when ſeparated, is to be preſerved for Uſe. It is to be carefully kept, becauſe only a ſmall Quantity of it is obtained from one Pound of the auſtere Oil, and it eaſily evaporates on account of its aereal Quality. It is good againſt all Putrefactions in the Body, and againſt the Plague; it is, alſo, proper for carrying Pus, and thick and viſcid Humours, out of the Lungs, in a Pleuriſy, a Peripneumony, and an uneaſy Cough; for it may be ſafely taken internally, and neither ſuffers the Formation of the Stone in the Kidneys, nor in the Bladder. It, alſo, cures the Bladder when exulcerated. The Doſe is one, two, or three ſmall Drops, in moderately temperate Wine.

Crollius, in *Baſilica Chymica*, orders the ſweet Oil of Vitriol to be prepared thus:

Take of the rectified Oil of Vitriol, one Part; and of Alcohol, four Parts: Digeſt in a Vapour Bath for ſome Months, and afterwards diſtil; and thus you will have floating on the Water an Oil of Vitriol of a grateful Taſte and Smell, and of great Efficacy in Medicine.

Theſe are the two Proceſſes I have found in the Writings of the moſt antient Chymiſts. Now it may juſtly be queſtioned, whether this Proceſs anſwers, ſince I never remember to have met with it in any other Author, eſpecially with this Detail of Circumſtances and Cautions. Hence, it is probable, that the Chymiſts of the ſucceeding Age either did not prepare it, or did not look upon the Proceſs as genuine, tho' in reality it is moſt true.

That deſcribed by *Crollius*, is the true *Spiritus Vitrioli Dulcis*; and, as in this Preparation, he has omitted the principal Circumſtances added by *Geſner*, it is juſtly to be doubted, whether he ever prepared ſuch a ſweet Oil of Vitriol, eſpecially becauſe he informs us, that the Oil floated on the Water; whereas on account of its Weight, it rather ſubſides to the Bottom. *Hartman*, alſo, in his Notes on *Crollius*, doubts with reſpect to this Proceſs, and ſubſtitutes another ſweet Oil of Vitriol in its ſtead; which is prepared thus:

Boil Oil of Vitriol in a new iron Pan with common Water, till the corroſive Salt is collected at the Bottom of the Pan; and then the reſt of the Oil of Vitriol becomes ſweet. The ſame Effect is produced by extinguiſhing red-hot Iron, for ſeveral times, in Oil of Vitriol; but by this means the Virtues of the Oil are greatly changed, and its medicinal Effects loſt.

Every one muſt be ſenſible, that Oil of Vitriol, when mixed with Iron, loſes its corroſive Quality, but degenerates into a vitriolic Liquor, which, in ſome meaſure, ſubſides to the Bottom. But this is not the ſweet Oil of Vitriol which ought to reſemble that of Olive-oil, to be inflammable, of a fragrant Smell, and aromatic Taſte, leaving no Acidity on the Tongue. It ought, alſo, to be diſſolvable in highly rectified Spirit of Wine, and to be poſſeſſed of anodyne and ſedative Virtues. The celebrated Author of the Diſſertation *de Vitrioli Elogiis*, ſpeaks in the following Manner of the *Oleum Vitrioli Dulce*: "*Paracelſus* boaſts, that he is able from Vitriol to obtain a "Spirit, or rather a ſweetiſh Oil of a green Colour, by means "of which, he affirms, he can cure the Epilepſy. The Art "of obtaining this puzzles the moſt expert Chymiſts, ſince, "ſo far as I know or remember, no one has ventured to affirm, "that he was Maſter of ſuch a Secret." But I have obſerved, that two Centuries ago, the Preparation of this Oil was known to *Geſner*, and *Valerius Cordus*, the Truth of which will be more evinced by what follows. When, without any Knowledge of *Geſner*'s Proceſs, I above twenty Years ago had prepared ſome ſweet Spirit of Vitriol, I found this highly fragrant Oil. The Proceſs, as carried on by me, is as follows:

Take one Pound of Oil of Vitriol by Rectification freed from all its Phlegm, and of highly rectify'd Spirit of Wine entirely free from Water, ſix Pounds; to which pour the Oil of Vitriol. This produces a great Heat and Noiſe, reſembling that produced by red-hot Iron immerſed in cold Water. The Mixture becomes warm, and acquires a red Colour, and a grateful Smell; a few Days after, diſtil from a Cucurbit, with the Sand laid pretty high about it. Thus there is firſt obtained a pretty fragrant Spirit of Wine, and afterwards a more fragrant one. If the Mixture begins to be changed into a black Subſtance at the Bottom of the Cucurbit, the Spirit is to be removed, and another ſmall Receiver applied; the Fire in the mean time being very mild and gentle; for unleſs this Caution is obſerved, the Whole of the black Maſs ſuddenly comes over, and all the Labour is loſt. But if we carry on the Proceſs with a gentle Fire, we obtain a Phlegm of a ſulphureous Taſte, together with at leaſt five Drams of an Oil, which ſubſides to the Bottom. This ſulphureous Water is decanted, and we obtain a ſweet ethereal Oil, of a grateful and penetrating Taſte and Smell; and this is to be carefully preſerved in a Phial.

1. That there is an Acid in this ſweet Oil of Vitriol is obvious from this, that if any of it is put in a Silver Spoon, and held over a Candle, it contracts a reddiſh Colour, becomes acid, and tinges the Spoon with a black Colour.

2. If this aromatic Oil is for ſome Months kept in a Glaſs covered with a Swine's Bladder, it ſucceſſively corrodes it, and that which remains in the Phial contracts a red Colour, and an acid Taſte.

3. If it is boiled in a Phial with Quickſilver, it attacks the Quickſilver.

4. This aromatic Oil, when recent, is thoroughly diſſolved by highly rectified Spirit of Wine, to which it communicates its Taſte and Smell, together with an anodyne and ſedative Quality, highly beneficial in all Pains and Spaſms.

5. This Spirit of Wine impregnated with ſweet Oil of Vitriol, if mixed with a ſmall Quantity of the Solution of Gold, makes a yellow Tincture, which, when dropped on Iron, tinges it with the Colour of Gold.

6. When this Solution of Gold ſtands for twelve Hours, a black Powder ſubſides to the Bottom, a Sign that the Sulphur of the Vitriol unites with the Powder of the Gold, and that both of them are precipitated to the Bottom.

This curious and remarkable Proceſs clearly diſcovers the Production of ethereal and diſtilled aromatic Oils. *Glauber* informs us, that highly-rectified Spirit of Wine may be converted into Oil, if it is mixed with Oil of Salt concentrated with *Lapis Calaminaris*. I tried this Experiment, but could obtain no Oil, beſides the ſweet Spirit of Salt; but by the Help of this Experiment I obtained an Oil, from the Production of which we learn, that highly-rectified Spirit of Wine is nothing but an æthereal Oil by the fermentative Motion reſolved into the minuteſt Parts, and intimately mixed with the Phlegm: But when the Oil of Vitriol intimately unites itſelf with the oleous Particles disjoined in the Spirit of Wine, it is again coagulated into an Oil.

Hence it is obvious, that an Acid may enter the Mixture of diſtilled Oils, and that without a manifeſtly acid Taſte it may be concealed and covered by the Oil and Sulphur: By the Admixture of the acid Sulphur of the Vitriol, ſince the whole Oil is ſulphureous, the pinguious and oleous Parts of the Spirit of Wine acquire a new and penetrating Taſte; for which Reaſon the Sulphur of Vitriol, in a liquid Form, may juſtly be accounted an excellent Anodyne, of great Efficacy in the Cure of Diſeaſes, as I have often found from Experience. *Hoffman. Obſ. Phyſ. Chym.*

The fixed Anodyne Sulphur of Vitriol.

We ſhall now conſider that black Maſs, of the preceding Proceſs, which, in Diſtillation, remains at the Bottom: If to this

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this a ſufficient Quantity of common Water is poured, the Acid is diluted, and the Liquor, aſſuming a browniſh Colour, is, by a due Evaporation, ſo concentrated, as again to yield true Oil of Vitriol; with which, and the Addition of the highly-rectified Spirit, we may again attempt the Preparation of the Spirit and ſweet Oil of Vitriol. All the Acidity being waſhed away by the common Water, there remains, in the Filtre, a ſubtile Powder, of a blackiſh Colour, and which, when dried, and thrown upon live Coals, flies all off with a ſulphureous but not a fetid Smell. If this Powder is put into a Crucible, and urged by a ſtrong Fire, it becomes red-hot, and a conſiderable Part of it is diſſipated in the Air.

Upon laying this Powder, *ſtratum ſuper ſtratum*, with Plates of Silver, theſe were not diſſolved, as they generally are by mineral Sulphur; then I put two Drams of Salt of Tartar into the Crucible, in order to melt the Silver; after the Addition of a Dram and an half, I obtained an alcaline Maſs, of a rediſh Colour, like that Liver of Sulphur which is obtained from a like Treatment of Salt of Tartar, the *Arcanum Duplicatum*, and Powder of Charcoal.

Hence we may conclude, that it is a fixed Earth; and we are carefully to examine whether its Origin is to be derived from the Oil of Vitriol, or from the oleous and ſulphureous Part of the Spirit of Wine; whether there is a peculiar medicinal, ſedative, and anodyne Quality in it; and whether there is not, perhaps, an anodyne Sulphur of Vitriol in it.

It is a common Opinion, that, in the Diſtillation of Vitriol with an Acid, by means of the rapid Motion of the Fire, ſome ſubtile, chalybeate, or coppery Parts, are elevated, and aſcend: For this Reaſon, the Antients, and eſpecially *Baſil Valentine*, preferred red Oil of Vitriol to that which is white, becauſe they thought the former contained Sulphur of *Mars* and Copper, on which its Colour depended. But that this is falſe, is demonſtrated, partly by the Rectification of the Oil of Vitriol, in which it becomes limpid like Water, without any Remainder of coloured Particles; and partly by the momentaneous Converſion of white Oil of Vitriol into red, by the Addition of a ſmall Quantity of Oil, any inflammable Subſtance, or of a Piece of Paper.

Many eſteem the Earth, left after the Diſtillation of the highly-rectified Spirit of Wine, and the Oil of Vitriol, a metallic chalybeate Earth: But I tried an Experiment upon it with a large Burning-glaſs, upon which, it was immediately evaporated into the Air; nor was there any fiery Ebullition like that which always happens in the Fuſion of Iron by means of ſolar Fire; nor did Spirit of *Sal Ammoniac*, when poured to it, extract any Copper, as was evident from the want of a bluiſh Colour, which, by an Admixture of an urinous Spirit, always diſcovers itſelf in Copper.

I am, therefore, of Opinion, that this highly-black and light Earth remaining in the Cucurbit after the Diſtillation of ſweet Oil of Vitriol, and edulcorated by Water, is the phlogiſtic Part of the highly-rectified Spirit of Wine, and of the Vitriol: And that it is ſo, may, I think, be demonſtrated, in the following manner: All Oils even of the moſt ſubtil and æthereal kind, when kindled exhale a black Smoak, which, when collected, conſtitutes a black combuſtible Powder; now it is equally certain, that all inflammable Spirits are only ſubtil Oils by a fermentative Motion united with Phlegm: But as diſtilled Oils, when mixed with Oil of Vitriol, firſt become red, and then, after Diſtillation, and Evaporation, leave a large Quantity of phlogiſtic Earth; ſo it is not to be wondered at, if an inflammable Spirit, in the ſame manner mixed with Oil of Vitriol, ſhould, by its intimate Union with it, not only contract a red Colour, but, alſo, leave a large Quantity of combuſtible Earth, and diffuſe a Smell like that of Sulphur; for that fetid Smell, diffuſed by its Smoak, when kindled, ariſes from acid Particles mixed with a ſulphureous Earth.

In this Experiment it is obſervable, that the thick and black Matter, ſwelling like kindled Sulphur, and the Phlegm of an acid Taſte, do not appear till the Diſtillation is almoſt over, the ſuperfluous inflammable Spirit conſumed, and the earthy Particles of the Spirit of Wine, and Oil of Vitriol left: Theſe volatile and oleous Particles, being mixed with acid fixed Particles, ought, alſo, to be ſeparated by a gentle Fire; for by a ſtrong Fire, they will quickly elevate, and raiſe all that ponderous Maſs, ſo that it ſhall come over a long Cucurbit, and the Alembic. Hence we learn, that a ſmall Quantity of volatile Matter is, on the Approach of Heat, capable of raiſing a great deal of the fixed Subſtance with which it is mixed. *Fr. Hoffman. Obſ. Phyſ. Chym.*

VITRUM. Glaſs. *Vitrum Antimonii* is Glaſs of Antimony. *Vitrum Saturni*, is Glaſs of Lead.

VITTA. That Part of the Secundines with which the Head of a Child, when born, is ſometimes covered as with a Coif, is called *Vitta* in a Female; but *Galea* in a Male.

VITULUS. The Calf. For an Account of the alimentary Subſtance contained in Veal, ſee the Article ALIMENTA.

Veal, I mean the Fleſh of all the Parts of a Calf, is much uſed in Food, and ought to be white, juicy, tender, plump, and well-taſted.

The Head and Lungs of a Calf are pectoral, good to qualify the ſharp Humours of the Breaſt and Throat, and for the Phthiſic. Calves Feet are, alſo, pectoral, their Subſtance is glutinous, qualifying, and moiſtening. They are boiled in Broths to moderate the Loſs of Blood, in the Menſes, Piles, and Spitting of Blood.

Veal, and the other Parts of a Calf being endued with a Juice that is temperate, produces no ill Effects; but they are not good for thoſe who have a Looſeneſs, cauſed by the Relaxation of the Fibres; for they will increaſe this Diſorder.

Veal contains much Oil, Phlegm, and volatile Salt.

It agrees at all times, with any Age or Conſtitution; but it is better for weak and tender People, and ſuch as live a ſedentary Life, than for thoſe that are ſtrong, robuſt, and accuſtomed to conſtant Exerciſe, who require more ſolid Food, and that does not ſo ſoon conſume as Veal.

REMARKS.

A Calf ought to be choſe when very young, and while it ſucks, becauſe then its Fleſh and other Parts, are tender, dainty, and eaſy of Digeſtion; whereas theſe ſame Parts will afterwards become dryer, harder, and conſequently, not ſo eaſy of Digeſtion. *Bruyerinus* ſays, the *Romans* and *Italians* let their Calves ſuck ſix Months, and ſometimes even a whole Year; and that during that Time, they took care they ſhould eat no Graſs, as being perſuaded their Fleſh would thereby be more dainty, healthy, and better taſted: In ſhort, as theſe Animals are naturally of a dry Conſtitution, the younger they are, the more good Effects their Fleſh ſhould produce, becauſe it is in a better Temper.

Avicenna pretends Veal is very wholſome, and that it produce good Juices. Laſtly, *Galen* ſays, that roaſted Veal is eaſy of Digeſtion, and very nouriſhing.

Veal is nouriſhing, cooling, and moiſtening, becauſe it contains an oily, viſcous, and balſamic Juice, that is fit to unite with the ſolid Parts, to embarraſs the ſharp Humours, and to moderate their Fury and Impetuoſity. It looſens the Body, by making the Humours contained in the Veſſels more fluid, and the Paſſages more free and open. As for a Calf's Liver, as it conſiſts of a compact and earthy Subſtance, as well as thoſe of other Animals, it is not ſtrange it ſhould make the Humours groſs, and bind the Body. They make uſe of the Fat or Suet of Veal, and eſpecially that about the Kidneys, in Pomatums: This, as well as the Marrow of the Animal, is of a diſſolving Nature.

The Runnet, which is made uſe of to curdle Milk, is in *Latin* called COAGULUM; which ſee. *Lemery on Foods.*

It is very remarkable that Veal, however eaſy of Digeſtion it is generally eſteemed, will not agree with ſome Stomachs, but excites a kind of Sickneſs and Uneaſineſs, for many Hours after; a certain Evidence that it does not duly digeſt; and theſe are generally the Stomachs, which digeſt other Animal Food without any Uneaſineſs.

VIVERRA. Offic. Charlt. Exer. 20. *Viverra, Ictis, Furo.* Mer. Pin. 167. *Muſtela ſylveſtris.* Geſn. de Quad. Digit. 762. Aldrov. de Quad. Digit. 327. Johnſ. de Quad. 107. *Muſtela ſylveſtris Viverra dicta.* Raii Synop. A. 198. THE FERRET.

The Fleſh, and Gall of this Animal, are recommended in an Epilepſy, the Gout, and are ſaid to be good againſt Poiſons. *Dale. Lemery.*

VIVIPARUS. An Epithet for thoſe Animals which bring forth a young Animal, by way of Diſtinction from thoſe which produce Eggs, and are called Oviparous.

ULCUS. An Ulcer.

What is meant by an *Ulcer*, ſeems ſo well known to every Perſon as to require no prolix Deſcription; for the Definitions which are uſually given us, both of this and many other things, are generally more obſcure and difficult to be underſtood than the Names themſelves. The moſt clear, however, and diſtinct Notion given of an *Ulcer* is, by thoſe who define it *a Solution of the ſoft Parts of our Bodies together with the Skin, produced by ſome internal Cauſe*, as an Inflammation, Abſceſs, or acrimonious Humours. But Wounds which become inveterate and even Contuſions when difficult of Cure, come within this Definition, and paſs at length into *Ulcers*, and are commonly ſo called.

The proper and uſual Seat of an *Ulcer*, then, is in any of the ſofter Parts of our Body, as the Skin, Fat, Glands, Fleſh, and

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and internal Viscera: For if there be any Exulceration or Corrosion in the harder Parts, as the Bones, it comes rather under the Notion of a Caries, or what is commonly called *Spina Ventosa*, than that of an *Ulcer*; though on account of some kind of Resemblance which it has with an Ulcer or Erosion of the softer Parts, they are sometimes treated of in Conjunction.

How *Abscesses*, *Contusions*, and *Wounds* differ from *Ulcers*, will be sufficiently illustrated by an attentive Consideration of the Nature of each Disease: For though *Wounds* and *Contusions*, as well as *Ulcers*, consist in a Dissolution of the soft Parts, yet they differ from them in a very material Point, as they proceed from an external Cause, and are produced, as it were, in a Moment; whereas *Ulcers*, on the contrary, owe their Original chiefly to some internal Cause, and form themselves by Degrees. As for *Abscesses* they are, as it were, the first Principles of *Ulcers*, or *Ulcers* not yet arrived at Maturity, as when an Inflammation passes into a Suppuration, the Skin remaining as yet entire. But as soon as the Skin breaks, and there is an Effusion of mature Pus, the *Abscess* is supposed to pass into an *Ulcer*, whether the Rupture happens spontaneously from an Erosion by the Pus, or the Skin be opened by the Surgeon's Knife.

Ulcers can by no means be reckoned all of one Kind, but are distinguished into various Species on many Accounts; as (1.) with respect to the different Parts of the Body in which they are seated; for sometimes they infest the Skin, at other times the Fat, and sometimes the Glands and Flesh; (2.) as to their Magnitude; for some *Ulcers* are large and extended; others small and contracted within narrow Limits; some deep, others shallow and more superficial; in particular, *Ulcers* of a considerable Depth, but narrow, and more especially distinguished by the Narrowness of their Orifice, or Beginning, usually pass under the peculiar Denomination of *Sinus*, or *Fistula*. *Ulcers* differ, (3.) with regard to *Duration*; for some are *recent*, others *inveterate*; (4.) on account of their *attendant Symptoms*; in which respect some *Ulcers* are *mild* and *favourable*, others *malignant*, that is, *attended with very acute Pains*, or *fetid*, *putrid*, *pinguious*, *rheumy*, or *discharging much Ichor*, *creeping*, or *spreading*, *cancerous*, or *inclining to a Cancer*, *callous*, *fistulous*, or *verminous*; there is a Difference between them, (5.) with respect to their Causes, in which Light they assume the Epithets of *scorbutic*, *venereal*, *carious*, *cancerous*, *pestilential*, and such as are supposed to proceed from *Fascination*. In the last place *Ulcers* are distinguished (6.) by the Parts in which they are seated. Thus some infest the *Nostrils*, others the *Fauces*, *Palate*, *Breast*, and *Anus*; and one Sort has the Name of *Fistula Lacrymalis*.

The Opinion of some late Physicians, who ascribe the *principal Cause* of *Ulcers* to some foreign *Acid*, corroding the Parts of the Body like Aqua-fortis, seems too precarious and ill-founded to demand our Assent, since there is hardly any Kind of *acrid Humour*, whether it be saline, lixivial, alcaline, or acid, that is not capable of corroding the Body, and exciting an *Ulcer*. And indeed, as the Blood in Stagnation is generally converted into an alcaline Acrimony, which has nothing at all of the Acid in it, as some would persuade us, since the very fetid Smell of Ulcers shews the Alcali to have by much the Predominance, I think it appears very plainly that the *Cause* of Ulcers is oftener to be ascribed to alcaline than acid Humours, as we know and take it for granted, that by *Alcali* our Physicians mean any Kind of acrimonious or salsuginous Substance, which resists and enters into Conflict with all Kinds of Acids; as, for Instance, Salt of Tartar with Vinegar, and Oil of Tartar *per Deliquium* with Spirit of Vitriol. But to proceed. As there is a great Variety of Poisons, so is there, also, of acrimonious Substances, and consequently of *Ulcers*. The more pestilential the corroding Acrimony, the more noisome and fetid, the more phagedenic and dangerous are the *Ulcers*, and sometimes to such a Degree of Malignity as to become quite incurable, as in a Carcinoma, or Cancer. It is to be observed, also, that *Ulcers* may owe their Original not only to Acrimony, but to any Cause whatever, which is capable of effecting a Stagnation and Corruption of the Blood. Thus *Tumors*, *Inflammations*, *Wounds*, *Contusions*, *Fractures*, *Luxations*, *Scirrhuses*, *Cancers*, and *Caries*, very frequently degenerate into *Ulcers*, which, also, tho' they may happen at first to be mild and safe, often become at length malignant and dangerous, either from a bad Habit of Body, an improper Regimen of Diet, or unskilful Treatment and Bandage, and other like Causes.

Tho' most Kinds of *Ulcers* may be discovered and known by the bare Sight, yet that we may examine more exactly the Depth of a Sinus, and which Way it proceeds and has its Course, and whether it be attended with a Caries, we use the Help of Probes. Whether it be a new or an old Ulcer is best known by interrogating the Patient, who will, also, probably make the best Discovery of the Causes why the Disease is become inveterate, and whether it be owing to some subjacent Caries, or to an improper Regimen of Diet, or Method of Cure. An *Ulcer* is to be judged mild and favourable principally on the following Account; if, in the first place, it be not inveterate, nor accompanied with any bad Symptoms; if again the Pus be moderately thick, whitish, smooth, and not very fetid; and, lastly, if the Patient be young and vigorous. On the contrary, *Ulcers* are justly esteemed malignant and difficult of Cure, if the Patient be of an infirm, scorbutic, or hydropic Habit of Body; if the Pus be immoderately thin, acrid, fetid, yellow, whitish and reddish, greenish or blackish, or too thick, and much resembling Lard. No less Danger is to be apprehended, when the Patient labours under intense Pains, or the *Ulcer* is of such a Nature as to reject the Method of Cure used in Wounds, and recent Abscesses, by Digestives, and vulnerary Balsams.

Impure and *putrid Ulcers* are so called, when the affected Flesh appears corrupted, soft, whitish, or livid; or when the Matter discharged is thicker, and more glutinous than ordinary; or appears green, or variegated. *Ulcers* of the *fluent* or *rheumatic* Kind are such as discharge Plenty of thin Sanies. *Phagedenic*, or *spreading Ulcers*, discover themselves by corroding the circumjacent Parts, in a quicker or slower manner, according to the Degree of Acrimony in the Matter. We call an *Ulcer fistulous*, when it penetrates to a considerable Depth under the Skin, or between the Muscles, and especially when the Sinus is large, and the Outlet, or Orifice, narrow. And, lastly, *Ulcers* are said to be *callous*, when their interior Parts are covered with a Kind of hard, and, as it were, cartilaginous Substance.

Ulcers are judged to be *venereal*, when consequent upon lying with an infected Woman, or after some venereal Disorder, as a Gonorrhœa, venereal Bubo, or the Lues Venerea. Various is the Situation of these Kinds of *Ulcers*, tho', for the Generality, they are seated in the same Places in which venereal Bubos are produced; or in the Nose, Fauces, and Penis; which last are called *Ulcers*, or *Carcinomas* of the Penis, in *French Chancres*, "Shankers." In the other Sex these venereal *Ulcers* are most incident to the *Labia Pudendi*, and the Neck of the *Uterus*. *Cancerous Ulcers* are either the very same with those exulcerated *Carcinomas* treated of under CARCINOMA, [see that Article] or such as, in their Progress, and attendant Pains, most nearly resemble a *Carcinoma*. *Ulcers* are said to be *carious*, when some adjacent Bone is found deprived of the Periosteum, and corroded, or affected with a *Caries*. That *Ulcers* may be produced by *Fascination*, or Witchcraft, the common Proof is, that Pins, Hair, Threads, Rags, Nails, Egg-shells, Coals, and other extraordinary and preternatural Things, are sometimes found, in Wounds, or Abscesses, But, if I may be allowed to speak my own Sentiments, in this Affair, I am of Opinion, that not only most of those Signs which are regarded by the Ignorant as undoubted Marks of Fascination, but the very Thing, or Fascination itself, is, at least, very much to be questioned, or else is absolutely counterfeit, and wholly directed and promoted with a superstitious View: For many *Ulcers* were, in former Times, esteemed the Effects of *Fascination*, when, in Reality, they were manifestly otherwise.

Recent Ulcers, of a favourable Kind, like recent Abscesses, are not difficult of Cure, especially if the Patient be young and vigorous; but the more inveterate an *Ulcer* becomes, and the worse the concomitant Symptoms are, the greater is the Difficulty which attends a due Conglutination; whence it is, that very *putrid*, *rheumatic*, or *much-running*, *fistulous*, *callous*, *carious*, and *cancerous Ulcers*, are not cured but with vast Difficulty, and by the utmost Skill and Management of the most able Surgeons. For as for those bold and confident Quacks and Mountebanks, who boast and value themselves at so high a Rate, on account of their secret Plaisters and Ointments, which they pretend to be of surprising Efficacy in all manner of *Ulcers*, I am persuaded, and can appeal to Experience, that they very grossly impose upon themselves, and others. The more depraved or infirm the Habit of Body, the older the Patient, the more acrimonious the Blood, the worse the Smell of the *Ulcer*, and the Colour and Acrimony of the Pus, the more difficult must, of Necessity, be the Cure. When the *Ulcers* are very large, or numerous, and every Day discharge a vast Plenty of Matter, or Sanies, they very much weaken, and, by Degrees, exhaust and destroy the Patient. Old *Ulcers* in the Feet, especially in Persons far advanced in Years, and infirm, are by no means to be healed: For, as Experience almost universally shews, the Health of the Patient stands established on a good and hopeful Foundation, as long as the corrupted Matter, collected from all Parts of the Body, is discharged by the *Ulcers*; but when this Efflux is suppressed by a Conglutination, the Consequence, after some time, is generally observed to be some very bad Distemper, such as Pains of the Head, Vertigo, Apoplexy, Epilepsy, a Difficulty of Breathing, or a Suffocation, or, perhaps,

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a Diarrhœa, Dyſentery, internal Inflammations, and other Diſorders of that Kind, which terminate in Death, according to the concurrent Obſervations of very many practical Phyſicians. Thus, alſo, when any inveterate *Ulcers*, of this Kind, dry up in old Perſons, and their Lips contract a Lividneſs, with a Heat, there is great Danger of a *Sphacelus*, ſucceeded by Death. But in younger, and robuſt Perſons, the Cure of inveterate *Ulcers* is attended with more Safety; but the neceſſary Care to be taken in ſuch Caſes is, not only to remove the Cauſe of the *Ulcer*, by proper Medicines, but to reſtore the Blood to its former Purity; which, oftentimes, is not effected but with great Difficulty. If the Diſeaſe, therefore, be too inveterate, and the affected Perſons impatient of Medicines and Abſtinence, it is no wonder if *Ulcers* cannot be cured, even in robuſt Conſtitutions.

Venereal Ulcers are ſeldom or never to be cured without a previous Expulſion of the venereal Venom out of the Body by proper Medicines; without which, all external Remedies are of no Effect, in this Caſe. *Fiſtulous*, *callous*, and *carious Ulcers*, are ſeldom or, rather, never cured but by manual Operation; for oftentimes after inducing a Cicatrix, they form themſelves anew, and are more troubleſome than before: In particular, a *carious Ulcer*, if the Caries be great, and eſpecially in the Joints, often diſcharges ſuch vaſt Quantities of Pus, as extremely to weaken, and, without a ſeaſonable Amputation of the Limb, to deſtroy the Patient. The Caſe is much the ſame with *cancerous Ulcers*; for here, alſo, unleſs the Part affected be ſeparated from the Body, there can be no Hopes of a Cure, as we have before obſerved under CARCINOMA; and ſometimes the *Cancer* or *Carcinoma* returns after the Operation, and is not to be removed till it terminates in the Deſtruction of the Patient. As for *Ulcers* affecting the Viſcera, ſince they are removed from the Reach of manual Operation, or the convenient Application of Medicines, they are often very juſtly eſteemed incurable.

The Method of Cure in *Ulcers* is extremely various, as adapted to the great Variety of the Diſeaſe: For when the *Ulcer* is but recent, it is to be healed in the ſame manner as a recent Wound, or Abſceſs. We muſt firſt, then, begin with *Mundification*, or cleanſing the *Ulcer*; after that, proceed to incarne, or fill the Cavity with new Fleſh; and, laſtly, cover and conglutinate the ſame, as much as poſſible, with a fair and even Cicatrix.

Mundification of an *Ulcer* is uſually performed in the following manner: Firſt, The corrupted Matter is evacuated; or, when it diſcharges itſelf not ſo freely as it ought, gently expreſſed with the Fingers; if there be a deep *Sinus* belonging to the *Ulcer*, it is to be exterged, by ſome proper Injections; or, if the Place be open enough, by repeated Intromiſſions of freſh Lint. If there be any Pieces of Membranes, or other corrupted, pinguious Parts left in the *Ulcer*, the beſt way to eject them is, at every Dreſſing to introduce into the Place Lint moiſtened with ſome digeſtive Ointment, and cover it with a Plaiſter of Diachylon, Diapalma, or ſomething of the like Nature; and upon that apply Compreſſes, and over the Whole a Bandage: This Method is to be carefully followed till the Place be thoroughly cleanſed, or till the Bottom of the *Ulcer* appears quite red, and covered with new Fleſh.

After due *Mundification*, our next Buſineſs is, to fill the *Ulcer* with new Fleſh, which is performed by Help of ſuch Medicines as are commonly called *Sarcotics*, [from σάρξ, Fleſh] that is, Fleſh-generaters; among which, the beſt, and moſt effectual by many Degrees, is the *Digeſtive Ointment*; for without ſome extraordinary Impediment, this *Digeſtive* is of itſelf ſufficient to produce new Fleſh. It is, indeed, the Manner of almoſt all Surgeons, very gravely to recommend every one his proper Balſamics for the procuring of new Fleſh; but there was no Neceſſity, as I imagine, for them to be ſo careful and ſolicitous on this Point, ſince there is in this very *Digeſtive*, a balſamic Virtue; and we ought, beſides, to conſider that this new Fleſh owes its Generation not ſo much to the Aſſiſtance of Medicines, as the Benefit of Nature: For all the Care and Diligence of the Surgeon have ſcarce any other Effect than to remove all ſuch Things as are hurtful, and may prove Impediments to a Cure. If any one, however, ſhould think our *Digeſtive Ointment* not ſtrong enough for his Purpoſe, I would adviſe him to *Balſam of Arcæus*, *Balſam of Peru*, *Balſam of Meccha*, *Balſam of Sulphur*, *Eſſence of Myrrh and Aloes*, *Oil of Myrrh* per Deliquium, *Oil of Eggs*, and other vulnerary Balſams of the like Kind, to be uſed in its ſtead; and, by the beſt Means he can procure, to accompliſh a perfect Conglutination.

Where an *Ulcer* has penetrated ſo deep as to have its Bottom remote not only from Sight, but from the Reach of Medicines, it may ſeem neceſſary, in every Dreſſing, after expreſſing the corrupted Matter collected within, to make an Injection of ſome cleanſing and healing Liquor; ſuch as a Decoction of Agrimony, or Birthwort mixed with Honey of Roſes, or Eſſence of Myrrh and Aloes, or what *Belloſte*, in his *Hoſpital Surgeon*, recommends, a Decoction of Walnut-leaves, mixed with Sugar, before the Place be bound up, till the Bottom is conglutinated; and to continue the ſame till the *Ulcer* is filled up.

The *Ulcer* being, by ſome means or other, as may ſeem moſt adviſeable, incarned, and filled up, the Induction of a fit and decent Cicatrix is, in the laſt Place, to be conſidered; and there is no better Method to be taken, for this Purpoſe, than every Day to apply dry Lint to the Place, with a Plaiſter, till the Cicatrix be completed: But if, by ſuch means, you cannot prevent a Luxuriancy of Fleſh, with a Moiſtneſs of the *Ulcer*, it will be proper to ſprinkle on the Part ſome drying Powders, ſuch as thoſe of Maſtic, Frankincenſe, Sarcocolla, Colophony, Lapis Calaminaris, and Tutty; applying afterwards, to the Place, dry Lint, and a Plaiſter accommodated to retain and hold together the Things applied, continuing the ſame till the Place be perfectly whole and ſound: But if the luxuriant and fungous Fleſh has already elevated itſelf above the reſt of the Skin, the beſt way to conſume it is, to rub it with blue Vitriol; or, if this be not ſtrong enough, to ſprinkle on it ſome Powder of red Precipitate, and burnt Alum, till its Growth be entirely ſuppreſſed, and nothing appears prominent.

In the laſt Place, it is hardly to be expreſſed how much a prudent Regimen in Diet and manner of Living, contributes towards the Incarning and Conglutination of *Ulcers*: For it has been an old Obſervation of the Profeſſors of the ſalutary Art, that very bad *Ulcers* have often been cured by means of a Regimen, without any conſiderable Aſſiſtance from Medicines; and, on the contrary, that the ſlighteſt, and moſt contemptible, Sores have, by a Neglect of the Rules of Diet, and a preſterous way of Living, degenerated into very bad, and even incurable *Ulcers*. Great Care, therefore, is to be taken, by every Perſon infeſted with an *Ulcer*, to avoid acrid, ſalt, and acid Food, and ſuch as is too fat, or heating, with Swine's Fleſh, and all ſuch as is difficult of Concoction. If a bad Habit of Body be an Impediment to the Cure of an *Ulcer*, the Advice of a ſkilful Phyſician is required, who, by the Preſcription of proper internal Medicines, may not only prevent an *Ulcer* of a mild and favourable Kind from becoming malignant, and, perhaps, incurable, but, as much as poſſible, promote and haſten its Cure.

For *fiſtulous Ulcers*, ſee the Article FISTULA.

OF MALIGNANT ULCERS.

There are *Ulcers* of ſo bad and malignant a Nature, as not to admit of a Cure by the common Method of Treatment of *Ulcers* of an ordinary Kind; and theſe are, for that Reaſon, called, in medicinal Terms, *dyſepulotic*, *chironian*, *cacoethea*, [ſee DYSEPULOTOS, CHIRONIUM, CACOETHES] *obſtinate*, and *ſtubborn Ulcers*. It is not to be doubted but that there are ſome proper Cauſes of their Malignity; but what they are in particular, in every Caſe, which render a Cure ſo difficult, is alike known to the Generality of Surgeons, and thoſe who are quite ignorant of the Matter. *Ulcers*, however, of a *ſtubborn* and *malignant* Nature, generally infeſt Perſons of a bad, ſcorbutic, cachectic, and hydropic Habit: They may, alſo, proceed from the *Lues Venerea*, a Caries, or a Callus, an extraordinary Acrimony of the Blood, or a cancerous Diſpoſition; and theſe Cauſes are diligently to be inveſtigated, and extirpated, by thoſe who attempt the Cure of thoſe Kinds of *Ulcers*, if they would hope for any Succeſs. But an Attempt of this Nature is a Matter of ſuch Difficulty and Importance, as, in moſt Caſes, to require the matureſt Thoughts and Deliberations of the moſt experienced Phyſician or Surgeon; ſo much is it above the Capacity of a mere Empiric, how impudently ſoever he may boaſt of his incomparable Secrets, and ſovereign Remedies of Plaiſters and Ointments, which he has always in Readineſs by him againſt the worſt of *Ulcers*.

If there be nothing of a Fiſtula, Callus, Caries, putrid Fleſh, or Worms, belonging to the *Ulcer*, its Stubbornneſs and Malignancy muſt certainly proceed from a bad and infirm Habit of Body, on account of a too glutinous, acid, acrimonious, or bilious Blood; or from an imprudent Regimen of Diet, or ſome venereal Diſorder; or in Women, particularly, from an Obſtruction of the Menſes; in Men, from a Suppreſſion of the Hæmorrhoids: In ſuch Caſes, it is not only the Buſineſs of a Phyſician to preſcribe internal Remedies, but injoin, alſo, a ſtrict Diet; which is of ſuch extraordinary Efficacy, that even the worſt of *Ulcers* have been frequently cured by it, with hardly any Aſſiſtance from internal Remedies, provided they are every Day duly cleanſed, and dreſſed with ſome common vulnerary Ointment, Oil, or Balſam, with ſome ordinary Plaiſter, as the Lead Plaiſter, or Diapompholygos, or the like, carefully laid over it ſo as to cover the Whole. In Meats and Drinks

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Drinks it must be observed, as an inviolable Rule, to chuse none but the lightest Kinds, and to be very abstemious even in the Use of these: But any thing too salt, acrid, acid, hard, or crude, or whatever is prepared of Fat, Bacon, Swine's Flesh, and farinaceous Masses, or whatever is taken in Quantities beyond the Rules of strict Temperance, is always found to be extremely prejudicial. Patients of a hot Temperament are to avoid heating Meats; those of a cold Temperament are to abstain from Foods of a refrigerating Quality; but a good Diet, or Abstinence, is, however, observed to be more effectual, when assisted with due external Treatment. The *Ulcer* must, therefore, be very carefully exterged and cleansed from the corrupted Matter, lest the same, by its Stay, should become more acrimonious, and, by that means, the *Ulcer* should spread. After Mundification, you may apply the digestive Ointment, with which may be mixed Myrrh, Mastic, or Colophony, or a Decoction of Walnut-leaves, with a little Sugar, or a Decoction of Verdegrise in Wine. In some Patients, simple Spirit of Wine, or Lime-water, applied in Linen moistened with them, is of excellent Service in drying and healing those Kinds of *Ulcers*: If there be any Fistulas in the Case, they are to be cut, then cleansed, and afterwards consolidated with Balsam of *Peru*, Balsam of *Capivi*, Balsam of Sulphur, with Oil of Turpentine, or any other agglutinating Medicines; and if, at the same time, there be no Neglect of internal Medicines, there is no doubt but some of the worst of *Ulcers* may, by such Management, be brought at last to a perfect Cure.

If there be a copious Discharge of Humours from these stubborn Kinds of *Ulcers*, it is an Indication of a Mixture of too great a Quantity of thin and acrid Serum with the Blood, which is often owing to the Patient's drinking too much; and such *Ulcers* are called *Rheumatic*. In this Case, since there can be no Way more commodious for the Discharge of the Humours than by the principal Passages downwards, Cathartics and Diuretics, if the Strength will permit, are freely to be administered; and, at the same time, the Patient is to drink less. Excellent Medicines, for these Purposes, are, prepared Millepedes, Essence of Amber, of Myrrh, of *Peruvian* Balsam, Tincture of Tartar, tartarised Tincture of Antimony, or any other Kinds of balsamic Tinctures, or Essences, proper for provoking of Urine. Drinking too freely, or in great Quantities, which is often the Cause of such Disorders, is quite improper here; on the contrary, the moderate Use of strong Beer, and old Wine, as ordinary Drink, is very wholsome, and the more so if a little *Hungarian* or *Spanish* Wine be taken now-and-then at Dinner; except at Dinner, I would advise Abstinence from all manner of Drink. Of Meats, or Eatables, the most proper are such as are dried or roasted, or such as thicken the Blood; for which Purpose, Barley and Rice-puddings, Water-gruel, Calves Feet, and Jellies, are accommodated. External Medicines, also, of a drying Quality, are of principal and necessary Use; among which are, Lime-water, Lapis Calaminaris, prepared Tutty, Chalk, Mastic, Frankincense, Colophony, and native Cinnabar prepared; with one or other of which the *Ulcer* is to be sprinkled, and afterwards covered with the Plaister Diapompholygos, the lead Plaister, or a Plaister of Lapis Calaminaris.

That Sort of malignant *Ulcer*, which spreads and extends itself gradually, by corroding the adjacent Parts on every Side, has the Epithet of *corrosive*, or *phagedenic*, and indicates the State of the Blood to be highly acrimonious. The first Care of the Physician, therefore, in this Case is, by internal, lenient, and emollient Medicines, to correct the ill State of the Blood: To this End are especially adapted Decoctions of the Roots of China, Sarsaparilla, Comfry, Polypody, Liquorice, Scorzonera, the Lapathum Acutum, the Herbs Mallows, Marshmallows, St. John's-wort, Sanicle, Agrimony, white Horehound, and the like. Of Foods, the most proper are, such as were prescribed before for *rheumatic Ulcers*; for every thing acrid, salt, or too much seasoned with Spices or Acids, and all Meats prepared with any Part belonging to a Swine, is highly prejudicial, and therefore to be avoided. On the other hand, purging Medicines now-and-then administered with a Mixture of *Mercurius Dulcis*, are not only serviceable in diminishing the Sanies of the Blood, but of great Efficacy as Lenients, in correcting the Acrimony of the Blood, and promoting the Cure. Topical Remedies may be such as were recommended before, and the Use of them, after a careful and thorough Extersion or Mundification of the *Ulcer*, is to be continued till its Progress be entirely checked, and the Place perfectly healed.

Somewhat of the Nature of phagedenic or corrosive *Ulcers* are *cutaneous Ulcers*, or such as arise in the Skin, and most commonly in the Face, as well of Children, as adult Persons; for they not only owe their Origin to an acrimonious Blood, but dilate and spread themselves. In cutaneous, therefore, as well as phagedenic *Ulcers*, the most proper and effectual Medicines are such as potently evacuate by Stool, and gradually correct the Acrimony of the Blood, and are before specified. To Adults I would recommend, for these Purposes, before other Things, the aforesaid Decoctions of the Woods, or the Decoction of the Root of the Lapathum Acutum, or of the Herb Fumitory. Of either of these is to be taken the Quantity of eight or ten Ounces, three or four times a Day, warm; and, after the first Draught in the Morning, it will be proper for the Patient to compose himself in his Bed, and to sweat. To these may not improperly be added, the Essences of Fumitory, of the Woods, and of Amber, or the tartarised Tincture of Antimony, to the Quantity of thirty or forty Drops, to be taken several times a Day, with the forementioned Decoctions; also absorbent Powders mixed with Antimony and Flowers of Sulphur, and the Use of the same is to be continued for some time; but a careful and exact Regimen seems as necessary here as in any Case whatever. For Infants not weaned from the Breasts, it has been found of great Service to use Medicines which gently purge and correct the Blood, the Mother, or Nurse, who suckles the Child, being injoined a strict Regimen, besides the Use of the Remedies before-mentioned. Topics proper in this Circumstance are, principally, Oil of Tartar *per Deliquium*, applied two or three Times a Day with a Pencil, or Feather, either alone, or mixed with Oil of Eggs and Wax; after which, the Place must be covered with a Plaister, either the Lead Plaister, or *Emplastrum de Minio*, or *Emplastrum de Sperma Ceti cum Camphora*, to secure it from Injuries by the external Air. Where the Disease has spread itself over the Face, as it often happens in Infants, a Plaister is not convenient; and it is better to adapt a Linen Mask, or Vizard, to the Face, as is advised in Ambustions: Also, *Oleum Philosophorum*, Oil of Eggs, Lime-water, and Water with which diaphoretic Antimony has been edulcorated, are good Remedies, if the Face be every Day washed and cleansed with them. Instead of these, it may be sometimes proper frequently to anoint the Place with Ointment of Litharge, or *Unguent. Diapompholygos*, or *De Enula*; mixing therewith, if the Disease be more stubborn than ordinary, a small Quantity of Quicksilver, or red Precipitate. If the cutaneous *Ulcers* flow with Sanies, like those of the rheumatic Sort, it may be necessary to treat them every Day, with an Insperion of an absorbent and drying Powder, prepared of Tutty, *Lapis Calaminaris*, Cerus, Chalk, or the like, mixed with native Cinnabar, or red Precipitate; or to anoint them very frequently with beaten Cream.

But of all corrosive and malignant *Ulcers*, none are more virulent or formidable than those of the *cancerous* Kind; since they are to be treated with the same internal and external Remedies, as we have prescribed for an exulcerated Carcinoma [see CARCINOMA]; tho' *M. A. Severinus*, a very celebrated Physician and Surgeon, seriously assures us, that we are to expect more Relief from manual than medicinal Operations, in such Cases; for many have been cured by Steel and Fire, when Medicines have been of no Use. When, therefore, it is determined to treat an *Ulcer* of this Kind with Burning, or Excision, we are to take all possible Care that the same be entirely extirpated, and that no corrupted Part remain; for that would entirely defeat the End and Design of the Operation. Some, instead of these severe Operations, use a phagedenic Water, prepared in the following manner:

> Take Water of Quicklime, one Pint; Sublimate Mercury, half an Ounce: Mix them together. Or, instead of Mercury Sublimate, use an Ounce, or an Ounce and half, of white Precipitate: This is to be applied warm frequently, with Lint dipped therein.

Instead of Sublimate Mercury, I have often used, with very good Success, *Mercurius Dulcis*, in Lime-water, for stubborn *Ulcers*, as a much safer Medicine than the other. As for digestive Ointments, they are quite improper in cancerous *Ulcers*, and even found to be fatal.

If there be a Putridness and Fetidness attending the *Ulcer*, it must proceed either from a very depraved Habit of Body, or want of Care or Skill in the Surgeon employed in the Dressing. It is the Physician's Part here, by proper Medicines, to correct and strengthen the Habit with all convenient Speed, while the Surgeon takes due Care frequently to exterge and cleanse the *Ulcer*, and so much the more, if the same be affected with a burning and intense Heat: For when *Ulcers* are but seldom dressed and cleansed, as is usually the Case after great and bloody Battles when the Number of the Wounded is very considerable, it can scarce be avoided, but that the vitiated Flesh will be infested with Heats, Putridness, or Worms. For preventing such Inconveniencies, there is no readier Way, than to apply our digestive Ointment, mixed with *Unguentum Ægyptiacum*, or the *Unguentum Fuscum* of *Wurtzius*, or the phagedenic Water, or red Precipitate, either by itself, or mixed with burnt Alum, or well worked into the digestive Ointment, and to continue the same

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ſame till the corrupted Fleſh be totally conſumed, and the Bottom of the *Ulcer* comes to its natural red Colour. While this is doing, it will be convenient to wrap the affected Part in Linen moiſtened with Spirit of Wine, which is a Medicine that very potently reſiſts Putrefaction. The Sore being thus cleanſed from the putrid and corrupted Parts, the Conglutination is to be performed by the ſame Means as have been preſcribed for other Kinds of *Ulcers*, the Surgeon taking all due Care that the Patient be frequently refreſhed, and have his Spirits enlivened not only with comforting Meats and Drinks, but by ſuch cardiac and antiſeptic Medicines as are directed by the Phyſician, leſt Nature ſhould ſink, and the Strength be exhauſted under the Length of the Cure. *Verminous Ulcers* are to be treated in the ſame manner; for whatever reſiſts Putrefaction, is, alſo, an Enemy to Worms, and all due Care is ſuppoſed to be taken, at every Dreſſing, for exterging the Worms and putrid Fleſh; after which the Cure is effected by the Methods above preſcribed.

In the laſt Place, there are ſome Ulcers ſo malignant and obſtinate, that though they cannot be diſcovered to have contracted any Venereal Contagion, they yet reſiſt all the Medicines hitherto preſcribed. In this Caſe I have learned by long Experience, that there is no Method of Cure ſo prevalent and effectual as what is performed by means of mercurial Medicines, or by a gentle Salivation. For I have found the Blood, in ſome Patients, corrupted to ſuch a degree, as not to be lenified, much leſs corrected, without the Help of Mercury. But if there be any manifeſt Signs of Venereal Contagion contracted by the Patient, this Method of Cure by Mercury becomes abſolutely neceſſary, as we ſhall demonſtrate below.

Of the Cure of Venereal Ulcers.

Venereal Ulcers, as we have already obſerved, are generally ſeated in the Groin, or Inſide of the Thighs, being the Effects of Exulcerations of Venereal Buboes: They are, alſo, generated in the Prepuce, Frenum, and Glans of the Penis; in which Caſes they take the Name of *Cancri*, in *French*, *Chancres*, (whence the *Engliſh Shankers)*; in Women they infeſt the Vagina, and *Labia Pudendi*; ſometimes the Noſe, Palate, Lips, Fauces, Tongue, and Uvula, the Forehead, Cranium, and other Bones, are affected with them; and one ſingle Ulcer of this Kind, if neglected, or ill-treated, is capable of exciting an univerſal *Lues Venerea*. The whole Affair, therefore, of the Cure conſiſts chiefly in evacuating and eliminating, by proper Medicines, as ſoon as may be, the Poiſon of the Venereal Infection.

No Medicines are better adapted to this Purpoſe, than Cathartics, incorporated with *Mercurius Dulcis*, either in Pills or Powders, and frequently adminiſtered. With theſe muſt be joined the Uſe of the Woods in Decoction, for correcting the Blood, together with Eſſences of the Woods, Pimpinella alba, and Amber, and Tincture of Antimony, and the like, which are of excellent Service, when taken in the Morning early, in Bed, by promoting a moderate Sweat. A ſtrict Regimen of Diet is in no Caſe more neceſſary than the preſent: For Wine, and all other heating Liquors, as well as ſalt, acrid, and acid Meats and Drinks are highly pernicious. If theſe Remedies prove too weak and ineffectual on account of the Inveteracy of the Diſeaſe, or its Complication with the Lues Venerea, it will be neceſſary, either to uſe ſtronger Sudorifics, ſuch eſpecially as Decoctions of the Woods, with a proper Regimen; or to call in the Aſſiſtance of Mercury, in order to excite a gentle Salivation, which at once cures the Ulcer, and expels the Venereal Venom.

When theſe Kinds of Ulcers affect the Mouth, Uvula, Fauces, Tonſils, or Tongue, not only internal Remedies are to be employed, but the Mouth itſelf is to be very often waſhed with a Decoction of the Woods, either ſimple, or mixed with Honey of Roſes. After this the affected Part is to be anointed and cleanſed, either with *Hartman*'s Green-water, or Honey of Roſes, mixed with a few Drops of Spirit of Vitriol to give it a gentle Acidity; and, at laſt, it is to be healed by the Uſe of Eſſences of Amber and Myrrh, or Oil of Myrrh *per Deliquium*. If the Ulcer appears in the external Parts, the beſt Way is to apply the Digeſtive Ointment, or Baſilicum, mixed with Quickſilver, or white or red Precipitate in Lint, or *Vigo*'s Frog-ſpawn Plaiſter, or Diachylum mixed with Mercury, in order to exterge and cleanſe the Parts. After Mundification, the Ulcers are to be ſprinkled with the Eſſences juſt mentioned, or the abſorbent Powders ſo often preſcribed, which may have their Virtue augmented, by mixing with them a ſmall Quantity of red Precipitate, in order to Exſiccation and Conglutination: No leſs effectual for the Purpoſes of Cleanſing and Healing are the phagedenic Water, or Lime-water, impregnated with *Mercurius Dulcis*, applied in Lint, moiſtened therewith ſeveral times in a Day; eſpecially if the Parts be now-and-then gently touched with the Lapis Infernalis. You have, alſo, an excellent Conglutinant, after Mundification, in a ſimple Ointment prepared of Quickſilver, mixed with a ſufficient Quantity of Turpentine, or in the following Mercurial Ointment.

Take of Unguentum Mundificativum, or Diapompholygos, crude Mercury extinguiſhed in a little Turpentine, each an Ounce. Or,

Take of an Amalgama of Mercury, and Lead, one Ounce; Bole Armoniac, two Ounces; Ointment of Roſes, a ſufficient Quantity: Make them into an Ointment.

If the ſubjacent Bone be carious, it is to be treated with ſuch Remedies as are preſcribed for the Cure of a Caries [ſee the Article Os], and particularly with Euphorbium, Oil of Cloves, the phagedenic Water, or Spirit of Nitre in which Mercury has been diſſolved, or, if it may ſafely be done, with a red-hot Iron. Sometimes theſe Kinds of Ulcers in the ſofter Parts of the Body, and particularly the Groins, make a conſtant and copious Diſcharge of a Lymph; and ſuch Ulcers are found to be ſo ſtubborn, that no Medicines can be found of ſufficient Force to exterge and dry them. Such a Circumſtance is uſually attended with a Rupture, or Eroſion of ſome lymphatic Veſſel; and here we are firſt to attempt a Suppreſſion of the Flux by Compreſſes, and a ſtrait Bandage, which has ſometimes happily ſucceeded: But if a Bandage proves of no Service, there is no better Remedy for ſo foul and troubleſome a Nuiſance, than the Application of a red-hot Iron; and the ſame muſt be repeated as often as Neceſſity requires.

Venereal Ulcers of the Penis, or Glans, careleſsly treated, uſually terminate in the *Lues Venerea*, and Perforations and Corroſions of the Urethra, through which the Urine paſſes, as through a Sieve. Sometimes the whole Glans, or Penis, are affected with a Scirrhus, or Shankers, to ſuch a Degree as to require the Uſe of the Knife. If the Diſeaſe infeſts the Noſe, it commonly produces a very fetid Ulcer, called, in the technical Way of ſpeaking, *Ozæna*, which ſometimes conſumes the whole Part. Sometimes the Palate with its Bones is ſo miſerably corroded and perforated, that whatever Drink or liquid Food is attempted to be ſwallowed, is rejected through the Noſtrils: Theſe Perforations are ſeldom cloſed, or brought to a Coalition, eſpecially if larger than ordinary: They may, however, when their Orifices are conſolidated, be cloſed up with a thin Piece of Gold or Silver. It is much more uſual for the Tonſils, with the outer Membrane of the Uvula, or the entire Uvula, to be corroded and conſumed. In all theſe Affections, Mercury, and the Decoctions of the Woods, are the principal Remedies. Sometimes it happens, as I myſelf have had ſeveral Opportunities of obſerving, that the very Cranium itſelf, eſpecially about the Forehead, is corroded and perforated with a Caries, in ſo ſurpriſing a manner, as to diſcover the very Brain, with the Pulſe of the Arteries belonging to it, which are plainly to be diſcerned; whence very formidable and dangerous Symptoms muſt ariſe, the Conſequence of which is ſometimes Death, unleſs it be prevented by the ſeaſonable Adminiſtration of the before-mentioned Remedies.

Of callous Ulcers.

Ulcers of the callous Sort are ſeldom or never cured without a previous Extirpation of the *Callus*. Now there are three Ways by which the Callus may be extirpated. The firſt and gentleſt, which takes Place in a recent and ſofter Callus, is by Corroſives, and thoſe of the mildeſt Sort; ſome of the principal of theſe are burnt Alum, and red Precipitate, either uſed alone, or mixed in equal Portions, or with a Mixture of the Digeſtive Ointment, or Baſilicum, or Unguentum Ægyptiacum, or the Brown Ointment of *Wurtzius*. With ſome or other of theſe Medicines are the callous Parts to be anointed ſeveral times in a Day, and theſe are uſually effectual, eſpecially thoſe mixed with red Precipitate. But if none of thoſe milder Topics prove of ſufficient Force to eat away and conſume the Callus, it will be proper, in the ſecond Place, to make a thorough Scarification of the callous Parts, and afterwards rub them with the Lapis Infernalis, or Butter of Antimony. A third Method, no leſs expeditious than the former, is by Spirit of Nitre, or Aqua-fortis, impregnated with as much Quickſilver as can be diſſolved in it over the Coals, and every Day applied to the Part.

There is yet a gentler Way of extirpating a Callus, deſcribed by *Le Dran. Tom.* 2. *Obſerv.* 115. This Method is to apply, for four or five Days together, a Plaiſter compounded half of a Plaiſter of Diachylum with Gums, and half of *Vigo*'s Plaiſter, mixed with four times the Quantity of Mercury, to be renewed every Morning and Evening, in order to ſoften, in ſome meaſure, the Lips of the Callus. After this the Callus

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is to be ſcarified, all manner of Ways, to the Bottom, the Ulcer being covered afterwards with a Bit of Lint, till the Blood, which commonly flows in ſmall Quantities from the Inciſions in the Callus, be ſtopped: This done, the ſame Plaiſter is applied over the whole Ulcer, ſo as to touch the bare and newly ſcarified Lips of the Callus. About four Days after, the Surgeon repeats the Inciſions, or *Scarification*, as it is uſually called, and renews the ſame the third or fourth time if there be Occaſion, that is, if the Callus be not diſſolved. By this Method, as the above-mentioned Surgeon affirms, is the Callus gradually ſubdued, ſoftened, and at length totally diſappears, leaving in its room a very laudable Cicatrix, without the Aſſiſtance of any other Remedy. I never had an Opportunity, I muſt confeſs, of trying this Method.

If the callous Ulcer be, alſo, fiſtulous, an Inciſion is firſt to be made into the Sinus, in the ſame manner as has been directed for a Fiſtula, before we attempt to conſume the Callus; after which the Callus is to be conſumed, by the Methods above related. If the Application of the Kniſe be too much dreaded by the Patient, or otherwiſe unſafe, it will be convenient to introduce into the Sinus a Tent of *Unguentum Ægyptiacum*, or the Brown Ointment of *Wurtzius*; by which means the Callus, if not very obſtinate, is inſenſibly conſumed, and may be the ſooner, if the fore Part of the Tent, before its Intruſion, be rubbed with red Precipitate, Lapis Infernalis, or Butter of Antimony, and this be continued till the Callus be conſumed. If theſe corroſive Tents will not penetrate to the Callus, the moſt convenient Method will be to uſe the Syringe, and make frequent Injections of the Phagedenic Water, or of *Unguentum Ægyptiacum*, or *Wurtzius*'s Brown Ointment, diſſolved in Spirit of Wine, into the difficult and winding Sinus, compreſſing afterwards the Mouth of the Ulcer, that the Liquor may be retained for ſome Space of Time, within. The Callus being thus removed, the Cure of the Ulcer is to be managed like that of a Fiſtula.

It may ſometimes happen, that in callous and fiſtulous Ulcers which are of long Standing, or full of Turnings and Windings, theſe corroſive Medicines are of little or no Service, or, what is worſe, may be more diſpoſed to corrode and vellicate the Nerves, and excite moſt terrible Convulſions, ſooner than conſume the Callus. In ſuch a Circumſtance it cannot but be moſt proper to make an Inciſion in the Ulcer, in the ſame manner as directed for cutting the Fiſtula [ſee FISTULA], but with all due Care and Circumſpection, for Fear of wounding ſome Artery, Nerve, or Tendon.

If neither the Method of Inciſion juſt recommended be thought of Force ſufficient, or expeditious enough, in extirpating the Callus: In this Caſe, if the Patient be endowed with a good Meaſure of Strength and Intrepidity, and the Place be ſafe and convenient, with reſpect to the Nerves and Arteries, the moſt expeditious Method that can be uſed, is to ſeparate or cut off all the Calloſities with the Kniſe, or cauterize them with a red-hot Iron. By this bold and reſolute Operation, the inveterate and ſtubborn Ulcer is, as it were, converted into a very recent Wound; and, conſequently, may be healed by common Remedies, unleſs the Cure be prevented by a Caries, a bad Habit of Body, the *Lues Venerea*, Scurvy, Dropſy, or ſome other Indiſpoſition.

Of the Cure of MAGIC ULCERS, *or ſuch as are ſuppoſed to be induced by Faſcination.*

For Ulcers on which they beſtow the Epithet of *Magic*, on account of their ſtrange Phænomena, as containing Threads, Needles, Nails, and the like, *Paracelſus*, *Helmont*, *Agricola*, and many others, have been very careful to preſcribe Remedies, which are, for the moſt part, of no Significancy, and either ſuperſtitious or idle. The beſt of them, however, ſeem to be Oaken and Willow-leaves, Maidenhair, St. John's Wort, by ſome called *Fuga Dæmonum* on this Account, Quickſilver, Aſa-fœtida, Antirrhinum, and ſome others: Any one of theſe, either hung about the Neck, or uſed in ſome other inſignificant manner, according to Preſcription, will, as it is pretended, ſecure the Body from all malevolent Influence and Effects of Faſcination. Some preſcribe the Aſhes of a Woman burnt for Witchcraft; others the Aſhes of burnt human Dung, to be ſprinkled on the Ulcer. *Heerius* and *Horſtius* recommend eſpecially the *Unguentum de Viſco corylino*, or Ointment of Miſſelto of the Hazel, againſt magic Ulcers: *Mynſicht* preſcribes his Fœtid Plaiſters: Others adviſe other Things.

Whatever our Sentiments ought to be on this Head, it is certain a Phyſician beſt conſults his own Reputation, as well as the Health of his Patient, when he treats Diſeaſes and Maladies of this Kind, which, by the ignorant Vulgar are, for Reaſons vain and ridiculous, reputed the Effects of Magic, with natural and common Medicines, or ſuch as he eſteems, upon careful and due Thought and Examination, accommodated to the Nature of the Ulcer, and eſpecially to the Habit of the affected Party; ſuch are the Remedies recommended under the preceding Heads: For though we ſhould be never ſo willing to grant, that a Perſon may ſuffer in his Body, and be diſquieted, by the crafty and cunning Tricks and Deluſions of the Devil and Magicians, yet we have no ſufficient Reaſon to convince us, that the Diſorder thus cauſed, is ſupernatural, and, on that Account, incurable by natural Means; ſo as to oblige us to have Recourſe to ſuperſtitious, ſordid, and abſurd Remedies. To this it may be added, that ignorant and ſuperſtitious Surgeons, and Attendants on Bagnios, report everywhere as magical, all ſuch Ulcers as they are not able to cure; whereas the ſame falling afterwards into more ſkilful Hands, when the true Nature and Cauſe of their uncommon Malignity comes to be diſcovered, are often healed without much Difficulty. There have been, alſo, perhaps, in former times, ſome ill-meaning Surgeons who have pronounced an Ulcer *magical*, without Foundation, in order to extort the more Money for the Cure.

Of the Cure of OLD ULCERS, *eſpecially in the Legs.*

Though no Part of the Body be ſecure from the Danger of old or inveterate Ulcers, yet are the Legs and Feet more ſubject to them than other Parts: And for this Reaſon, though we have formerly treated of malignant or inveterate Ulcers in general, we think it incumbent on us to enlarge more particularly, on thoſe which infeſt the Legs or Feet. The Cauſes of Exulcerations of the Legs are generally the ſame with thoſe of malignant Ulcers in general; for one as well as the other proceed from a bad Habit of Body, a thin and acrimonious Blood, ſome adjacent Fiſtula, Caries, or Callus: In Women, from an Obſtruction of the Menſes, and other like Cauſes. Whoever, therefore, pretends to cure an Ulcer in the Leg, muſt inquire into its true Cauſe, and to the ſame accommodate the Cure, in the Manner preſcribed above.

But before we enter into the Method of Cure, it will not be improper to inquire whether a Conglutination of ſuch inveterate Sores or *Ulcers* in the Feet and Legs can be effected with Safety; becauſe there are Inſtances in the Writings of the moſt experienced Phyſicians, where the Conſequences of ſuch Caſes have been very ſevere and dangerous Diſorders, and oftentimes moſt certain and preſent Death. I have, as I apprehend, in a great meaſure, given a ſatisfactory Anſwer to this Queſtion near the Beginning of this Diſcourſe, when I ſaid, that in Perſons far advanced in Years, and of a very bad Habit of Body, it is beſt to abſtain from Conglutination of ſuch inveterate *Ulcers*, becauſe they are a great means of Health, as being ſo many Iſſues or Outlets by which Nature is accuſtomed to expel the noxious or ſuperfluous Humours. I would not, however, without ſome weighty Reaſon, have this Rule applied to young and robuſt Perſons; for ſince the firſt Cauſes of ſuch ſtubborn *Ulcers*, either by Abſtinence and a prudent Regimen, or by Fontanels, or proper Medicines, may, without all Danger, in ſuch Subjects, be removed, it cannot be doubted but that the Conglutination may afterwards be performed with little or no Detriment to the Patient.

Tho' we have determined the Conglutination of moderate Sores or *Ulcers* in the Legs or Feet of aged Perſons to be dangerous, yet we are ſo far from thinking all Care and Medicines in their Caſe uſeleſs, that we rather pronounce them highly neceſſary. The Surgeon here has a double Duty incumbent on him; one Branch of which conſiſts in alleviating as much as poſſible the Pains and Diſorders which attend them; the other Part of his Buſineſs is to take care that the Evil may not increaſe, nor ſpread; and that no new bad Symptoms, ſuch as Pains and Inflammations, may add to the Diſeaſe by exaſperating the *Ulcer*.

In the firſt place, therefore, Abſtinence, and a very exact Regimen of Diet is to be injoined the Patient, that he may not eat to Exceſs, nor of ſuch Meats as are noxious and prejudicial in his Caſe; of which Kind are all acrimonious, hard, and crude Aliments, and Swine's Fleſh in particular. Proper and gentle Cathartics are, alſo, of Service in attracting the redundant and malignant Humours from the lower Parts, and expelling them gently by Stool. Beſides theſe, other internal Medicines, which are contrary to the Cauſe of the Diſeaſe, are occaſionally to be preſcribed; ſuch, for Inſtance, as Elixir Proprietatis, and Eſſences of Myrrh, Amber, and *Peruvian* Balſam, which, as well as all Balſamics, and Bitters, are highly ſerviceable for correcting the immoderate Thinneſs and Acrimony of the Blood in Perſons advanced in Years.

With reſpect to external Treatment, it is above all things neceſſary, that the *Ulcer* be kept clean, and once or twice every Day exterged from Sanies. After this it is to be filled with Lint, either dry, or dipt in a Decoction of the Leaves of Walnut or Birthwort, for the Reception of the acrid Humours. Upon this it will be proper to apply *Bauhine*'s Plaiſter for old

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Ulcers; or the *Emplaſtrum Diaſulphuris* of *Rulandus*; the Lead Plaiſter, the Plaiſter of Diapompholyx, or of *Lapis Calaminaris*, or any other of the like Nature. Theſe Directions being carefully and regularly obſerved, and the affected Part guarded, as much as is poſſible, from the Injuries of the Air, or external Cold and Humidities, it is not to be doubted but the *Ulcer* will prove of the mildeſt Sort, and ſerve as a Drain to the whole Body for the Evacuation of corrupted Humours, and conſequently be found beneficial and ſalutary, and highly conducive to the Prolongation of Life and Health. And really it ſeems probable, that the Obſervation of thoſe admirable and wholſome Effects of inveterate *Ulcers* in aged Perſons induced the antient Phyſicians, who followed Nature as the beſt Guide, to raiſe Fontanels in ſick and valetudinary Bodies, which might do the Office of *Ulcers* in draining and evacuating the Body of acrid and ſuperfluous Humours.

If it ſhould happen, as is ſometimes the Caſe, that by means of ſome Blow, or taking Cold, or by immerging the Leg in cold Water, or from a Fit of Anger, a Fright, Sorrow, or an improper Regimen of Diet, that the diſeaſed Part be ſeized with a Pain or Inflammation, it will be convenient to wrap the Place in a Linen Cloth folded and moiſtened with *Hungary* Water, or with theriacal, or camphorated Spirit of Wine, or with Lime-water and the ſaid camphorated Spirit, and frequently to repeat the ſame; and the Patient is to be ſtrictly injoined to keep his Leg in Bed, and to guard it from external Cold, taking every Morning ſome Cups of Tea, or ſome other Sudorific, and to ſweat well afterwards in his Bed; by theſe means the Pain and Inflammation are uſually in a ſhort time removed. But the Caſe becomes dangerous, when the Inflammation is violent, eſpecially in a corrupted and weak Body, and begins to paſs into a Gangrene. In ſuch a Circumſtance the ſame Remedies are to be employed, both internal and external, as have been preſcribed for a Gangrene [See the Article GANGRENA]. But Care is to be taken, above all things, that ſuch infirm and aged Patients be every now-and-then refreſhed with Cardiacs, and comforting Medicines, and frequently caſt into a gentle Sweat. If theſe Kinds of Remedies be poſtponed and neglected, the Danger uſually increaſes, and there is very great Reaſon to fear, that the Diſeaſe will gradually degenerate into a Sphacelus, followed by Death.

When inveterate *Ulcers* of this Kind, in old and infirm Subjects, dry up ſpontaneouſly, and turn livid, the Patients, for the moſt part, are immediately ſeized with an Horror, Nauſea, and Feebleneſs, which are Indications of a great Decay of Nature, a Corruption of the affected Part, and an extremely dangerous Condition, which often terminates in a ſpeedy Death. Under ſuch formidable Symptoms there is the greateſt Neceſſity to have immediate recourſe to a proper Diet, and corroborative Medicines for preſerving the Strength. Topics convenient to be applied to the *Ulcer* are the Roots of Gentian, or Florentine Orris bruiſed; or, if theſe prove not ſtrong enough, the Root of Black Hellebore reduced to Powder, or in Globules; or, in the laſt place, if this be ineffectual, Powder of Cantharides, or a Globule of a Bliſter-plaiſter of the Shops. By this Method ſuch *Ulcers*, when in a State of Exſiccation, or in a manner dry'd up, are ſtimulated and irritated to ſuch a Degree as ſometimes to flow afreſh, and ſo begin to relieve the Patient from the malignant Humours by which he was oppreſſed, after which the *Ulcer* is to be treated in the manner preſcribed. But if theſe Medicines prove of no Effect, and the *Ulcers* continue in a State of Dryneſs, there remains no Hope of the Patient, whoſe Caſe is deſperate, and Death unavoidable. *Heiſt. Chir.*

ULEX. A Name for the *Geniſta ſpartium*; *majus*; *brevioribus aculeis.*

ULMARIA.

The Characters are;

The Leaves are pinnated, reſemble thoſe of Agrimony, are triangulated, and divided after the Manner of thoſe of umbellated Plants. The Apex of the ſmall Pedicle is expanded into a monophyllous, quinquefid Calyx, which is expanded like a Star. The Flowers are roſaceous, pentapetalous, collected into Panicles, ſcarce viſible, and furniſhed with numerous Stamina. The Ovary, which grows in the Centre of the Calyx, conſiſts of three, four, or five little Pods, furniſhed with a Tube, and becomes a Fruit compoſed of a Multitude of ſmall membranaceous intorted Sheaths, collected into an Head, and containing one ſmall Seed.

Boerhaave mentions two Sorts of *Ulmaria*; which are,

1. Ulmaria. *J. B.* 3. 488. *Raii Hiſt.* 1. 623. *Synop.* 3. 259. *Boerh. Ind. A.* 295. *Tourn. Inſt.* 265. *Ulmaria Regina Prati.* Offic. *Ulmaria vulgaris.* Park. Theat. 592. *Ulma Regina Prati.* Ger. 886. Emac. 1043. *Ulmaria Barba Capri floribus compactis.* C. B. P. 164. MEADOW-SWEET.

Meadow-ſweet has a long, reddiſh, fibrous Root, from which ſpring ſeveral pinnated Leaves, having two or three Pair of oppoſite large ſerrated Pinnæ, with an odd one at the End, cut into three Parts; they are hoary underneath, and green above, wrinkled, and full of Veins, and having ſeveral very ſmall Pieces between the Pinnæ; the Stalk is red and angular, growing two or three Feet high, beſet in an alternate Order with the like Leaves. The Flowers grow upon the Top of the Stalks, Umbel-faſhion, being ſmall, five-leaved, and full of Apices of a white Colour, and are followed by little round Heads, made Screw-faſhion, of ſeveral Seeds ſet together. It grows in moiſt Meadows, and by River Sides, and flowers in *June*. The Leaves and Tops are uſed.

They are alexipharmic and ſudorific, and good in Fevers, and all malignant Diſtempers; they are, likewiſe, reſtringent, binding, and uſeful in Fluxes of all Sorts: They are put into the *Aqua Lactis*.

The only Officinal Preparation is the *Aqua Ulmariæ. Miller's Bot. Off.*

Its Leaves have an herby, ſaltiſh, and glutinous Taſte; they give a faint-red Colour to the blue Paper; the Root gives it a deep one; it is ſtyptic, and a little bitter; its Salt ſeems to reſemble the Sal Ammoniac; but is united with a great deal of Sulphur, and a pretty deal of Earth.

By the chymical Analyſis it yields ſome acid Liquors, ſome volatile concrete Salt, a good Quantity of Sulphur, and a pretty deal of Earth: Thus it is ſudorific, cordial, and vulnerary. The Decoction of its Root in Water is very good in malignant Fevers, and is preferable to that of *Scorzonera*.

The Extract of its Root is ſaid to be ſudorific, but it is very moderate; for though you ſhould give a Dram of it in the Morning, another in the Afternoon, and a third at Night, with a Grain of Laudanum, you muſt continue this Practice for two or three Days, before you can perceive any conſiderable Effect. The ſame is, alſo, obſervable in other Sudorifics. A Decoction of its Root is deterſive and vulnerary. Its Juice enters the *Emplaſtrum Felicis Wurtzii. Martyn's Tournefort.*

The Flowers, infuſed in Wine or Beer, communicate to them a grateful Smell and Taſte in manner of the *Pimpinella*. The Flowers are of a pleaſant Smell, exhilarating the Heart without oppreſſing the Head, whence they are very proper in Summer-time to adorn or be ſtrew'd in Parlours and Dining-rooms. One *Renætus* of *Rochelle*, as we are told by *J. Bauhine*, affirms, that the Flowers communicate a grateful Smell to Metheglin, and improve it to ſuch a Degree as to compare with the Wine of *Crete*, or *Candy*, which they call *Malmſey*.

I myſelf have ſeen, and can ſolemnly affirm, ſays *S. Pauli*, that *Queen of the Meadows* has had ſurpriſing Effects on a Girl who had a mortal Wound in the Bladder, and in an almoſt incurable Fracture of the Arm; whence it juſtly deſerves to be an Ingredient in the moſt celebrated and uſeful Plaiſter of *Felix Wurtzius*, who highly extols the Roots of this Plant, and ſeems to prefer it before all other Vulneraries, or any ſuch as are recommended in Fractures. *Raii Hiſt. Plant.*

2. Ulmaria; floribus in longas ſpicas congeſtis. *Barba Capræ, floribus oblongis.* C. B. P. 163. T. 265. *Barba Capri.* J. B. 3. 488. *Boerh. Ind. alt. Plant.*

Ulmaria is antiſpaſmodic, antiepileptic, corroborative, and aſtringent: Hence our Peaſants uſe it in a Dyſentery, and Diarrhœa, and to repreſs Vomiting. I have found it, alſo, of Service in regulating the diſorderly Motions of the Heart, Blood, and Spirits; and where-ever Condenſation, Strengthening, or Aſtriction are required, this Herb is of excellent Uſe. The Leaves are good for an Hæmoptoe; and the bruiſed Root is applied to Wounds, in order to ſtop the Blood, and conſolidate the Part. A Decoction of the Roots is proper in malignant Fevers. *Hiſt. Plant. adſcript. Boerhaav.*

ULMUS.

The Characters are;

The Flower is monopetalous, Bell-ſhaped, and adorned with many Stamina. The Ovary in the Centre of the Flower becomes a foliaceous, Heart-ſhaped Fruit, ſoon mature, concealing in the Middle a membranaceous, Pear-ſhaped Capſule, full of a Seed of the ſame Figure.

Boerhaave mentions four Sorts of *Ulmus*; which are,

1. Ulmus; campeſtris, & Theophraſti. *C. B. P.* 426. *Tourn. Inſt.* 601. *Boerh. Ind. A.* 220. *Ulmus.* Offic. J. B. 1. 139. *Ulmus vulgaris.* Park. Theat. 1404. *Ulmus vulgatiſſimus folio lato ſcabro.* Ger. Emac. 1480. Raii Hiſt. 2. 1425. Synop. 3. 468. COMMON ELM.

The Elm is one of the commoneſt Trees we have: It has a rough thick Bark, and the Branches are cloathed with ſomewhat rough, crenated, green Leaves. The Flowers are ſmall and ſtaminous, coming out early in the Spring before the Leaves. The Seed is round and foliaceous.

The Bark is principally uſed, being abſterſive and cleanſing, and is frequently uſed in Gargariſms for ſore Mouths and Throats, to clear them of tough viſcid Phlegm. It is, likewiſe, accounted good for Ruptures, and to conſolidate Wounds. *Miller's Bot. Off.*

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The Seed of the *Ulmus* is called *Samera*, and is ripe about the latter End of *April*.

As to its Virtues, according to *Dioscorides*, the Leaves, Tops, and Bark, are of an aſtringent Quality. The Leaves bruiſed in Vinegar are effectual againſt the Lepra, being rubbed on the Parts, [*Galen* aſcribes this Virtue to the Bark, *Pliny* to both the inner Bark and Leaves] and conglutinate Wounds, and much more effectually if the Bark be bound about the Place inſtead of a Fillet. The Roots have the ſame Virtue of conglutinating Wounds, and the Decoction of the Roots, or, according to *Dioscorides*, of the Bark of the Roots, is uſed by ſome to waſh Fractures, in order to accelerate Conſolidation by inducing a Callus. The ſame Decoction is ſaid to mollify Hardneſſes of the Joints, and to reſolve Convulſions of the Nerves. The fat Subſtance ſwimming on the Decoction, reſtores Hair fallen off, being rubbed on the Place. The Bark of the Root bruiſed, and worked up with *Muria*, into a Malagma, mitigates the Pain of the Gout.

A Dram of the Bark [an Ounce] taken in an Hemina of cold Water [*Dioscorides* ſays in Wine or Water] works by Stool, and particularly upon phlegmatic and watry Humours. *Plin. Dioscorides.* It is ſtrange, ſays *Ray*, that an Aſtringent ſhould purge. *Pliny* commends the Tear for Collections [Abſceſſes] Wounds, and Ambuſtions; but the Elm in our Country, ſays *Ray*, diſcharges no Tears, either ſpontaneouſly, or from Wounds.

The Bark of the Tree boiled in common Water to near the Conſiſtence of a Syrup, and then mixed with a third Part of Aqua Vitæ, is a ſingular Remedy againſt the Pain of the Sciatica, the Part affected being fomented with it for ſome time by the Fire.

The Humour found in the Follicles, which grow on the Leaves, rubbed on the Face, brightens the Skin, and makes the Countenance more amiable. *Matthiolus* writes, that it cures the Enterocele in Children, if Bolſters dipped therein are applied to the Groin, and tied under their Thighs. *Fallopius* ſays, that he never found any thing more effectual in Agglutination than this Liquor. Of the ſame is prepared an Oil, which, as we are aſſured by *Sylvius*, is of extraordinary Efficacy in Wounds; but we could never obſerve, ſays *J. Bauhine*, that Oils had any good Effect on ſimple Wounds, but rather fill them with Sordes, and prevent their Conglutination. *Raii Hiſt. Plant.*

2. Ulmus; folio latiſſimo ſcabro. *Ger. Emac.* 1481. *Raii Hiſt.* 2. 1426. *Synop.* 3. 469. *Tourn. Inſt.* 601. *Boerh. Ind. A.* 220. *Ulmus montana.* Offic. C. B. P. 426. *Ulmus latiore folio.* Park. Theat. 1404. THE WYCH HAZEL.

This is found frequently in Hedges. The Bark is uſed in Medicine, and agrees in Virtues with that of the preceding Elm.

3. Ulmus; minor, folio anguſto, ſcabro. *Ger. Emac.* 1480.

4. Ulmus; folio glabro. *Ger. Emac.* 1481. Park. Theat. 1404. *Boerh. Ind. alt. Plant.*

ULNA. The Name of a Bone in the fore Arm. See BRACHIUM.

ULNARIS MUSCULUS. *Winſlow* deſcribes three Muſcles under this Name; the *Ulnaris Internus*, the *Ulnaris Externus*, and the *Ulnaris Gracilis*; for which laſt ſee PALMARIS LONGUS.

The ULNARIS INTERNUS is a long Muſcle, fleſhy at its upper Extremity, and tendinous at the other, ſituated on the outer Part of the Ulna.

It is fixed by its upper Part in the back Side of the long or internal Condyle of the Os Humeri, in that Part of the Olecranum which is next the Condyle, along the upper Half of the Ulna very nearly; and to the Middle common Tendon of the neighbouring Muſcle, termed commonly *Profundus*.

It runs in the Direction of the external Angle of the Ulna, and ends by a long Tendon in the *Os Piſiforme*, or *Orbiculare* of the Carpus, reaching, alſo, to the *Os Unciforme*, being united to the Ligament common to theſe two Bones.

When the *Ulnaris Internus* acts alone, or as the principal Mover, it brings the Hand obliquely toward the internal Condyle, and toward the Olecranum, though with Difficulty.

When it acts together with the *Radialis Internus*, it turns the Hand equally towards the two Extremities of the Bones of the fore Arm; and thereby moves not only the Carpus in general on the fore Arm, but, alſo, the ſecond Row of the Carpus on the firſt, and the metacarpal Bones on the ſecond.

When it acts with the *Ulnaris Externus*, it turns the outer Edge of the Hand toward the Olecranum.

The ULNARIS EXTERNUS is a long Muſcle lying on the Outſide of the fore Arm, fleſhy toward the Os Humeri, and tendinous toward the Carpus.

It is fixed above to the external Condyle of the Os Humeri, being there united to the *Anconæus minor*; to the annular Ligament of the Head of the Radius, and to the upper Half of the external Angle of the Ulna. From thence it advances, and forms a Tendon, which paſſes through the external Notch at the lower Extremity of this Bone, on one Side of the Styloide Apophyſis.

The Tendon having afterward paſſed under a particular Ligament ſituated near the Os Cuneiforme of the Carpus, is inſerted in the Outſide of the Baſis of the fourth metacarpal Bone, ſending ſome tendinous Filaments to the Baſis of the little Finger. It is, alſo, often fixed in the Baſis of the third metacarpal Bone.

When the *Ulnaris Externus* acts with the *Ulnaris Internus*, it turns the outer Edge of the Hand toward the Olecranum.

With the *Radiales Externi*, it turns the Back of the Hand toward the outer Condyle. This Motion is termed *Extenſion*, but very improperly, when applied to the Hand; for the *Metacarpus*, which is naturally bent this Way, will be ſtill more bent by the Action of theſe Muſcles. I ſhould chuſe, therefore, to term this Motion the Inverſion, rather than the Extenſion, of the Hand. The *Carpus*, indeed, may, in ſome Senſe, be ſaid to be extended, becauſe the Bones of the ſecond Row are brought to a ſtraiter Line with thoſe of the firſt.

When this Muſcle acts alone, it brings the outer Edge of the Hand obliquely toward the *Olecranum*, and the external Condyle, at the ſame time; but this is performed with Difficulty. *Winſlow's Anatomy.*

ULOMELIA, ὐλομελία, *Ionice*, ὐλομελίη, from ὖλ-ος, for ὅλ-ος, entire, and μέλ-ος, a Limb, in *Hippocrates*, ſignifies the entire, abſolute, eſſential, and univerſal Nature of any Thing. This appears to be the Senſe of the Word in the following Paſſages, *Lib. de Artic.* περὶ ἀδένων ὑλομελίης γεγράφεται, "there "will be a Treatiſe of the full and complete Nature of the "Glands;" where *Galen*, in his Comment, expounds the Place by τὴν ὁλόκληρον φύσιν τῆς τῶν ἀδένων φύσεως, "the perfect and "entire Nature of what eſſentially belongs to the Glands." The Word is uſed in the ſame Senſe in two Places of the Treatiſe *de Glandulis*, from which *Erotian* expounds ὑλομελίης by ὅλης φύσεως, "the entire Nature." Again, *Lib. de Aliment.* where we read, κατὰ μὲν ὑλομελίην πάντα, the Paſſage imports, that all the Parts conſpire, or are accommodated to the univerſal Good or Benefit of the Whole; and κατ' ὑλομελίην is there oppoſed to κατὰ μέρ-ος, which is uſed to expreſs a particular Relation and Conſent of the Parts among themſelves. We read, alſo, in his Epiſtles, ὑλομελίην τὸ σκῆνε-ος, by which he plainly means, "the univerſal Nature of the Body," which he recommends to the Study of a Phyſician. *Heſychius* takes ὑλομελίη for an Adverb, and expounds, by καθόλα, συλλήβδην, "univer-"ſally, comprehenſively;" and adds, that ſome underſtand it, ἐπὶ τῆς ἀῤῥάς τῶν ὅλων φύσεως, τὸ γὰρ ὅλον ὅλον λέγει, "of the "complex Nature of things; for ὅλον he calls ὅλον."

Οὐλομελίη ſignifies, alſo, a Perfection and Soundneſs in all the Members; and ὑλομελὴς is abſolutely perfect in all the Parts, and is expounded by ὑγιὴς, ὁλόκληρ-ος; "ſound, entire:" And thus it imports, in *Lib. de Corde*; where we read, τὴν μὲν γὰρ καρδίην ἰδοις ἂν ῥιπταζόμενον ὑλομελίῃ, "you may obſerve the "Heart agitated in every Part which belongs to it."

ULON, ὖλον, in the Plural *Ula*, ὖλα, are the Gums or Carruncles which are placed about the Teeth. Οὖλα, ſays *Ruffus Epheſius*, ἀι περὶ τὰς τῶν ὀδόντων ῥίζας σάρκες; "The *Ula* are "the fleſhy Parts about the Roots of the Teeth." But *Pollux* tells us, that the ὖλα are the Fleſh which incompaſſes the Teeth on the Outſide; and that the Fleſh which ſurrounds them on the Inſide is called ἔνυλα (*Enula*); ſee ENULON. The Gums are ſaid to have this Name beſtowed on them on account of their Softneſs and Tenderneſs; for ὖλ-ος, in *Heſychius*, is expounded τρυφερὸς καὶ ἁπαλὸς, "delicate and ſoft;" and *Erotian* explains ὖλῳ ἐρίῳ, τῷ μαλακῷ, "ſoft Wool." The ſame Author ſays, that ὖλον ἐρύθριον ſignifies τὸ πυῤῥὸν, "red, or ruſſet-"coloured;" and by ſome is taken to mean τὴν ἰσομεγέθη ἐρυθρῷ ἀκροχορδόνην, "a Wart, of the Bigneſs of a Vetch." Οὖλα, in *Hippocrates*, *Lib.* 2. *de Morb.* is put for a Tumor and Diſorder of the Gums.

Ulæ, ὖλαὶ, alſo, ſignifies the Gums, 7 *Epid.* where we read, ὑλάων ὑπερσάρκωσις, "a fleſhy Excreſcence in the Gums," &c. But *Lib.* 5. *Epid.* we read it ὕλων, and the ſame is repeated. Οὖλαι, alſo, in *Erotian*, is expounded by κρίθαὶ (*Crithæ*), "Grains of Barley."

ULOPHONOS, ὐλοφόν-ος. The Name of a poiſonous Plant; the ſame as IXIA.

ULPHA. *Rulandus* explains this by *Lapſatura*; *Caſtellus* by *Recrementum Cotis.*

ULRACH. Dragons Blood. *Rulandus.*

ULTRAMARINUM. Ultramarine. A fine Magiſtery of *Lapis Lazuli*, of a fine blue Colour, much uſed in Painting, but not in Medicine. *Junken* deſcribes the Method of preparing it.

ULVA. A Species of Moſs. See the Explication of botanic Terms, under the Article BOTANY.

ULULA,

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ULULA. Offic. Aldrov. Ornith. 1. 538. Bellon. des Oyſe. 142. Geſn. de Avib. 700. Mer. Pin. 171. Jonſ. de Avib. 32. Charlt. Exer. 78. *Strix cinerea.* Will. Ornith. 68. Raii Ornith. 105. Ejuſd. Synop. A. 26. THE GREY OWL.

The Parts in Uſe are, the Gall, Fat, and Fleſh. The Gall is commended for the Albugo, Cataracts, and Films; the Fat for clearing the Sight; the Fleſh boiled in Oil, and that Oil mixed with Sheep's Butter and Honey, is good to heal Ulcers. *Pliny.* It is eſteemed by ſome for the Gout. *Dale.*

UMARI. See CAMARINHAS.

UMBELLA. See FLOS UMBELLATUS, in the Explication of botanical Terms, under the Article BOTANY.

UMBELLIFERA ALSATICA. A Name for the *Oreoſelinum, pratenſe*; *Cicutæ folio.*

UMBELLIFERA CANARIENSIS. A Name for the *Bupleuroides*; *quæ Simpla nobla Canarienſium.*

UMBELLIFERA, FOLIO PANACIS. A Name for the *Paſtinaca, folio quaſi Libanotidis latifoliæ*; and, alſo, for the *Paſtinaca*; *ſemine longiſſimo.*

UMBILICATA LINIFOLIA. A Name for the *Omphalodes*; *Luſitanica*; *Lini folio.*

UMBILICUS MARINUS. Officin. *Operculum Cochleæ cælatæ.* Bellon. de Aquat. 430. Mont. Exot. 6. *Operculum Cochlearum marinarum ſubrotundum in ſe contortum.* Long. Math. Teſt. 56. This is the Cover of the *Cochlea Cælata*, and is a ſtony kind of Subſtance, of a flat Superficies, remarkable for a ſpiral Line of a deep-yellow Colour, hollow in one Part, after the Figure of a Navel, of a carnation, or igneous Colour, and an earthy Taſte. As to the Virtues, *Johnſon* ſays it ſtimulates to Venery.

Auguſtinus Scilla is perſuaded, that theſe Subſtances are either the Eggs of the *Cochlea*, or ſome other ſhort, imperfect Productions of the ſame: But the ingenious Mr. *Ray*, when he was on his Travels in *Italy*, and at *Rome*, procured the Fiſh itſelf juſt taken out of the Sea, alive, in its Shell, with this kind of Operculum or Cover over it.

UMBILICUS VENERIS. A Name for the *Saxifraga*; *Sedi folio, anguſtiore, ſerrato.*

UMBILICUS VENERIS is, alſo, a Name for the *Cotyledon*; *major.*

UMBILICUS, is, properly, the Navel.

UMBLA. The Name of a River Fiſh, ſomewhat like the Trout. It is eſteemed very good Food, and to be aperient, and reſolutive.

UMBRA. Offic. Salv. de Aquat. 115. Raii Ichth. 299. Ejuſd. Synop. Piſc. 95. Rondel. de Piſc. 1. 132. Geſn. de Aquat. 1029. *Umbra marina.* Aldrov. de Piſc. 81. Bellon. de Aquat. 129. THE GRUNTER, or SHADOW-FISH.

It is taken in the *Mediterranean* Sea. The Parts in Uſe are, the Bones found in the Head, and called in the Shops *Lapides Umbrarum:* Theſe are commended for the Colic, and, in *France*, are commonly ſet in Silver, and ſold by the Goldſmiths under the Name of Colic-ſtones: For, they ſay, if it be only carried about one, or worn about the Neck, it not only removes the Pain of the Colic, but prevents its Return. *Bellon. Dale.*

UMBRAGINES. Pigmies. *Rulandus.*

UMBRATILIS PUGNA, *Græc.* σκιαμαχία, is a Species of Gymnaſtics, in which the Patient fights with Head and Heels, or boxes and wreſtles with a Shadow. He is not only to uſe his Hands, ſays *Oribaſius*, but his Legs, in this Encounter with a Shadow; and ſometimes to put himſelf in a Poſture of Leaping, and throwing himſelf on his Adverſary, and to uſe his Heels like a Wreſtler; ſometimes he is to preſs, or ſpring forward; and ſometimes to retreat, as from a ſuperior Force. The Patient, in this kind of Exerciſe, did not always fight with a Shadow, but ſometimes encountered a Pillar, or a Poſt. Of this *Umbratilis Pugna* we find not only Notice taken in *Plato*, who, in his *Apology*, and elſewhere, ſays, of thoſe who fought without an Adverſary, that they did σκιαμαχεῖν, "combat a Shadow;" but, alſo, by St. *Paul*, who, 1 *Cor.* ix. alludes to it, in theſe Words, ἄτυπτα πυκτεύω, "οὐχ ὡς ἀέρα δέρων, "ſo "fight (box) I, not as one who beateth the Air." *Mercurialis de Art. Gymnaſt.* p. 191.

The *Umbratilis Pugna*, or *Sciamachia*, is good to remove the Senſe of a Laſſitude, to ſtrengthen the Shoulders, and for Weakneſs of the Nerves, and a Tremor; it, alſo, draws the Humours downwards, eſpecially in thoſe who act the Wreſtler in ſtanding on Tiptoe; and it is of good Service to the Kidneys, and *Inteſtinum Colon*, and in Diſeaſes of the Thorax. *Oribaſ. Med. Col. Lib.* 6. *Cap.* 29.

UMBU. See IVA-UMBU.

UMBU. Piſon. *Pruniſera Braſilienſis Fructu magno, radicibus tuberoſis.*

In Bigneſs, Structure, and Fruit, it appears, at a Diſtance, like a ſmall Citron or Lemon-tree; the Trunk is ſhort, and not thick, but divided into a Multitude of twiſted Branches, of a weak Contexture; the Leaves are not large, but ſmooth, and of a lively Green, but of an acid and aſtringent Taſte; it bears a whitiſh Flower; and the Fruit is of a yellowiſh White, and reſembles a pretty large Plum, but has a harder Pulp, tho' but little in Quantity, becauſe it covers a large Stone, as does the Fruit *Acacia*; and when it is ripe, in the rainy Months, becomes of a very grateful Taſte, being of an acid mixed with a Reliſh of ſweet; but is, otherwiſe, ſo harſh, as to ſet the Teeth on Edge; and is, therefore, reſerved for the ſame Uſes as the Leaves, which are adapted to the Intentions of refrigerating, and aſtringing: The Root, which has ſomething peculiar, and remarkable, beyond the Roots of other Trees, ſpreads far and wide under-ground, and ſwells to various thick and ponderous Tubera, which, if you conſider their Shape and Colour on the Outſide, which is an Aſh-colour, you would take for large Potatoes, or Roots of the *Linhyama*; but, when their outer Pellicle is taken off, they will appear different; for, on the Inſide, they are of a Snow-white Colour, and full of a ſoft and ſucculent Pulp, exactly like that of the Gourd, and diſſolving, in the Mouth, into a cold watery Juice, very ſweet, and grateful to the Palate.

It is highly comfortable and refreſhing to feveriſh Perſons, to ſuch as labour under violent Heats, and to Travellers, as I have often experienced, ſays *Piſo*; and, in the Sweetneſs and Wholſomeneſs of its Water, is not at all inferior to the Citrul. *Raii Hiſt. Plant.*

UNCAM. Quickſilver. *Rulandus.*

UNCIA. An Ounce.

UNCINUS. A ſmall Hook. *Caſtellus.*

UNCTIO. Unction.

UNCTUARIUM. A Room, in the antient Baths, where People were anointed.

UNCTUOSITAS. Unctuoſity, or Unctuouſneſs.

UNCUS. An Hook: Of which many Sorts are uſed in Medicine.

UNDATIO. A kind of preternatural Motion of the Heart. It ſhould ſeem to be that Sort of Motion which makes an undulating Noiſe, perceiveable externally.

UNDIMIA. A kind of œdematous Tumor, the Matter of which is coagulated, and glutinous, like the White of an Egg.

UNEDO. See ARBUTUS.

UNGUEN. An Ointment.

UNGUENTARIUS. A Vender of Ointments, and Perfumes.

UNGUENTUM. An Ointment.

Ointments are divided into ſimple and compound; though it ſo happens, that ſome of the former are conſiderably compounded: And, amongſt the latter, there are ſome ſimple Ointments, and others very little compounded.

It frequently occurs, that Turpentine, Ceruſe, Lard, and ſome other Things, are ordered to be waſhed in Roſe-water, or the Juice of ſome Herbs; but this is a Circumſtance that avails ſo little to any Purpoſe of Moment, that I never knew it complied with: So that a Continuation of ſuch Directions ſeems principally to be in Compliment to the old Preſcriptions, which abound in ſuch minute Exactneſſes. It may here, alſo, be obſerved in general, that where Oil is directed in an Ointment or Plaiſter, the wholeſale Traders, who ſeek only Profit, generally ſubſtitute Lard; and where Ceruſe, Minium, or Litharge are concerned, they are generally uſed in Over-proportions, becauſe they make ſuch a Weight come out much cheaper.

The *Unguentum album Camphoratum*, and *Rubrum deſiccativum*, are much of the ſame Intention, though the former is the more cleanly Medicine, and moſt in Uſe; and there is no Circumſtance in their Making, of Conſequence, but the mixing of the Camphire, when the other Materials are ſo cool, that their Heat will not evaporate it; but even long Keeping will, in a great meaſure, if not wholly, loſe it: So that the Goodneſs of theſe is ſolely known by their ſmelling ſtrong of this Ingredient. The *Unguentum de Minio Camphoratum*, & *Plumbo*, and *Nutritum*, are within the ſame Intention: But the two former are not uſed; and the latter is ſo inconvenient, upon account of its ſoon growing dry, and even milky, that it is, alſo, but in little Eſteem: The common Diachylon, alſo, lowered into an Ointment, with a little Oil, is the ſame thing, and of a much ſmoother and better Conſiſtence. The *Unguentum Tutiæ* comes in too, as a Dryer, and a Cooler; but hath nothing remarkable in its Making, and is principally uſed againſt Inflammations in the Eyes.

The *Unguentum Ægyptiacum* is the only one, amongſt many others, brought to a Conſiſtence with Honey, that is in Uſe; and

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and this principally in Sores of the Mouth, where those Things which are more properly Ointments, are nauseous. The green Colour of Verdegrise changes black in the Boiling.

The *Unguentum ex Apio*, amongst the lesser, and *Mundificativum ex Apio*, amongst the greater Compounds, are exactly the same: But I never knew any thing made or prescribed under either of these Titles.

The *Unguentum è Gummi Elemi*, most commonly called *Linimentum Arcæi*, from the Name of its Inventor, and the *Basilicon Minus*, are the principal in Use amongst our Surgeons, for deterging Dressings; though there are others of like Intention, and some of them newly added, from the Experience of Persons now living, which are not yet so much established in the Shops; as the *Unguentum Basilicon flavum*, *Unguentum aureum*, *è Resina*, and *Detergens*.

There are some considerable Compositions of this Form, in the Intention of Emollients, at the Head of which is the *Unguentum Dialthææ*; but the great Demand for this, as it is much used, hath taught the wholesale Men very greatly to spoil it, in order to render it cheaper; for they accustom themselves to make it without the Mucilages, and counterfeit their Scent with a little Fenugreek Powder; the Neats-foot Oil, also, is hardly to be expected from them: When it is good, it is of a yellow Colour, and no ill Scent. The *Unguentum Liliorum*, *de Mucilaginibus*, and *Emolliens*, are of the same Intention, but not in Use.

Amongst the compound Ointments, there are some which take in a Number of very warm aromatic Ingredients, and seem designed for Paralytic Infirmities, and Cases that require brisk attenuating Applications: Of these are in most Esteem, the *Unguentum Martiatum*, and *Nervinum*; both which are much the best when fresh made; though that can be done but once in a Year, when the Ingredients are in their proper Season.

There are Ointments, also, within the Intention of Strengthners; but this at first View seems to be a very improper Form for such Things; because an Astringent, in an unctuous Vehicle, is the most unsuitable manner possible for its Application; the Slipperiness of the one entirely frustrating the Efficacy of the other: For which Reason, those few, that yet keep a Place in the Dispensatory, are entirely neglected; neither the *Unguentum Mastichinum*, nor the *Astringens*, being ever made; altho' it hath so happened, that the latter is twice prescribed in the last Dispensatory, but the second time under the Title of *Unguentum Sumach*.

The next Intention, of any Consequence, for which we are provided by this Form, and which seems as suitable to it as any, is against cutaneous Foulnesses, as the Itch, and such-like Distempers; and this seems to be the Reason that there is such Choice of them now given: But tho' most of these have the Reputation of great Antiquity, and hold their Places in abundance of officinal Dispensatories down to the present, especially the *Unguentum Enulatum Nicotianæ*, and *Ex Oxylapatho*; yet they are so uncleanly in Use, that they are almost altogether fallen to Neglect, unless in some of our Hospitals, those which contain Mercury being much more neat, and efficacious, for the same Purposes, as the *Unguentum cæruleum*; but even this must greatly give Place to many Prescriptions, for Elegance, which are to be met with only in extemporaneous Practice for the same Intentions.

Some other Things, of this Division, are, little less than Oils brought into Ointments by the Exchange of Oil for Lard; as the *Unguentum Rosaceum*, and *Sambucinum*, with some others, newly added, not yet brought into Use; as the *Unguentum Digitalis*, *Linariæ*, and some few others; but these require no particular Remark. Some others, also, pretty difficult to tell what they were intended for, as the *Valentia Scabiosæ*, *Tapsi Valentia*, *Tapsimel*, and *Unguentum Splanchnicum*, cannot be of any great Service to inquire into, especially as they are neither regarded in the Shops, or Prescription. The *Unguentum Populneum*, and *Diapompholygos*, are designed as Coolers, but now daily give Place to much neater Ointments in extemporaneous Practice. The Pomatum only remains, of this Division, to be taken notice of; but both the Making and Use of that is almost entirely got amongst the Women; that which is directed in the Dispensatory being of no manner of Regard. *Quincy's Prælect. Pharm.*

UNGUENTUM ÆGYPTIACUM. See ÆGYPTIACUM UNGUENTUM.

UNGUENTUM ÆGYPTIACUM MAGIS COMPOSITUM.

A more compound Egyptian Ointment.

Take of Verdegrise, four Ounces; of the sharpest Vinegar, six Ounces; of Honey, one Pound: Let them all boil over a gentle Fire, to a dusky Colour; adding, towards the latter End, of Roch Alum, and Sal Ammoniac, of each half an Ounce; and make them into an Ointment.

UNGUENTUM ALBUM. See ALBUM UNGUENTUM.

UNGUENTUM AMARUM.

The bitter Ointment.

Take of the Oils of Rue, Savin, and Mint, of each two Ounces and an half; Juice of Wormwood, one Ounce; Powder of Rue, Gentian, the lesser Centory, and Myrrh, of each one Dram; of the Pulp of Colocynth, two Drams; of Succotrine Aloes, three Drams; of Lupin-flowers, half an Ounce; of Ox's Gall, and of Wax, of each one Ounce and an half: And boil up to an Ointment, with a sufficient Quantity of the Juice of Wormwood.

The *Augustan* Dispensatory hath a Composition of this Intention, under the Title of *Unguentum ad Vermes*, which agrees with this, in many Ingredients; but that takes in many others, which *Zwelfer* justly finds fault with, as of no Advantage to the Medicine: This, therefore, seems to have had no Regard to that as a Pattern, but very plainly follows the Prescription taken into the first Dispensatory of the College from *Foesius*, under the Title of *Unguentum ad Lumbricos majus*, this differing from that in nothing but the Expulsion of some needless Ingredients, as the Juice of Peach-blossoms, *&c.* and changing Hepatic for Succotrine Aloes; but this last Alteration is against the Opinion of those who prefer the Hepatic Sort in external Applications, as this is designed principally to anoint the Bellies of Children troubled with Worms, because its more vigorous and fetid Scent is most likely to pass thro' the Pores, and give the intended Disturbance to these troublesome Creatures.

UNGUENTUM AD AMBUSTA.

Ointment for Burns.

Take of the inner Rind of fresh Elder, and of the fresh Leaves of the same Tree, each two Ounces: Bruise them well, and boil them in two Pounds of Linseed Oil, till the aqueous Moisture is consumed; then press out the Oil, and dissolve in it six Ounces of white Wax; and whilst they remain fluid, sprinkle the following Powders therein, keeping the Whole perpetually stirring; Powder of Ceruse, three Ounces; and of Calamine, one Ounce: Then taking the Mixture from the Fire, and permitting it to cool a little, add thereto two Drams of Camphire, reduced to a Powder, by being rub'd with a few Drops of Oil of Almonds: Lastly, mix all together, so as to make an Ointment.

This seems to be an excellent Ointment for the Purposes expressed by its Title, and deserves always to be kept in Readiness, to provide, in the best manner, against such Contingencies as we meet with every Day.

UNGUENTUM ANTIPSORICUM.

Ointment for the Itch.

Take of Elecampane-root, and the Root of sharp-pointed Dock, each three Ounces: Slice and bruise them; then pour thereon three Pints of Spring-water, and a Pint of Vinegar: Boil them to an half, and strongly press out the remaining Liquor; to which add six Ounces of the Leaves of fresh Water-cresses; and two Ounces of those of Sage: Let the Herbs be well bruised, and mixed up with four Pounds of Hogs Lard: Then boil all together, till the aqueous Moisture is exhaled, and press out the Ointment; whereto put four Ounces of the Oil of Bays; and mix the whole together.

Sulphur may be hereto added, occasionally.

If that stubborn cutaneous Distemper, the Itch, be curable by vegetable Preparations, this Ointment bids fair to effect it; but, in case of Failure, you see the Compilers order the Assistance of Sulphur, to be used at Discretion; and in the following Ointment, what rarely fails, the Assistance of Mercury.

UNGUENTUM ANTIPSORICUM CUM MERCURIO.

Ointment for the Itch, with Mercury.

This is made of the preceding Ointment, by adding thereto four Ounces of Quicksilver, killed by being ground with a proper Quantity of *Venice* Turpentine; and mixing them together, according to the Rules of Art, so as to make an Ointment.

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The three laſt Ointments are from the *Edinburgh* Diſpenſatory.

Unguentum Aſtringens ſive Sumach.

An aſtringent Ointment.

Take of Oil of Roſes, often waſhed in Alum-water, one Pint and an half; of white Wax, four Ounces; of unripe Galls, Cypreſs-nuts, Myrtle-berries, Balauſtines, Pomgranate-peel, Acorn-cups, Acacia, Sumach, and Maſtich, of each one Ounce: After all are well beat, macerate them for four Days in the Juice of Medlars and Services; then let them all be dried by a moderate Fire, and make them into an Ointment, with the Oil of Wax.

Unguentum Aureum.

The golden Ointment.

Take of yellow Wax, half a Pound; of common Oil, two Pounds; of Turpentine, two Ounces; of the Pine-tree Reſin, and Colophony, of each one Ounce and an half; of Frankincenſe, and Maſtich, of each one Ounce; of Saffron, one Dram: Firſt of all melt the Wax in the Oil; then put in the Turpentine, and give them a Boil together: After they have ſtood to cool a little, ſift in all the reſt, finely powdered; but add the Saffron laſt of all, and ſtir them about with a wooden Spatula, till they become an Ointment.

This is a Compoſition originally of *Meſue*, and had a Name firſt given it, both on account of its Colour, and the wonderful Virtues aſcribed to it; on which laſt Score, too, by ſome Authors, it is called *Unguentum Regis*. The *Auguſtan* Diſpenſatory, and all the Editions of the College, have received it, exactly the ſame, down to the preſent; yet I cannot learn, that it is in any great Eſteem in the preſent Practice of our Surgeons: Tho' *Zwelfer* ſays, it is a wonderful good Incarner, eſpecially in the moſt tender Conſtitutions: But he ſays, that it is much better for ſeveral Purpoſes, eſpecially in Wounds of the Head and Tendons, to uſe in it Oil of Turpentine, inſtead of the common Oil.

Unguentum Basilicon flavum. See Basilicon.

Unguentum Basilicon minus, *ſeu* Tetrapharmacum. See Basilicon.

Unguentum Coeruleum.

The blue Ointment.

Take of live Quickſilver, one Pound; of *Venice* Turpentine, ſix Ounces: Mix them together, in a Mortar, till the Globules of Mercury diſappear; and then add to it four Pounds of Hogs Lard made warm, ſo as to make them together into an Ointment.

Unguentum de Calce. See Calx.

Unguentum Citrinum.

The yellow Ointment.

Take one Ounce of Quickſilver, and diſſolve it in as much Spirit of Nitre as will ſerve for that Purpoſe: Then add, by Degrees, a Pound of melted Hogs Lard; and mix them into an Ointment.

For the Purpoſes of a Detergent, this ſeems to be a fine Contrivance. *Edinburgh Diſpenſatory.*

Unguentum detergens.

A detergent Ointment.

Take of yellow Reſin, of Sheeps and Hogs Fat, of each one Pound; of yellow Wax, and Powder of Olibanum, of each one Pound and an half; Gum Euphorbium, and Powder of Verdegriſe, of each two Ounces; of *Straſburg* Turpentine, three Ounces: Let the Fats, Reſin, and Wax, be melted together, and ſtrained; then to them ſift in the Olibanum, Euphorbium, and Verdegriſe, in Powder: And, laſtly, put in the Turpentine; and, when the Veſſel is taken off the Fire, keep ſtirring, till the Whole is cold.

Unguentum Dialthææ. See Althæa.

Unguentum Dialthææ compoſitum. See Althæa.

Unguentum Diapompholygos. See Cadmia.

Unguentum Digitalis. See Digitalis.

Unguentum e Gummi Elemi. See Elemi Gummi.

Unguentum Emolliens.

The emollient Ointment.

Take of freſh Butter waſhed in Roſe-water, ſix Ounces; of Oil of ſweet Almonds, four Ounces; Oils of Chamomile and Violets, of each three Ounces; of Ducks and Hens Fat, of each two Ounces; of Orrice-root, two Drams; of Saffron, half a Dram: When the Orrice and Saffron are powdered, and the reſt melted together, make them into an Ointment.

Unguentum Enulatum. See Helenium.

Unguentum Enulatum cum Mercurio. See Helenium.

Unguentum Fuſcum.

The brown Ointment.

Take of Colcothar, and the Phlegm of Vitriol, of each one Ounce; of Vinegar, one Ounce and an half; of the Flowers of Verdegriſe, five Drams; of deſpumated Honey, three Ounces: And make into an Ointment.

Unguentum Liliorum.

Ointment of Lilies.

Take of the Oil of white Lilies, ſix Ounces; of the Oils of Dill and Chamomile, of each two Ounces; of the Oil of ſweet Almonds, one Ounce; of Ducks and Hens Fat, of each two Ounces; and of yellow Wax, three Ounces: And melt them all together into an Ointment.

It ſeems calculated for the ſame Intention as the *Unguentum de Althæa*, to ſoften and diſcuſs Tumours.

Unguentum Linariæ. See Linaria.

Unguentum Martiatum. See Martiatum Unguentum.

Unguentum Maſtichinum.

The Maſtich Ointment.

Take of the Oils of Maſtich, Wormwood, and Spikenard, of each two Ounces; of the Powders of Maſtich, Mint, red Roſes, red Coral, Cloves, Cinnamon, Aloes-wood, and Camels Hay, of each one Dram; and of Wax, a ſufficient Quantity to make it into an Ointment.

Unguentum Mercuriale ſeu Neapolitanum.

The Mercurial or Neapolitan Ointment.

Take of Quickſilver, one Pound; of *Venice* Turpentine, and liquid Storax, each two Ounces: Grind them together in a Mortar, till the Globules of Mercury are no longer viſible; then add thereto three Pounds of melted Hogs Lard, and four Ounces of Oil of Bays: Mix all together into an Ointment, according to the Rules of Art.

The liquid Storax is here added with Judgment, both as it promotes the entire Diſſolution of the mercurial Globules, by its Viſcoſity, and gives the Whole a grateful Scent. *Edinburgh Diſpenſatory.*

Unguentum de Minio Camphoratum.

Camphorated Ointment of red Lead.

Take of Oil of Roſes, one Pound and an half; of red Lead, three Ounces; of Litharge, two Ounces; of Ceruſs, one Ounce and an half; of Tutty, three Drams; of Camphire, two Drams; of Wax, one Ounce and an half: Make them into an Ointment with a leaden Mortar and Peſtle, the Wax being firſt melted with a gentle Fire; and the reſt being added in fine Powder.

Unguentum de Mucilaginibus.

The mucilage Ointment.

Take of the Oils of white Lilies, Orrice, Violets, and Chamomile, of each ſix Ounces; of the Mucilage of Linſeed, Quince-ſeeds, Fenugreek ſeed, and Marſhmallow-roots, of each four Ounces; of Ducks and Hens Fat, of each five Ounces; of white Wax, one Pint: Mix, and make into an Ointment.

Unguentum Nervinum.

Nerve Ointment.

Take of Cowſlip-leaves, with their Flowers, of Sage, Ground Pine, Roſemary, Lavender, Bays with the Berries, Chamomile, Rue, Smallage, Melilot with its Flowers, and

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and of Wormwood, of each one Handful; of Mint, Betony, Penyroyal, Parſley, the leſſer Centory, and St. John's-wort, of each half an Handful; of Sheep's or Neat's-foot Oil, five Pounds; of Mutton or Beef-ſuet, or the Marrow of both, two Pounds; Oil of Spike, half an Ounce: Bruiſe them, and boil together with the Oils and Suets, till they become an Ointment.

This is much like the *Martiatum*, but the warmer of the two; and it is in Eſteem enough to keep its Place in the Shops, and be ſometimes preſcribed.

Unguentum e Nicotiana seu Peto.

Ointment of Tobacco.

Take of the depurated Juice of Tobacco, of freſh Hogs Lard, diligently waſhed, of each one Pound: And boil them together, to the Conſumption of the Juice; then add, of Turpentine, four Ounces; and of round Birthwort, in Powder, two Ounces: And make them into an Ointment.

This is originally taken from a Diſpenſatory of *Laurentius Jobertus*. Its firſt Preſcriber gives it an extraordinary Character for diſſipating ſcrophulous Tumours, and healing green Wounds; but the modern Practice directs it principally in cutaneous Foulneſſes; tho' it is ſo uncleanly a Medicine, at beſt, as to be offenſive to nice Perſons.

Unguentum Nutritum.

An Ointment by Mixture.

Take of Litharge of Gold, in fine Powder, half a Pound; of White-wine Vinegar, five Ounces; of Oil of Roſes, one Pound: Let the Litharge be ſtirred about in a Mortar, by Turns pouring in Oil and Vinegar, in little Parcels, until the Vinegar ceaſes to be viſible, and the whole becomes a white Ointment.

It is very drying, and even, in keeping, will grow ſo brittle, as to want freſh Oil to make it fit for Uſe; but it is not greatly in Uſe.

Unguentum Ophthalmicum.

Ointment for the Eyes.

Take of Tutty and Calamine, of each ſix Drams; of calcined Lead, and Camphire, of each two Drams; of Myrrh, Sarcocolla, Aloes, and white Vitriol, of each one Dram: Make them all into a fine Powder. Then take of freſh Butter, twelve Ounces; of white Wax, two Ounces; and when theſe are melted together, by Degrees ſhake in the forementioned Powders, and ſtir all together, till the Whole is cold, and become an Ointment.

Unguentum ex Oxylapatho.

Ointment of ſharp-pointed Dock.

Take of ſharp-pointed Dock-root, boiled in Water, and ſtrained thro' a Sieve, and live Sulphur, of each one Ounce and an half; of Hogs Lard, boiled in the Juice of Scabious, to the Conſumption of all the Juice, half a Pound; of the *Unguentum Populneum*, boiled in the Juice of Elecampane, half an Ounce; ſome Drops of Oil of *Rhodium* Wood: And let them all be reduced, in a Mortar, into an Ointment.

It is deſigned for the Itch, and cutaneous Diſtempers, but is ſo troubleſome to make, and ſo uncleanly, at beſt, that it is ſeldom uſed, or made.

Unguentum Pectorale.

Pectoral Ointment.

Take of the Ointment of Marſhmallows, two Ounces; of *Sperma Ceti*, half an Ounce; of Oil of Mace, obtained by Expreſſion, two Drams; of the diſtilled Oils of Aniſeed and Roſemary, each half a Dram; of the Oil of ſweet Almonds, one Ounce: Melt the Ointment of Marſhmallows, the *Sperma Ceti*, and the Oil of Almonds, together; then, having removed them from the Fire, put in the diſtilled Oils, and the Oil of Mace, ſo as to make an Ointment.

There is nothing in the Compoſition of this Ointment that forbids its internal Uſe as a good balſamic or pectoral Medicine, provided the Oil of Mucilages be carefully made for the Ointment of Marſhmallows contained therein; however, its Title denotes it deſigned for external Application; and, indeed, by being rubbed warm upon the Cheſt, it cannot but be of conſiderable Efficacy, in ſome Diſeaſes of that Part. *Edinburgh Diſpenſatory.*

Unguentum e Plumbo.

Ointment with Lead.

Take of the Oil of Roſes, ſix Ounces; of calcined Lead, and Litharge, of each ten Drams; of Turpentine, one Ounce; of Ceruſe, and Antimony, of each half an Ounce; of white Wax, two Ounces: Make them into an Ointment, by mixing them together in a leaden Mortar.

Unguentum Pomatum. See Pomatum Unguentum.

Unguentum Populneum. See Populus.

Unguentum e Resina.

Ointment of Reſin.

Take of the fineſt Pine-tree Reſin, of Turpentine, yellow Wax waſhed, and fine Oil, each equal Parts: Let the Wax and Reſin be melted in the Oil, and then the Turpentine added to them, ſo that they may all have a Boil over the Fire together, and be ſtrained, *S. A.*

Unguentum Rosatum.

Ointment of Roſes.

Take of Hogs Lard, cleared from all its Membranes, and well waſhed, one Pound; and add to it one Pound of freſh red Roſes; which ſuffer to ſtand together for ſeven Days; then boil them over a gentle Fire, and preſs out the Lard; afterwards macerate again with freſh Roſes, for the ſame Space of Time, and boil and ſtrain as before: Laſtly, put to it ſix Ounces of the Juice of red Roſes; of Oil of Sweet Almonds, two Ounces; and boil over a ſlow Fire, to a Conſumption of all the Juice: Then ſtrain it again, that it may become an Ointment, *S. A.*

Unguentum rubrum desiccativum.

Red drying Ointment.

Take of common Oil, two Pounds; of yellow Wax, twelve Ounces; of *Armenian* Bole, and the Caput Mortuum of Vitriol, of each ſix Ounces; of Calamine levigated, four Ounces; of Litharge, and Ceruſs, of each ſix Ounces and an half; of Camphire, half an Ounce; and boil over a gentle Fire to the Conſiſtence of an Ointment.

Unguentum Sambucinum. See Sambucus.

Unguentum Saturninum, *vulgo* Balsamum Universale.

Ointment of Lead, commonly called the Univerſal Balſam.

Take of Litharge of Gold, and red Lead, of each one Pound; of Vinegar, four Pints; and boil them together till one half of the Liquor is waſted; then ſtrain off the other; to the Remainder add the ſame Quantity of Vinegar, and proceed to boil and ſtrain as before, till the Operation ſhall have been performed ſix ſeveral times. Then mix all the Parcels of ſtrained Liquor together, in a glazed Earthen Veſſel, and exhale them to the Conſiſtence of an Extract. Take of this Extract, and of white Wax, each three Ounces; of Oil-olive, a Pound; and mix them together, according to the Rules of Art, ſo as to make an Ointment.

As Vinegar is ſo good a Solvent for Lead and Litharge, it may be worth the Pains to prepare the Extract, for this Ointment, in the manner here deſcribed: It is, without Diſpute, a much better way, than uſing calcined Lead and crude Litharge; and this, if it had no other Advantage, would give it the Preference, as an Healer and a Dryer, to the Unguentum e Plumbo, uſually aſcribed to *Foeſius*, and above deſcribed. *Edinburgh Diſpenſatory.*

Unguentum Splanchnicum.

An Ointment for the Bowels.

Take of the Bark of Caper-root, ſix Drams; of Bryony-root, *Florentine* Orrice, Powder of ſweet Fennel-ſeed, and

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and Ammoniacum dissolved in Vinegar, of each half an Ounce; of the Tops of Wormwood, and Chamomile-flowers, of each one Dram; of the Ointment of Bays, one Ounce and an half: Let those things be powdered which require it, and sifted, and the rest mixed therewith in a warm Mortar, so as to make an Ointment, *S. A.*

UNGUENTUM TUTIÆ. See CADMIA.

UNGUENTUM VERMIFUGUM.

Ointment against the Worms.

Take of the Leaves of Female Southernwood, common Wormwood, Rue, Savine, and Tansey, each two Ounces: Bruise and boil them with a Pound and an half of Oil-olive, and a Pound of Hogs Lard, till the aqueous Moisture is consumed; then strain and press out all that will run; to which add of the Gall of an Ox, and of Succotrine Aloes, each one Ounce and an half; of Colocynth, and Wormseed, of each one Ounce: Boil them all together, keeping them continually stirring, so as to make an Ointment. But observe, that the Aloes, the Colocynth, and the Wormseed, are reduced to very fine Powder.

Here we have an Instance of a Composition, where the Ingredients, though numerous, conspire to the same Intention, and seem to uphold each others Virtues; there is nothing improper, or indiscreetly admitted in the Whole; so that it cannot well fail of answering its End, as an external Application in the Case of Worms. *Edinburgh Dispensatory.*

UNGUES. The Nails.

The Nails are looked upon by some as Productions of the cutaneous Papillæ; and by others, as a Continuation of the Epidermis. This last Opinion agrees with Experiments made by Maceration, by means of which the Epidermis may be separated entire from the Hands and Feet, like a Glove or Sock.

In this Experiment we see the Nails part from the Papillæ, and go along with the Epidermis, to which they remain united like a kind of Appendix; and yet their Substance and Structure appears to be very different from that of the Epidermis.

Their Substance is like that of Horn, and they are composed of several Planes of longitudinal Fibres soldered together. These Strata end at the Extremity of each Finger, and are all nearly of an equal Thickness, but of different Lengths.

The external Plane or Stratum is the longest, and the rest decrease gradually, the innermost being the shortest; so that the Nail increases in Thickness from its Union with the Epidermis where it is thinnest, to the End of the Finger where it is thickest.

The graduated Extremities or Roots of all the Fibres of which these Planes consist, are hollowed for the Reception of the same Number of very small oblique Papillæ, which are Continuations of the true Skin, which, having reached to the Root of the Nail, forms a semilunar Fold, in which that Root is lodged.

After this semilunar Fold, the Skin is continued on the whole inner Surface of the Nail. The Fold of the Skin is accompanied by the Epidermis, to the Root of the Nail exteriorly, to which it adheres very closely.

Three Parts are generally distinguished in the Nail, the Root, Body, and Extremity. The Root is white, and in Form of a Crescent; and the greatest Part of it is hid under the semilunar Fold.

The Crescent and the Fold lie in contrary Directions to each other. The Body of the Nail is naturally arched, transparent, and appears of the Colour of the cutaneous Papillæ which lie under it. The Extremity of the Nail does not adhere to any thing, and still continues to grow as often as it is cut.

The principal Use of the Nails is to strengthen the Ends of the Fingers and Toes, and to hinder them from being inverted towards the convex Side of the Hand or Foot, when we handle or press upon any thing hard. For in the Hand, the strongest and most frequent Impressions are made on the Side of the Palm, and in the Foot, on the Sole; and therefore the Nails serve rather for Buttresses than for Shields. *Winslow's Anatomy.* See POLLEX.

UNGUIS, is, also, the Name of a Disorder of the Eye, called *Pterygion.* See OCULUS.

UNGUIS ODORATUS. Offic. *Onyx.* Dioscorid. THE SWEET HOOF.

It is unknown in our Shops, which substitute in its stead, the *Blatta Byzantina*; as we have demonstrated from the Observations of the learned *Martin Lister*, under that Article. *Dale.* See BLATTA BYZANTINA.

It is, also, a Name for the BLATTA BYZANTINA.

UNGUIS, in Botany, is the white and inferior Part of the Leaves of Roses, and some other Flowers.

UNGUICULI. The same as ALABASTRA.

UNGULA CABALLINA, is the TUSSILAGO. Colts-foot.

UNGULA OCULI is a Pterygion, a Disorder of the Eye. See OCULUS.

UNICORNU, MONOCEROS. Offic. Park. Theat. 1611. *Monocerus.* Raii Ichth. 42. Ejusd. Synop. Pisc. 11. *Monoceros, Unicornu marinum.* Charlt. Pisc. 47. *Cetus mari-nus Narwal dictus.* Mont. Exot. 6. *Balæna decimum sextum genus dicitur Nahwal.* Schonef. Icht. 28. THE UNICORN.

It is taken in the *Davis*'s Straits; and the Part in Use is the very large, white, round, striated, turned Tooth, growing out on the Left Side of the upper Jaw, almost in the same manner as that of an Elephant; but that on the Right Side soon falls off. It is distinguished from Ivory by the Fineness of its Fibres: It is, also, generally more solid and ponderous; in other respects it resembles Ivory.

As to the Virtues, it is sudorific, alexipharmic, and cordial, whence it is commended against Poisons, contagious Diseases, and the like; it is, also, thought effectual in the Epilepsy of Infants. *Schroder. Andreas Baccius* has written a whole Book of the Unicorn, in which he directs Fragments of it to be set in Rings, and worn upon the Fingers, or hung about the Neck instead of an Amulet, so as to touch the Skin. It has the same Virtues as Hartshorn, Ivory, and the like Substances.

The Fragments of Horns, which are sold under the Name of *Unicorn's Horn*, are no other, as we are assured by *Paulus Ammannus*, than Bones of the Whale, Sea-horse, or Teeth of the Elephant, which, as *Cardan* says, may be made, by artificial Means, to resemble this Horn. *Dale.*

UNICORNU FOSSILE. Offic. Geoff. Prælect. 73. Schrod. 359. *Cornu fossile.* Worm. 54. Charlt. 23. *Cornu fossile, vulgo Monocerotis Cornu.* Boet. 425. *Ceratitis.* Aldrov. Mus. Metall. 630. Gesn. Lap. Fig. 154. *Ebur fossile.* Clus. Exot. 68. *Lapis Arabicus.* Cæsalp. 611. *Turquesia.* Ind. Med. 47. *Dens Elephanti petrefactus, aliis, Lithoræarga, alba.* THE UNICORN-STONE.

The fossile Unicorn, or *Lapis Ceratites* of *Gesner*, is a stony Substance, resembling in Colour, Smoothness, and Shape, the Horns, Teeth, and Bones of Animals. It is made up of an outer, hard Part, of an yellowish, blackish, or Ash-colour, and a soft, friable, compact medullary Part, without Pores, of an astringent and drying Quality, sticking very close to the Tongue, and sometimes of an agreeable Smell.

It is often dug up in the Form of Bones turned to Stone, among which we often find the *Dentes Molares*, and *Incisorii*; and we can perfectly distinguish between the Root of these Teeth, and that Part which appears without the Gums. Sometimes we meet with Fragments of the Radius and Tibia, representing the natural Conformation of these Bones in a very perfect manner. There are, likewise, dug up large Branches, and Trunks of Trees, in which the Species of Wood is still distinguishable. There is, therefore, no room left to doubt, but that these stony Substances are really Petrifications of the Horns, Teeth, and Bones of Animals, or of Wood; which being putrefied, by remaining long under Ground, and, in a manner, calcined, their Substance becomes more rare and porous, as we see daily in rotten and worm-eaten Wood. By the Afflux of a fine Marl dissolved in Water, these porous Substances are filled, and the Water insensibly evaporating, the Remainder incorporates with the Bones, or Pieces of Wood, into a stony Substance, of the same Form and Figure with what they were before. But if these earthy Parts, which concrete with them, be of the crystalline or flinty Kinds, then they turn to a Substance like Crystal or Flint, as we see in several Sorts of fossil Shells.

The fossile Unicorn is found in many Places of *Germany*; and at *Mont Martyr*, near *Paris*, there were lately found many Bones hid in a stony Substance. The *Germans* esteem it for its astringent, alexipharmic Qualities, and as a Provoker of Sweat, and accordingly, often use it in Diarrhœas, Dysenteries, Hæmorrhages, the *Fluor Albus*, malignant and pestilential Fevers, and in the Epilepsy. The Dose is from ten Grains to a Dram. But they do not use all Kinds of it indifferently, but choose that which has a pleasant Smell, and which has been previously tried upon Dogs, or other Animals, because it sometimes contains a poisonous Quality, especially when dug out of the Earth, mixed with Arsenic; and therefore great Care is required about it. *Geoffroy.*

It agrees in Virtues with the *Terra Lemnia*, and is recommended against malignant Distempers; it resembles, also, Unicorn's Horn, particularly in resisting Poison, and curing the convulsive Motions of Infants; and is often used in the Small Pox and Measles. Of this Substance calcined, is prepared the factitious Turquoise. *Dale.*

UNIFOLIUM. A Name for the *Smilax*; *unifolia*; *humillima.*

UNIO. A Pearl. See MARGARITÆ.

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UNNI CHILENSIUM de Laet. *Hiſpanis Murtilla.* The Name of an *Indian* Tree, which bears a Fruit in Cluſters, about the Size of Peas, of a ſweetiſh, and at the ſame time, ſomewhat acrid Taſte. The Natives expreſs a clear Liquor from it, which reſembles Wine; and of this Juice they make a ſort of Vinegar.

UNQUASI. Quickſilver. *Rulandus.*

VOARCHADUMIA. A kind of *Cabbala*, or Ænigmatic Art, relative to Metals, which propoſes the Exaltation of Gold by Cementations, and other Methods, in which the *Hebrew* Letters, of ſome occult and myſterious Virtues, are employ'd. The Curious may ſee an Account of this in the *Theatrum Chymicum, Vol. 2. p.* 500.

VOCIFERATIO. Vociferation. See ANAPHONESIS.

VOLA. The Hollow of the Hand, or Palm.

VOLANS. Mercury. *Dornæus.*

VOLATICA. The ſame as *Lichen.* See LEPRA. A ſort of wandering Pain, attended with a Tumor, and affecting ſometimes one Part, ſometimes another, is called by *Hannemannus* in the *Act. Haffnienſ. Volatica Scorbutica.*

VOLATILIS. Volatile. In Chymiſtry, thoſe Subſtances are called *Volatile*, which riſe, and fly off, upon the Application of Heat, or Fire; as thoſe which endure the Fire without Diſſipation, are called *fixed.*

VOLEMA. The Name of a certain Species of very large Pear. *Virg. Georg.*

VOLSELLA, λαβὶς, is the ſame as FORCEPS, [ſee the Articles FORCEPS and ACANTHABOLUS] is a chirurgical Inſtrument, contrived for taking hold of any thing, according to the Etymology of the *Greek* λαβὶς [*Labis*], uſed by *Hippocrates, Lib. de Sterilib.* and *Galen, de C. M. S. L. Lib.* 3. *Cap.* 3. and derived from λαμβάνω [*lambano*] to apprehend, or lay hold of. Its principal Uſes are in removing Plaiſters and Lint from Wounds and Ulcers, and in extracting Splinters, and other things of that Kind; as, alſo, in taking hold of various things, in which reſpect it is very uſeful in Anatomical Diſſections. It is commonly made of Steel, but ſometimes, for Brightneſs and Curioſity, of Silver. *Tab.* XXII. *Fig.* E, repreſents the *Volſella*, or *Forceps*, which is denticulated, or furniſhed with Teeth, by which means it is enabled to hold a thing the faſter.

VOLVA, in *Scribonius Largus*, No. 104. is the middle Part, or Core of the Apple containing the Kernels, preſcribed by him, among other things, for a Weakneſs of the Stomach rendering it incapable of retaining the Food.

VOLUBILIS, *a volvendo*, from twiſting, or twining, according to *Blancard*, is a Name for the SMILAX.

VOLUNTARIUS, κατὰ προαίρεσιν, ἑκούσιος, voluntary, ſpontaneous, is applied to any thing which is in our own Power to have it done or not done. In this Senſe *Motion*, *Tears*, and other Actions, are ſaid to be voluntary. *Caſtellus.*

VOLUNTAS, θέλημα, according to Dr. *Willis*, *de Anima Brutorum*, is an Attendant of the rational Soul, proceeding from the Underſtanding, and a kind of rational Appetite, in the ſame manner as the ſenſitive Appetite is connected with the Imagination, and is the procuring Hand of the corporeal Soul. *Caſtellus.*

VOLUPTAS, ἡδονὴ, Pleaſure, is the ultimate Perception of the ſenſitive Soul, in which all other Affections acquieſce; and, conſiſts, according to Dr. *Willis*, who has attempted to deſcribe it, in the Treatiſe juſt before quoted, in a grateful and elegant Alteration, Expanſion, Agitation, and Motion of the Spirits, occaſioned by ſenſible Objects. *Caſtellus.*

VOLVULUS, in *Pathology*, is the ſame with ILEOS, which ſee. In *Botany* it is a Name for the *Convolvulus*; *Linariæ Folio*; *aſſurgens.*

VOMER, ὖν, ὑνὸς, in Anatomy, according to the Deſcription given it by *Cheſelden*, is ſeated between the Bones of the Palate, and the ſphenoidal Bone, being, alſo, joined to the Proceſs of the Ethmoides, and Part of the lower Jaw, and having its fore Part, which is ſpongy, continued to the middle Cartilage of the Noſe, and making in Conjunction with it, the *Septum Naſi.* See a fuller Deſcription of this Bone under the Article CAPUT.

VOMICA is commonly taken for a ſuppurated Impoſtume, or an Abſceſs with a Suppuration. *Caſtellus.*

Vomica Pulmonum is a latent Diſeaſe of the Lungs, which often deceives under a Shew of Health. What goes by this Name is a ſmall Abſceſs ſeated in ſome Part of the Lungs, and ſtraitly incloſed within a Bag, or Membrane. This Diſorder is moſt incident to thoſe who are affected with a Tabes, or labour under an Anaſtomoſis, or Rupture of a Vein in the Lungs. In this Diſeaſe, the Breath ſmells ill long before the *Vomica* breaks, ſometimes Blood comes up with Coughing, the Body is perpetually dull and heavy, and the Cough very long and troubleſome, and ſometimes followed with an Expectoration of the *Vomica*; in which Caſe the Patient is ſeized with no ſmall Fever, ſucceeded by bloody Spit, and vaſt Perturbation of Body; the Conſequence of which Circumſtance may poſſibly be a Recovery to a good State of Health. It has often happened, that the *Vomica*, by a ſudden Rupture, has diſcharged itſelf into the Heart, and occaſioned ſudden and unexpected Death. *Lommii Obſ. Med.*

Vomici, in ſome Authors, are ſuch as are affected with a *Vomica Pulmonum*; and *Johnſon Lexic. Chym.* calls Quickſilver *Vomica Liquoris æterni*, "the *Vomica* of the eternal Liquor."

VOMILIUM, ſuppoſed to be from *Vomo*, to vomit, is a Name beſtowed by *Libavius*, *S. A. Chym. Lib.* 6. *Cap.* 19, 20. on *Mercurius Vitæ*, and *Aurum Vitæ*, on account of their Effects. It is extended, alſo, to other Emetics; ſo that *Vomilia*, in the Jargon of the Chymiſts, may be ſuppoſed to be the ſame with *Vomitoria.*

VOMITIO, Vomition, or the Act of Vomiting.

VOMITORIA, VOMITIVA, ἐμετικὰ. Vomitories, Emetics.

Vomitory Medicines, or Emetics, are indicated,

1. From the Foulneſs of the Mouth in the Morning, from its Bitterneſs, from Eructations, Nauſea, a gnawing Pain of the Stomach, with a gradual Decay of the Appetite, neither excited nor attended by a Fever.

2. From ſpontaneous *Vomiting*, together with great Facility in the Action.

3. From the Nature of the Matter, as it is known to be moveable or immoveable.

4. From the Situation of the Place affected with a Repletion or Obſtruction below the Diaphragm, and eſpecially if that Affection be primary, and nothing contraindicates.

5. From the general or epidemic Nature of the Diſeaſe.

6. From the Conſtitution of the Year.

Emetics are forbidden by the Contraries to the fore-mentioned Indications.

The Body is prepared for taking a *Vomit* with the more Eaſe and Safety,

1. By rendering the Matter moveable by Dilution, Attenuation, and Diſſolution.

2. By relaxing and lubricating the Paſſages with mollifying, oleous, and gentle Medicines.

3. By premiſing Phlebotomy, if the Body be plethoric, or exceſſively robuſt, and, at the ſame time, very ſtrongly agitated.

Vomiting is excited,

1. By irritating the Spirits by preſenting ſome very nauſeous Idea, or by ſome unaccuſtomed Agitation, as on the Sea, or otherwiſe.

2. By irritating the Fibres of the Fauces and Pharynx with a Feather dipt in Oil, or ſomething like it.

3. By ſwallowing large Draughts of freſh warm Water, with Oil, Honey, Sugar, and the like.

4. By every thing highly acrimonious, and at the ſame time viſcid; by the Flower and Seed of Dill; by the Leaves of Aſarabacca; and by the Root and Seed of *Atriplex*; or by more violent Simples, as the Cataputia, Eſula, the Root of Cyclamen, the Flower, Juice and Bark of the Ebulus, or Dwarf-elder; the Flowers, Seeds, and Root of Broom; both the Hellebores, the Seeds of Naſturtium, Ricinus, Thymelæa, and Cnicus; the Roots of Bryony, Iris, and Tithymalus; the Herbs Gratiola, and Tobacco.

5. By Antimonials, as the Crocus, Glaſs, Flowers, or Regulus of Antimony, in Subſtance, Infuſion, Rob, Syrup, emetic Wine, the Mercurius Vitæ, Emetic Tartar, and the like, which produce various Effects according to the different Degrees of Violence.

6. By Mercury rendered acrimonious by Acids, in which, alſo, great Variety may be obſerved, in proportion as the Acid more copiouſly and openly, or more ſparingly and covertly, adheres to the Mercury.

The Choice, Doſe, Form, with the proper Time for adminiſtering Emetics, are indicated by the Age, Sex, Temperament, Seaſon of the Year, the Nature of the Diſeaſe, and of the Matter to be evacuated.

Vomiting is promoted by copious Draughts of mild, aqueous, honeyed, and warm Liquor, taken after every Paroxyſm of Vomiting, and the ſame, after being diſcharged, again repeated.

Vomiting is repreſſed by ſwallowing ſome ſmooth Oil, by Opiates, Aromatics, grateful Acids, and Corroboratives, either taken inwardly, or outwardly apply'd. *Boerhaav. Inſtitut. Medic.*

VOMITUS. A Vomiting. See PYRETOS.

Vomiting and a *Nauſea*, ſeem to be retrograde ſpaſmodic Motions of the muſcular Fibres of the Oeſophagus, Stomach, and Inteſtines, attended with ſtrong Convulſions of the Muſcles of the Abdomen and Diaphragm, which, when gentle, create a

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Nauſea; when violent, a *Vomiting*. Theſe convulſive Diſorders proceed from the immoderate Quantity, or Acrimony of the Food; from Poiſons; from ſome Injury of the Brain, as a Wound, Contuſion, Compreſſion, or Inflammation of that Part; from an Inflammation of the Diaphragm, Stomach, Inteſtines, Spleen, Liver, Kidneys, Pancreas, or Meſentery; from an Irritation of the Gula; from a diſorderly Motion of the Spirits by unaccuſtomed Agitations in a Coach, Ship, or otherwiſe; or from the Idea of ſomething nauſeous. *Boerhaav. Inſtitut. Medic.*

There is ſcarce any Accident, in human Life, which occurs more frequently than *Vomiting*; for there is no Perſon but vomits at one time or other; and there are very few Diſeaſes which are not attended with this troubleſome Symptom. Now *Vomiting* is no other than a preternatural Inverſion of the periſtaltic Motion of the *Oeſophagus*, Stomach, and eſpecially the *Duodenum*, to the Degree of a convulſive Contraction, by which the Contents of the Stomach, accompanied ſometimes with thoſe of the *Duodenum*, are diſcharged by the Mouth.

The Affection itſelf is too manifeſt, to require a Deſcription by diagnoſtic Signs; but the Symptoms which attend it are to be regarded with Care and Attention, and the rather, as the Cauſes of *Vomiting* are various, to a great Degree. In general, we may obſerve, that ſome Perſons are very eaſy to vomit, and diſpoſed to that Action on the leaſt Occaſion; others, on the contrary, are with great Difficulty provoked to it, and find it no leſs troubleſome, with much Striving, and after many vain Efforts, to diſcharge their Stomachs this way. The firſt of theſe Perſons are called, by a technical Term, *Euemeti* [εὐέμετοι, from εὖ, importing Facility, and ἐμέω, to vomit]; and ſuch are Children in compariſon of Adults; Women, if compared with Men; and, among Men, they who are of a lax Habit of Body: They, on the contrary, who are of a cloſe, well-ſet Habit of Body, ſhort-necked, and of a robuſt Syſtem of Nerves, are termed *Dyſemeti* [δυσέμετοι, from δύς, importing Difficulty, and ἐμέω, to vomit].

The antecedent and concomitant Symptoms of *Vomiting* are uſually a very troubleſome Nauſea, with a Tenſion and Weight in the epigaſtric Region, a Bitterneſs in the Mouth, Heat, a gnawing Pain, and Loſs of Appetite, with a great Anxiety of the *Præcordia*, and Reſtleſſneſs. Much Spittle diſtils into the Mouth, and is evacuated by Spitting, and the Patient is, beſides, affected with a Vertigo, Dimneſs of Sight, Heavineſs of Head, Redneſs of Face, Trembling of the under Lip, and moſt of all with a Cardialgia, till, at length, after much laborious and fruitleſs Eructation, he diſcharges the Contents of his Stomach. All theſe Symptoms plainly enough indicate a ſpaſtic and convulſive Subverſion of the Stomach and adjacent nervous Parts.

The Matter diſcharged by *Vomiting* is what gives the ſeveral Denominations to that Affection: A mucous, chylous Diſcharge of Reliques of Foods not perfectly diſſolved, is called a *pituitous Vomiting*; a Congeſtion of bilious Matters evacuated this Way conſtitutes what we call a *bilious Vomiting*; other Denominations, as thoſe of *blackiſh*, *corrupt*, *green*, *æruginous*, and *porraceous*, are taken from Accidents owing to a Mixture of other Humours, and particularly ſuch as are acid, or corroding. Sometimes Worms and Inſects are thrown up by *Vomiting*; and ſometimes a ſtercoraceous Matter from the very Bottom of the Inteſtines, is, by an Inverſion of the periſtaltic Motion, diſcharged the ſame Way. At other Times Pus and a ſanious Matter are evacuated; and I myſelf once obſerved a fleſhy and membranous Maſs, like a Polypus, which was generated in the Stomach, expelled by *Vomiting*. Frequently there is a Diſcharge of pure Blood, and in ſuch a Caſe the *Vomiting* is denominated *ſanguineous*; ſometimes the Blood is black and corrupted, which conſtitutes what we call the *Morbus niger*, or *black Diſeaſe* of *Hippocrates*.

The proximate Seat of the Matter diſcharged by *Vomiting* is the Stomach, by whoſe preternatural Motion with that of the adjacent Parts the ſame is expelled; but the more remote Parts, as the Liver, Pancreas, by means of their Ducts, the Spleen, the Maſs of Blood and Humours, and the Habit of the Body, as it happens in Tumours, by means of the Veſſels and Glands, have their Contents attracted the ſame Way. The Cauſes which irritate the ſenſible and nervous Subſtance of the Stomach to a ſyſtaltic and compreſſory Motion are to be ſought not only in itſelf, but in the adjacent and remote nervous Parts, ſince we may, on ſome Occaſions, obſerve, that *Vomiting* is excited by Conſent of Parts in a Multitude of ſpaſmodic Affections: And this Obſervation is of ſo great Moment, that for its better Illuſtration, we cannot but think it very proper to premiſe an exact Deſcription of the Fabric of the Stomach and *Duodenum*, according to the Diſcoveries of the neweſt and moſt approved Anatomiſts.

The firſt Parts, then, which here offer themſelves to our Sight, are, the *Coats* of the Stomach, which has four aſcribed to it. The outermoſt is *membranaceous*, and takes its Riſe from the *Peritonæum*, and is continued to the Coat which ſurrounds the Concavity of the Diaphragm; the ſecond Coat is *muſcular*, and conſiſts of a double Series of Fibres, of which the external is conſtituted of longitudinal Fibres, which ſerve in contracting the Length of the Stomach; the internal Series of Fibres conſiſt partly of ſuch as extend themſelves from the *Cardia*, or the Mouth of the Stomach, to the *Pylorus*, and cauſe an Approach of both Orifices to one another; and partly of circular ones, which are diſpoſed over the Breadth of the Stomach, and are inſtrumental in its Contraction: The third Coat, which is ſubjacent to the former, has the Denomination of *nervous*, and is furniſhed with tendinous Fibres, which are extended obliquely over the Stomach; this Coat is larger than the former, on which Account it is rugous, and provided with a Multitude of Glands: The fourth is called the *villous Coat*, and is compoſed of nervous *Papillæ*, and Ends of Veſſels erected like *Villi*, or coarſe Hairs, and lined with a Mucus, derived from the forementioned Glands; but between the outer Coat, and the muſcular as well as between this and the nervous Coat, and between this laſt and the villous Coat, there is a triple cellulous Subſtance, containing very numerous Blood-veſſels.

The next Parts which deſerve our Conſideration, are the *Veſſels* of the Stomach: Theſe are two *gaſtric Arteries*, the *right*, and the *left*, and *coronary Artery*: For the *Aorta Inferior*, after entering the Abdomen thro' a Perforation near the Spine, immediately ſends forth the *Arteria Cœliaca*, which is divided into three Branches, the firſt of which is the *hepatic*, whence ariſe the *Arteria Pylorica*, *Gaſtrica dextra*, and *Duodena*. Another Branch is, the *Coronary*, whoſe Ramifactions extended over the Stomach are innumerable; and the third Branch is the *ſplenic*, which taking its Courſe to the Spleen, ſends forth firſt the *pancreatic Artery*; ſecondly, the *left Gaſtric*; thirdly, the *epiploic Artery*; and, fourthly, the *Vaſa Brevia*, one of which is *venous*: By this Connection of Arteries it appears, that the Conſent of the Humours, in their Circulation thro' the Parts before-mentioned is very conſiderable. The *Veins* are, the *coronary*, the *right* and *left Gaſtric*, and one of the *Vaſa Brevia*; theſe all ariſe from the *Vena Porta*, whoſe Trunk, taking its Courſe under the *Duodenum* to the *Pancreas*, ſends forth, in the firſt Place, the *Venæ Cyſticæ*, *Pyloricæ*, and *Duodenales*; after this, ſends off three, and ſometimes but two Branches: One of them, which is the *ſplenic*, is ſubdivided into the *coronary*, *left Gaſtric*, *pancreatic*, *epiploic*, and the venous Portion of the *Vaſa Brevia*; another Branch, the *greater Meſeraic*, ſupplies the *inteſtinal* and *gaſtro-epiploic* Veins; and the third Branch, the *internal hæmorrhoidal*, produces the *right gaſtric* and the *duodenal* Veins. Hence it appears, that an Interruption of the Circulation of the Blood in one of the *Viſcera* is ſucceeded by a Regurgitation to ſome other; the Veins are accompanied by lymphatic Veſſels, as the Arteries are by Nerves; theſe Nerves proceed partly from the *Par Vagum*, and partly from the intercoſtal Branch; the *Par Vagum*, deſcending in two Branches on both Sides of the *Oeſophagus*, diſtributes innumerable Ramifications over the whole Stomach, and afterwards concurs in forming the Plexuſes of the intercoſtal Nerve: This latter, after perforating the Diaphragm, forms, near the Cœliac Artery, ſemilunar *Ganglia*; whence ariſe, on the right, the *Plexus Hepaticus*, and *Renalis major*; and, on the left, the *Plexus Lienaris*, *Stomachicus*, and *Renalis Sinister*. From the *Plexus Hepaticus* and *Renalis dexter*, with the ſemilunar Ganglion, ariſes the *Plexus Meſentericus Superior*, by whoſe Intervention the five Plexuſes, before-mentioned, on both Sides are ſo united, that the Parts which are ſupplied from them with Nerves, are mutually related to one another by the ſtricteſt Conſent.

In the next Place, the Structure of the *Duodenum* highly deſerves our Contemplation: This Part, with reſpect to its Coats, Nerves, and Veſſels, agrees with the Stomach, and, beginning at the *Pylorus*, forms three Flexures; the firſt Flexure, tending from the Stomach obliquely downwards is at the ſame time reflected backwards, and has inſerted into it, near its End, the common biliary Duct, which conveys the Bile and pancreatic Juice; after this, when it approaches the right Kidney, it forms another Flexure, where it reſts upon the Pancreas; and, laſtly, near the Spine, in its Approach to the left Kidney, it makes a third Flexure, over which the Artery and the *Plexus Meſentericus Superior* have both their Courſe; the Conſtriction of which immediately affects the *Duodenum*; the Capacity of this Inteſtine far exceeds that of the others, contrary to the common Opinion, which makes it leſs.

Theſe two Parts, the *Stomach*, and the *Duodenum*, which may juſtly be called a *leſſer Stomach*, are not only connected with one another in a very remarkable manner, but with other nerveo-membranous Parts; as, firſt, with the *Oeſophagus*, by a Communion of the ſame common Coats; and hence they communicate, alſo, with the Coat which ſurrounds the Fauces and the Mouth. Secondly, they have a Connection with the whole inteſtinal

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inteſtinal Duct, or Tube, not only by the Communication of the ſame Coats, but, more eſpecially, by means of the *Plexus Meſentericus Major*, from which all the Inteſtines are ſupplied with Nerves. And, thirdly, they have a ſtrict Relation to the *Omentum*, which is very firmly connected to the anterior Part of the Stomach. Fourthly, they have a Connection with the Diaphragm by Branches from the *Par Vagum*, and intercoſtal Nerve; and, alſo, by a Coat which is common to the exterior Superficies of both the Stomach and the Diaphragm; and, by means hereof, fifthly, with the nervous and membranous Parts of the Breaſt, and with the Muſcles of the Abdomen. Sixthly, they have a Correſpondence with the biliferous Ducts, not only by the *Ductus Cholidochus*, which is inſerted into the *Duodenum*, but principally by the *Plexus Hepaticus*, which ſupplies the *Duodenum* and Stomach with Nerves, and communicates with the *Plexus Stomachicus*, by the Intervention of the *Meſentericus Superior*. Seventhly, they communicate with the Pancreas, which firmly adheres to the *Duodenum*. Eighthly, with the Kidneys, by the right and left *Plexus Renalis*, which is connected with the *Plexus Stomachicus*. And, laſtly, with the Head and Brain; as, alſo, with the Heart, by the Branch of the *Par Vagum*, which is common to them both.

By virtue of the muſcular Coat, and its Fibres above-mentioned, which are common to the *Oeſophagus*, Stomach, and all the Inteſtines, there is excited a vermicular kind of Motion, which is peculiar to thoſe Parts, and has the Name of periſtaltic: This Motion conſiſts in an alternate Conſtriction and Relaxation of the ſaid Parts, and tends from the upper Parts downwards. In the Stomach, by contracting and ſtraitening it, after different manners, and dilating it again, with the conſtant Aſſiſtance of the Motion of the Diaphragm and Muſcles in Reſpiration, it promotes the Digeſtion of the Aliments, and their Expulſion thro' the *Pylorus*. In the Inteſtines it is the means of an Abſorption of the laudable Humours by the lacteal or chyliferous Veſſels, and of the Protruſion of the excrementitious Parts to the lower Region, and their Elimination by the *Anus*.

Whenever this periſtaltic Motion, which directs its Force downwards, is perverted into a Motion of the preternatural, ſpaſmodic, and convulſive Kind, there ariſe Gripes of the Inteſtines, cardialgic Pains about the *Pylorus*, Spaſms, as they are called, of the Stomach, Colics, and Fluxes of the Belly: But if this ſame Motion, beſides its ſpaſmodic Contraction, be, alſo, inverted, and tends upwards, it firſt of all forces up the Contents of the Inteſtines into the Stomach, or if they are there already, impels and protrudes them upwards, whence *Vomiting* is excited, in which Action the *Pylorus*, together with the *Duodenum*, connected to it, and the lower and anterior Part of the Stomach, thro' a violent Contraction of the longitudinal and circular Fibres, are contracted to the upper Orifice, to which the Contents are by this means applied, and the continued Force of the Spaſm ſtill preſſing behind, are from thence forced into the *Oeſophagus*, and, the ſame inverted Motion being propagated thro' the whole *Oeſophagus*, conveyed to the Mouth, and ſo diſcharged. This Motion is aſſiſted by a violent Conſtriction of the Diaphragm and abdominal Muſcles, cauſed by Conſent, and by a Compreſſion of the Sides of the Stomach, thence occaſioned. Hence it is obſerved, that, after each Act of *Vomiting*, the Difficulty of Reſpiration ſtill continues, and the Region of the Abdomen is more or leſs affected with Pain; and, that in Animals diſſected immediately after the Exhibition of an Emetic, a Compreſſion of the Stomach by the Diaphragm and *Muſculi Recti* of the Abdomen, is evidently viſible; whence ſome *Engliſh* Phyſicians are of Opinion, that the Fibres of the Stomach contribute nothing at all to the Action of *Vomiting*.

The weaker the Fibres of the Stomach, and the more copious and moveable the Matter to be diſcharged, the eaſier is the *Vomiting*; but if the Fibres be conſiderably robuſt, as in thoſe who vomit with Difficulty, or the Cauſe of the *Vomiting* conſiſts in a tenacious, viſcid Humour firmly adhering to the Folds of the Stomach, or an acrimonious cauſtic Matter infeſting the Nerves, the Action of *Vomiting* is rendered difficult, and attended with formidable Symptoms: The Action in ſuch a Circumſtance is preceded by a very ſevere Cardialgia, vaſt Nauſea, Anxieties, and Perturbation of the Præcordia, laborious and fruitleſs Eructations, troubleſome Concuſſions of the Abdomen, its Contents, and eſpecially of the Diaphragm; whence proceed ſingultuous Agitations; a plain Evidence that the Stomach labours under a great Convulſion, which is inſufficient to expel the noxious Matter. It very frequently happens at ſuch a time, that the Convulſion is propagated to the bilious Ducts, which occaſions an Effuſion of Bile into the *Duodenum* and Stomach, and, being diſcharged by Eructation, the *Vomiting* is not in the leaſt abated: The ſame Motion is communicated to the *Oeſophagus*, and expreſſes the Lymph from its Glands, and thoſe of the Fauces, much of which is diſcharged by Spitting. Moreover, from a Compreſſion of the Blood-veſſels of the Stomach, and the adjacent Parts, by the violent Concuſſions, the Blood is impelled in great Quantities to the ſuperior Parts, and the Head, and cauſes an Infarction of the Veſſels, a Diſtention of the nervous Membranes, and a Diſpoſition to the like Spaſms: Hence proceed Redneſs of the Eyes, Pains in the Head, Dimneſs of Sight, Vertigo, Trembling of the under Lip, and ſometimes convulſive and epileptic Commotions of the whole nervous Syſtem.

The proximate Cauſe which diſpoſes to *Vomiting*, is a Vellication or Stimulation of the nervous Fibres of the Stomach and *Duodenum*: Now the vellicating Matter reſides either in the Parts themſelves, or in others remote, but connected with them by means of the Nerves: Hence ariſes a Diſtinction of *Vomiting* into *ſymptomatic* and *idiopathic*; the material Cauſe of the latter is in the Stomach itſelf, or at leaſt in the *Duodenum*; the other has its Cauſe more remote, reſiding in the lower Inteſtines, the bilious Ducts, Kidneys, Head, or ſome other diſtant Part, and depends chiefly on Conſent of Parts, by which the irregular Motions are communicated. It is evident, therefore, that there is no ſuch thing as a monarchical Power, which *Helmont* aſcribes to his Regent of the *Pylorus*, from which, he thinks, the Origin of the Conſtriction and inverted Motion is always to be derived. For tho' it ſometimes begins at the *Pylorus*, yet the Principle of the Conſtriction is frequently reſident in the loweſt Inteſtines, as appears by the ſtercoraceous *Vomitings*.

Among the material Cauſes of *Vomiting*, which have their Seat in the Stomach itſelf, the firſt which deſerves Notice is, the exceſſive Quantity of Things ingeſted, which, by oppreſſing the Fibres of the Stomach, and diſtending them beyond the Sphere of their Elaſticity, and by that means occaſioning a more than ordinary Afflux of the nervous Fluid and the Blood, excites them to convulſive Motions, in order to expel the noxious Matter: Hence the Subjects moſt obnoxious to *Vomiting* are, 1. Exceſſive Drinkers, on account of the immoderate Quantity of Liquors ingeſted. 2. Tender Infants, from ſucking too much Milk, or a premature Reception of more ſolid Food; in which latter Caſe, *Kerkringius*, not without Reaſon, imputes the Cauſe to the Straitneſs of the *Pylorus*, not as yet capable of tranſmitting ſolid Aliments. 3. Perſons weakened by Diſeaſes, and faſting under them; in which Circumſtance, a moderate Allowance of Food, eſpecially of the ſolid Kinds, may provoke *Vomiting*. 4. Voracious Children, who are much ſubject to Hickups and *Vomiting*.

Another Cauſe of *Vomiting* is the vitiated Matter collected in the Stomach, which is frequently the Reliques of crude Meats, and ſuch as are difficult of Digeſtion, ſalt Meats, ſuch as are hardened in the Smoak, and the like improper Foods, which are hard to be concocted. Hence are excited *Vomitings* of a pituitous Kind, which are incident, 1. To Perſons of a weak Stomach, but voracious Appetite. 2. To thoſe who, being accuſtomed to ſofter Kinds of Food, enter upon a more ſolid and groſs Diet. Hence, alſo, 3. They who indulge themſelves in plentiful Feeding, much Sleep, and a lazy Kind of Life, are, alſo, much ſubject to *Vomiting*. The ſame vitiated Matter, or foul Sordes, by long Reſidence, becomes acid, and by an Acceſſion of Bile from the *Duodenum*, procured by a Fit of Anger, or, perhaps, ſome other Cauſe, is rendered more acrimonious; whence ariſe, from the Stomach, bilious *Vomitings*.

All bilious *Vomitings*, eſpecially if they are chronical, or periodical, have their *Fomes* in the *Duodenum*. This Inteſtine is very well accommodated for the Entertainment of the vitiated Sordes, on account of its Flexures, and becauſe of an Affuſion of Bile to the chylous Juice which happens in the ſame. If this Bile becomes inert and unactive, or ſtagnates on account of the languiſhing Tone of the Inteſtines, and is not duly mixed with the Aliments, or has its Subſtance more and more corrupted by an Acceſſion of acid Humours, it is rendered acrimonious, and in a manner cauſtic; whence, by vellicating, it excites bilious, green, æruginous, and even black *Vomitings*: For Bile, by a ſtrong Acid, is rendered green; and after it has ſtood for a conſiderable time, it becomes of a black Colour; hence the Matter diſcharged by *Vomiting* is often acid to a high Degree, ſo as to ſet the Teeth on Edge, and corrode the very Stones of a Pavement, and ſilver Veſſels. Such was the Matter of the *Vomiting* obſerved by *Henricus ab Heer*, Obſ. 29. which had the Taſte of Vitriol: And I myſelf, in my Notes on *Poterius*, *Cent.* 2. Caſ. 93. have related a Caſe where the Matter thus diſcharged was corroſive like *Aqua fortis*; and mixed with Filings of Steel, became true Vitriol.

Perſons ſubject to *Vomitings* which have their Origin in the *Duodenum*, are, 1. *Hypochondriac* and *melancholic* Patients, who, on account of the languid Tone of the Inteſtines, are much moleſted with acid and viſcid Crudities, from the Remains of the Food in the *Stomach* and *Duodenum*. To this it muſt be added, that the Bile is unactive to ſuch a Degree, that inſtead of a generous Chyle, there is produced nothing but a copious Collection of acrid and acid Humours mixed with a corrupted *Bile*, by

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by long Residence become black, and communicating the same Colour to the Humours, which, for that Reason, the Antients imagined to proceed from the Spleen. These Humours are constantly vellicating the *Duodenum* and *Pylorus*, Parts quick of Sensation, whence the Stomach is easily subverted, especially since these Parts are of themselves subject to an Inversion of the peristaltic Motion. 2. The *scorbutic* are no less liable to this Affection, from the Thickness and Impurity of the whole Mass of Humours; as are, also, 3. The *cachectic*, whose Bile is vapid, and insufficient for the perfect Dissolution of the Aliments; whence their Vomit is more of the bilio-viscid Kind. 4. Infants are much subject to these *Vomitings*, from their sucking impure Milk, rendered acid by the angry and fretful Temper of the Nurse, which frequently is the Occasion of porraceous, æruginous, and green Discharges of this Kind. And, lastly, Persons labouring under a Quartan are molested with these *Vomitings*, proceeding from the *Duodenum*.

Vomiting is, also, excited by the noxious and offensive Qualities of the Things received into the Stomach. Thus Aliments too fat, Fruits, and fermentible Substances, undergoing a more acrid Fermentation, excite *Vomiting*, especially if the Stomach be already oppressed with bilious Humours. The same is effected by Food which is ungrateful, and taken with a Loathing; and the more, if it be of an oily and pinguious Substance. Under this Head must be reduced acrimonious Things, and such as are endued with a subtil caustic Principle, as are all Emetics, and poisonous Substances; particularly the Eggs of the Barbel-fish, for which see *Timæus à Guldenklee*, *Lib.* 3. *Cap.* 7. and poisonous Mushrooms, mentioned by *Hildanus*, *Cent.* 4. Obs. 34. As for Poisons themselves such as Arsenic and Sublimate, it is very well known, that by their highly-caustic Principle, they excite not only *Vomiting*, but very terrible convulsive Symptoms in the whole System of the Body, which are the Effects, also, of the more acrimonious Emetics and Cathartics.

A subtil, acrimonious Humour, infesting the nervous Parts of the Stomach, is, also, a Cause of very troublesome *Vomitings*. Sometimes this Humour is by a *Metastasis* transferred to the Stomach from the Matter of the Gout, *Erysipelas*, *Scabies*, Ulcers, and Purples, to the Stomach. An Instance of *Vomiting* excited from the premature Consolidation of an Ulcer, we find in *J. Rhodius*, *Cent.* 2. Obs. 65. For the same Reason it happens, that the Small Pox, Measles, and malignant and exanthematous Fevers, are attended with most violent *Vomitings*: For the acrid and caustic *Miasma* of those Diseases, by infesting and irritating the nervous Fibres of the Stomach, produces this Disorder. From the same Cause must we account for those dreadful *Vomitings* in the Pestilence, where, upon dissecting a Carcase, *Helmont*, as he assures us, in his *Tumul. Pestis*, found the Stomach covered over with an *Eschar*. And *Diemerbroeck*, *de Peste*, *Lib.* 4. *Hist.* 13. tells us, that he saw the same Part affected with a Carbuncle.

A Congestion of the vital Blood in too great a Quantity in the Vessels of the Stomach, and by that means distending them to an immoderate Degree, is another usual Cause of *Vomiting*. Hence, 1. Women with Child, in the first Months after Conception, are affected with it, from a Regurgitation of the Blood, caused by a Retention of the Menses, to the superior Parts, which ceases when the Fœtus arrives at a considerable Bulk, in some Subjects after the fourth Month. We have a remarkable Instance to this Purpose in *P. Lotichius*, *Lib.* 5. Obs. 7. 2. Women who have no menstrual Flux are, for the same Reason, molested with *Vomiting*. Thus *Panarolus*, *Sect.* 1. Obs. 22. relates the Case of a Girl from whom the Menses never flowed, who for seven whole Years as soon as she took any Food, vomited it up again; but, after her Menses began to flow, was freed from that Disorder. 3. Men are subject to the same Distemper from a Suppression of the Hæmorrhoids, which occasions a Reflux of the Blood, in too great Quantities, to the *Vena Porta*, and by that means a Congestion of the Blood as aforesaid, whence *Vomiting* is frequently excited.

A preternatural Constitution or Disposition of the Stomach itself is a sufficient Cause of *Vomiting*. For, first, if the upper Orifice be closed up by a Spasm, or any other preternatural Cause, it excites this Affection, which, however, cannot properly be called *Vomiting*, but is rather to be esteemed a Spasm of the lower Part of the *Oesophagus*; since the Food, before it arrives at the Stomach, is thrown up again, together with a Mucus contained in the *Oesophagus*. Examples to this Purpose may be found in *Willis's Pharmacop. rat. Part.* 1. *Sect.* 2. *Cap.* 1. *Fernelius*, *Lib.* 6. *Pathol. Cap.* 1. and *Coiterus*, *Observ. Chirurg.* p. 121. where you have an Instance of the *Cardia*, or upper Mouth of the Stomach, closed up with a *Scirrhus*, and hard Tubercle.

The Case is otherwise with the *Pylorus*, from whose preternatural Constitution and Obstruction Occasion is given for chronical and perpetual *Vomitings*; so that it may be taken for a Rule, that whoever is for a long time together molested with *Vomiting*, especially after Meat, and at the same time pines and wastes away in his Body, he has his *Pylorus* ill constituted. We have an Instance of that Part hardened and incrustated to such a Degree, as to be incapable of transmitting Food, in *Sanchez*, Obs. 1. p. 376. of a scirrhous *Pylorus* in *Salmuth. Obs.* 20. *Cent.* 1. *Willis's Pharmac. rat. p.* 1. *Sect.* 2. *Cap.* 1. and in *A. Med. Berol. Dec.* 2. *Vol.* 3. of a blackish and corroded *Pylorus* in *Meiboin. Diss. de Vomit. Sect.* 31. and of a *Pylorus* obstructed by a Piece of Money swallowed, in *Kerkringius*, *Spic. Anat.* Obs. 1. in which Cases the Patients were molested with *Vomiting* as long as they lived.

A symptomatic *Vomiting* proceeds from the Irritation of the *Oesophagus* or Intestines: Hence it happens, that from the Intrusion of a Feather, or the Finger, into the Fauces, and a Titillation of the Beginning of the *Oesophagus* by the same, the Stomach is immediately subverted, or irritated to Vomition, especially if it be oppressed with a Load of Humours. And that the Beginning of an Inversion of the peristaltic Motion frequently commences from the lower Intestines, and is propagated, by Consent of Parts to the Stomach, we are assured by those *Vomitings* which owe their Rise to the Colic, Gripes, and the like Disorders, in which Cases vast Quantities of Humours, of various Colours and Consistencies, are often discharged. See *Hildanus*, *Cent.* 4. Obs. 32, 35. And *Marcellus Donatus*, *Lib.* 4. *Cap.* 3. affirms, that twenty Pounds of Sordes have been, for several Days together, discharged by *Vomiting*. I have myself observed in old Persons afflicted with an Hernia, where the Falling down of the Intestines has been very considerable, an extraordinary and surprising Discharge of a feculent Matter by vomiting every third or fourth Day, for several Years together.

Vomitings are occasioned by some Disorder in the Intestines, in the following Cases: 1. From their Distention by Wind and Fæces, an Example of which we have in *Dodonæus*, *Obs. Med.* 37. 2. From an obstinate spasmodic Colic, as we are assured by Experience. 3. From a stubborn Obstipation of the Belly; as it happens in that wandering spasmodic Disorder in which Clysters, after Injection, are discharged together with the Fæces, by the Mouth. 4. From the Iliac Passion, and Hernias. 5. From a Dysentery, according to *Platerus*, Obs. p. 875. 6. From Worms corroding the Stomach and Intestines. See *Amatus Lusitanus*, *Cent.* 1. *Cur.* 5. *Cent.* 3. *Cur.* 20. I knew a Girl, seven Years of Age, who, having laboured under a violent Cardialgia, Convulsions, and continual *Vomitings*, at length discharged a large Worm by the Mouth, and soon after died. In these Cases there is very often a total Inversion of the peristaltic Motion, which beginning from the *Intestinum Rectum*, ascends even to the Fauces, and conveying all the Contents of the Intestines to the superior Parts, expels them by the Mouth.

There may be, also, a severe *Vomiting* excited by Consent of Parts from a Disorder of the biliferous Ducts in the Liver: For as these Ducts are endued with the same constrictive and dilatatory Motion as the Intestines, so their preternatural Constriction or immoderate Laxness provokes to *Vomiting*. In the former Case there is not only a violent Expression of the Bile into the *Duodenum*, and from thence into the Stomach, in a retrograde way, vellicating its Coats, and exciting to vomit; but the very Spasm of the above-mentioned Ducts is, by Consent of the *Plexus Hepaticus* and *Stomachicus*, propagated to the Stomach. In the latter Circumstance there is too great an Effusion of the Bile thro' the relaxed Tubes into the *Duodenum*.

Causes of bilious *Vomitings* are, 1. Emetics, and strong Cathartics, which excite Spasms in the Stomach and biliferous Ducts, whence there is an Effusion of Bile into the *Duodenum*. 2. A great Fit of Anger, especially when the Subject is eating; and, in such a Circumstance, the Passion of the angry Mother may have a pernicious Effect upon the Child who sucks her Milk. 3. A tertian Fever, on account of the Spasms of the *Primæ Viæ*; in which Case bilious *Vomitings* are of Service. 4. The *Cholera Morbus*, and bilious Fevers. 5. Hypochondriacal Disorders, in which the *Primæ Viæ* are affected with Spasms. 6. The last Cause I shall mention is, Stones in the Gall-bladder, or bilious Concretions, by which Spasms are excited which produce bilious *Vomitings*. Remarkable Instances of this are to be found in the *M. N. C. An.* 6. *Dec.* 1. Obs. 20. and *Scultet. Armament.* Obs. 61.

Nothing is more common than for Persons under nephritic and calculous Disorders to be affected with a Nausea, *Vomiting*, and Gripes, especially if a Stone happens to stick in those sensible Parts the Ureters, or even in the Kidneys. Observations to this Purpose occur in *Bonetus*, *Sepulchr.* Obs. 60. and I remember a celebrated Physician, and Botanist, of this Place [*Hall*], sixty Years old, who from a Stone which stuck very fast in the middle of his left Ureter, laboured under continual *Vomitings*, and Loathings of all Food, for three Months to-

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together, which, at length, induced a Decay of Strength, and Wasting of the Body, terminating in Death. Some Weeks before his Deceaſe, he complained of the corrupt and fetid Taſte and Smell of the Matter diſcharged, imagining it to be mixed with the urinous Secretions, which paſſed off but in ſmall Quantities. It very frequently alſo happens, that nephritic Paroxyſms after long ceaſing, are renewed and re-excited by Spaſms of the Stomach and Inteſtines. The Reaſon is obvious, for as the left Kidney, by its nervous *Plexus*, thro' the Intervention of the *Meſentericus Superior*, coheres with the *Plexus Stomachicus*; and the right Kidney, by means of the like *Plexus*, is immediately connected with the *Plexus Hepaticus* and *Stomachicus*; and beſides as the *Duodenum* is connected with the *Inveluera* of this Kidney, hence it eaſily appears why Spaſms of either Kidney, but the Right more than the Left, ſhould excite *Vomiting*, often of the bilious Kind, and ſo violent, as hardly to be exceeded by Emetics. We have a remarkable Inſtance, to this Purpoſe, in *Meibomius*, *Diſſert. de Vomitu*, *Sect.* 27. where Stones impacted in the Kidneys firſt excited terrible *Vomitings*, and, when theſe ceaſed, ſo violent a Spaſm of the *Oeſophagus* was excited, that ſomething, as it were, ſeemed to leap out of the Mouth.

Vomiting, alſo, may, by Conſent of Parts, attend Affections of the Head, as *Hippocrates* long ago obſerved, 6 *Aph.* 50. "A Wound of the Brain, he ſays, is neceſſarily ſucceeded by "a Fever, and bilious *Vomitings*." And we read the ſame in the *Coacæ Prænotiones*; and every Surgeon knows, that Inflammations, or conſiderable Wounds and Contuſions of the Head and Brain, and its Membranes, are ſucceeded by *Vomiting*. And the ſame Conſequence happens from violent Spaſms of the nervous Parts of the Head, as in that ſevere Pain of the Head called *Clavus Hyſtericus*, an obſtinate Cephalalgia, Hemicrania, Vertigo, ſpaſmodic Apoplexy, and the like Diſorders; in all which Caſes a *Vomiting* is occaſioned thro' that Conſent which the Stomach, by means of the *Par Vagum* of Nerves, holds with the Brain; not to mention, that the Connection of the *Par Vagum* with the fifth Pair of Nerves, is the Cauſe of *Vomiting* under difficult Dentition.

A Depreſſion of the Enſiform Cartilage, by compreſſing and irritating the Stomach, may be reckoned among the external Cauſes of *Vomiting*. Examples to this Purpoſe we have in *Barbette*, *Anat. Lib.* 1. *Cap.* 4. and *Decker Prax. Barbett*, p. 126. For this Reaſon Maids who much ſtraiten and compreſs their Præcordia with ſtiff Boddice, are ſubject to *Vomiting*. To external Cauſes, alſo, is to be referred, an imaginatory *Vomiting* excited from the Perception of ungrateful Objects, by Sight, or even by Hearing; and, alſo, that *Vomiting* which is provoked by a whirling Motion of the Body, or Jactation in a Ship, to Subjects unaccuſtomed to it.

There is, alſo, a critical Kind of *Vomiting*, when the material Cauſe which produces it is eliminated by the very Vomition, which is therefore very ſalutary, and is ſometimes to be obſerved in angry Perſons, and Cachectics of a choleric Diſpoſition; and, alſo, in Fevers, both acute and intermittent, and principally about the critical Days: For, by means of this Action, the Stomach, *Duodenum*, the biliary Veſſels of the Liver, the Pancreas, with the inteſtinal Tube and Glands, are purged, and deterged from thoſe Collections of vitious Juices and Humours which otherwiſe might enter the Maſs of Blood, and create various Diſorders, which, upon their Expulſion by *Vomitings*, are not to be apprehended. Of ſuch ſalutary *Vomiting*, *Celſus* excellently remarks, *Lib.* 1. *Cap.* 3. "that it is beneficial to "all bilious and full Perſons, who have either injured themſelves by Repletion, or have bad Digeſtions. For if more be "received than can be concocted, we ought not to run the "Hazard of its being corrupted; or if it be already corrupted, "there is nothing more commodious than to expel it, by the "quickeſt and moſt ready Paſſage. Whenever, therefore, we "are moleſted with bitter Eructations, attended with Pains, "and Oppreſſion of the Præcordia, let us have immediate Re"courſe to *Vomiting*."

The Diagnoſis of the different Cauſes of *Vomiting* is formed upon the Evidence of concurring Signs. Pituitous *Vomitings*, attended with a preſſive Pain about the Region of the Stomach, are an Indication of Crudities adhering to the *Primæ Viæ*. Bilious, chronical, and periodical *Vomitings*, ſignify too great a Laxneſs of the biliferous Ducts; chronical *Vomitings*, particularly, of many Years Duration, in which the Food is thrown up half-concocted, indicate ſome Injury or *Scirrhus* of one of the Viſcera. That *Vomiting* has its Riſe from the Stone, we infer, from a Pain in the Region of the Loins, attended with a Diminution of the urinary Evacuations, and with ſandy Excretions. Paleneſs of Countenance, and Pains and gnawing Senſations in the Inteſtines, attended with frequent Spitting and Itching of the Noſtrils give a Suſpicion of Worms: But Judgment is neceſſary in theſe Caſes, to explore, from the various concurrent Symptoms which attend *Vomiting*, the true Cauſe of that Affection, without the Diſcovery of which we can expect but a palliative Cure.

By way of Prognoſis, all critical Vomitings are ſalutary, ſymptomatical ones bad, and worſt of all when excited by a ſubtile cauſtic Acrimony vellicating the Nerves. All Vomiting more violent than ordinary, is not free from Danger; for it may cauſe Abortion, excite an Hernia, and diſpoſe to a Retropulſion of the arthritic, podagric, and eryſipelatous Matter upon the nobler Parts, to the no ſmall Detriment of the Patient. It has occaſioned a Rupture of the Omentum, as we read *Act. Med. Berol. Dec.* 2. *Vol.* 3. and a Laceration of the very Stomach, as we are told by *Sanchez*, *Ob. pract.* p. 376. Bilious Vomitings, eſpecially the green, porraceous, and æruginous, terrify us with Appearance of Danger, and threaten an Inflammation. Vomiting from Worms corroding the Stomach is generally pernicious; and if a dead Worm be diſcharged, and at the ſame time there be a Ceſſation of very ſevere Symptoms, and terrible Convulſions of the Limbs, all at once, it is a mortal Indication of a ſupervening *Sphacelus*, which deſtroys the Worms, together with the Patient. All fetid Vomitings are of bad Prognoſtication, as they indicate an internal Corruption. Sebaceous or Tallow-like Vomitings indicate a Redundance of corroſive acid Humours in the Stomach, by which the pinguious Subſtances are coagulated, and an intolerable burning Heat and Cephalalgia are uſually excited.

Where there is a plentiful Diſcharge of a groſs Humour tinged with a brown Colour like Gall, to the Quantity of Half a Pint, or a Pint, whether ſpontaneous, or procured by Art, as it frequently happens in ſlow Fevers, it is a certain Indication, that the Tone of the Inteſtine next the Stomach is very much decayed.

Conſtant Vomitings, for the Space of Half a Year together, or more, and attended with a ſlow Heat, and an Extenuation of the Body, give ſtrong Suſpicion of an ulcerated Stomach. I met with an Inſtance of this Nature when I practiſed Phyſic at *Minden* in *Weſtphalia*, fifty Years ago, and had a View of it in the Diſſection of a dead Body.

The Method of Cure.

Critical Vomitings, by which Humours of various Kinds are plentifully diſcharged, being ſalutary, ſcarce require any Cure, but are rather, on ſome Occaſions, to be promoted. But ſymptomatical Vomitings, which are leſs ſufficient or accommodated for removing the Cauſe, are the more carefully to be treated, in order to their Cure: And the two principal curative Indications, or Intentions, to be anſwered, are, in the firſt Place, to quiet and compoſe the convulſive and unruly Motion of the Stomach; and, afterwards, to oppoſe and ſubdue the material Cauſes of the Diſorder.

The firſt Intention is anſwered by Antiſpaſmodics, Corroboratives, and Anodynes, beginning with gentle, and proceeding to ſtronger Remedies of thoſe Kinds. Of this Nature are, Saffron, and Caſtor in the Form of Powders, Eſſences, or Extracts; *Theriaca Cæleſtis*, incorporated with Powder of Amber, and Abſorbents, as Hartſhorn, Crabs-eyes, and red Coral: Powders compoſed of theſe Ingredients, with ſpirituous and vinous Waters, ſuch as the Waters of Lime-tree-flowers, Lilies of the Valley, Chamomile, Baum, Mint, Black Cherries, Cinnamon, and the like, are of ſignal Service in theſe Caſes. Among Corroboratives are diſtinguiſhed, Nutmegs, Mace, Cardamoms, Cinnamon, *Coſtus Verus*, Cloves, Orange and Citron-peels, the Roots of red Gentian, Calamus Aromaticus, Galangals, the Herbs Marjoram, Roſemary, and the like; with the Oils and Eſſences prepared of theſe Simples. But of all the Remedies ſpecifically appropriated to this Diſeaſe, the *Mentha Criſpa*, or curled Mint, is the moſt eminent and effectual; for which Reaſon, the Oil prepared from it may be mixed with almoſt all the Remedies adminiſtered in theſe Caſes, as being an eminent Paregoric as well as Strengthener. Among Anodynes, I can affirm, that my own anodyne Liquor is as effectual as ſafe, eſpecially if it be mixed with my Balſam of Life; or, if more powerful Anodynes are required, recourſe may be had to the *Pilulæ de Styrace*, *Wildeganſii*, or *Sydenham*'s Laudanum.

With the Adminiſtration of theſe internal Medicines, it may be of good Service to join the Application of Topics to the epigaſtric Region, in order to repreſs, in ſome meaſure, the Violence of the diſorderly Motions. Externals proper for this Purpoſe are, the ſtrengthening diſtilled Oils of Mint, Cloves, Nutmegs, Wormwood, Mace, Cedar, and the like, reduced with Balſam of *Peru* into an Ointment. Epithems, alſo, for the ſame Purpoſe, may be compoſed of the *Spiritus Matricalis*, *Spiritus Theriacalis*, Hungary-water, and Eſſence of Saffron; and Cataplaſms of camphorated Spirit of Wine, Ferment of Bread, the ſtrongeſt Wine-vinegar, with Balſam of *Peru*, and an Addition of ſome Drops of the Oils of Mace and Mint. Of no leſs Efficacy is a Plaiſter of Crums of Bread, and Balſam of *Peru*, ſoftened with a Drop or two of ſome diſtilled Oil; over

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over which it will be proper to apply resolvent and strengthening Bags warm. Our Balsam of Life does excellent Service in this Case, the Præcordia, and epigastric Region being anointed therewith.

But we shall lose our Pains, if we only use these Things alone, without attempting to remove the material Cause of the Disorder. A Vomiting, then, of the pituitous Kind which depends on Crudities of the *Primæ Viæ*, and a viscid Mucus sticking in them, is best cured by an Emetic, especially if the Vomiting is not of itself sufficient to eliminate the Sordes; and if the Patient is greatly afflicted with an Effort to vomit, a Nausea, and Cardialgia; for, in this Case, after the Use of inciding and digestive Medicines, such as neutral Salts, the Roots of Arum, and especially of Squills, we are to exhibit a gentle Emetic, such as tepid Water mixed with fresh Butter, and copiously drank; or the Root of Ipecacuanha reduced to Powder. To Infants seized with a Vomiting on account of coagulated Milk, or the Meconium contained in the Stomach, is is expedient to give Oxymel of Squills mixed with Syrup of Rhubarb.

A bilious Vomiting which arises from a weakened Digestion, and has its Fomes in the *Duodenum*, after the Use of Absorbents, and gently-laxative Preparations of Manna and Rhubarb, admits of a perfect Cure, by restoring the Strength of the Stomach and Intestines; which, after the Sordes are gradually removed, is excellently performed by my visceral Elixir, used for a considerable time together with a proper Regimen, and due Exercise: And as this Kind of bilious Vomiting is of a chronical Nature, so that Species is of a more acute and hurtful Kind, which draws its Origin from violent Spasms of the Stomach and biliary Ducts, excited by Anger. In this Case, it is expedient to correct the Acrimony of the Bile by diluent and acidulated Medicines; by the *Spiritus Nitri Dulcis*; by the Spirit of Vitriol; by Absorbents, fossil Ivory, and Crabs-eyes: The spasmodic Motions are, in the mean time, to be allayed by gentle, antispasmodic, and anodyne Medicines; using for the Sake of Evacuation Potions impregnated with Rhubarb; but where there is a Coagulation of the Bile, or a Gall-stone, nothing is more effectual for resolving them, than the *Caroline* Springs, or any cold medicinal Waters, exhibited tepid. When too great a Relaxation of the biliary Vessels proves the Cause of chronical Vomitings, the most proper and efficacious Remedies are Corroboratives; the best of which are, the *Peruvian* Bark; the Bark of Cascarilla; Essence of Gentian; and chalybeate Tinctures, exhibited in vinous Waters.

A Vomiting which arises from an acrid Matter adhering to the Nerves of the Stomach, or from a Retropulsion of a Gout, arthritic Disorders, or an Erysipelas, besides mild Sedatives, and Medicines which excite the Motions necessary to the Expulsion of the Matter, requires a recalling of the exanthematous Matter to the Surface of the Body: This End is obtained by exhibiting a diaphoretic Powder, which determines the Motion of the Blood and peccant Matter to the external Parts of the Body; and this Effect is more successfully produced, if a small Quantity of Camphire is added to the diaphoretic Powder, and Clysters, Frictions, and Baths for the Feet, are used. When Poisons or poisonous Aliments excite a Vomiting, nothing affords more certain Relief than the immediate Exhibition of large Draughts of Milk and pinguious Liquors, by means of which the Spicula of the Poison are not only obtunded, but vomited up along with the Liquor drank. Hence some Physicians, in Vomitings arising in Plagues and malignant Fevers from a Miasma stimulating the Coats of the Stomach, order the Root of Ipecacuanha to be taken in some warm Liquor; after which, they exhibit Acids in Conjunction with Diaphoretics. But this Practice is not to be used in Cases where there is an Inflammation of the Stomach.

Acrid, acid, and bilious Sordes, falling into the Intestines, frequently excite a Vomiting accompanied with colical Pains; in which Case, we are first to exhibit internally diluting and demulcent Medicines, such as Decoctions of Oats and Hartshorn, Whey, or a few Spoonfuls of the Oil of sweet Almonds. 2. Antispasmodics; the best of which is, the anodyne mineral Liquor, mixed with a few Drops of genuine Oil of Mace, and exhibited in cold Water. The Laudanum of *Sydenham* may be, also, used for this Purpose; and in Patients of choleric Temperaments, rectified Spirit of Vitriol, either alone, ormixed with the anodyne Mineral Liquor, and exhibited in cold Water, is an excellent Remedy. And, 3. Mild Laxatives; the best of which are Clysters joined with the internal Use of Preparations of Manna and Rhubarb, or the Salts obtained from medicinal Waters dissolved. Where there are Worms in the Intestines, Clysters of Milk alone are most expedient, exhibiting at the same time internally, bitter Resolvents, or mercurial Laxatives; during the Use of which a sufficient Quantity of Milk, or Oil of Sweet Almonds, is to be exhibited.

The preservative Method is principally to be used, when from too great a Relaxation of the *Primæ Viæ*, Crudities are perpetually generated, and periodical Vomitings by that means produced. In this Case the Region of the Stomach, and of the Back about the first Vertebra of the Loins, with which the Stomach is connected by a certain Ligament, is to be defended from all Cold. Saline, acid, crude, and smoked Aliments, together with such as are of hard Digestion, are to be carefully abstained from. Nor must the Patient for ordinary Drink use Malt Liquors, but some proper Decoction in Conjunction with old generous Wine, especially *Burgundy*. Excessive Sleep is hurtful, but moderate Exercise beneficial. It is, also, expedient for some time to use visceral Elixirs after Meals; Chalybeate Baths, and Liquid Medicines prepared of Steel, are very beneficial. It is, also, of great Advantage at proper Intervals to purge with gentle Laxatives.

To attempt to stop a Vomiting by Astringents and Anodynes, before the peccant Matter is removed, is an highly prejudicial Practice; for when the spasmodic Motions are allay'd, worse Symptoms succeed, such as excessive Anxieties of the Præcordia, Cardialgias, and Inquietudes. For this Reason, the Vomiting generally does not cease by the Exhibition of Corroboratives, before the Excretion of the peccant Matter; for these Remedies are only to be used when the Motions, but not the Matter, are peccant, or when there is no Proportion between the Motion and the Matter, or when the latter is subtile, and in a small Quantity, but the Efforts to vomit strong and violent.

Hence if in Infants especially and Children a Vomiting is excited by the Chin-cough, on account of the Consent between the Stomach and Diaphragm, the Disorder is to be allayed by sedative and anodyne Medicines, such as the Syrups of white and red Poppies, Extract of Saffron, Oil of Sweet Almonds mixed with Sperma Ceti, the Pulvis Marchionis, Amber, Cinnabar, and a Grain or two of the *Theriaca Cœlestis*, Clysters may, also, be injected, and the Breast and epigastric Region may be anointed with a Liniment prepared of green and red *May* Butter, the Fats of the Badger, Fox, and Beaver, and a little of the Oil of Henbane.

The Vomiting of pregnant Women arising from a Regurgitation of the Blood to the Stomach, which is, also, observed in Women afflicted with a Retention of the Menses, and Men labouring under a Suppression of the Hæmorrhoids, is most effectually removed by temperating Medicines, mild Laxatives, Clysters, Corroboratives, and best of all by Venesection, or a Recalling of the usual Excretions of Blood. In Cases of this Kind Emetics are highly prejudicial, since they either excite a Vomiting of Blood, or, which I have frequently seen, bring on an Inflammation of the Stomach.

A bilious Vomiting, accompanied with Spasms of the Præcordia, and excited by Anger, especially when the Patient is at a Meal, is to be treated with great Caution; and the principal Intention of Cure ought to be directed to the Relaxation of the Spasms. In such Cases it is customary with many to exhibit Emetics and Purgatives; but I would advise these to be carefully abstained from, since I have often seen violent Symptoms, and sometimes mortal Inflammations of the Stomach brought on by this means.

When Efforts to vomit or actual Vomitings seize in the Morning, which frequently happens to those who use too much spirituous Liquors, especially over Night, then the precipitating Powders, and such as involve the acid Crudities, together with Medicines which promote Digestion, such as the Stomachic Powder of *Brickmannus*, and candy'd Citron, and Orange-peel, are the most efficacious Remedies.

If, as I have frequently observed, a chronical Vomiting at certain Intervals arises from long-continued Grief, I have found the most efficacious Relief in Analeptics, and especially in the Balsam of Life mixed with an equal Portion of the anodyne Mineral Liquor, and used both internally and externally. Excellent Effects are, also, produced by the *Balsamum Embryonum*, Cinnamon-water impregnated withQuinces, and generous Wines.

When Vomiting as joined as a Symptom to febrile Paroxysms, which frequently happens in Quotidians both of the simple and double Kind, it is proper, if no Circumstance contraindicates it, to exhibit a gentle Emetic. In the Small Pox and Measles the Vomiting ceases spontaneously after the Eruption; and a Mixture prepared of distilled Waters, the Juice of Lemons or Citrons, and the Salt of Wormwood, is of excellent Service. Nor does this Preparation want its proper Use in Tertians.

A Vomiting, arising from the Pain of the Stone, is most effectually allay'd by the Anodyne Mineral Liquor, or the *Spiritus Nitri Dulcis* well prepared. Oleous Clysters, Baths of sweet Waters, Oil of Sweet Almonds taken internally, and Antispasmodics are, also, proper. The Vomiting of Persons labouring under Hernias, or the Iliac Passion, rarely remits till the Tumor is mollify'd and reduced.

Hippocrates,

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Hippocrates in *Epid. Lib.* 6. informs us, that Vomiting is cured by Vomiting; but becauſe Contraries are cured by Contraries, ſome Phyſicians have concluded from this Paſſage of *Hippocrates*, that Similars may be cured by Similars. But this is an Error; for, if Vomiting is cured by Vomiting, the Cure is performed by Contraries; for Vomiting often proceeds from peccant Sordes, and ill concocted Juices lodged in the Stomach, which Nature endeavours ſpontaneouſly to evacuate; and when ſhe is not able to do ſo, her Force is to be aſſiſted by Art. For this Reaſon young Practitioners are to be adviſed not to abuſe this Maxim, leſt by a wrong Application of it they ſhould be led into a prepoſterous and injurious Practice; for if an acrid cauſtic Matter adhering to the Coats of the Stomach, or Blood ſtagnating in the Veſſels of the Stomach, is the Cauſe of the Vomiting, it would be a terrible Error to attempt to increaſe this Vomiting by Art.

In order to ſtop exceſſive Vomiting, Reſt, and lying in Bed, contribute conſiderably; for any Commotion of Body forthwith excites and augments the Vomiting; and this Obſervation is of ſingular Uſe in Practice.

In the Beginning of exanthematous Fevers, ſuch as the Plague, Eryſipelas, and Small Pox, Nature often attempts a Vomiting, which ought by no means to be ſtopped, or treated with Aſtringents. In Caſes of this Kind, ſuch Medicines as gently promote cuticular Excretion are proper; for when the Efflorescences begin to appear on the Surface of the Body, the Vomiting ceaſes ſpontaneouſly.

The obſtinate Vomitings of hyſteric Patients ought not to be ſuddenly ſtopped by Opiates, or Aſtringents; for by this Practice I have ſeen violent Convulſions of the Limbs, and Anxieties of the Præcordia produced; and when theſe Symptoms ceaſed, the Vomiting returned.

When frequent Vomitings afflict and weaken the Stomach, an exact Regard is to be had to the Regimen and Method of Life. It is expedient to eat frequently, though little at a time, and of ſuch Aliments as are proper, and eaſy of Digeſtion. Sweet Milk and white Bread agree with ſome, though not with all; and I can from Experience aſſert, that the drinking pure cold Spring-water contributes more to ſtrengthen the Stomach, and remove the Cuſtom of Vomiting, than any other Liquor whatſoever: Rich and aſtringent *Pontac*, and *Burgundian* Wines, are preferable to others, eſpecially *Rheniſh* Wine, which is prejudicial to hypochondriac Patients. The Juices of roaſted Fleſhes are more proper than thoſe of ſuch as are boiled.

In Diſeaſes where Nature is by a certain ſalutary Motion employ'd in propelling a peccant Humour to the Surface of the Body, which happens in arthritic and eryſipelatous Diſorders, Topics, and eſpecially Preparations of Camphire, are to be very cautiouſly applied; for I have frequently obſerved, that by camphorated Spirit of Wine, which in ſome Caſes is very uſeful, uſed by infirm Patients labouring under arthritic Pains, an Hepatitis, and ſpurious Pleuriſy, which are, alſo, Species of a Rheumatiſm, the peccant Matter has been forced back to the nervous Coats of the Stomach and Inteſtines, and excited Vomitings, Cardialgias, and Hiccups. In Caſes of this Kind, if an Attempt is imprudently made to ſtop the Vomitings by Aſtringents and Opiates, a mortal Inflammation of the Stomach is eaſily brought on in infirm Patients.

Immoderate and long-continued Vomitings of pregnant Women, which principally happen in the firſt Months of Geſtation, eſpecially in thoſe who indulge themſelves too much in Venery, and are plethoric, are by no means to be cured by ſpirituous Medicines, ſuch things as corroborate the Stomach, Aſtringents and Opiates; but are to be removed by repeated Veneſections in the Ancle, Reſt of Body, and Tranquillity of Mind; and when a Vomiting of this Kind is ſo violent as to threaten Abortion, I have ſeen it more effectually ſtopped by drinking pure cold Water, than by the Uſe of any other Medicine whatever. But when an Analeptic is requiſite, one Spoonful of Cinnamon-water taken after Meals, is ſufficient. *Fred. Hoffman.*

VOMITUS CRUENTUS. See MORBUS NIGER.

VOPISCUS. The Twin which comes to perfect Birth, while the other periſhes in the Uterus. *Caſtellus.*

VORACITAS. Voracity. See ADDEPHAGIA.

VOSACAN. A Name in *Boerhaave* for the *Corona Solis*; *Rapunculi Radice.*

UPUPA. Offic. Schrod. 5. 324. Aldrov. Ornith. 2. 704. Geſn. de Avib. 70. Schw. A. 368. Jonſ. de Avib. 85. Charlt. Exer. 98. Raii Ornith. 145. Ejuſd. Synop. A. 48. Will. Ornith. 100. Bellon. des Oyſe. 293. THE HOOPO.

It is a melancholy and very unclean Bird, living on Worms found in Dung, Caterpillers, Beetles, and the like. The Parts in Uſe are the *Fleſh* and *Feathers*. The *Fleſh*, and its Decoction, according to *Avicenna*, have a ſpecific Virtue againſt the Colic. And the *Feathers* applied, are ſaid to mitigate Pains of the Head. *Dale.*

URACHUS, ὐραχὸς, from ὖρον, Urine, and ἔχω, to have, or contain, a Ligament belonging to the Bladder, and of particular Uſe in the Fœtus. See ALLANTOIS and RENES.

URÆON, ὐραῖον, in *Galen*, *Com. in R. V. ſ. A.* is the the Extremity of a Bone, particularly the *Os Sacrum. Caſtel.*

URAGION, ὐράγιον, in *Hippocrates*, *Lib. de Corde*, is the the Apex, or Point of the Heart.

URAGOS, ὐραγὸς, from ὖρον, Urine, and ἄγω, to convey, in *Aetius*, *Tetr.* 4. *Serm.* 4. *Cap.* 3. is the ſame as *Urachus.*

URANÆ, ὐράναι, from ὖρον, Urine, the Ureters, by ſome ſo called. *Gorræus.*

URANION, ὐράνιον, is the Name of a Collyrium, of the Sort called *Adecta*, [ſee ADECTOS] deſcribed by *Paulus*, *Aetius*, and *Trallian*, *Lib.* 2. *Cap.* 5.

URANIOS, ὐράνιος, from ὐρανὸς, *Cœlum*, the Heavens, in *Hippocrates*, is commonly ſpoken of the Air, particularly 1 *Epid. Sect.* 3. near the Beginning.

URANISCUS, ὐρανίσκος, a Diminutive of ὐρανὸς, Heaven, is a Name for the Palate, or *Hyperoa*, on account of its being the ſuperior Part of the Mouth, and, alſo, arched in manner of the Heavens. *Caſtellus.*

URANOS, ὐρανὸς, Heaven, by *Hippocrates*, in Compliance with the vulgar Way of Speaking, is commonly uſed for the Air, which is above us as far as the Region of the Clouds. *Galen*, *Com.* 2. *in* 1 *Epid. T.* 4. It is, alſo, a Name for the Palate, as in *Ariſtotle*, *de Part. Anim. Lib.* 2. *Cap.* 17.

URANOSCOPUS. Offic. Aldrov. de Piſc. 264. Rondel. de Piſc. 1. 305. Jonſ. de Piſc. 61. Salv. de Aquat. 197. Raii Synop. Piſc. 97. *Uranoſcopius ſeu Cœli Spectator.* Charlt. de Piſc. *Callionymus vel Uranoſcopus*, ἡμεροκάλλης. Oppian. THE STAR-GAZER. For a further Account of this Fiſh ſee CALLIONYMUS.

URCEOLARIS, URCEOLA. Names for the *Parietaria*, from its Uſe in ſcouring Glaſs-veſſels [*Urceoli vitrei*].

URCEUS. A Meaſure of Liquids, of various Dimenſions in different Places; in the Territory of *Pergamus*, it contained twelve or fifteen Ounces of Wine. *Caſtellus.*

UREDINES, in the alchymiſtical Cant, are the Virtues of Metals communicated to them from the Sun. *Uredo* in *Pliny*, *Lib.* 20. *Cap.* 18. is the Smut affecting Fruits; and is a Name given, alſo, to a burning and very ſevere Cephalalgia in a remarkable Caſe related in the *Philoſophical Tranſactions* for *June* 1668.

UREMA, ὔρημα, in *Hippocrates*, *Lib. de Nat. Hominis*, is the ſame as ὖρον, Urine.

URENTIA (*Medicamenta*), the ſame as *Cauſtica*, or rather, according to *Blancard*, PYROTICA.

URESIS, ὔρησις, in *Coac.* 263. is the ſame as ὖρον, Urine, but *ibid.* 348. ſignifies Miction, or the Action of urinary Excretion.

URETERES, ὐρητῆρες, from ὖρον, Urine. The Ureters. See RENES.

URETHRA. See GENERATIO.

The proper Method of opening the imperforated Urethra, or Glans.

Two Caſes uſually occur, in which the impervious Glans, or Urethra, ſhould be opened. 1. When the Glans is impervious in a new-born Infant. 2. When, in Adults, the Extremity of the Glans being imperforated, the Urine is diſcharged under it. That the Urethra is impervious in Infants, may be gathered from hence: If, for ſome Days after their Birth, we do not find the leaſt Marks of Urine in the Cloths and Swaths about them, and if they cry violently. Upon this, the Operation muſt be ſpeedily performed, leſt the Infant ſhould loſe its Life, through the Detention of too great a Quantity of Urine. But this Operation is commonly varied, according to the various Diſpoſitions of the Diſorder: For ſometimes we find ſome Mark, at leaſt, of an Urethra in the Glans, as the Paſſage of the Urine is only ſtopped by a very thin kind of Membrane. In this Caſe, therefore, the Cure may very eaſily be performed, by carefully piercing that Membrane with a pretty fine Lancet, or even with the Needle before deſcribed in couching a Cataract (*Tab.* XXXVIII. *Fig.* 5. or 6.); and, after a Diſcharge of Urine made by the Patient, by introducing into the Urethra, either a Tent faſtened to a Thread, and dipt in the Oil of ſweet Almonds, or in ſome other vulnerary Oil, or a ſmall flexible Candle, or a waxed coarſe Thread, in order to hinder it from cloſing again. If the Membrane be ſomewhat thick and fleſhy, it is better to uſe, inſtead of the Lancet, either the aforeſaid Couching-needle, or even a finer triangular-pointed Needle, commonly called a *Trocar*, like that in *Tab.* XLVII. *Fig.* 6. and to perform the reſt of the Operation in the Manner already directed. But if not the leaſt Mark of an Urethra can be perceived, then commonly the Infants are left by many Surgeons without any kind of Aſſiſtance, as incurable. Though it is better, in my

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my Opinion, to make the Experiment, and to attempt, tho' in vain, some difficult Operation, than, by neglecting all Methods, to exchange the doubtful Hopes of Recovery for the immediate Danger of Death. Wherefore those Surgeons are to be commended, who, in such a Case, especially if the adjacent Parts of the Abdomen be distended with Urine, duly perforate the Penis with some of the above-mentioned Instruments; and, after a Discharge of the Patient's Urine, set about the rest of the Cure in the Manner already prescribed.

But if this Method should not prove successful, then nothing seems to remain, but the Death of the Child, or piercing the Bladder above the Os Pubis, or perforating the Perinæum, in the Manner directed under that Article. But, whether this latter Method of Cure for this Disorder in Infants has ever been tried by any Surgeon, I cannot be positive.

In Adults several Cases may happen which require the Assistance of a Surgeon to open the impervious Glans: For, sometimes, it is true, the Urethra is pervious, but yet in such a manner that the Urine flows not so much from the Glans, as from some other Part of the Penis below it, and that sometimes nearer, and sometimes farther from it, and even in some Cases from the Perinæum. Sometimes we find a Perforation in some other Part of the Penis and Urethra, besides the Glans, so that the Urine passes two Ways: But almost always such Disorders have been contracted in the Uterus; and consequently they are natural, as it were, to most of those affected with them. In the mean time it cannot be denied, but that they likewise arise from an Ulcer or Wound in the Penis, or sometimes, possibly, on occasion of extracting a Stone out of the Urethra, or from the Acrimony of the Urine, which being stopt by a Stone lodged in the Urethra, corrodes, and makes a new Passage for itself. Such Apertures are all commonly hard to cure, yet those which are largest and nearest to the Bladder are worst; and if the Aperture is very large, it can never be totally conglutinated. Those Persons whose Penis is perforated near the Abdomen, are to be esteemed quite unfit for Marriage and Procreation; but the Case is otherwise with those whose Urine flows either about the Middle of the Penis, or near the Glans; for nothing at all hinders the subtile Particles, or Aura of the Semen of such Persons in Coition, from passing into the Uterus: So that here the greatest Care and Prudence is requisite in those Surgeons, who, in Cases of this Nature, are called upon to give their Opinion, before any Court of Judicature, as to Matters of Ability or Impotence. If the Urine flow through the Glans, though at a preternatural Aperture; yet since a Man is not unfit for Copulation, nor has any Impediment in discharging his Urine, it seems safer to forbear attempting a Cure, than by an Incision to occasion a dangerous Profusion of Blood, and an Inflammation in the Glans, a Part very full of Blood-vessels. But if the Urethra be perforated below the Glans, or even below the Frenulum, then two things are chiefly incumbent on the Surgeon. 1. To make a proper Perforation through the Glans with some Instrument. 2. To agglutinate and close up, as nicely as possible, the preternatural, and consequently incommodious, Passage of the Urine.

The Glans may be perforated most commodiously in two Manners: The first is, after a Discharge of the Urine, to cut longitudinally in a strait Line the impervious Glans with a Knife, beginning at the preternatural Aperture, in such manner as to lay the Corpora Cavernosa bare, yet without wounding them in the least. Let the wounded Parts bleed plentifully, according to the Patient's Strength and Habit, the more readily to prevent any Danger of an Inflammation. Then if the Bleeding does not stop spontaneously, fill the Wound with dry Lint, which cover with a Plaister and Compress, and make a proper Bandage round it. About twenty-four Hours after, remove the Dressings and Lint, and introduce a smooth leaden Cannula into the Wound, in such a manner as to pass from the *Extremity* of the Glans, beyond the preternatural Foramen, into the Urethra; and consequently receive and transmit the Urine, till the Cure is completed. Make repeated Scarifications in the callous Lips of the preternatural Orifice; or which is safer, cut them away very nicely with a Pair of fine Scissars; for the finer the Portions cut off are, the better do the Parts agglutinate; to promote which, glutinous Plaisters are exceedingly serviceable, provided they be narrow, but yet adapted to keep the Lips of the Orifice in Contact.

But they must not be brought quite round the Penis, lest by hindering the Circulation they should cause too great a Swelling, and make the Lips of the Orifice part from each other. Put a Compress over the Plaister, and a slack Bandage round it, and last of all secure the *Cannula* from falling out. After this is done, put the Patient to Bed, and let him keep himself very quiet there, and forbear drinking for some Days, lest he should have too frequent Calls to make Water, or at least a Discharge of his Urine before the Wound is conglutinated should excite Pain, and, by loosening the Plaister, hinder the Cohesion of the Parts: For indeed the first Dressing should not be removed unless there be some urgent Necessity, before the third or fourth Day; and then it must be done with the greatest Care, lest the Lips of the Wound, having still but a slight Cohesion, should be again separated; and when the Parts are found to cohere, the first Dressing must be kept on for some Days: But if on the contrary, they be not joined, it will be proper to lay on a new adhesive Plaister, till the Lips of the Orifice are firmly united; as to the rest, the same things are to be done, as directed in every Conglutination of Wounds.

The second Method of Cure is performed in the following Manner: Let the Needle, or fine sharp-pointed triangular Trocar, (*Tab.* XLV. *Fig.* 2. or *Tab.* XLVII. *Fig.* 6.) be passed directly, and very carefully, through the impervious Glans into the Urethra; then, after a sufficient Quantity of Blood is discharged, let a pretty long and slender Tent of clean Lint, in order to stop the Bleeding, be introduced into the new made Orifice, and a proper Dressing applied. But if the Bleeding stops spontaneously, let a waxed coarse Thread, or a flexible Wax-candle big enough to enter it, be introduced, in order to hinder the Adhesion of the Lips of the Orifice. Next Day, let a new Tent, dipt in a digestive Ointment, be put into it, but with this Caution, that it reach not beyond the preternatural Foramen from which the Urine has already flowed, so that as often as there is Occasion, the Urine may be discharged thro' it, till the Inside of the new Passage be lined with a Membrane; for otherwise, should it flow through it too soon, it would occasion Pain in the fresh Wound, and hinder the Production of the Skin. For some Days, therefore, let the Tent, and afterwards the Wax-candle of a proper Thickness, be dipt twice a Day in some desiccative Ointment, and let the Urine be discharged through the preternatural Orifice, till by means of the Wax-candle and desiccative Ointment, the Membrane be found to be grown over the Inside of the new Perforation. For then, instead of a Tent, Thread, or flexible Wax-candle, a very smooth and pretty long leaden *Cannula* is to be introduced into that new Aperture of the Penis, so as to pass beyond the old Orifice, and receive and discharge the Urine; by which means the Agglutination of the preternatural Foramen will be more conveniently accomplished. The following Method of Cure is most commonly made use of: Either the Lips of this Orifice are scarified with the Knife, or cut as nicely as possible, with a fine Pair of Scissars, and then joined by laying an adhesive and narrow Plaister over them, after which the Wound is to be treated in the same manner, as has been shewn above in the first Method of Cure. The preternatural Foramen being closed up, the leaden *Cannula* is likewise taken out; and thus the whole Cure is completed. Sometimes, such is the State of that preternatural Foramen of the Urethra, that it cannot be closed up or agglutinated; and yet duly perforating the Glans is not entirely an useless Operation; for when it is properly executed, and a new Passage formed, the Patients become afterwards more fit for Procreation. For tho' by this means, perhaps, not all, nor the greatest Part, yet a considerable Portion of the Semen can, in Coition, be thrown into the Uterus. By this very Method of Cure, therefore, those have the Faculty of Generation restored, or at least promoted and increased, who otherwise, through a natural Defect in the Penis, seemed almost or entirely unfit for Procreation. Besides, it is very necessary, after the Cure has been completed, to open a Vein as soon as possible, and repeat Bleeding occasionally, especially in such Persons as are of a laudable and plethoric Habit. For otherwise it may happen, especially in vigorous young Men, that an Erection and Expansion of the Penis should readily ensue, which may divide the Lips of the Orifice, and consequently retard the Conglutination, or render it entirely impossible.

I know very well, that there are some Surgeons, who, in order to close this kind of preternatural Foramen, stitch up the Lips of the Wound. Others choose rather by Corrosives to consume the hard and callous Parts of the Foramen, than to cut them away. But neither of these Methods of Cure, in Cases of this Nature, is much to be commended. For the tender Lips breaking, as commonly happens when stitched, the old Foramen, instead of being closed up, is rather enlarged. And by applying Corrosives the Skin may be corroded too much, and consequently the Orifice made so wide, that the Lips can never afterwards be joined together; and both Pain and a troublesome Inflammation may be thereby caused.

URETICOS, ἐρητικὸς, from ἔρον, Urine, is sometimes spoken of the Urinary Passages, in which Sense ἐρητικοὶ πόροι, are the Ureters; sometimes it is apply'd to Medicines, and so is the same as *Diuretics*, sometimes to the Patient, and imports a Facility of Urine, and in that Sense is used by *Hippocrates*, *de R. V. & A.* in the superlative Degree, where ἐρητικώτατος, with him, signifies a Person who has a very free and plentiful Flow of Urine;

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Urine; and, in the last place, it is spoken of a Disease, and apply'd to a Species of symptomatic Fever; and thus *Uretica Febris* is a Fever attended with a Diabetes.

URIAS, οὐρίας. The Urinary Tube; that is, the *Urethra*.

URINA. Urine. See RENES.

The principal Symptoms of Urinary Secretion injured are,

1. Ἰσχουρία, an *Ischury*, or entire Retention of Urine, the primary Causes of which are a Plethora, an Inflammation of the Kidneys, Ureters, Bladder, the Neck of the Bladder, Urethra; a Spasm, and Compression of the same Parts; also, an Obstruction of the same from the Stone, Phlegm, Pus, a Thrombus, Caruncle, Impostume, or Tumor.

2. Δυσουρία, a *Dysury*, or Excretion of Urine with Trouble, Labour, or Pain. One Species of this is what we call στραγγουρία, a *Strangury*, in which there is an Emission of Urine by Drops, with a burning Sensation. The Cause of both these Disorders is manifold; as principally the Acrimony of new fermenting Beer or Wine, or of their Lees; the acid, salt, alcaline, oleous, aromatic, bilious Acrimony of the Humours; an Excoriation of the Parts of the Bladder, or Urethra, by an Inflammaaion, some Ulcer, an Attrition by a Stone, and especially from an internal Exhibition of caustic Insects; and, lastly, from a Stoppage of the Passages by a Stone, or a Tumor in the Neck of the Bladder, or the Urethra.

3. *An Incontinence of Urine*, when the same flows without Effort or Consent of the Will, or Respiration. This Disorder generally proceeds from a Resolution, Dilatation, or Discission of the Fibres of the Sphincter of the Bladder, or a Consumption of the same by a Suppuration, or a Putrefaction of them by a Gangrene. See INCONTINENTIA.

4. Διαβήτης, a Diabetes which is a frequent and copious Discharge of chylous or lacteous Urine. The Cause of it is supposed to be too great a Laxness of the urinary Arteries, in Conjunction with an extraordinary Dilutedness of the Humours, both which proceed from Aquosities. *Boerhaav. Inst. Med.*

An ISCHURY.

A total Suppression of Urine is called *Ischuria*, ἰσχουρία, "an "*Ischury*;" but a Diminution of the Action of making Water, is termed *Stranguria*, στραγγουρία, "a *Strangury*;" tho' this latter Word is of much more extensive Signification, as comprehending every *Stillicidium* of Urine, which if not attended with Pain, and the Urine flows by Drops, is a lesser Degree of *Ischury*; but if it be painful, is to be referred rather to a Dysury, or Heat of Urine.

An *Ischury*, then, or a total Suppression of Urine, is of two Kinds, as it is commonly distinguished into the *true*, or *genuine*, which attends a full Bladder, and the *spurious* or *bastard* Kind; in which Affection the Bladder is empty, nothing descending into it from the Kidneys.

A *true* and *genuine Ischury* depends on three Causes; the first of these is *an Abolition of Sense in the Bladder*, on account of a Resolution or Obstruction of the Nerve which supplies it, or a Diversion of the Spirits, for want of which the Bladder feels no Stimulation, nor is it at all irritated to Expulsion, as is the Case in Deliriums, and soporous Affections.

A second Cause is *a cold Distemperature of the Bladder*, contracted from refrigerating Causes, either internal or external, which obtund the Sense of the Bladder, and weaken its expulsive Faculty.

A third Cause is *a Straitness of the Neck of the Bladder*, intercepting the Efflux of the Urine. Of this *Straitness* there are three Causes assigned by *Galen*, *de Loc. Affect. Lib.* 1. *Cap.* 2. For either, first, he says, the Muscle surrounding the Neck of the Bladder is swelled to such a Degree as to obstruct the Passage, which is the Case when it happens to be affected with an Inflammation, Scirrhus, Abscess, or any other Tumor; or, in the second place, there is an Excrescence of some Caruncle, the Passage from some preceding Ulcer; or, lastly, the Obstruction proceeds from a Callus, or some other Substance, insensibly generated in Length of Time from a gross and viscid Humour. The Passage may be stopped up, also, by a Stone, a crude and gross Humour, grumous Blood, or Pus.

Moreover the Urine may be intercepted by a Compression of the Neck of the Bladder, from a Tumor of the incumbent neighbouring Parts; for Instance, the Uterus, when turgid with a large Fœtus; the Intestinum Rectum, when stuffed with hard Feces, or the Anus tumefy'd with the Hæmorrhoids increased to a remarkable Bigness.

Again, a Suppression of Urine is sometimes occasioned by an excessive Quantity of Urine too long retained, by which the whole Body of the Bladder is distended in such a manner as to be incapable of contracting itself in order to Expulsion, from which Distension the Passage must of Necessity be contracted and closed up. Now a Repletion of the Bladder from too long a Retention of the Urine, happens in two Cases: The first is when a Person in Health, on occasion of urgent Business, or when he is at Church, or at the Assemblies, at Feasts, riding in a Coach, or in other like Circumstances, for want of a convenient Opportunity of Time and Place, voluntarily suppresses his Urine: And, secondly, the Bladder is excessively filled and distended, so as to be incapable of contracting itself, from an Insensibility of the Stimulus of the Urine, on account of the dulled Sense of the Bladder, occasioned by an Affection of the Nerves which supply that Part, when the Nerves appropriated to the Constriction of the Sphincter Muscle may all the while remain unaffected. This was the Case of a certain Person, as we are assured by *Galen*, *de Loc. Affect. Lib.* 6. *Cap.* 4. from a Luxation of the Vertebræ of the Spine.

A *spurious Ischury* so called is, when the Urine is suppressed, the Bladder being empty, because there is no Afflux of Urine to that Part. The Cause why no Urine descends to the Bladder is of two Kinds; being either, first, because the Kidneys form no Urine, nor send it downwards; or, secondly, because the Ureters receive it not. The Kidneys may be injured in their attractive or expulsive Function; the first happens when either the Faculty itself receives Detriment, or the Object is unsuitable and wrong. The Faculty is injured by a violent Distemperature, and principally by a cold one, or is under an Impediment from an Obstruction either in the Kidneys, or the emulgent Vessels, proceeding from the Stone, or a Conflict of gross Phlegm, or Pus, descending thither from some superior Part; sometimes, also, the emulgent Vessels are obstructed by a Repletion from an immoderate Collection of Blood and Serum, an Instance of which *Riverius* gives in *Obs.* 1. *Cent.* 1.

The Attraction of the Kidneys is injured through the Fault of the Object, when the Serum is either consumed, as in burning Fevers, or diverted to other Parts, which is the Case in a Dropsy.

The expulsive Faculty of the Kidneys is in like manner injured by the same Causes, that is, by a Distemperature, Obstruction by a Stone, grumous Blood, gross Phlegm or Pus, or by an Inflammation.

The Ureters receive not the Serum, nor transmit it to the Bladder, on account of an Inflammation or Obstruction from the Stone, grumous Blood, Pus, or gross Phlegm, or from a Compression of the neighbouring Parts by Tumors.

It is to be observed, that both Kidneys, or Ureters, must be affected, in order to procure a total Suppression of Urine; for while there is an open and a free Passage through one of them, the Urine may continue to flow.

All the forementioned Causes may each of them be considerable enough to procure an entire Retention of the Urine, called an *Ischury*; but if they are too weak for that Effect, they produce only a partial and diminished Excretion, which we call a *Strangury*. Both Disorders proceed from the same Causes differing only in Degree.

The *true* and *proper Ischury* is known by the Weight and Tension of the Hypogastrium, and the circumscribed Tumor, which has the Figure of the Bladder. Its Causes are discovered from preceding and attendant Circumstances; for if the Disorder proceeds from a copious Collection of Urine, which impedes the Contraction of the Bladder, it may be learnt by Relation from the Patient, who will inform you, that he has omitted the necessary Business of making Water for a considerable Time, either on account of long Riding, or out of Respect to the Place, or the Presence of some honourable Person, and that he was never affected in those Parts before. If he happens to labour under a Delirium, Palsy, or any other Disorder, above enumerated among the Causes, the Suppression of Urine is justly to be ascribed to it.

Constrictions from Tumors of the same or neighbouring Parts, or from other Causes above-mentioned, may be known from the proper Symptoms of those Affections. Obstructions of the Urinary Passage may be discovered by introducing a wax Candle or Catheter, which, if they cannot penetrate, but stop by the Way, are a plain Evidence, that their Passage is obstructed by some Stone, Caruncle, or some other Matter that blocks up the Way. And these offensive Substances may be distinguished by the following Characteristics: If a Stone be impacted in the Canal, and the same be descended from the Kidneys, nephritic Pains have preceded; if the Stone be generated, or has long resided in the Bladder, the Symptoms proper to a Stone in the Bladder have, at least, in some slight measure, preceded the Affection. If a Caruncle hinders the Passage of the Urine, it is the Consequence of a virulent Gonorrhœa, or some Ulcer in the Canal of the Penis, which has for a long time been discharging purulent Matter. If the Obstacle be a Grume of Blood, a Concretion of Pus, or gross Phlegm, they will manifest themselves by an Excretion of some small Portions from the Penis in adhering to the Catheter when extracted.

A *spurious Ischury* is distinguished by its having no Tension,

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nor any Tumor or Weight in the Region of the Pubes, but rather a Perception of a kind of Vacuity, or Emptineſs in theſe Parts. There is no Deſire to make Water, no Irritation in the Bladder; and when the Catheter is introduced, tho' the Paſſage be found free and open, no Urine comes away. Preceding Signs are Stones in the Kidneys and Ureters, an Inflammation, or great Plenitude, or exceſſive Drinking, not followed by a copious Diſcharge of Urine, and by that means occaſioning too great a Repletion of the Veins; or, laſtly, a burning Fever, or a Dropſy, by turning the Courſe of the Serum another Way, may be the Cauſe of a ſpurious *Iſchury*.

As to the *Prognoſtics:* A Suppreſſion of Urine is very dangerous, and if it exceeds the ſeventh Day, generally mortal. For the Serum retained in the Veſſels infects and contaminates the Blood, regurgitates upon the whole Body, endangers Suffocation, and, being convey'd to the Head, there induces a comatous Affection.

A Suppreſſion of Urine, which proceeds from a Wound of the Spine, a Fall, or a Luxation of the Vertebræ, is incurable.

If the Smell of Urine proceeds from the Mouth and Noſtrils of the Patient, there is no Hope left of Recovery.

A Teneſmus, ſupervening a Suppreſſion of Urine, portends Death on the ſeventh Day; a ſupervening Hiccough ſhews Death near at hand.

In the Cure of an *Iſchury*, whether total or partial, our Intention is to be directed to the Removal of the Cauſe. And, firſt, with reſpect to the *ſpurious Iſchury*, which depends on Affections of the Kidneys and Ureters, we are to addreſs ourſelves to the Cure of the Inflammation, nephritic Pains, and Stone of the Kidneys. But ſuch an *Iſchury*, proceeding from a Repletion of the emulgent Veſſels, is to be treated by taking away a large Quantity of Blood, and by Hydragogues. A *true Iſchury* is cured by Remedies which remove the Cauſe that produces it. And here, firſt, if it proceeds from an Inflammation of the Bladder, or adjacent Parts, ſuch Medicines as are adapted to the Cure of ſuch Inflammatons are to be employ'd.

If the Suppreſſion of Urine be cauſed by a Stone impacted in the Neck of the Bladder, it is to be removed by the following Method:

Firſt, let the Patient be placed on his Back, with his Legs elevated, and be ſtrongly ſhaken for a good while together, that the Stone may ſlip back into the Bladder; and if it cannot be moved by this means, it is to be impelled by introducing the Catheter. If the Stone has penetrated deeply into the Urethra, its Excretion is to be promoted by all manner of Ways, by gently impelling it with the Fingers, and ſo bringing it to the Extremity of the Penis; after that by Immerſion of the Penis in warm Water, or warm Milk, or by immerging the Patient in a Semicupium, in order to relax and dilate the Paſſages. If the Stone can neither be extracted outwardly, nor impelled inwardly, we are directed by practical Authors to make a Ligature above and below the Place, and then to make an Inciſion in the Penis, and ſo take out the Stone.

An Obſtruction of the Neck of the Bladder from an Inflamtion, is cured by Remedies proper for an Inflammation. However, if the Urine be retained for a conſiderable time, a Wax-candle rubbed over with Oil of ſweet Almonds, may be gently introduced, avoiding by all means the Catheter, leſt, by exciting a Pain, the Inflammation ſhould be increaſed.

A Suppreſſion of Urine from a Caruncle is cured by an Extirpation of that Caruncle, which muſt be accompliſhed by proper Remedies introduced by Help of a Wax-candle, which muſt be managed by a Surgeon well ſkilled in ſuch Operations. But when the Symptoms are preſſing, for the Caruncle ſometimes ſwells to ſuch a Degree as to obſtruct the whole Paſſage, we are under a Neceſſity of making a Way for the Efflux of the Urine by the Introduction of the Catheter, though it is to be feared, leſt the Part being irritated ſhould ſwell the more. Before we take this Method, however, we are to attempt a Revulſion by Phlebotomy and Vomiting, and, alſo, to try to diminiſh the Inflation of the Caruncle by an Application of Repellents to the Pubes and Perinæum, that a Way may be made for the Diſcharge of the retained Urine.

An *Iſchury* owing to groſs Phlegm requires Purgation, firſt, with *Diaphœnicon* reduced with Rhubarb into the Form of a Bolus, and afterwards with Turpentine frequently exhibited with Powder of Liquorice. After theſe, a Decoction of the Opening Roots with Oxymel, or Syrupus Byzantinus, may be given; not omitting, during the whole Courſe, the Uſe of emollient and opening Clyſters, Fomentations, and Semicupiums. All ſuch Remedies as are proper for diſſolving and expelling the Stone are, alſo, convenient in this Caſe; and among other peculiar Remedies the following are approved by Experience:

Take Benedicta Laxativa, half an Ounce; Troches of Myrrh, two Scruples; Decoction of Savin, three Ounces; mix them for a Potion. With this Remedy a Suppreſſion of Urine, in a certain Woman, was cured in a ſhort time.

If there be a Redundance of Phlegm in the whole Body, or particularly in the Head, an univerſal Purgation by Apozems for three or four Days together in the Beginning of the Diſorder, will be of very good Service, Phlebotomy being premiſed.

A very good Medicine, alſo, in this Affection, is a Julap prepared of the Juices of Pellitory of the Wall, Sea-fennel, and Lemons, with Oil of ſweet Almonds, preſcribed for the Cure of the Stone in the Kidneys.

Syrupus Fernelii de Raphano, two Ounces the Doſe, is, alſo, very effectual in this Caſe.

Dodonæus relates, *Lib. Conſerv. Cap.* 47. that a Man of eighty Years was perfectly cured of a Strangury by once taking a Lixivium of Egg-ſhells incinerated and mixed with Spirit of Wine.

Arnaldus Villanovanus recommends Wine of Winter-cherries in the following Caſe, related in his Book *de Venis:* "There "was in my Time, he ſays, a certain Cardinal, who for Days "together had laboured under a Suppreſſion of Urine, and was "ſwelled very big, and his Caſe was ſaid to be deſperate. When "all Remedies were of no Effect, at laſt by the Advice of a "Quack, he took a Draught of Wine of Winter-cherries, "and made a vaſt Quantity of Water, and was freed from his "Diſorder. By the good Succeſs of this Experiment this poor "and illiterate Quack grew celebrated and rich." This Wine is prepared as *Arnaldus* there deſcribes it, by taking five, ſeven, or more Winter-cherries, and bruiſing them in White-wine, which muſt afterwards be ſtrained, and ſo exhibited.

Millepedes, alſo, bruiſed in White-wine, and given, are very effectual in provoking Urine. The Oil of Scorpions of *Matthiolus*, to the Quantity of five or ſix Drops, in Broth, or other Liquor, is a potent Diuretic.

The frequent Uſe of Cryſtal Mineral provokes Urine, eſpecially where an Inflammation is feared, which is very often excited by too long a Retention of the Urine in the inner Coat of the Bladder.

Spirit of Salt has the ſame Effect, and in a much greater Degree.

Of common Remedies the Juice of Pellitory of the Wall depurated, and exhibited to the Quantity of four Ounces, with half an Ounce of Sugar, is of great Efficacy; it may be mixed with Sal Prunellæ, or Spirit of Salt.

If a Suppreſſion of Urine, which is owing to a pituitous Matter, makes frequent Returns, there is no better Remedy than the Uſe of the nitrous and ſulphureous Waters of hot Springs, which by frequent drinking and bathing are of mighty Efficacy in diſſolving, abſterging, and conſuming the mucilaginous Matter.

A Perſon of Quality of this City, labouring under a Suppreſſion of Urine for ſeveral Days, after trying many Remedies in vain, was cured by the Injection of the following Clyſter, and retaining it two Hours.

Take of the Roots of Smallage, Parſley, Butchers-broom, Aſparagus, Mallows, Marſh-mallows, each two Ounces; Pellitory of the Wall, two Handfuls; Seeds of Aniſe, Fennel, Dill, Caraway, Daucus, Biſhops-weed, Baſtard-ſaffron, Rue, and Cumin, with Bayberries, each half an Ounce; Flowers of Chamomile, Melilot, Dill, and Stœchas, each two Pugils: Boil them in red Wine to the Conſumption of half; ſtrain the Liquor, and in one Pint of it diſſolve four Ounces of freſh Butter, two Ounces of Honey of Roſes, one Ounce of brown Sugar, half an Ounce of Benedict. Laxativ. one Yolk of an Egg, Oils of Nuts, Dill, and Linſeed, each one Ounce: Make them into a Clyſter.

The Chymiſts, alſo, have Remedies which they highly extol for theſe Diſorders, ſuch as Spirits of Salt, Vitriol, Sulphur, and Turpentine, which they exhibit to the Quantity of half a Scruple in proper Waters, or in Chicken-broth. They recommend, alſo, for the ſame Purpoſes, Salt of Tartar, and Salt of Bean-ſtalks, exhibited from half an Ounce to an Ounce.

To make a Revulſion of the Humours from the Parts affected they preſcribe an Emetic, by which means they boaſt to have cured not a few.

Through the whole Courſe of the Cure, Fomentations, Liniments, Cataplaſms, Semicupia, and other external Remedies, the ſame as are preſcribed in nephritic Pains, are not to be neglected. A good Remedy, among others of that Kind, is a Cataplaſm of Pellitory of the Wall fry'd with Butter, or what is better, with Oil of Scorpions; alſo, a Bladder half full of Oil, which will be improved by boiling Scorpions in the Oil.

A common Topic in this Diſorder is a Cataplaſm of fry'd Onions with Swine's-fat, and an Addition of ſome Oils, applied to the Region of the *Pubes* and Loins.

But

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But far more potent in Operation are raw white Onions bruiſed in a Mortar, and with Oil reduced into the Form of a Cataplaſm, and applied to the Kidneys, Ureter, and Region of the Pubes.

A Cataplaſm of bruiſed Radiſhes has the ſame Virtues.

When an Iſchury is produced by Grumes of Blood, we muſt attempt their Diſſolution by Remedies adapted to that Purpoſe. Of the Number of theſe are, Troches of Amber, the Rennet of a Kid, the *Coagulum* of an Hare, Oxymel ſimple, and of Squils, Syrup of Vinegar, and the like. Among external Remedies, Cow-dung is of admirable Efficacy, according to *Aetius*, *Tetrab.* 3. *Serm.* 2. *Cap.* 27.

In the laſt Place, when a Suppreſſion of Urine, or a Strangury, proceeds from Pus, abſterging and inciding Remedies are required, and ſuch as are uſually preſcribed in Ulcers of the Kidneys and Bladder. See ISCHURIA.

Of a DYSURY, *or* HEAT OF URINE.

By the Word *Dyſury*, that is, *Difficulty of Urine*, we underſtand any dolorific or painful Excretion of Urine, which the Moderns generally expreſs by *Ardor Urinæ*, "an Heat of "Urine." Numbers of Authors confound this Affection with a Strangury, which they will have to be attended, alſo, with a painful Senſation, and to be diſtinguiſhed from a *Dyſury* only in that a leſſer Quantity of Urine is diſcharged under it; for which Reaſon it is, alſo, called *Stillicidium Urinæ*, "an Ex-"cretion of Urine by Drops." But we choſe, for the ſake of Perſpicuity, to call a Diminution of the Quantity of the Urine, not attended with Pain, by the Name of *Stranguria*; and comprehended it under the ſame Chapter with *Iſchuria*, becauſe the ſame Method of Cure ſerves for both; and proceed, in this Chapter, to treat of dolorific Excretions of Urine, compriſing them all under the Name *Dyſuria*, "Dyſury;" becauſe they all proceed from the ſame Cauſes, and require the ſame Remedies.

The proximate and immediate Cauſe of dolorific or painful Miction, or making of Water, is, a Solution of Continuity in the ſphincter Muſcle, or *Urethra*; and therefore whatever is capable of making a Solution of Continuity in thoſe Parts, may excite a *Dyſury*, or *Heat of Urine*.

Amongſt thoſe Cauſes, the principal and moſt frequent is, the Acrimony of the Urine, which is ſometimes ſimple, and without the Mixture of other Humours, as proceeding only from an hot Diſtemperature of the Viſcera, or the Uſe of hot and acrimonious Food; but it is more frequently procured by a Mixture of acrid Humours, ſuch as Bile, or ſalt Phlegm. Sometimes a Diſtillation of Pus from an ulcerated Bladder or Kidneys, is the Cauſe of this Acrimony in the Urine; ſometimes a kind of white and milky Subſtance, diſcharged in great Quantity with the Urine, excites this Heat of Urine: This Subſtance, the Generality of Phyſicians take to be purulent, and to proceed from the Kidneys: But their Opinion is rejected by *Sennertus*, for this Reaſon, becauſe if the whole Kidneys were reſolved into Pus, they could not ſupply ſuch vaſt Quantities as are ſometimes excreted every Day, for ſome Weeks together. He ſuppoſes it, therefore, to proceed from a depraved Concoction, firſt, in the Stomach, and afterwards in the Liver; ſince an Error of the firſt Concoction can never be rectified in the ſecond. Hence the Chyle, and after that the Blood, is left in a crude State, without due Depuration from the ſaline and tartareous Parts, which ought to be ſeparated in the firſt Concoction; and theſe Particles, being attracted by the Kidneys, and afterwards tranſmitted to the Bladder, excite that dolorific Senſation in the Act of making Water. He confeſſes that he was induced to be of this Opinion, from obſerving the following Caſe: A learned Gentleman, who had laboured for ſome Weeks under an Heat of Urine, and voided the ſame in conſiderable Quantities, but ſo full of a white Matter, that it took up half the Urinal, and with a great deal of Pain, was at laſt, after trying various Sorts of Remedies to no Purpoſe, perfectly cured only by drinking Malmſey Wine.

A latent Stone in the Bladder, by Alliſion to its Neck, creates a Pain in making Water; the ſame may be excited by groſs Sand vellicating the Entrance into the *Urethra*.

An Inflammation or Ulcer of thoſe Parts excite, alſo, an Heat of Urine, ſince the Parts, being rendered more exquiſitely ſenſible by thoſe Affections, ſuffer conſiderably even from Urine of a good Temperament, juſt as we ſee in external Inflammations or Ulcers, the Parts affected not being able to ſuffer the leaſt Touch from Objects otherwiſe ſuited to them. Thus, in a Gonorrhœa, while the Inflammation of the *Urethra* continues, an Heat of Urine is conſtantly felt.

The Diagnoſis of this Diſtemper is manifeſt of itſelf; for the Pain, under Excretion of Urine, is ſo ſenſible and acute, as frequently to make the Patient cry out: But the diagnoſtic Signs of the Cauſes are to be diſtinguiſhed in the following manner:

If the Heat of Urine proceeds from its Acrimony, it will appear thin, and high-coloured, and ſometimes of a flammeous Colour; or it will be remarkable for a Mixture of bilious, pituitous, or purulent Matter; or there will be a Diſtemperature of the Viſcera, or an hot and acrimonious Diet, a ſultry Seaſon, or the like preceding procatarctic Cauſes.

As for Stone, and Inflammations of thoſe Parts, and the like Cauſes, they will manifeſt themſelves ſufficiently by their proper Signs.

With reſpect to the Prognoſis, this Affection is not dangerous in itſelf, but is very afflictive to the Patient; and, with regard to the various Diſpoſition of the Cauſes, is often difficult to be cured, eſpecially in aged Perſons, whom, if decrepit, it accompanies to the Grave; and at whatſoever Age it happens, if it continues long, it cauſes an Ulceration of the Bladder, and its Neck.

The Cure conſiſts, in the firſt Place, in the Removal of the Cauſe: And thus, if the Dyſury proceeds from the Stone, an Inflammation, or an Ulcer of the Bladder, or its Neck, the Cure is to be managed with an Eye to Indications taken from theſe reſpective Diſeaſes; but ſuch Remedies as are, alſo, proper for mitigating the Symptoms, will be propoſed below.

A Dyſury proceeding from the Acrimony of the Urine, and the Heat of the Humours mixed with it, is to be treated with the following Remedies.

In the firſt Place, Phlebotomy is neceſſary to be adminiſtered, in order to correct the intemperate Heat of the Liver, and other Parts; and the ſame is to be repeated ſeveral times, with regard to the Greatneſs of the Plethora, or the Danger of an Inflammation: 1. In the Right Arm, for Evacuation and Revulſion; after that, in the inferior Veins, for Derivation from the Part affected; on which Account *Hippocrates*, and his Follower *Galen*, in all Affections of the Parts below the Kidneys, preſcribe opening the inferior Vein.

Purging is, alſo, proper in this Diſeaſe, but only with ſuch Cathartics as are of a lenient and cooling Quality; for otherwiſe the Heat of Urine would be highly exaſperated; and therefore ſome, in this Caſe, will not venture to preſcribe more than a Bolus of ſimple Caſſia, which is indeed preferable to other Purgatives. But it will be ſtill more refrigerating, if mixed with the Pulp of Tamarinds, or a Solution of Caſſia in a Decoction of Lettuce, Purſlane, and the Tops of Mallows, may be exhibited for ſeveral Days together, that the Conflux of the acrimonious Humours to the urinary Parts may be gradually derived to the Inteſtines. But if the Redundance of the depraved Humours ſeems to require ſtronger Medicines, we may have recourſe to the following Potion:

> Take Leaves of Lettuce, Purſlane, Plantain, and Tops of Mallows, each half an handful; Tamarinds, Half an Ounce; citrine Myrobalans, one Dram: Boil them to ſix Ounces; ſtrain the Liquor, and infuſe therein, of recent Extract of Caſſia, one Ounce: Strain the ſame again, and diſſolve therein, of Rhubarb infuſed in Water of Lettuce, with yellow Sanders, one Dram and an half; Manna, and Syrup of Roſes, one Ounce: Make a Potion.

In a long Dyſury, a purging Opiate would be of Service.

Vomiting excited by Emetics of the gentleſt Sort, muſt be highly beneficial; for it makes a Revulſion from the Part affected, and avoids thoſe Inconveniencies which uſually attend Evacuations by Stool. It will therefore be proper to be uſed in ſuch Subjects as can bear it with Eaſe, and to be repeated once or twice in a Week.

By Clyſters, frequently injected, not only the acrimonious Humours are derived to the Inteſtines, and, by degrees, purged off, but the hot Diſtemperature and Inflammations of the Bladder, and adjacent Parts, are mitigated and corrected. A Formula, for this Purpoſe, you have as follows:

> Take of Roots of Marſhmallows, one Ounce; Leaves of Mallows, Violets, and Lettuce, each one Handful; Flowers of Water-Lily, and Barley cleanſed, each one Pugil: Boil them to a Pint; ſtrain the Liquor, and in the ſame diſſolve of Caſſia newly extracted, one Ounce; one entire Egg; Oil of Violets, two Ounces; for a Clyſter.

Mucilages of the Seeds of Marſhmallows, Quinces, and Fenugreek, may very properly be mixed with Clyſters, in order to mitigate Pain.

But as Lenients for mitigating Pain, and Coolers for correcting the Heat, Clyſters conſiſting purely of Milk, or of the ſame mixed with the above Mucilages, are uſually moſt efficacious; and we have known ſome Patients who, after long Pains and Afflictions under this Diſorder, have received Relief only from this Remedy, and a Semicupium.

Remedies

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Remedies to be taken at the Mouth are very numerous, and found by Experience to be of Service, as Demulcents, in correcting the Heat of Urine, and the Diſtemperature of the Parts. Some of the principal are as follow:

Take of the Waters of Purſlane, Lettuce, Roſes, and Water-Lilies, each one Ounce; Syrup of Violets, and Nymphæa, each ſix Drams; Sal Prunellæ, one Dram: Mix them, for a Julap, to be often repeated. Or,

Take Roots of Marſhmallows, one Ounce; Leaves of Lettuce, Endive, Purſlane, and Tops of Mallow, each one Handful; Seeds of Melon, Gourd, Mallow, Lettuce, and white Poppy, each three Drams; Jujubes, and Sebeſtens, each ſix Parts; Violets, Roſes, and Water-Lilies, each one Part: Boil them to a Pint and an half; ſtrain them; and in the Liquor diſſolve of the Syrups of Violets, Jujubes, and white Poppy, each one Ounce and an half; Sal Prunellæ, half an Ounce: Make a Julap, for four Doſes, to be taken twice a Day.

Emulſions, alſo, are of Uſe, tho' they are diuretic; becauſe they are cooling, and gently cleanſe the urinary Paſſages. Of this Nature is the following:

Take of the Four greater cold Seeds, and thoſe of white Poppy, each three Drams; ſweet Almonds blanched, and infuſed in cold Water, half an Ounce: Pound them in a marble Mortar, pouring thereon, by degrees, of the Decoction of Barley decorticated, Liquorice, Purſlane, and the Tops of Mallow, one Pint and an half: Make an Emulſion for three Doſes; adding, to every Doſe, of Syrup of Violets, one Ounce; Sal Prunellæ, one Dram. If the Pain be greater than ordinary, ſome Syrup of Poppies may be mixed with it. A Dram of the Powder of Gum Arabic is, alſo, proper to be added, or the *Syrupus de Althæa Fernelii*.

Broths may, alſo, be prepared in the following manner:

Take of the Roots of Marſhmallows, half an Ounce; Mallows, one Handful; Liquorice, half an Ounce; Seeds of Quinces, one Dram: Boil them in Broth of a Chicken or Hen; to be repeated for ſeveral Days together.

Whey of Goats Milk, taken in large Draughts, is, alſo, of ſignal Service.

Of no leſs, or rather more Efficacy, in the Abſence of a Fever, is Milk taken by itſelf, eſpecially Aſſes Milk, which not only deterges, but is a Demulcent, mitigating Pain, and correcting the Acrimony of the Humours.

If the Diſorder be of long Continuance, mineral refrigerating Waters, eſpecially ſuch as are impregnated with Alum and Iron, or have a little Tincture of Vitriol, are highly ſerviceable: For it has been found, by Experience, that the Waters of *Mayenne*, which are endued with the like Virtue, have ſometimes cured theſe Diſorders, tho' become inveterate.

Inſtead of the Julaps above deſcribed, a ſimple Decoction of Mallows, with Syrup of Violets, may be uſed; by which Remedy, *Foreſtus*, *Obſ.* 4. *Lib.* 25. tells us, he was cured of a very ſevere Dyſury. He found no Relief, he ſays, from any thing, ſo much as from the aforeſaid Decoction; and he informs us, that, with the ſame Remedy, he cured others who were in the like Circumſtances.

The ſame Author, *Obſ.* 3. of the ſame Book, tells us, that one *Jacobus Joannis*, an Apothecary, cured himſelf, and others, with Roſe-water, beaten with the White of an Egg, and drank at two Doſes.

And he further informs us, that an old Man of *Delft* was cured of this Diſorder by a Decoction of Chamomile-flowers in Milk, to which he was adviſed by an old Woman.

Amatus Luſitanus, *Curat.* 56. *Cent.* 6. relates, that a Woman who laboured under a Dyſury, and could not be cured by a Number of Medicines, which he there deſcribes, was perfectly recovered by a Conſerve of the Flowers of Mallows. Of this Conſerve ſhe took, every Morning and Evening, the Quantity of one Dram, drinking afterwards a Quarter of a Pint of Water of Mallows. And the ſame Author, *Curat.* 59. *ibid.* tells us, that an old Man, who laboured under a Dyſury, after excreting a Stone, was cured by the ſame Conſerve, taken in the ſame manner, in leſs than three Days. The Conſerve of the Flowers of Marſhmallows is of the ſame, or greater Efficacy.

Some experienced Phyſicians commend Troches of Alkekengi, or Winter Cherries, exhibited a Dram at a time, in ſome convenient Liquor; becauſe they are diuretic, and at the ſame time obtund and correct the Acrimony of the Urine.

If the Pain be very ſharp and preſſing, it may be of Service, while the Patient makes Water, to immerge the Penis in warm Milk, or a Decoction of Mallows, and the Seeds of white Poppies; and even warm Water, by itſelf is of no ſmall Efficacy in diminiſhing the Heat and Pain.

By way of Potion, a mild Decoction of Mallows, mixed with Syrup of Violets, or impregnated with Conſerve of Roſes, will be of ſignal Benefit.

For Mitigation of the Heat of Urine, it has been found beneficial, to make Injections into the *Urethra*, compoſed of Milk, Emulſions of the Cold Seeds, Plantain-water, and Whey; with which may be mixed, the Liquor of the White of an Egg well beaten; or a Scruple of the Troches of Winter-cherries.

External Remedies, alſo, are not a little conducive to the repreſſing of thoſe Heats: Such are Baths, and Semicupiums; Fomentations of the *Pubes* and *Perinæum*, by Decoctions of cooling Herbs; Liniments prepared of Oil of Roſes, Oil of Water-Lilies, Ointment of Roſes, *Unguentum refrigerans Galeni*, *Populeon*, with Camphire, and Mucilage of *Pſyllium* (Fleawort) extracted in Plantain-water. Refrigerating Epithems, and the aforeſaid Liniments, are, alſo, to be applied to the Kidneys and Liver, for mitigating their hot Diſtemperature.

When there is a Flux of acrid and bilious Humours, it will be convenient, in order to their Derivation, to apply a Cauſtic to the Right Leg, or to open the hæmorrhoidal Veins, which is of excellent Service in all Affections of the Kidneys and Bladder, according to 6 *Aph.* 11. ſince, from the ſame Branch, called the *Ramus Splenicus*, are propagated thoſe Veins which are diſtributed over the Kidneys, Bladder, and Hæmorrhoids. *Riverii Prax. Med. Lib.* 14. *Cap.* 3.

Bloody Urine.

An Hæmorrhage from the urinary Paſſages, generally called a Diſcharge of bloody Urine, proceeds from a Rupture or Corroſion of the Veſſels either of the Kidneys or Bladder, in ſuch a manner, as that they evacuate their Contents ſometimes with, and ſometimes without any Urine. This Diſorder is more or leſs dangerous, according to the Circumſtances with which it is accompanied.

It frequently happens that Phyſicians are egregiouſly deceived in determining whether the Blood is diſcharged with the Urine, or not. If pure Blood, in conſiderable Quantities, ſuppoſe a Pint, or more, as it ſometimes happens, be diſcharged with the Urine, or Blood, without any Mixture of Urine, be evacuated by the urinary Paſſages, the Matter is paſt all Doubt: But if the Blood is mixed in a ſmall Quantity with the Urine, a more careful Scrutiny is requiſite; for often Urine of a bloody Colour is diſcharged, and depoſites a Sediment which exactly reſembles Blood: On the contrary, Urine of a brown or blackiſh Colour is diſcharged, which is mixed with Blood, tho' no ſuch thing is ſuſpected. For this Reaſon, we ſhall enumerate the certain Signs from which this Variation and Difference is to be judged of. If, then, the Redneſs of the Urine, by which it reſembles Blood, proceeds from ſulphureous Particles exalted by an Admixture, eſpecially, of alcaline Salts, then, as ſoon as it is diſcharged, it appears clear and tranſparent, whilſt the Sediment is of an incarnate and cinnabarine Colour. But this Sediment, by the Application of a ſufficient Heat, again diſſolves in the Urine, which becomes clear and tranſparent as before; whereas, when the Urine is red, by means of Blood, it is opake, and ſomewhat thick, whilſt the Sediment is grumous, of a black-reddiſh Colour, and is either not diſſolved at all, or again abſorbed by the Urine: Beſides, if the Redneſs of the Urine proceeds from Blood, it tinges the Cloth thro' which it is ſtrained, with a reddiſh Colour, which does not happen when the high Colour of the Urine proceeds only from Salts.

As there are various Paſſages for the Secretion and Excretion of the Urine, it is of Importance to know whence the Blood diſcharged flows: If pure Blood is copiouſly and ſuddenly diſcharged, without Pain, *Hippocrates*, in *Sect.* 4. *Aph.* 78. juſtly concludes, that the Blood comes from the ſanguineous and vaſcular Subſtance of the Kidneys: But when the Quantity of Blood is ſmall, of an obſcure blackiſh Colour, with or without a purulent Matter, and eſpecially if there is a Pain during or after the Diſcharge, then it is certain that it proceeds from a Wound or Ulceration of the Bladder. That the Diſcharge of Blood from the Kidneys is without Pain, and that from the Bladder accompanied with one of an highly intenſe Kind, is to be aſcribed to the Diverſity of the Structure of theſe Parts; for the Kidneys are not poſſeſſed of an exquiſite Degree of Senſation; but when the Blood attempts its Paſſage thro' the highly-ſenſible nervous Coats of the Bladder, an intenſe Pain muſt neceſſarily be produced: Nor is it ſurpriſing, that, on ſuch an Occaſion, the Patient ſhould be ſeized with a Train of violent

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violent Symptoms; such as Deliquiums, Difficulty of Breathing, an obscure, small, and sometimes frequent Pulse; a Nausea, Anxiety of Mind, and cold Sweats. Thus *Hippocrates*, in *Lib.* 4. *Aph.* 80. informs us, "That if any Person frequently "discharges by Urine Blood, and grumous Matter, and at the same "time labours under a Strangury, accompanied with Pain in the "lower Part of the Abdomen and Perinæum, such a Person la-"bours under a Disorder of the Parts adjacent to the Bladder." When the Blood is mixed with the Urine in consequence of a Wound of the Ureters by a large or sharp Stone, there is an acute Pain about the Loins, and iliac Region, and a difficult Discharge of sandy Urine, whilst the Disorder is discovered by the other Signs of a Stone lodged in the Ureters. If, in consequence of a Wound of the Blood-vessels of the Bladder, and its Coats, any Blood is discharged, the Urine is not only evacuated with great Pain, and sometimes after a previous Obstruction; but, also, grumous Concretions, full of gross fabulous Moletules, are sometimes discharged with it: And this, also, on certain Occasions, happens, when a Stone, firmly impacted in the Kidneys, wounds them.

There is still another Species of bloody Urine, which is rarely mentioned by Authors, and which proceeds from a too great Distention and Aperture of the Vessels of the Bladder, or rather of the Sphincter. *Cœlius Aurelianus*, in *Tract. de Morb. Chron.* speaks of this Disorder in the following Manner: "As in the "Anus and Vagina or Neck of the Uterus of Women, so, "also, in the Bladder, Hæmorrhoids are sometimes generated, "which discharge Blood, at various Intervals. This ought at "first carefully to be adverted to, by the prudent Physician, "since the Effusion is not at its greatest Height at first, but is "gradually augmented, whilst the Patient is now-and-then "seized with Deliquiums, and the Blood retained about the "Pubes with considerable Pain; for sometimes inflated and "tumid Hæmorrhoids produce a Difficulty or Suppression of "Urine, by the *Greeks* called *Dysury*, or *Ischury*." *Archigenes* affirmed, "That as the Menses and Hæmorrhoids had stated "Periods; so, also, a Plethora sometimes vented itself, at cer-"tain Seasons, by the Kidneys and Bladder." *Heurnius*, in *Comment. in Aph.* 78. *Sect.* 4. when treating of the different Parts from which the Blood is discharged, speaks in the following manner: "The Blood discharged from the Bladder is not "intimately mixed with the Urine, but becomes grumous "when it subsides; and this grumous Matter, which is some-"times evacuated without Urine, produces a Pain about the "Bladder; but Blood discharged from the Kidneys is in a "large Quantity, and so exactly mixed with the Urine, that "the whole Urine seems to be nothing but a thin diluted "Blood: But the Blood immediately subsides, tho' it remains "liquid, and is by no means concreted."

But we are not to confound a Discharge of bloody Urine with an Evacuation of bloody Semen; for it frequently happens, that, in Persons labouring under a virulent Gonorrhœa, when the *Prostatæ* are relaxed, by the too great Afflux of Lymph and Serum, not only the seminal Liquor, but, also, a mucid Serum, full of small Particles of Sand, and sometimes Blood evacuated from the Mouths of the Vessels corroded by the Acrimony of the Matter, is discharged from the Urethra, without any Urine.

We are, also, carefully to distinguish between a Discharge of bloody Urine, and that Evacuation of Blood which is made from the Integuments of the Penis. I have known several Instances of Men, in whom, at certain Periods, a large Quantity of pure Blood has, for several Weeks, been discharged from the Penis, after a preceding tensive Pain of the Groin and Thighs. *Stalpart Vander Wiel. in Cent.* 1. *Obs.* 80. has collected Instances of the same Kind. But, in this Case, the Blood discharged is not mixed with the Urine, but is discharged by itself, Drop by Drop, from the Ramification of the external hæmorrhoidal Veins, which is distributed to the Pudenda.

We are, also, carefully to distinguish between a critical and salutary Discharge of Blood, and that which is morbid and prejudicial: The former most frequently happens in large Quantities from the Kidneys, and sometimes but rarely in a small Quantity from the Sphincter of the Bladder, without Pain, or great Uneasiness, and returns at certain Periods. This principally happens by a Translation of the Blood which ought to be eliminated by the Menses or Hæmorrhoids, when these Evacuations are either obstructed, or suppressed. I have seen such critical Discharges of Blood from the Penis, in young and old Men of plethoric Habits, succeed a Cessation of the hæmorrhoidal Flux, or an Omission of usual Venesection, without any manner of Danger: I have, also, seen Discharges of bloody Urine, in Women of eighty Years of Age, who lived high, and enjoyed good Health, especially if, after the Cessation of their Menses, they neglected Venesection.

Besides, I have frequently observed, that old Persons, when the hæmorrhoidal Discharge ceased, and middle-aged Men, afflicted with the blind Hæmorrhoids, after violent Commotions either of Body or Mind, have discharged a large Quantity of Blood of a browniſh Colour, like Coffee, without any Difficulty of Urine; and this Blood, undoubtedly, proceeds from the Blood-vessels about the Sphincter of the Bladder: For the external hæmorrhoidal Veins communicate with the Bladder, and distribute Ramifications to it. But it is not so with the internal Hæmorrhoidals, whose Ramifications distributed to the Bladder, have not, as yet, been seen by any Anatomist.

This Excretion of Blood with the Urine, arising from the Suppression of other sanguineous Excretions, especially the Hæmorrhoids, principally happens from the Kidneys, whilst the Blood, accumulated and conveyed thro' the inferior mesaraic Artery to the Coats of the *Intestinum Rectum*, not finding a Passage there, as it were, regurgitates to the Trunk of the great Artery, or is rather there collected in great Quantity; and, being conveyed to the arterial Vessels of the Kidneys, which, both in Number and Bulk, exceed the emulgent Veins, by distending and opening their Orifices, passes to the urinary Ducts which are connected with the Extremities of the small Arteries, from which it is conveyed to the Mouths of the Papillæ, thence to the Pelvis, and thence into the Ureters and Bladder. In such a Case, therefore, neither *Anastomosis*, nor *Diæresis*, nor *Diapedesis*, so much talked of by Authors, obtain.

The Bladder is, also, greatly subject to Excretions of Blood; because, on account of its perpendicular and low Situation, the Return of the Blood from it thro' the Veins, is very difficult. Hence it is, that, in the tumid external Hæmorrhoids, or the internal Hæmorrhoids, when obstructed, especially in plethoric Patients, the Blood accumulated and stagnant there, preternaturally enters the Orifices of the capillary Vessels of the Bladder, or rather of the Sphincter.

The Suppression or Cessation of the hæmorrhoidal Discharge by any Cause whatever, is the principal Cause of that Species of bloody Urine in which the Blood is conveyed from the Kidneys. *Hercules Saxonia*, in *Lib.* 3. *Cap.* 4. gives us an Instance of a Person of Distinction who, during five Years, labouring under a Suppression of the Hæmorrhoids, now-and-then evacuated from the Urethra large Quantities of Blood, before he discharged his Urine. *Rolfinckius*, in *Dissert. Anatom. Lib.* 5. *Cap.* 26. tells us, "that a Person of Distinction, subject "to the hæmorrhoidal Flux, upon having it suppressed, "fell into a Discharge of bloody Urine, which lasted for several "Weeks, but disappeared when the Hæmorrhoids were re-"called in a very moderate manner." *Reiselius*, in *Epistol.* 64. tells us a memorable Story of a Shepherd, who, having a Suppression of the Hæmorrhoids for three Years, evacuated sometimes such a Quantity of pure Blood, without any Urine, as to fill a Chamber-pot; nor had the Patient, ever in his Life, used Venesection: But after he had three Paroxysms of this Kind returning at stated Periods, limpid and natural Urine was discharged. But when, by the Advice of his Physician, he used Wine pretty liberally, took Pills prepared of Aloes impregnated with Juice of Succory, and Extract of the Troches of Alhandal, the Hæmorrhoids returned, and his Disorder ceased.

Tho' all violent Exercise, in plethoric Persons, lays a Foundation for Hæmorrhages; yet no Species of Exercise has a more direct Tendency to excite a Discharge of bloody Urine, than Riding. Various Instances of this occur in practical Authors: Thus *Riverius*, *Cent.* 2. *Obs.* 13. gives us an Account of a Man, of fifty Years of Age, who discharged bloody Urine every time he rode. *Hollerius*, also, in *Aphor.* 78. *Sect.* 4. *Hippocrat.* speaks in the following manner: "If some Persons "ride hard, or use immoderate Exercise, they discharge Blood "from their over-heated Kidneys." And, a little after, says he, "I am of Opinion, that bloody and turbid Urine was dis-"charged by a reverend Bishop, both on account of the Di-"latation made in the Cavities of the Kidneys, and in the "urinary Passages, on account of the excessive Heat, first ge-"nerated by the violent Motion of the Chariot driven quickly "in a rough Road, which agitated his whole Body, and especially "the Region of his Back; and then, by the succeeding exces-"sive Heat; whilst, with a Coat of Skins, he ascended the "Mountain under a scorching Heat of the Sun. By all these "Things, so great an Heat was excited in the Parts about the "Kidneys, that, on account of their too great Dilatation, "bloody Urine was discharged." Hence it is, that even now, "when he is fatigued, or uses violent Exercise, his Urine is "turbid, and bloody." The Reason why Riding, which is of great Efficacy in curing other chronical Diseases, disposes to Hæmorrhages of the Kidneys and Bladder, is, that by the Compression of the Veins in the Thighs, the *Perinæum*, and the *Anus*, the Return of the Blood is greatly retarded. Hence the Quantity of the Blood is enlarged in the Arteries, and its Motion in the superior Parts increased, especially about the

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Loins, by means of the ſucculſory Agitation. Thus the Afflux of the Blood being rendered briſker, the emulgent Arteries, at laſt, eaſily open. For *Malpighi*, in *Tr. de Renibus*, juſtly obſerves, "That, if we except the Lungs, there is no Part of "the human Body more ſubjected to the Injuries of a redun-"dant Blood than the Kidneys."

A Stone in the Kidneys is, alſo, frequently the Cauſe of a Diſcharge of bloody Urine, which is more troubleſome and dangerous than the former: Of this there are many Inſtances; ſuch as that related in *Horſtius*, *Lib.* 4. *Obſ.* 37. where, without any Pain of the Loins, nephritic Patients, eſpecially when plethoric, upon uſing violent Exerciſe, are obſerved to diſcharge bloody Urine. This probably happens, becauſe a pretty large Stone, of a ſharp Figure, may for a long time remain without Pain in the Kidneys, and yet, by its Compreſſion and Attrition, excited by Exerciſe, conſiderably injure the vaſcular Subſtance of the Kidneys, greatly hurt their natural Functions, and, by that means, lay a Foundation for an Eruption of the Blood: For when the Stone, by its Bulk and Weight, compreſſes the Ramifications of the emulgent Vein, by hindering the Paſſage of the Blood thro' them, it proves the Cauſe why the Blood copiouſly and impetuouſly conveyed thro' the ſmall emulgent Arteries, and their capillary Ramifications, which terminate in the urinary Ducts, greatly diſtends the former, and at laſt makes its Way into the latter, which, in a natural State, were only deſtined for the Conveyance of Urine: And this happens more violently and infallibly when in Perſons diſpoſed to the Stone, various Medicines which force Urine, and the Stone, are exhibited; which is a common tho' a wretched Cuſtom, eſpecially if theſe Medicines are of the hot Kind; ſuch as Preparations of Turpentine, Amber, and Juniper: For, in ſuch a Caſe, the Stone, pent up in the Kidneys, by corroding, excoriating, and dilacerating the ſmall Veſſels of the Kidneys, produces an Exulceration; in which Caſe, Pus and Blood drop thro' the Ureters into the Bladder, and, conſequently, a painful Diſcharge of ſome Portion of the Urine, with which corrupted Pus and Blood are evacuated, is produced. This, alſo, happens the more rarely, when the Ureters are exulcerated by a Stone.

There is, alſo, a copious and dangerous Diſcharge of bloody Urine, when, from an Exulceration of the Bladder, ariſing from a copious, acrid, and ſtagnant Blood, a mucous, purulent, and bloody Matter deſcends into its Cavity; for, in this Caſe, the Urine is diſcharged with intenſe Heat, intolerable Pain, and Difficulty, whilſt the Diſorder is accompanied with Tremors and convulſive Motions of the Limbs, attended with Colds and Tremblings. I have, alſo, frequently ſeen this happen in Perſons labouring under virulent and inveterate Gonorrhœas, whilſt an acrid and corroſive Matter flowed from the Genitals, and corroded the adjacent Parts. When this Caſe happens, and when the Subſtance of the Kidneys or Bladder is corrupted, and a purulent and putrid Matter is ſecreted, furfuraceous Urine is diſcharged, with ſmall Caruncles or Subſtances reſembling Hairs or Worms in it, which can never come from the Bladder, ſince it is not poſſible they ſhould be its Filaments. They muſt, therefore, proceed from the mucous Matter contained either in the Kidneys, or Bladder, concreted into ſuch a Form and Conſiſtence.

Another Species of bloody Urine may be produced by external Cauſes, ſuch as Contuſions, Falls, Blows, and the lifting of Burdens: This frequently occurs in Practice, tho' it is not very eaſy to account for it: For if it proceeded from a Rupture of the Veſſels in the Kidneys, or a Solution of Continuity in them, it could not be ſo ſpeedily cured by Veneſection, and ſuch Things as diſſolve the Blood. I am rather of Opinion, that, by the Contuſion or Contorſion, eſpecially of the Blood-veſſels, and the Stagnation of the Blood there, its Circulation through thoſe wounded Parts is hindered, by which means the Impetus and Quantity of the Blood is increaſed in the internal Veſſels; and when theſe, eſpecially in plethoric Perſons, are diſtended, the Blood is eaſily diſcharged from them. This very eaſily happens in the Kidneys, if a Blow has been inflicted on that Region. Hence there are Inſtances in which Diſcharges of bloody Urine have ſucceeded Luxations of the *Vertebræ*. As *Hildanus*, in *Cent.* 2. *Obſ.* 10. obſerved a Dyſentery produced by the Amputation of a Leg, ſo I knew a Diſcharge of bloody Urine ſucceed a Fracture of the Bone of the Leg: So that it is eaſy to conceive how, by a Contuſion of the Veins, and a Stagnation of the Blood elſewhere, ſome Part of it may be diſcharged through the *Urethra*.

It is certain from Experience, that Diſcharges of bloody Urine may be produced by violent Gripings of the Abdomen, by acrid Purgatives, and by ſtrong Diuretics, ſuch as Cantharides; but this Symptom is owing to the ſpaſmodic Stricture of the Veins, by which the free Circulation of the Blood is intercepted: Hence we may eaſily give a Reaſon why the Meaſles and Small Pox, eſpecially of the malignant Kind, are ſometimes accompanied with this terrible Symptom. There are Obſervations in ſome Authors, in which it is affirmed, that, by Veſicatories, in which there are Cantharides, a Diſcharge of bloody Urine is ſometimes produced: But as I never obſerved any ſuch thing, we may juſtly ſuſpect that the bloody Urine proceeded from ſome other Cauſe.

No Diſcharge of bloody Urine is free from Danger: For though, at the Beginning, it may appear critical and ſalutary, on account of the Redundance of Blood produced by a Suppreſſion of the Menſes, or Hæmorrhoids, yet it is dangerous, becauſe it not only eaſily recurs and exhauſts the Strength, but, alſo, if an Error in Regimen is committed, or if it is imprudently treated with Styptics, an Inflammation and Corruption are readily induced on the Kidneys, or Bladder: It, alſo, frequently happens, that a certain Portion of grumous Blood deſcending from the Kidneys, is ſo firmly impacted in that Part of the Ureter, where it is obliquely inſerted into the Bladder, as to produce a violent Iſchury, not to be cured without the greateſt Difficulty. Sometimes, alſo, Blood becomes grumous in the Cavity of the Bladder; and, adhering firmly to the Sphincter, produces an intenſe Pain, and a total Suppreſſion of Urine. The ſame, alſo, happens, when the Blood-veſſels of the Sphincter, like the blind Hæmorrhoids, become turgid with thick Blood.

The moſt dangerous Species of bloody Urine is that which proceeds from a profound Wound or Ulceration of the Kidneys or Bladder, and is accompanied with an intenſe Pain, and an Evacuation of Pus: We are not, however, to take the mucous and glutinous Sediment, ſometimes obſerved in bloody Urine, for Pus, which generally floats on the Surface; for the Quantity of this Sediment is often ſo great, that if it proceeded from an Exulceration of the Kidneys, they would ſoon be conſumed by it: It is rather a Mucoſity which drops from the too much relaxed glandular Coat of the Bladder and *Urethra*, or from the wounded *Proſtatæ*; after which, it is mixed with the Urine.

Having thus conſidered the various Cauſes and Seats of bloody Urine, it is incumbent on the ſkilful Phyſician to have a due Regard to all theſe, both in his Meaſures for the Prevention and Cure of this Diſorder: When, therefore, a Diſcharge of bloody Urine ariſes from a Redundance of Blood, or is to be dreaded from that Cauſe, nothing is more ſafe and efficacious than Veneſection; only obſerving this Caution, that, during the Paroxyſm, it is to be performed in the ſuperior Parts, that is, the Arm; and the Quantity to be taken away is to be eſtimated by the Patient's Strength, and Habit of Body. But if a Diſcharge of bloody Urine ariſes from a Suppreſſion of the Hæmorrhoids, it is ſafer, in order to prevent a Relapſe, to open a Vein in the Foot: The ſame Practice is, alſo, to be obſerved, when, in a ſpaſmodic Colic, and violent Gripings of the Abdomen, a Diſcharge of bloody Urine happens, on account of the Stagnation and Congeſtion of Blood about the Coats of the Inteſtines, and its Incapacity of being diſcharged from the hæmorrhoidal Veins. Beſides, as this Diſorder generally returns at ſtated Periods, it is ſo much the more neceſſary we ſhould prevent its Approach by ſeaſonable Veneſections.

When this Diſorder derives its Origin from a violent Ebullition or Expanſion of the Blood, with or without a *Plethora*, which generally happens by violent Commotions either of Body or Mind, or by the Abuſe of hot Medicines, which too ſtrongly agitate the Blood, beſides Veneſection, nothing is more efficacious than the Uſe of nitrous Medicines, and ſuch as check the elaſtic inteſtine Motion of the Blood; or Refrigerants, the beſt of which is depurated or artificial Nitre prepared with Spirit of Nitre and Salt of Tartar, mixed with earthy and abſorbent Subſtances, and exhibited either in the Form of a Powder, or a Potion. The beſt Vehicles for this Medicine are, ſweet and acidulated Whey, a Decoction of Barley, pure Spring-water, or Spring-water mixed with an equal Quantity of *Seltzeran* or *Tonſtein* Waters, a Decoction of Hartſhorn and Vipers-graſs, or ſmall Ale into which a ſufficient Quantity of the Tincture of Roſes, or Daiſy-flowers, with Spirit of Vitriol, but not of Salt, whoſe volatile Acrimony is prejudicial to the Lungs and Kidneys, has been dropped.

As Coſtiveneſs is of great Force, not only in generating, but, alſo, in ſuſtaining this Diſorder, partly becauſe by the Flatulencies and Spaſms ariſing thence the equal Circulation and Diſtribution of the Blood is hindered, and more copiouſly conveyed to one, eſpecially the weakeſt Part, than others, and partly becauſe many impure, acrid, and bilious Sordes, are conveyed from the *Primæ Viæ* to the Maſs of Blood and Humours, hence nothing is a better Preſervative againſt this Diſorder, or more efficacious for preventing a Relapſe, than keeping the Body duly ſoluble: But this End is not to be procured by Purgatives, acrid Stimulants, or large Doſes of Salts; much leſs by Preparations of Aloes, or Pills which contain even the leaſt Quantity of that Ingredient: The Intention is rather to be anſwered

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ſwered by mild Laxatives of a corroborative Quality, which, as they are beſt in all preternatural Excretions of Blood, ſo, alſo, they are moſt efficacious and ſafe in this. The beſt of this Kind are, Preparations of Rhubarb mixed with Raiſins; ſuch as Currans rendered laxative by a gentle Inſpiſſation with a Solution of Rhubarb, or Powder of Rhubarb, mixed with Cream of Tartar.

In order to corroborate and gently conſtrict the dilated and opened Veſſels of the Kidneys, or in order to conſolidate their Subſtance if wounded, the moſt efficacious Medicines are, Decoctions or Infuſions of gently vulnerary and aſtringent Ingredients, ſuch as Agrimony, Ground-ivy, Horſetail, Yarrow and its Tops, Golden Rod, and the Root of the greater Conſound edulcorated with *Pruſſian* Honey, which is highly friendly to the Kidneys. Theſe Decoctions may be, alſo, mixed with Milk, according to the Situation of the Patient. Almond Milk, eſpecially when uſed as a Vehicle for *Armenian* Bole, is, alſo, of ſingular Efficacy in healing and conſolidating theſe Parts.

If a Corroſion or Ulceration of the Kidneys, Ureters, or Bladder, are preſent, which often happens when the Diſorder is of long Standing, and accompanied with Pains, the principal Intention of the Phyſician ought to be, to correct the Acrimony of the Humours; and ſo long as this is neglected, neither an Alleviation of the Pain, nor a Conſolidation and Cure of the wounded Part, are to be expected. This Intention is therefore excellently anſwered by *Fernelius*'s Syrup of Marſhmallows, *Foreſtus*'s Decoction, and that recommended by *Mynſicht* againſt a Diſcharge of bloody Urine. The ſame End is, alſo, anſwered by an Infuſion, which, beſides the above-mentioned vulnerary Herbs, has, for Ingredients, the Bark of *Egyptian* Thornroot, and Cherry-tree Gum: A Powder, alſo, prepared of the Roots of Marſhmallows and Liquorice, *Sperma Ceti*, the Four cold Seeds, white Poppy-ſeeds, the Seeds of Club-moſs, and Saffron ſweetened with a ſufficient Quantity of Sugar-candy, are, alſo, of Service.

For a Dyſury or Iſchury, which are frequently dangerous Symptoms of an Hæmorrhage from the Kidneys or Bladder, whilſt grumous Concretions of Blood obſtruct the Ureters in that Part where they are inſerted in the Bladder, or the Sphincter of the Bladder itſelf, no Medicine affords a more efficacious or inſtantaneous Relief, than large Draughts of tepid Water, and the external Uſe of Baths. In this Caſe it is, alſo, expedient, to inject into the *Urethra* and Bladder tepid Water, in order to dilute the acrid Humour, and diſſolve the grumous Concretions. *Hippocrates*, as we have already obſerved, recommends theſe very Remedies: But if, on account of grumous Concretions in the Bladder, or its Sphincter, ſuch Spaſms are excited, as to induce a total and hurtful Iſchury, excellent Effects are produced by an Emulſion of the Four cold Seeds prepared with Crabs-eyes and diaphoretic Antimony; as, alſo, by a Powder prepared of *Sperma Ceti*, Crabs-eyes, and Nitre; externally a Bladder, full of a Decoction of emollient Flowers, is to be applied to the Abdomen; the Body is, alſo, to be rendered ſoluble, by a Laxative of Manna, or by an emollient oleous Clyſter.

Beſides all theſe Remedies for curing recent, and removing inveterate Diſorders of the Kidneys and Bladder, nothing is more efficacious than temperate medicinal Waters; ſuch as the *Selteran*, *Antonian*, and *Wildungenſian* Springs, eſpecially if mixed with Milk, but rather Aſſes Milk. This is ſufficiently obvious from the ſalutary Elements of which they are compoſed, and the unanimous Conſent of thoſe who have wrote concerning their Virtues.

Milk and Whey are, alſo, excellent Remedies againſt this Diſorder: For *Hippocrates*, in *Lib. de Intern. Affect. Sect.* 17. ſpeaks in the following manner: "If the Urine is diſcharged "like the Juice of roaſted Beef, the Patient is to drink Whey "and Milk; Whey till he is ſufficiently purged, and Milk for "forty or fifty Days; by which means, the Diſorder is alle-"viated." The Milk of Sheep and Goats is, alſo, recommended by *Riverius*, in *Obſ.* 13. *Cent.* 17. as, alſo, by *Gatinarias* and *Foreſtius*, who affirm, that, by this ſingle Remedy, they have effectually cured a Diſcharge of bloody Urine, mixing with each Doſe one Dram of *Armenian* Bole. *Riverius* is, alſo, of Opinion, that this Practice is proper in violent Diſcharges of bloody Urine; though he thinks it leſs expedient in thoſe of a moderate Kind.

With reſpect to Veneſection, which is of the greateſt Importance both for curing and preventing a Return of the Diſorder, if it proceeds from a Suppreſſion of critical Hæmorrhages, we are to obſerve, that, in the Beginning, a large Quantity of Blood is to be taken away; for by this means the Deſign not only of Evacuation, but, alſo, of Derivation, is anſwered: But when a Diſcharge of bloody Urine is periodical, a Vein is to be opened two or three Hours before the Paroxyſm, and ſuch a Quantity of Blood taken away as the Patient can bear.

Hippocrates, in the Part laſt quoted, in a Diſcharge of bloody Urine ariſing from an Exulceration of the Kidneys or Bladder, orders the Patient to drink temperate White-wine of a yellowiſh Colour; for too ſpirituous Wines, or ſuch as abound with an Acid, ſuch as Rheniſh-wine, are by no means proper where there is a painful Diſcharge of bloody Urine; but rather ſweet Wines, ſuch as thoſe of *Spain*, the *Canary* Iſlands, and *Hungary*; for they not only promote Digeſtion, but are, alſo, friendly to the affected Bladder.

Since it is of great Importance what Kind of Liquor a Perſon labouring under any Diſorder of the Kidneys and Bladder drinks, we are to obſerve, that he is carefully to abſtain from thick and acid Ales, but to uſe large Quantities of ſmall pure Beer, which, like an aqueous Medicine, reſolves and carries off the acrid and ſandy Matter. This is confirm'd by the celebrated *Sydenham*, in his Treatiſe *de Mictu cruento a Calculo Renibus impacto*. And that Phyſician, as ſoon as he entered his Coach, took a large Draught of Small Beer, which he repeated before he return'd Home, if he chanced to ſtay a conſiderable time; by which means he affirms, that he prevented a Diſcharge of bloody Urine. But the Ale uſed on this Occaſion ought to be well boil'd, and fermented.

Though proper Exerciſe is of great Importance for the Prevention and Cure of chronical Diſorders; yet it is quite otherwiſe in Excretions of Blood, eſpecially from the urinary Paſſages; for nothing is more effectual in bringing on this Diſorder than violent Exerciſe, eſpecially Riding: And I have, alſo, ſeen loud and long-continu'd Speaking prove highly prejudicial in a painful Diſcharge of bloody Urine, ariſing from a Diſorder of the Bladder. Thus *Hippocrates*, in the Paſſage already quoted, tells us, "that when Blood is diſcharged with the "Urine, the Patient is ſoon cured, if he enjoys a State of "Reſt; whereas by Exerciſe his Pains are rendered far more "intenſe." *Sydenham*, alſo, in the before-mentioned Treatiſe, determines the Matter by his own Example; for when he walked much, or rode in a Coach, though very ſlowly, in the Streets, he was ſeized with a Diſcharge of bloody Urine; whereas, when he performed long Journeys in a Coach on the high Road which is not paved with Stones, he was never afflicted with that Symptom. He, alſo, tells us, that he went ſoon to Bed, that the Concoctions, which are diminiſhed by nocturnal Lucubrations, might be the more duly performed.

In a Diſcharge of bloody Urine, whether from the Kidneys, or the Bladder; whether critical, or ſymptomatical; nothing is either more common, or more prejudicial, than the Uſe of Aſtringents, which too ſuddenly ſtop the Evacuation of the Blood; for by this means Inflammations, Exulcerations, and Putrefactions are produced, by the grumous Concretions retained in the Veſſels: For as a Spitting of Blood, treated by theſe Remedies, eaſily degenerates into an Inflammation, Phthiſis, or Exulceration of the Lungs, ſo, alſo, a Diſcharge of bloody Urine terminates in an Inflammation, Exulceration, and Putrefaction. When, however, the Effuſion of Blood is very violent, and accompanied with exceſſive Loſs of Strength, I have found excellent Effects produced by the following Mixture, ſucceſsfully uſed by *Sylvius*, in Diſcharges of bloody Urine.

> Take of Plantain-water, two Ounces; of the Waters of Purſlane and Cinnamon, and of diſtilled Vinegar, each one Ounce and an half; of prepared red Coral, Crabs-eyes, and Seal'd Earth, each one Scruple; of liquid Laudanum, three Grains; and of *Quercetan*'s Syrup of Coral, or *Fernelius*'s Syrup of Comfrey, a ſufficient Quantity to render the Preparation grateful.

Topics are, alſo, advantageouſly applied to the lumbar Region: For this Purpoſe we may uſe the Frog-ſpawn Plaiſter mixed with Alum, or Sugar of Lead, and a little Camphire: The White of an Egg, beat with Alum, and applied pretty cold to the Pubes, by way of Epithem, is, alſo, of conſiderable Service: For theſe, by their mild, refrigerating, and aſtringent Quality, in ſome meaſure check the Impetus of the Blood.

Thoſe who are now-and-then afflicted with this Diſorder, or diſpoſed to it, ought to be very careful with reſpect to their Regimen and Diet, carefully abſtaining from Wine, all Aromatics, eſpecially Garlic and Onions, together with aperient Roots, ſuch as thoſe of Parſley, Parſneps, Celery, and Aſparagus. Nor ought they to ſleep upon their Backs, or lay them upon too warm Cloths, or Skins. Exceſſive drinking of warm Infuſions of Tea, or other Herbs, is to be avoided, and rather cold, or ſomewhat cold Liquors, are to be uſed. I often, with great Succeſs, order a Decoction of dried Cherries in Ptiſan, to be uſed as common Drink. *Frederic Hoffman.*

Of

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Of Predictions from URINE; *of the Nature and Causes of* URINE; *and of what Importance it is with respect to Prognostication.*

Since it has been demonstrated that the Life or Death of the Patient in acute Diseases may be predicted from the *Stools*, [see DEJECTIO] we are now in course to examine into the Signs and Prognostics which may be afforded from *Urine* relating to the same Subject; for the Observation of the *Urine* is of no less Importance than that of the other Excretions towards the presaging a good or bad Event to Diseases. *Galen, de Loc. Affect. Lib.* 6. *Cap.* 4. tells us, that the gibbous Parts of the Liver, and all others which are superior to these, are subjected to an Expurgation by *Urine*; and *Com.* 2. *in Lib. Prognost.* 7. 26. he says, that the *Urine* is an Indication of the Affections of the Bladder and Kidneys; and more than this he tells us, *Com.* 2. *in* 1 *Prorrhet. T.* 2. that it indicates, also, the Strength or Weakness of the Blood-vessels, and of the Faculty which generates the Juices. Many Disorders, therefore, though not all, as is vulgarly imagined, in a great many Parts of the Body, may be judged of by the *Urine*, as may, also, all Fevers, Hectics excepted, and Inflammations, though these latter, when affecting the Thorax, are first signify'd by the Spit, as those which affect the Belly are indicated by the Stools; but even in these Cases, the Judgment which may be made of them from the *Urine*, is not to be despised.

Since therefore the Observation of *Urines* is of vast Moment towards the Prognostics of many Diseases, it justly deserves our Inquiry how far we may venture to prognosticate from them with respect to the Life and Death of the Patient. For this End it will be proper to premise a few things concerning the *Differences* and *Causes* of *Urines*, which are necessary to be known, in order to predict Events from them in Diseases.

Every Physician knows, that the *Urine* is a serous Excrement, secreted by the Kidneys, and from them by the Ureters transmitted to the Bladder, from which it is excreted and discharged from the Body. But by *Urine* we understand not only the serous Humidities, but all other Substances which are evacuated by *Urine*, since they are of great Moment towards a Prognosis. For the Matter of *Urine* seems to be of three Sorts: Sometimes the Excretion consists of the Humidities of the Meat and Drink, which, from those who drink much, are commonly discharged in a crude and aqueous State. Secondly, the *Urine* is sometimes nothing but the serous Humidity of the Blood impregnated with the Quality of the predominant Humour; and, in the last place, it may be composed of Humidities proceeding from a Colliquation, as when it is of a fattish Substance. This triple Matter of the *Urine* is very elegantly expressed by *Hippocrates*, 6 *Epid. Sect.* 5. *Aph.* 14. in the following Words; ἔστιν ὁμόχρουν βρώματι καὶ πόματι, καὶ ὡς ἔσωθεν ἐὸν, ὑπὸ τῆ ὑγρῆ ξύντηξις, "*Urine* is of the same Colour with "the Meat and Drink, and is, as it were, a Colliquation of "the internal Humid."

But let us now take a distinct View of the Differences of *Urines*, and they may be distinguished with respect to their *Substance*. *Qualities*, *Quantity*, and *Contents*.

As to their *Substance*, some are thin, others thick, and others are of a middle Kind; of the thin Sort some continue so a long Time, others soon become thick; after the same manner, of *Urines* voided thick, some continue in that State, others become thin.

With respect to their *Qualities*, there is a triple Difference observable, one in regard to their *Colour*, another as to their *Clearness* or *Obscurity*, and a third with respect to *Smell*.

Urines, with regard to *Colour*, are distinguished into *white*, *pale*, *yellow*, *gold-coloured*, *red*, *green*, *livid*, and *black*. There are several other Colours of *Urine* enumerated by some; but these, which are the principal, will be sufficient to furnish us with Prognostics: And some of these Colours are united with, or proper to *Urine* of a thin Substance, others to thick *Urine*. To thin *Urine* belong the *light-red*, *yellow*, *green*, *livid*, and, also, the *black* Colours. Some think, that only the *pale*, *light-red*, and *yellow*, are proper to thin *Urine*; but it is certain, that the *green*, *livid*, and *black*, are sometimes observed in *Urine* of a thin Consistence, as, for Instance, in the Cases of *Herophon*, the Wife of *Epicrates*, and *Meton*, observed by *Hippocrates*, 1 *Epid. Ægr.* 3. 5. 7. Of *Meton*, he says, "that his "*Urine* was thin and blackish." It cannot, however, be denied, that *black Urine* is commonly thick; but the *pale*, *light-red*, and *yellow*, are never voided thick, but are constantly thin; for these Colours are imputed to a Want of Matter.

With respect to *Perspicuity*, or *Obscureness*, in the second place, some *Urines* are *clear* and *lucid*, others *turbid* and *obscure*, and of those which are voided clear some remain so, others, in a little time, become foul or turbid; in the same manner, of *Urines* excreted turbid some continue so, others, by a Subsiding of the gross Matter, become clear.

With respect to *Smell*, also, in the last place, some *Urines* are *fetid*, others not.

Urines, as was said, are distinguished, thirdly, with respect to their *Quantity*, for sometimes the Excretions are copious, sometimes small, sometimes moderate, and, on some Occasions, wholly intercepted.

The last Distinction mentioned of *Urines* regards the *Contents*; and under this Head may be observed a Multitude of Differences in *Urine*. We call the *Contents of Urine* that Substance which appears in any manner separated from the Body of the *Urine*, and is observed sometimes on its Superficies, sometimes in the Middle of the Vessel, and sometimes at the Bottom. This last the *Greeks* call *Hypostasis*, and we (the *Latins*) *Subsidentia*, *Residentia*, *Sedimenta*, and *Subjecta* (the *Hypostasis*, Settlement or Sediment, which subsides to the Bottom of the Urinal). When the *Contents*, or separated Corpuscles, occupy the Middle of the Vessel, they are called by the *Greeks* Ἐναιώρηματα, and by the *Latins Sublimationes*, *Suspensa*, *Sublimia*, and *Sublimamenta* (the *Enæorema*, or pendulous Substance in the Middle of the *Urine*, see ENÆOREMA). If the *Contents* appear on the Superficies of the *Urine*, they take the Name of *Nubes* and *Nubeculæ*, "*Clouds* and *Mists*, or Films." Under the Head of *Hypostasis*, or *Sediment*, may be reduced a Variety of subordinate Distinctions; for some *Hypostases* are thick, others thin, some continuous, others discrete, or incoherent, and not at all united, but unequally dispersed through the Substance of the *Urine*. They are, also, distinguished into *white-pale*, *yellow-pale*, or *deep-red*, *green*, *livid* and *black*, and into *fetid* and *not fetid*. Again, of *thick* Sediments, some consist of crude and gross pituitous Humours, others are of a melancholic, or black adust, and others, to name no more, of a red and sanguineous, Consistence. These *thick* Sediments, or *Hypostases*, appear, also, of various Forms; some appear in the Shape of Grains, and are for that Reason called by the *Greeks* *Oroboides*; sometimes they shew like Scales, and have the Name of *Petaloides*; sometimes like Bran, narrower but thicker than the scaly Sort, and take the Appellation of *Pityroides*; and, in the last place, these Hypostases sometimes resemble a kind of Meal, and are hence called by the *Greeks* *Crimnodes*; and like these last, in Appearance, are the purulent *Urines*, which consist of Pus. Sometimes, also, there appears in the *Urine*, a thick, pituitous Substance, and a mucous Humour.

In the Enæoremata, or suspended Corpuscles, as, also, in the superficial Clouds, or Films, appear the same Varieties, with respect to Continuity and Division, Equality and Inequality, Thickness and Thinness, Difference of Quantities, and Diversities of Colours, with those before ascribed to the Hypostases. But it is proper to the superficial *Contents* to consist sometimes of oily and pinguious Particles.

Of the different Causes of the URINE.

In treating on this Head, we shall begin with the *thick* and the *thin Urine*: The last Sort in Fevers always indicates a Weakness of Concoction, and is occasioned either from an Obstruction of the Blood-vessels, Ureters, Kidneys or Bladder, by which means only an ichorous, or thin serous Humidity is excreted, or when the Humours take their Course to the Head, as the Case is in Phrensies, where a *Thinness* of *Urine* is a common Symptom. Hence we conclude, that a *thin Urine* is excreted when nothing of the Humours happens to be mixed with it, and that a *thick Urine* is occasioned from a Mixture of something which is the Result of a Concoction attempted by Nature, or the Removal of some Obstruction. That a *thin Urine* in Fevers always signifies Crudeness we are taught by *Galen* in many Places; and *Hippocrates* 3 *Epid. Sect.* 3. *Stat. Pest.* speaking of epidemical burning Fevers, tells us, they were attended with "plentiful Excretions of *thin Urine*, which had "nothing critical, nor were of any Service to the Patient." This *Thinness* of the *Urine* sometimes continues, sometimes alters to *Thickness*: The latter shews, that Nature has begun its Work or Concoction; but the other indicates, that the Business is as yet unattempted, and is a Sign of an extraordinary Crudeness, as we are taught by *Galen*, *Lib. de Urinis*, *Cap.* 3.

Thick Urine is occasioned by a Mixture of *Humours*, and if it appears in the Beginning, indicates a Redundance of gross Humours, as we are told by *Galen*, *Lib. Quæsita in Hippocratem dicta*; but in the State or Height of the Disorder it shews, that Nature attempts an Excretion of the Humours.

Much Urine proceeds from plentiful Drinking, or a Redundance of Humidities, as in a Dropsy, and a Suppression of Evacuations by Stool in an humid State of the Belly, on which Occasion we are told by *Hippocrates*, 4 *Aph.* 82. "that copious Excretions of *Urine* by Night, are an Indica-"tion of small Discharges by Stool." An immoderate Quantity of *Urine* may be occasioned, also, by an Inflammation of the Kidneys attracting to themselves a vast Plenty of Humidities,

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ties, as in the Diabetes, or from a Mutitude of Humours when the Patient undergoes a critical Expurgation by the Kidneys, as was the Case with many observed by *Hippocrates*, 3 *Epid. Sect.* 3.

Urine in too small Quantities proceeds from contrary Causes, as from drinking but sparingly, from a too plentiful Discharge of the Humidities by Stool or Sweat, or a Consumption of them by an immoderate igneous Heat, as it usually happens in burning Fevers, in which Cases it is often totally suppressed. Sometimes, also, as it is well known, the *Urine* is excreted in small Quantities from an Obstruction of the Passages, by which it makes its Way through the Kidneys or Bladder.

As to the Causes of the *Colours* of *Urines*, we shall begin with the white *Urine*, which is either *thin* or *thick*. *White thick Urine*, as we are taught by *Galen*, indicates a Redundance of crude and gross Humours, especially what is excreted thick, and continues so. *Urine* of this Kind, in which nothing subsides, indicates an extraordinary Crudeness, and an extreme Weakness of the Faculty of Concoction. Hence such *Urine* in acute Diseases is pernicious, as it proved in the Cases of the Wife of *Philinus*, and the Wife of *Dromeades*, 1 *Epid. Ægr.* 4. 11. But *Urine* of this Kind, which begins to grow thinner, shews that Nature has begun Concoction.

White thin Urine, which *Galen*, *Com. in* 4 *Lib. Aph.* calls *aqueous Urine*, has for its Causes either a Weakness of the concoctive Faculty, as in old Persons; or an Obstruction of the Kidneys, as in nephritic Disorders before the Stone is discharged; or an Obstruction of the Liver; or, which often happens, a total Diversion of the bilious Humour to the Brain; for which Reason such *Urine* portends a Phrensy, as *Galen* assures us, *Lib. de Urin. Cap.* 6. As this Kind of *Urine* indicates an highly crude State of the Disease, with an extreme Weakness of the concoctive Faculty, it is of all *Urines* the most pernicious, especially in bilious Diseases, as we are assured by *Galen*, 1 *Lib. de Crisibus*, *Cap.* 12. and *Com.* 2. *in Prognost. T.* 32.

The Cause of *pale Urine* is the Mixture of too small a Quantity of the yellow Bile with the serous Humidities; but this Sort of *Urine* seems not far removed from a State of Concoction, provided it be not very thin.

Yellow, *light-red*, or *saffron-coloured Urine*, if *thin* at the same time, indicate the Disease to be in an absolutely crude State, and the Viscera affected with a violent burning Heat; but when *thick*, it is a Sign of Concoction, and sometimes of a critical Excretion.

Red, and *reddish Urine* take their Colour from Blood, as we learn from *Galen*, *Lib. de Crif.* and *Com.* 2. *in Prognost.* and more fully, *Com. in* 3. *Epid.* They are occasioned by an Excretion of half-concocted Blood by the urinary Passages, and indicate, as he says in the Treatises just mentioned, a Redundance of an unconcocted and serous kind of Blood in the Vessels, and the inner Parts of the Body; such *Urine* is, also, an Indication to us of the Imbecillity of the secretive Faculty; whence *Hippocrates*, *Lib. Prognost.* tells us, that reddish *Urine* signifies a long Duration of the Disorder, or that a long Space of Time is required for the due Concoction of the Blood. *Reddish*, *thin Urine*, though the Author of the Book *de Urinis* denies there is any such *Urine*, is occasioned by a slight Tincture of ichorous Blood; but the *thick* and *reddish* is from a Redundance of unconcocted Blood, as may be often observed in that burning Fever called a *Synochus*.

Resembling the former is that *Urine* which is coloured with Blood, and called *bloody*, or *sanguineous Urine*. Such Excretions are occasioned from the infirm State of the Kidneys, and a Relaxation of the Vessels which terminate in those Parts, called an *Anastomosis*, or a Relaxation of the Ducts which lie between the first and second Sinus; from such Causes proceeded the *bloody Urine* discharged by *Apemantus* and the Carpenter, mentioned by *Hippocrates*, 4 *Epid. T.* 19. Sometimes a Discharge of Blood is occasioned by a Rupture or Aperture of the Veins, or an Ulceration of the Kidneys or Bladder, as we may learn from *Hippocrates*, 4 *Aph.* 86. where he says, "If Blood, "or Pus, or Scales, are excreted by *Urine*, and this *Urine* has, "also, a fetid Smell, the same indicates an Ulceration of the "Bladder;" and *ibid.* 77. "A sudden [ἀπὸ ταυτομάτε, spontaneously, see AUTOMATOS] Discharge of Blood by Urine, "indicates a Rupture of some small Vein in the Kidneys."

Green Urine is either from porraceous Bile, generated in the Stomach, as *Galen* says, from the Crudeness of the Humours, or else from an æruginous Humour in the Vessels, which owes its Original, according to the same Author, *Com.* 2. *in Prognost.* to a burning Heat, and vehement Adustion of yellow Bile. In Persons who are in Health, or free from a Fever, such *Urine* is generally a Sign of porraceous Bile; but in acute Fevers and Inflammations of the Viscera, it indicates an æruginous and bilious Humour, according to *Galen*, *Lib.* 2. *de Crit.* where he determines this Colour in particular to proceed from an Alteration of yellow Bile, by the Force of a burning Heat, into Bile of a black Colour.

Next in Colour to *green* is *oily Urine*, which however is not fat, or pinguious; but as *Galen*, *Com. in* 3 *Epid. T.* 72. and *de Crisibus*, describes it, resembles Oil in Colour and Consistence; and this Sort of *Urine*, as he tells us, he had sometimes observed, proceeding from a Concoction of the Disease, without any bad Consequence to the Patient.

But *pinguious*, or *fat Urines*, which by their Fatness resemble Oil, or are called *oily*, because, like Oil, they swim on the Superficies, have quite another Cause, as proceeding always from a Colliquation of the Fat, either of the whole Body, or only of the Kidneys. To this Purpose we read in 7 *Aph.* 35. that "a pinguious and compact Hypostasis indicates an acute Dis-"order of the Kidneys." And we may know, says *Galen*, in his Comment on that Aphorism, when there is a Colliquation in the whole Body from the feverish Heat, if it were only by an Excretion of Fat with the *Urine* successively, and not all at once, as in a Colliquation only of the Kidneys. Hence we conclude, that there are two Sorts of *oily Urine*; one, which in Colour and Consistence only appears very like Oil, and another, which is of a pinguious Substance, and which *Hippocrates*, in the Aphorisms before-mentioned, says, contains Fat. Of this latter Sort of *oily Urine*, he says, in his *Prognostics*, "If there be a Fatness on the Superficies resem-"bling a Spider's Web, it is to be condemned, for it is a Sign "of a Colliquation." *Galen*, *de Sanit. tuend.* tells us, that this Fat swimming on *Urine*, is like that which concretes on the Superficies of Broths when cooled. And, *Lib. de Urinis*, a Treatise ascribed to him, he makes three Distinctions of this kind of fat or *oily Urine*; the first is what the *Greeks* call *Elæochroos*, which is of the Colour of Oil, and indicates a beginning Colliquation; the second is called *Elæophanes*; this has a more exquisite Mixture of oily Particles, and shews that the Colliquation increases; the last is the *Elæodes*, which in its whole Substance, and in all respects resembles Oil, and shews the last Degree, or Height, of a Colliquation. But the same Author, *Com. in* 3 *Epid.* 72. makes two Kinds of *oily Urine*, one like Oil in Colour and Thickness, but void of Fatness; another Fat, of which there are two Sorts, one with a Fatness swimming atop, like the Eyes of Oxen, called by the *Greeks* *Elæophanes*; and another, which has its Superficies covered with a fat Substance resembling a Spider's Web, and is called *Elæodes*. All these Kinds of *oily*, or more properly, *pinguious Urine*, proceed from a Colliquation of the Fat by an igneous Heat, as was before observed.

Urine of a *livid* Colour proceeds from an immoderate Coldness, according to *Galen*, *de Crif. Lib.* 1. *Cap.* 12. and is therefore pernicious in acute Distempers, as indicating an Extinction of the natural Heat. It is however sometimes occasioned by a gross, livid Matter, and on that account not deny'd by *Hippocrates* to be good, and sometimes critical.

Black Urine is either the Effect of an immoderate Coldness (though in that Case it may more properly be styled *obscure* than *black*), or of a burning Heat. *Galen*, *Com. in* 1 *Prorrh.* tells us, that *black Urine* is occasioned by a Mixture of black Bile with the Serum, which tinges the *Urine* with a black Colour; and *Com. in* 3 *Epid.* he says, that it proceeds from a melancholic Blood, which like Soot, communicates its Colour to the Serum. Hence, *Lib.* 1. *de Crif. Cap.* 12. he says, that *black Urine* is a Sign of a Redundance of black Bile, or adust Blood in the Body. But here we are to make a Distinction of this Kind of *Urine* into those of a thick and a thin Consistence.

Thick black Urine always derives its Colour from a more than ordinary copious Excretion of a gross atrabilious Humour, or black Bile, or adust Blood, whence in Quartans, and Disorders proceeding from the Spleen and Melancholy, a thick and black Kind of *Urine* is evacuated.

A *thin* and *black Urine*, *Galen*, *Com.* 2. *in Prognost.* and *Lib.* 1. *de Crif.* supposes to proceed either from excessive Coldness, which occasions, also, a Blackness of the Blood, or from an immoderate Heat scorching the Blood. We know and can predict these Kinds of *Urine*, because they are preceded by *Urine* of a yellow, light-red, or saffron-colour; livid *Urine*, also, changes to *black*.

We should next in Order, after *black Urine*, treat of the Causes of *clear* and *foul*, or *turbid Urine*. As for *clear Urine*, which is permanent, or continues in a State of Clearness, it is included in what has been said of the Colours of Urine in its thin Consistence, and therefore we are to treat only of such Urine as is excreted *clear*, but after some time becomes *turbid*. This Kind of Urine every one knows to be crude, and to become foul and disturbed from a Redundance of gross Flatulences, and consequently it is regarded by every Physician of the least Experience, as an Indication of Nature's Efforts toward a Concoction.

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coction. *Galen, de Sanit. tuend. Lib.* 4. *Cap.* 4. says, "If "the *Urine* be excreted pure and clear, but is immediately dis- "turb'd, it shews that Nature sets about the Concoction of "the crude Juices; if the *Urine* becomes not foul immedi- "ately, but after some time, it is a Sign that Nature has not "yet begun its Work, but will attempt it hereafter." The same Author, *Com. in* 3 *Epid. in* 4 *Aph. & Lib.* 4. *de Sanit. tuend. & Lib.* 1. *de Crif.* makes three Sorts of *turbid Urine*; one excreted clear, and becoming *turbid* afterwards, of which we now speak; another excreted *turbid*, and becoming clear; and a third which is excreted *turbid*, and always remains in that State. This last is by Physicians generally call'd *Subjugalis*, with reference to Horses *sub jugo*, "under the Yoke," or us'd to draw; because in Colour, Thickness, and Foulness, it resembles the *Urine* of a working Horse. Such Sort of *Urine* proceeds from crude and gross Humours agitated by Heat, and an Elevation of numerous Flatulencies thence occasion'd, which mix with the Serum, and render it confus'd and turbid. For this Reason *Hippocrates*, 4 *Aph. Cap.* 9. says, "That *turbid* "*Urine*, like that of Horses, in Fevers, indicates a present "or future *Cephalalgia*;" as it is a Sign to us, he means, that Multitudes of Vapours are elevated and convey'd to the Head. *Galen, Com.* 5. *in* 6 *Epid. T.* 15. says, "that *turbid Urine*, "like that of Horses, is proper to those who abound with crude "Humours, which are put in a State of Fusion by the Heat." By this means, being converted into a spirituous Kind of Substance, they furnish Plenty of Matter for flatuous Exhalations to the Head. *Turbid Urine*, then, we find, proceeds from crude and gross Humours agitated by Heat.

Turbid Urine, which becomes clear, is, from the natural Heat, employed in Concoction; but *Urine* always remaining in a *turbid* State is generally the Effect of a febrile Heat agitating and confounding the Mass of Blood, and is such as we see in the Beginning of malignant Fevers, when Nature has done nothing towards a Concoction. *Avicenna*, and the other *Arabian* Physicians, tell us, that *turbid Urine*, which never settles, foreshews an Ebullition of the Humours, on account of the Violence of an extraneous Heat, and the Weakness and Indisposition of the natural Heat towards a Concoction. But *Galen, de Crif. Lib.* 1. *Cap.* 12. says, that *Urine* remaining *turbid*, without becoming in the least clear, indicates that Nature has begun an Agitation in the Blood, and is in full Vigour and Strength, sufficient for Concoction; but that *Urine* excreted clear, and soon after becoming *turbid*, signifies that the Agitation of the Humours towards a Concoction is not yet begun, but may be expected. For these Reasons, he prefers that Kind of *turbid Urine*, which always remains in that State, because they indicate a beginning Concoction, as he more clearly expresses it, *de Sanit. tuend. Lib.* 4. *Cap.* 4. where he says, that "*Urine foul*, or *turbid*, like that of Horses, indicates a Re- "pletion of the Veins with such Humours as are called crude; "but that Nature, however, ceases not from her Work, but "powerfully concocts them."

And of *Urine* which becomes *turbid* after Excretion, he there adds, "If it be voided pure, and immediately turns foul, it "shews that Nature attempts a Concoction; but if it grows "*turbid* at some Distance of Time, it is a Sign that Nature is "not at present, but will shortly be, employed in that Work." A little after he seems to assert the contrary, when he says, "If there be no Separation, or what subsides is bad, it shews "that Nature is weak, and wants Assistance in concocting the "Juices." Upon the Whole, it must be said, that *turbid Urine* continuing in that State, is sometimes the Effect of an extraneous Heat agitating the whole Mass of Blood, and sometimes proceeds from the natural Heat, or Nature itself employ'd in Concoction; and that in the latter Case it is distinguished from the other by its not appearing in the Beginning, but in the Increase of a Disorder, when Nature manifestly attempts a Concoction; after which the *Urine* has a Sediment, or becomes less *turbid*, the Strength not much impair'd, and the Disease is free from mortal Signs: And this perhaps is no more than what *Galen* means in the Chapter above quoted, by the following Words: "Of all *turbid Urines*, let the general Character be a Sepa- "ration of the *thick* from the more *liquid* Part, which is either "quick or slow, or none at all. If it be quick and imme- "diate, and what subsides be white, smooth, and equal, it "shews Nature far superior to the Juices which it concocts; "but if what subsides be bad, Imbecillity of Nature is signi- "fied." If then such *turbid Urine* appears, as we said, in the Beginning of a Disorder, at which Season Nature attempts no Concoction, on account of the Ebullition and Agitation of the extraneous and febrile Heat, it indicates a Turbation from a Redundance of crude and gross Humours put in a State of Fusion by the vehement Heat, which, in Conjunction with the Violence of the Distemper, and the extreme Weakness of the Patient, may be justly esteemed a fatal Prognostic. *Galen*, therefore, might well say, *Com. in* 4 *Aph. T.* 70. "*Turbid Urine*, which "comes to no Settlement, if the Patient be strong, shews the "Disease will be of long Duration; if weak, that it will be "mortal." *Urine*, then, which appears *turbid*, and continues so in the Beginning of a Disease, proceeds not from the natural, but an extraneous Heat, which is confirmed by the Weakness of the Patient, and some pernicious concomitant Sign, and from its having nothing of a laudable Sediment.

We have spoken largely of the Causes of *turbid Urine*, and would treat, in a few Words, of the Origin and Cause of *pungent Urine*, or such as is excreted with Pain, and a pungent Sensation: This, in short, proceeds from highly-acrimonious and hot Humours, which are voided together with the *Urine*, and, according to *Hippocrates*, 1 *Epid. Sect.* 2. are the Occasion of a Strangury. And *Galen, Com. in* 1 *Epid.* to the same Purpose, tells us, "that when the excrementitious Parts of the "whole Body are purged off by the Passages of the Kidneys, "the Patient is seized with a Strangury, as well upon other "Accounts, as principally from the Acrimony of the confluent "*Urine*;" this Acrimony is the Effect of an immoderate Degree of Heat.

Fetid Urine is known by every Body to be the Effect of an extraordinary Putridness either in the Vessels, or the Kidneys, or the Bladder.

As to *Urines* of an equal and unequal Consistence, *Galen, Com. in* 7 *Aph. T.* 33. makes the following Remarks: "If we "take the Word διεστηκὸς (distant or separate) in its proper "Sense, the Thing is impossible; because *Urine* is always con- "tinuous, without Interstices; but if we understand by this "Term an Inequality of Substance or Consistence, he (*Hip- "pocrates*) rightly says, that such an Inequality indicates a ve- "hement Perturbation in the Body: For when Nature pre- "vails, and is predominant, all Things are equally united; "but when it is repelled and controlled by Variety of stubborn "and rebellious Matters, that Portion of them which is sub- "dued and concocted, takes one Form; and what is renitent "and refractory, another; and when there is a great Variety "of these contumacious Particles, it shews the Inequality in "the *Urine* to be very considerable, as well as the Perturbation, "which is the Cause of it."

We have given you the Causes of the various Kinds of *Urine*, and proceed to treat of the Causes of its Contents; under which Head we are to inquire the Reasons of those Contents at the Bottom, which we call *Hypostases*, *Subsidences*, and *Sediments*; and what are the Causes of those pendulous Contents in the Middle, which pass by the Names of *Enæoremata* and *Sublimamenta*; as, also, the Reasons of the *Nubes* and *Nubeculæ*, or the Clouds and Films which swim on the Superficies of *Urine*.

In general, the Variety of Contents in *Urines* depends on the various Generation and Mixture of Flatuosities; for when there is a Redundance of these in the *Urine*, the excrementitious Particles are conveyed to the Superficies; when there is but a moderate or small Quantity of them, they make this Settlement in the Middle; and if there be none at all, they reside at Bottom. Hence it is that an Hypostasis indicates a good Concoction, in which the Flatuosities, being discussed, cause no Perturbation. This, however, is no necessary Consequence from the Contents being lodged at the Bottom, since not every Hypostasis, or Sediment, infers, of Necessity, a Concoction, but that which is white, smooth, and equal at all Times, as we are taught by *Hippocrates*, in his *Prognostics*. Nor do *Clouds* and *Films* always signify Crudeness: For, as we are told by the same Author, in the Book just quoted, "Clouds on the Sur- "face of *Urine*, if white, are good." And *Galen, Lib.* 1. *de Crif. Cap.* 12. tells us, that in Patients inured to Fasting and immoderate Labour, the Disease often has its Solution before any thing subsides in the *Urine*; and it is generally sufficient if there be a white Cloud, and a white, smooth, and equal *Enæorema*.

But white, smooth, and permanently equal Contents, in the Bottom of the Vessel, or Urinal, constantly signify Concoction, an *Enæorema* of that Kind a less Degree of Concoction; and a Cloud of the same Sort, as being situated highest of all, a still lesser Measure of Concoction of the Disease.

The Contents, or excrementitious Particles, elevated in the Form of a Circle, to the Superficies of the *Urine*, is a certain Indication of a *Delirium*, as was observed by the Author of 1 *Prorrhet.* and I have frequently found the Truth of it by Experience.

A copious *Sediment*, though it occupies the lowest Place in the Urinal, indicates a Redundance of crude Humours, as *Galen, Lib.* 1. *de Crif. Cap.* 12. has demonstrated, from Examples of Children bred in Idleness, and pamper'd with full Diet, whose *Urine* abounds with Crudities, from a Repletion of the Body with crude Humours. And, *Com.* 2. *in Prognost.* he says, that there appears a copious *Sediment* in *Urine*, when the Disease is fomented by crude Humours; and that there is very

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very little or no *Sediment* in the *Urine* of thoſe who labour under bilious Diſeaſes, or are uſed to Faſting, and hard Labour.

A *thin Urine*, Sediment, or Hypoſtaſis, is a Sign of thin Humours; but a *pure* Hypoſtaſis, which ſcarce riſes upon ſhaking the Veſſel, ſhews a great Weakneſs of Nature in the ſecond Concoction.

Thick and *groſs Sediments* are, in like manner, Indications of groſs Humours, agreeably to what we are told by *Galen*, *Com. in 4 & 7 Lib. Aph.* and *Lib. de Plenitud.* where he ſays, that "the *Urine* of voracious Perſons has a thick Sediment." We affirm, therefore, that a groſs or thick Hypoſtaſis is an Indication of groſs Humours, and conſequently of difficult and troubleſome Diſorders.

An *united*, or *continuous*, and *equal Hypoſtaſis*, of a pyramidal Figure, is highly commended, as being a Sign of a very good Concoction; as, on the contrary, a *diſcrete* and *unequal Sediment*, or *Hypoſtaſis*, has a quite different Signification. *Galen*, *Lib.* 1. *de Criſ. Cap.* 12. For an *Hypoſtaſis* which is *unequal*, and *diſcrete*, or conſiſting of looſe and ſeparate Parts, ſhews a Redundance of groſs Flatuoſities in the Veins, which are incapable of being diſſolv'd and diſcuſs'd by Nature, as we are told by the Author of *Lib. de Urinis.*

As to the Colours of the Contents of *Urine*, *white*, as we ſaid, is judg'd the beſt, if the Matter be, alſo, continuous, ſmooth, and equal; and ſuch is the Reſult of a perfect Concoction.

Unequal diſcrete Contents are diſtinguiſh'd from an *Hypoſtaſis*, as making a Subſtance disjunct, or diſunited, and diſpers'd, like ſmall and minute Particles of Sand, through the Body of the *Urine*. Theſe are the Effects of a copious Phlegm, or proceed from Pus, or a Colliquation of the ſolid Parts; and of this Nature are the Contents reſembling coarſe Flour, and the *Hypoſtaſis* which the *Greeks* call *Crimnodes*.

Red and rediſh Contents ſignify Crudeneſs, and Want of Concoction; whence it is juſtly ſaid by *Hippocrates*, *Lib. Prognoſt.* "that rediſh *Urine*, with a rediſh and ſmooth Sediment, "ſhews the Diſeaſe to be of longer Duration than in the firſt "Caſe [where the Sediment is white, ſmooth, and equal]; "but is, however, very ſalutary." The Author of the Book of *Urines* ſays, that red Contents proceed from an ichorous Blood, and ſignify Want of Concoction.

Yellow and green Contents are bad, becauſe they ſhew, that the Diſeaſe is fomented by a yellow, æruginous, or porraceous Bile.

The worſt Colours in the Contents of *Urine* are the livid and the black. A livid Colour ſoon changing to black, proceeds from a Refrigeration of Heat; and a yellow, light-red, or green Colour, quickly altering into black, is the Effect of an igneous Heat burning the Humours. Juſtly, therefore, does *Hippocrates*, *Prognoſt.* pronounce black Clouds in *Urine* bad.

Of Contents in *Urine* which proceed from a Colliquation, and therefore appear in various Shapes, thoſe *Hypoſtaſes* which are call'd by the *Greeks Oroboides*, becauſe they reſemble the Pulſe *Orobus*, and, alſo, *Sandarachoides*, are the Effects of a beginning Conſumption of the Fleſh after the Fat is conſum'd; and are Indications of a Colliquation either of the whole Body, or of the Kidneys.

The Contents, or *Hypoſtaſes*, call'd, in *Greek*, *Petaloides*, that is, ſquamous, or ſcaly, appear, according to *Galen*, when, after a Colliquation of the Fat and Fleſh, the ſuperficial Parts are abraded by the igneous Heat.

The *Pityroides*, or *furfuraceous Hypoſtaſes*, which are narrower and ſtraiter, but yet thicker, than the ſcaly Sort, are the Effects of a Dilaceration and Conſumption of the Veſſels of the ſolid Parts by the igneous Heat.

In the laſt Place, the Contents or *Hypoſtaſes* call'd *Crimnoides*, which are like coarſe Meal, or Flour, proceed from a Conſumption of the ſolid Parts more violent than the former: Of theſe Kinds of *Hypoſtaſes*, we find *Hippocrates* paſſing his Judgment, *Lib. Prognoſt.* in the following Words: "If the "*Hypoſtaſis* of the *Urine* be *Crimnoides* [like coarſe Flour], it "is bad; but the *Petaloides* [reſembling Scales] are worſe; "the white and thin is very bad, but the *Pityroides* [furfu-"raceous] is ſtill worſe." Here *Galen*, in his Comment on the Place, tells us, that theſe Kinds of *Urine* are the Effects of an igneous Heat ſcorching the Blood, or conſuming the Fleſh in an unequal manner.

Of good URINES, *portending Recovery.*

Urine, as well as other Excretions, affords Indications in Diſeaſes for a *Prognoſis* of Death or Recovery, two Ways: Firſt, as it is a Sign of Concoction and Malignity; and, ſecondly, as it is a Cauſe, in diſcovering itſelf to be a good or bad Excretion. Of *Urine* portending a good Event, in both theſe Reſpects, we find *Galen*, *de Criſ. Cap.* 12. and *Com. in* 3 *Epid.* giving the following Deſcription: "The beſt Kind of *Urine* is what is of "a moderate Conſiſtence, anſwering in Proportion to the "Quantity of Drink, of a lightiſh Red, or yellowiſh Colour, "with a white, ſmooth, and equal Sediment, or *Hypoſtaſis*." "The beſt *Urine*, ſays *Hippocrates*, *Lib. Prognoſt.* is what has "a white, ſmooth, and equal Sediment, during all the time "before the Criſis; for this ſignifies that the Patient is in a ſafe "State, and that the Diſeaſe will not be of long Duration: "But if there be an Intermiſſion, and the *Urine* be ſometimes "pure, and ſometimes with a white and ſmooth *Hypoſtaſis*, the "Diſeaſe will be the longer, and the Patient the leſs ſecure." *Galen* adds, "The *Urine* ought to be of a moderately ſaffron "Colour, and of a mean Conſiſtence between thin and aqueous, "and thick like that of Horſes." The ſame Author, *Lib.* 1. *de Criſibus*, *Cap.* 12. ſays, "that the beſt *Urine* is rather of a "lightiſh-red, than yellowiſh Colour:" And *Com. in* 1 *Epid.* and *Lib.* 10. *Simpl.* he makes it moderately yellow; and *Lib.* 2. *de Sanit. tuend. Cap.* 2. he ſays, "that a lightiſh-red and "bilious *Urine*, is an Indication of a perfect Concoction in "Diſeaſes."

In many Caſes concocted *Urine* has but little Colour; in others it is more deeply tinged; whence it appears, that the beſt *Urine* is not always obſerv'd to be of the ſame Colour. The divine *Hippocrates* was of Opinion, that we were not ſo much to regard the Colour or Conſiſtence of *Urine*, as its Contents, in order to a *Prognoſis*; ſince, in the Place juſt quoted, where he deſcribes the beſt *Urine*, he ſays not a Word of the Colour and Subſtance, but only of the Contents: For he tells us, that "the beſt *Urine* is what has a white, ſmooth, and equal Sedi-"ment," omitting the Colour and Subſtance, which are not obſerv'd to be always the ſame in ſuch an *Hypoſtaſis*. And though, indeed, it be neceſſary for the *Urine*, when furniſh'd with the beſt *Hypoſtaſis*, to be of the beſt Colour, and of a moderate Conſiſtence, and in temperate Bodies ſuch Colours are uſually obſerv'd, as before deſcrib'd, and reputed laudable, yet as there is a vaſt Variety in *Urine* with reſpect to the various Conſtitutions and Diſpoſitions of Bodies, we are to have recourſe to a general Method for diſcovering the beſt Kind of *Urine* in all particular Caſes. Here we are well directed by *Ariſtotle*, *Lib.* 1. *Probl. T.* 52. "The beſt *Urine*, he ſays, is moderate "in all Reſpects, and moſt like that of the Perſon in Health; "which is a Precept to be regarded by the young and unex-"perienced Phyſician, in his Inſpection of *Urine*; in which, "when he ſees any Alteration from what it was in a State of "Health, he may ſafely pronounce the Perſon to whom it be-"longs fallen from a perfect State of Health and Soundneſs." This of *Ariſtotle* is certainly a good Rule for judging of good and bad *Urine*, ſince the Theory of *Similars* and *Diſſimilars* is one of the chief Principles of the Art of *Prognoſticating*. Upon theſe Conſiderations we, alſo, conclude, that in Diſeaſes ſuch *Urine* is to be eſteem'd the beſt, as approaches neareſt to the *Urine* of the Patient in Health; and this is the Character which *Galen*, alſo, has given of it, *Lib.* 1. *de Criſ. Cap.* 12.

But, for our clearer and more exact *Diagnoſis* of the beſt *Urine*, we are attentively to conſider the Temperament of the Body and *Viſcera*, with the Age, Sex, Diet, and Way of Living, of the Patient: For the *Urine* of Bodies of an hot Temperament is of an higher than ordinary Colour; and the *Urine* of Perſons of a cold Temperament, of a lower Colour than is conſiſtent with Mediocrity. In reſpect of Age, young adult Perſons make thinner *Urine*, and more colour'd than Children; and the *Urine* of Children is thicker than ordinary, as that of old Perſons is thinner, and more colourleſs. With regard to Sex, the *Urine* of Women is thicker, and more colourleſs, than that of Men, and more abounds with Contents: In other Reſpects, the *Urine* of voracious Perſons abounds with crude Sediments; on the contrary, the *Urine* of thoſe who are us'd to Faſting has but little Sediment, and is more coloured than the former; and the ſame Appearance in the *Urine* is effected by Watchings and Fatigue; whereas the *Urine* of thoſe who live in Idleneſs abounds with Sediment, and is leſs colour'd.

Hence we conclude, that in Children the beſt *Urine* is what appears of a thickiſh Conſiſtence, is but ſlightly tinged, and abounds with a copious, white, ſmooth, and conſtantly equal *Hypoſtaſis*. In Youth and Manhood the *Urine* ought to be more deeply tinged, and of a yellowiſh or lightiſh-red Colour, and of a thinner Conſiſtence, with fewer Contents, and ſo much the thinner, and more colour'd, as the Body is of an hotter Temperament; and ſo much the leſs colour'd, as the Temperament of the Perſon is colder. In Women the *Urine*, on ſome Occaſions, muſt be thicker, and more colourleſs, than ordinary; in Perſons under Circumſtances of Faſting, Fatigue, and Watching, higher colour'd, and thinner, with fewer Contents; and in thoſe who indulge themſelves in plentiful Living, and Idleneſs, the *Urine* muſt be expected leſs colour'd, of a thicker Conſiſtence, and with a more copious Sediment.

But in Bodies of a moderate Temperament the beſt *Urine* is, as *Galen* ſays, of a moderately croceous Colour, of a mean Conſiſtence, anſwering in Quantity to the Drink, with a white,

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white, smooth, and constantly-equal Sediment, and, in short, most resembling the *Urine* of Persons in Health. In all Cases the best *Urine* has a white and equal *Hypostasis*, or Sediment; *Urine* with a pendulous Substance, or *Enæorema*, is not so good, and that with a Cloud, or Film, worse than the former. We are, however, taught by *Galen*, *Com. in* 3 *Epid.* that an *Enæorema* is sometimes good; and that even a Cloud may be good enough to prove a salutary *Prognostic*, according to *Hippocrates*, 4 *Aph.* 70. where we read, that "Persons in whom the Fever "comes to a Crisis on the seventh Day, have a red Cloud in "their *Urine* on the fourth Day, and other Things in Proportion." And not only a red Cloud, says *Galen*, which was not seen before, prognosticates a Crisis; but a white Cloud much more; and a white, equal, and settled *Enæorema*, more than either: But if the Disease be very quick in Motion, and there be a Change in the Colour and Consistence of the *Urine*, there are sufficient Grounds for prognosticating an approaching Crisis. *Hippocrates*, *Lib. Prognost.* says, that "a Cloud floating in the "*Urine*, if white, is good." And a little after, "we are to "consider in these Clouds, whether they move upwards or "downwards, and, also, what Colour they are of; for if they "tend downwards, and are of the Colour above-mention'd "[white], they are good, and laudable."

With respect to the Substance, *Urine* of a thin Consistence, with a good Colour, is laudable. Hence *Galen*, *Com. in* 1 *Epid.* says, "It is plain that thin *Urines*, but of a good Colour, promise a Recovery on account of the Goodness of their Colour; but, in respect only of their Thinness, they require a "longer time for Concoction." So that this Kind of *Urine* prognosticates, indeed, a Recovery, but it is after a considerable time; as it happen'd in the Cases of *Cleonactides* and the *Clazomenian*, 1 *Epid. Ægr.* 6. 10. and *Chærion*, 3 *Epid. Sect.* 1. *Ægr.* 5.

Thin and colourless *Urine*, where there are Signs of Recovery, indicate an Abscess, as we are taught by *Hippocrates*, *Lib. Prognost.* quoted by *Galen*, *Com.* 1. *in* 3 *Epid. T.* 4. to this Purpose: "Thin and equal *Urines*, he says, excreted for a long time "together, if there be other salutary Signs, indicate an Abscess in the Parts below the Diaphragm." Thus it happen'd to *Pythion*, 3 *Epid. Ægr.* 1. who liv'd near the Temple of *Tellus*, of whom it is said, "From the first to the eighth Day "his *Urine* was thin, and colourless, and had a cloudy *Enæ*-"*orema*; on the tenth he fell into a Sweat, his Spit was "somewhat concocted, and he had a Crisis, about which time "he voided a thinnish [for ὑπόλευκα, as all the printed Editions "have it, I read ὑπόλεπτα] *Urine*." On the fortieth Day after the Crisis, a Suppuration appear'd in the Parts about the Anus, and the Abscess produc'd a Strangury.

Of Colours in *Urine*, the laudable, as we said, are the yellowish, lightish-red, subcroceous, or somewhat saffron-like Colour, the moderately pale and subluteous Colour. The reddish *Urine*, with a redish Sediment, is said, by *Hippocrates*, to be salutary, though it indicates a long Disease; the black Colour in *Urine* is not always bad; it is not so, for Instance, in Disorders of the Spleen, as appears in the Case of *Herophon*, 1 *Epid. Ægr.* 3. and in those who abound with melancholic Blood; and the same is agreeable to what *Galen*, *Com. in Epid.* remarks of a female Patient, where he says, "that the Colour of her "*Urine*, though black, indicated no Danger, because proceeding from a Retention of the Menses, which were of "a more melancholic Cast." Plenty, also, of black *Urine*, which changes not to aqueous critically excreted, is of Service. Hence *Galen*, *Com.* 3. *in* 3 *Epid. T.* 73. says, he knew a Woman who was very much reliev'd by a plentiful Excretion of such Kind of *Urine*; besides, black *Urine* with a plentiful Hæmorrhage from the Nostrils, as in the Case of *Meton*, 1 *Epid. Ægr.* 7. or a copious Flux of the Menses, as was observ'd of the morose Woman, 3 *Epid. Sect.* 3. *Ægr.* 11. are not in the least to be dreaded.

Of turbid, or foul Kinds of *Urine*, what soon settles or subsides is good, especially if the Sediment be white, smooth, and equal, according to *Galen*, *de Sanit. tuend. Lib.* 4. *Cap.* 4. where he writes, "that if there appears a Separation of the "thicker from the more liquid Substance in the *Urine*, and what "subsides is white, smooth, and equal, it indicates a Superiority of Nature in subduing and concocting the Juice."

Clear *Urine*, which soon becomes turbid, may, also, be esteem'd beneficial, as it signifies, that Nature is at work in concocting the Humours.

With regard to Alterations in *Urine*, those are esteem'd laudable which are made for the better, either in Colour, Consistence, or *Hypostasis*. Hence thick *Urine*, excreted after the Beginning of a Disease, is accounted beneficial, since Excretions, after the Commencement of a Concoction, become thick, if they were thin before; as, on the other hand, when from thick they change to thin, it is a very good Sign; agreeably to the Doctrine of *Hippocrates*, 4 *Aph.* 68. where we read, "that "they who void a thick, grumous Urine, and in small Quan-"tities, and are not free from a Fever, are reliev'd by a super-"vening plentiful Excretion of thin Urine, which is most likely "to happen when there has been an *Hypostasis* in the Urine "from the Beginning, or not long after." Here *Galen*, in his Comment, says, "that Plenty of thin Urine is beneficial, as it "indicates the morbific Matter to be more attenuated."

It is best for Urine, from turbid to become clear, from colourless to grow colour'd, from too high a Colour to become less colour'd, and from wanting Contents to assume either a Cloud, *Enæorema*, or *Hypostasis*, which are white and equal.

Such, then, are the Properties and Qualifications of Urine, by which it indicates a Recovery in acute Diseases, as it is a Sign of Concoction; in the same manner it portends a good Event as a Cause in shewing itself to be a salutary Evacuation.

For this Reason, Plenty of Urine excreted on a critical Day, indicates a salutary Crisis, and with the greater Certainty, if it be in its own Nature of a laudable Kind, as it was in the Case of *Nicodemus*, 3 *Epid. Sect.* 3. *Ægr.* 10. of whom *Hippocrates* observes, 3 *Epid. Sect.* 3. "that on the twenty-fourth Day he "voided much white Urine, which had a copious *Hypostasis*; "and he fell into a plentiful hot Sweat, underwent a Crisis, "and was freed from his Fever." And of *Pericles*, *ibid. Ægr.* 6. he says, "On the third Day his Fever was abated, and he "voided Plenty of concocted Urine, with a copious Sediment." *Chærion*, also, *ibid. Sect.* 2. *Ægr.* 5. is said to escape, by the Benefit of a copious Effusion of bilious Urine. To the same Purpose we read, 4 *Aph.* 73. "that where an Abscess is ex-"pected in the Joints, the same is prevented by an Evacuation "of much thick and white Urine." And, 6 *Epid. Sect.* 4. *Aph.* 2. "that an Evacuation of thick white Urine, such as "happen'd to the Servant of *Archigenes*, sometimes happens in "Quartans attended with a Lassitude, and prevents an Abscess." But that Kind of thick Urine which resembles coarse Meal, portends Death, or a long Duration of the Disease; as we are taught by *Galen*, *Com. in* 7 *Aph.* 31.

Acrid Urine, evacuated with Pain, and in great Quantity, frequently happens to be critical in acute Diseases, agreeably to the Observation of *Hippocrates*, 1 *Epid. Sect.* 1. where, after describing an epidemic Disorder very fatal to Children, he says, "that the only serviceable, and most important of all the Judi-"cations, and by which many escap'd the greatest Danger, "was, an Alteration of the Disease to a kind of Strangury, "and Abscesses in the Parts affected." And a little after, "with regard to the Strangury, it was tedious, and very trou-"blesome to the Patient; the Urine, in this Case, was co-"pious, thick, various, red, mix'd with Pus, and excreted "with Pain." To which he adds, "All who were in this Cir-"cumstance recover'd, and not one of them, as far as I know, "dy'd." The Case of *Python*, 3 *Epid. Ægr.* 1. which was much of the same Nature, had probably the same happy Event; of whom we read, that "on the fortieth Day after a Crisis, a "Suppuration was form'd about the *Anus*, and converted it-"self into a Strangury;" after which, it is probable that he recover'd by the Benefit of copious Evacuations by Urine.

There are some Kinds of oily Urine, not fat, but resembling Oil only in Colour and Consistence, which are, also, salutary; these never happen but from a perfect Concoction of the Disease, and have been several times observ'd by *Galen*, as he says, *Com. in* 3 *Epid. T.* 72. from a Concoction of the Disease, without any Detriment to the Patient. And so much for good Urines, which are of salutary Prognostication.

Of bad URINE, *which portends Death.*

Thin, white, aqueous Urine, of long Continuance, in a Disease not of a favourable Kind, is destructive, as we are assur'd by *Galen*, because it indicates a very high Degree of Crudeness; and it is no less pernicious in acute Fevers, because, according to the same Author, it shews that the yellow Bile has its Course upwards, and is carry'd towards the Head, from whence we may predict a Delirium and Phrensy. And such Urine we find condemn'd by *Hippocrates*, 4 *Aph.* 72. where he says, "that white pellucid Urine is bad, especially in a Phrensy." And *Galen*, in his Comment on the Place, says, that he never knew one in a Phrensy, from whom such Excretions of Urine proceeded, recover. For it is much better, as the Disease is wholly of a bilious Nature, that the Urine should appear bilious, and worst of all that it should be thin and transparent, as it was observ'd in *Philistes*, labouring under a mortal Phrensy, 3 *Epid. Sect.* 2. *Ægr.* 4. We conclude hence, that thin and aqueous Urine, in all acute Fevers, is bad, as portending, at least, a long Duration of the Disorder, with Relapses; for Nature requires a long time for the Concoction of Humours in so highly crude a State, when, if the Fever be not extremely violent, and the Strength not much exhausted, the Patient has been sometimes known, though after a long time, to recover; but

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but if the Diſeaſe be violent, and the Strength much impair'd, ſuch Urine is abſolutely fatal: And this is what *Galen* means, *Com. in 4 Aph.* 71. when he ſays, "If the Strength was before "exhauſted, ſuch white perſpicuous Urine is pernicious, as in "Phrenſies; in which Caſe we have no Inſtance of Recovery." We may add, as a ſtronger Confirmation of their Fatality, their long Continuance, and Appearance after the Beginning of the Diſorder, as it happen'd in the Caſe of the Woman who lay ill in *Thaſos*, 3 *Epid. Sect.* 3. *Ægr.* 2. who, on the eleventh Day, evacuated ſuch thin aqueous Urine, and continu'd ſo to do till the fortieth Day. We have already obſerv'd from *Hippocrates*, *Lib. Prognoſtic.* that a Continuance of ſuch Urine, with ſalutary Signs, prognoſticate, a Solution of the Diſeaſe by an Abſceſs, as it actually happen'd in the Caſe of *Pythion*, who liv'd near the Temple of *Tellus*, 3 *Epid. Ægr.* 1. and is demonſtrated by *Galen*, in his Comment on the Caſe. But, on the other hand, where are no ſalutary Signs to accompany it, a Continuance of ſuch Urine is always mortal. Hence *Hippocrates*, *Prognoſt.* pronounces aqueous Urine one of the moſt deſtructive Kinds, and worſt of all in Children.

Thick Urines, according to *Hippocrates*, in the ſame Book, are bad, eſpecially if they appear in the Beginning; at which time, as *Galen* will have it, *Comment. in 4 Aph.* 6. the Urine is generally thin: But thoſe Kinds of thick Urine which have either none, or a bad *Hypoſtaſis*, are very bad; and of theſe, *Galen*, *Com. in 4 Lib. Aph.* ſays, "thick Urine, without a Se-"diment, if the Strength be pretty entire, portends a long "Continuance of the Diſeaſe; but if the Strength be much "exhauſted, the Death of the Patient." And *Hippocrates*, 1 *Epid. Sect.* 1. deſcribing an epidemic Fever of the ſemitertian Kind, ſays, that "in ſome Subjects the Urine was thick, and "had but a ſmall *Hypoſtaſis*, and the ſame not of a due Con-"ſiſtence, but crude and unſeaſonable." *Galen*, alſo, 1 *Com. in 3 Epid. T.* 5. ſpeaking of theſe Kinds of Urine, ſays, that *Hippocrates*, in that Caſe of *Hermocrates*, by "hinting that his "Urine was thick, and without *Hypoſtaſis*, plainly intends, "that it was foul and turbid, as he here uſually calls that "Urine which always appear'd in a crude, diſturb'd State, and "impregnated with a flatulent Spirit, like Muſt." Since Urine, then, in which nothing ſubſides, is of the Number of turbid Urines, thick Urine, alſo, deſtitute of a Sediment, is to be eſteem'd a turbid Urine, which, ſays *Galen*, beſides indicating a flatulent and crude Perturbation of the whole Maſs of Blood, ſhews the Diſeaſe to be fomented by groſs Humours.

Having firſt obſerv'd, that turbid Urine may be either thin or thick, we proceed to inquire into the *Prognoſtics* which may be drawn from turbid Urine in acute Diſeaſes. *Galen*, as we before obſerv'd, makes three Sorts of turbid Urine; one voided thin and clear, and afterwards becoming foul and turbid; a ſecond voided turbid, and continuing in that State; and the laſt voided foul and turbid, and afterwards growing pure, and clear. Theſe laſt mention'd, *Galen*, *de Criſ. Lib.* 1. *Cap.* 12. makes to have a leſs Degree of Pravity; becauſe it ſhews, that ſomething of an unequal Turbulency remains, and that the Diſeaſe will be concocted in a ſhort time. Worſe than the former is that kind of turbid Urine which is diſcharged clear, and becomes turbid afterwards; becauſe ſuch a poſterior Turbation ſignifies that Nature wants to begin its Work of Concoction of the Diſeaſe, but has not actually begun it; and therefore requires a longer time, and a good meaſure of Strength in the Patient, to perfect the Concoction. Of a mean Kind between the two former, according to *Galen*, is that Urine which is excreted turbid, and continues in a State of Turbation, without growing in the leaſt clear, or ſubſiding. And this Sort of turbid Urine, he ſays, indicates, that the Agitation in the Blood is ſtill promoted, in order to a Concoction. The ſame Author, *de Sanit. tuend. Lib.* 4. *Cap.* 4. tells us, that "if the Urine appears turbid, like "that of Horſes, it ſhews the Veins to be replete with what "they call crude Humours; but that Nature, however, is not "idle, but hard at work in concocting them." Hence it appears, that turbid Urine, which becomes not clear, nor ſubſides, is better than ſuch Urine as is excreted clear, and afterwards becomes turbid. This Diſtinction, however, *Hippocrates* ſeems not to be ſenſible of, ſince he no-where ſays that this laſt mention'd is of worſe Signification than the other; but condemns, in general, thoſe Kinds of turbid Urine which never ſubſide, nor grow clear, more than the others; and pronounces them pernicious. Thus it prov'd, for Inſtance, in the Caſe of the Wife of *Philinus*, 1 *Epid. Ægr.* 4. who dy'd; of whom it is ſaid, "Under her Convulſions great Quantities of Urine "came from her, for the moſt part, involuntarily; white, "thick, like what is diſturb'd by ſhaking, after long Settlement "in the Urinal; it did not ſubſide, but in Colour and Thick-"neſs was like the Urine of a Horſe; ſuch was the Na-"ture of her Urine, ſays *Hippocrates*, as far as it appear'd to "me." And of the Wife of *Dromeades*, another fatal Inſtance, we read, *ibid. Ægr.* 11. "that the Day after ſhe was "ſeiz'd with a Rigor ſhe had a commodious Evacuation by "Stool; that her Urine was thick, white, turbid, like Urine "agitated after long Settlement, and did not ſubſide." The ſame turbid, and not ſubſiding Urine, was obſerv'd in the Man who, "being in a feveriſh State, made a Supper, and drank "freely;" 1 *Epid. Ægr.* 12. and in *Hermocrates*, 3 *Epid. Sect.* 1. *Ægr.* 2. who both died of acute Fevers. *Galen*, alſo, ſeems to aſſert the ſame *Prognoſis* from turbid Urine, in his Comment on 4 *Aph.* 70. where he ſays, "Some Sorts of Urine "remain turbid for a long time, others ſoon acquire a thick "Sediment, and ſignify a quick Solution of the Diſorder; but "turbid Urine in which nothing ſubſides, if the Patient be "ſtrong, ſhews the long Duration of the Diſeaſe; if weak, "Death." And *de Sanit. tuend. Lib.* 4. *Cap.* 2. he gives us his Deſcription and Judgment of theſe turbid Kinds of Urine, in ſo clear a manner, that we may from thence conclude this kind of turbid Urine to be more pernicious than the reſt. "Of "all turbid Urine, he ſays, the general Mark or Character by "which it is judg'd, is a Separation of the thicker and groſſer "from the thinner and more liquid Subſtance; and this Sepa-"ration is effected in a quick or ſlow manner, or not at all; "if the Separation be quick, and what ſubſides be white, "ſmooth, and equal, it ſhews that Nature has the Dominion "over the Juices, and concocts them. If the *Hypoſtaſis* be "good, but acquir'd at ſome conſiderable Diſtance of time, it "prognoſticates that Nature will prevail over the Juices in "Length of time. But if there be either no Separation at all, "or what ſubſides is bad, it indicates that Nature is weak, and "wants Aſſiſtance in concocting the Juices."

We conclude, then, from the Premiſes, that turbid Urine, in which nothing ſubſides, is more pernicious than other Urine of that kind. The ſame may be demonſtrated from the Rule of Contraries: For ſince *Galen* himſelf confeſſes, that turbid Urine, which collects an *Hypoſtaſis*, is good, and ſignifies that Nature will overcome the Diſeaſe; the contrary Urine, therefore, which is deſtitute of all Sediment, and always remains turbid, muſt have a contrary Signification, and portend that the Diſeaſe will prevail over Nature: For turbid Urines, alſo, not to grow clear, indicates their Turbation to proceed not from the natural Heat employ'd in Concoction, but from ſome extraneous and preternatural Heat working the Ruin of the Patient. For turbid Urine, which acquires that Property from the natural Heat, terminates in Clearneſs; but turbid Urine which is the Effect of a Turbation by the febrile Heat, always remains turbid, and collects either none, or a bad *Hypoſtaſis*.

Moreover, among the Kinds of turbid Urine, what remains turbid in the Beginning of a Diſeaſe, is worſe than the like happening in the Increaſe; at which time the natural Heat is employ'd in Concoction, and often cauſes a Turbation in the Urine by filling it with Flatulencies; but in that Caſe the Urine in a little time depoſites a good Sediment, and becomes clear.

As to that kind of foul or turbid Urine which is evacuated clear, and becomes turbid afterwards, whether it has a greater Degree of Pravity than the other Kinds of turbid Urine, as *Galen*, *de Criſ. Lib.* 1. *Cap.* 12. will have it, I am not perfectly ſatisfy'd: For if by Urine becoming turbid after Evacuation, it be ſignify'd, as he there, and *Lib.* 4. *de Sanit. tuend. Cap.* 4. tells us, that Nature has not indeed yet begun, but is preparing to ſet about its Work of Concoction; and that by turbid Urine growing clear, it be indicated, that Nature has actually begun a Concoction; it ſeems to follow, that turbid Urine, depoſiting no Sediment, is the moſt pernicious, at leaſt in acute Diſorders, and is juſtly indeed ſo eſteem'd, ſince it indicates the Preſence of a Multitude of crude and groſs Humours, which requires a long time for Nature to concoct and ſubdue; and a great meaſure of Strength is, alſo, neceſſary, for ſuch a Work. Hence, in weak Bodies, and violent Diſorders, ſuch Urine portends Death.

With reſpect to the Colours of Urine, the white, thin, and aqueous, in acute Diſeaſes, are the worſt, becauſe, as we learn from *Galen*, it is beſt, in bilious Diſeaſes, for the Urine and Excrements to appear pretty much colour'd. *Hippocrates*, *Lib. Prognoſt.* condemns the thin and fiery red Urine, as "indicating the Diſ-"eaſe to be in an abſolutely crude State; and that if it conti-"nues long, it is to be fear'd the Patient will not be able to ſup-"port himſelf till the Urine be concocted." And ſuch is its *Prognoſis*, becauſe a thin and fiery-red Urine is a Sign of a violent Diſeaſe, and an internal burning Heat, or vehement Inflammation, either in the Liver, Stomach, or Diaphragm.

In Inflammations of the internal Parts, and in acute Fevers, gold-colour'd Urine, of long Continuance, is very much to be ſuſpected, becauſe it indicates a high Phlegmon, or Inflammation, in ſome one or other of the Viſcera.

Black Urine, in acute Diſorders, is always attended with Danger, unleſs it be critically excreted, or flows in a copious manner, under a Suppreſſion of atrabilious Menſes, or a plentiful Hæmorrhage from the Noſe. In what Caſes black Urine is not

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to be dreaded we have shewed before; but in acute Diseases, if not excreted under the Circumstances before-mentioned, it imports Danger, as indicating Plenty of adust Blood, which it will be difficult for Nature to concoct. For this Reason *Hippocrates*, *Prognost.* pronounces *black Urine* more destructive than the *thin* and *fiery-red*, and worst in adult Persons; on the same Account he condemns black Clouds floating in *Urine* as a pernicious Sign.

Thin black Urine, excreted in small Quantities, 1 *Epid. Sect.* 2. *Stat.* 3. was one of the Symptoms which attended the Beginning of a very mortal epidemic *Causus*, or burning Fever, and portended a fatal Event.

Black Urine changing to *aqueous*, as in the Woman who lay ill near the cold Water, 3 *Epid. Sect.* 3. *Ægr.* 2. is destructive. Of her it is observed by *Hippocrates*, that on the eleventh Day she voided Plenty of *thin black Urine*, and on the twentieth great Quantities of *aqueous Urine* flow'd from her; on which *Galen*, in his Commentary, observes, that *black Urine* changed to *aqueous* is a mortal Sign. The Author of 1 *Prorrh. T.* 4. writes, that "in Persons under Perturbations and "Watchings, colourless *Urine*, with a black Enæorema, is phre-"nitic," that is, prognosticates a Phrensy; and we may say, a Phrensy of a malignant and mortal Nature, because proceeding from a black and adust Bile.

Black and *fetid Urine* is observed by *Galen*, *Comment. in Aph.* and *Com.* 2. *in Prognost. T.* 32. to be destructive. And continually *black*, *thin*, and *aqueous Urine*, with bad Signs, portend Death, as it happened in the Case of the Woman, 3 *Epid.* before-mentioned, of whom it is said by *Hippocrates*, at the End of his Account, that "her Urine was perpetually *black*, "*thin*, and *aqueous*, attended with a Coma, Loathing, De-"spondency, Watching, Proneness to Anger, Anxiety, and "melancholy Disorders of Mind."

But the worst of all is *black Urine* with a *black Sediment*. On this Kind of *Urine*, *Galen* passes his Judgment, *Lib.* 1. *de Crisibus*, *Cap.* 12. in the following Words: "Worst of all, "he says, is *Urine* black in its whole Substance, and I never "knew one Person recover after voiding such *Urine*; but it is "less pernicious if what subsides of it only be black, and less "so still, if no more than what floats in the Middle (the Enæ-"orema) be black, and much less pernicious than this last, is a "Cloud only of that Colour."

Oily Kinds of *Urine*, particularly such as have a Fatness on the Surface, resembling a Spider's Web, are condemned by *Hippocrates* in his *Prognostics*; and *Galen*, *Lib.* 4. *de Sanit. tuend.* says, they are pernicious, as indicating a Colliquation. Of *Pythion*, 3 *Epid. Sect.* 3. *Ægr.* 3. who lay ill near the Temple of *Hercules*, it is said, that "he voided an *oily* Kind of "*Urine*." Next to *black*, *oily Urine* is the worst, because it is a Sign of an extraordinary Colliquation, and that the igneous and febrile Estuation prevails over the natural Heat, as it did, for Instance, in the aforesaid *Pythion*, and the Woman of *Cyzicus*, *ibid. Ægr.* 14. who both voided first *black*, and soon after *oily*, or *fat Urine*.

No less pernicious is a *fat* Kind of *Urine* succeeding a *thick*, *turbid Urine*, which deposits no Sediment, because it signifies, that the igneous or febrile Heat, which first excited the Turbation, is not only undiminished, but very much increased. Such was the Circumstance of the *Urine* observed by *Hippocrates* in the Case of the Wife of *Dromeades*, and of him, who being severish, supped and drank freely, 1 *Epid. Ægr.* 11. 12. In the latter Case the Patient on the first Day voided *red*, *thick*, *turbid Urine*, which deposited no Sediment; on the fifth and seventh he excreted great Quantities of a *fat*, *oleous Urine*, and died on the eleventh Day of his Illness. In the other Instance, "the *Urine* on the second and third Day was *thick*, "*turbid*, and had no Hypostasis; on the fourth and fifth oily, "and on the sixth the Patient died."

In like manner Plenty of *thin* aqueous *Urine* without Contents, no way relieving the Patient, or vitious in any manner, in acute Disorders is very much to be dreaded. Thus *Hippocrates*, 3 *Epid. Sect.* 3. *Stat. pest.* describing the Symptoms of an epidemic *Causus* generally attended with a Phrensy, and very mortal, tells us, that the Patients excreted "great Quan-"tities of *thin Urine*, which were of no Service, nor had any "Relation to a Crisis." And afterwards, speaking of the same Subjects, he says, "The *Urine* was in vast Quantities, and not "in proportion to the Drink, but far exceeding it; and it had "besides an extraordinary Degree of Pravity, being neither "thick nor concocted, nor duly purged." The same Author, 3 *Epid. Sect.* 2. *Ægr.* 12. relating the mortal Case of the Woman who lay ill *in Foro Mendacium*, says, that on the tenth Day she voided great Quantities of *Urine*, which had no Hypostasis. And of the sick Woman by the cold Waters, he says, that her *Urine* was always much in Quantity, black, thin, and aqueous.

Much thick, or *turbid Urine*, not subsiding, and no way beneficial is, also, very much condemned, as are generally all great Quantities of *Urine* in the Beginning of acute Distempers, being justly esteemed of no Service, because at that Time nothing concocted can be excreted, nor any good Purgation be made.

Thin Urines in small Quantities, under burning Fevers, and acute Inflammations, are very bad, as indicating the Serum of the Blood to be consumed by the fiery Heat, and if the *Urine* has besides any manner of Pravity, it is so much the worse, as it proved in the Cases of the Wife of *Dromeades* before mentioned, the young Man of *Melibœa*, 3 *Epid. Ægr. ult.* and the Virgin Daughter of *Euryanactes*, 3 *Epid. Sect.* 2. *Ægr.* 6. in the two last of which the *Urine* was little, thin, and not of a good Colour; and in the first Case the *Urine* was little, thin, and oily. And in the Cases of the Woman who lived with *Tisamenus*, and another Woman who belonged to the Family of *Pantimides*, 3 *Epid. Sect.* 2. *Ægr.* 9. 10. the *Urine* was observed to be thin, and in small Quantities. All these Patients before mentioned died in a short time after the Appearance of this Symptom which we are speaking of.

An utter Suppression of *Urine* from a total Consumption of the serous Humidities of the Blood by the igneous and febrile Heat, or from an Extinction of all the Functions, as *Galen* expresses it, *Com.* 2. *in* 3 *Epid. T.* 4. is a fatal Prognostic in Fevers. Of *Silenus*, who lay sick of a mortal Fever, 1 *Epid. Ægr.* 2. *Hippocrates* observes, that "On the sixth Day his "*Urine* stopped, and that on the seventh he made no Water; "but that on the eighth he made Water in small Quantities "with Pain and a pungent Sensation." This is an Indication to us of a vehement Heat consuming the Serum of the Blood, and rendering it highly hot and acrimonious. In the Woman of *Cyzicus*, 3 *Epid. Sect.* 3. *Ægr.* 14. the Woman who was a Domestic of *Aristion*, and lay ill of a Quinsey, *ibid. Sect.* 2. *Ægr.* 7. and the young Man of *Melibœa* before-mentioned, there was a Suppression of *Urine* a little before their Decease from an Extinction of the Faculty.

Urine little in Quantity, acrid, and of no Benefit to the Patient is, also, mortal, as it is a Sign, that all the serous Humidity is consumed by the burning Heat which affects the internal Parts, and that the Humours are inflamed; and it was observed by *Hippocrates* of *Silenus*, that before his Death he voided a small Quantity of pungent acrid *Urine*. And I have myself, says *Prosper Alpinus*, observed these small Excretions of highly acrid and vellicating *Urine* in my beloved Wife *Guadagnina*, and several others, labouring under a mortal burning Fever, a little before their Decease.

Urine void of Contents, and having neither Hypostasis, Enæorema, nor Cloud, is bad, unless it be occasioned through Fasting, Fatigue, Watching, or an highly bilious State of Body, in which Circumstances it is a bad Sign for the *Urine* to appear without Contents, as we are taught by *Galen*, *de Crif. Lib.* 1. *Cap.* 4.

Thick Urine, without a Sediment, in acute Distempers, is affirmed by *Galen* to be mortal.

Urine with a *small* or a *crude* Sediment is bad: Such was that observed by *Hippocrates*, 1 *Epid. Sect.* 1. in those who laboured under an epidemic Kind of semitertian Fever. "The "*Urine*, he says, was thin, unconcocted, colourless, and lit-"tle in Quantity, or else thick, with a small Hypostasis, of "no laudable Constitution, and depositing a crude and un-"seasonable Sediment."

Galen, *Com. in* 4 *Aph.* 69. condemns *thick Urine* on account of the Heavineſs of its Sediment; and the Author of the Book *de Urinis*, *Cap.* 42. tells us, that sometimes a white and crude Humour is excreted with the *Urine*, and subsides to the Bottom like a good Hypostasis. And *Galen*, *Com.* 2. *in Prognost.* says, that a copious and crude Sediment is an Indication that the Disease is fomented by a Multitude of crude Humours, and by that means rendered difficult and dangerous; for the same Reason he absolutely condemns a thick and gross Hypostasis, *Com. in* 4 *Aph.* 69. Of such an Hypostasis is *Hippocrates* to be understood, 7 *Aph.* 31. where he says, "That an Hypostasis with a branny Sediment *(Crimnodes)* in Fevers, indicates "that the Disease will be of long Continuance." We have already observed from *Galen*, *Lib.* 1. *de Crif. Cap.* 12. that those thick Sediments, which the *Greeks* call *Crimnodes*, signify a great Colliquation, and therefore in acute Diseases are mortal. The same Author, *Com. in* 7 *Aph.* 31. speaking of those Sediments, he says, "It appears then by these Examples "[*Silenus*, and the sick Man in the Garden of *Dealces*] that "whenever Patients void an *Urine* with this branny Sediment, if "ever they recover, it is but very slowly; but if the Disease "be mortal, they die in a very short time." *Galen* therefore pronounces such *Urine* destructive, by hinting to us, that great Numbers whom it concerns, are destroy'd before the Disease is protracted to any considerable Length; and that whoever happen to escape, recover with much Difficulty, and not till after under-

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undergoing a long and tedious Sickneſs; and for this very good Reaſon, becauſe ſuch a Diſpoſition as is the Cauſe of theſe Excretions by *Urine*, requires a vaſt deal of Concoction. *Hippocrates*, *Lib. Prognoſt.* highly condemns the *Crimnodes* Hypoſtaſis; ſuch an Hypoſtaſis had the *Urine* of *Silenus*, 1 *Epid. Ægr.* 2. who died on the eleventh Day; and that of the ſick Perſon in the Garden of *Dealces*, 3 *Epid. Sect.* 1. *Ægr.* 3. in whom the Diſeaſe came not to a perfect Criſis till the fortieth Day.

We have before obſerved, that the *Sediments* reſembling the Pulſe called *Orobus*, the *ſquamous*, or *ſcaly*, and the *furfuraceous*, which the *Greeks* call by the reſpective Names of *Orobides*, *Petaloides*, and *Pityroides*, are mortal in acute Fevers, as proceeding from the ſame Colliquation, unleſs they are the Effects of ſome Diſeaſe in the Kidneys or Bladder. *Hippocrates*, in his *Prognoſtics*, paſſes his Judgment on all theſe Kinds of *Urine* in the following Words: "A *Crimnodes* (branny) "Hypoſtaſis in *Urine*, he ſays, is bad; but the *Petaloides* "*(ſquamous)* worſe; the white and the thin *Urine* have a con- "ſiderable Degree of Pravity; but the *Pityroides (furfura-* "*ceous)* is yet worſe." We know theſe Sediments are not the Effects of a Diſorder in the Kidneys from the Preſence of an actually incumbent, acute, and colliquating Fever, and the Appearance of no Sign by which we can judge the Kidneys to be injured.

A *looſe*, *diſcrete Sediment* is, alſo, diſapproved, as it indicates Crudity; and when an Hypoſtaſis of this Nature appears, we can never ſafely predict the Recovery of the Patient.

The ſame Judgment is to be paſſed on an *unequal Sediment*, according to *Hippocrates Prognoſt.* where we read, "If there "be an Intermiſſion, and the *Urine* be ſometimes excreted "pure, and at other times depoſites a white and ſmooth Hy- "poſtaſis, the Diſeaſe becomes the longer, and the Patient "the leſs ſecure."

A *reddiſh Sediment* is diſapproved by *Hippocrates*, *ibid.* becauſe, though it be in a good meaſure ſalutary, it indicates the Diſeaſe to be of long Duration. And the Author of the Book *de Urinis*, ſays, that a *reddiſh Sediment* ſhews a Defect of Concoction, but is no mortal Sign. A long Diſeaſe is however to be ſuſpected, and therefore ſuch a Sediment ſeems not free from Pravity, eſpecially in weak Bodies, and violent Diſeaſes, which ſoon exhauſt the natural Strength, and oftentimes before the Diſeaſe is concocted.

A *black Sediment*, or Hypoſtaſis, is very bad in acute Diſeaſes, and, if attended with black *Urine*, is affirmed by *Galen* to be the worſt of all Sediments; a black Enœorema is leſs pernicious, and a black Cloud leaſt of all the three.

Of *Enœoremas* the *ſublime* [μέ]ωρον] is diſapproved, as indicating a Delirium; an Inſtance of which we have in the Virgin of *Lariſſa*, 3 *Epid. Sect.* 3. *Ægr.* 12. where *Galen*, in his Commentary ſays, that this *Enœorema* ſignify'd a Delirium, not in itſelf, but by Accident, as it was an Indication of a flatuous Blood, ſince if there were no Flatuoſities in the Blood, the Enœorema would ſubſide to the Bottom of the Urinal. The Author of 1 *Prorrhet.* 4. 32. 37. makes a ſublime ſuſpended Subſtance in the *Urine* to portend a Delirium, and ſo much the more, ſays *Galen*, *Com.* 2. *in* 1 *Prorrhet. T.* 1. if it be attended with a Ringing of the Ears, or a Ceſſation of a Pain in the Hip, or ſome other inferior Part remote from the Viſcera.

A *black*, *looſe*, or *diſcrete* and *unequal Enœorema*, is bad; but not ſo bad as a Sediment of that Character, according to the Author of *Lib. de Urinis*, ſuppoſed to be *Galen*, *Cap.* 17.

A *black Cloud* is condemned by *Hippocrates*, *Lib. Prognoſt.* as is, alſo, a fat Subſtance ſwimming on the Surface of the *Urine*, becauſe it indicates a Conſumption. I have ſeveral times obſerved a Cloud of a circular Form elevated near the Surface in the *Urine* of thoſe who have died phrenitic, and thence concluded ſuch an Appearance to be a pernicious Sign in acute and turbulent Fevers. If therefore the Contents of the *Urine*, though conſtituted according to Nature, are by an undue Quantity of Spirit elevated to the Surface, it portends ſome Diſorder, and that no inconſiderable one, of the Head.

To the fore-mentioned Characters of *bad Urine* we may add, that Excretions of *Urine* not remembered, or not perceived by the Patients themſelves are, alſo, of bad Signification. Thus, 1 *Prorrhet.* 29. we read, that "a Flowing of *Urine* "from a ſick Perſon without his remembering it, is pernicious;" for it indicates, as *Galen* ſays in his Comment on the Place, a Deprivation of all Senſe of the natural Functions.

There remains one thing which highly deſerves our Remembrance on this Head, and is as follows: In many very deſtructive Fevers, the *Urine* in Colour, Subſtance, and Contents, appears like the *Urine* of Perſons in Health, and on that Account is eſteemed and pronounced laudable by the miſtaken and unexperienced Phyſicians, though at the ſame time it portends inevitable Death, by indicating to us that the Bile, by which the *Urine* is coloured, has its Courſe wholly diverted upon the Brain, or one of the Viſcera, and that nothing of the noxious Humours is excreted with the *Urine*, which is obſerved by Phyſicians to be highly deſtructive in Phrenſies, and, alſo, in a Pleuriſy and Peripneumony. *Proſper Alpinus de Præſag. Vit. & Mort. Ægrot.*

URINACULUM. The URACHUS.

URINALIS HERBA. A Name for the LINARIA. *Blancard.*

URINARIUS. The ſame as URETICOS.

URNA. A Meaſure of Capacity among the *Romans*, derived, according to *Varro*, *ab urinando*, "from Diving," becauſe, as he ſays, *in aqua haurienda urinat, hoc eſt, mergitur ut Urinator*, "in drawing of Water it *dives*, or is immerg'd "like a *Diver*." It is the fortieth Part of the *Culeus*, and half of the *Amphora*, *Columella*, *Lib.* 3. *Cap.* 3. *Voluſius Mætianus*, *Columella*, *ibid.* ſpeaks of Vineyards, which yielded ſix hundred *Urnæ* the *Jugerum*, which is at the Rate of above fifty-four Hogſheads and an half to our Acre. *Arbuthnot of Weights and Meaſures.*

UROCRISIA, or UROCRISIS, οὐροκρισία. The Judgment formed of Diſtempers by the Urine; from οὖρον, Urine, and κρίνω, to judge.

UROCRITERIUM. The ſame as UROCRISIA.

UROCRITICA. The Signs taken from Urine.

UROGALLUS, *J. Jonſt.* Tetrao. *Ariſtotel.* A Species of Pheaſant; there are two Kinds of this Bird, the great and the ſmall; the firſt is as big as a Turkey-cock, with a black Head, and ſhort Beak, a Neck almoſt a Foot long, and blackiſh and reddiſh Feathers; the ſecond, or ſmaller Sort, is called the *Mountain Pheaſant*. Theſe Birds live in Northern Countries, and are ſaid to keep themſelves for two or three Winter Months under the Snow; they are very good to eat.

Their Fat is emollient, reſolvent, ſtrengthening, and nervine. *Lemery des Drogues.*

UROMANTES, from οὖρον, Urine, and μάντις, a Prophet. A Water-caſter; or, in the vulgar Phraſe, a Piſs-Prophet.

UROMANTIA. The ſame as UROCRISIA.

URON, οὖρον, Urine. See RENES, and URINA.

UROPYGION. See ORRHOPYGION.

UROSCOPIUM. An Inſpection of the Urine.

URSUS. Offic. Schrod. 5. 312. Raii Synop. A. 171. Schw. Quad. 131. Aldrov. de Quad. Digit. 117. Jonſ. de Quad. 86. Charlt. Exer. 14. Geſn. de Quad. Digit. 941. THE BEAR.

The Parts of this Animal, which are uſed in Medicine, are the *Fat* and the *Gall*. The Fat is emollient and diſcuſſive, and is of principal Uſe in the Alopecia; it cures, alſo, Pains of the Gout, the Parotides, and other Tumors, and heals Ulcers in the Legs. The *Gall* is recommended to be taken inwardly for the Epilepſy, Aſthma, and Jaundice. Outwardly it is of Service in cancerous and ſpreading Ulcers, the Toothach, Dimneſs of Sight, and other like Diſeaſes. *Schroder.* The *Skin* is good for a Perſon bitten by a mad Dog to lie upon; and ſerves inſtead of a Rug to Travellers in the Winter-ſeaſon. *Schwenhfeld.*

URTICA.

The Characters are;

The Stalks are not branched. The Leaves on the Stalks grow oppoſite by Pairs, and are ſerrated, triangular, and in the *European* Kinds ſet with ſtinging Spines. The Flower is apetalous, ſtamineous, male, ſeated, for the moſt part, in a tetrapetaloidal cruciform Calyx, and having a Calycule in the Middle. The Stamina are ſometimes four, ſometimes more, and the Teſticules are parted into foliaceous Planes. The Fruit generally grows on a Plant diſtinct from that which bears the Flower, and is either a bivalve Capſule, full of Seed, and conſiſting ſometimes of a Collection of Globules, or a Pincer-ſhaped Subſtance holding the Seed in its Gripe, and furniſhed with a filamentous Tube and Calycule. There are found Ovaries, alſo, in the Male Plant; ſo that there are Male, Female, and Hermaphrodite *Urticæ* or Nettles.

Boerhaave mentions eight Sorts of *Urtica*; which are,

1. Urtica; maxima; racemoſa; Canadenſis. *H. R. Par.*

2. Urtica; urens; maxima. *C. B. P.* 232. *Tourn. Inſt.* 534. *Boerh. Ind. A.* 2. 105. *Urtica.* Offic. *Urtica racemifera major perennis.* Raii Synop. 54. *Urtica major vulgaris.* J. B. 3. 445. Raii Hiſt. 1. 160. *Urtica major vulgaris & media ſylveſtris.* Park. 440. *Urtica urens.* Ger. 570. Emac. 706. COMMON STINGING-NETTLE.

The common Stinging-nettle has a creeping ſpreading ſlender Root, full of Fibres, ſending forth ſquariſh Stalks, a Foot and an half, or two Feet high, having two oblong ſharp-pointed Leaves growing on long Foot-ſtalks, deeply ſerrated about the Edges, and covered, as well as the Stalks, with ſhort ſtinging Hairs, that cauſe a Burning and Itching in the Fleſh. The Flowers

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are small and staminous, growing on long slender Bunches; some Plants bearing larger Flowers, and no Seed, and others small round Seed, and smaller Flowers. They grow everywhere in too great Plenty. The Roots, Leaves, and Seed are used.

They are cooling and restringent. The Juice is good for all Kinds of inward Bleedings, Hæmorrhages, and Fluxes. A Tent dipt into it, stops the Bleeding of the Nose, or of Wounds. The Root is diuretic, and are accounted a Specific for the Jaundice. The Seed is commended for Coughs, Shortness of Breath, and Obstructions of the Lungs. *Miller's Bot. Off.*

The Leaves of this Species of Nettle have an insipid, glutinous Taste, and give no Tincture of Red to the blue Paper; the Roots stain it very little; they are insipid also, but a little styptic; from which we may conjecture, that the Nettles contain a Salt resembling that which is naturally in the Earth, that is to say, composed of Sal Ammoniac, Nitre, and Marine Salt; but in these Plants it is clogged with a great deal of glutinous Phlegm, and united with abundance of Sulphur and terrestrial Parts: For,

By the chymical Analysis we obtain from the Nettles some volatile concrete Salt, a great deal of Sulphur and Earth, and several Liquors, which give a greater Indication of an acrid than an acid Salt; so that it is very likely, that the Phlegm of these Herbs is thickned rather by the terrestrial Parts, than by the Acid: But this thick Phlegm, which is very considerable, is entirely destroyed by the Fire. Nevertheless, it is no Wonder, that the Nettles should be detersive, diuretic, and good to restore the Motion of the Fluids; for this glutinous Phlegm only moderates the great Activity of the acrid Salt, and of the Sulphur.

The Juice of Nettles depurated either of itself, or by gentle boiling it up, stops the Spitting of Blood, and the Flux of the Piles: It is very good for the Dysentery and Fluor Albus. The Cataplasm of Nettles is emollient and resolvent, and consequently good to dissolve Tumors accompanied with an Inflammation; it relieves the Gout, and dissipates sometimes malignant Ulcers, and cold Tumors. The Leaves of Nettles may be taken after the manner of Tea, for the Stone and Gravel; some drink the Wine in which they have been infused. The Roots of Nettles preserved with Sugar, procure Expectoration in an old Cough, Asthma, and Pleurisy, especially if the Leaves be applied as a Cataplasm upon that Side where the Patients feel their Pain: Some drink their Juice for the same Diseases. The young Shoots of Nettles, taken in Broths, purify the Blood. The Conserve of their Clusters, and the Extract of the whole Plant, have the same Virtues. The Ptisan of Nettles is very good in a malignant Fever, Small Pox, or Measles; Emulsions may be made with the Water and Seed of this Plant. *Martyn's Tournefort.*

All Nettles are diuretic and lithontriptic, and are said to have a particular Antipathy to the *Cicuta*, and *Hyoscyamus*. Eaten as a Green, they loosen the Belly, cleanse the Kidneys, expel the Stone, and promote Expectoration, and the Eruption of the Measles. The good Wives in our Country use to gather the fresh Buds of Nettles, and the Leaves at their first coming forth in the Spring, and boil them in Broth, to purify the Blood. The Juice of the Herb, or a Syrup prepared of it, are very effectual in Spitting of Blood.

Take of the Juice of Nettles, four Ounces, for five or six Days together in the Morning fasting, and boil the Nettles in Broth. This Remedy has recovered those who have been left by the Physicians.

A Woman who had a Bleeding from a Vein opened in her Stomach, which returned upon her at every new Cold or Indisposition, found the same Medicine of most immediate Efficacy, when all others failed. The distilled Water, mixed with Spirit of Wine to a great Degree of Acidity, is admirably effectual in restraining an Hœmoptysis. *Hier. Rehlingerus*, and *Udalricus Jungius*, two Persons of Quality, who were both very subject to Hæmorrhages at the Nose, used, as a never-failing Remedy, to take a Piece of the white, ligneous, and round Root of the Red Nettle, and put it up their Nostrils, snuffing up some Water.

Externally it is of Service in putrid, gangrenous, and malignant Ulcers, and discusses Hardnesses and Tumors, and represses an Inflammation of the Uvula. The lesser *Urtica* bruised, or the Juice of the same put up the Nostrils, stop their Bleeding.

The Seed of the *Urtica*, especially the *Roman* Kind, is of frequent Use in Affections of the Lungs, as the Asthma, stubborn Coughs, the Pleurisy, and Peripneumony. A Conserve prepared of the Bunches of the Flowers and of the Seeds, is a most effectual Remedy in the Stone of the Kidneys, Affections of the Thorax, and Spitting of Blood. That the Seed of *Nettles* provokes Urine and the Menses, and stimulates to Venery, is agreed by Physicians; whence it is commonly given by lewd Women to those who address them. The Root of the *great Nettle* is highly commended for the Jaundice; the same boiled in Wine and Honey, is an excellent Medicine in old Coughs, and an Orthopnœa.

For the burning Heat, Pustules, and Itching, excited by *Nettles*, the Remedies are Oil of Olives, Oil of Roses, the Juice of Tobacco, or a green Leaf of the same applied; and, to name no more, the expressed Juice of the Nettle itself, as *Parkinson* tells us.

An immoderate Flux of the Hæmorrhoids, after all manner of Remedies try'd in vain, and the Patient was very much weakened, has been cured only by the Juice of *Nettles* depurated by a slight Ebullition, given to the Weight of two Ounces with a little Sugar. Examples of this have been collected from *Riverius*, and other practical Writers of Medicine, by Dr. *Tancred Robinson*.

The People in my Country, says *S. Pauli*, know by certain Experience how to prevent the unseasonable Fermentation of their new Beer, and to defend it from the Thunder, by placing in their Vessels a very large Stinging-nettle, with some Bits of Steel. *Raii Hist. Plant.*

3. Urtica; urens; minor. *C. B. P.* 232. *M. H.* 3. 435.

4. Urtica; urens; pilulas ferens; prima Dioscoridis; semine Lini. *C. B. P.* 232. *Tourn. Inst.* 434. *Boerh. Ind. A.* 2. 105. *Urtica Romana.* Offic. *Urtica pilulifera folio profundius Urticæ majoris in modum serrato, semine magno Lini.* Raii Synop. 54. *Urtica Romana.* Ger. 570. Emac. 706. Park. 440. Raii Hist. 1. 161. *Urtica Romana sive mas cum globulis. J. B.* 3. 445. ROMAN NETTLE.

This Nettle has rounder Stalks, and darker-green Leaves, more deeply serrated, than the common Nettle; they are neither so large, rough, nor hairy, but full of small shining Prickles, that are rather more stinging and burning than the common. Towards the Top of the Branches, from the Bosom of each Leaf, arises a round Ball on a long Foot-stalk, about as big as a Pea, and thick set with sharp stinging Hairs, including several shining Seeds, in Shape like Linseed. It grows in several Places of *England*, as about *Yarmouth*, and in *Romney-Marsh*; but it is not very common.

This is much of the same Nature with the common Nettle; but the Seed is reckoned more pectoral, and of greater Service against Coughs, and Affections of the Lungs; but is very seldom used. *Miller's Bot. Off.*

It grows in sandy Places, and the Parts in Use are the orbicular, compressed, smooth, shining Seeds, which are of a blackish-red Colour, of a somewhat acrimonious Taste, with a kind of Fineness. They are frequently used in pulmonary Affections, the Asthma, stubborn Coughs, Pleurisy, and Peripneumony. *Dale.*

5. Urtica; altera; pilulifera; Parietariæ foliis. *H. R. Par.* 131.

6. Urtica; Romana; facie Urticæ vulgaris.

7. Urtica; pilulifera; folio angustiori; caule viridi; Balearica. *Salvadore.*

8. Urtica; Americana; caule rubro; folio læte viridi; splendente. *Boerh. Ind. alt. Plant.*

The Nettle is called *Urtica, ab urendo*, "from burning," because it is very burning when handled. The four first Species are furnished with small, slender Spines, of so flexile a Nature at the Extremities, that when they enter the Skin they easily bend; but when they penetrate the Flesh they cannot be drawn forth, but are there broken off as it were into Fragments, and excite an Inflammation and Vesicles, which continue till the Pieces are expelled.

The Decoction of the Leaves is aperitive, and commended against the Gout. The greenest and freshest Stalks are used to whip the Limbs affected with the Gout or Palsy, in order to excite an Inflammation in the external Parts. This Plant is of Service in Diseases of the Kidneys and Bladder, Coughs, Phthisis, internal Hæmorrhages, Hœmoptysis, Vomiting of Blood, an immoderate Flux of the Hæmorrhoids, and bloody Urine. The Leaves bruised and applied, resist a Gangrene, and a Decoction of them drank in the manner of Tea, is an excellent Laxative. *Hist. Plant. adscript. Boerhaav.*

URTICA ACULEATA A Name for the *Cannabina*; *flore purpurascente*, and for the *Cannabina*; *flore albo.*

URTICA HERCULEA. A Name for the *Galeopsis*; *procerior*; *fœtida*; *spicata.*

URTICA INERS. A Name for several Sorts of *Lamium*; it is, also, a Name for the *Galeopsis*; *sive Urtica iners*; *flore luteo.*

URTICA MORTUA. A Name for the *Galeopsis*; *lutea*; *amplioribus foliis*; *maculatis.*

URTICA MARINA. Offic. Charlt. Exer. 68. Schonef. Icht. 77. *Urtica.* Jonst. Exang. 54. *Urtica marina* 5 & 6. *Rondelet.*

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Rendeletii. C. B. P. 369. *Urtica rubra*. Rondel. 1. 530. Bellon. Aquat. 342. Geſn. 1039. Aldrov. Exang. 568. *Urticæ vel Pulmonis marini Species*. Mer. Pin. 194. SEA BLUBBER.

It ſwims on the Water, and is often caſt by the Tide on the Shore, being a round, compreſſed, pellucid Subſtance, reſembling a Jelly, with red Veins interſperſed. The Virtues are the ſame with thoſe of the *Lepus marinus*.

URTICATIO. A kind of chirurgical Operation, which conſiſts in ſtriking any Part of the Body with Nettles, in order to recall the natural Heat.

URUCU. See ACHIOTL.

URUCATU *Braſilienſibus*. *Marcgr*.

This is a Plant which grows upon the Tree *Urucari-iba* without a Root; but it has four or five Leaves, which are broad beneath, and make an oval Bulb, about four Digits in Length, and containing a fat, medullary Subſtance, of the Appearance and Conſiſtence of a factitious Ointment, cold to the Touch, of a white Colour, inclining to green, and interſperſed with many fine whitiſh Filaments. Above the Bulb the Leaves part, and become narrow, but ſhoot up to a Foot or more in Height, wider above, Tongue-ſhaped, and green like thoſe of the Squill; every Leaf has three Fibres extended according to its Length. It bears neither Flower nor Fruit, and has no Smell, as neither has its Ointment.

This Ointment is cold, and eſteemed very proper and effectual for mitigating Pain; and is, alſo, found by Experience to induce a Sopor. *Raii Hiſt. Plant*.

URUCURI-IBA. See PALMA.

URUMENA, ὑρόμενα. The Urine, or Subſtances diſcharged together with the Urine.

URU-PARIBA. See GUIRA-PARIBA.

URUS. The wild Bull.

USFIDA. The Scoriæ of Gold. *Rulandus*.

USNEA CRANII HUMANI. Offic. *Muſcus ex Cranio Humano*. Ger. 1374. Emac. 1563. Park. 1313. *Muſcus Cranio Humano innatus*. *Uſnea Officinarum noſtratium*. Raii Synop. 36. MOSS OF A DEAD MAN'S SCULL.

They find it frequently in *Ireland*, whence it is imported to us. The whole Plant, which is in Uſe, is commended by very many Authors for Hæmorrhages; and is an Ingredient in that celebrated Compoſition called *Unguentum armarium*.

There are two Sorts of *Uſnea humana*; the firſt, which is uſed in our Shops, is imported from *Ireland*, and is nothing but a ſmaller Species of the *Muſcus vulgaris terreſtris Adianthi aurei Capitulis*, and differs not from the Moſs which grows to Stones and Trees, which it exactly reſembles, ſo as not to be diſtinguiſhed from it neither by Form nor Smell. Mr. *Doody*, an Apothecary of *London*, and a very good Botaniſt, has obſerved it growing to the Bones of Horſes and Oxen lying in the Fields.

The other Species is cruſtaceous, and grows to Sculls after the Manner of the *Lichen petræus*, and ſpreads itſelf. And this Sort is prefer'd by Authors to the preceding, as it is ſuppoſed to be endued with a peculiar Virtue of ſubduing and removing ſeveral Kinds of Diſeaſes. *Ephem. Germ. Raii Hiſt*.

This Species of Herb which adheres to the Sculls of Carcaſes expoſed to the Air, is by different Authors recommended as highly beneficial in various Diſeaſes. Thus it is extol'd as a Specific in Epilepſies, and all Diſorders of the Head, in Hæmorrhages produced by whatever Cauſe, and in Dyſenteries. It is uſed internally, externally, alone, mixed with other Subſtances, and as an Amulet. It is an Ingredient in the *Unguentum Armarium*, *Magneticum*, or *Sympatheticum*. In Hæmorrhages it produces its Effects, if only held in the Hand. Thus *Boyle*, in his Specifics, informs us, that he himſelf had an Hæmorrhage of the Noſe ſtopt by uſing it in this manner. *Juncker*, in *Therap*. informs us, that it renders the Body ſo impenetrable as not to be pierced with a Muſket-bullet. Some affirm, that the Virtues of that Uſnea are greater which has been gathered from the Sculls, during a certain Poſition of the Stars; when, for Inſtance, the Moon is in the Increaſe in the Houſe of *Venus*, when ſhe is in *Piſces*, *Taurus*, or *Libra*. Others affirm, that the Uſnea gathered from the Heads of hang'd Perſons is beſt: But *Paracelſus* aſſerts, that what is found on the Sculls of Perſons broken on the Wheel, is no leſs valuable: See *Schrod. Ph. Hoffman*, *Cl. Schrod. Boecler. Ettmuller*, *Helmont*, *Barbet*, *Med. Paulli Quadrip. Konig. Valent. Muſ. Hildan. Grube in Arcan. Med*. informs us, that thoſe who greatly extol the Uſnea in Medicine, ſuppoſe, that the vital and animal Spirits of the deceaſed Perſon are collected in it, and by a certain medicinal Force derived to any Part affected in a living Perſon: But as every one knows, that a Carcaſe has neither vital nor animal Spirits, thoſe ſeem to be in the right who give no Credit to the peculiar Power of this Plant, or its ſpecific Virtues in removing obſtinate Diſorders. *Juncker*, in the Work already quoted, affirms, that the Virtues of this Plant are founded on Credulity, or ſome other Error. Beſides, the Force of Imagination may be ſuppoſed to co-operate ſtrongly with this Medicine, as *Boyle*, *de Specific*. thinks; where he informs us, that if a certain Perſon, when Blood was taking from him, took Uſnea in his Hand for the ſake of Curioſity, the Blood ceaſed to flow till he laid it aſide again. *Marx*, the celebrated Dealer in Aromatics, in *Nuremberg*, does not heſitate to affirm, that the Uſnea of the human Cranium is of no other Uſe but to be preſerved as a Rarity. And *Boecler* is of Opinion, that, as with the Bones of dead Bodies, ſo, alſo, with the Uſnea, many ſuperſtitious and impious things are done. But I am of Opinion, that in Hæmorrhages, where ſtyptic Tents, or Peſſaries, are expedient, the Uſnea mixed with other proper Ingredients, may produce happy Effects. Beſides, where exſiccant and aſtringent Medicines are proper, its Powder, whether uſed externally or internally, muſt certainly produce ſome Effect; for it is of a drying and aſtringent Nature. Thus I agree with *Pauli de Med. Corp. hum. Sect. 8*. where he ſpeaks in this Manner: "Though the Uſnea may "produce good Effects in Spittings of Blood, Hæmorrhages, "and other Fluxes; yet there is no Neceſſity why a Phyſi- "cian ſhould diſgrace his Profeſſion by preſcribing it, ſince "there are other Subſtances equally aſtringent, and which no "Patient will refuſe on account of the Horror and Nauſea "they produce." *Ettmuller* informs us, that ſome ſupply the Place of the true Uſnea with the Moſs of a Tile, which in Hæmorrhages of the Noſe, they immerſe in Vinegar, and apply to the Crown of the Head; whereas inſtead of the true Uſnea, which is rare, others uſe one of the artificial Kind, which they obtain in the following manner: They take the Moſs of large Meadow Stones, gathered in the Month of *April*; this, when gently dried, they reduce to a groſs Powder in a Glaſs Mortar, ſprinkling it with *Malmſey* Wine, or that of *Petrus Simon*, till it has acquired the Conſiſtence of a thick Poultice. Then with a Knife they ſpread this Preparation very thin on the Cranium of a Carcaſe broken on the Wheel. As it becomes gradually dry, they ſpread more of it on the Cranium, which in the open Air they expoſe to the Rays of the Sun, removing it when Rains come on. This they repeat till the Plant begins to flouriſh, and afterwards gather from it an Uſnea not inferior to that which grows ſpontaneouſly from the Scull. *Ludovici*, in *Pharm*. when treating of Vulneraries and Aſtringents, ſpeaks in the following manner: "Moſs may be every-where "found; and that obtained from the Oak, and the common "*Egyptian* Thorn, for medicinal Purpoſes, in Peſſaries for "Inſtance, Tents and Ointments are not inferior to the Uſnea, "gathered in the moſt ſuperſtitious manner, or even that grow- "ing in human Sculls." *Rieger*.

USRUB, or URSUB. Lead. *Rulandus*.

USTILAGO. Blighted Corn.

USTIO. Burning, either relative to the Simples of the *Materia Medica*; or to the chirurgical Application of the actual Cautery.

USTULATIO. The toaſting, or roaſting any moiſt Subſtance, in order to render it dry. It is, alſo, uſed with reſpect to Wine which is heated, or, as it is uſually expreſſed, burnt.

USUALIA MEDICAMENTA. Medicines which are in common Uſe.

USURAT. Tin. *Rulandus*.

UTERARIA. Uterine, or hyſteric Medicines.

UTERINUS FUROR.

The *Furor uterinus* is a Species of Madneſs proceeding from an ardent and inordinate Deſire of Coition, which deprives the Patient of the Uſe of Reaſon, ſo that ſhe ſpeaks all manner of obſcene Words, and abandoning all Shame invites, by all Sorts of immodeſt Geſtures and Expreſſions, the Men to venereal Embraces.

This immoderate Deſire of Copulation is produced by the Plenty, Acrimony, and Heat of the uterine Juices, exceeding the natural Bounds, and creating an extraordinary Turgency in the ſeminal Veſſels, which ſtimulating, and in a manner inflaming the genital Parts, excites a vehement and unruly Appetite to venereal Commerce. From the ſame Matter and Fomes aſcend Vapours to the Brain, which diſturb the Reaſon, and interrupt the Uſe of it, tho' indeed the furious Deſire of Coition alone, without the Aſſiſtance of Vapours, might very well be ſuppoſed to produce the ſame Effect, ſince all violent Paſſions are known to create the like Diſturbances in the Mind, and particularly an inordinate and extravagant *Love*, which has the Name of *Eroticus Affectus*. [See AMOR].

The Juices acquire theſe Qualities by long Retention in hot and ſalacious Bodies; for which Reaſon, this Affection is proper to Virgins, and young Widows, tho' it may poſſibly happen to young Wives, whoſe Huſbands are either impotent, or hated, and not qualified for a ſufficient Depletion of the Spermatic Veſſels, or ſatiating the venereal Deſires.

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Some are of Opinion, alſo, that the Juices putreſy, and contract a malignant Quality, productive of thoſe ſevere Symptoms. But they will find it difficult to ſhew the Difference between the *Furor uterinus* and the *Hyſteric Paſſion*, which owes its Original to corrupted and malignant Juices. For the various Degrees of Putrefaction create different Degrees of Malignity, whence ariſes a great Variety of Symptoms; yet the manifeſt Qualities of the Juices, ſuch as its Redundance, Heat, Acrimony, and immoderate Turgeſcence, together with the exceſſive Heat of the genital Parts, are ſufficient to excite this Affection.

The Cauſes productive of this Diſorder are hot, copious, and acrimonious uterine Juices, Youth, a ſanguine and bilious Temperament, participating of an aduſt Quality, and atrabilious Food of bad Juice, rich and plentiful Living, and eſpecially ſpiced and high-ſeaſoned Diſhes, with the frequent Smell of Spices, as Nutmegs, Cubebs, and the like, long Sleep, and on ſoft Featherbeds, the Courtſhip and Careſſes of Lovers, the Reading of obſcene Books, Dancing, and other Pleaſures and Sports enjoy'd in Company with young Perſons.

The Diagnoſis of this Affection is eaſily formed from the Premiſes; but becauſe it comes on gradually, and by ſlow Steps, its Progreſs is to be explained. In the Beginning, while Reaſon is yet entire, the Patient becomes more ſad and ſilent than ordinary, has a wanton Caſt of the Eye, and a red Colour in the Face, which is heightened at Intervals, and eſpecially at the Relation of amorous Adventures; at which Time the Pulſe and Reſpiration are altered, through Sympathy of the Heart. Hence *Galen* boaſts, that he had diſcovered the mad and ungovernable Paſſion of Love in Women by the Pulſe, which ſuddenly alters, and beats in various Manners at the Sight, or recalling to Mind the beloved Object. In Proceſs of Time, as the Diſorder increaſes, ſhe begins to be quarrelſome, and to ſhed Tears, and now-and-then to burſt into Fits of Laughter, and to ſpeak many things inconſiſtent or indecent; from which, however, nothing certain can be inferred: After ſhe repents, and is ſorry for what is paſt, till the Return of another Paroxyſm, which happens, according to the irregular Motion of the Matter, without any certain Period. When the Diſeaſe is arrived at its Height, the Patient invites the Men to venereal Commerce openly and in a public Manner, and talks of venereal Affairs in coarſe and common Terms, calling Things by their proper Names.

As to the Prognoſis, the Diſeaſe is curable if treated in Seaſon; but if ſuffered to continue for a conſiderable Time, till it has taken firm Root, it degenerates at laſt into a true Mania.

There is great Hope of Recovery when the Intervals begin to be long, when the emaciated Body begins to recover Fleſh, and when the Patient is not much affected or diſturbed at the Mention of Love Affairs.

The Cure of this Affection is to be directed with a View to the Correction of the hot Diſtemperature of the Viſcera, particularly the Uterus, and of the Blood and uterine Juices, and to the Evacuation of the acrid Humours, and ſeminal Matter. Theſe Intentions are anſwered by the following Method:

Firſt, then, we are to begin with Phlebotomy, and repeat the ſame ſeveral times, and as often as the Strength will permit, that the whole Maſs of Humours, and the Uterus itſelf may be refrigerated, and a Revulſion of the fervid Blood from the Veins of the Uterus procured.

If there be a Suppreſſion of the Menſes in the Caſe, the Veins are to be opened in the inferior Parts, in order to provoke that Courſe of the Humours which Nature has appointed.

If the Blood ſeems to tend towards the hæmorrhoidal Veins, which is known by their Swelling and Redneſs, theſe Veſſels are to be opened with Leeches.

After this, Cathartics are to be adminiſtered of the milder Kind, and ſuch as evacuate Bile or Melancholy, as either of them moſt abounds.

After the Uſe of Purgatives are required Julaps preparatory of the peccant Humours, or ſuch as are refrigerating and gently opening, to be uſed three Days.

Soon after this, a pretty ſtrong Purge is to be given in order to evacuate the obſtinate and deeply fixed Humours. For this Purpoſe the ſame Cathartics as are preſcribed in a Mania, are here, alſo, proper to be uſed, and to be repeated at Intervals.

After repeated Purgation, in order to the Refrigeration of the Uterus and the whole Body, and to allay the Heat of the Humours, the following Bath will be of excellent Service, being frequently uſed during the Courſe of the Diſtemper:

Take of Leaves of Lettuce, Willow, Water-lily, the Vine, Purſlane, Navelwort, each one Handful; the Flowers of Violets, Water-lily, and Roſes, each two Handfuls: Boil them all together for a Bath, which the Patient is to uſe warm, without ſweating, twice a Day, long before and after the Times of Eating.

But ſince an entire Bath cannot eaſily be continued for many Days together, a Semicupium at leaſt of the Decoction aforeſaid, or even of ſimple Water, is frequently to be uſed quite tepid, or warm; for the principal Part of the Cure conſiſts in potently refrigerating the Uterus. And this is confirmed by a remarkable Caſe related by *Harvey* in his Treatiſe *de Partu*, of a Woman of Quality, who was delirious for above ten Years from a *Furor* and *Melancholia Uterina*. After trying all manner of Remedies without Effect, ſhe happened to be ſeized with a Falling down of the Uterus, which was not ſuffered to be replaced till its hot Diſtemperature was throughly qualified by the external Cold. The Succeſs anſwered Expectation, and the Lady recovered the perfect Uſe of her Reaſon in a ſhort time, after which the Uterus was reduced to its proper Situation.

For the farther Refrigeration of the Body, it will be convenient to drink Whey for many Days together.

In ſhort, all thoſe Remedies which are preſcribed for the Cure of the Hypochondriac Affection and Mania, are of Service, alſo, in this Diſorder; Reſpect being had to its Origin, whether from Bile or Melancholy.

To all the Remedies before-mentioned, may be added ſuch as are endued with a ſpecific Property of extinguiſhing and refrigerating the uterine Juices; among which are the following Preparations:

Take of Leaves of the Water-lily, Willow, and Agnus Caſtus, each four Handfuls; Lettuce, Purſlane, Navelwort, each one Handful; the Four greater cold Seeds, thoſe of Lettuce, White Poppy, each half an Ounce; Seeds of Dill, two Drams; Flowers of Water-lily, and Violets, each one Handful: Bruiſe them freſh together, ſprinkling them with the Juice of Lemons, and diſtil them in *Balneo Mariæ*, and to each Pint of Water add a Dram of Camphire: The Doſe is an Ounce, to be taken frequently:

Or,

Of the forementioned Simples, or ſome of them, may be prepared a Decoction, which may be taken at ſeveral Doſes, ſweetened with Sugar, with an Addition of a little Camphire.

Or,

An Emulſion may be prepared of the Four greater cold Seeds, thoſe of Lettuce, and White Poppy, extracted with Waters of the Water-lily, Lettuce, and Willow, with Syrup of Violets.

Opiates may, alſo, be preſcribed of the following Forms:

Take Conſerves of the Flowers of Water-lily, Violets, and the Vitex, or Agnus Caſtus, each half an Ounce; Conſerve of Roſes, an Ounce and an half; Stalks of Lettuce preſerved, one Ounce; Coral, and Emerald prepared, each one Dram: Make them into an Opiate with Syrup of Violets, and Water-lily.

When the Delirium is at its Height, Medicines which procure Sleep are of greateſt Service, both internal and external, and ſuch as are preſcribed for the Cure of the Phrenitis and Mania.

During the whole Courſe of the Diſeaſe, cooling Clyſters, and gentle Cathartics are to be uſed, avoiding the ſtronger and more acrid Purgatives, which by Exagitation of the Matter contained in the Uterus, or its Veſſels, may cauſe an Exacerbation of the Symptoms, as is uſually the Caſe.

Injections may, alſo, be made into the Uterus of the Decoction of thoſe Herbs which have been preſcribed for Baths, and other Remedies; and with thoſe Injections Salt of Lead may properly be mixed.

Clyſters of Oxycrate frequently adminiſtered are of good Effect.

External Remedies are cooling Liniments, applied to the Loins, Pubes, and Perinæum, prepared of Oil of Water-lily, Ointment of Roſes, or the White cooling Ointment, with the Juice of Nightſhade, Henbane, and Water-lily diſſolved, with an Addition of a little Camphire.

A leaden Plate perforated is to be continually worn upon the Kidneys.

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With regard to the proximate Cauſe of this Diſorder, ſince the Evacuation of the acrid and corrupt Juices may remove the ſame, the moſt proper Means would be, in the Beginning of the Diſeaſe, before the Fit of Delirioufneſs becomes very manifeſt, or in ſome more lucid Interval, to diſpoſe of the Patient in Marriage to a young and luſty Man, by whoſe Embraces the Uterus being ſatiated, and the Matter contained in its Veſſels diſcharged, the Cure is effectually accompliſhed.

Peſſaries may be prepared of Leaves of *French* Mercury bruiſed, with a little Myrrh, or Powder of Birthwort. Theſe are to be introduced while the Patient is in the Bath, that the Uterus may not be over-heated, and after an Hour's Time be removed. And ſoon after Injections are to be made into the Uterus of Whey, or a Decoction of Barley, with a little Juice of Nightſhade, Houſleek, or of Hemlock, which laſt Herb is peculiarly recommended in this Affection.

For Expurgation of the Juices, the following Bolus is of great Service:

Take of *Venice* Turpentine, three Drams; Troches of Agaric, half a Dram; Seeds of Carrot, Hemp, Powder of Wood of Aloes, each eight Grains: Make them into a Bolus with Sugar.

If the Diſorder continues, Cauteries are to be applied to the Legs; for there is no Method more effectual than to derive the Matter to the inferior Parts by means of thoſe Drains.

If the Spleen be affected with a Tumor, or Obſtructions, as is often the Caſe, it is to be treated with Remedies properly adapted to thoſe Affections.

And, in the laſt place, becauſe the Brain and Heart are great Sufferers in this Diſeaſe from Vapours aſcending thither from the Uterus, proper Relief is to be provided for each Part; the Brain is to be eaſed as much as poſſible by Frictions, and Ligature on the inferior Parts, and Application of Cupping-glaſſes to the Hips and Groins; and the Heart muſt be relieved by Epithems, both liquid and ſolid, ſuch as are preſcribed in Decays of the vital Forces. *Riverii Prax. Med.*

UTERUS. The Womb.

In inveſtigating the curious Structure of the Uterus, we ſhall firſt take notice of the ſurpriſing Force, or elaſtic Power, of its muſcular Fibres and Veſſels, which are capable of being incredibly diſtended, and of ſpontaneouſly returning to their former State. This is principally obvious in pregnant Women, whoſe Uterus is ſometimes incredibly diſtended by a large Fœtus, or Twins, and the Secundines and Waters; but when theſe are excluded, the Uterus is again leſſen'd, and contracted, ſo as hardly to be an hundredth Part ſo big, as during Geſtation: And though other Parts of the Body, ſuch as the Skin and Scrotum, when diſtended by a dropſical Tumor, or the Stomach and Inteſtines when turgid with Flatulences, are capable of yielding in a ſurpriſing manner, when acted upon by an interior Force, and of contracting themſelves into their natural State and Space, when that Force ceaſes; yet this Power of Dilatation and Contraction is no-where ſo conſpicuous as in the Uterus. Beſides, what is ſtill more ſurpriſing is, that though the Uterus, which, out of a State of Geſtation, is hardly equal to a Pear in Figure and Bulk, grows to ſo vaſt a Largeneſs, yet its Thickneſs is not leſſen'd by this Expanſion, but rather remains the ſame.

Beſides, no Part of the human Body is furniſh'd with ſuch numerous Veſſels as the Uterus. The firſt of theſe Veſſels are, the ſpermatic Veins and Arteries, which are contiguous to the *Ovaria*; and, being in numerous Ramifications convey'd to the Bottom of the Uterus, terminate there, which is ſufficiently obvious, from this, that, by blowing into theſe ſpermatic Veſſels, the Bottom of the Uterus is diſtended. After the ſpermatic Veins and Arteries, the next moſt conſpicuous Veſſels are, the Ramifications of the hypogaſtric Artery and Vein, which run to the middle and inferior Part of the Uterus, as, alſo, to the Vagina; to which, alſo, eſpecially where it is connected with the Rectum, are diſtributed the Ramifications of the external hæmorrhoidal Veins, which are by an Anaſtomoſis join'd with the Ramifications of the internal hæmorrhoidal Veins; and, which is particularly to be obſerv'd, theſe Blood-veſſels, copiouſly diſtributed through the Body of the Uterus, not only run everywhere, in a winding incurvated Direction, but are, alſo, very ſmall in Virgins, barren Women, and ſuch as are not with Child; notwithſtanding which, after Conception, in pregnant Women, theſe Veſſels are ſo enlarg'd, both with reſpect to Length and Breadth, that their ſmalleſt Ramifications become capable of admitting a large Probe.

Beſides the large Congeries and winding Direction of the Veſſels in the Uterus, there is ſo remarkable and ſingular a Concurrence of theſe Ducts, that there is no-where ſo frequent and great an *Anaſtomoſis* or Conjunction both of arterial and venous Veſſels diſtributed from different Parts of the Body: For when the ſpermatic Veſſels are blown up, the hypogaſtric are, alſo, dilated; and when theſe are expanded, the former are ſo too. The external Hæmorrhoidals, when blown up, diſtend the internal, which, when expanded, dilate the former: Beſides, there is a manifeſt Connection obſerv'd between the ſpermatic Veſſels of the Right and Left Side. But there is this peculiar in the exquiſite Connection of the Veſſels of the Uterus, that their Extremities terminate in ſuch a manner, as to form mutually communicating oval *Cellulæ* of different Bulks, which render the Subſtance of the Uterus ſpongeous and fungous, and which, in pregnant Women, are ſurpriſingly enlarg'd. Hence it is that the Uterus, eſpecially of a pregnant Woman, when cut tranſverſly, exhibits large and almoſt numberleſs Cavities: By means of this ſinuous and cavernous Conjunction of the Veſſels it is, that not only the Uterus in pregnant Women is greatly diſtended by the contain'd Blood, and its Compages, which was before tenſe and conſtricted, render'd more lax and ſoft, but, alſo, that the Orifices of the Extremities of the Veſſels, which under the Membrane of the Uterus open obliquely into its Cavity, and through any of which, when Air is blown, it eaſily paſſes into the Cavity of the Uterus, are more dilated; by which means, the perforated Filaments of the vaſcular Membrane of the Chorion can receive Nouriſhment from them, and convey it to the Fœtus.

Nor in this anatomical Conſideration of the Structure of the Uterus, and eſpecially of its Veſſels, are we to forget, that not only the hypogaſtric Veins, which return the Blood, have Diameters as large again as the hypogaſtric Arteries, but, alſo, that the ſpermatic Veins do not run ſtrait, but in a winding manner; ſo that if they were ſtretch'd out, their Length would amount to ſome Ells, and be three times greater than that of the ſpermatic Arteries. All theſe Circumſtances ſufficiently evince, that the Motion of the Blood through theſe Veins is ſlow, eſpecially ſince they are deſtitute of Valves, by means of which, in other Parts of the Body, the otherwiſe ſlow Return of the Blood to the Heart is greatly promoted and aſſiſted. With reſpect to the Structure of the Uterus, it is, alſo, remarkable, that it is deſtitute of Fat, with which other internal Parts are copiouſly cover'd, for this Reaſon, no doubt, leſt its Membrane, being furniſh'd with adipoſe Veſſels, ſhould hinder the free Expanſion and Contraction of its Sides.

From what has been ſaid, many difficult Phenomena, with reſpect to the natural and preternatural State of Women, may be more clearly explain'd; many Errors in the pathologic and therapeutic Parts of Medicine detected; and a ſurer and more compendious Method of treating Diſeaſes, ariſing from Indiſpoſitions of the Uterus, eſtabliſh'd.

To begin, then, with the moſt uſual Diſorder of this kind: It is ſufficiently known, that, every Month, Women, from the time of Puberty till they are pretty far advanced in Years, have a ſalutary Excretion of pure Blood from the Mouths of the Veſſels, whether diſperſed through the Uterus, or the Vagina; but when this Excretion is either totally ſuppreſs'd, too ſcanty, or returns at irregular Periods, violent and terrible Diſorders are produced; ſo that Phyſicians, in all Diſorders incident to Women, ought to have a juſt and careful Regard to the State of the menſtrual Diſcharge. But in ſpecifying the Cauſes of this Evacuation, Phyſicians run into different Opinions, ſince ſome aſſert that it is owing to a certain ſpecific Ferment; others, that it is produced by a certain determinate Effort of an intelligent Principle, endeavouring to expel what is diſagreeable to Nature: Others aſſert, that this Evacuation is produced by the Influence of the Stars, and eſpecially of the Moon; whilſt ſome maintain, that it is the Effect of a Redundance of Blood, which is denied by others; becauſe, ſay they, by Veneſection, which hinders the Generation of a Plethora, this menſtrual Diſcharge cannot be totally remov'd, or check'd.

But the Perſon who carefully conſiders the mechanical Structure of the Uterus, with reſpect to its Veſſels and Fibres, will eaſily perceive, that the true Cauſes, and even the Effects, of this periodical Evacuation, are expreſſive of the greateſt Wiſdom and Contrivance in Providence: For as the Uterus, on account of the numerous Veſſels with which it is furniſh'd, and their winding Direction, as, alſo, on account of the eaſy and ſurpriſing Dilatation, of which it is capable, affords a fit Receptacle for the redundant Blood; hence, if this vital Liquor in Women, who are always greatly diſpoſed to the Generation of a Plethora, is, in proceſs of time, gradually accumulated in the uterine Veſſels, and not return'd in a due Degree and Proportion thro' the Veins, the vaſcular Sinuſes are fill'd and infarcted with it, till their Extremities, which terminate obliquely in the Uterus, being too much diſtended, at laſt open, and diſcharge a pure Blood into the Cavity of the Uterus, or the Vagina. But when a ſuffi-

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a ſufficient Quantity of the redundant Blood is evacuated, the Mouths of the Veſſels again collapſe, and are contracted; and the Plethora being diminiſh'd, the Circulation of the reſt of the Blood is render'd freer, not only through the Uterus, but all the other Parts of the Body. Thus, on account of the exquiſite Relation every thing in the animal Oeconomy bears to the Circulation of the Blood, this ſalutary Evacuation is produced.

Since, then, a Redundance of Blood is the principal Cauſe of the menſtrual Diſcharge, it is ſufficiently obvious, that thoſe Phyſicians commit a terrible Error, who, in Caſes where the Menſes are ſtop'd by previous Diſorders, or exceſſive Hæmorrhages from other Parts, endeavour to recal that Diſcharge by ſtrong, forcing, and emmenagogue Medicines; whereas their Intention ought rather to be, after the Diſorder is ſurmounted, to reſtore the Appetite and Digeſtion, and, by ſalutary Aliments, which are eaſily digeſted, and generate a laudable Chyle, to rouze and augment the depreſſed Sanguification; and, when this End is obtain'd, the Menſes again flow ſpontaneouſly.

But ſince the Structure of the Uterus, with reſpect to its Texture, contractile and expanſive Power, Largeneſs and Smalneſs, is not the ſame in all, but differs, with reſpect to Age, hereditary and native Conſtruction of the ſolid Parts, and Method of Life, it is abſolutely incumbent on a Phyſician, who endeavours either to judge of, or cure Diſorders ariſing from the Uterus, carefully to inveſtigate the Nature and Diſpoſition of that Part, and afterwards to treat the Diſorder by proper Remedies. Nothing is more frequent in Practice, than, when in Virgins, and tender Women, the Menſes do not return at their proper Periods, to adviſe Veneſection; and, after that, to preſcribe forcing Medicines, and even ſuch as excite a violent Turgeſcence and Commotion in the Blood; by which means the miſerable Patients are thrown into a worſe State than before; ſince a Chloroſis is brought on, and accompanied ſometimes with Convulſions, ſometimes with Diſtentions of the Limbs, or with ſlow Fevers, violent Head-achs, and other Diſorders, of a like Nature: This, in my Opinion, happens, for no other Reaſon, than that the Suppreſſion or ſcanty Diſcharge of the Menſes derives its Origin from the tenſe Stricture of the Fibres of the Uterus, and the exceſſive Smalneſs of the Veſſels, ſo that they are difficultly diſtended by the Blood: For it is certain, from Experience, that young and tender Girls, by the Abuſe of Acids, or by the too free Admiſſion of Cold to their inferior Parts, whilſt they ſit almoſt naked on the cold Ground, have contracted an anomalous State of the Menſes, accompanied with terrible Symptoms, and hardly capable of being cur'd.

If an irregular State of the Menſes proceeds from this Cauſe, forcing Medicines are not only uſeleſs, but, alſo, prejudicial; for when the Veſſels are contracted, and cloſed up, and the Blood thrown into a quick Motion and Ebullition, a greater Infarction and Obſtruction, and a Regurgitation of the Blood to the more noble nervous Parts, will happen, and, by that means, produce Spaſms and Convulſions. Nor is Veneſection in the Foot, in other Caſes highly beneficial for the Alleviation of the Symptoms, of any great Service; but frequently, on account of the greater Derivation it occaſions to the Uterus, confirms the Obſtruction, and hinders the Blood from being diſcharg'd from the Orifices of the uterine Veſſels. Almoſt the only Relief, in this Caſe, is found in tepid emollient Fomentations, and Baths, which relax the conſtricted Fibres. This Intention is excellently anſwer'd by Baths of pure light Rain-water alone, or by thoſe of the ſulphurated *Toeplitz* Waters, ſeaſonably uſed; but, internally, rejecting all hot, acrid, and balſamic Subſtances, let the Patient drink mineral Waters; and, if ſhe has not an Opportunity of doing ſo, the next moſt efficacious Medicines are, neutral Salts, of an inciding, aperient, gently diuretic, and laxative Quality, exhibited in a ſufficient Quantity of ſome proper Liquor. The moſt conſiderable Salts of this Kind are, Borax, *Sedlitz* Salts, the *Terra foliata Tartari*, a Solution of Crabs-eyes, the *Arcanum Duplicatum*; and, in Perſons of bilious Habits, Nitre is of uncommon Efficacy. But, if the *Primæ Viæ* are full of acid Sordes, the Liquor of the Salt of Tartar, with a ſmall Quantity of the Maſs of balſamic Pills diſſolv'd in it, affords the moſt ſurpriſing Relief.

But as the Suppreſſion or ſcanty Evacuation of the Menſes ariſe principally from a Narrowneſs, Compreſſion, and Stricture of the Arteries of the Uterus, ſo exceſſive Diſcharges of this Kind derive their Origin from the too great Largeneſs, Relaxation, and weaken'd Tone of the uterine Veſſels, and the Sinuſes form'd by them in the Subſtance of the Uterus, and from the ſlow Return of the Blood through the Veins to the Heart, occaſion'd by that means: For, if we except the Liver, there is no Part of the Body in which the Motion and Return of the Blood to the Heart is obſerv'd to be ſo difficult, as in the Uterus; which happens not only on account of the perpendicular Situation of this Part, with reſpect to the Heart; but, alſo, becauſe the Veſſels, and eſpecially the Veins, as we have already obſerv'd, run in a very winding and incurvated manner, through the Texture of the Uterus. Beſides, ſince, both on account of the Diſtenſion of the Uterus by the Fœtus, and the winding Direction of the hypogaſtric and ſpermatic Veins, the quick Motion of the returning Blood is greatly retarded, the Reaſon is obvious, why the Diameters of the uterine Veins ſhould be as large again as thoſe of their correſponding Arteries: So that we may reaſonably conclude, that four times as much Blood is contain'd in the uterine Veins, as in their Arteries. If, therefore, the venous Sinuſes, with which the Compages of the Uterus abounds, are preternaturally diſtended by a thick ſtagnant Blood, by this means the Blood, being ſtrongly convey'd through the Arteries, and denied a Paſſage through the Veins, it by its Quantity and Force at laſt opens the diſtended Orifices of the Veſſels, ſo that their Contents are copiouſly diſcharg'd.

From what has been ſaid we may eaſily underſtand why Virgins have more rarely exceſſive menſtrual Diſcharges, than Women who have brought forth Children, or ſometimes pregnant Women, in whom an exceſſive Hæmorrhage from the Uterus frequently proves the true Cauſe of Abortion: For it is ſufficiently known, that an abortive Excluſion of the Fœtus rarely happens without an exceſſive previous Hæmorrhage from the Uterus: For when, in pregnant Women, the venous Veſſels of the Uterus are preternaturally diſtended, by the copious Afflux of Blood, and when the Blood becomes grumous, and coagulated in the ſmall Cells of the Uterus, not only the Orifices of the Arteries, but, alſo, the infarcted Sinuſes, being open'd, and a convulſive Motion of the Uterus and adjacent Parts, without which an Abortion is not eaſily produc'd, happening, the Arteries and Sinuſes diſcharge a large Quantity of Blood with Impetuoſity, the Uterus becomes flaccid, the Placenta is ſeparated from the Filaments of the Uterus, and from the Apertures of the Veſſels, and, laſtly, the Fœtus, is excluded, two or three Days after the Hæmorrhage.

Hence pregnant Women, if in the laſt Months of Geſtation Nature attempts an Abortion with an exceſſive Hæmorrhage from the Uterus, are often in great Danger; nor is the Danger leſs, when the Excluſion of a mature Fœtus is preceded by a large Diſcharge of Blood. It is certain from Experience, that by this Misfortune, both the Mother and Infant are expoſed to the moſt imminent Danger, and unleſs the latter is brought into the World, both are deſtroy'd by the Hæmorrhage which cannot be ſtopt; for ſo long as the Infant, whether mature, or only an Embryo is retained in the Uterus, the Uterus, with its Veſſels, is not only greatly diſtended, but the Orifices of the Veſſels, on account of the more impetuous Afflux of Blood to them, being more opened, diſcharge a greater Quantity of Blood, which flows continually; whereas when the Fœtus is excluded, though the Mouths of the Veſſels opened by the Removal of the Secundines, with which they were before covered, diſcharge a large Quantity of Blood, yet when the Diſtenſion of the Matrix ceaſes, the open Orifices of theſe Veſſels collapſe, and, upon their Contraction, the Hæmorrhage ceaſes. In ſuch a Caſe, if we intend to preſerve the Mother, and prevent a mortal Hæmorrhage, nothing remains but to extract the dead Fœtus with all Expedition, or in the ſafeſt manner poſſible, to procure a ſeaſonable Abortion. This Doctrine is ſufficiently confirmed by *Bhonius*, in *Diſſert. de Abortu ſalubri.*

Though violent Affections of the Mind, eſpecially Frights, or intenſe Commotions, and Rarefactions of the Blood, ariſing from violent Exerciſe, too hot Baths, or the Uſe of draſtic Purgatives, Emetics, Sudorifics, or Emmenagogues, are the frequent Cauſes of Abortion, yet unleſs the Veſſels of the Uterus are preternaturally diſtended, relaxed, and infarcted by a Redundance of Blood, and the Matrix ſubject to ſpaſmodic and convulſive Motions, an Abortion is not greatly to be dreaded. Hence we may juſtly reckon it an Error, not only in the Vulgar, but, alſo, in ſeveral Phyſicians, who are of Opinion, that ſome Remedies infallibly procure Abortion; whereas it is certain from Experience, that Women of Pleaſure, when pregnant, cannot ſometimes obtain their wicked Ends by copious Veneſections, and the Uſe of draſtic Purrgatives, Emetics, and Emmenagogues, though when the Matrix is diſpoſed to a too ſpeedy Excluſion of the Fœtus, Abortion is procured by the ſlighteſt Cauſe. It is, therefore, a ſingular Proof of the Goodneſs and Wiſdom of Providence, that there are not found in Nature Remedies univerſally and infallibly capable of procuring Abortion, ſince by their means numberleſs Murders might be committed.

Nothing happens more frequently than that Women who have once ſuffer'd Abortion, are again eaſily ſubject to the like Misfortune, at the ſame Period of their Geſtation. It is, alſo, certain

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certain from Experience, that generally ſanguineous Maſſes, as large as an Hen's Egg, together with a large Quantity of grumous Blood, are excluded from the Uterus before Abortion happens, which is a manifeſt Proof, that the Strength and Elaſticity of the Uterus and its Veſſels, are ſo weakened by the precening Abortion, that they could not ſoon return to their natural State; for the ſo frequent Diſpoſition of the Uterus to Abortion is only to be accounted for from the exceſſive Relaxation and Dilatation of the Veſſels. And this Dilatation muſt be removed, and the Tone of the Veſſels reſtored by a prudent Phyſician, in the firſt Days or Weeks after Abortion, or natural Birth, by mild Laxatives, and temperate balſamic Corroboratives, duly repeated, or by a proper Diet; or if the Patient is plethoric, and has conceived, by proper Veneſection in the firſt Months of Geſtation; and unleſs theſe Meaſures are taken, this peccant State of the Uterus is not removed without great Difficulty; for, what is carefully to be adverted to, too great a Redundance of Blood with reſpect to the Veſſels and Strength, to which Women of ſpongious Habits, thoſe who are coſtive, and ſuch as lead a ſedentary Life, are principally ſubject, proves the material Cauſe of Abortion. Hence, if in the firſt Months of Impregnation the Blood is not by the provident Force of Nature diſcharg'd from the external Region of the Uterus, at the uſual Period, which frequently happens; or if too ſmall a Quantity of Aliments are taken into the Stomach, on account of Inappetence, Nauſea, Subverſion of the Stomach, and Uneaſineſs of the Præcordia, which in the firſt Months after Impregnation are very common Symptoms; or if in Proportion to the redundant Blood Veneſection is not duly performed, and the Patient's Body kept ſoluble by proper Remedies, the Fœtus rarely arrives at Maturity, and ſeldom is retained in the Uterus till the full Time.

There is, alſo, another no leſs fatal Error in Practice, which is an Attempt by frequent Veneſections in the Arm, the liberal Uſe of refrigerating, or actually aſtringent Medicines, ſuch as Opiates, and Narcotics, to put an imprudent Stop to menſtrual or lochial Diſcharges, either in Childbed Women, or ſuch as have ſuffered Abortion; for by this prepoſterous Method, and the Uſe of improper Remedies, the natural Strength, Tone, and Elaſticity, not only of the Uterus, but, alſo, of all the Solids, are greatly diminiſhed, and the Misfortune rendered either incurable, or far worſe than it would have otherwiſe been; for what to ſome may perhaps appear a Paradox, we rather affirm, that the ſame Method, and almoſt the ſame Remedies, by which a Diminution and Suppreſſion of the Menſes are removed, are moſt beneficial for checking them when immoderate, and reducing them to a natural State: For it is certain from Experience, that both an exceſſive and too ſcanty menſtrual Diſcharges, have been cured by a proper Uſe of hot and cold medicinal Waters, Baths of nervous and emollient Herbs, uterine Clyſters, Preparations of Steel, the balſamic Pills, thoſe of *Becher*, and others made in the ſame manner, Baths for the Feet, and the Uſe of deterſive nitrous Salts; for in both States the Tone of the Uterus is deſtroy'd, the Veſſels diſtended with Blood, the Circulation of the Humours through the uterine Ducts not free and eaſy, but intercepted by Infarctions, Obſtructions, and Stagnations; for removing or correcting which, the forementioned Remedies are very proper.

We now come to conſider another Diſorder of the Uterus, which is to be derived from the ſame Structure of the Matrix we have already mentioned; for in the Compages of the Uterus, the Direction of the numberleſs Veſſels is winding and intricate, and the Circulation of the Blood through them, highly ſlow and difficult; ſo that it is not to be wondered at, if, in conſequence of a depraved Nutrition, both the internal Surface, internal Cavity, Neck, or even Vagina of the Uterus, ſhould be preternaturally ſubject to fleſhy and fungous Excreſcences of various Figures, Bulks, and Structures, which ſometimes ſo augment it, as to reſemble a State of Pregnancy. Fibrous bloody Maſſes, and polypoſe Concretions formed of Membranes, are, alſo, more frequently generated in the uterine Veſſels than any where elſe, and lay a Foundation either for Sterility, or immoderate Hæmorrhages from the Uterus, which are ſucceeded by Abortion. Concretions of this Kind are commonly called *Moles*, of which there are various Species; by *Lamſwerd* diſtributed into Moles of Nutrition, and thoſe of Generation; but leſt theſe ſhould be confounded, as they eaſily are, we ſhall conſider their Difference ſomewhat accurately.

Firſt, then, the Secundines, with a tender Fœtus of one or two Months old, excluded by Abortion, is by ignorant Perſons taken for a Mole, becauſe it reſembles a fleſhy Concretion. Beſides, though more rarely, globulous Maſſes formed in the Uterus itſelf, often create a Suſpicion of Pregnancy, and are frequently found in ſuch Perſons when dead, or are excluded by a preternatural Increaſe of the Motion and Conſtriction of the Uterus; beſides, it ſometimes happens, that, a few Months after Abortion, or a legitimate Delivery, Women who have been judg'd pregnant, have diſcharg'd from the Uterus ſolid fleſhy Maſſes, of various Bulks and Figures, which, as they are deform'd, and reſemble a Mole, large Mouſe, or ſome other Animal, are not only, by the Vulgar, aſcrib'd to Incantation, and ſaid to be Moles, but, alſo, by ſome Phyſicians, given out for preternatural Conceptions, ariſing from the Imbecillity of the ſeminal Fluid. Theſe Concretions are often carried in the Uterus for a Year, and longer; and, by reaſon of the various Symptoms peculiar to the Mother, create a Suſpicion of a true Embryo; but are generally excluded on the tenth or eleventh Month. But Mr. *Ruyſch*, in *Obſervat. Anatomico-chirurg.* 28. & 58. ſeems to have advanc'd a more ſolid and rational Doctrine, when he aſſerts, that all theſe Concretions ariſe from Pieces of the Secundines left after the Excluſion of the Fœtus, and firmly connected with the Veſſels of the Uterus; and that theſe Pieces, being nouriſh'd by the Afflux of the Blood, increaſe; and, in Proceſs of time, becoming more compact, and hard, aſſume various Figures, according to the different Compreſſion of the Uterus: For it often happens, that the Secundines are diſcharg'd dilacerated; for which Reaſon, it is expedient, after the Delivery, to inſpect whether they are entire, or ſeparated: For if any Portion remains, the Patient is often ſubjected to violent Symptoms; for which Reaſon, the remaining Piece is to be expeditiouſly expel'd; which I have known ſucceſsfully done by a proper Clyſter, or by the *Pilulæ Balſamicæ*. But Maſſes of Blood, and membranous Fibres, by ſome call'd Polypuſes, are more frequently obſerv'd, and theſe, being form'd in the dilated Veſſels of the pregnant Uterus, and at laſt propel'd by the ſtrong Effort of the Matrix and adjacent Parts, frequently cauſe Abortion, which they either precede, accompany, or follow.

Having thus traced the Difference, and inquir'd into the Origin of Moles, we may the more eaſily determine that important Queſtion, Whether Virgins can be pregnant with Moles. For it is ſufficiently obvious, that the Species of Moles, ariſing from enlarg'd Pieces of the Secundines, can by no means be found in Virgins. Nor are the Pieces of fibrous and coagulated Blood, which are thought Moles, or Polypuſes, found in the Uterus of Virgins, the Veſſels of which are very ſmall, and narrow; but they are principally obſerv'd in pregnant and Child-bed Women. But it is neither unuſual, nor impoſſible, that fungous Bodies ſhould be produc'd, both on the external Surface, and in the internal Cavity, of the Uterus of a Virgin, who has been ſubjected to ſome external Violence, ſuch as a Fall from an Height on the Abdomen, as we are inform'd by *Bartholine*, *Cent.* 1. *Hiſt.* 97. and by *Horſtius*, in *Lib.* 4. *de Morb. Mulier. Obſ.* 39. Nor is it to be deny'd, ſince it is certain, from Experience, that married Women, Widows, Women advanc'd in Years, thoſe above Fifty, and thoſe of ſanguine and corpulent Habits, have, after a long Ceſſation of the Menſes, evacuated fleſhy and bloody Moles, ſometimes as large as an ordinary Fiſt, and of different Degrees of Softneſs and Hardneſs, accompanied with immoderate Effuſions of Blood. Of this we have Inſtances in *Marcellus Donatus*, *Lib.* 4. *Cap.* 25. *Joh. Rhodius*, *Cent.* 3. *Cap.* 53. and *Rodericus a Caſtro*, who gives us an Inſtance of this Kind in a Woman of ſeventy Years of Age.

On account of the difficult and ſlow Return of the Blood through the Veſſels of the Uterus, eſpecially the ſpermatic Veſſels, which run into various Windings and Curls, like the Tendrils of Vines, and, conſequently, make the Way to the Heart longer than it would otherwiſe be, it, alſo, happens, that, in the Uterus, and adhering Parts, eſpecially the Tubes and Ovaries, there ſometimes happen Inundations of Serum, and aqueous Tumours; for never does the fluid and aqueous Part of the Blood ſooner recede from the reſt, than when it paſſes through the Viſcera in a ſlow and languid manner; as is ſufficiently obvious in the Liver; for which Reaſon, in no Part are there more numerous lymphatic Veſſels obſervable, than in the Subſtance of the Uterus and Liver, and adjacent Parts; and theſe lymphatic Veſſels, being, by the Afflux of the Lymph, diſtended, are rais'd into large Bliſters, or Hydatides, which being broken, a Dropſy is ſometimes quickly generated, and a ſurpriſing Quantity of extravaſated Serum lodg'd in the Cavity of the Abdomen. Thus *Salmuthus*, in *Cent.* 1. *Obſ.* 38. informs us, that, after a difficult Labour, he found many Hydatides in the Confines of the Uterus. *Pechlinus*, in *Obſ.* 19. tells us, that he found the ſame in an hyſteric Patient, who dy'd pregnant. And *Tulpius*, in *Lib.* 4. *Obſ.* 45. gives us an Inſtance of a Woman, in whom the Horns of the Uterus contain'd about nine Pints, or more, of Water and Pus, included in numberleſs Veſicles. More Inſtances of this Kind occur in *Schenckius*, *Lib.* 3. *Obſ.* 6, 7. *Rolfinckius de Organ. Genital. Cap.* 20. and *Sydenham*, *de Hydrope*. *Harderus*, alſo, informs us, that, in a Countrywoman, the Left Ovary contain'd three Pints of a ſaltiſh and fetid Water, and that the *Fallopian* Tube annex'd to it had a remarkable Hydatid on it. About twenty Years ago, I remember to have ſeen produc'd, in a Woman of forty

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Years of Age, by a violent Fall on the hypogaſtric Region, a Swelling in that Part, accompanied with a tenſive Pain; and this Swelling was ſucceeded by a large Diſcharge of limpid Water, which was firſt evacuated with the Menſes; and when the Diſcharge of the Blood ceas'd, that of the Lymph continu'd for half a Year, ſo that the Patient daily diſcharg'd almoſt a Pint; till, having try'd all Remedies in vain, ſhe at laſt dy'd of a Conſumption, and ſlow Fever.

I have, alſo, frequently obſerv'd, that a Dropſy is conceal'd under a State of Pregnancy, which frequently lays a Foundation for Phyſicians paſſing a fallacious Judgment; but I have ſeen pregnant Women, labouring under a Dropſy at the ſame time, preſerv'd by a copious Diſchaige of the Serum; but when the Humour is diſcharg'd into the Cavity of the Abdomen, it proves mortal. *Platerus*, in *Lib. 3. Obſervat.* gives us a memorable Inſtance of a Woman who was afflicted with an *Aſcites* every time ſhe was pregnant. I myſelf have ſucceſsfully reſtor'd Women, who, from a Cachexy, ariſing from irregular Living, and a Defect of the Menſes, have fallen into a Swelling of the whole Body, accompanied with a Difficulty of Breathing, Drowſineſs, and Defect of Strength: From theſe Women, after the Uſe of the balſamic Pills prepar'd in my manner, and of the aperitive Salt, a large Quantity of Water was evacuated, not only by Stool, but, alſo, from the Uterus, both at the time of their Menſes, and out of it; and when this Water was evacuated, all the violent Symptoms were gradually abated: Hence I am of Opinion, that dropſical Tumours in Women ariſe rather from a Fault of the Uterus, than of the Liver; and that when they ariſe from the former alone, they are more eaſily cur'd than when the latter is affected; becauſe there is a freer Diſcharge to the ſtagnant Serum through the Uterus.

Hence it is eaſy to perceive the Reaſon why not only Virgins, but, alſo, married Women, are ſo frequently afflicted with a long-continu'd and uneaſy Diſcharge of Serum of various Colours and Conſiſtences, from the Uterus: For becauſe the Tone and Motion of the Matrix, which conſiſt in the equable Contraction and Relaxation of its Fibres, are eaſily injur'd, and weaken'd, and the Motion of the Humours through the winding uterine Veſſels ſlow and languid, and the Return of the Blood through Veins deſtitute of Valves, alſo, very ſlow; not only Infarctions, and Stagnations of the Blood and Serum, eaſily ariſe in the Matrix, but, alſo, the ſerous and lymphatic Juice, becoming viſcid by its ſlow Circulation, prepares a Way for itſelf, and is diſcharg'd through the Orifices which every-where occur in the Uterus and Vagina. It is the common Opinion of moſt Authors, that this Humour is ſecreted from the *Lacunæ* of *De Graaf*, or the ſmall Pits remarkable about the *Urethra*, and the ſmall Glands lodg'd there: But in theſe *Lacunæ* there is no Perforation found capable of admitting even a Briſtle; but rather, on both Sides of the Orifice, and through the whole Subſtance of the Vagina, there appear more numerous *Lacunæ*, which eaſily receive half a Finger's Length of a Briſtle, and whoſe Ducts, when compreſſed, diſcharge a Liquor not unlike the ſeminal Fluid. See *Heiſter. Compend. Anatom.*

But though theſe Glands, when greatly relax'd, may diſcharge a copious Humour, yet they are not the only and genuine Seat of a *Fluor Albus*; but there are far more numerous Paſſages, from which the Matter of the *Fluor Albus*, and the impure ſerous Liquor diſcharg'd with and after the lochial Flux in Child-bed Women, derive their Origin. And though Mr. *Ruyſch* denies, that Glands have ever been ſeen, or their Exiſtence demonſtrated, in the Uterus; yet it is not to be doubted but the Serum may attempt its Diſcharge from the ſmall Mouths of the Veſſels, which evacuate the Blood during the Menſes: For the celebrated *Fantoni*, in *Anat.* makes a memorable Obſervation, which is, that Air may be blown through the Veins of the Uterus into the Cavity of the Matrix and Vagina, and from the latter through the former. Beſides, according to *de Graaf*, and *Hornius*, Pores and ſmall Perforations are obſerv'd in the Neck of the Uterus. *Verheyen*, in *Anatom. C. H. Cap. 33. e, f, Tab. 17. Fig. 2, 3.* informs us, that in a Uterus macerated in Water, and retain'd in a moderate Heat for ſome time, he ſaw many globular Corpuſcles, not only in the interior Surface of the Vagina, in ſome Parts form'd into Cluſters, and elſewhere diſſeminated through it, but, alſo, in the inferior Part of the Cavity of the Uterus; and theſe Corpuſcles, he thinks, ought to be juſtly look'd upon as ſmall Glands, ſubſervient to the Secretion of a ſerous and pituitous Humour.

This Diſorder, which at firſt Sight appears ſo ſlight, as to be only eſteem'd a ſerous Defluxion, is, nevertheleſs, highly obſtinate, and not to be cur'd without the greateſt Difficulty; which, in my Opinion, is owing to this, that moſt Phyſicians only ſeek for the Cauſe of it in a deprav'd Sanguification, a want of a due ſpirituous Quality in the Blood, and a Redundance of Serum; whilſt, little ſolicitous to reſtore the Tone of the Uterus, and promote the briſk Circulation of the Blood through it, they attack the Diſorder with Anticachectics, Purgatives, and ſuch Medicines as eliminate the Serum, omitting Corroboratives, which are highly neceſſary. I, in order to remove this obſtinate Diſorder, recommend the Uſe of balſamic Pills, prepar'd after the manner of *Becher*, of bitter Extracts, balſamic temperate Gums, and a ſmall Quantity of Extract of Aloes and black Hellebore, eſpecially if uſed with ſome chalybeate Medicine: For ordinary Drink, the Patients ought to uſe a Decoction prepar'd of the Wood of the Maſtich-tree, the Roots of Sarſaparilla, Shavings of red and yellow Sanders, Currants, Hartſhorn, and Fennel-ſeeds; externally, Morning and Evening, balſamic Fumigations of Maſtich, Amber, Olibanum, Tacamahaca, and artificial Cinnabar, are to be uſed; or, by means of a Syringe, the *Aqua Sclopetaria* is to be injected into the Womb, or a Liquor prepar'd of the Root of Birthwort, the Herbs Mugwort, Feverfew, Agrimony, Silverweed, Myrrh, Maſtich, Myrtle-leaves, and the Flowers of red Roſes boil'd in Red-wine; which proves highly beneficial, not only when injected into the Uterus, but, alſo, when frequently apply'd with linen Cloths to the Region of the Pubes. But to all theſe we prefer natural Baths, which, on account of their chalybeate Principle, are of a corroborating Quality; ſuch as the Waters of *Lauchſtad*, eſpecially when boil'd with nervous Herbs, which corroborate the Uterus; ſuch as Baum, Mint, Origanum, Mother of Thyme, Clary, *Roman* Chamomile, and Marjoram; for theſe, frequently exhibited, after the Uſe of Balſamics, and, when the Body is duly purg'd, are of ſingular Efficacy, not only in this, but in other Diſorders ariſing from a Fault of the Uterus, eſpecially if at the ſame time temperate mineral Waters are drank.

But as the Diſorders of the Uterus, hitherto ſpecify'd, ariſe principally from its Relaxation, and want of Tone; ſo there are others which derive their Origin from its exceſſive and ſpaſmodic Stricture: For the Matrix has this in common with all other Parts compos'd of muſcular and nervous Fibres, that it is, on certain Occaſions, ſeiz'd with Spaſms, and ſometimes even agitated with convulſive Motions: But as in the internal Orifice of the Womb, which is of an exquiſite Senſation, the Remiſſion of the Motions, ſo, alſo, the intenſe and preternatural Rigour, is principally perceiv'd in the ſame Part, becauſe it is in a great meaſure compos'd of nervous Fibres connected with each other, and running in a ſpiral Direction: For ſometimes an exceſſive Conſtriction of the internal Orifice of the Uterus not only renders Birth difficult, but, alſo, unleſs relax'd by emollient Baths, Ointments, and Fomentations, abſolutely prevents the Excluſion of the Fœtus. It is, alſo, certain, from Experience, that a raſh Admiſſion of Cold to the inferior Parts, eſpecially the Confines of the Uterus, during the lochial or menſtrual Diſcharges, puts a Stop to theſe Evacuations. The ſame Effect is, alſo, produc'd by Frights, which, as they are of great Efficacy in conſtricting, eſpecially the Fibres and Ducts of the external Parts, ſo this Influence is in a particular manner obſerv'd in the nervous and muſcular Subſtance of the Uterus, and its Parts; and frequently proves the Cauſe of Abortion, or of an exceſſive or ſuppreſs'd lochial or hæmorrhoidal Diſcharge. Emetics, acrid Purgatives, and all Kinds of Poiſon, induce a great Change on the Uterus, and, by exciting Spaſms in it, eaſily procure Abortion, in Women of delicate Habits.

It is, alſo, certain, that, in order to exclude not only the Fœtus and Secundines, but, alſo, Moles, and Maſſes of coagulated Blood, it is neceſſary there ſhould be an intenſe ſyſtaltic or conſtrictory Motion of the Uterus, ſo that its Bottom being conſtricted and corrugated, its Orifice and Vagina may be dilated. When, therefore, in Women in Labour from a Defect of Strength, this intenſe Motion and conſtrictory Force of the Uterus fails, Analeptics are to be us'd; ſuch as Cinnamon, and the Oil and ſpirituous Water of Cinnamon; as, alſo, other Corroboratives, ſuch as the Eſſences of Amber and Myrrh, the Balſam of Life, the *Spiritus Oleoſus* of *Sylvius*, and the Bezoardic Spirit of *Buſſius*; Emmenagogues, alſo, are of great Uſe, as Borax; and Vomits are, by ſome Phyſicians, greatly recommended, in order to ſtimulate the Fibres of the Uterus to a briſker Motion.

On the contrary, when before or during the Labour, the Uterus is ſeiz'd with ſpaſmodic or convulſive Motions, which often, either before or during the Birth, invert the natural Situation of the Fœtus, and when the Mother is afflicted with an intenſe Heat, it is highly prejudicial to exhibit ſuch ſpirituous Subſtances; becauſe they hinder the Excluſion of the Infant, and excite a Fever, or Delirium, in the Mother: But, in ſuch Caſes, the moſt ſalutary Effects are produc'd by antiſpaſmodic and ſedative Medicines, which check and allay the Impetuoſity of the Motions: The moſt conſiderable Remedies of this Kind are, Saffron, Caſtor, the Gall of an Eel, Powders of Vipers, of human Secundines, and of Worms; the *Pilulæ Wildegarſii*, the Tops of white Lilies, and the Waters of the Flowers of the Lime-tree, of Elder, of the *Egyptian* Thorn, of white Lilies, and of Primroſes. It is, alſo, expedient, in ſuch Caſes, when

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when the Patient is plethoric, to open a Vein in the Arm, immediately before the Labour, leſt the Nerves of the Abdomen being compreſs'd by the redundant Blood, the Motion, not only of the Uterus, but, alſo, of the Muſcles ſubſervient to the Expulſion of the Fœtus, ſhould be ſuppreſs'd and hinder'd. Almoſt the ſame Method is to be us'd, when the *Lochia* are retain'd, in Pain ariſing from exceſſive Stricture, which, in Child-bed Women, is known from Pains of the Abdomen: When ſuch a Caſe happens, the lochial Diſcharge is not to be procur'd by forcing Medicines, but by Sedatives; for which Reaſon, *Etmuller*, in *Diſſert. de Vi Opii Diaphoretica*, greatly recommends Preparations of Opium for this Purpoſe: But if, on account of a Diminution of the conſtrictory Force of the uterine Fibres, the impure and ſtagnant Blood is not, after the Birth, duly evacuated from the Uterus, beſides internal Medicines which excite the Diſcharge of ſuperfluous Humours, nothing is more beneficial than a Clyſter prepar'd of uterine Herbs, ſuch as Southernwood, Pennyroyal, Roſemary, Mugwort, Baum, and Flowers of the Wall-flower, with the Addition of a ſmall Quantity of the Maſs for the balſamic Pills.

There is, therefore, in the Uterus a conſtrictory and relaxatory, which, in my Opinion, may be juſtly call'd a periſtaltic Motion; for whilſt one Part is contracted, another is dilated; by which reciprocal Motion every thing preternatural is effectually excluded from the Uterus. That Child-bed Women often complain of Flatulences burſting from the Uterus, is a Sign that a tenacious Humour, which, by the Heat, is reſolv'd into Vapours, remains in the Uterus; and that in the Subſtance of the Matrix this periſtaltic Motion is ſtill carry'd on: Beſides, that this alternate Motion of the Uterus, juſt as it happens to the Stomach in Vomiting, is ſometimes inverted, is certain, from this, that the menſtrual or lochial Blood, uſually diſcharg'd through the Vagina, is, on certain Occaſions, forc'd through the *Fallopian* Tubes into the Cavity of the Abdomen, a Circumſtance which always proves mortal. An Inſtance of this, Mr. *Ruyſch* has given us, in *Obſervat. Anatomico-chirurg. Obſ.* 84, & 85. It is, alſo, to be carefully obſerv'd, that, when the *Fundus* of the Uterus is cloſely contracted, and its inferior Part, together with the Vagina, too much relax'd, the Matrix itſelf may be ſo contorted and ſubverted, that Midwives are often deceiv'd, and imagine that a Fœtus ſtill remains in the Uterus. See *Ruyſch*, in the Work already quoted, *Obſ.* 93. Beſides, to the preternatural Motion of the Uterus, which is inverted from the external to the internal Parts, we ought, in my Opinion, to aſcribe thoſe violent and fatal Symptoms, which frequently afflict Child-bed Women, ſuch as Fevers, acute Pains, Convulſions, Deliriums, mortal Apoplexies, and Purples of the red and white Kind; becauſe all theſe Diſorders derive their Origins from the corrupted Blood which ought to be evacuated from the Uterus, repreſſed to the interior Parts, and becoming ſtagnant.

Hippocrates expreſly aſſigns, as the Cauſe of theſe Diſorders, an intercepted Paſſage of the Blood through the Uterus, in the following manner: "The Blood, returning from the Uterus, "and preſſing upon the Diaphragm, produces a Strangulation, "by a Retraction of the Uterus; when entering the Head, it "gives Riſe to Madneſs, Epilepſies, a Catochus, and Apo-"plexies; when poſſeſſing the Thorax, it excites Coughs; "when ruſhing into the Heart, it produces Palpitations, Tre-"mors, and ſometimes Syncopes; and when it enters the "Nerves, it gives Birth to Stupors, Immobilities, and Palſies." For all thoſe Symptoms, commonly call'd hyſteric, which frequently afflict Women, and have a great Agreement with the Symptoms of the ſpaſmodic and flatulent hypochondriac Diſorder, ariſe principally from a Fault of the Uterus; for there is a great Conſent between the Uterus and the principal Parts of the Body; and this Conſent is not ſo much to be accounted for from the Communication of Nerves, and the mutual Concurrence of the irregular Motions in the nervous Parts, as from the Syſtem of Blood-veſſels, and the diſturbed Motion of the Blood in them: For as in hypochondriac Patients, when the Blood, paſſing with Difficulty through the Liver, is accumulated in theſe Parts, eſpecially of the nervous Kind, ſuch as the Stomach and Inteſtines, to which the Ramifications of the *Vena Porta* are diſtributed, it, by its Preſſure and Diſtention, excites Spaſms, accompanied with violent Symptoms, ſo, alſo, in Women, when the Blood, becoming ſtagnant, is not freely conveyed through the Uterus, it regurgitates to the principal Parts of the Body, ſuch as the Stomach, and eſpecially the Inteſtines, Head, and Thorax; where, according to the Diverſity of the Parts, it injures their Functions, and induces various and violent Symptoms. Hence the moſt ſkilful and ſagacious Phyſicians, in all Diſorders peculiar to Women, have a particular Regard to the Uterus, the State of the Menſes, and the Circulation of the Blood through the Veſſels of the Matrix; whereas thoſe Phyſicians proceed in a prepoſterous Method, who preſcribe various Remedies, in order to remove the Symptoms; whilſt, at the ſame time, they overlook the Cauſe and Origin whence they proceeded.

We now come to conſider the Conſent between the Uterus and the *Inteſtinum Rectum*, and hæmorrhoidal Veins. With reſpect, then, to the Sympathy between the Uterus and hæmorrhoidal Veins, we muſt take notice of an anatomical Error common to thoſe who greatly extol Hæmorrhages and the hæmorrhoidal Diſcharges, whilſt they imagine that the internal hæmorrhoidal Veins, which are Ramifications of the *Vena Portæ*, diſtribute Branches to the Uterus, and eſpecially to the Vagina; whereas *Saltzmannus*, in *Diſſert. de Vena Portæ*, has clearly demonſtrated, that only the external hæmorrhoidal Veins ſend to the Matrix and Vagina an incredible Number of ſmall Branches, connected with the internal Hæmorrhoidals by a mutual Anaſtomoſis: When this Connexion of the Veſſels is known, it is eaſy to render a Reaſon why, in plethoric Women, the Blood ſeeks a Paſſage not only from the Uterus, but, alſo, ſometimes, from the Veins of the Anus: And when the Paſſage this Way is precluded, the ſtagnant Blood not only produces Tumours, called the blind Hæmorrhoids, but, alſo, lays a Foundation for more Diſorders; ſuch as oppreſſive fixed Pains in the *Os Sacrum*, and other Symptoms familiar to thoſe who labour under a Suppreſſion of the Hæmorrhoids. It is, alſo, certain, that in old Women, who have no longer their menſtrual Evacuations, there often ariſes, if not an hæmorrhoidal Diſcharge, yet, at leaſt, an Effort of Nature that way, accompanied with the ſeveral Diſorders uſually accompanying a Suppreſſion of the Hæmorrhoids. It is, alſo, owing to this Connexion of the Veſſels, that, in the firſt Days after Delivery, knotty Protuberances of the hæmorrhoidal Veins frequently ariſe in the Anus, and excite an intenſe Heat; and theſe Protuberances certainly draw their Origin from the ſtrong Efforts of the Patient, forcing a large Quantity of Blood to the Uterus and its Veſſels.

The Conſent between the Vagina and *Inteſtinum Rectum*, is ſufficiently obvious from this, that their Membranes are ſo cloſely connected, and adhering to each other, that they can hardly, by the moſt cautious Hand, be ſeparated, without Dilaceration. This is the Reaſon why a *Teneſmus*, a Symptom familiar to thoſe labouring under a Dyſentery, eaſily diſpoſes the Vagina to fall down, and often proves the Cauſe of Abortion. Hence it is that acrid Suppoſitories, eſpecially ſuch as are prepared of draſtic Purgatives, contribute much to Abortion; and that Clyſters, prepared of uterine, nervous, and gently-ſtimulating Medicines, are very efficacious in expelling Moles, or grumous Blood, from the Uterus; as, alſo, in recalling the Menſes, or Lochia, when ſuppreſſed. I ſhall now ſubjoin ſome Rules and Cautions, highly uſeful in Practice.

1. Pregnant Women, when plethoric, are by nothing better fortified againſt Diſeaſes, and the Fœtus preſerved ſound, and vigorous, than by Veneſection, about the third, ſeventh, and ninth Months.

2. It is an Error to imagine that Veneſection in the Foot is prejudicial to pregnant Women, becauſe it procures Abortion.

3. Veneſection is often uſed with great Benefit, when the Patient is afflicted with Pains of the Back, hyſteric Symptoms, or Sciatic Pains.

4. Veneſection in a Suppreſſion of the Lochia, or when the Purples remain in the internal Parts of the Body, often prevents the Danger of ſpeedy Death.

4. The Suppreſſion and Diminution of the Menſes often ariſe from a Plethora, which is removed by Veneſection; ſo that, immediately after it, the Pulſe becomes ſtronger, and the Blood is more freely conveyed through the Uterus.

6. When a continual or intermittent Fever ſeizes either a pregnant or Child-bed Woman, Veneſection is never prejudicial, but often highly neceſſary.

7. It is expedient, in the firſt Days after Labour, to exhibit the *Pilulæ Balſamicæ*, by the Uſe of which the Lochial Diſcharge is not only promoted, but, alſo, many Sordes, collected during the time of Geſtation, are evacuated by Stool.

8. Preparations of Raiſins, Manna, Rhubarb, and Tartar, are more proper for pregnant Women than other Laxatives.

9. In order to remove Sterility, the only Intention of Cure is, to reſtore the Tone of the Uterus, and reduce the Menſes, and Motion of the Blood through the Matrix, to a natural State.

10. Almoſt all Diſeaſes, ariſing from a Diſorder of the Uterus, if capable either of an Alleviation, or a Cure, require Veneſection, gently-laxative balſamic Pills, Baths, both natural and artificial, duly-prepared Chalybeates, gentle Antiſpaſmodics, Carminatives, and the Uſe of temperate mineral Waters.

11. *Peruvian* Bark, in Conjunction with other proper Remedies, eſpecially Powder of Chamomile-flowers, if exhibited prudently, and at a proper time, in Intermittents, is not prejudicial to pregnant Women, but proves a moſt ſalutary Remedy.

12. Ob-

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12. Obſtinate Diſorders ariſing from a Fault of the Uterus, often require external Applications, ſuch as Fumigations, Injections, uterine Clyſters, Fomentations, Epithems, and Baths, that the Virtues of Medicines may be the ſooner conveyed to the Part affected.

13. Pregnant and Child-bed Women ought to be very careful with reſpect to their Diet, Regimen, and Method of Life.

14. Pregnant and Child-bed Women ought carefully to avoid external Cold, and internal Refrigeration, by means of purgative Medicines, and all aſtringent Acids; nor ought they to uſe too large Quantities of Aliments. But as Reſt of Body is friendly to Child-bed Women, ſo it is prejudicial to ſuch as are pregnant, who ought for that Reaſon to uſe proper Exerciſe.

Of an Inflammation of the Uterus.

The peculiar Fabric of the *Uterus*, the ſurpriſing Elaſticity of the Fibres of its whole Subſtance, the Number of its Blood-veſſels, and their winding ſerpentine Direction, the glandulous and nervous Texture, together with the exquiſite Senſation of the Neck, and internal Orifice of the Uterus, are Circumſtances which render it ſubject to various Diſorders, eſpecially acute and dangerous Inflammations, together with Abſceſſes, and malignant Ulcers ariſing thence. Beſides, becauſe, not ſo much on account of the Communication and Senſibility of the Nerves, as the intercepted Motion of the Blood through the fibrous and vaſcular Compages of the Uterus, its Motion in the other Parts of the Body, is, alſo, greatly diſturbed and perverted, hence there is a great Conſent between the Uterus and the more noble Parts of the Body, ſuch as the Head, the Breaſt, the Præcordia, the Stomach, and whole nervous Syſtem; ſo that when the Uterus is diſordered, or inflamed, violent Symptoms happen in the adjacent and remote Parts of the Body.

Among the other Diſorders incident to the Uterus, an Inflammation frequently happens, and may be known from the Heat and fixed Pain in the Groins, accompanied with an acute Fever, a Pain of the Loins, and lower Part of the Belly, an Inflation of the Abdomen, a Stimulus to diſcharge the Urine and Excrements, an Heat and Difficulty of Urine, together with other violent Symptoms in the Præcordia, Head, and Breaſt. Though the Moderns take little Notice of this Diſorder, yet ſome of the Antients were very full and accurate in deſcribing it: Thus, *Aetius* ſpeaks of it in the following Manner: "An Inflammation of the Uterus may "be produced by various Cauſes, ſuch as Blows, Suppreſſions "of the Menſes, external Cold, Inflations, Abortions, and "hard Labours. An Inflammation of the Uterus is ſucceeded "by an acute Fever, a Pain of the Head, and its Tendons, "a Pain in the Bottoms of the Eyes, and in the Joints of the "Arms and Fingers, a Detraction and Declination of the "Neck, a Diſorder of the Stomach in conſequence of its "Conſent with the Uterus, a Contraction of the Mouth of "the Uterus, and a ſmall and denſe Pulſe. If the whole "Uterus is inflamed, there is a violent pulſatory Motion in "all its Parts. If its poſterior Parts are only inflamed, there "is a Pain about the Loins, and the Fæces are retained on ac"count of the Compreſſion of the Inteſtinum Rectum. If "on the contrary, its anterior Parts are inflamed, there is a "Pain about the Groin, a Strangury, and difficult Diſcharge "of the Urine, ariſing from a Compreſſion of the Bladder. "When the Sides of the Uterus are inflamed, the Groins are "rendered tenſe, and the Thighs and Legs oppreſſed. When "its Bottom is inflamed, there is a Pain and Tumor princi"pally about the Navel. When its Neck, or inner Orifice "is inflamed, there is a Pain in the ſuperior Part of the Ab"domen, and, upon introducing the Finger into the Vagina, "the Mouth of the Uterus appears hard, and makes a conſi"derable Reſiſtance."

An Inflammation of the Uterus may be juſtly divided into ſlight or ſuperficial, and violent or profound; the former frequently happens to Childbed Women, is eaſily produced, and moſt frequently ſucceeds the Milk Fever. This Species admits of a Cure, if prudently treated, and is eaſily reſolved in a few Days. But the violent, or profound Inflammation of the Uterus, which is accompanied with an intenſe Fever, and a Train of terrible Symptoms, whoſe Vehemence does not remit, often proves mortal on the ſeventh, ninth, or eleventh Day, eſpecially when the White Purples ſupervene, which are always a bad Sign, ſince they derive their Origin from a corrupted, putrid, and vapeſcent Blood and Serum lodged in the Uterus, and are even a Proof, that the Uterus is already corrupted and ſphacelated.

The material proximate Cauſe of an Inflammation of the Uterus is an unequal Circulation of the Blood through the uterine Veſſels; for when the ſmall Veſſels are obſtructed, contracted, and ſpaſmodically conſtricted, the Blood is with a greater Impetuoſity and Swiftneſs convey'd through the adjacent Veſſels, and their lateral Ramifications, otherwiſe not ſuſceptible of Blood. Hence ariſe a Tumor, Redneſs, and Heat, together with a Preſſure of the nervous Coat of the Uterus. The Uterus is diſpoſed to Inflammations by Blows, Contuſions, external Wounds, a Plethora, a Cacochymy, a Suppreſſion of the Menſes, or Lochia, a copious Defluxion of Blood to the Uterus, a difficult Labour, the Paſſions of the Mind, eſpecially Anger, and Frights, exceſſive Vomiting, or ſtrong Efforts to it, Refrigeration of the lower Part of the Abdomen after violent Exerciſe in plethoric Habits, the drinking cold Liquors, eſpecially during the menſtrual, hæmorrhoidal, or Lochial Diſcharges. Convulſive Colics, alſo, and violent ſpaſmodic, and hyſteric Affections, produce Inflammations of the Uterus.

Inflammations of the Uterus are never more incident to Women, than when they are in Child-bed; for, after the Birth, the Uterus freed from its Load, by its elaſtic Force is again reduced to a ſmaller Space, and gradually contracts itſelf. Hence the dilated Veſſels of the Uterus are contracted, the Blood contained in them is expreſſed from their open Mouths, before continuous with the Secundines, and evacuated under the Name of *Lochia*, to the great Benefit of the Patient. But at the ſame time, this Contraction of the Veſſels directs the Motion and Courſe of the Blood elſewhere, that is, from the Uterus and inferior Parts, to the ſuperior Parts and Breaſts; and this generally happens about the third Day, with a conſiderable febrile Commotion, generally called the *Milk Fever*. If, therefore, the Lochial Diſcharge is prevented by ſpaſmodic Strictures of the Uterus, it not only excites a dangerous and inflammatory Stagnation in the Uterus itſelf, but, alſo, increaſes this uſual Conveyance of the Blood from the inferior to the ſuperior Parts, both with reſpect to its Vehemence and Quantity. In this Caſe the ſpaſmodic Strictures of the Abdomen are violent, the Diſcharge of the Blood, or mucid Humour from the Uterus is ſtopt, the Patient becomes coſtive, the Feet are rendered cold, there is a Stimulus to diſcharge the Urine, which is evacuated with Pain; the Countenance becomes red and tumid the Eyes ſparkle, certain Drops ſometimes fall from the Noſtrils, the Mind is reſtleſs, the Sleep either none at all, or diſturbed with frightful Dreams; and at laſt theſe violent Symptoms, a difficult Reſpiration, Deliquiuums, Convulſions, and a phrenitic Delirium, often ſuddenly put an End to the Patient's Life.

Theſe Circumſtances are accurately deſcribed by *Hippocrates*, in *Lib.* 1. *de Morb. Mulier.* in the following Manner: "If, ſays he, the Uterus of the Child-bed Woman is "inflamed, the Abdomen becomes hot and large, there is a "Suffocation about the Præcordia; and when the Lochia are "retained in conſequence of Cold, the Uterus is diſtended." And in *Lib.* 2. *de Morb. Mulier.* he tells us, "That if an Ery"ſipelas happens in the Uterus, the Breaſt is affected by it, "the Abdomen becomes tumid and cold, the Patient is ſeized "with a violent Fever and Rigor, breathes thick, and is ſub"jected to Deliquiums and Weakneſs, a Pain of the whole "Body, Dejectedneſs and Inconſtancy of Mind. The Diſorder "aſcends from the inferior Part of the Abdomen to the Loins, "Back, Præcordia, Breaſt, Neck, Head, and Stomach, ſo "that the Patient ſeems dead." But 'tis certain from Experience, that pregnant Women of tender and delicate Habits, prone to violent Commotions of Mind, ſubject to ſpaſmodic and flatulent Diſorders, afflicted with an irregular State of the Menſes, or with Coſtiveneſs after Labour, eaſily fall into a Suppreſſion of the Lochia, accompanied with a dangerous and acute uterine Fever. Sometimes, alſo, an Inflammation of the Uterus ariſes from a Retention of the Whole, or ſome Part, of the Secundines; for when the Secundines are retained, the Excluſion of the Blood from the Uterus is not only prevented, but, alſo, the ſucceeding Putrefaction excites a Fever, or renders it worſe, if already formed.

Now, as in all Inflammations the ſtagnant Humour, if not diſcuſſed, putrefies, and degenerates either into a ſphacelous, or ulcerous Corruption; ſo the ſame, alſo, happens in Inflammations of the Uterus. An Inflammation of the Uterus, which degenerates into a Sphacelus, is ſoon mortal, and is moſt incident to Child-bed Women, in whom, when diſſected, the Uterus and Vagina are generally found hard, and of a dark-brown Colour. But an Inflammation of the Uterus, which terminates in a Suppuration, or Ulceration, is of a more chronical Nature, and happens principally out of a State of Child-bed. This ſuppuratory Inflammation of the Uterus is principally incident to Women of ſanguine, ſoft, and ſpongious Habits, eſpecially if they have been afflicted with a bloody Fluor Albus, and have put an unſeaſonable Stop to it by Aſtringents. It is, alſo, frequently incident to thoſe Women whoſe Blood is groſs and

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and impure, who use insalutary Aliments, sweet Summer Fruits, and Sweet-meats, who expose their inferior Parts to the Cold, especially when the Body is over-heated, who are afflicted with Sorrow, who are prevented from satisfying their Inclinations to venereal Commerce by Enjoyment, who neglect usual Venesections, or who being old, lead a quiet and melancholy Life. And in such Women the Inflammation happens more frequently in the Neck and internal Orifice, which consists of nervous Fibres spirally interwoven, than in the Bottom of the Uterus; for which Reason there is an intense and burning Pain in the Pubes, accompanied with a difficult Discharge of Urine. The Signs of an Abscess of the Uterus are by *Hippocrates*, in *Lib.* 1. *de Morb. Mulier.* enumerated in the following Manner: "If, "says he, the Uterus is ulcerated, Blood and Pus are discharged, a fetid Smell of the Parts arises, an acute Pain "seizes the Loins, Groin, and lower Part of the Abdomen. "The Pain ascends upwards to the soft Parts of the Sides, "the Ribs, the Scapulæ, and sometimes to the Clavicles. "The Patient is seized with a violent Head-ach, and Delirium: But, in Process of Time, she becomes tumid, weak, "subject to Deliquiums, slight Fevers, and Refrigerations; "but her Legs are more considerably swelled than the other Parts "of her Body. This Disorder succeeds Abortion, if the corrupted and putrefied Humours left behind are not duly evacuated, and the whole Body is excessively hot. It is, also, "brought on by uterine Fluxes, the Matter of which is of an "acrid or bilious Quality." But for the most part, an Ulcer of the Uterus degenerates into a Gangrene and Sphacelus, and by that means proves mortal. It sometimes, however, happens, that an Apostem formed in the Uterus, breaks internally, and a white fetid Sanies is copiously discharged, by which means the Patient is preserved. See *Forestus, Lib.* 28. *Obs.* 44.

If the exterior Part of the Uterus is inflamed by external Cold, the Inflammation easily degenerates into a Scirrhus, which becoming ulcerated, is justly called a *Cancer of the Uterus*, and is incurable. It, also, frequently happens, that the Glands about the Neck of the Uterus, and especially its internal Orifice, are changed into a Scirrhus, which at last, degenerates into an ulcerous Inflammation, which, like an ulcerated Cancer, is, also, incurable. Though the Moderns have taken little Notice of this Disorder, yet I have frequently seen Instances of it, and found it accompanied with the same Symptoms, exactly enumerated by *Aetius, Tetrabib.* 4. *Serm.* 4. *C.* 94. in the following manner: "Cancers in the Uterus are sometimes with, and "sometimes without, an Ulceration; an hard, unequal, prominent Tumor, of a disagreeable, red, and sometimes sublivid Colour, is found about the Mouth of the Uterus. "There is a violent Pain in the Groins, superior Part of the "Abdomen, and Loins, whilst the Parts, originally affected, "can hardly bear to be touched, or treated in the different "Manners necessary for a Cure. But if the Cancer is of the "exulcerated Kind, besides Pains, Hardness and Tumor, corroded and unequal Ulcers appear, which have generally "sordid, tumid, and whitish Lips, and are covered with unseemly Crusts. But the Ulcers which seem most pure, appear feculent, livid, red, and bloody. From such Ulcers "there is continually discharged a thin, aqueous, black, or yellow fetid Sanies, and sometimes Blood, accompanied with the "other Signs of an inflamed Uterus." This Disorder, according to *Hippocrates*, is incurable; but it is to be mitigated by Insessions prepared with Fenugreek and Mallows, and by Cataplasms of a like Nature.

The CURE.

As an Inflammation of the Uterus is never more frequent than in Child-bed Women, and after Abortion, and is brought on either by the unskilful Management of Midwives in difficult Labours, and their too rough handling the Mother, or by the violent Efforts during Labour, which force the Blood, especially of the impure Kind, to the Uterus, or by an Obstruction of the Lochia, by means of Pains, hysteric Spasms, a Fright, or Refrigeration, it is necessary, both for the Purposes of Prevention, and Cure, that the Physician should be well acquainted with all these Causes. But because it is far more easy to prevent this Disorder when approaching, than to cure it when present, the Physician ought, by all means, to use his utmost Endeavours to put a timely Stop to it, and prevent its Approach if possible.

Without considering those Disorders of the Uterus, which are brought on by external and violent Causes, we shall only observe, that nothing more frequently occurs in Practice, than an inflammatory Fever of the Uterus after Labour, on account of a too scanty, or totally suppressed Discharge of the Lochia. Hence the Physician is in the first Days after Delivery, to take care that the Lochia be duly evacuated; for which Purpose he is to direct his principal Intentions to the Removal of those Causes which obstruct the Lochial Flux. Now it is sufficiently certain, that during a long and violent Labour, there is so violent a Commotion and Exagitation both of the solid and fluid Parts, that from the Quickness of the Pulse, the Heat of the whole Body, the Thirst, and Inquietude, we may justly conclude that a Fever is present, during which febrile Commotion, little or none of the putrid and bloody Recrements is evacuated from the Uterus. Hence, after the Labour, the Physician is to use his Endeavours to compose and mitigate this impetuous Commotion of the Parts. This Intention is best answered by keeping the Patient in a State of Rest, the Use of a temperate diaphoretic Regimen, and the Exhibition of diluent and gently cooling Medicines. But because during Labour, which is only performed by spasmodic and convulsive Strictures arising from the spinal Marrow, the Spasms, and painful Strictures, are by Consent, convey'd to the Intestines; and because these Strictures remain some time after the Labour, and in consequence of the same Consent, by constricting the muscular and nervous Fibres of the Uterus, obstruct the free Circulation of the Blood, the Physician is therefore carefully to allay and sooth them: For this Purpose,

Take of the Pulvis Marchionis, and Crabs-eyes, each one Dram; of diaphoretic Antimony, half a Dram; and of pure Nitre, sixteen Grains: Reduce to a Powder; of which the fourth Part is to be taken for a Dose, adding, if the hysteric Spasms are at the same time very violent, four or six Grains of the Powder of Castor, to be taken in the Water of common Chamomile-flowers distilled with Ale prepared of Wheat.

This Intention is, also, answered by the Oil expressed without Fire, from recent sweet Almonds, which either alone, or mixed with a fourth Part of Sperma Ceti, may be exhibited to the Quantity of an Ounce, or half an Ounce, in Broth prepared of Pullets, or in Water-gruel. Externally the whole Abdomen is to be anointed with a Liniment thus prepared:

Take of the Oils of Dill, Chamomile, and white Lilies, each one Ounce; of the Oil of Caraway, two Drams; or of the Oil of Camphire, one Dram: Make into a Liniment, for anointing the Abdomen; after the Use of which, apply a warm folded Cloth.

When the febrile Motion is thus composed, in order to promote the Lochial Discharge, there is hardly any more efficacious Medicine, than the Mass of Pills prepared in Imitation of *Becher*'s, of bitter Extracts, resinous temperate Gums, and Aloes duly corrected. On the second Day, therefore, after Delivery, let fifteen Grains of this Medicine, in the Form of Pills, other Circumstances being alike, be exhibited in the Morning or Evening, and continued for five or eight Days, according as the Circumstances of the Patient require. This is an highly mild and proper Evacuant; for by corroborating the Tone of the Intestines and Uterus, which is weakened by the excessive Distension, and at the same time, by gently stimulating, it frees the Abdomen and Intestines from Sordes, and the Uterus from stagnant and corrupted Blood, by which means it excellently prevents the Inflammation, the Fever, and other violent Symptoms arising from a Retention of the recrementitious Sordes. This Medicine is, also, of singular Use when the Secundines, or any Part of them, or any other foreign Substance, is to be expelled from the Uterus.

But if the Intentions of the Physician are not answered by these means; if a continual Fever preys upon the Patient; if her Abdomen is distended with Flatulences; if the Lochia are retain'd, and violent Spasms conveyed to the superior Parts, another Method is to be used; for the Redundance of Blood accumulated during Gestation, is to be diminished by Venesection, not in the Arm, but in the Foot; for Spasms often arise from an excessive Distension of the Vessels, and the Quantity of the superfluous Blood by distending the Compages of the Uterus, diminishes and prevents its systaltic and and expulsive Power. Hence Venesection is of the greatest Importance to promote the Lochial Discharge, and prevent Inflammations. As in *France* Venesection is more often used for this Purpose than it ought, so in *Germany* it is totally rejected; so that many die of an inflammatory Fever of the Uterus, who might have been preserved by seasonable Venesection.

Besides Venesection, when an inflammatory Fever is already present, the stagnant Blood is to be put in Motion, the thick Humours rendered fluxile, and the Stagnation disussed: In order to obtain this End,

Take of the Waters of Chervil, Carduus Benedictus, Scordium, Elder-flowers, *Egyptian* Thorn-flowers, and distilled Vinegar, each one Ounce and an half; of Crabs-

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eyes, one Dram and an half; of diaphoretic Antimony, or Bezoardic Mineral, half a Dram; of the Spiritus Nitri Dulcis, or the Anodyne Mineral Liquor, twenty Drops; and of the Syrup of Carduus Benedictus, two Drams: Make into a Mixture; of which let the Patient take two or three Spoonfuls every two Hours.

For ordinary Drink let her use weak Broth prepared with Fowls, the Roots of Vipers-grass, and Succory, together with the Shavings of Hartshorn, adding at Pleasure the Juice of Oranges. It is, also, expedient now-and-then to exhibit an Infusion prepared of the Herbs Pauls Betony, Scabious, Sow-thistle, the Flowers of Clary, and common Chamomile, together with the Seeds of Fennel; nor are we to omit the temperating and resolvent Powders prepared of Crabs-eyes, a Solution of Crabs-eyes, Nitre, and Sal Polychrestus. Powders of this Kind are commodious, interposed with *Becher*'s Pills, or others like them, in order to promote the Lochial Discharge, and derive the Impetus of the Blood from the Head. Clysters are, also, to be used, and may consist either of sweet Whey, or Decoctions of the Flowers of common Chamomile, the Herbs Mugwort, Sage, Clary, and *French* Mercury, with an Addition of Honey, Nitre, and the Fat of Hens.

When out of a State of Child-bed, in Women of impure Habits, various Causes concur to produce an Inflammation, not so much in the Bottom as in the Neck of the Uterus and Vagina, besides the internal Remedies already mentioned, external Medicines are, also, to be used, such as Epithems applied to the Region of the Pubes, uterine Injections prepared of proper Ingredients, Pessaries, and, on account of the Vicinity of the Parts, Suppositories introduced into the Anus. An Epithem may be prepared thus:

Take of the Aqua Sclopetaria, four Ounces; of the Essence of Saffron, and camphorated Spirit of Wine, each two Ounces; and of Nitre dissolved in Elder-flower Water, one Dram; and, according as Circumstances require, let these be mixed with Vinegar of Rue, or of Scordium, and applied with several Folds of Linen Cloth.

For an Injection I commend either Womens, or Asses Milk boiled with Elder-flowers, Myrrh, and Saffron, adding a little Nitre. The most uneasy Symptom of this Disorder, which is a Tenesmus, is, besides by emollient Insessions, excellently alleviated by Oil of sweet Almonds, or a Mucilage of the Seeds of Flea-bane, or Fenugreek; two Ounces of which, with an Addition of twelve Grains of the Extract of Saffron may be injected into the Anus; and all these Remedies are useful when the Inflammation has degenerated into a Suppuration.

It, also, frequently happens, that when a long-continued *Fluor Albus*, especially of the bloody Kind, is ill treated, or preposterously stopt, the Uterus is affected with a Tumor, Pain, and inflammatory Fever, which sometimes terminates in a Suppuration. In this Case the Cure is highly difficult and perplexed, especially when the Matter flows not from the external Glands, but the internal Substance of the Uterus. When this Disorder is chronical, I know nothing more efficacious than the mild *Empsen* and *Caroline* Waters, which not only effectually dissolve the stagnant Humours, but, also, corroborate the Part affected. But the Patient is to abstain from astringent Baths, and from the stronger *Caroline* Waters, which on account of their calcarious and chalybeate Earth, are of an astringent and repellent Nature. But Insessions prepared of uterine and aromatic Herbs, boiled in sweet Water, are very beneficial. When the Vessels are thus relaxed, and the Humours diluted, we may with Advantage exhibit the *Pilulæ Becherianæ*, which are the most considerable of all the uterine Specifics. Nor is *Hippocrates*'s Method of curing an Ulcer in the Uterus to be rejected, which in *Lib.* 1. *de Morb. Mulier.* he gives us in the following manner: "When "this Disorder happens, bathe the Patient in large Quantities "of warm Water, and apply tepid Substances to the Part "affected. But if Pains possess the superior Parts, the whole "Body is to be fomented, and a purgative Potion exhibited; "and, if boiled Whey can be had, let the Patient drink it for "five Days: But if Whey cannot be had, let her drink boiled "Asses Milk for three or four Days. After the Use of the "Whey or Milk, let her drink Water, and use proper Aliments, such as tender and recent Mutton, the Flesh of Fowls, "Beet, and Gourds; but she is carefully to abstain from all saline, acrid, and Sea Substances, as, also, from the Flesh of "Goats." And certainly Whey, and Asses Milk, are highly beneficial, not only in obtunding the Acrimony of the Humours, but, also, in correcting the hectic Heats, with which Patients labouring under this Disorder, are greatly afflicted.

An Inflammation of the Uterus induced by an external Cause, and accompanied with a Fever, a Pain of the Groins, a difficult Discharge of Urine, and Spasms in remote Parts, calls for Venesection, not only in due time, but, also, repeated first in the Arm, and then in the Foot. In this Species of Inflammation, it is, also, requisite the Body should be rendered soluble by Clysters, which in all Disorders of the Uterus, are of singular Use. Externally we are to apply a Plaister prepared of Melilot, two Ounces; Sperma Ceti, half an Ounce; Gum Ammoniac, two Drams; Saffron, one Dram; and Camphire half a Dram; not omitting the internal Exhibition of mild, diaphoretic, and discutient Medicines.

Since many Child-bed Women die of an uterine Fever, especially if they contain a large Quantity of gross impure Blood, hence it is certainly of great Importance, in order to prevent these capital Disorders, for pregnant Women, partly by a salutary Regimen, and partly by proper Remedies, to preserve both their Solids and Fluids in a due Temperature, Quantity, and Equilibrium of Motion; for such as is the Nature of the Patients, even of Child-bed Women, such is the Struggle of Nature against the Disease, and such is the Cure, in which Nature does more than Art. In order therefore to prevent this terrible Disorder, it is necessary that Women, during Gestation, should consult their Health both by seasonable Venesections, and proper Laxatives, especially Preparations of Rhubarb. They ought, also, to use a moderate Diet of a laudable Kind, preserve a due Tranquility of Mind, and drink diluting Potions, which have a Tendency to support and promote Perspiration. Besides, as Inflammations of the Uterus in Child-bed Women, especially those of sanguine Constitutions, and those who in the last Months have neglected Venesection, frequently proceed from hot and spirituous Liquors, aromatic Wines, and such as are impregnated with Saffron, both Nurses and Patients are to be seriously advised to abstain from these Liquors, which exagitate the Blood, and rather by Venesection, and the Use of Baths, for two or three Weeks before the Labour, to procure a free Circulation of the Blood through the Uterus, and its easy Discharge after Delivery.

In no Disorder are Commotions of Mind, especially by Frights and Anger, so prejudicial as in Inflammations of the Uterus. Nor is Refrigeration of the Abdomen and Groins in any Case so hurtful, as after Abortion and Delivery; for Child-bed Women, on account of the Solution of Continuity in their Fibres, the Dilaceration of the Vessels, and the Extravasation of the Humours, are to be considered as Persons severely wounded. But it is sufficiently known how easily these Causes may induce an Inflammation of the wounded Part, and consequently of the Uterus. Hence, not only Child-bed Women, but, also, those who labour under any Disorder of the Uterus, are to be carefully advised to abstain from such hot and spirituous Liquors.

In order to promote the suppressed Lochial Discharge, we are never to exhibit drastic Emmenagogues, such as Preparations of Saffron, Myrrh, Amber, Aloes, or hot Aromatics, or saline stimulating Medicines, much less, if immediately after their Labour, there is still an Impetus of the Motions; for these rather increase the Fever; heighten the Spasms, condense the Blood in the Uterus, by carrying off its moist Parts, which renders it unfit for Evacuation, and dry and obstruct the Emunctories more than they were before. But, when the Spasms begin to be relaxed, the Pains to remit, and the Pores to become open, then moderate Emmenagogues, and such Medicines as restore the Tone of the Parts, are to be exhibited. The best of this Kind are, Solutions of Amber, Myrrh, Rhubarb, and Saffron, not with Spirit of Wine, but with an aqueous and lixivious Menstruum; as, also, Baum-water, or gently spirituous Water of Mugwort, such as that which is distilled with Ale prepared of Wheat, exhibited frequently, though in small Doses.

Venesection is, also, one of the most considerable Remedies for recalling the Lochial Discharge; nor, if it is indicated, let the Physician be terrified from ordering it by the Violence of the Symptoms, or even when the Purples appear. See PURPURA. But when provident Nature by profuse Sweats, or Stools, in some measure, makes Amends for the Cessation or scanty Discharge of the Lochia, we are to abstain from such Medicines as excite the Lochial Evacuation.

When a viscid, yellow, and bloody Humour is evacuated, it is a pretty sure Sign, that the Substance of the Uterus is injured, and that an Inflammation and Ulceration are approaching. In order, therefore, to prevent an Inflammation, or remove it when already present, frequent Purgings with Rhubarb, Tamarinds, and Manna, are both safe and necessary, in order to divert the peccant Humours from the Uterus. This Practice is of such Importance to the Cure, that *Forestus*, in *Lib.* 29. *Obs.* 48. tells us, that he cured a Woman of Distinction of an Ulcer in the Uterus, by giving her every fourth Day, five Ounces of a Decoction of Sena, Epithymum, red Roses, and *Indian* Myrobalans, edulcorated with Sugar, ordering her at the same time, to have abstergent Decoctions injected into the Uterus.

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Uterus. If an Ulcer of the Uterus is curable, after the Uſe of gentle Purgatives for ſome Days, a Decoction of Sanders, Maſtich-tree, Sarſaparilla, Mint, Epithymum, Liquorice-root, and Roſe-wood, drank for twenty-five Days, with a ſudorific Regimen, is of conſiderable Service. See *Sylvaticus*, *Cent.* 4. *Obſ.* 48.

When an Ulcer of the Uterus reſembles the Nature of an ulcerated Cancer, a putrid Sanies, together with corrupted Shreds of the Uterus, are evacuated with a fetid Smell, intenſe Pain, and a Train of violent Symptoms; and, in this Caſe, the Diſorder is generally incurable; demulcent and lenitive Medicines are, however, only to be uſed. If any Hope of a Cure ſtill remains, I recommend the drinking of Milk, eſpecially that of Aſſes; as, alſo, the Uſe of temperate mineral Waters; ſuch as the *Selteran* Springs, and thoſe of *Wildungen*; interpoſing, Morning and Evening, a Bath of ſweet Water with Bran, in which the Patient is to ſit for an Hour, or longer. No acrid, hot, and ſtimulating Medicines, are to be exhibited internally. In Abſceſſes, and Ulcers of the Uterus, we are, alſo, cautiouſly to uſe Aſtringents and Repellents, ſince by theſe a Scirrhus is eaſily induced. Injections of Goats Milk, Saffron, and Elder-flower-water, produce excellent Effects. *Hippocrates* recommends the Uſe of Cabbage; but the Juice of red Beets, frequently injected warm, is better.

An exulcerated Cancer of the Uterus is frequently accompanied with an intenſe Pain, which deſtroys the Strength, and totally prevents Sleep. This Pain is beſt allayed by Anodynes; ſuch as the Extracts of Saffron and Poppies, the *Pilulæ de Styrace*, the *Pilulæ de Cynogloſſo*, the *Pilulæ Wildeganſii*, the *Pilulæ Matthæi*, and the *Pilulæ Starkii*. *Riverius*, in *Prax. Cap.* 10. ſpeaks in the following manner: "All theſe Things "are ſometimes inſufficient to allay the intenſe Pain, which, "on certain Occaſions, abſolutely deprives the Patient of Reſt "and Sleep. Hence we are frequently obliged to have Re"courſe to Narcotics, which, in this Diſorder, are not hurtful, "on account of the intenſe Heat of the Humours: And I my"ſelf knew a Woman labouring under a Cancer of the Breaſt, "who, for four Months, daily took two or three Grains of "*Laudanum*, from which ſhe obtained great Relief." *Frederic Hoffman.*

UTRICARIA. The Name of a Plant which grows at the Cape of *Good Hope*, to which I find no medicinal Virtues aſcribed. *Raii Hiſt. Plant.*

UTRICULUS. The Uterus is ſometimes thus call'd.

UTRIFORMIS ABSCESSUS. The ſame as OEDEMOSARCOMA.

UTRUS. A Name for the *Iſatis*, Woad. *Marcellus Empiricus*, *C.* 23.

UTY *Braſilienſibus*. The Name of a Tree which grows in *Braſil*, of no Uſe in Medicine. *Raii Hiſt. Plant.*

UVA CRISPA. See GROSSULARIA.

UVA GRUINA. Offic. *Vitis Idæa paluſtris Virginiana, fructu majore*, Raii Hiſt. 1. 685. *Vitis Idæa paluſtris Americana, oblongis ſplendentibus foliis, fructu grandiore; rubro, pluribus intus acinis referto.* Pluk. Almag. 392. Phytog. Tab. 320. f. 6. CRANE-BERRIES.

They are imported from *New England*, and are ſuppoſed to be excellent againſt the Scurvy: They are, alſo, of ſome culinary Service, among us.

UVA MARINA. A Name for the *Ephedra*; *maritima*; *major*; and for the *Ephedra*; *maritima*; *minor*.

UVA PASSA MAJOR. See VITIS.

UVA PASSA MINOR. See VITIS.

UVA URSI.

The Characters are;

The Calyx is very ſmall, and, as it were, denticulated; the Flower is monopetalous, and Pitcher-ſhaped; and the Ovary in the Centre of the Calyx becomes a ſpherical Berry, containing a Multitude of oblong Seeds.

Boerhaave mentions but one Sort of *Uva Urſi*, which is;

Uva Urſi. *Tourn. Inſt.* 599. *Boerh. Ind. A.* 2. 219. *Vitis Idæa.* Offic. *Vitis Idæa foliis carnoſis & velut punctatis, ſive Idæa Radix Dioſcoridis.* C. B. P. 470. Raii Hiſt. 2. 1489. *Radix Idæa putata, & Uva Urſi.* J. B. 1. 523. *Vaccinia Urſi, ſive Uva Urſi apud Cluſium.* Ger. 1230. Emac. 1416. SPANISH WHORTLES.

They grow in *Spain*, *Italy*, and other ſouthern Countries; and are ſaid, by *Dioſcorides*, to be good for exceſſive Fluxes of the Belly, Menſes, and all Kinds of Hæmorrhages. *Dale.*

UVÆ FABRILES, in *Cælius Aurelianus*, imports Grapes dry'd in the Smoke of a Smith's Shop.

UVATIO. A Diſorder of the Eye, the ſame as *Staphyloma*. See OCULUS.

UVEA TUNICA. The uveous Coat of the Eye. See OCULUS.

UVIFERA ARBOR TABACENSIS. *De Laet.* The Name of a Tree, the Wood of which is red, the Leaves round, and the Fruit like Grapes, of a very grateful Taſte. It grows principally on the Sea Coaſts. *Raii Hiſt. Plant.*

VULCANUS. Fire.

VULNERARIA. See ASTRINGENTIA.

VULNERARIA.

The Characters are;

The Calyx is tubulated, and ſwelling; the Pod is ſhort, full of a roundiſh Seed, and concealed in the membranaceous Calyx of the Flower.

Boerhaave mentions four Sorts of *Vulneraria*, which are;

1. Vulneraria ruſtica. See ANTHYLLIS LEGUMINOSA.

2. Vulneraria ruſtica flore albo. *T.* 391.

3. Vulneraria; flore purpuraſcente. *T.* 391. *Anthyllis, leguminoſa hirſuta herba, flore ſuave rubente.* M. H. 2. 181.

4. Vulneraria; pentaphyllos. *T.* 391. *Anthyllis leguminoſa, loto affinis, major, Hiſpanica veſicaria.* M. H. 2. 181. *Lotus pentaphyllos veſicaria.* C. B. 332. *Trifolium Halicacabum ſive veſicarium.* J. B. 2. 17. 361. *Boerh. Ind. alt. Plant.*

It is called *Vulneraria*, from its Excellence in vulnerary Uſes, for the Decoction of it, or the Herb itſelf, bruiſed and applied, deterges Wounds, prevents their Suppuration, and cloſes their Lips. *Hiſt. Plant. adſcript. Boerhaav.*

VULNUS. A Wound.

A Wound is a recent and bloody Solution of the Union of a ſoft Part, by a hard and ſharp Body in Motion, preſs'd againſt it, or reſiſting it.

In this Aphoriſm we have an accurate Definition of a Wound, which is, that it is a Solution of Coheſion in the Parts: But, in order to give it the Denomination of a Wound, it muſt be recent; by which Circumſtance it is diſtinguiſhed from an Ulcer, in which there is a Solution of Coheſion in Parts before cohering. By *Hippocrates*, however, as in *Lib. de Capit. Vulnerib. Cap.* 12. Ulcers and Wounds (ἕλκεα καὶ τραύματα) are ſometimes uſed promiſcuouſly, and that in the ſame Chapter. It is, alſo, added, in the Definition, that it is a bloody Solution of Continuity: For if the Wound is ſo ſmall that no red Blood is diſcharged, it hardly deſerves Conſideration, ſince the Skin can ſcarcely be pricked with the Point of a Pin, without producing an Effuſion of ſome Blood. It is, alſo, added, that it is a Solution of Continuity in a ſoft Part, in order to diſtinguiſh it from a Separation or Diviſion in the Bones, by Fracture or Fiſſure. And, laſtly, in order to diſtinguiſh it from a Contuſion, it is added, that the Solution of Continuity is made by an hard and ſharp Body, which, in a ſmall Surface, impreſſes its Motion on any Part of the Body: But an hard and ſharp Body cannot ſeparate the Coheſion of the Parts, unleſs, by Motion, or Preſſure, it is apply'd to the cohering Parts, or unleſs the Parts of the Body are moved or preſſed to the hard and ſharp, and at the ſame time reſiſting Body: For it is ſufficiently obvious, that the Effect muſt be the ſame, whether the Lancet is apply'd to the Arm, or the Arm to the Lancet.

Therefore the ſenſible Cauſe of a Wound is, the Hardneſs, Sharpneſs, and Motion, or Reſiſtance of the wounding Inſtrument.

Theſe Things are ſufficiently obvious: For, unleſs the wounding Inſtrument was hard, it could not overcome the Force by which the Parts mutually cohere; and unleſs it was ſharp, it would make a Contuſion, inſtead of a Wound.

The Subject is any ſoft Part; and therefore, conſequently, the Texture of the ſanguiferous, ſerous, lymphatic, adipoſe, nervous, membranous, and tendinous Veſſels, and the Canals formed of them.

It is obvious, from the Definition, that the Subject of a Wound is a ſoft Part; but modern Anatomy evinces, that the ſoft Parts of the human Body are a mere Congeries or Texture of Veſſels: Hence there can be no Wound without a Diviſion of many Veſſels, and that of different Series: For no ſanguiferous Artery can be divided, without the Veſſels almoſt of all Kinds, being injur'd; for the Coats of this Artery conſiſt of other ſmaller Veſſels, whoſe Coats are, alſo, made up of other ſtill ſmaller Veſſels, and ſo on, till we arrive at the ſmalleſt. Hence, by a ſimple Wound of a ſanguiferous Artery, the ſerous and lymphatic Veſſels are wounded, as, alſo, the Follicules which yield that lubricating Subſtance, with which the internal Sides of the larger Arteries appear anointed: The Membranes, alſo, and muſcular Fibres, conſtituting the muſcular Coat of the Artery, are wounded.

Hence it is obvious, that, by a very ſlight Wound, all the Parts, enumerated in this Aphoriſm, may be wounded.

In this Subject the Cauſe already mentioned, produces a Separation of the coherent Parts, and an Effuſion of the contain'd Liquid.

Since.

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Since, therefore, there can be no Separation of Cohesion in a soft Part, without many Vessels being wounded, it is sufficiently obvious, that every Wound must produce a double Effect; for it separates the solid Parts before mutually cohering, and then it brings from the wounded Vessels that Fluid which was in them at the Moment they were wounded; as, also, that which by the Laws of Circulation, must soon be conveyed to the wounded Part through the divided Vessels. But since it is obvious, from the preceding Aphorism, that all Kinds of Vessels may be injured by a Wound; so it evidently appears, that all Kinds of Fluids may be discharged from the wounded Vessels.

Hence those Actions are injured, which depend upon the Cohesion of the Parts, and a determined Circulation of Liquids through the Vessels.

The entire human Body consists of Solids and Fluids. No Wound can be conceived, which does not destroy the Cohesion of the solid Parts, and interrupt the Circulation of the Humours through the divided Vessels: But all the Functions of the human Body depend on the Soundness of the solid Parts, and the due Motion of the Fluids through the Vessels. Hence there can be no Wound but what injures, at least, some Functions. Thus, that the Fingers of the Hand may be moved at Pleasure, the *Musculus Profundus*, and *Sublimis*, by which this Motion is performed, must be sound; now if by a Wound the Tendons of these Muscles are divided, the Motion depending on the Soundness of these Parts is of course destroyed.

In Physiology it is shewn, that, among other Things requisite to the Action of any Muscle, it is necessary there should be a free Influx of the Spirits through the Nerves: Now if the Nerve distributed to the Muscle should be divided, the usual Influx of the nervous Fluid into the Muscle is hindered, and its Action destroyed.

Those Wounds, therefore, are mortal, which are inflicted in those Parts whose Cohesion is inseparable from Life.

A mortal Wound is such as produces Death as its necessary Effect; but Death is present, when the Influx of the Blood into the Heart, and its Expulsion from it, are hindered: But that these two Effects may be produced, the Soundness of many other Parts is requisite. Every Wound, therefore, which destroys the Things requisite to the free Influx of the Blood into the Heart, and its Expulsion from it, must, of its own Nature, be mortal. The Characteristics of mortal Wounds, and in what Parts they are afflicted, shall be hereafter specified.

Some of these Wounds induce inevitable Death.

All those Wounds which by their Effects induce Death, agree in this, that they destroy the Reception of the Blood into the Heart, and its Expulsion thence: But there is, however, a considerable Difference between mortal Wounds; for some are inevitably mortal; so that though the Wounds are accurately understood, and the Parts wounded thoroughly known, no Attempts of Art hitherto known, can prevent Death from succeeding them, as the Effect does its Cause. Thus, for Instance, if by a two-edged Sword, thrust into a Man's Thorax, a large Wound is made in that Part of the Aorta where it emerges from the Pericardium, all the Blood discharged from the Left Ventricle of the Heart will flow through this Wound, and either be accumulated in the Cavity of the Thorax, or flow through the external Wound, but can never return through the Veins to the Right Ventricle of the Heart; whence inevitable Death ensues. Nor can this be by any Art prevented; for there is no Access to the Hand for applying Ligature, or Suture: And though this could be done, which, however, is impossible, the Aorta being ty'd, the Left Ventricle of the Heart could not empty itself. Hence the Circulation of the Blood, on which Life depends, would be suffocated.

But if after the Aorta is divided into two Branches distributed to each Thigh and Leg, it is wounded in any of these Branches, the Wound will, indeed, of itself, be mortal, because all the Blood will be discharged from this divided Artery; but yet it will not be inevitably mortal, because, by means of a Tourniquet, or Bandage, the Artery may be so compressed, as to emit no Blood, after which, it may be ty'd.

In the Reports given in by Physicians to Judges, these Circumstances ought carefully to be adverted to, and distinguish'd.

Others, if left to themselves, are mortal; but, by the Help of Art, may be so amended, as to remove the Danger of Death.

All the large Arteries distributed through the Limbs may, if wounded, discharge the Blood in such a manner, as to prove mortal: Hence a Wound in such an Artery is, indeed, mortal; but, by Art, may be hindered from producing Death, as its Consequence. Hence it is obvious, that Physicians and Surgeons, who treat Wounds, and make Reports concerning them to Judges, ought to know the Directions and Distributions of the larger Vessels, and those Parts in which they may be most commodiously compressed, in order to prevent Death from the subsequent Hæmorrhage.

Yet, through Neglect, or Error, Wounds, in themselves not mortal, may be rendered so.

This most frequently happens to those who least deserve it; that is, to Soldiers in the Field of Battle. Many wounded Men have died of Hæmorrhages, which might have been stopt by a skilful Surgeon. Many have, also, dy'd by an Extravasation of Blood under the Cranium, who might have been preserved by a seasonable Use of the Trepan. A strong Contusion of the external Integuments of the Cranium, accompanied with a very small Wound, has, when neglected, often produc'd the most terrible Symptoms, and even Death; all which might have been prevented, if a proper Method of Cure had been pursued. Numberless Instances of this occur in practical Authors.

Not only Neglect, but, also, Errors in Practice, often render Wounds, of themselves not mortal, fatal to the Patient. Persons rarely die of Hæmorrhages, unless the large Arteries are divided; but those who suffer a great Loss of Blood, fall into a Deliquium, and then the Hæmorrhage stops: If they are thus left half dead, as it were, in a moderately hot Place, give them only small Quantities of Flesh-broths, at different times; and by this means drooping Life may be supported, till the divided Vessel contracts itself, and is even often consolidated. Thus many have been preserved, whose Death seem'd unavoidable.

But those who endeavour to recover those who have fallen into Deliquiums, in consequence of violent Hæmorrhages by spirituous Liquors, do not restore the lost Quantity of Fluids, but increase the Action of the Vessels upon the Liquids; by which means another Loss of Blood is produced, and the Cause of Death augmented. Many, after Engagements, being left for whole Days among the Carcases of the Slain, with almost their whole Blood exhausted, have, however, afterwards revived.

Some Chymists inform us, that Arsenic, fixed with Nitre, is an excellent Remedy for stopping Hæmorrhages; but the Application of such a virulent and poisonous Remedy to a crude Wound, is highly dangerous; since the smallest Portion of it, received into the Veins, after violent Convulsions, might prove mortal.

Hence when, by public Authority, the Carcases of wounded Persons are inspected, it ought first to be enquired whether the Wound is such as that Death must necessarily ensue; or whether by Surgery, as now known, Death might have been prevented; and then, whether the Death, succeeding the Wound, is to be ascribed to that Wound, or to other Causes.

The Effects of Wounds are various according to the Variety of Actions exercised, whilst the wounded Part was entire; and hence various Appellations of Wounds arise, which are readily distinguished by the Physician who is acquainted with those Actions during Health.

As many different Parts of the human Body as may be hurt by a Wound, so many distinct Functions may be injured, the Soundness of which depended on the Cohesion of the Parts divided by the Wound: But the Person who, from the high Improvements of Anatomy and Physiology, knows the various Uses of the several Parts of the Body, can, from a Knowledge of the Part wounded, determine the Injury which must succeed the Wound. Thus, when the Tendon of a Muscle is divided, it is obvious, that the Action of such a Muscle which depended on the Soundness of the Tendon, must be destroyed: Hence it is obvious, that there is a great Variety of Wounds, as to the Effects they produce in different Parts of the Body.

Nor is there a less Variety of Names, Forms, and Effects, in Wounds arising from the Diversity of the wounding Cause, with respect to its Figure, and Method of acting, whether by Puncture, Cutting, Striking, or Agitation; as, also, with respect to the Force with which it is applied, its Removal from the Wound, its remaining in it, and its poisonous Infection.

In this Aphorism are considered the Diversities of Wounds, so far as they depend on the wounding Instrument.

As for the Figure; if the Instrument be of a conical acute Figure, there will be a Puncture, which soon closes; in which Case,

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Case, it is difficult to know the Deepneſs of the Wound: But if the Inſtrument is of the Figure of an acute Wedge, a Sciſſure will be produced.

As for its Method of acting, whether by Puncture, or Cutting; from theſe Circumſtances ariſe a great Variety of Wounds; for, by Puncture, a narrow, though often a deeply-penetrating Wound, is produced: Whereas, when an Inſtrument, of the Form of an acute Wedge, is drawn through the ſoft Parts, then long tho' leſs deep Wounds are form'd.

As for Striking; in this Caſe the wounding Inſtrument penetrates with the greater Force, and is driven the deeper; and, unleſs it is very ſharp, it may, at the ſame time, make a Contuſion.

As for Agitation; it is to be obſerved, that, when a Wound is inflicted with a full-extended Arm, the Sword often paſſes without doing any great Harm between Parts a Wound in which would be very dangerous; but if the Sword, remaining in the Wound, is agitated and twiſted about in it, far more Parts are injur'd; but this is to be learned from the Figure of the Wound: For if the Bulk of the Wound correſponds to that of the wounding Inſtrument, it has only been inflicted with a direct Thruſt: But if, with a broad Sword, the Wound is made round, it is a Sign, that the Sword has been twiſted about in it.

As for the Force of impinging, according to the different Degrees of Impetuoſity with which the wounding Inſtrument is apply'd to the Body, the Wound will penetrate more or leſs deep.

As for removing the Inſtrument from the Wound, or leaving it in it; in the moſt violent Wounds it is ſometimes expedient to leave the Inſtrument in the Wound, ſince the Parts wounded often ſo embrace the Inſtrument, as to prevent an Hæmorrhage, which, when the Inſtrument is withdrawn, often proves inſtantly mortal. By this means, Life is at leaſt preſerved for ſome time. Thus *Virgil*, in his *Æneid*, *Lib.* 10. when repreſenting the Death of *Pallas* by *Turnus*, expreſſes himſelf in the following beautiful manner:

Ille rapit calidum fruſtra de vulnere telum,
Una eademque via ſanguiſque animuſque ſequuntur.

When the implacable *Achilles* is, in the 22d Book of *Homer*'s *Iliad*, repreſented as having plunged a Spear in the Neck of *Hector*, he is ſaid to leave the Inſtrument in the Wound, that he might have an Opportunity of inſulting him in the Agonies of Death; but *Hector* expired as ſoon as the Spear was withdrawn.

This Diverſity of Wounds principally happens from this Cauſe; when the Inſtrument is barb'd, or hook'd, ſo that it cannot be extracted without great Laceration.

As for the poiſonous Infection; ſurpriſing Experiments evince, that there are ſome Subſtances, which, tho' they may be ſafely ſwallowed, yet prove infallibly and ſuddenly mortal, when apply'd to Wounds. In the Bites of Vipers, the venomous Juice, convey'd into the Wound by the Teeth of the Animal, infallibly kills Men, larger Animals, Hens, and Pigeons. When, at the Deſire of the great Duke of *Tuſcany*, Men of Learning were inquiring into the Nature of the Venom of the Viper, and with the Antients and ſome of the Moderns, aſſerted that it was lodged in the Bile of the Animal, a bold Viper-catcher convinced them of their Miſtake; for he courageouſly drank the Bile, mix'd with half a Glaſs of cold Water, and ſuſtain'd no Injury by doing ſo: Nor did the Viper's Gall, exhibited to various Species of Animals, do them any Harm; nor, when dropt into a recent Wound, did it produce any bad Effects. *Franc. Redi Obſervat. de Viperis.*

Others think it more probable, that the Poiſon of Vipers is lodg'd in the *Loculi*, or Bags, adjacent to their Teeth; in which there is a Liquor, in Colour and Taſte reſembling Oil of Almonds; and, when the Viper bites, the Jaws being compreſſed, this Liquor is neceſſarily infuſed into the Wound. But tho' the Poiſon, convey'd into the Wound by the Viper's Bite, produced ſuch terrible Effects, the ſame Viper-catcher who drank the Bile, did not heſitate to drink the Liquor expreſſed from the *Loculi* of an angry Viper, and all the Foam and Saliva in its Mouth, after having diluted them in Wine, without ſuſtaining any Injury. Neither did this Liquor and Foam produce any bad Effects, when exhibited to other Animals. *Redi.*

The Spears of the Inhabitants of *Bantam*, which, by a very ſlight Wound, prove mortal, when infuſed in Wine, or any other Liquor, for many Days, conveyed no malignant or poiſonous Quality to the Liquor in which they had ſo long remained. *Redi.*

When the valiant *Cato* led his Army thro' the parched *Libyan* Deſerts, his thirſty Soldiers would not venture to drink of a certain Fountain, on account of the great Number of Serpents it contain'd; but their ſagacious General perſuaded them to drink boldly, and encouraged them, by his own Example, to do ſo. *Lucan. Pharſal. Lib.* 9.

If a Thread, wet with Oil of Tobacco, is, by means of a Needle, paſſed thro' any Part of a live Animal, ſuch an Animal ſoon dies. In this manner was a Viper killed, in leſs than half a quarter of an Hour, by *Redi*; who, nevertheleſs, found, that the ſame Degrees of Malignity were not in the Oils obtained from all the Species of Tobacco.

When, therefore, there are anomalous Symptoms, which we cannot ſuſpect to ariſe from the Wound, as their Cauſe, we are then to conſider whether they ariſe from the venomous Infection of the wounding Inſtrument.

All theſe again vary, with reſpect to the Difference of the Part receiving the Wound, as to its Hardneſs, Softneſs, Connexion, Situation, Effect, contain'd Liquid, and Alteration.

In the two preceding Aphoriſms are enumerated the Diverſities of Wounds, as far as they depend on the Functions injur'd by the Wound; as, alſo, thoſe Differences which depend on the Diverſity of the wounding Cauſe: But in this are conſidered thoſe Varieties of Wounds which ariſe from the different Natures of the wounded Parts.

As for the Hardneſs or Softneſs of the Part; a wounding Inſtrument will, with a ſmall Force, penetrate the ſoft Integuments of the Abdomen; but it will require a far ſtronger Impetus, or Application, to divide the Cranium.

As for the Connexion of the wounded Part with others; when the Tendon of a Muſcle is divided, the Motion of that Part to which it was naturally united, is loſt; and this is accounted the Effect of the Wound. When a ſmall Artery, remaining in the Socket after the Extirpation of a Tooth, diſcharges ſo much Blood as almoſt to prove mortal, this does not happen becauſe ſo ſmall an arterial Ramification is hurt, but becauſe, being fix'd to the bony Surface of the Socket, it cannot contract itſelf, and by that means be cloſed. When, in the Flexure of the Cubit, by raſh and unſkilful Veneſection, the *Aponeuroſis* ariſing from the tendinous Part of the Biceps Muſcle is hurt, the terrible Symptoms which enſue do not depend upon ſuch a ſlight Wound, but upon the Connexion of that tendinous Expanſion with other Parts.

As for the Situation of the Part; if only a ſmall Ramification of the intercoſtal Arteries is ſo wounded, that the *Pleura* being, at the ſame time, perforated, the Blood flows into the Cavity of the Breaſt, the Lungs may, by the Corruption of the extravaſated Blood, be inflamed and ſuppurated, and a mortal Conſumption brought on, only becauſe that Artery is ſo ſituated as that it can diſcharge Blood into the Cavity of the Breaſt. For, in other Parts of the Body, larger arterial Ramifications may be cut without Danger. A Wound in the internal Part of the Thigh is, on account of the large Veſſels ſituated there, far more dangerous than an equal Wound in its external Part.

As for the Effect; many Parts of the human Body are of ſuch a Nature, that, when they are injured by a Wound, or any other Cauſe, the Functions of other Parts are, alſo, diſturbed; but Anatomiſts have not as yet found a Reaſon why, when the former are hurt, the Actions of the latter ſhould be diſorder'd. Thus, for Inſtance, after ſeveral Fits of the Colic, or Iliac Paſſion, there ariſes, in the *Colica Pictonum*, a Palſy of the Arms, and frequently, if the Diſorder proceeds, a true *Maraſmus* of the ſuperior Limbs. But no one, from the known Structure of the Parts, can account for ſuch a Phenomenon. In the *Memoires de l'Acad. des Sciences, l'An.* 1727. we are inform'd, that, after Wounds of the Abdomen, in which ſome Nerves of the Meſentery were cut, the Patient was ſubjected to intolerable Pains, and died; but, upon opening the Body, neither the large Veſſels were found cut, nor any of the Viſcera wounded: Upon cutting in a Dog the intercoſtal Nerve, and the eighth Pair, which, in that Animal, are included in one Vagina, or Covering, it appeared, that the Dog's Eye, on the ſame Side, was darkened, became leſs, and was inflamed; and, by repeated Experiments, it was evinced, that the Eyes are always ſenſibly changed, by that means. But this could not be accounted for from the Structure of the Parts, tho' it was confirmed by the Effects ſucceeding the Wound. Hence it is obvious, that there is a great Diverſity of Wounds ariſing from the Effects which are obſerv'd to be produc'd by the wounded Part in other Parts of the Body. But an Obſervation of the Fact often informs us of ſuch Events, when, from the known Structure of the Parts, we could not have demonſtrated, that ſuch Phenomena were to be apprehended.

As for the Liquids contained in the Part wounded; if the Gall-bladder, being wounded, diſcharges the Bile into the Cavity of the Abdomen, this Bile, becoming putrid, will ſoon

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produce terrible Symptoms. If the Ureters ſhould be cut, the Urine diſcharged from the Wound, will be accumulated in the Abdomen, and becoming corrupted may render all the abdominal Viſcera putrid.

As for a Change or Alteration in the Appearance of the Parts; the Parts of the Body hurt by a Wound may, more or leſs, ſo degenerate from their natural Conformation, and by that means have their external Appearance ſurpriſingly chang'd.

When the Muſcles of one of the Sides of the Face become paralytic, there is a ſurpriſing Diſtortion on the oppoſite Side; becauſe the Muſcles, deſtitute of the Æquilibrium of their antagoniſt Muſcles, retract the Parts of the Face. It is ſufficiently obvious, that the like Effect may be produced by Wounds, when ſome Muſcles of the Face, or other Parts, are hurt; or when the Nerves diſtributed to theſe Muſcles are cut or divided.

As it is neceſſary to be acquainted with the Origin of this Multiplicity, ſo a ſubtile Diſtinction of Names is of no great Uſe.

It is not to be doubted, but Phyſicians and Surgeons, who undertake the Cure of Wounds, ought carefully to attend to what has been ſaid in the three preceding Aphoriſms; for upon theſe depend the Diagnoſtics and Prognoſtics of Wounds, which can be placed on no ſure Foundation but that of a Knowledge of the Structure and Uſe of the Parts: For when we know the wounding Inſtrument, together with the Manner and Force with which it was applied, when we conſider the Nature of the Part wounded, and know its natural Uſes injured by the Wound, we foreſee what is to be dreaded, and underſtand how far Art can remove the Misfortunes which have already happened, or prevent ſuch as are to be expected. But it ſeems difficult by various Names ſo to ſpecify the numerous Diverſities of Wounds, that the Word affixed to each ſhall convey a diſtinct Idea of it to the Mind; and ſtill more difficult ſo to impreſs theſe Ideas and Words in the Memory, as that they may be of Uſe. Thus *Paré*, that he might give the Differences of Wounds, has prefixed a whole Table to his Treatiſe on Wounds: But a Perſon who attentively conſiders, will eaſily ſee that theſe are not of great Uſe; and that the general Knowledge of thoſe Things on which the ſo great Diverſity of Wounds depends, is ſufficient.

If, in an healthy and robuſt Body, a Wound is made in a viſible Place, not irrigated by any large Artery, and not too tendinous, the following Phenomena ariſe, provided the Orifice of the Wound is defended from the Cold, from Air, and Exſiccation.

That ſomething certain may be eſtabliſhed, with reſpect to the Cure of Wounds, it is neceſſary to premiſe thoſe Phenomena, which are obſerved to happen from the time in which the Wound was inflicted, till it is perfectly conſolidated; and, when theſe are pointed out, in the Order in which they ſucceed each other, they afford an evident Knowledge of the Method uſed by Nature in reſtoring Parts ſeparated by a Wound, to their former Coheſion.

In order, therefore, to avoid all Error and Confuſion, we ſhall only here conſider a Wound alone, and ſuppoſe the Body of the wounded Perſon in perfect Health in every other reſpect; otherwiſe the Phenomena obſerved would not be juſtly aſcribed to the Wound alone, but might, in ſome meaſure, depend upon a Diſeaſe accompanying the Wound; for quite other Changes appear in a Wound when the Body of the Patient labours under a ſcorbutic, venereal, or rachitic Cacochymy: Beſides, the Body is ſuppoſed robuſt; for in weak Habits the languid Circulation conveys the Humours to the Wound with a ſmaller Impetus: Hence, in ſuch a Patient, the Pain, Heat, and Tenſion, are far leſs about the Lips of the Wound, than they are in an equal Wound inflicted on a ſtrong, robuſt, and vigorous Perſon.

Beſides, all theſe Things ought to be obvious to the Senſes: Hence, in the external Parts of the Body, the Phenomena of Wounds are principally obſervable; and from a Sight of theſe we learn what happens in the internal Parts of the Body, when wounded. For this Reaſon it is, alſo, ſuppoſed, that no large arterial Veſſel is wounded; for in this Caſe, the violent Effuſion of Blood would hinder all the Phenomena from being accurately viewed.

It is, alſo, added, that a Wound ought not to be in a tendinous Place; for if the Tendon of any Muſcle is wounded, and not entirely cut thro', the Muſcle affixed to ſuch a Tendon may, by drawing the wounded Tendon, produce terrible Symptoms, which do not ſo much depend on the Wound, as on the Muſcle drawing the wounded Tendon. But we ſhall hereafter deſcribe thoſe Symptoms which ariſe from a Diviſion of large Arteries or Tendons by means of a Wound.

Beſides, an Admiſſion of the Air, eſpecially when Cold, ſurpriſingly changes the wounded Parts, and injures and dries the tender Veſſels. Thus if, by a Wound, the *Cranium* is denudated, and the Bone expoſed to the free Air for a conſiderable time, ſuch a Wound will hardly be cured till there is a Separation of the bony *Lamina*, by Exfoliation. But this Circumſtance does not depend upon the Wound: For if the denudated Bone had been immediately defended from the Air, ſuch an Exfoliation would not have happened.

Under theſe Conditions, then, are enumerated, the Phenomena proper to Wounds alone, in the following Numbers:

1. The Parts between which the wounding Cauſe is forced, recede by degrees more and more from each other, tho' the Cauſe is removed, unleſs the Puncture is very ſmall.

As ſoon as the wounding Inſtrument has divided the Coheſion of the Parts, the Diſtance of the Parts ſeparated is equal to the Thickneſs of the Inſtrument: Hence, when the public Executioner, with a ſharp Razor, ſlits the Face of Malefactors, there only appears, at firſt, a red Line; but, gradually, the Lips of the Wound recede from each other, ſo as frequently, in a few Hours, to be the Breadth of a geometrical Line diſtant from each other: For that Force by which the ſolid Parts cohere, proceeding to act, retracts the divided Lips; becauſe in the Place where the Wound is, the Coheſion of the Parts is deſtroyed.

As for the Smalneſs of the Puncture; whilſt a wounding Inſtrument by Puncture makes a ſmall Wound, as ſoon as it has penetrated the Skin, and wounded the ſubjacent *Tunica Celluloſa*, unleſs the Patient's Body is much extenuated, the Wound appears very inconſiderable, or none at all; becauſe the *Tunica Celluloſa*, by the Preſſure of the Skin, in the adjacent Parts, immediately riſes in the Wound, and cloſes it. Hence, when corpulent Perſons are blooded, the Diſcharge of the Blood is often ſuddenly ſtopt by the Fat obſtructing the Orifice of the Skin.

2. At firſt the Blood flows from a Wound with Impetuoſity, but, by degrees, ſtops ſpontaneouſly.

If a great Artery is not wounded, nor ſuch a one as, being affixed to a Bone, cannot retract, and cloſe itſelf, the firſt Moment the Wound is received, the divided Veſſels diſcharge the Blood with Impetuoſity; but ſoon after, their Orifices being by their own Elaſticity contracted, and concealed within the Lips of the Wound, the Hæmorrhage is quickly diminiſh'd, and at laſt ceaſes ſpontaneouſly. This evidently appears in Cutting for the Stone; in which Operation, when by a pretty large Wound the Skin and ſubjacent Parts are divided, an Ounce or two of Blood are diſcharged; but unleſs, by ſome unlucky Accident, a large Artery is wounded, the Hæmorrhage, which would otherwiſe greatly diſturb the Operation, ſoon after ceaſes almoſt totally; for almoſt all the Blood evacuated from the Wound is diſcharged from the Arteries; for pretty large Veins, when divided, diſcharge but a ſmall Quantity of Blood, unleſs there is ſome Obſtacle placed between the Heart and the Wound, inflicted in the Vein: But the Arteries, by their Elaſticity, eaſily contract themſelves; by which means, the Blood is ſoon ſtopt.

3. Then a ſanguineous Cruſt is formed in the Cavity of the Wound.

Since, then, as we have now obſerved, arterial Blood is almoſt only diſcharged from a Wound; and ſince ſuch Blood, when extravaſated, in the ſoundeſt and moſt robuſt Perſon, is naturally ſoon coagulated; hence, as ſoon as the Impetus of the diſcharged Blood begins to ceaſe, ſuch a *Coagulum* of the Blood is formed, generally called a *Thrombus*, or bloody Eſchar, which adhering to the Lips of the Wound, perfectly covers its whole Surface. Thus Wounds are covered and defended by the exquiſite and ſalutary Effort of Nature; and under this Covering, the Parts ſeparated by the Wound are gradually conſolidated: And becauſe this *Thrombus* is, by the Heat of the Body, and the contiguous Air, more and more dried, there is a pretty hard Covering thus formed, which after the Cure of the Wound ſpontaneouſly falls off.

4. A diluted rediſh thin Liquor flows from it.

When this *Thrombus* begins to be formed, or when it is removed, after its Formation, Blood is not generally diſcharged, but only a thin Liquor tinged with a faint-red Colour, and reſembling the Waſhings of new-killed Fleſh. This ſeems to happen

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happen becauſe the Veſſels deſtined for the Conveyance of the red Blood being divided, but gradually contracting, their Orifices diſcharge but little red Blood, whilſt a greater Quantity of a thinner Fluid, which is not red, is evacuated from them.

5. Then the Lips of the Wound begin to be red, preternaturally hot, painful, tumid, and retorted, whilſt the Bottom of the Wound becomes tumid and prominent. But eſpecially the Fat riſes into the Aperture of the Wound, and there ſoon degenerates.

When the divided Veſſels by their proper Elaſticity contract their Orifices, and are almoſt entirely cloſed, the Humours which uſed to flow through thoſe Veſſels, are ſtopt: Hence there ariſes an Obſtruction about the Lips of the Wound, and the Impetus of the ſucceeding vital Humours forcing the Fluids into the obſtructed Veſſels, dilates them near the obſtructed Place; and hence ariſes a true Inflammation. For this Reaſon on the ſecond and third Day the Lips of the Wound become red, whilſt greater Heat and Tumor, the Concomitants of an Inflammation, appear. And if all theſe Symptoms are moderate, they prognoſticate nothing bad, ſince they naturally happen in all Wounds. This is the Reaſon why a recent Wound is hardly accompanied with any Pain, but eſpecially on the third Day, or ſometimes ſooner, an Inflammation ariſing, and the wounded Parts becoming tumid, a very conſiderable Pain is often perceived in the Wound.

Hence *Hippocrates*, in *Epidem. Lib.* 2. tells us, "That "when ſevere Wounds are inflicted, if a Tumor does not "ſucceed, it is a very bad Sign." The ſame is affirmed in *Aph.* 66. and 67. *Sect.* 5. where he obſerves, "That ſoft "Tumors are good, but ſuch as are crude, bad." For if no Tumor ariſes about the Lips of the Wound, it denotes that the vital Force is defective, and if the Tumor is exceſſive, the violent Inflammation lays a Foundation for dreading a bad Event.

The ſame Author, in his Treatiſe *de Fracturis*, not only obſerves, but lays it down as one of the moſt important Rules in Surgery, "That on the third and fourth Days, Wounds "are by no means to be diſturbed; and that we are at this "time to abſtain from all Searches by the Probe, and from "every thing which is capable of irritating Wounds; for in "general, moſt Wounds take a conſiderable Turn, and grow "troubleſome on the third or fourth Day."

For the like Reaſon, in the ſame Treatiſe, he adviſes, that when a fractured Bone ſticks through the Skin, it is to be reduced on the ſame or following Day; but not on the third, and by no means on the fourth and fifth.

Thus *Simeon*, and *Levi*, the crafty Sons of *Jacob*, in order to revenge the Affront given them by *Sechem* the Son of *Hamor*, in deflowering their Siſter *Dinah*, perſuaded the the unwary *Hamorites* to ſubmit to Circumciſion; and on the third Day, their Wounds being ſo exceſſively painful, that they could make no Reſiſtance, they ſlew them all both with Eaſe and Impunity.

As for the Retorſion of the Lips of the Wound, and the tumid prominent State of its Bottom: The Membrana Adipoſa ſubjacent to the Skin is eaſily diſtended, and rendered tumid, as is obvious in fat and dropſical Perſons, and in an Emphyſema, in which the Air entering the Membrana Adipoſa, produces ſo ſurpriſing Expanſions thereof. But the Skin covering the Membrana Adipoſa, confines it very ſtrongly; hence, when the Skin is divided by a Wound, the Lips of this Wound gradually recede from each other; and the Membrana Adipoſa, which in the Place of the Wound is free from the equable Preſſure of the Skin, ſoon riſes and ſwells. Hence the Skin being on both Sides retracted from the protuberant Membrana Adidoſa, the Lips of the Wound are retorted, and, in its Bottom, a tumid Prominence appears. But if the Impetus of the Fluids diſtending the Veſſels remains the ſame, whilſt the Cauſes reſiſting this Diſtenſion are leſſened, the Largeneſs of the Veſſels will be augmented. When, therefore, the Reſiſtance of the Skin in a Wound is removed, the Membrana Adipoſa riſing in the Wound, will be more dilated, and grow out into what the Surgeons call *fungous Fleſh*, and conſequently degenerate very ſoon.

6. And, at the ſame time, a ſlight Fever, accompanied with Thirſt and Heat, is excited.

This only happens when the Wound is conſiderably large; for in a ſmall Wound theſe Symptoms are not generally obſerved; for as ſoon as the Symptoms enumerated in the preceding Number ariſe, a greater Heat is excited, not only in the Wound, but, alſo, in the whole Body, the Pulſe becomes quicker, the Patient is afflicted with Inquietudes, and turbulent Dreams; his Thirſt is, alſo, increaſed, and his Urine more red than before. But all theſe Symptoms laſt as long as the Tumor, Pain, Heat, and Retortion of the Lips of the Wound are preſent; and when theſe ceaſe, the other terminate. Such a ſlight Fever happening to wounded Perſons in this Stage of their Misfortune, is ſo far from being injurious, that it is beneficial, ſince by its means the Pus is formed, after which it generally ceaſes. In cutting for the Stone, the Extirpation of a Breaſt, or other Wounds of a like Nature, the Preſence of ſuch a Fever at the time ſpecified, is always a good Sign.

Hence *Hippocrates*, in *Aph.* 47. *Sect.* 2. obſerves, "that "during the Generation of Pus, Pains, and Fevers more "readily happen, than when it is formed."

But here we only ſpeak of ſuch a Fever as at this time ariſes from the Wound as its Cauſe; for a Fever may happen to wounded Perſons from various other Cauſes: Thus in large Wounds a copious Pus already formed, and in ſome meaſure reſorb'd by the bibulous Veins, often induces an hectic Fever, which preys upon the Body.

7. Hence about the third or fourth Day, ſooner or later, a tenacious, white, pinguious, equal Liquor, called *Pus*, is formed in the Wound.

When a Wound is inflicted, the Blood is immediately diſcharged; and afterwards, when the divided Veſſels are more conſtricted, a rediſh Ichor. Then ariſes an Inflammation of the Wound with the Symptoms deſcribed. Then begins to appear in the Wound an unctuous Liquor, almoſt of the Conſiſtence of freſh Cream, ſomewhat yellowiſh, entirely equable, without Smell, and of a mild Taſte, almoſt like that of Chyle: This Liquor is called *Pus*, which if laudable, has all the now enumerated Qualifications. But ſuch a Pus is never formed unleſs the Wound is covered; but a Pus of this Kind is generated under a Thrombus ariſing in the Wound, or a Plaiſter covering it. Hence Pus is not formed in the Veſſels, but in the Wound, by the extravaſated Humours cheriſhed and changed by the Heat of the Body; for if all the Pus in a Wound is wiped away with ſoft Lint, about an Hour after the Surface of the Wound will every-where appear moiſt with a thin Liquor, which is not Pus. But if for twenty-four Hours the Wound is covered with a Plaiſter, the Pus will appear upon removing this Plaiſter. Hence Pus is formed out of the Veſſels; but the Matter of which it is formed, is conveyed thro' the Veſſels.

But Pus thus formed in a Wound produces happy Effects; for Nature uſes this Method to diſengage and ſeparate from the live and ſound Parts ſuch as are mangled and half lacerated, and the inflamed Extremities of the Veſſels, together with the infarcted Liquids lodged in the Lips and Bottom of the Wound. Beſides under this Pus, when formed, all the loſt Parts grow up afreſh.

Hippocrates, who ſtrictly followed Nature, in the Beginning of his Treatiſe *de Ulceribus*, tells us, that recent Wounds [ἕλκεα νεότρωτα, which Words ſeem rather applicable to Wounds than Ulcers] and the Parts adjacent to them were not inflamed, if a Suppuration was ſpeedily brought on. He afterwards adds, that a Wound inflicted with an acute Inſtrument, may be cured without a Suppuration; but that contuſed and mangled Fleſh became putrid, and being converted into Pus, was conſumed, after which new Fleſh muſt neceſſarily be generated.

In the ſame Place he tells us, that Wounds are inflamed when they tend to a Suppuration; but they ſuppurate by ſuch a Change and Heat of the Blood, as renders their Pus putrid. But by Putrefaction, he does not here ſeem to mean a malignant and truly putrid Degeneracy of the Humours, but only that Change of their State by which they are transformed into Pus, as is obvious to every one who reads the Paſſage attentively.

Hence laudable Pus is by Surgeons reckoned the beſt of Signs. And *Galen*, in *Com. Aph.* 22. *Sect.* 5. does not heſitate to affirm, "that no bad Accident can happen to an Ulcer "which generates Pus;" for Pus is formed whilſt laudable Humours are with a due Motion conveyed to the Wound; hence it has as its firſt Cauſe, the Actions of remaining Health; for in a cacochymic Body good Pus is rarely formed in a Wound, but an Ichor, which greatly degenerates from the Conditions of laudable Pus. Hence in ſuch Patients, Wounds though ſlight, are not to be cured without the greateſt Difficulty. For this Reaſon the antient *Greek* Phyſicians called ſuch Bodies δυσλκεα, that is, Bodies in which Wounds were not cured without great Difficulty. And *Hippocrates*, in *Aph.* 8. *Sect.* 6. tells us, "that Ulcers ariſing in the Bodies of dropſical Patients are "not eaſily cured." If, in conſequence of a violent Fever, the Humours are moved with a great Impetus, the Wound appears dry without any Pus: If, on the contrary, the Strength of

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of Nature is languid, there is, alſo, a Defect of Pus. For this Reaſon *Hippocrates*, in *Prognoſt.* reckons the Dryneſs of an Ulcer among the Signs of approaching Death.

8. At this time the Redneſs, Heat, Tumor, Pain, Retorſion of the Lips, and Fever, ceaſe, or are diminiſhed.

For all theſe Symptoms only ariſe, becauſe the divided Veſſels in the Lips of the Wound being contracted by their Elaſticity, deny a free Paſſage to the Fluids convey'd to them. Hence ariſes a true Inflammation which brings on Redneſs, Pain, and Heat in the Part. The Membrana Adipoſa in the mean time, free from the equable Preſſure of the Skin, receives into its dilated Veſſels foreign Humours, by which means it becomes tumid in the Bottom of the Wound, and retorts its Lips. But a Suppuration ſeparates the obſtructed Extremities of the Veſſels, together with the ſtagnant Fluids lodged there. Hence, when Pus is formed, and the obſtructed Veſſels are again rendered pervious, a free Circulation of the Humours thro' them is reſtored. All theſe Symptoms, therefore, ariſing from an Inflammation of the Lips and Bottom of the Wound, are neceſſarily much diminiſhed, or totally removed, by the Formation of Pus.

This Stage of a Wound is by Surgeons generally called the *Time of Digeſtion*; and when they ſee the tumid Parts ſubſide, they generally ſay, that *the Pus fuſes, and diſſolves all the Parts.*

9. And the Cavity of the Wound, from the Bottom to the Top, from the Circumference to the Centre, is gradually filled with a new red live Matter called *Fleſh*, whilſt the Margins, becoming white, bluiſh, ſoft, and equal, are united.

When after a laudable Digeſtion, all the Parts which could not be reduced to their requiſite Soundneſs, are ſeparated from the live Veſſels, then the Wound is ſaid to be *pure*; and its whole Surface appears every-where equably moiſt and perſpirable, whilſt there is no Roughneſs nor Dryneſs either in the Lips or Bottom of the Wound. Then begins that Stage of the Wound in which it is conſolidated; for under the Pus, which is a natural and mild Balſam, we daily obſerve the Bottom of the Wound to riſe gradually, and a new Matter to proceed equably from the Circumference to the Centre. And when this Matter is viewed with Microſcopes, it appears to be the tender and pulpous Extremities of Veſſels. This is by Surgeons called *Incarnation*; not that muſcular Fleſh properly ſo called, is regenerated in this manner, but it has become cuſtomary to call this red and live Matter daily increaſed in a pure Wound, *Fleſh*. This appears beautifully in Wounds with Loſs of Subſtance, whilſt, for Inſtance, by the Stroke of a Sword, the Skin, with a Part of the ſubjacent Membrana Adipoſa, is carried off; for in this Caſe there naturally appears, firſt, in the Bottom of the Wound, a Congeries of ſprouting Veſſels; then the like Veſſels are protruded from the Margins, and concurring and uniting with the others riſing from the Bottom, by an admirable Artifice of Nature, reſtore the loſt Subſtance; for in this Caſe, Art does nothing but remove Impediments, and prevent the Acceſs of the Air, by covering the Wound; the natural Fabric of the Body performs all the reſt. That theſe things happen in this manner is ſufficiently certain; but by what Laws or Mechaniſm they are brought about, is hitherto unknown. *Galen*, in *Method. Medend. Lib.* 3. *Cap.* 3. beautifully expreſſes this in the following manner: "With reſpect to the "Generation of Fleſh, it is to be obſerved, that the Matter "of it is laudable Blood; but the Artiſt, or Author, of its "Formation, [δημιεργὸς τε καὶ τεχνίτης] Nature." In this Paſſage he treats of the Method in which an hollow Ulcer ought to be cured. The Antients were, however, ignorant of the admirable Structure of the minute Veſſels of which our Bodies are compoſed. And the Moderns far more ſkilled in Anatomy, cannot help admiring how the elongated Mouths of the divided Veſſels in the Wound, ſhould concur, unite, and be concreted with the adjacent Veſſels, and that in ſuch a manner, that Arteries are united to Arteries, Veins to Veins, and Nerves to Nerves; ſo that a Subſtance exactly like that which was loſt, is formed in the Wound. This peculiar Property of the human Body is loudly expreſſive of the infinite Wiſdom of its all-powerful CREATOR.

Whilſt theſe thing happen in an hollow Wound, the Margins which were before red and tumid, begin to ſubſide in an equable manner; they acquire a bluiſh Pearl-like Colour; and thus the firſt Rudiments of the Cicatrix are formed about the Margins, and are gradually increaſed toward the Centre, till the Wound is equably cloſed.

10. Laſtly, the Wound becomes dry, and is covered with a Cicatrix.

When all the loſt Parts are reſtored, and the Parts divided by the Wound, united, the Wound appears dry, though before a certain Moiſture was obſerved all over its Surface.

If a large Quantity of Subſtance is not loſt, nor by an exceſſive Suppuration much of the Membrana Adipoſa and Skin conſumed, all the Parts are ſo conſolidated, that there hardly appears any Difference between the Place of the Wound, and the adjacent Skin, in which Caſe it hardly deſerves the Name of a Cicatrix. But where a large Portion of the Skin is taken away, or much of the ſubjacent Membrana Adipoſa conſumed by the Suppuration, then the Place of the Wound will appear more white, ſolid, and often more depreſſed, than the adjacent Skin. In this Caſe it is called a *Cicatrix*, which is always leſs perſpirable, tho' more ſmooth and ſhining, than the other Parts of the Surface of the Body. This is in a particular manner obvious after the Extirpation of a Breaſt or large Steatoma, where a conſiderable Portion of the Skin is removed; for in this Caſe the Cicatrix formed, or Surface of the Wound is ſmooth, ſhining, unmoveable, and adhering to the ſubjacent Parts.

Thus we have deſcribed the Hiſtory of Wounds in a ſound Body, and enumerated all the Phenomena, which from Experience we find to happen in a Wound from its firſt Infliction to its entire Conſolidation. Hence we may deduce the beſt Method in which Wounds ought to be cured, which is, by imitating Nature's Method, which conſiſts in removing ſuch things as are hurtful, and ſupplying ſuch as are defective. But it is to be obſerved, that we here ſpeak of Wounds in which neither a large Artery, nor an highly tendinous Part, are wounded. We muſt, therefore, next conſider, what Changes of Phænomena happen to a ſimple Wound, if ſuch Parts ſhould be wounded.

If an Artery, not too large, nor too near the Heart, is cut quite through tranſverſly, the divided Parts retiring, and hiding themſelves in the neighbouring ſolid Parts, by means of this Contraction, ſtop the Efflux of Blood; and the other Phenomena proceed as before deſcribed.

Whilſt the Blood, by the Force of the Heart, is thrown into the Arteries which always become narrower, by acting on their Sides it removes them from the Axis of the Canal, and conſequently increaſes the Capacity of the Arteries. But all other Circumſtances being alike, it dilates the Arteries the more the greater Reſiſtence there is about their Extremities. Hence an Artery when tied becomes very tumid between the Ligature and the Heart. But this Dilatation is reſiſted by the muſcular and orbicular Fibres of the Arteries with a conſiderable Force, by which they are again contracted into their former Dimenſion, as ſoon as the impelling Force of the Heart ceaſes. When, therefore, an Artery divided by a Wound diſcharges Blood from its open Orifice, the Reſiſtance of the Blood impelled from the Heart is diminiſhed, and conſequently the Cauſe of the Dilatation of the Artery is leſſened. The Force, therefore, of the orbicular Fibres prevails, by which in every Moment the Artery is more contracted, and thus gradually the Orifice of the divided Artery is cloſed, if it is not exceſſively large. Beſides, the longitudinal Fibres being by the ſame Cauſes more contracted, diminiſh the Length of the Artery: Hence an Artery, entirely divided, ſhrinks back, and, lodging itſelf between the adjacent ſolid Parts, is by their Bulk and Weight more compreſſed and contracted. If a conſiderable Quantity of Blood is diſcharged from a Wound, the Strength being impaired, and the Impetus of the impelled Blood diminiſhed, the Contraction of the divided Artery is augmented. When a great Toe was cut off by one Stroke of a Chiſſel, I ſaw two Arteries project, perhaps the Length of a geometrical Line beyond the Surface of the Wound; but when they had for a few Minutes diſcharged the Blood freely, they began to be retracted, the Hæmorrhage was leſſened, and two Days after when the Dreſſing was removed, no Blood was diſcharged, the Mouths of the divided Arteries being cloſed up. But if an Artery, which is either very large, or very near the Heart, is divided, the Contraction of ſuch an Artery is not able to reſiſt the Blood impelled with ſo great a Force; hence the Hæmorrhage proves mortal; for the ſmaller the Artery is, and the farther diſtant from the Heart, the Impetus of the Blood impelled from the Heart is the more retarded, becauſe the Reſiſtance it meets with is greater.

If an Artery is wounded tranſverſly, and not cut quite through, the Wound enlarges by a Retraction of the divided Fibres; hence a pepetual Hæmorrhage; and when that ceaſes, an Aneuriſm, from the Tenuity of the Cicatrix yielding to the Force of the circulating Fluid.

In this Caſe, for the Reaſons already ſpecified, a Wound inflicted on an Artery is, in conſequence of the Receſſion of

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as yet cohere, the Extremities of the Artery cannot ſhrink back and lodge themſelves in the adjacent Parts; nor can the orbicular Fibres be ſo contracted as to cloſe the Wound of the Artery. Since, therefore, in this Part there is no Reſiſtance, and a conſiderable one in the other entire Veſſels, ſuch a Wound will continue to diſcharge Blood till the Patient dies, or falls into a Deliquium. But it more frequently happens, that the Blood is diſcharged not in ſuch a Degree as to prove mortal, but only to induce a great Weakneſs. Then there begin to grow gradually on the Part of the wounded Artery, as it were, the Rudiments of a Cicatrix, which are able to check the Effuſion of the Blood moved by ſo weak a Force of the Heart: But afterwards the Strength of the Patient becoming greater, this Part remaining weaker than the other Parts of the Artery, is more dilated, and becomes protuberant. This is called an *Aneuryſm*, or a *Dilatation of the Artery*, becauſe the Artery in that Place no longer remains an equable conical Canal, but is diſtended into a Sack; for as the Largeneſs of Arteries depends on two Cauſes, that is, the Force with which the Blood propelled from the Heart endeavours to dilate the Arteries, and the Reſiſtance of the Sides of the Arteries, and conſequently as the Largeneſs of Arteries is in a Ratio compounded of the direct Ratio of the Impetus of the impelled Blood, and an inverſe Ratio of the Reſiſtance of their Sides, it is ſufficiently obvious than when an Artery is rendered weaker in any Part, it muſt of courſe be more diſtended there. But becauſe by ſuch a Diſtention, ſuch a Part will be ſtill more weakened, the Reaſon is obvious why ſuch large aneuryſmatical Tumors, of which we have many Inſtances in practical Authors, are often formed.

If a large Artery is wounded, and cut quite through, a perpetual Hæmorrhage will ariſe, till Fainting, or Death, is induced. The Parts below the Wound grow tabid, and are conſumed by a putrid but ſlow Gangrene, or elſe drying, are entirely contracted.

In this Caſe the Blood is diſcharged with a full Stream, tho' not with an equable Celerity, but, as it were, by Starts, ſometimes with a ſmall, and immediately after with a greater Force; becauſe at the time the Arteries are in their Diaſtole, the Force of the Heart alone urging the Blood, then expels it through the open Artery. But a great Part of the Impetus convey'd from the Blood to the Heart, is ſpent in dilating the Arteries: Hence only in the time of the Diaſtole of the Arteries, the Blood is propelled with that Exceſs, by which the Force of the Heart ſurpaſſes the Reſiſtance of the Sides of the Arteries. But whilſt, when the Action of the Heart ceaſes the Arteries are compreſſed, the Blood moves with a far greater Celerity through them, and when evacuated from the Body, is of a ſcarlet Colour. From theſe two Signs we know, that the Blood is diſcharged from an Artery, and not from a Vein. But a large Vein, except in highly plethoric Patients, when wounded, diſcharges but a ſmall Quantity of Blood, which is always blackiſh, and leſs red than arterial Blood. If the Artery wounded is large, and very near the Heart, the Death of the Patient ſoon enſues, the whole Blood being in a ſhort time expelled from the Wound. But the Effuſion often only brings on a Deliquium; and if in this Caſe, the Patients are not invigorated by Wine, or Cordials, but left, as it were, half dead, there is ſome Hope, that during the Continuance of ſuch a weak and languid Life, the divided Artery may be contracted and conſolidated. *Boerhaave*, in his Prelections, uſed to give his Auditors a very memorable Inſtance of this Kind, which he himſelf ſaw.

A Countryman over his Bottle was wounded with a Knife under the Axilla; and the axillary Artery being divided, the Blood was diſcharged with a violent Force: Soon after the Patient falling down was thought to be dead, and was laid out as ſuch. Next Day when the Perſons appointed by public Authority to examine Wounds, and give in their Report to the proper Judges with reſpect to their mortal Nature, came to him, they found ſome Warmth about his Thorax, without any other Signs of Life. They deferred examining his Wound for ſome Hours, during which the Patient began gradually to recover, tho' every one imagined that he would ſoon die. But contrary to all Expectation he totally recovered, after continuing a long time in ſuch a weak and languid Condition; only the Arm of that Side remained all his Life dry, and without Juice, almoſt like a Mummy. If, therefore, in an Artery ſo large and ſo near the Heart a Conſolidation could be obtained, it is obvious, that we are not to deſpair in the moſt dangerous Wounds of Arteries, and, perhaps, in ſuch Patients, if weak and languid Life was not augmented by ſtimulating, vinous and cordial Subſtances, more would be preſerved than really are.

If a large Artery, running to the inferior Parts, is divided, and if the Ramifications of no other Artery are diſtributed to theſe Parts, the total Influx of the vital Fluid into them muſt neceſſarily be deſtroyed: This is ſucceeded by a Mortification of thoſe Parts, which in this Caſe may happen in a double manner; for either the Fluids contained in the inferior Parts, being no longer propelled by the Impetus of the arterial Blood, become ſtagnant and corrupted; in which Caſe a putrid, tho' ſlow Gangrene happens, becauſe all the vital Impetus which moves the live Parts to theſe gangrenous Cruſts, and conſequently ſoon makes the Diſorder ſpread, is here wanting: Or the Humours left in the inferior Parts, after the Diviſion of a large Artery, by the proper Contraction of the Veſſels, and Action of the adjacent Muſcles, paſs into the Veins, and return to the Heart; from which, however, nothing can be conveyed to theſe Parts. Hence the Veſſels of theſe Parts being totally deſtitute of Fluids, collapſe, and grow together. And as the moſt Part of the Bulk of the human Body depends upon Humours, ſo the Bulk of thoſe Parts is ſurpriſingly diminiſhed, whilſt they are dried and totally contracted, as appears in the Inſtances laſt-mentioned.

Thoſe Nerves which are large and tenſe, when cut quite through, recede, and hide themſelves, draw and extend their ſmall Branches ſituated a little above the Wound, excite Pain and Obſtruction in the neighbouring Nerves; but to the Parts below the Wound, cauſe a Stupor, Immobility, Emaciation, or a Gangrene.

We ſhall now conſider thoſe Phenomena which appear when large Nerves are wounded; for no Wound can injure the Skin without dividing numberleſs nervous Fibrils; but of theſe we do not treat, for we conſider here only the large Nerves as they are demonſtrated by Anatomiſts, and which are ſo many Congeries of other Nerves contained in a common Covering.

As for the Receſſion or Shrinking of the Nerves; that which in large Nerves may properly be called a *Nerve*, and which ariſes from the tender Pulp of the Brain does not ſeem poſſeſſed of ſuch a Degree of Strength, as that when divided to be by its Elaſticity capable of receding or ſhrinking back. But the Nerves which ariſe from the Medulla Oblongata, and Spinal Marrow, and, which at their Origins, are highly ſoft, are covered with tough Coats, that they may be ſafely convey'd to theſe Parts of the Body on which they are to perform their Offices. On theſe Coats depend the Strength and Elaſticity of the Nerves. Hence ſmall nervous Fibrils make a conſiderable Reſiſtance to the Knife in diſſecting Carcaſes. And unleſs it was ſo, the Demonſtration of the Nerves, eſpecially where they are divided into ſmall Ramifications, would be abſolutely impoſſible. When, therefore, a large Nerve is divided, the ſeparated Extremities, by the contractile Force of the Coats covering the Nerves, and of the Veſſels diſtributed through theſe Coats, recede from each other, and conceal themſelves under the adjacent Parts. But the larger a Nerve is, other Circumſtances being alike, the thicker its Coats are; and as the ſmall nervous Congeries, which united form the large Nerve, are, alſo, covered with their proper Coats, hence large Nerves when divided are retracted with great Force.

As for their drawing and extending their ſmall Branches a little above the Wound; the Nerves, as well as the Arteries and Veins, are divided into Ramifications; but the Ramifications ariſing from the Arteries and Veins, every-where communicate with the Cavity of the Trunk whence they ariſe. Hence the Fluids are by a Continuity of Motion convey'd from the Trunk into the Ramifications. But it is otherwiſe in large Nerves, which ſend off ſmaller Nerves like Ramifications from them; for ſuch a large Nerve contains numberleſs ſmaller Congeries of Nerves wrapt up in a common Covering, and theſe ſmaller Congeries conſiſt of others ſtill ſmaller. Nor have the Dexterity and Induſtry of the moſt curious Anatomiſts been hitherto able to find an End of this Diviſion. But from a large Nerve in its Courſe, are every-where diſtributed ſuch Congeries of Nerves, which are called *Ramifications of the large Nerve*, not becauſe they are by a Continuation of Subſtance propagated from it, as in the Arteries and Veins, but becauſe being before united with other ſimilar Congeries, they conſtituted the Bulk of the large Nerve; but now going off from it, they run to their proper Places in order to perform their Offices. All the Nerves, therefore, which like Ramifications are derived from the large Nerve, are ſuch as they are in that Place where the large Nerve ariſes from the Medulla Oblongata, or Spinal Marrow. But in the Arteries and Veins, the Ramifications take their Origins from that Part in which they run off from the Trunk of the greater Veſſels.

When, therefore, a large nervous Trunk is divided, it by receding will, at the ſame time, draw with it the ſmall Ramifications ariſing from it, a little above the Part where the Wound is inflicted. Hence by this violent Diſtraction of the nervous Fibres, intolerable Pains of the adjacent Parts to which

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theſe Ramifications run, are produced; and hence there is often a more intenſe Pain in the adjacent, than in the wounded, Part. But that by ſuch a ſimple Diſtraction of the nervous Fibres, intolerable Pain may be produced, is certain from numberleſs Obſervations. When a Phlegmon diſtending the Membrana Adipoſa, is ſuppurating, it elevates the Skin, and diſtracts its Fibres with an intenſe Pain. But when the Pus is formed, and an Inciſion made in the Skin with a Lancet, the Pain forthwith ceaſes, whilſt the diſtending Pus is diſcharged. An intenſe Pain is, alſo, produced by an inflammatory Tumor elevating the tenſe and nervous Membrane of the Auditory Paſſage. And in a Lues Venerea, a Tumor ſometimes ariſing in the Subſtance of the Bone, diſtracts the Perioſteum, and produces a Pain ſo intenſe, that the Patients are ready to lay violent Hands on themſelves.

Beſides, the Coats which cover the large Nerves, and the Ramifications running off from them, conſiſt of numberleſs ſmall Veſſels, as is certain from anatomical Injections. The nervous Ramifications cannot, therefore, be diſtracted by the divided Trunk receding, but the Coats with which they are covered muſt, alſo, be diſtracted, and conſequently the Veſſels conſtituting theſe Coats, muſt be elongated. But it is certain that every Cauſe which diſtracts and lengthens Veſſels, diminiſhes their Capacity. Hence may ariſe an Obſtruction, and all its Effects.

As for the Stupor of the Part below the Wound; quite different Actions of the Nerves are obſerved in the human Body; for ſome give a Power of Senſation to the Parts to which they are diſtributed; others produce muſcular Motion, whilſt the Nutrition of the Parts and Life itſelf ſeem to depend on others. That theſe different Actions are performed by different Nerves, is ſufficiently evinced by what happens in Diſeaſes; for often Palſies of particular Parts are formed, and ſometimes an Hemiplegia, in which one Side of the Body becomes incapable of Motion, and is entirely deprived of voluntary muſcular Action, whilſt the Senſation, Heat, and Nutrition of the Part affected remains. In this Caſe there is conſiderable Hope of a Cure. Sometimes together with a Power of Motion, Senſation is loſt, and ſuch a Stupor produced in the Part affected, that it appears no longer to belong to the Body, whilſt the Patient perceives Obſtacles acting on ſuch a Part, as if he only touched them with a ſtretched-out Stick. This is a worſe State of the Diſorder. But when there is a Senſe of Cold in a paralytic Part, and its muſcular Subſtance begins to decreaſe, the Diſorder is generally incurable, as is certain from many Examples of Palſies ſucceeding the Colica Pictonum. Tho' the Nerves ſubſervient to ſo many different Functions, have diſtinct Origins in the Brain, yet being collected into large nervous Congeries, they are diſtributed to the ſeveral Parts. When ſuch Nerves are, therefore, entirely divided, all the Functions depending on the Soundneſs of ſuch Nerves are aboliſhed. Hence ariſe the Stupor and want of Senſation in the Parts below the Wound, as, alſo, their Extenuation, and Privation of Motion, unleſs Ramifications riſing from the Trunk above the Wound are diſtributed to the inferior Parts, or other nervous Trunks ſend off Ramifications to them.

The Reaſon will, perhaps, appear leſs evident, why a Gangrene of the Parts below the Wound often ſucceeds a total Diviſion of a large Nerve. But a Gangrene is ſuch a Diſorder of a ſoft Part, as after the Ceſſation of the Influx of the vital Fluid into the Arteries, and its Efflux through the Veins, tends to a Mortification. If, therefore, a Gangrene ſucceeds the Diviſion of a large Nerve, this vital Influx and Efflux of the Humours muſt have ceaſed; the Arteries, however, and Veins, are entire, and the Humours moving in them laudable, whilſt the Nerves are only divided. But if it is conſidered, that the Motion of the Fluids through the Arteries depends on two Cauſes, that is, the Force of the Heart, and the Action of the Arteries, and if it is at the ſame time obſerved, that the Force of the Heart is in a great meaſure ſpent in dilating the Arteries, and that conſequently the principal Cauſe of the Motion of the Fluids through the Arteries is their own Contraction, which partly depends on their Elaſticity, but more eſpecially on the muſcular Force of the orbicular Fibres, by which the dilated Arteries are contracted, and propel their contained Fluids, and as it is certain from Phyſiology, that the Action of a Muſcle requires the Soundneſs of the Nerve convey'd to that Muſcle, and that the nervous Trunks ſend off Branches to the adjacent Arteries, it will appear, that when the Nerve is deſtroy'd, the muſcular Force of the Artery is, alſo, loſt, by which it propel'd its contained Fluid: There will, therefore, only remain the Elaſticity of the Artery, and the Impetus communicated by the Heart. But in the Veins the Blood moves with that Motion which it has whilſt it paſſes from the Arteries into the Veins. It is, alſo, aſſiſted by the Motion of the adjacent Muſcles, which becoming turgid when they act, preſs the adjacent Veins, and by that means promote the Motion of the venous Blood. But when the Nerves are divided, the inferior Muſcles remain paralytic, and no Power of Action remains in them. When, therefore, the Impetus of the Blood convey'd from the Arteries into the Veins, is diminiſhed, and the Action of the Muſcles, adjacent to the Veins, defective, the Blood in the Veins begins to move ſlowly, to be accumulated, and become ſtagnant. And thus a greater Reſiſtance ariſes to the Arteries, whoſe Action was before weakened. Hence at laſt the vital Motion of the Fluids through the Arteries and Veins is ſuffocated in the Parts below ſuch a Wound, that is, a Gangrene is formed.

Thus appears the Reaſon of thoſe Diſorders which are obſerved to ſucceed the Diviſion of large Nerves. But medicinal Obſervations evince, that after ſuch Wounds, Gangrenes are formed in the inferior Parts.

Nerves which are tenſe, or tendinous, if pricked, or cut half through, excite Pains; ſometimes at firſt obtuſe, and ſometimes acute; firſt in the wounded Place, afterwards in all the annexed and adjacent Nerves. Hence Heats, Tumors, a Redneſs extending pretty far round the Wound, Fevers, Deliria, Spaſms, Inflammation, an Aperture of the inflamed Part, accompanied with an Evacuation of an acrid, thin, and often a very copious Serum: After theſe, Inſenſibility, Rigidity, Exliccation, Immobility, or Gangrene, and Death: And indeed all theſe Symptoms are the more violent, the more ſtrongly the Nerve is ſtretched above the firm Parts, or more ſtrongly affixed to them, as, alſo, the more tough and tenacious the Coverings of the Nerve are.

Theſe are the calamitous Caſes in which from a ſlight Wound ſo terrible Symptoms often ariſe. It ſometimes happens that in opening a Vein of the Arm, the Tendon of the BicepsMuſcle is injur'd, or, which happens more frequently, the broad Aponeuroſis, which ariſes from that Tendon, and covers the Muſcles of the Cubit. At this very Moment an intolerable Pain is often perceived, which the Patient expreſſes with miſerable Shrieking.

Sometimes, in the Beginning of ſuch a Diſorder, there is only felt an obtuſe Pain, which a few Hours after is greatly increaſed, and affects the whole Arm as far as the Humerus. Sometimes, alſo, the ſubaxillary Glands become pretty ſoon tumid, and inflamed. The Patients often complain that they perceive in the Wound itſelf, as it were, a live Fire burning the Parts. On the Skin appear oblong red Spots, which are always a bad Sign. In a malignant *Paronychia*, where the Tendons of the Flexor Muſcles of the Finger are affected, a red Zone running longitudinally according to the Direction of the Muſcles which bend the Fingers, through the Skin of the Cubit, is by the ſkilful Surgeons looked upon as a very bad Sign: In the ſoundeſt Man, an acute Fever is often excited; and the Brain being diſturbed partly by the Fever, and partly by the Vehemence of the Pain, Deliriums, Convulſions, and ſometimes Death, enſue.

But tho' Death does not always ſucceed ſuch Wounds of the Nerves, yet terrible Misfortunes are produced by them; for the whole Part becomes greatly tumid and inflamed, and an incredible Quantity of thin Liquor is continually diſcharged either from Bliſters raiſed on the Epidermis, or from the Wound itſelf; but becauſe the Patients perceive a burning Pain, they accuſe the Acrimony of the Humour diſcharged, which, however, when taſted, is found to have no great Degree of Acrimony. Sometimes a Gangrene preys upon the whole Membrana Adipoſa; and in this Caſe a mild Suppuration never happens, but ſinuous Collections of ichorous Matter conſume all the Fat lodged in the Interſtices of the Muſcles, and the pinguedinous Coats of the Tendons are deſtroy'd; hence afterwards the Skin adhering to the Muſcles, and the Tendons and Muſcles for want of the Membrana Celluloſa being concreted with the adjacent Parts, a Rigidity and Immobility of the Part are brought on, and the Uſe of the whole Member is loſt. When by a violent Gangrene, or Suppuration, the Coats of the Nerves in which the Membrana Celluloſa is alſo found, are deſtroyed, the Uſe of theſe Nerves is loſt, and an Inſenſibility, and Extenuation of the Parts brought on. In the ſoundeſt Conſtitutions, ſurpriſing Degeneracies of the Humours, exceſſive Pains, and a Loſs of the Uſe of the Parts, are often induced by the ſlighteſt Puncture, or Wound, of a Nerve.

It is, alſo, to be obſerved, that all theſe Symptoms are the more violent, the more tenſe the wounded Nerve is. Hence ariſes the Danger of Punctures about the loſt Phalanxes of the Fingers, where the ſtrongeſt Tendons are inſerted, and in the Palm of the Hand, where the tendinous Expanſion of the Muſculus Palmaris forms the tenſe and tendinous Part of the Palm. Beſides, this Malignity is increaſed, if the nervous Parts wounded are covered with thick Coats, as is obvious in the moſt dangerous Species of Paronychia, where the Tendon inſerted

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inſerted in the laſt Phalanx of the Finger, being hurt by a Puncture, or inflamed by any other Cauſe, produces the moſt intenſe Pains, a Phrenitis, Convulſions, a Syncope, and often ſudden Death; or, if the Patient ſurvives this, after violent Agonies, the laſt Phalanx of the Finger becomes mortified, and falls off: And a Clinching of the Hand, which cannot by any Art be removed during the Patient's whole Life, ſhews the dire Remains of the Diſorder. The Reaſon of ſo great a Malignity depends almoſt entirely on this, that the Tendons bending the Phalanxes of the Fingers are ſurrounded with a ſurpriſing Ligament almoſt of a cartilaginous Hardneſs; for if in the Beginning of ſuch a Diſorder, a ſkilful Surgeon, by a bold Inciſion, divides all the Parts to the Bone, and by that means cuts the Ligament ſurrounding the Membranes, the Pain is forthwith leſſened, and all theſe terrible Symptoms are prevented.

The ſame Symptoms, with very little Alteration, happen, when Tendons are differently wounded, and theſe are extremely violent.

The Tendon of a Muſcle, when examined, may be divided into as many Fibrils as the Muſcle itſelf. Between theſe Fibrils are lodged numberleſs ſmall Veſſels, as is evident from anatomical Injections. But theſe Fibrils of the Tendons ſeem to be only Continuations of the muſcular Fibres, which ſeem to derive their Origin from the Nerves which enter the Muſcles. Hence it is not to be wondered at, that the Tendons, which are, as it were, the Offſpring of the Nerves, ſhould, when wounded, ſuffer the ſame Misfortunes with the Nerves. But as in a large Nerve there are found Veſſels of all Kinds, and the cellular Membrane ſeparating the nervous Fibres from each other, ſo the ſame is obſerved in Tendons. But becauſe the Tendons are only ſubſervient to the Motion of the Parts, and ſincebe, ſides, the Nerves contribute to Senſation and Nutrition in many Parts of the Body, hence all the ſame Misfortunes do not happen to the Tendons when wounded, as happen to the Nerves. But in both Caſes, there are many Phenomena in common; which, however, are obſerved to be generally more violent in the Tendons than in the Nerves.

Nerves, when entirely divided, unleſs their ſmall Ramifications a little above the Wound are diſtracted by the Receſſion of the divided Trunk, do not create much Pain. But all the Uſes which the inferior Parts received by theſe Nerves are deſtroyed. Thus, alſo, when a Tendon is entirely divided, the Motion of the Part which depended on the Integrity of that Tendon, is deſtroyed; but there is often no more Pain than that which accompanies a ſimple Wound, nor do any more violent Symptoms ſucceed. This I ſaw in a Man in whom the Tendons which erect the Fingers, were cut with a Kniſe. In the *Mem. de l'Acad. Royale des Sciences An.* 1722. there is a memorable Caſe which confirms this. A nimble Dancer endeavouring by a great Leap to raiſe his Body, broke the *Tendo Achillis* in both Legs, the Skin remaining entire. There were three Fingers-breadths between the Extremities of the Tendons. By a proper Ligature the Patient was reſtored to his natural State; nor at the time of the Rupture, nor during the whole Courſe of the Diſeaſe, did he feel any Pain.

In another Man, the Skin remaining entire, that Part of the ſame Tendon which ariſes from the Gaſtrocnemii Muſcles, was broken, whilſt that Part of the Tendon, which derives its Origin from the *Muſculus Soleus*, lying under the *Gaſtrocnemius*, remained entire. In that Caſe, there was an intenſe Pain, with a ſtrong Inflammation and Tumor of the Part. Hence it appears, that far worſe Symptoms are produced when a Tendon is half divided, than when it is totally divided.

But violent Symptnms are produced by the ſlighteſt Wounds of the Tendons, and by only gently touching a Tendon diveſted of its Coat, the whole nervous Syſtem is in a Moment diſturbed; which is ſurpriſing, ſince the Tendons when covered with their Coats, eſpecially with that pinguedinous Membrane which by its ſoft Oil lubricates them, and renders their Action quick, may, without any great Pain, not only be ſtrongly drawn, but, alſo, ſtitched together; for it is ſufficiently known in Surgery, that the Extremities of divided Tendons are ſeized with Forceps, drawn together, retained in Contact by paſſing a Thread through them, and thus happily cured, whilſt the Part affected is ſo diſpoſed, as that the Muſcles whoſe Tendons are cut remain flaccid. But when a Tendon diveſted of its Coats is but gently touched, terrible Symptoms are produced.

There is no Remedy more efficacious for preventing or mitigating the violent Symptoms ariſing from Punctures of the Nerves and Tendons, than black *Peruvian* Balſam gently warmed, and dropt into the Wound; then by the Application of a warm Spatula it is to be made to penetrate and diffuſe itſelf through all the Parts of the Wound. Afterwards, the whole Limb is to be wrapt up in ſoft Cataplaſms, or Fomentations, or continually anointed with mild oleous Subſtances. If the Wound is ſo ſmall as not to admit the *Peruvian* Balſam eaſily, it is to be a little dilated.

The Application of warm Oil is of great Uſe where the whole nervous Syſtem is irritated, and Convulſions dreaded, as we learn from *Galen*'s own Caſe, as recorded by himſelf, in *Comment.* 1. on *Hippocrates de Articulis.*

And the Membranes of the Tendons and Nerves, which are frequently propagated to the adjacent Parts, are affected with the ſame Diſeaſes.

All Membranes, when wounded, do not produce ſuch violent Symptoms, but only ſuch as are highly tenſe. The tendinous Membrane produced from the Faſcia Lata, and the like Aponeuroſis ariſing from the Glutæus Muſculus, and ſurrounding the ſtrongeſt Muſcles of the Thigh, when hurt by a ſlight Puncture, are ſeized with intolerable Pain. The ſame happens in the Aponeuroſis of the Muſculus Biceps, which is ſometimes hurt in taking Blood from the Arm. If the tenſe Membrane covering the Auditory Paſſage is diſtracted by an inflammatory Tumor, an intolerable Pain ariſes, and a Delirium and often Death ſucceed, as *Hippocrates* tells us in his *Prognoſt.* and *Coacæ Prænotiones.* But Wounds are to be moſt dreaded in thoſe Membranes which are either Productions of the Tendons, or are poſſeſſed of an exquiſite Senſation, and Capacity of Irritation on account of the great Number of Nerves diſperſed through their Subſtance. Thus the Perioſteum, when wounded, ſometimes produces the moſt exquiſite Pain.

A Knowledge of the Laws of Circulation, and a Conſideration of the adjacent Parts, will teach us in what manner the lymphatic, adipoſe, venous Veſſels, and the Veſiculæ, or ſmall Ciſterns, ſuffer in Wounds.

As for the lymphatic Veſſels; the Veſſels by Anatomiſts demonſtrated under the Name of *Lymphatics*, are all of the venous Kind, as is obvious from the Motion of the Fluids thro' thoſe Veſſels from the Ramifications into the Trunks, as, alſo, from the Valves, which *Ruyſch* ſo evidently demonſtrated in his *Dilucidatio Valvularum*, to *Bliſſius*, who denied that the Valves in theſe Veſſels were ever demonſtrated. Theſe lymphatic venous Veſſels, when wounded, produce no great Harm; for conſiderable ſanguineous Veins, when wounded, diſcharge no great Quantity of Blood. But to theſe lymphatic Veins correſpond ſimilar lymphatic Arteries, which, when wounded and not entirely divided, may produce a perpetual and uneaſy Effuſion of Lymph in Wounds. But that there are numberleſs ſuch Veſſels in the Body may be concluded from anatomical Injections made into the Arteries; for in this Caſe thoſe Veſſels, in which there naturally appeared no red Blood, are filled with a coloured Matter. *Ruyſch* ſo filled the Tendons and Ligaments, that they became quite red; there were, therefore, in theſe Parts many ſuch Veſſels, which during Life were filled with a thin Liquor, whoſe Colour was not perceptible: Perhaps, for this Reaſon, a Diſcharge of ſuch Lymph is ſo frequently obſerved in Wounds inflicted about the Joints; and Surgeons often find large Quantities of this Lymph flowing both from Ulcers and Wounds about the Joints.

As for the adipoſe Veſſels; that the Fat of the human Body may be mixed with the Blood, and with it move through the Veſſels, is ſufficiently certain; for in fat Perſons labouring under an acute Fever we obſerve, that in a few Days the Fat is ſurpriſingly diminiſhed; and in ſuch Diſeaſes, oleous Drops have appeared in the Blood taken from the Veins. When *Malpighi*, as he tells us, in *Tr. de Omento, Pinguedine, & Adipoſis Ductibus*, obſerved oleous Streaks growing to the Trunk of the Vena Portæ in Frogs, upon compreſſing them, he ſaw plainly Drops of Oil in the Trunk of the Vena Portæ carried to the Liver along with the Blood. There ſeems, therefore, to be no Doubt concerning this. But it is a Doubt, whether ſuch a pinguious Oil is by a continual Motion conveyed in proper Veſſels like the other Humours, or whether it remains collected in ſmall Cells, which by their recipient Orifices are united with the Arteries, whence this Oil is ſecreted, and which by their emittent Orifices communicate with adjacent ſimilar Cells, as, alſo, with the Veins, which again receive and mix with the other Humours this Fat, ſecreted from the Arteries, and depoſited in Cells. *Malpighi*, in the Work laſt quoted, ſeems to think that there are ſuch pinguedinous Veſſels, which by a continual Courſe convey this Oil, without the Interpoſition of any Cells: But in his poſthumous Works he tells us, that the Fat is preſerved, and accumulated in proper Cells, as in ſo many peculiar Laboratories; but that he durſt not aſſert the Exiſtence of adipoſe Veſſels, tho' he had been very accurate in ſearching for them. But whether the Fat is lodged in ſuch Cells mutually com-

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communicating with each other, or whether there are such pinguedinous Vessels, when either are wounded, their Contents will be discharged, become corrupted, and capable of producing many Misfortunes. *Ruysch*, as he tells us, in *Epist. Anat. ad Boerh.* upon opening the Abdomen of an Horse which died after hard Running, found its whole Cavity full of a thin diluted Oil. It is certain, that the Fat is highly lax, easily protuberates into a Wound, and produces fungous Flesh, especially if fat Parts, when wounded, are treated with too emollient Applications.

As for the venous Vessels; provided these are not very large, they are not, when wounded, productive of very dangerous Symptoms; for a violent Hæmorrhage rarely happens from them, except in plethoric Patients, in whom it is not prejudicial, since it diminishes the Redundance of the Blood. But the adjacent Veins mutually joined by frequent Anastomoses, easily supply the Defect of the wounded Vein. But it is to be observed, that when a considerable Vein is known to be wounded, it is dangerous to apply those acrid Styptics which are sometimes used for stopping Hæmorrhages from Wounds, such as Vitriol, Alum, and Alcohol; for it is to be feared, lest these being received into the open Wound of the Vein, should enter the Blood, and produce Coagulations therein, which being conveyed through the Vein, which becomes continually broader, to the Right Ventricle of the Heart, and thence impelled into the Pulmonary Artery, may produce the most terrible Disorders.

As for the Vesicles; these are all glandular Follicules, in which the Humour secreted from the Blood by the Arteries, is collected into a membranaceous Cavity, and thence discharged through a proper Emissary for particular Purposes. When these Vesicles are wounded, it is obvious their Use must be lost. But of how great Importance this Loss is, is only to be known from a Knowledge of the Use of those Parts. Thus, when the Vesiculæ Seminales are wounded, it is obvious the whole Business of Generation must be disturbed.

If a Wound lies exposed to View, its Presence and Nature is discoverable,

1. By the Sense, after wiping away the Impediments which hinder the Sight of it, and stopping the Flux of Blood.
2. By an anatomical Knowledge of the adjacent Parts.

Great Caution is requisite in a Physician or Surgeon called to a wounded Person, lest they should pass a Judgment of the Wound before they have carefully examined it; for whatever they rashly pronounce on such an Occasion may, perhaps, be afterward related to the Judges. If the unlucky Event should prove that the Wound was dangerous, though at first Sight they pronounced it but slight and inconsiderable, those who plead the Cause of the Guilty afterwards, brand the Character both of the Physician and Surgeon, as if the Misfortunes succeeding the Wound ought to be imputed to their Want of Skill. Prudent Surgeons generally ask the Physician present, what he thinks of the Wound, and of the Effects to be dreaded from it, by which means they save their Reputation. It is therefore proper, that all Physicians should embrace every Opportunity of seeing Wounds, and severe Operations, that thus they may gradually accustom themselves to look upon the Calamities of Mankind with Intrepidity. *Hippocrates*, in *Tr. de Flatibus*, tells us, "That the Physician should look upon dan-"gerous Wounds, handle such as are disagreeable, and by the "Calamities of others endeavour to prevent his own Miseries; "for by Art the Sick are freed from the greatest Misfortunes, "Diseases, Pains, Sorrow, and Death." These Misfortunes are alleviated by the salutary Art; but it often happens, that Physicians who are well acquainted with the Fabric of the Body, are by the Sight of the Wound, the Cries of the By-standers, and the Complaints of the Patient, so disturbed, as to pass a quite different Judgment from what they would have done, if they had considered all Circumstances with a calm and sedate Mind.

A Wound is not therefore to be examined precipitately, but with the greatest Attention of Mind; for at the first Dressing the Surgeon may safely do that which afterwards cannot be commodiously done; since on the succeeding Days the Wound often becomes so tumid, painful, and inflamed, that it cannot bear the Scrutiny of the Probe without great Pain and Irritation.

If a Wound is inflicted on a Part of the Body exposed to View, all Impediments which hinder the distinct Examination of the Wound are to be removed from it. Tepid Water with Honey, Wine, and a little Sea Salt, is to be used for washing the Wound, by which means the Thrombuses of concreted Blood are removed, and the whole Surface of the Wound is discovered. But so long as the Blood flows impetuously from the Wound, there is such an Inundation, that nothing can be distinctly observed. For this Reason the Hæmorahage is to be stopt, which in the Limbs is easily done by compressing the Trunks of the Vessels by a proper Ligature; and in other Parts of the Body, unless very large Vessels are wounded, the Hæmorrhage may be stopt with warm Alcohol of Wine.

As for an anotamical Knowledge of the adjacent Parts, nothing certain can be determined without it; for the Inspection of a Wound may discover its Largeness, Deepness, and Direction; but a Knowledge of the Parts adjacent to the Wound, is only to be obtained from Anatomy. *Eustachius*'s Tables, in which the Situation of the large Arteries, Veins, and Nerves, as, also, the Origins and Courses of the Muscles, are so accurately marked, may be of great Use for this Purpose, that thus, knowing the Place of the Wound, we may be able to determine what Parts of the Body are wounded, and what Injury is to be dreaded from the Wound.

The Presence and Nature of a Wound, which is not exposed to View, is discovered,

1. By Anatomy; by the Situation of the Person when wounded; and the Manner and Force of the Stroke.
2. By an Impediment to the Action of a particular Part, subsequent to the Wound.
3. By the Humours discharged from the Wound, either within or out of the Body.
4. By the Affections which are consequent to the Wound, as Pain, Hiccup, Spasms, Tumor, &c.

The Knowledge of a Wound is far more difficult where the Whole of it cannot be viewed by the Eye. The Entry of the wounding Instrument into the external Integuments is seen, but how far it has penetrated, cannot often be discovered. It will, however, be of great Use to the Surgeon carefully to attend to the following Circumstances:

1. By Anatomy we know what Parts are situated in the Place wounded; but the Situation of the Patient at the time he received the Wound, and of the wounding Person when he inflicted it, will demonstrate the Way in which the wounding Instrument penetrated into the internal Parts of the Body. If the wounding Instrument can be had, it may sometimes be known from the Largeness of the Wound in the Integuments how deep it has been driven. All these things ought to be carefully inquired into, both from the Patient, and from those who were present when the Wound was inflicted. Thus, for Instance, if a Sword is passed in a perpendicular Direction between the sixth and seventh true Ribs, it will penetrate into the Cavity of the Abdomen: But if a Man receives a Wound with his Body reclined backwards, whilst the Sword is passed from the inferior Parts upwards, it may penetrate into the Cavity of the Thorax. But if when the Body is inclined forwards, a Sword enters the same Part, it may pass through the whole Abdomen, even to the Pelvis. Thus, also, a Wound inflicted on the Side may run a great Way under the Integuments, and above the Ribs, especially in fat Persons, without penetrating into the Cavity of the Thorax. When we examine into the Deepness of a Wound by means of the Probe, it is of great Importance to know the Situation of the Patient when the Wound was received, and to place him in that very same Situation; for unless this is done, it often happens, that the Membrana Adiposa stops up the Wound. Thus, in Venesection, especially in fat Persons, it often happens, that at first the Blood flows out with a full Stream, but immediately stops upon the smallest Change of Situation in the Arm, because the Fat subjacent to the Skin interposes itself between the Orifice in the Skin, and that in the Vein.

2. As we know from Physiology the things requisite to the Soundness of the particular Functions of the Body, so we easily see from the Action either hindered, or totally abolished after the Wound, whether some or all of the Requisites necessary for that Action are destroy'd by the Wound. Thus if a Wound penetrating into the Cavity of the Abdomen is immediately succeeded by an excessive Languor of the vital Actions, if the Heart palpitates quickly, if the Pulse is quick and unequal, the Face and Lips pale, and the Extremities cold, we conclude, that in consequence of a Division of some large Vessels, a considerable Quantity of Blood is discharged into the Cavity of the Abdomen. If a Wound inflicted in the Neck is without a considerable Hæmorrhage succeeded by the like Symptoms, it is to be dreaded, lest the Nerves situated here, and running through the vital Viscera, are wounded. If after a Wound of the Head the same Symptoms happen, it is thought that the Cerebellum is wounded, or compressed by the extravasated Humours. When Wounds of the Head are succeeded by an Abolition of all the animal Functions, the same Misfortunes are thought to have befallen the Brain itself. If after a Wound of the Back the inferior Parts are deprived of Sensation and Motion, we conclude that the Spinal Marrow is wounded. The same holds true with respect to the other Actions of the Body.

3. If

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3. If after a Wound of the Thorax a red frothy Blood is either discharged from the Wound, or vomited up, we know that the Vessels of the Lungs are divided. If from a Wound in the Abdomen Chyle is discharg'd, a Wound of the small Intestine is denoted; but if the Fæces, a Wound of the large Intestines is indicated. If Blood is discharg'd by the urinary Passages, we know that the Kidneys, Ureters, or Bladder, are wounded.

4. A Pain suddenly succeeding a Wound, denotes that the Nerves, Tendons, or tendinous or nervous Membranes, are wounded; but an Hiccough, and Spasms, may be produced by Wounds inflicted in different Parts. After excessive Hæmorrhages, an Hiccough, and Convulsions, often arise; and are, by *Hippocrates*, in *Coac. Prænot. & Aphor.* in such a Case, pronounced very bad Symptoms. *Hippocrates* condemns an Hiccough arising from the Iliac Passion. Hence it is very probable, that this Disorder may be consequent to Wounds of the Intestines. An Hiccough, also, succeeds Wounds of the Diaphragm, *Oesophagus*, Stomach, and Head: Hence this Symptom, when consider'd alone, always shews the malignant Effect of the Wound, tho' it does not always infallibly indicate the Part wounded.

Sudden Tumors, succeeding Wounds, either shew that the Humours are extravasated, and collected in preternatural Parts; or that the Air has enter'd into the Cavities of the Body, thro' the Wound, and is surprisingly dilated by the Heat. We have consider'd those surprising Tumors succeeding Wounds of the Breast, whilst the Air entering the *Membrana Adiposa*, distends the whole external Surface of the Body in an incredible manner, under the Article THORAX.

From a Knowledge of what has been said, the Event of Wounds may be prognosticated. As,

1. The Death or the Life of the Person wounded.
2. The possible, impossible, entire, or partial Cure.
3. The easy, difficult, long, or short Cure.
4. The Effects of the Wound remaining after the Cure is perform'd, as Consumption, Insensibility, Immobility, Deformity, &c.

When, by the Assistance afforded by the modern Improvements in Surgery, and a due Examination of all the Circumstances mention'd in the two preceding Aphorisms, we find the Diagnostic of a Wound, which teaches us the Part wounded, and the Actions of the Body, either abolish'd, or hinder'd by it, we may then foretel the Event of the Wound; and those Symptoms which may proceed from the Wound, as their Cause, will become obvious. This is call'd the Prognostic of Wounds; in determining which, great Caution is necessary: For, as *Celsus*, in *Lib.* 5. *Cap.* 26. informs us, "It is the Part of a "prudent Surgeon not to meddle with a Patient who cannot "be preserv'd, lest he should be thought to have destroy'd him "who fell the Victim of his own Disorder. But where there "is great Dread, without absolute Despair, he is to acquaint "the Friends of the Patient with the Difficulty of the Case, "lest, failing of Success, he should be thought either deceitful, "or ignorant. But as these are the Measures taken by prudent "Surgeons, so Quacks give out, that slight Cases are of the last "Importance, that their Cures may appear the more surprising."

But it is to be observ'd, that there are some Cases, in which the most skilful Anatomists may be deceiv'd, in determining the Parts injur'd by a Wound: For the Situations of the internal Viscera have frequently been found very different from those which they commonly obtain. For Instances of this Kind, see *Journal des Sçavans, Janvier* 1689. *Act. Lipsienf. An.* 1690. and *Carol. Drelincurt. Opuscul.*

In these Instances such Phenomena happen'd in sound Persons, and the Change of Situation in the Viscera obtain'd from the very Beginning of their Lives. But it is, also, certain, from Experience, that the Situation of the Viscera is frequently chang'd by Diseases. Thus, in *Mem. de l'Academie Royale des Sciences, l'an.* 1716. we are told, that, in a certain Woman, the Situation of the Stomach, as, also, of the other abdominal Viscera, was found surprisingly chang'd by frequent Vomitings. It is highly probable, that such Changes in the Situation of the Viscera are very frequent: For in those Carcases, says *Vanswieten*, which I have either dissected myself, or seen dissected by others, many such Changes were observable. Thus I have seen the Spleen fallen down into the Pelvis, the Bottom of the Stomach reaching below the Navel; that Part of the *Intestinum Colon*, which lies below the Stomach, so far distant from it, as to be lodg'd below the Navel, and form an Arch, the convex Part of which lay towards the Pelvis, and the concave towards the Stomach.

Now the Errors which must necessarily happen hence in the Prognostic of Wounds, seem hardly to be avoidable, since these Things can neither be predicted, nor known, by any Signs.

Besides, the particular Idiosyncrasy of the Person wounded may greatly change the Effects of the Wound. Thus some are so faint-hearted, as to fall into a *Deliquium*, upon seeing the Blood flow from the Wound even of another Person. Hence *Hippocrates*, in *Prorrhetic. Lib.* 2. tells us, "That there are "many Wounds inflicted in Places which are not dangerous, "whilst, at the same time, the Wound itself is so painful, that "the Patient is depriv'd of a free Respiration; whereas others, "where there was no Danger, have, on account of the Excess "of Pain, breath'd freely, but been seiz'd with a *Delirium*, "and dy'd feverish: For whoever have Bodies prone to Fevers, "or Minds easily subject to Commotions, suffer such Misfor-"tunes. But the Surgeon is neither to be surpris'd, nor afraid, "at these Things; considering that both the Souls and Bodies "of People differ widely from each other, and are of great "Efficacy in Wounds and Diseases."

By means of these Cautions we are to determine the Prognostic of Wounds; in which we are to examine,

1. Whether the Wound is such as to produce infallible Death as its physical Effect; or whether, after the Wound, Life may be preserved.

2. *With respect to the possible, impossible, entire, or partial Cure*; a Wound is said to be cured, when the Parts separated from their natural Cohesion by the wounding Cause, are again concreted, and united. Thus, if the Finger is transversly cut, in such a manner as only to cohere by a small Portion of the Skin, the Cure of such a Wound cannot be promised. The Patient may, indeed, be preserved, tho' without this Part of his Body: Besides, it often happens, that, after the Cure of the Wound, all the Uses are not restored to the wounded Part, which it had in its natural State; in which Case there is not a total, but a partial Cure. Thus if a considerable Nerve is totally divided by a wounding Cause, there will never be a total Cure of such a Wound; for all those Functions which depended on the Soundness of such a Nerve, will ever after be abolish'd.

3. *With respect to the easy, difficult, long, or short Cure*; unless these Things are mentioned at the Beginning, the Blame of a difficult, or long-protracted Cure, will be often thrown on the Physician, or Surgeon. A Cure is said to be easy, which is performed without great Pain to the Patient, or Trouble to the Surgeon. When the Tendon of the Muscle which erects the Thumb, being divided, shrinks back under the Integuments, such a Wound cannot be cured, and the natural Use of the Part restored, unless the Wound is dilated, the Extremities of the divided Tendon laid hold of with Forceps, brought into Contact, and retained in that State by proper Suture; but these Things cannot be done without Difficulty and Pain: Prudence requires, that these Things should not always be revealed to the Patient, but rather indicated to his Friends, lest the Misfortunes of a tedious Cure should be afterwards imputed to the Physician, or Surgeon.

Thus when a Wound with considerable Loss of Substance is inflicted, whilst a large Portion of the Skin and *Membrana Adiposa* is removed by the Edge of the Sword, a considerable Space of Time is required for the Restitution of what was lost. If a simple Division of the Skin and *Membrana Adiposa* is only made by the wounding Instrument, when the Lips of such a Wound are duly united, it will be pretty soon consolidated, provided the Body of the Patient is sound; but if he labours under a considerable Cacochymy, the Cure will be far longer, and more difficult. These Things ought to be determined in making the Prognostics of Wounds, because many are of Opinion, that Surgeons, from a sordid View to Gain, protract the Cure of Wounds far longer than is necessary: But no honest Surgeon will ever be guilty of such a Piece of Wickedness.

4. *As to the Effects of the Wound remaining after the Cure is perform'd, as Consumption, Insensibility, Immobility, Deformity, &c.*; these Things are, also, to be carefully attended to: In Wounds which are not mortal, Judges generally proportion the Punishment of the Inflictor to the Injury which the Patient sustains from the Wound inflicted: Hence the Advocates for the Offender usually employ all their Cunning and Oratory in charging the Symptoms subsequent to the Wound, upon the Physician or Surgeon to whose Care it was committed. For this Reason, at the first Dressing, from an anatomical Knowledge of the Part in which the Wound is inflicted, and from the Functions injured after the Wound, those Misfortunes ought to be indicated, which will follow the Wound, tho' ever so well cured; or, if this cannot be certainly determined, a Caution is to be given with respect to the particular Misfortunes to be dreaded after the Cure of the Wound: For in no Cases are Surgeons more injuriously treated than in these; since after the Wound is cured, if the Motion of the Part is lost, they generally tell who cured the Wound, and not who inflicted it; ungenerously laying on the former that Blame, which is the just Portion of the latter. When the only Artery which is distributed to a Part is divided, we foretel that an Atrophy of the Part will succeed the Cure: If a large Nerve, distributed to a Part, is destroyed, we prognosticate the Insensibility, and often

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the Immobility, of the Part. If a Wound cannot be cured till after a long and violent Suppuration, when, for Inſtance, the Parts of a wounded Bone ought to be gradually ſeparated, the *Membrana Adipoſa* being thus conſumed, we prognoſticate that there will be a deep and unſeemly Cicatrix.

Unavoidable Death, ariſing from a Wound, may proceed from five Effects; ſo that the following Wounds will neceſſarily prove mortal.

In this Aphoriſm are enumerated thoſe Wounds which neceſſarily, and, in Spite of the higheſt Art hitherto known, remove that Condition of the Body which is abſolutely requiſite, that the Commerce between the Body and Mind may continue, or be reſtored, and not neceſſarily be deſtroy'd. But from Phyſiology it is abſolutely certain, that the muſcular Action of the Heart, the Reception of the Blood into the Heart, and the Expulſion of the received Blood from it, are indiſpenſably neceſſary. Hence, in N° 1. are enumerated thoſe Wounds, which hinder the Influx of the nervous Fluid requiſite for the muſcular Action of the Heart. In N° 2. thoſe Wounds are enumerated, which, in conſequence of a Diviſion of the Cavities of the Heart, hinder any Blood from being contained in it. In N° 3. are enumerated thoſe Wounds, which, in conſequence of the Dilatation of the Orifices of the wounded Veſſels, hinder the diſcharged Blood from returning to the Heart. But as in an human Creature, after it is brought into the World, the Right Ventricle of the Heart cannot evacuate the Blood contained in its Cavity, except thro' the Lungs, and as to this their Dilatation by Reſpiration is requiſite, for this Reaſon, in N° 4. are enumerated thoſe Wounds which totally deſtroy Reſpiration. Then, laſtly, ſince, by an inevitable Effect of Life and Health, many both of the ſolid and fluid Parts are daily loſt, hence it is requiſite, that, in order to preſerve Life, as many Parts of the ſame Kind ſhould be perpetually reſtored both to the Solids and Fluids, as were loſt by the Energy and Activity of Life. But the Loſs of all theſe is reſtored by the Aliments eaten, and by the natural Actions changed into a Subſtance ſimilar both to the ſolid and fluid Parts of the human Body. For this Reaſon, in N° 5. are enumerated thoſe Wounds which deſtroy the Soundneſs of thoſe Parts abſolutely requiſite to this Work.

To theſe five Heads we may therefore reduce all mortal Wounds.

Firſt, Thoſe which intercept the Influx of the nervous Fluid into the Heart, from the *Cerebellum*; ſuch as Wounds of the *Cerebellum*, or Brain, ſo deep as greatly to injure the *Medulla Oblongata*; or when the Texture of the Veſſels within the *Cranium* is ſo diſſolv'd, as to admit of an Extravaſation of their Contents, which deſtroy Life by Preſſure or Putrefaction, and which cannot be come at by means of the Trepan, by reaſon of the Condition of the Place; as it happens in Wounds of the inferior Part of the Orbit of the Eye, the temporal Bones, the *Os Ethmoides*, and the Baſis of the *Cranium*, thoſe which deeply injure the ſpinal Marrow; or which divide the cardiac Nerves.

As the Heart is a true Muſcle, ſo its Action requires all thoſe Things, which from Experience we know to be neceſſary for the Action of the other Muſcles of the Body. But it is certain from Experiments, that the Influx of the Spirits thro' the Nerves into a Muſcle, is requiſite to its Action; the ſame will, therefore, obtain in the Heart: It is, alſo, certain from medicinal Obſervations, that when by violent external Cauſes, the Blood is ſo extravaſated within the *Cranium* as to compreſs the whole Brain, all the Senſations and Motions depending on the Will are totally aboliſhed; whereas the Action of the Heart in the Beginning of ſuch a Diſorder, is rather increaſed, as is obvious from the Strength and Celerity of the Pulſe in apoplectic Patients. But it is known from Anatomy, that the *Cerebellum* is very ſafely defended, ſince it lies under the Brain, and being covered with the *Dura Mater*, cannot be ſo eaſily compreſſed by the extravaſated Humours, as the Brain itſelf. But when the ſame Cauſes continuing or increaſed begin to compreſs the *Cerebellum*, which being of a more ſolid Contexture, therefore more reſiſts compreſſing Cauſes, then the Action of the Heart ceaſes, and Life is deſtroyed. Hence we know that the *Cerebellum* communicates, thro' the Nerves, the Spirits requiſite for the muſcular Motion of the Heart. Wounds, therefore, which greatly hurt, or totally deſtroy, the *Cerebellum*, are juſtly accounted mortal. This is confirmed by Experiments made on live Animals. Thus *Perrault*, in his *Mechanique des Animaux*, *Partie* 2. *Cap.* 7. informs us, that, when the Brain of a large Dog was cut like Chequer-work, almoſt for an entire Hour, he died the very Moment his *Cerebellum* was wounded. *Raymund Vieuſſens*, in his *Neurographia Univerſalis*, *Lib.* 1. *Cap.* 20. tells us, "That when, after opening the ſuperior Part of a "Dog's Head, the *Cerebellum* is cut into Pieces, and taken "out of the *Cranium*, the Animal dies almoſt forthwith, tho' "the Brain, and Trunk of the *Medulla Oblongata*, are by no "means hurt." The ſame Experiment was made by *Bleninſius*, in young Puppies, whoſe *Craniums* were as yet ſoft, and their Sutures gaping, by driving a Knife into the *Cerebellum*, upon which he ſaw them expire, after ſlight Concuſſions of the external Parts; but upon removing the *Cranium*, it appeared, that the Inſtrument, in one of the Animals, had perforated almoſt the whole Compages of the *Cerebellum*; whereas, in the other, it had only penetrated its medullary *Nucleus*.

Nor is it any Objection againſt the mortal Nature of Wounds of the *Cerebellum*, that *Wepfer*, in *Tr. de Cicutæ Aquaticæ Hiſtoria & Noxæ*, in Puppies whoſe Heads were cut off, ſaw the alternate Syſtole and Diaſtole of the Heart remain for ſeveral Hours: For here we treat of the durable Action of Life, and not concerning that ſurpriſing Property of the Heart, by which, when taken out of the Body, it continues its Motion after Death: For *Wepfer* by no means intended to deduce from his Experiments any thing contrary to this Doctrine, as he himſelf affirms.

But ſince it is certain, from Anatomy, that no Nerve is derived from the *Cerebellum*, but that the whole medullary Subſtance of the *Cerebellum* being collected, goes off into the *Medulla Oblongata*, from which the Nerves afterwards ariſe, it is ſufficiently obvious, that conſiderable Woundi of this *Medulla Oblongata* muſt neceſſarily prove mortal. Now if we conſider that the *Cerebellum* and *Medulla Oblongata* are ſo ſafely lodged that they cannot be wounded without a conſiderable Wound of the Brain itſelf, and of the large Veſſels and Muſcles, the mortal Nature of Wounds of theſe Parts will be ſtill more obvious.

But Wounds of the Brain itſelf, tho' pretty large, are not always mortal; as is obvious, from many Obſervations ſpecified under the Article CAPUT.

When ſanguiferous arterial Veſſels, or large venous Veſſels, are by any Cauſe ruptured, they diſcharge their contained Blood, as, alſo, that which by the continual Force of the Heart, would have flowed thro' the Veſſels, if ſound. But the hard Bone of the *Cranium* cannot yield, and naturally the Brain exactly fills the Cavity of the *Cranium*; for which Reaſon, the extravaſated Blood muſt neceſſarily compreſs all the Parts contained in the Cavity of the *Cranium*. Hence, immediately after an Extravaſation of Humours within the *Cranium*, the Functions of the Brain begin to be aboliſhed, and afterwards the ſame Cauſe continuing to act, the *Cerebellum* and *Medulla Oblongata* are compreſſed, and Life by that means is deſtroy'd. If the Blood extravaſated from the ruptured Veſſels, is not in ſo large a Quantity, as by its Compreſſion to remove the Action of the Brain, *Cerebellum*, and *Medulla Oblongata*, it may yet prove prejudicial in another manner: For the Humours of the human Body when extravaſated, are by a ſpontaneous Degeneracy corrupted, tho' more ſlowly where all Acceſs of the Air is denied; but at laſt becoming putrid, and acrid, they bring on Inflammations and Suppurations of the Brain, by which they conſume and deſtroy its tender Fabric. Hence, in practical Authors, many Obſervations prove, that Wounds and Contuſions of the Head, which were thought very inconſiderable, have after a pretty long time brought on ſudden Death. In Carcaſes there has appeared a large Quantity of ichorous or purulent Matter, and often a conſiderable Conſumption of the Brain, by this means. Inſtances of this Kind may be ſeen in *Bonetus*'s *Sepulchretum Anatomicum*.

In ſuch Caſes, therefore, the principal Hope of Cure is placed in the Operation of the Trepan, in order to procure a free Diſcharge to the Humors; but if ſuch is the Condition of the wounded Part, that this Operation cannot be performed in it, inevitable Death will follow: But the Places in which this Operation cannot be performed, are, principally, theſe following:

The inferior Parts of the Orbit of the Eye; that is, that Part of the Orbit of the Eye which conſtitutes the greateſt Part of the Bottom of the *Cranium*, and which lies below the *Cranium*, but conſtitutes the ſuperior *Lacunar* of the Orbit of the Eye; for this Part of the Orbit is formed by the *Lamella* of the *Os Frontis*, which in a prepared *Cranium* is pellucid, and hardly ſo thick as the Nail of one's Finger: But this *Lamella*, on which the anterior Parts of the Brain, together with pretty large Blood-veſſels, lie, is, on account of its Thinneſs, perforated by a ſlight Wound, in which Caſe the extravaſated Blood is lodg'd under the Brain, in the very Baſis of the *Cranium*; for which Reaſon it cannot be evacuated by the Trepan. Hence it appears how dangerous Wounds, inflicted in this Part, are. *Ruyſch*, in *Obſervat. Anatom. Chirurg. Centur. Obſervat.* 54. gives us an Account of a Man, who was, with the Extremity of a Stick which was not very ſharp, wounded in the Orbit of the Left Eye; and tho' the Wound appeared inconſiderable to thoſe who had the Care of it, yet the Patient ſoon after died. And when, by public Authority, the Cauſe of his Death was enquired into, the *Cranium* being divided with a Saw, the Wound appear'd to have penetrated pretty deep into the Brain.

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As for the inferior Parts of the temporal Bones; the Pits appearing in prepared Sculls, and excavated by the Pulsation of the Arteries of the *Dura Mater*, demonstrate, that considerable Arteries are distributed about the Temples: When, therefore, these are wounded, the extravasated Blood tends directly downwards to the Basis of the *Cranium*; and, on account of the large temporal Muscles situated here, there is no Place for the Trepan: All the Misfortunes are, therefore, to be dreaded, which are to be expected from an Extravasation of Humors producing unhappy Effects, either by their Compression, or Corruption.

As for the inferior Part of the Os Ethmoides; perhaps, at first, this Bone may seem to be so safely lodged, that it cannot be easily wounded: But if, when the Head is reclined backwards, a sharp-pointed Sword is driven up the Nostrils, it may easily penetrate as far as that Bone. Besides, if in the lateral Part of the Orbit of the Eye towards the Nose, a Wound is inflicted, it may by a gentle Force perforate that *Lamella* of the *Os Ethmoides*, which constitutes a Part of the Orbit of the Eye, and is called the *Os Planum*, and thus pass into the Cavity of the *Cranium*. *Bonetus*, in *Sepulchret. Anatom.* gives us an Instance of a Student of Law, who receiving a Prick of a Sword below the Orbit of the Left Eye, died apoplectic twenty-four Hours after. Upon laying open the *Cranium*, it appeared that the Wound had penetrated thro' the Orbit of the Eye and the *Os Ethmoides* near the *Crista Galli*, into the Right Ventricle of the Brain. The Basis of the Brain and Region of the *Cerebellum* were, also, full of Blood. It is sufficiently obvious, that there were no Hopes of a Cure in such a Case.

Other Wounds, penetrating into the Basis of the *Cranium*, prove infallibly mortal, for the same Reasons.

As to Wounds of the spinal Marrow; after nine Pairs of Nerves have arose from the *Medulla Oblongata* within the *Cranium*, all the rest of the medullary Substance of the Brain and *Cerebellum*, collected into one Trunk, and defended by the *Vertebra*, is stretched out to the *Os Sacrum*. From this spinal Marrow all the Members below the Head, and many of the *Viscera*, receive a great Part of their Nerves: If, therefore, a considerable Wound is inflicted in the superior Part of the spinal Marrow, its medullary Substance is destroy'd, and all the Action of the Brain and *Cerebellum* on the inferior Parts is remov'd, so far as it depends on the Soundness of these medullary Fibres: For the eighth Pair of Nerves called the *Par Vagum*, and the intercostal Nerves arising higher from the *Medulla Oblongata* within the Cavity of the *Cranium*, are distributed to many of the vital *Viscera*. Hence such a Wound is not succeeded by immediate Death, tho' Patients wounded in this manner all die sooner or later, according as the spinal Marrow is wounded deeper, or nearer its Origin. The Reason of this is sufficiently obvious; for the whole *Cerebrum* and *Cerebellum*, by their Fabric, secrete from the arterial Blood that highly-subtile Fluid, which, being thus secreted, is conveyed to all the Parts of the Body thro' the medullary Fibres, and the Nerves consisting of those Fibres collected together. Whilst, therefore, so long as the Quantity of the Liquid conveyed to the found secreting Organ is the same, so great a Number of Vessels, which ought to contain and convey the secreted Liquor to its proper Places, is destroy'd, it follows, that the Function of the secreting Organ must first be disturb'd, and then destroy'd: Besides, large Blood-vessels are at the same time generally hurt. Hence the extravasated Humors easily reascend into the Cavity of the Brain, after the Cavity formed by the *Vertebræ* is first full. But that such Wounds are mortal, is certain, from practical Observations. Thus *Bonetus*, in *Sepulchret. Tom.* 3. tells us of a Countryman who falling from a Tree had the second *Vertebra* of the Neck luxated near the *Atlas*, as afterwards appear'd in the Carcase. He liv'd for some Days in this manner, and then died: But others subjected to the like Misfortune, have died in a very short time.

Sennertus, in *Tom.* 3. *Lib.* 5. *Part* 4. *Cap.* 3. informs us, "That he knew a certain Butcher, who, when intending to "kill Oxen, did not strike them in the usual manner, with an "Ax in the Forehead, but thrust a small Knife into that Part "of the spinal Marrow where the Head is joined to the *Ver-*"*tebræ* of the Neck; by which means the Animal immedi-"ately dropt down, as it were, apoplectic." *Galen*, also, observes, that Bulls in which the spinal Marrow is divided hard by the first *Vertebra* of the Neck, immediately fall down, and lose both Voice and Respiration.

In Puppies, the like Experiment was attended with the same Success.

Hippocrates, in *Lib.* 1. *de Morbis*, pronounces Wounds of the spinal Marrow mortal; and in *Prorrhet. Lib.* 2. *Cap.* 11. he tells us, "That if the spinal Marrow is disordered, either "by a Fall, by any other Cause, or spontaneously, the Patient "loses the Use of his Limbs, in such a manner, as not to per-"ceive when they are touched: Nor, in the Beginning of the "Disorder, does he discharge his Excrements and Urine, un-"less with Difficulty: But when the Disease is of long stand-"ing, both Excrements and Urine are evacuated spontaneously, "but the Patient dies soon after this." In this Place it is obvious, that *Hippocrates* treats of a Wound in the inferior Part of the spinal Marrow; notwithstanding which, he pronounces it mortal. But that some have escap'd, or, at least, led a very miserable Life for a long time after the spinal Marrow has been compressed by a Luxation of the *Vertebræ* about the Loins, is certain from *Hildanus*, in *Observat. Chirurg. Cent.* 5.

But I know of no Instance in which any one has survived a Wound of the superior Part of the spinal Marrow.

With respect to a Division of the cardiac Nerves; thro' these is convey'd that fine Fluid separated, by the Fabric of the *Cerebellum*, from the purest arterial Blood, and which is requisite to the muscular Motion of the Heart.

In the *Pericardium* the Heart remains free, and adhering to no Parts except the Vessels, which either enter or run out from the Heart. Now all these Vessels with which the Heart is connected in the *Pericardium*, are free, moveable, and adhering to no adjacent Parts: The Nerves, therefore, which enter the Heart, must be convey'd to it along with the Vessels with which it is annex'd; for the Heart adheres to no other Part in the *Pericardium*: Hence the Nerves distributed to the Heart do not remain free, as one might possibly conjecture from anatomical Tables, but are applied to the Veins which convey the Blood into the Cavities of the Heart, and to the Arteries which receive the Blood expelled from the Heart. Physiology, from this surprising Position of the Nerves running to the Heart, explains its Systole and Diastole, whilst the same Cause which produces the Motion of the Heart, the Moment after, by the necessary Fabric of the Parts, destroys it. Hence, in one Moment of Life, the Heart is, as it were, contracted by a violent Spasm, and the next Moment becomes perfectly paralytic.

Hence it is obvious, that near the Heart the cardiac Nerves cannot be wounded, without wounding the large Vessels about the Heart; in which Case, inevitable Death will follow the Wound. But here we only consider simple Wounds of the Nerves of the Heart. But anatomical Observations inform us, that all the Nerves which are distributed to the Heart arise from the eighth Pair, the intercostal Nerves, or from the recurrent Nerves: But the Trunks of these Nerves may, in their Course, be wounded, and thus the Effects which these Nerves perform to the Heart, may be abolished.

Willis, in *Anatome Cerebri*, tells us, that, upon dividing the Skin in the Throat of a live Dog, he applied a tight Ligature to both Trunks of the *Par Vagum*; after which, the Animal immediately became torpid, and swell'd, and suffer'd convulsive Motions, accompanied with a great Tremor about the *Hypochondria*. This Symptom soon ceasing, the Creature lay, as it were, at the Point of Death, vomiting up its Aliments; but it liv'd after these Nerves were entirely divided for several Days, till it was almost destroy'd for Hunger.

But, upon opening its Body, the Blood coagulated within the Ventricles of the Heart, and in the large Vessels, was found formed into grumous Concretions. In Animals, however, which perish by Hunger, such Coagulations of Blood are not found. The Cause why the Life of this Animal was so long protracted, was by *Willis* deduced from the small Ramifications of the recurrent and intercostal Nerves distributed to the Heart.

Lower, in *Tr. de Corde*, tells us, that upon making the same Experiment, he observ'd, that the Heart began immediately to tremble and palpitate; and thus for a Day or two the Animal protracts a miserable Life, with a trembling Heart, and Sighs sent from his Breast: But so intense is the Pain of the Animal, that he cannot be confined, without very strong Ropes. But *Bhonius*, in his *Circulus Anatomico-physiologicus*, affirms, that an Animal which he treated in this manner expir'd in a Moment, by the Constriction of the Cords. *Vieussens*, in his *Neurographia*, tells us, that the Nerves of the eighth Pair, and those constituting the intercostal Pair, being transversly cut about the Neck, the Animal is forthwith seiz'd with a Languor, which is the Forerunner of approaching Death: He suffers tremulous Motions, his Strength gradually fails, and, in about twenty-four Hours he is deprived of Life. I made the same Experiment on a Dog, tying on each Side of the Neck, the eighth and intercostal Pairs: The Dog howl'd no more, but with a violent Effort utter'd a kind of obscure Noise: At certain Intervals he was seized with an intolerable Madness, biting every thing which came in his Way with incredible Rage; but before he was seiz'd with the Paroxysm of his Madness, the Point of his Nose began to be surprisingly corrugated. He liv'd in this Condition from Six in the Afternoon till Eleven at Night; but I found him dead next Morning.

From all these Circumstances it is obvious, that a Division of the cardiac Nerves in Animals, is succeeded by Death sooner

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or later; and that the Animal almoſt immediately labours under, as it were, the Agonies of Death; which happens from the Inability of the Heart any longer to expel the Blood contain'd in its Cavities. But we obſerve that, in ſome Diſeaſes, Patients remain in ſuch Agonies for two Days, or longer, becauſe the Blood cannot be forced thro' the obſtructed Arteries. The ſame ſeems, alſo, to have happen'd in theſe Animals, which after theſe Nerves were ty'd or divided, protracted their Lives for a conſiderable time: Perhaps, alſo, other ſmall Nerves diſtributed thro' the Subſtance of the Heart, ſo long ſuſtain'd its vital Motion. Thus in *Hiſt. de l'Academie des Sciences, An.* 1734. we are told, that there was found a Ramification of a conſiderable Nerve, ariſing from the ſemilunar gangliform Plexus of *Vieuſſens*, near the large meſenteric Plexus, aſcending from the Abdomen to the Breaſt, and inſerted into the Right Auricle and Baſis of the Heart. Perhaps, alſo, the ſurpriſing Property of the Heart, by which, when divided from all the Veſſels, it continues its Motion, might continue Life after the cardiac Nerves were deſtroy'd.

Thus it is known from Experiments, what happens in Brutes in conſequence of a Diviſion of the cardiac Nerves; but in Men it rarely happens that the Trunks of the eighth Pair, or of the intercoſtal Nerves, are wounded, but, at the ſame time, the Soundneſs of the adjacent Veſſels is deſtroy'd, the wounding of which alone proves mortal: For the Trunks of the Carotids, and the large jugular Veins in the Neck, lie above theſe Nerves; and, behind, the lateral Proceſſes of the *Vertebræ* hinder them from being eaſily wounded. Nor do I remember, ſays *Van Swieten*, to have found, either among Phyſicians, or Surgeons, a ſingle Inſtance, in which the cardiac Nerves alone were wounded.

Secondly, Such as cauſe an Effuſion of Blood from the wounded Cavities of the Heart; for which Reaſon deep Wounds penetrating its Cavities, are mortal.

As the Heart is a Muſcle continually mov'd, and whoſe Parts ſo conſpire, and are united, that one cannot want the Aſſiſtance of the other; and as it is the Fountain of Life, whence all the animal Functions flow; ſo many of the antient *Greeks* and *Arabians* affirm'd, that Wounds of the Heart proved ſoon and infallibly mortal: But they ſeem to have aſſerted this rather from Theory, than from Experience.

There are ſome ſurpriſing Relations found in Authors, which, if true, would prove that Animals have liv'd without the Heart. Thus *Pliny* the Second, in *Lib.* 11. *Cap.* 37. tells us, that the firſt Day *Cæſar the Dictator* made a Proceſſion in his purple Robes, and ſat in a golden Chair, he twice found the Heart wanting in the Animals he ſacrificed. *Plutarch*, alſo, and *Suetonius*, in their Lives of *Cæſar*, affirm, that the Heart of the Sacrifice did not appear to him; which was look'd upon as a bad Omen; becauſe an Animal cannot naturally ſubſiſt without an Heart. But the Haruſpices often boldly impoſed on the Credulity of the Multitude, that they might at Pleaſure decree what was to be done. Hence theſe Teſtimonies are very ſuſpicious; ſince they are ſo directly repugnant to the known Oeconomy of Animals.

For it is hardly credible, that the Heart was ever wanting in an human Creature, or in any other Animal, tho' the Incautious might be deceiv'd by the great Variety of the Situation, Figure, and Bulk, of the Heart, ſometimes brought on by Diſeaſes, as is certain, from practical Obſervations.

The celebrated *Boerhaave*, in the Year 1720. had a ſurpriſing Obſervation communicated to him by a ſkilful Anatomiſt in *Edinburgh*, which proves that there may exiſt in Nature, ſuch Monſters as perplex the Knowledge of the Uſe of the Parts. This ſkilful Anatomiſt when carefully ſearching for the ſeminal Veſſels, in a large, live, and robuſt Rat, found the Right Kidney double; but, upon opening the Membrane which cover'd it, the genuine Right Kidney appear'd; but the other Body, which he took for a Kidney, and which was included in its proper Covering, was of ſuch a Bulk and Figure as the Heart of that Animal uſually has, with its Baſe towards the ſuperior, and its Apex towards the inferior Parts. This Heart when carefully examined had two Ventricles, divided by a kind of Partition; there was, alſo, a Left Auricle, Valves, and fleſhy Columns; but there were not the leaſt Traces of the Right Auricle, the *Vena Cava*, the pulmonary Veins and Arteries, nor the Aorta. Upon opening the Thorax, neither *Pericardium*, nor Heart, appear'd; but from the *Vertebræ* of the Thorax, in the middle Space between the two Lobes of the Lungs, aroſe the Right Auricle, from which the pulmonary Arteries were diſtributed. The Veſſels which return the Blood from the Lungs were united into one Trunk, forming the Aorta, which was afterwards diſtributed in the uſual manner. The Animal was adult, and all the other *Viſcera* form'd in the natural manner: There was, indeed, an Heart, furniſh'd with the uſual Parts, but deviating from the natural Situation, and uſeleſs. Without the Action of the Heart, therefore, this Animal not only liv'd, but was ſound, and agile.

It is ſufficiently certain, from Experience, that ſome Animals have lived for ſome time after their Hearts have been cut out. *Galen*, in *Lib.* 2. *de Placitis Hippocrat. & Platon. Cap.* 4. tells us, that, in Sacrifices, the Victims, after their Hearts are taken out and laid on the Altar, reſpire, bellow ſtrongly, and even run till they die by the Effuſion of Blood. *Veſalius*, alſo, informs us, that he has ſeen Dogs, and eſpecially Cats, after their Thorax was laid open, and all the Veſſels of the Heart were conſtricted by a Ligature paſſed about the Baſe of the Heart, and the Heart itſelf was cut out below the Ligature, run a conſiderable Way, when the Cords, with which they were ty'd, were looſed. After the Hearts were taken out of Puppies cut from the Uterus of a live Bitch, their Life remain'd for a Quarter of an Hour with a ſenſible Motion of their Members, and a certain whizzing Noiſe. It is, alſo, certain, from Zoology, that Worms and other Animals of a ſimilar Species, have liv'd for a long time after their Hearts have been cut out; and after ſuch Animals are divided into Parts, each Segment retains Life for a conſiderable time. But from the Obſervations of *Malpighi* and *Lewenhoeck* it is certain, that Animals have, in their original State, liv'd the Life of Worms. Hence, perhaps, ſo long as theſe Animals remain in the Uterus, they retain ſomething of their antient Tenacity, or Toughneſs of Life. *Boyle* in his Treatiſe *de Utilitate Philoſophiæ Experimentalis*, tells us, that a Frog, after its Heart was cut out, leap'd about, ſwam when put into Water, and with Agility jumping out of the Veſſel full of Water, continued to leap about the Room for an Hour, and more.

Lord *Verulam*, in *Hiſt. Vitæ & Mortis*, tells us, that a certain Man, after the Executioner had cut out his Heart and held it in his Hand, was heard to utter three or four Words of Prayer; but that Author informs us, that the Criminal's Friends had given the Executioner a Reward for executing his Office quickly, and freeing the Malefactor from the racking Pains he would have otherwiſe been ſubjected to. Hence it is not very ſurpriſing, that, ſince the preternatural Cold a little conſtricted the divided Veſſels, and ſince in theſe laſt Moments of Life, the Diſpoſition of all the animal Organs was very intenſe, ſome Preſſure of the Blood ſhould as yet act for a few Moments on the Brain, by which Preſſure on the Organs thus diſpoſed, during that laſt Effort, the Criminal's Speech continued for a ſhort time; eſpecially if we conſider, that the Lungs, after the Aperture of the Thorax, being collapſed and every-where contracted by a preternatural cold Air, expel'd their contain'd Air with a pretty ſtrong Force. This Inſtance is not, therefore, repugnant to the Neceſſity of the Heart: But in the Experiment of *Veſalius*, where all the Veſſels were ty'd, the contractile Arteries, their Elaſticity being contracted by the cold Air, might force the Blood thro' the Brain and *Cerebellum*, and, conſequently, continue Life for a conſiderable time.

The Experiments made on Frogs, Vipers, and Tortoiſes, which evince that theſe Animals may live a conſiderable time after their Heart is taken out, demonſtrate, that the manner of Life in Animals cannot be limited by very general Rules, but that it is different in different Animals. So that it is not eaſy to give a general Hiſtory of Life, ſince we can only draw our Obſervations from Experiments made.

But no certain Obſervations have evinced that the Heart was ever wanting in human Creatures, or that they have, for a conſiderable time, ſurviv'd the total Deſtruction of its Fabric: Hence the Reaſon is obvious, why conſiderable Wounds of the Heart are juſtly look'd upon as mortal. It is, however, certain, that all Wounds of the Heart are not mortal; and that they differ much from each other, according to the different Parts of the Heart in which they are inflicted.

For if, by a Wound, the Trunk of the coronary Vein or Artery, in the Baſe of the Heart, is divided, a ſpeedy Death muſt inevitably follow; becauſe, by a great Impetus, which is the ſtrong Contraction of the Aorta, the Blood, which ſoon returns by the Veins, is, thro' the coronary Artery, tranſpreſs'd thro' the muſcular Subſtance of the Heart; for at every Contraction of the Heart, the whole Heart becomes pale, becauſe all the Blood is expreſſed: But the Moment after, when the Heart is in its Diaſtole, all the Veſſels, running thro' its Subſtance, are fill'd.

But if a Wound has penetrated into the Right Ventricle of the Heart, the Blood will be diſcharg'd into the *Pericardium*, partly from the wounded Veſſels of the Subſtance of the Heart, and partly from the Cavity of the Heart; and from the *Pericardium* it will be diſcharg'd into the Cavity of the Thorax, or flow from the external Wound: Such a Wound will be dilated, when the Heart is full; for at the time the Heart is conſtricted, the wounded Parts rather accede to each other: Nor, at that time, will there be a great Effuſion of Blood. When the Blood,

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Blood, however, is discharg'd, the Strength will be impair'd, tho' the Action of the Heart and Life still remain: But when the greatest Weakness is present, the Heart is almost at rest: If, at this time, there is no muscular Motion, the venous Blood will flow into the Heart with a calm Motion, and in a small Quantity. And if, in this Case, the Patient abstains from such Things as, by Nutrition, suddenly augment the Quantity of the Blood, and from Cordials which, by their stimulating Quality, always augment the Motion of the Fluids, it seems possible to preserve Life, and restore Health. For unless the Matter was confirm'd by practical Observations, in wounded Persons, and Women who have suffer'd Abortion, no one could believe with how small a Quantity of Blood, and how slow a Degree of its Circulation, a Man can live. Thus when, by a violent Hæmorrhage, the Quantity of Blood is greatly diminish'd, and the Strength impair'd, the Wound inflicted is hardly any more dilated, the Rudiments of a Concretion begin to be form'd, and gradually perfected, provided, by an increas'd Quantity and Motion of the Blood, those Parts are not broken which had begun to be concreted.

Besides, in Wounds of the Right Ventricle of the Heart it is to be observ'd, that the Lungs continue to act, and, by their Dilatation, prepare an easy Way for the Blood forced from the Right Ventricle of the Heart. Hence, in the time of the Systole, on account of the free Passage thro' the Lungs, such a Quantity of Blood will not be express'd thro' the Wound. Hence arises a greater Opportunity of consolidating the Wound.

But Wounds of the Left Ventricle of the Heart seem to be far more dangerous; for if the Left Ventricle of the Heart is wounded, and not entirely perforated, such a Wound must necessarily be dilacerated, since the Left Ventricle of the Heart, by its strong muscular Force, in which it far surpasses the Right, presses its contain'd Blood into the Aorta, which makes a considerable Resistance, and dilates not only that, but all its Ramifications, throghout the whole Body: For the Fibres of the Left Ventricle of the Heart, being then distracted by the contain'd and resisting Blood, the Wound will be increas'd, till, penetrating into the Cavity of the Heart, it prepares a more easy Discharge for the Blood than thro' the Aorta, where there is a considerable Resistance: Or, if any Consolidation is begun here, it is to be fear'd, lest the Part being preternaturally weak, should be extended into an aneurysmatic Tumor, and the Action of the Heart be, by that means, disturb'd; so that Life may indeed be protracted, tho' with a Train of Miseries, which can only be terminated by Death.

But if the Left Ventricle of the Heart is perforated with a large Wound, a speedy Death infallibly ensues: But in all Probability, that Wound would, of all others, prove most suddenly mortal, which should divide the Beginning of the Aorta immediately above its Valves. But when the Left Ventricle of the Heart is perforated, the Valves of the Aorta sustain the Blood contain'd in the Arteries. Hence the whole arterial System remains full, after which, the Arteries, being contracted, propel the Blood; and thus Life may be sustain'd, for some time.

Medicinal Observations have evinced, that, after Wounds of the Heart, Men have liv'd for a considerable time, especially when only the Right Ventricle is perforated: Besides, some Observations evince, that a Consolidation of Wounds of the Heart is possible; Instances of which are found in *Thom. Barthol. Hist. Anatom. rarior. Cent.* 1. *Hist.* 77. *Schenckius, Observat. Med. rarior. Paré, Lib.* 10. *Cap.* 32. *Act. Leipsic. An.* 1705. and *Miscellan. Cur. Dec.* 2. *An.* 6.

From all the Instances recorded in these Authors, we may conclude, that though Wounds of the Heart are always dangerous, yet they are not at all Times suddenly and infallibly mortal: It is, also, certain, that we ought not to despair in the most desperate Wounds, since, whilst a weak and languid Life is only sustain'd, such Consolidations of Wounds frequently happen, as could not have been expected.

Thirdly, Those Wounds which derive the Blood from the Heart, Brain, and *Cerebellum*, either into some Cavity of the Body, or out of the Body, and which cannot be cur'd on account of the Situation of the Places; such as large Wounds of the Lungs, Liver, Spleen, Kidneys, Pancreas, Mesentery, Stomach, Intestines, Uterus in pregnant Women, Bladder about its large Arteries, the Aorta, Carotid, Vertebral, and the like Arteries and Veins.

In the preceding Numbers of this Aphorism we have shewn, that those Wounds are mortal which destroy the Fabric of the *Cerebellum*, or which, by wounding the *Medulla Oblongata*, or the spinal Marrow near its Origin, or the cardiac Nerves, hinder the vital Influx of the Spirits secreted from the Blood by the Fabric of the *Cerebellum* into the Heart, and other Parts of the Body, from performing the Functions requisite for Life: But that these vital Spirits may be separated by the Fabric of the *Cerebellum*, it is requisite that the Blood should, by the muscular Force of the Heart, be forced into the Arteries. Hence deep Wounds, penetrating into the Cavities of the Heart, are judg'd mortal. The whole Action of the Heart consists in receiving the Blood convey'd thro' the Veins, and propelling it into the Arteries, after it is receiv'd: All Wounds, therefore, which so injure the Vessels which convey the Blood to the Heart, or receive the Blood expel'd from the Heart, in such a manner that the Blood flows out of the Body thro' the open Wound, or is extravasated and accumulated in the Cavities of the Body, without returning again to the Heart prevent it from being convey'd in a due Quantity, and with a proper Impetus, thro' the Arteries of the Brain: Hence all the Functions of the Brain and *Cerebellum* must necessarily be disturb'd, and at last totally abolish'd. Nor is it of any Importance, whether the Vessels are wounded in their Course, before they are dispers'd thro' the Viscera, whose Fabric they constitute; or whether they are wounded in the Viscera with the like Effect, that is, such a considerable Effusion of the vital Blood as injures the Action of the Heart and *Cerebellum*. All the Wounds, therefore, of the Viscera, and Vessels enumerated in this Aphorism, are not absolutely mortal, unless under this Limitation: Besides, it is requisite that the Condition of the Wound made be such, that the Effusion of the Blood cannot be stop'd by Ligature, or the other Assistances of Art. Among the Wounds of this Kind are reckon'd, first,

Large Wounds of the Lungs.

The Right Ventricle of the Heart receives all the Blood of the Body convey'd thro' the Veins, and propels it thro' the Lungs into the Left Ventricle: When, therefore, a large Wound is made in the Lungs, the Blood forc'd from the adjacent Heart will be discharg'd from the divided Vessels, and, consequently, will not return to the Left Ventricle of the Heart, but flow thro' the Wound made; or passing into the aereal Cavity of the Lungs, it will be vomited up copiously; or, being extravasated into the Cavity of the Breast, it will hinder the free Expansion of the Lungs. Hence the mortal Effects of such Wounds are sufficiently obvious.

Medicinal Observations sufficiently evince the fatal Events of Wounds of the Lungs; Instances of which may be seen in *Bohnius de Renunciatione Vulnerum*. In practical Authors, Instances, also, occur, in which Wounds of the Lungs have been cur'd; but these Wounds have either been very slight, or such as that the Surgeon's Hand could have Access to them. See *Hildanus, Cent.* 2. *Obs.* 32. and *Cent.* 1. *Obs.* 46. It is, also, to be dreaded, that even slight Wounds of the Lungs may degenerate into Ulcers, which afterwards waste the Patient, by a slow Consumption. An Instance of this occurs in *Foreſtus, Obs. Chirurg. Lib.* 6. *Obs.* 4.

As for large Wounds of the Liver; the collected venous Blood of the abdominal Viscera is, by means of the *Vena Portæ*, convey'd thro' the Liver, and the Trunk of the *Vena Cava Ascendens* is inserted into the Liver, the Whole of which appears soft, and resembles a Sponge full of Blood. The hepatic Arteries, indeed, when compar'd with the great Bulk of the Liver, are very small; but considerable Ramifications of the *Vena Portæ* are distributed thro' the Liver. Hence it appears, that Wounds of the Liver are always very dangerous, and, if considerable Ramifications of the Vessels, distributed thro' the Liver, are wounded, always mortal, and that, for the most Part, very suddenly; because a large Quantity of Blood is discharg'd into the Cavity of the Abdomen, and thro' the Wound. Hence *Deliquiums* and Death soon succeed. See *Hippocrat. Epidem.* 7. But it is sufficiently obvious, that those Wounds of the Liver are most dangerous, which are inflicted about the *Porta*, which are, for that Reason, pronounced incurable, by *Celsus*, in *Lib.* 5. *Cap.* 26. But the Wounds made in the thick Part of the Liver he asserts to be cured with Difficulty, though they are not absolutely incurable. *Hildanus*, in *Cent.* 2. *Obs.* 34. gives us a memorable Instance of the Cure of a Wound in the Liver; but, from the Description that Author gives, it appears, that the Wound did not penetrate to the large Ramifications of the hepatic Vessels. Tho' slight Wounds of the Liver are not forthwith mortal, yet they generally prove fatal at last. See *Tulpius, Observat. Medic. Lib.* 2. *Cap.* 26.

As for large Wounds of the Spleen; tho' *Democritus*, in *Epist. ad Hippocrat. de Natur. Human.* affirm'd, that the Spleen, which lies opposite to the Liver, was not only an useless, but, also, an hurtful Part of the Body; tho', by Experiments made on live Animals, it is certain, that the Spleen may be cut out, without destroying Life, or even greatly disturbing Health; and tho' Mr. *Boyle*, in his Treatise of the Usefulness of experimental Philosophy, tells us, that this has been done in Men; yet the Blood-vessels of the Spleen are so large, and so near the Heart, that mortal Hæmorrhages are justly to be dreaded after Wounds of the Spleen: Instances in which Wounds of this Organ have

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prov'd mortal, may be seen in *Tulpius*, *Obſ. Medic. Lib.* 2. *Cap.* 29. and *Bohnius*, *de Renunciatione Vulnerum*.

But ſlight Wounds of the Spleen, as well as of the Liver, are not always abſolutely mortal, tho' it is highly probable that they are always very dangerous.

As for large Wounds of the Kidneys; *Celſus*, in *Lib.* 5. *Cap.* 26. affirms, that Patients, who have their Kidneys wounded, cannot be preſerv'd. The Perſon who conſiders the Largeneſs of the emulgent Arteries, will eaſily believe that a mortal Hæmorrhage may enſue, if the large Ramifications of theſe Arteries are divided, either in the Subſtance of the Kidneys, or at their Ingreſs into the Kidneys: And if, at the ſame time, the *Peritonæum* is wounded, the Blood will be diſcharg'd into the Cavity of the Abdomen; but if a Wound, inflicted in the poſterior Part of the Body, wounds the Kidneys, whilſt the *Peritonæum* remains entire, there will be a great Effuſion of Blood into the pinguedinous Coat lodg'd in the Interſtices of the Muſcles: Nor can the Blood flow ſo freely from the Wound in the Kidneys; nor is this Doctrine deſtroy'd by that Paſſage of *Hippocrates*, *de Intern. Affection. Cap.* 15. where he orders Section for the Stone in the Kidneys, in the following manner: "When "the Pain is exceſſive, waſh the Part aggriev'd with a large "Quantity of warm Water, and apply tepid Fomentations; "but when it becomes tumid, and protuberant, make an Inci- "ſion hard by the Kidney [κατὰ τὸν νεφρὸν], and, having ex- "tracted the Pus, carry off the Sand by diuretic Medicines." For it is ſufficiently obvious, that, in this Paſſage, he does not mean that an Inciſion ſhould be made in the Kidney, and the Sand evacuated by that means.

That all Wounds of the Kidneys, however, are not mortal, may be ſeen in *Foreſtus*, *Lib.* 25. *Obſ.* 20.

As for large Wounds of the Pancreas; if the Trunks, or large Ramifications of the Veſſels running thro' the Pancreas, are divided, the Blood being diſcharg'd into the Cavity of the Abdomen, and becoming afterwards corrupted, the Effect of ſuch a Wound may be Death: But as the Pancreas lies under the Stomach, it can rarely be wounded, but the Wound muſt, at the ſame time, paſs thro' ſome of the other Viſcera.

As for large Wounds of the Meſentery; how large the Blood-veſſels, running thro' the Meſentery, are, and in what Order they are placed, *Euſtachius*, in *Tab.* XXVII. *Fig.* 2, and 3. has beautifully demonſtrated. Beſides conſiderable Ramifications of the *Vena Portæ* and *Vena Cava*, large arterial Trunks, that is, the ſuperior and inferior meſenteric Arteries, are, alſo, convey'd thro' the Meſentery. When, therefore, theſe Veſſels are divided, by a wounding Cauſe, a mortal Hæmorrhage may enſue, and the Cavity of the Abdomen be fill'd with the extravaſated Blood. An Inſtance of this is found in *Bohnius*, *de Renunciatione Vulnerum*: *Ruyſch*, alſo, in *Adverſar. Anatom. Decad.* 2. N° 4. tells us, that Death follow'd a Rupture of the Veſſels of the *Omentum*, whilſt the whole Cavity of the Abdomen was fill'd with the Hæmorrhage. There is ſtill another Danger attending Wounds of the Meſentery, which ſeems firſt to have been adverted to by *Ruyſch*: For that Anatomiſt, being for more than fifty Years employ'd, in *Amſterdam*, in inſpecting the Bodies of thoſe who were taken off by a violent Death, in order to make a Report to the Judges, with reſpect to the Condition of the Wounds, ſays, that he has frequently obſerv'd, that Wounds of the Meſentery prov'd mortal in two or three Days after the Patients had been rack'd with the moſt exquiſite Pains: But, upon a careful Inſpection, it was certain, that no other Part, of any Moment, was wounded. Beſides, when Poulterers caſtrate Capons, if they ſee the Meſentery wounded, in the Operation, they immediately kill the Animal; becauſe they know, from Experience, that it will ſoon die by ſuch a Wound. The mortal Effect of ſuch Wounds ſeems to depend on the wounding of the Nerves of the Meſentery. How great Influence the Nerves, diſpers'd thro' the abdominal Viſcera, have on the vital Functions of the human Body, is ſufficiently obvious, from medicinal Obſervations in incarcerated Hernias, and Interceptions of the Inteſtines.

Perhaps ſomething like this is hinted at by *Hippocrates*, in his *Coacæ Prænotiones*, when he tells us, "That thoſe whoſe inte- "rior Nerves, whether ſmall or large, are wounded, die, if the "Wound is tranſverſe, and large; tho' ſome eſcape, when it is "ſmall, and ſtrait." *Cornarius*, inſtead of ὅι ἐς τὰ ἐντὸς, reads ὅι ἐς τὰ ἔντερα; which Reading approaches near to this Opinion.

As for large Wounds of the Stomach and Inteſtines; we here conſider ſuch Wounds of theſe Parts as may, by a Rupture of their Blood-veſſels, prove mortal, in conſequence of the Effuſion of Blood. For thoſe Misfortunes, which ſucceed an Evacuation of the Contents of the Stomach and Inteſtines thro' the Wound, are treated of under the Article ABDOMEN. The Stomach, then, is ſurrounded by pretty large Veſſels, which, about both its Orifices, deſcend towards its Bottom, and are, in their Courſe, by frequent Anaſtomoſes, join'd to ſimilar Veſſels riſing upwards from the Bottom of the Stomach. Hence, when a conſiderable Ramification is divided, the Blood contain'd in all the other Veſſels of the Stomach, will eaſily flow thro' the wounded Veſſel. In practical Authors there are many Inſtances of Death ſucceeding Wounds of the Stomach; a memorable one of which accompanied with an exceſſive Hæmorrhage, is found in *Bonetus*, *Sepulchretum Anatomicum*, *Tom.* 3.

But the Inteſtines annex'd to the Meſentery, by its means receive their Veſſels, which being applied on both Sides to the inteſtinal Canal, are, in that Part of the Inteſtines which is oppoſite to the Meſentery, mutually join'd, by Anaſtomoſes. Wounds, therefore, of the Inteſtines, eſpecially about the Meſentery, may divide pretty large Trunks of Veſſels; by which means, large Effuſions of Blood into the Cavity of the Abdomen, and Death, will happen. See *Bonetus Sepulchretum Anatomicum*, *Tom.* 3.

The Danger of Wounds in the large Veſſels of the Stomach and Inteſtines, is much augmented by the continual periſtaltic Motion of theſe Viſcera; in conſequence of which, ſuch Wounds are never in a State of Reſt: Perhaps, alſo, the like Misfortunes are produc'd by Wounds of the Nerves diſpers'd thro' the Stomach, with thoſe ſucceeding Wounds of the Meſentery.

In practical Authors, however, there are frequent Inſtances of Wounds of the Stomach and Inteſtines cur'd; ſo that all ſuch Wounds are not to be look'd upon as mortal.

As for Wounds of the Uterus in pregnant Women; the Uterus, after a Woman has conceiv'd, and the impregnated Egg, by its increas'd Bulk, begins to fill the Cavity of the Uterus, is extended every Way, and in the like Proportion; all its Veſſels are every way enlarg'd, and receive a greater Quantity of Humours. Hence the Uterus of a pregnant Woman is almoſt as thick as the Uterus, when contracted, in a Woman not pregnant; and yet it is diſtended to an incredible Bulk, by the Dilatation and Repletion of its Veſſels. Hence *Hippocrates*, in *Lib. de Mulier. Morb. Lib.* 1. *Cap.* 23. tells us, "That when a "Woman is pregnant, the Blood is gradually convey'd from "the whole Body to the Uterus, and enlarges it." And hence he deduces the Reaſon why the Colour of pregnant Women is deprav'd; which is, that the pure Blood is daily convey'd from the Body of the Mother to that of the Fœtus. Hence it appears, that Wounds of the Uterus, when impregnated, are very dangerous; becauſe its Veſſels are diſtended by ſo large a Quantity of Blood. And this Danger is increas'd by the Fœtus, which, diſtending the Uterus, hinders it from contracting itſelf, and its Veſſels. But if, immediately after a Wound inflicted in the Uterus, the Fœtus was ſuddenly excluded, there would be ſome Hopes that, in conſequence of the Contraction of the Uterus, the Hæmorrhage might be ſtop'd, and the Wound conſolidated; as it actually happens in the Cæſarean Operation. Inſtances of this may be ſeen in *Act. Lipſ. An.* 1693. and *Hiſt. de l'Acad. Royal. des Sciences*, *An.* 1731.

As for Wounds of the Bladder, about its larger Arteries; tho' *Hippocrates*, in his *Tr. de Morbis*, *Lib.* 1. *Cap.* 3. condemn'd Wounds of the Bladder as mortal, and affirms, that they could not be conſolidated; yet it is certain, from frequent and undeniable Experiments, that, in Cutting for the Stone, Wounds of the Bladder are happily and ſucceſsfully cur'd: Yet there is a Danger, leſt the large Veſſels running thro' the Bladder, being divided, produce an exceſſive Hæmorrhage. For the Veſſels ariſing from the large adjacent Trunks of the Iliac Arteries diſcharge the Blood with a violent Impetus. The Origin and Courſe of theſe Veſſels are found in *Euſtachius*, *Tab.* XII. *Fig.* 1. This Danger is increas'd, becauſe in thoſe afflicted with the Stone, the Bladder is often thicker, and its Veſſels more dilated, than in a natural State: But when theſe Veſſels are divided, the Bladder, ſo long as the Stone remains in its Cavity, cannot totally contract itſelf; for which Reaſon they continue to diſcharge the Blood. But when the Stone is extracted, the Bladder contracted, and the Urine freely diſcharg'd thro' the Wound, the divided Veſſels may be again clos'd.

As for Wounds of the Aorta; the Blood returning from the Lungs to the Left Ventricle of the Heart, is all forc'd into the largeſt arterial Veſſel of the whole Body, which is call'd the *Aorta*, which being incurvated, tends downwards, and being incumbent on the Spine, and declining a little to the Left Side, as far as the *Os Sacrum*, is there divided into two equal Ramifications call'd the Iliac Arteries. During the whole of its Courſe from the Heart to the Part where it is divided, it retains the Name of the *Aorta*: Now it is ſufficiently obvious, that when the Aorta itſelf is wounded, there are no Hopes of a Cure left, ſince, with a direct Impetus, it receives all the Blood from the Left Ventricle of the Heart, and there is no Acceſs to the Hands of the Surgeon; for it lies conceal'd in the internal Parts of the Body incumbent on the *Vertebræ*: But ſuch a Wound will prove the ſooner mortal, the nearer it is to the Heart. As

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As for Wounds of the Carotids; these Arteries arise from the Curvature of the Aorta, which draws its Origin from the Left Ventricle of the Heart. This is at least the Case with the Left Carotid Artery, though for the most part, the Right arises from the Subclavian Artery of the same Side. These two Arteries on each Side of the Aspera Arteria, run down to the Larynx, where each of them is divided into two Ramifications, one of which lying principally towards the external Parts of the Head, is called the *external Carotid*, and the other which enters the Cranium, and is distributed through the Brain, is called the *internal Carotid*. Through their whole Course from their Origin out of the Aorta, or Subclavian Artery, to that Place where they are divided into two Ramifications, they are called simply the *Carotids*. In Mankind these Arteries are almost as large as the little Finger: Hence a large Hæmorrhage must necessarily happen when they are wounded, since being so near the Heart, they receive the Blood propel'd from it with a great Impetus. It is true the Carotids, during this whole Course, are so near the external Integuments of the Body, that their Pulsation in the Neck may be easily perceived by the Finger. Besides, it is probable, that a Ligature may be safely applied to one of the Carotids, since a sufficient Quantity of Blood may be conveyed to the Head, by the means of the other, and the vertebral Arteries. In a Dog whose recurrent Nerves I had cut off eight Days before, I tied both Carotids, nor could I observe any Inconvenience produced by that means; for eight Days after I found the Animal brisk and lively. Then I tied the Jugular Veins without any observable Disadvantage to the Animal, and four Days after found him entirely in Health. But examining the Ligatures applied to the Carotids, I found them firm, and a thick compact Thrombus lodged between the Ligature and the Heart. Upon laying open the Brain I found no Change in it, but its Bulk appeared rather increased than diminished.

But if we consider the Difficulties which occur when the Carotid Artery is divided in a Man, it will appear, that such a Wound is justly to be called *mortal*; for an excessive Hæmorrhage may in a few Minutes put an End to the Patient's Life. But that such a Patient should be preserved, it would be requisite that a skilful Surgeon should be present the Moment the Wound is inflicted, in order to compress with his Fingers, against the resisting Aspera Arteria, both Extremities of the divided Carotid. Ligatures ought, also, to be applied to the Limbs, that thus the Veins being compressed, a smaller Quantity of Blood may return to the Heart, by which means the Impetus of the discharged Blood must be lessened. After these Measures are taken, both Extremities of the divided Carotid, are to be found out and tied; for it is not sufficient to tie that Part of the Artery which is next to the Heart, since the Blood would continue to flow through the other Extremity of the divided Artery, because the Carotids under the Basis of the Brain, are joined with each other, and with the Vertebral Arteries by pretty large Ramifications. From all these Circumstances it is obvious, that one Surgeon, tho' ever so dexterous, is not sufficient for Wounds of this Kind; but that two at least are absolutely requisite. Besides it is not probable, that the Extremities of the divided Artery can be found, without rendering the Wound larger by a Division of the Integuments. Hence the subsequent Death of the Patient would be imputed to the Surgeon, though he had acted with ever so much Care and Skill in the Discharge of his Office: But if the Patient should lose so much Blood, that falling into a Deliquium the Hæmorrhage should cease, such a Method may be tried.

As for Wounds of the Vertebral Arteries; the Vertebral Arteries arising from the Subclavian Arteries run on both Sides through the Perforations of the transverse Processes of the Vertebræ of the Neck towards the Cranium. In this Course they send off small Ramifications through the Joinings of the Vertebræ to the Spinal Marrow, and its Coverings; as, also, to the adjacent Muscles. When, therefore, these Arteries are divided, they cannot easily retract themselves and close their Orifices; and, as by their Ramifications sent off under the Basis of the Cranium, they communicate with the internal Carotids, hence the Blood convey'd through the Carotids, may be discharged from these Arteries when wounded. Hence it is obvious, that Wounds of them are exceedingly dangerous. In this Case there is no Opportunity of tying these Arteries when wounded, since their divided Extremities are concealed within these bony Perforations. The only Hope would be, if the Patient being extremely weakened by an Hæmorrhage, and a languid Life still remaining, the Extremities of the divided Artery could be consolidated by a small Quantity of mild and proper Aliment, without the Exhibition of Cardiacs. But that this is not absolutely impossible, is certain, from the Cures produced in Wounds of the Heart, and from a memorable Instance, in which the Patient lived after the Division of the Subaxillary Artery.

Now it is sufficiently obvious, that the same Danger attends Wounds of other large Arteries, such as the Emulgents or Iliacs, for Instance.

It is, also, certain, that Wounds of the large Veins are mortal, for the same Causes; but as most of the Veins lying near the Surface of the Body, may be more easily compressed, and as the Velocity of the Blood is not so great in the Veins as in the Arteries, hence it is obvious, that all other Circumstances being considered, Wounds of the Veins are not so dangerous as those of the Arteries.

4thly, Those Wounds which absolutely prevent Respiration: Such as a Division of the Larynx, with a Retraction of the divided Parts; large Wounds of the Bronchia, broad Wounds which perforate both Cavities of the Thorax, and admit the external Air, and Wounds which penetrate the Diaphragm on both Sides of the Mediastinum, or which affect its nervous Parts.

In a Man, after it is brought into the World, that the Blood may pass from the Right to the Left Ventricle of the Heart, it is requisite that the Lungs dilated by the inspired Air, should make way for the Blood forced from the Right Ventricle through the Pulmonary Artery, into the Pulmonary Veins, and thence into the Left Ventricle of the Heart. Respiration is therefore so necessary to Life, that if it is destroyed but for a few Minutes, Life ceases. But in order to Respiration it is necessary the Air should freely enter and expand the Lungs. All Wounds, therefore, which hinder the Ingress of the Air into the Lungs, or their Dilatation by the Air are mortal: Of this Kind are the following:

A Division of the Larynx accompanied with a Retraction of the divided Parts: The Aspera Arteria consisting of cartilaginous Segments, being always open, and never capable of collapsing, nor of being easily compressed, preserves a free Passage for the Air into the Lungs. When, therefore, a Wound so divides this aerial Pipe, that the inferior divided Extremity shrinks back and conceals itself in the adjacent Parts in such a manner as not to admit the Air, the Patient's Life is gone. But if notwithstanding a very large Wound, a free Passage is preserved for the Air into the Lungs, such a Wound will not be mortal, as we find from incontestable Proofs. Frequent Instances occur to Physicians and Surgeons, in which Persons wearied of Life, have laid violent Hands on themselves in such a manner as to divide the Aspera Arteria, as, also, of Persons who have suffered that Misfortune by Robbers, who have nevertheless been afterwards totally cured. Instances of this Kind are found in *Tulpius*, *Observat. Med. Lib.* 1. *Cap.* 50. *Thom. Bartholin. Histor. Med. Cent.* 5. *Hist.* 89. and *Paré* in *Lib.* 10. *Cap.* 31.

As for large Wounds of the Bronchia; after the Aspera Arteria descends through the anterior Part of the Neck into the Thorax, about that Part where the Aorta, arising from the Heart, is incurvated, it is divided into two Ramifications, each of which is distributed to the Lobe of the Lungs on its respective Side. Then these Ramifications losing the Name of the *Aspera Arteria*, are called the *Bronchia*; and the Subdivisions of these Ramifications made in the Lungs, also, retain that Name. Since, then, the Office of the Aspera Arteria, and Bronchia, is to distribute the inspired Air through the aerial Cavities of the Lungs, the Air making its Way through large Wounds of these will be accumulated in the Cavity of the Thorax, and this Air being expanded by the Heat of the Place, will compress the Lungs, and by that means hinder the Whole of their Action. Hence ensue Suffocation and Death; especially if the Bronchia on both Sides are so wounded; for in this Case Respiration is totally destroyed. Hence *Hippocrates*, in *Coac. Prænot.* 509. tells us, "That the Patient dies, who "having large Wounds so inflicted in the Aspera Arteria and "Lungs, that in consequence of the Wound of the Lungs, less "Breath is discharged by the Mouth than by the Wound." But the Danger of such Wounds is increased, because the Bronchia hardly seem capable of being hurt without dividing the Blood-vessels accompanying the bronchial Ramifications.

As for broad Wounds penetrating into both Cavities of the Thorax, and making Way for an Admission of the Air; so long as the Lungs are every-where contained in the Thorax exactly closed, they are always more distended than if they were everywhere exposed to the free Air; for in this last Case they collapse; and are contracted into a smaller Space, especially by the contractile Action of the muscular Fibres, which connect the Segments of the Bronchia with each other; for in a natural State there is no Air between the Pleura and the Lungs; but a free Access of that Fluid into the Lungs is left through the Glottis. Hence the Lungs are more distended by the Air which enters by the Aperture of the Glottis, than they are compressed

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compreſſed by the external Air acting on the Ribs and Diaphragm, becauſe the arched Figure of the Ribs, and the Connection of the Diaphragm with the Ribs and Vertebræ, hinder the external Air from preſſing the Diaphragm too far into the Cavity of the Breaſt, that thus there might be a proper Balance or Equilibrium, between the external Air, and that contained in the Lungs. This is the Reaſon why the Lungs always remain contiguous to the Pleura, even after Death, ſo long as the Thorax remains entire and cloſe, as is ſufficiently obvious, when, without wounding the Pleura, the Intercoſtal Muſcles are cautiouſly ſeparated; for in this Caſe the Lungs appear contiguous to the Pleura, which on account of its Thinneſs, is generally pellucid: But when the Pleura is perforated, and the Air admitted into the Cavity of the Breaſt, the Lungs collapſe, are immediately contracted into a ſmaller Space, and recede from the Contiguity of the Pleura. The Diaphragm before concave towards the Abdomen, highly tenſe, and thruſt into the Cavity of the Breaſt, immediately becomes flaccid, and ſinks downwards. From theſe things it is ſufficiently obvious, that in a natural State the Lungs are every-where contiguous to the Pleura, and that no Air is lodged between the convex Surface of the Lungs, and the Cavity of the Pleura. Whilſt therefore by Muſcles ſubſervient to that Purpoſe, the Ribs are elevated, and ſeparated from each other, the Diaphragm contracted, and rendered plain, and conſequently the Cavity of the Thorax enlarged, there would be a Space free from Air between the Pleura and the Surface of the Lungs. But the Air entering freely through the Glottis, ſo diſtends the Lungs, when the Breaſt is dilated, that they always remain contiguous to the Pleura, and thus Inſpiration is performed. But when, in conſequence of a Perforation of the Cavity of the Thorax, there is a free Acceſs of the Air into that Cavity, the Preſſure of the Air, which entered by the Glottis, is balanced; hence the Lungs will not be diſtended, but by their proper Contractility take up a ſmaller Space than before. If this happens in both Cavities of the Breaſt at one time, both the collapſed Lobes of the Lungs cannot be dilated by the inſpired Air; hence the Right Ventricle of the Heart cannot force its Blood through the collapſed Lungs. Thus the Motion of the Heart will ſoon be ſuffocated, and Life, which depends upon it, deſtroy'd.

This Doctrine has been ſufficiently confirmed by numberleſs Experiments upon Dogs, and other Animals, made both by the Antients and the Moderns; particularly if the Orifices of the Wounds were larger than the Aperture of the *Glottis*: Though in caſe of ſmaller Wounds penetrating both Sides of the Thorax, Animals have been known to live ſome time.

As for Wounds penetrating the Diaphragm on both Sides of the Mediaſtinum; the Pleura lines both Cavities of the Thorax, but in ſuch a manner, that each Cavity has its proper Membrane. The Cavities of the Thorax may therefore be conceived to be formed by the two Pleuras, reſembling hollow Bladders, adjacent to each other, and adhering in the Place of Contact. The Duplicature of theſe two Membranes is called the *Mediaſtinum*, which divides the Cavity of the Thorax into two, but in ſuch a manner, that the anterior Part inclines to the Left; for which Reaſon the Right Cavity of the Breaſt is larger than that of the Left, as is ſhewn in *Memoires de l'Acad. Royale des Sciences, l'An.* 1715. Since therefore the Mediaſtinum is not a ſimple Membrane, but formed of the two Bags of the Pleura adhering to each other, *Galen*, in *Tr. de Anat. Admin. Lib.* 7. *Cap.* 2. when deſcribing the Membrane lining the Thorax, juſtly enough aſſerts, that of it are formed the Membranes dividing the Thorax [ὑμένες διαφράττοντες τὸν θώρακα]. Now if a Wound is inflicted in the Diaphagm on each Side of the Mediaſtinum, the Air may by theſe Apertures enter the Cavity of the Thorax, and by that means hinder the Expanſion of the Lungs, as we have already obſerved with reſpect to Wounds penetrating both Cavities of the Thorax.

But if we conſider that the Liver and Spleen are ſituated near the Diaphragm, it is ſufficiently obvious, that the Diaphragm can hardly be hurt in two diſtinct Places, without theſe Viſcera being wounded. Hence Death ſucceeding ſuch a Wound, cannot be aſcribed alone to the Admiſſion of the Air into the Cavities of the Thorax; for beſides, theſe Viſcera being preſſed upon by the Action of the Diaphragm and abdominal Muſcles, will block up the free Paſſage made to the Air by theſe Wounds. But ſuch Wounds muſt farther be very large; hence ſuch a Caſe ſeems rarely or never to happen.

As for Wounds dividing the nervous Part of the Diaphragm; the Middle of the Diaphragm is called its *tendinous Centre*, which is a pretty broad tendinous Space, or Aponeuroſis, in which all the fleſhy Fibres of the Diaphragm meet. It was formerly called the *nervous Part of the Diaphragm*, becauſe the Antients called Tendons *Nerves*. It was for a long time believed, that by the Action of the fleſhy Fibres of the Diaphragm, this tendinous Centre was every-where drawn downwards, and conſequently that if a Wound ſhould be inflicted in this Part, every time the Diaphragm acts, the half-lacerated Fibres would be diſtracted, the Wound be augmented, and the Pain become ſo intolerable as to produce Convulſions and Death. But the celebrated M. *Senac*, in *Mem. de l'Acad. Royale des Sciences, l'An.* 1724. has demonſtrated, that the Middle tendinous Part of the Diaphragm, on which the Heart included in its Pericardium is incumbent, does not deſcend in Inſpiration, ſince the Motion and Situation of theſe would by this means be greatly diſturbed, becauſe the Pericardium with a pretty broad Surface adheres to this tendinous Part of the Diaphragm. This is, alſo, proved by the Structure of the Diaphragm, and its Connection with other Parts.

Wounds of the Diaphragm are ſucceeded by another Misfortune no leſs fatal, though not productive of ſo ſudden Death, after the Patient has ſuffered the moſt exquiſite Torments. And this happens when the Parts contained in the Cavity of the Abdomen are, by the Action of the Diaphragm and abdominal Muſcles, forced into the Wound of the Diaphragm, dilate it, paſs into the Cavities of the Breaſt, and thus by compreſſing the Lungs, and diſturbing the Motion of the Heart, prove mortal ſooner or later, after intolerable Agonies. Inſtances of this are found in *Paré*, *Lib.* 10. *Cap.* 32. and in *Sennertus*, *Lib.* 2. *Part.* 2. *Cap.* 13.

Hence appears the great Danger of Wounds of the Abdomen. *Hollerius*, however, in *Comment.* in *Aph.* 18. *Sect.* 6. *Hippocrat.* tells us, that in diſſecting the Body of a Perſon who had been hanged, he ſaw a Wound in the fleſhy Part of the Diaphragm, covered with a Cicatrix.

Fifthly, Thoſe Wounds which prevent the Motion of the Chyle into the Heart, ſuch as a Diviſion of the Oeſophagus, large Wounds of the Stomach, or ſmall Inteſtines, an entire Diviſion of the ſuperior Inteſtines, and a Wound of the Thoracic Duct, or Receptacle of the Chyle.

In this Number are enumerated the Wounds of thoſe Parts whoſe Soundneſs is requiſite to ſwallow and digeſt the Aliments, and convey the Chyle prepared from them into the Maſs of Blood, in order to reſtore thoſe Parts which are daily loſt by the Action of Life and Health.

As for a Diviſion of the Oeſophagus; an entire Diviſion of the Oeſophagus deſtroys all Paſſage of the Aliments to the Stomach; for that Wounds not entirely dividing the Oeſophagus, have frequently been cured, is certain from various Obſervations in practical Authors. See *Schenckius*, *Obſerv. Med. Lib.* 3. *Obſ.* 6. and *Bohnius de Renunciatione Vulnerum*. But when the Oeſophagus, together with the Aſpera Arteria, is totally divided, *Paré*, in *Lib.* 10. *Cap.* 31. tells us, that the Extremity of the divided Oeſophagus is ſo retracted to the Stomach, that it cannot be united with the other Extremity, tho' in one Inſtance he by Suture ſo united the Wound of the Aſpera Arteria, as to reſtore the Speech of the Patient, that he might diſcover the Perſon who wounded him; but he died on the fourth Day after. Another Inſtance of the ſame Kind is found in the ſame Place. But as the Oeſophagus is covered with the Aſpera Arteria, is incumbent on the Bodies of the Vertebræ, and has very large Veſſels adjacent to its Sides, it is rarely wounded alone; for which Reaſon it is probable, that the Wounds of the adjacent Parts may in like manner prove the Cauſe of Death. To this Purpoſe *Boerhaave* gives us a memorable Hiſtory in his *Atrocis nec deſcripti prius Morbi Hiſtoria*.

As for large Wounds of the Stomach; all the Aliments and Drink ſwallowed are received into the Cavity of the Stomach, by whoſe Fabric, the Affuſion of the Humours, and their Continuance there, they are ſo changed, that being thence convey'd through the Inteſtinal Tube, they afford a Matter, which being reſorbed into the ſmall venous Ducts, mixed with the Blood, and farther elaborated, may reſtore what is loſt from the Body by the Actions of Life. If, therefore, a large Wound is inflicted in the Stomach, its Contents will fall through the Wound out of the Body, or into the Cavity of the Abdomen; and thus all Nutrition will neceſſarily be deſtroy'd. Beſides, Wounds of the Stomach are dangerous, becauſe its Subſtance is full of ſo many Arteries, Veins, and Nerves. But when Perſons die of Wounds of the Stomach, ſoon after the Reception of the Wound, we cannot aſcribe the ſucceeding Death to the Defect of Nutrition, but to the Wound made in the Subſtance of the Stomach. Two Inſtances of this Kind are found in *Bohnius de Renun. Vuln.* in which Death ſucceeded two Days after the Wounds were inflicted. But when Wounds of the Stomach prove mortal, becauſe the Stomach cannot contain the Aliments taken, a ſlower Death enſues, and the Patient gradually waſtes away for want of Nouriſhment. It has, alſo, ſometimes happened, that ſuch Wounds degenerating into fiſtulous Ulcers, have remained open for ſeveral Years, whilſt the Patient could at Pleaſure let his Aliments and Drink out at this Aperture, or retain them in it by cloſing the Wound by means of an external Apparatus. Two Inſtances of this Kind are found in *Schenckius*

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Schenckius, in Obſervationibus Medicinalibus rarioribus. In the *Philoſophical Tranſactions*, No. 420. there are two remarkable Inſtances of perfect Cures produced in ſuch Wounds of the Stomach, and which ſeem to evince, that all Wounds of the Stomach, even though large, are not abſolutely mortal, when the Hands of the Surgeon can have Acceſs to the Wound in order to unite it by Suture. Good Hopes may be entertained with reſpect to the Cure of ſmall Wounds of the Stomach, provided it is not diſtended with Aliments or Drink; for in this Caſe the Stomach remaining contracted, its Wounds may be conſolidated.

As for entire Diviſions of the ſmall and ſuperior Inteſtines; ſuch Wounds ſeem to be abſolutely mortal; for the Extremity of the divided Inteſtine will diſcharge the Chyle into the Cavity of the Abdomen; and when this Chyle is corrupted, it will conſume all the Viſcera contained in the Abdomen, and hence certain Death enſues. But if either by Chance or Art, the Extremity of the divided Inteſtine grows to the external Margin of the Integuments, a Way will be made, through which by the periſtaltic Motion of the Stomach and Inteſtines, all the Contents of the Inteſtine will be eliminated from the Body; for the Chyle conveyed from the Stomach thro' ſo large a Portion of the Inteſtinal Tube, and its Gyrations and Windings, is by that means hindered from going out of the Body, before all that Part of it which is ſubſervient to the Nutrition of the Body is reſorbed by the Mouths of the lacteal and meſeraic Veſſels. If then the ſmall Inteſtines are entirely divided in the ſuperior Part, that is, where they are pretty near the Pylorus, the Body will neceſſarily be deprived of Nouriſhment, and the Patient will die of a ſlow Conſumption, if the Contents are diſcharged through the Wound of the Integuments; but if, falling into the Cavity of the Abdomen, they are there accumulated, they are there corrupted, and accelerate the Death of the Patient.

But Wounds both of the large and ſmall Inteſtines in Parts more remote from the Stomach, as, alſo, ſuch Wounds as do not entirely divide the Inteſtinal Tube, are always dangerous, though not abſolutely mortal. Of this a memorable Inſtance is found in *Mem. de l'Acad. Royale des Sciences, l'An.* 1705. And in the *Philoſophical Tranſactions* abridged, *Tom.* 5. we have an Account of a large Dog, in which the ſmall Inteſtine was longitudinally divided, and upon replacing the Inteſtine without Suture, the Wound of the Abdomen was ſtitched up, and the Animal cured without any bad Symptom.

Various Obſervations of this Kind occur in practical Authors. It is, alſo, certain from many Inſtances, that Perſons have ſurvived total Diviſions both of the ſmall and large Inteſtines, when the Extremity of the divided Inteſtine was fixed to the external Wound, in order to procure a Diſcharge for the Fæces. But in this Caſe it is requiſite the Length of the Inteſtine from the Stomach to the Part where it is divided, ſhould be ſuch, as that the Chyle prepared from the Aliments, and reſorbed by the Lacteal and Meſeraic Veſſels, may be ſufficient for the Nouriſhment of the Body.

As for Wounds of the Thoracic Duct, or Receptacle of the Chyle; all the Chyle reſorbed by the lacteal Veſſels from the Inteſtines, and a large Quantity of Lymph convey'd through the Lymphatic Veins, meet in this common Chanel. When this, therefore, is wounded, and diſcharges its contained Liquors, all thoſe Effects ceaſe which depend on a Mixture of the Chyle with the Blood for the farther Perfection of the Actions of the Veſſels and Viſcera, that is, Nutrition is deſtroy'd. It is true that the Orifices of the Meſeraic Veins every-where open into the Inteſtines, reſorb the thinneſt Part of the Chyle and convey it directly to the Liver; but the white chylous Juice is only received by the Lacteals, and Life ſeems incapable of being ſuſtained, if only the Meſeraic Veins abſorbed the thinneſt Part, ſince by this means the Admiſſion of the *Chyle*, properly ſo called, into the Maſs of Blood, would be hindered. *Lower*, in his Treatiſe *de Corde*, has by beautiful Experiments demonſtrated, that no Chyle is reſorbed by the Meſeraic Veins. And when the Entrance of the Chyle into the Blood is hindered, it is certain that Life cannot be long ſuſtained.

It rarely happens in Mankind, that the Thoracic Duct alone is wounded; for it lies generally on the Middle of the Bodies of the Vertebræ, in the middle Space between the *Vena ſine Pari* on the Right Side, and *Aorta Deſcendens* on the Left; ſo that the Aorta, for the moſt part, lies upon it; then riſing higher, it runs upon the Bodies of the Vertebræ, under the Oeſophagus, and under the Arch of the *Vena ſine Pari*; thence above the Bodies of the Vertebræ, it inclines to the Left, proceeds under the Left Carotid, as far as the Middle of the laſt Vertebra of the Neck, and there being bent in the Form of an Arch, it tends downwards to the Left, and is terminated in the Left Subclavian Vein. During the Whole, therefore, of this Courſe, it is ſafely lodged, and adjacent to large Veſſels, ſo that it can hardly be wounded without other Parts, the Wounds of which may be productive of Death. *Bonetus*, in *Sepulchret. Anatom. Lib.* 4. has a remarkable Inſtance, in which from the ſucceeding Symptoms, the Thoracic Duct ſeems to have been wounded, tho' from the long time the Patient lived, it ſeems not to have been totally divided.

Wounds in their own Nature mortal, but curable by Art, are,

Firſt, Wounds of any of the Contents of the Cranium, which are capable of being relieved by the Trepan.

In this Paragraph are conſidered thoſe Wounds which prove infallibly mortal if left to themſelves; but whoſe Effect, which is Death, may be prevented by proper Meaſures.

The Wounds of this Kind firſt ſpecified, are thoſe of the Encephalus, by which is meant every thing contained in the Cavity of the Cranium. Now it is certain from Anatomy and Phyſiology, that the Cavity of the Cranium is naturally exactly full. When therefore, by a Change of Figure in the Cranium, its Cavity is leſſened; or when by a Rupture of the Veſſels, the extravaſated Humours are collected under the entire Cranium, the ſoft Fabric of the Encephalus is neceſſarily compreſſed, all the Functions depending on it are injured, and at laſt totally deſtroyed.

If, therefore, the Cranium preſſed inward, or the extravaſated Humours by their Quantity compreſs the Brain; or if the Juices becoming corrupted by their Continuance there, by their Acrimony corrode that tender Pulp on which Life and Health depend, Death will be the Effect of ſuch a Wound: But if the extravaſated Humours are lodged in ſuch a Part of the Cranium, that they can be removed by an Aperture made with the Trepan, it eaſily appears that the Patient may be preſerved. See CAPUT.

Two things are, therefore, requiſite in ſuch a Wound; which are, that the evident Cauſe of Death is found to be the extravaſated Humour compreſſing the Brain; and that this Humour is lodged in ſuch a Place, that it may be ſafely eliminated.

Secondly, Wounds of large Arteries or Veins, in Parts to which the Hands of the Surgeon cannot have Acceſs.

It is abſolutely neceſſary a Surgeon ſhould know the Courſe of the large Arteries and Veins, eſpecially in the Limbs; for large Trunks of Veſſels wounded in the Cavities of the Body, will not admit his Hand. It is in a particular manner requiſite, he ſhould know thoſe Parts of the Limbs where the large Arteries and Veins are ſo naked as to be eaſily compreſſed. Of this Kind in the ſuperior Limbs, are the ſubaxillary Parts, and the anterior and ſuperior Part of the Os Humeri, where the large Trunk of the Artery may be compreſſed almoſt to the naked Bone, and by that means Hæmorrhages from Wounds inflicted in the inferior Parts are eaſily ſtopt. In the inferior Limbs, ſimilar Places are found in the interior and anterior middle Parts of the Thigh, as, alſo, under the Hams. In all theſe Places, Compreſſes ſtrongly applied with a *Tournequet*, ſo compreſs the Trunks of the Veſſels as to hinder all Paſſage of the Blood. Thus mortal Hæmorrhages are prevented, and an Opportunity given the Surgeon, after the Suppreſſion of the Blood, and the Dilatation of the Wound, if neceſſary, to find the wounded Artery, and apply proper Medicines, or Ligature, as he thinks fit. Hence, at preſent, no Wound of the Limbs ſeems abſolutely mortal in conſequence of an Hæmorrhage, which may be checked by a Compreſſion of the arterial Trunks, eſpecially in the ſubaxillary Parts, and in the Groins. And if the wounded Artery is lodged ſo deep, that it cannot be tied, the Amputation of the Limb is the only remaining Method to be taken for the Preſervation of the Patient. But when Surgeons are ignorant of the Courſe of the large Veſſels, they by Ligatures, and abſorbent ſtyptic Powders, ſuch as *Gypſum*, hinder the Blood diſcharged from the wounded Veſſel, from flowing through the Aperture of the Wound. And this Blood filling the whole Membrana Adipoſa, and afterwards becoming corrupted, preys on all the Parts with a terrible Putrefaction, of which there are many melancholy Inſtances.

Thirdly, Wounds of the Viſcera, to which the Surgeons Hands, and proper Medicines, can reach.

Unleſs it were certain from Experience, no one could believe that Parts, even of the vital Viſcera laid bare by a Wound, may be cut off, leſt afterwards becoming corrupted, they ſhould prove mortal. *Celſus*, in *Lib.* 5. *Cap.* 26. tells us, "That "if any Part of the Liver or Lungs hangs out, it is to be "cut off." There is a memorable Inſtance of this Kind recorded in *Tulp. Obſ. Med. Lib.* 2. *Obſ.* 17.

Fourthly, Such Wounds as are fatal thro' a Diſcharge of the Fluids, into thoſe Cavities whence they may be taken with-

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out Danger of Life, as it happens in ſome Wounds of the Thorax, Abdomen, Ureters, Bladder, and Inteſtines.

Many Wounds prove mortal, not ſo much on account of the large Quantity of the extravaſated Blood, as becauſe that Fluid becoming corrupted by Time, and the Heat of the Part, by its putrid Quality corrupts and waſtes the Viſcera on which it acts. Thus, for Inſtance, when the Thorax is wounded, after a copious Hæmorrhage the Patient falls into a Deliquium, the divided Veſſels contract themſelves, and the Diſcharge of the Blood ceaſes. The Blood, however, remains in the Cavity of the Thorax, where becoming corrupted, and corroding the adjacent Lungs, it deſtroys the Patient by a ſlow Conſumption. The ſame holds true in the Cavity of the Abdomen. But the Paracenteſis may be inſtituted both in the Thorax and Abdomen; and thus the extravaſated Blood may be eliminated, and all theſe Misfortunes prevented. But if a Wound is ſo inflicted in the Ureters, or Bottom of the Bladder, that the Urine flows into the Cavity of the Abdomen, it is ſufficiently obvious, that in this Caſe, the Urine naturally diſpoſed to Putrefaction, will far ſooner become putrid, by which means all the Contents of the Abdomen will be greatly injured. But by perforating the Abdomen, all the Fluids collected in it may be evacuated; and by introducing a flexible Catheter into the Bladder, the Urine may be hindered from collecting itſelf in the Bladder, and diſtending it; hence the Bladder remaining always contracted, the Wound inflicted, will be the more eaſily conſolidated. But if the Ureter is divided, after evacuating the Urine diſcharged into the Cavity of the Abdomen, a dry Diet is to be uſed; in which Caſe there are great Hopes, that the Extremity of the divided Ureter may be conſolidated. The Uſe of the Kidney will indeed be deſtroy'd by this means; but it is certain from many Obſervations, that the other Kidney may ſupply its Office, and that the Patient may enjoy perfect Health; for when the Cavity of one of the Ureters is obſtructed by a Stone impacted in it, the Patient has often ſurvived a great while, the other Kidney remaining ſound, and in that Caſe having its Bulk, generally, greatly increaſed.

We know that the Urine flows from the Wound into the Cavity of the Abdomen, when little or no Urine is diſcharged, and the Abdomen is daily more and more diſtended by a Tumor.

The ſame, alſo, holds true in ſome Wounds of the Inteſtines.

A Wound of itſelf not mortal, may be prognoſticated mortal, by theſe Cauſes:

Firſt, By neglecting to purge off the diſcharged Pus, from which a purulent Tabes ariſes; or the extravaſated Blood, which hence become putrefied.

Under this Claſs are comprehended ſuch Wounds as are inflicted in thoſe Parts, the Soundneſs of which may be removed without deſtroying Life, though ſuch Wounds are ſometimes ſucceeded by Death, not ariſing from the Wound as the Cauſe, but becauſe by the Careleſneſs of the Patient, the Error of the Phyſician, ſome other Diſeaſe not ariſing from the Wound, or a Peculiarity of Conſtitution, ſuch a Change is induced, as that the Functions requiſite to Life are aboliſhed. Theſe Changes are produced by the four following things:

A Neglect to purge off the diſcharged Pus, from which ariſes a purulent Tabes.

From what is already ſaid, it is obvious, that in every conſiderable Wound, Pus is not only formed, but is even requiſite to a Separation of thoſe things which would hinder the Conſolidation of the Wound. Now if the Condition of the Wound is ſuch, that the Pus formed in the Wound, falls into the Cavities of the Body, or, being too long left in the Surface of the Wound, is attenuated and reſorbed by the open Orifices of the Veins, in this Caſe the whole Maſs of Blood may be infected by a purulent Cacochymy, whence ariſe an hectic Fever, and a ſlow Conſumption; now if it appears, that Pus lodged in any Cavity of the Body, might have been ſafely evacuated, or that the Reſorption of the Pus, might have been prevented by a proper Depuration of the Wound, it is obvious, that the Death ſucceeding it is not to be aſcribed to the Wound as its Cauſe, but to the Omiſſion of purging off the extravaſated Pus. When, after the Amputation of large Limbs, broad Wounds daily collect a large Quantity of Pus, a great Difficulty frequently happens in the Cure; for if often in a Day the Wound is cleanſed, and the Pus wiped away, the Conſolidation of the Wound is by that means prevented, and it degenerates into the Nature, as it were, of a Fontanel, and diſcharges an incredible Quantity of Fluids. Thus the Patients are waſted away by a true Conſumption, while there is no Fault either in the Fluids or Solids of the Body, becauſe by the too great Formation of Pus, ſo much of the Nouriſhment of the Body is loſt, that all the Parts are conſumed. But if the Wound remains long covered, the Pus being, by its Continuance, and the Heat of the Place, attenuated and rendered more acrid, is reſorbed by the open Mouths of the Veins, by which means it is mixed with the Blood, and induces a purulent Cacochymy and Conſumption; or, being by a Tranſlation conveyed to ſome of the more noble Viſcera, proves mortal; many Inſtances of which occur in Practice.

As for the Evacuation of the extravaſated and putrefied Blood; *Hippocrates*, in *Aph.* 20. *Sect.* 6. affirms, "That "Blood preternaturally diſcharged into the Abdomen, muſt "neceſſarily be ſuppurated." *Galen*, in his Comment on this Place, tells us, that ſome inſtead of ἐς τὴν κοιλίην, read ἐς κοιλίην, without the Article, by which an Effuſion of Blood into any Cavity of the Body is denoted; and he adds, that this Opinion is confirmed by the Addition of the Word *preternatural*. Then the Senſe of this Aphoriſm is, that Blood diſcharged from its natural Place into any Cavity of the Body, muſt neceſſarily be converted into Pus. *Galen*, in the ſame Place, tells us, that by Suppuration is meant every Corruption of Blood, but not a Converſion into *Pus*, properly ſo called. If a free Acceſs is given to the Air, Blood diſcharged into any Cavity of the Body, is pretty ſoon putrefied, and proves mortal by corrupting the adjacent Viſcera, or by being reſorbed and deſtroying the tender Veſſels of the Viſcera by its putrid Acrimony. But if no Acceſs is given to the Air, it may remain for a long time without Corruption, and ſometimes being gradually attenuated, be again reſorbed without any Harm, as it frequently happens after violent Contuſions, when the Blood extravaſated under the entire Skin, often remains for a Month and more, but afterwards gradually diſappears without any farther Injury. When, therefore, Blood being diſcharged into the Cavities of the Body, and a free Acceſs given to the Air, Death enſues, and in the Carcaſe it is not found, that the Wound is in its own Nature mortal, the Death of the Patient is to be aſcribed to this Cauſe, if the extravaſated Blood could have been ſafely evacuated by Art.

Secondly, By any Fault committed with reſpect to the Six Non-Naturals.

It is certain from Pathology, that the Non-naturals are divided into ſix Claſſes, Air, Meat, Drink, Reſt, Retention, and Excretion, Sleep and Watching. They are thus called, becauſe by the Uſe or Abuſe of them, they are either natural Benefits, or preternatural Evils. The prudent Phyſician directs all theſe in a proper manner, and orders the Patient to abſtain from ſuch things as are injurious, and injoins the Uſe of ſuch things as are beneficial. Now, if by the Careleſneſs of the Phyſician, or the Obſtinacy of the Patient, Faults are committed in the Uſe of the Six Non-Naturals, a Wound of itſelf not mortal, may be ſo changed as to bring on Death. Inſtances of this are found in *Paré*, *Lib.* 10. *Cap.* 14. *Hildan. Obſ. Chirurg. Cent.* 1. *Obſ.* 20. *ibid. Obſ.* 17. and *ibid. Obſ.* 25.

Thirdly, By a Neglect or Error of the Surgeon.

It is certain from many Obſervations, and confirmed by daily Experience, that Contuſions and ſlight Wounds of the Head, when negligently treated, have produced terrible Symptoms, and Death. Many die of Hæmorrhages, who might have been preſerved if the Trunks of the Arteries had, by proper Ligature, been compreſs'd in thoſe Parts, where they are almoſt naked. In Battles many of the Wounded die only becauſe the Surgeons cannot take ſufficient Care of ſo large a Number. The Death of wounded Perſons is, alſo, frequently owing to the Error of Surgeons. Inſtances of which are found in *Paré*, *Lib.* 10. *Cap.* 32. *Hildan. Obſ. Chirurg. Cent.* 6. *Obſ.* 80. and *Hippocrates Epidem. Lib.* 5. *No.* 22.

Fourthly, By the Conſtitution of the Patient whether natural, morbid, manifeſt from the Hiſtory of the particular Patient; or ſometimes ſo ſingular, that it can only be diſcover'd by this Effect. And this Conſtitution of the Patient is always to be had a due Regard to by the Phyſician in his Report to the Judges.

It is of great Importance in making Reports with reſpect to Wounds, to have a due Regard to the Temperament of the Patient, which, however, is often totally overlooked. In many Places, Phyſicians and Surgeons are, by public Authority, appointed to inſpect the Bodies of thoſe who are killed, and make a Report of what they have ſeen to the Judges. But they often do not conſult the Phyſician or Surgeon, who before attended the wounded Perſon, in order to know his Temperament,

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perament, previous Diſeaſes, and the Symptoms ſubſequent to the Wound. But all theſe Things ſeem highly neceſſary, in order to make a faithful Report concerning the Wound: For ſome Perſons have nervous Syſtems ſo capable of being irritated, that they are by the ſlighteſt Cauſe ſeized with Spaſms, a *Tetanus*, or other like Misfortunes: Others, when they ſee the Blood flowing from another Perſon's Wound, fall into a *Deliquium*. Now it is probable, that in ſuch Perſons, violent Symptoms, and even Death, may be produced by a ſlight Wound; but whether the ſucceeding Death is to be aſcribed to ſuch a Wound alone, as its Cauſe, is hard to determine. Beſides, in ſome Patients, towards the End of Life, hardly any Blood remains in the Body. Thus in phthiſical Patients, after Death only a few Ounces of Blood are ſometimes found: Now if from ſuch a Patient, by a ſlight Wound, the ſmall Quantity of Blood ſhould be evacuated, infallible Death will enſue; but that Death will not depend on the Wound alone. It is ſufficiently known, that the *Lues Venerea*, and a malignant Scurvy, ſo corrode the Subſtance of the hardeſt Bones of the Body, that being rendered entirely carious, they may be broken by the ſmalleſt Force. If therefore, in ſuch a Caſe, a Fracture of the *Cranium*, by a gentle Preſſure, ſhould be productive of Death, this Effect will not depend on the wounding Cauſe alone; but theſe, and other Circumſtances of a like Nature, may be known from the Things obſerved in the Patient's Body before the Wound was inflicted. Perhaps there may be other Things latent, of which there never appeared any Sign, and which only diſcover themſelves by the Infliction of the Wound: For when we conſider what has been obſerved in the Bodies of Perſons who have died ſuddenly, we find that Death has often been inſtantaneouſly produced by the moſt latent Cauſes; whereas before Death nothing of any Moment appeared injur'd. Now if in ſuch a Perſon a Wound is inflicted a little before Death, the ſucceeding Death, which depends on a quite different Cauſe, would be unjuſtly aſcribed to the Wound. Thus *Valerius Maximus*, *Lib.* 9. *Cap.* 12. tells us, "That in "the End of Life, which is expoſed to various and occult "Cauſes, ſome Things are frequently, tho' undeſervedly, cal-"led mortal; ſince they rather happen at the time of Death, "than bring it on." Hence in ſuch Caſes it ought to be reported to the Judges, that the Wound was found ſuch, that the Death ſucceeding it did not ſeem to be aſcribed to the Wound as its Cauſe. Thus Phyſicians and Surgeons diſcharge their Offices faithfully, and the reſt belongs to the Judges.

Upon this Doctrine depends the Report concerning Wounds, and a Determination of the Time in which they may prove mortal.

Judges, before paſſing Sentence on Murderers, generally order Phyſicians and Surgeons to examine the Body of the Perſon killed, in order to diſcover whether his Death was cauſed by the Wound: Theſe Phyſicians and Surgeons accurately obſerve what Parts of the Body they find hurt by the Wound; and then by a common Conſultation conclude whether the Wound was abſolutely mortal; or whether, tho' mortal of itſelf, Death might have been prevented by Art; or whether the Wound has injured thoſe Parts, the Soundneſs of which was not abſolutely neceſſary to Life, and yet Death enſued, either from a peculiar Temperament of the wounded Perſon, or from the Careleſſneſs or Neglect of thoſe who had the Management of him. All theſe Circumſtances are related to the Judges, and this is call'd giving a Report concerning Wounds, *Renunciatio Vulnerum*. Hence it appears, how great Caution is neceſſary, ſince unſkilful Surgeons, when examining a Carcaſe, rather make than inſpect Wounds. We ought, as much as poſſible, to inquire into the Figure and Bulk of the wounding Inſtrument, the Situation of the wounded Perſon, and of him who gave it, at the Time it was inflicted; and into all the Symptoms which happened between the Reception of it and the Death of the Patient.

Beſides, all thoſe Things are to be conſider'd which happen'd to the Patient, or were applied after the Wound was inflicted; then, by a prudent and cautious Inciſion, we are to inveſtigate how far, and thro' what Parts the wounding Inſtrument paſſed: Thus from a Knowledge of the Uſe of the Parts wounded, we conclude whether the ſucceeding Death ought to be aſcribed to the Wound inflicted, as its Cauſe, or not.

But it ſeems not to be eaſily determin'd to what Space of Time the Mortality of Wounds is to be limited. Many are of Opinion, that if the wounded Perſon ſurvives nine Days, the ſucceeding Death is not to be aſcrib'd to the Wound; and that if the Perſon dies before that Time, then the Wound inflicted is neceſſarily and abſolutely to be accounted mortal: But a large Artery, divided either in the Arm or Leg, may, in a few Hours, or even ſooner, put an End to a Perſon's Life, tho' this Wound was not abſolutely mortal, but might have been cur'd by Art. Thus, alſo, extravaſated Blood in the *Cranium*, if lodg'd in a Part from which it could not be extracted by Art, whilſt its Quantity is ſo ſmall that, by Compreſſion, it does not immediately diſturb the whole Uſe of the Brain, may there remain for ſeveral Weeks, become gradually corrupted, and at laſt, by corroding the *Cerebrum*, *Cerebellum*, and *Medulla Oblongata*, produce Death; and ſuch a Wound is juſtly to be reported as mortal, tho' the Perſon has ſurviv'd it ſo long. If the ſmall Inteſtines are totally divided near the *Pylorus*, Life may be protracted for ſeveral Days, till, thro' a Defect of Nutrition, the Patient is gradually waſted away, and yet ſuch a Wound is abſolutely mortal. Hence it is obvious, that nothing certain can be determin'd with reſpect to the Mortality of Wounds, from the Time intervening between the Infliction of the Wound, and the Death of the Patient.

From the Hiſtory of Wounds, alſo, already given, the Prediction of other Events which are to be foretold, will be eaſy.

In treating of the Prognoſtics of Wounds, we have determin'd thoſe Things which, from a Knowledge of the Wound, might be foreſeen, as its Conſequences; we have, alſo, treated of the Life or Death of the wounded Perſon: The other Things relating to the poſſible or impoſſible, the eaſy or difficult Cure, and the Effects remaining after the Cure of the Wound, are evidently deduc'd from a perfect Knowledge of its Nature. For when we know from Anatomy, and the Doctrine of the Uſe of the Parts, what Parts are wounded, and what Functions are aboliſh'd or deprav'd, we may determine whether the Cure is poſſible or impoſſible, eaſy or difficult; or whether, after the Cure of the Wound, any of the Functions will remain injur'd. Thus, for Inſtance, if a Wound is inflicted on the Back of the Hand, the Phyſician, from Anatomy, knows that the Tendons of the Muſcles which extend the Fingers are plac'd here; he therefore orders the Patient to ſtretch out his Fingers; and if he perceives that he is abſolutely incapable of erecting his fore Finger, he concludes that the Tendon, compos'd of the united Tendons of the common extenſor Muſcle, and that of the *Muſculus Indicator*, is divided: But if it is poſſible that the Extremities of the divided Tendon can be brought into Contact, and united, he may promiſe a perfect, tho' a difficult, Cure. But if this cannot be done, he may ſafely predict, that, after the Cure of the Wound, the Erection of the fore Finger will be always aboliſh'd, and never capable of being reſtor'd. In predicting Things of this Nature, both Phyſician and Surgeon ought to be very cautious; becauſe all the Misfortunes which remain after the Cure of the Wound, will be aſcrib'd to them, unleſs they have foretold that ſuch Misfortunes will certainly happen, or, at leaſt, are to be dreaded.

The Cauſe of the ſeveral Phenomena appearing when a Wound is inflicted in a viſible Part of a ſound and robuſt Body, is ſufficiently obvious, to any one acquainted with the vital and animal Actions; and all theſe Symptoms have been already accounted for.

The exterior Coats of the Arteries, when prick'd, cut, bruis'd, broken, diſtracted, or corroded, whilſt the internal Coat remains entire, are dilated, by the Impetus of the Blood, and form a Bag, or Sack, which often increaſes to the Bulk of an Egg, acquires callous Sides, has a Pulſation, is of a bright-red Colour, diſappears upon Compreſſion, but returns to its former State when that Compreſſion is remov'd, enlarges its Artery, and by its Compreſſion leſſens the adjacent Veſſels: This is call'd a true Aneuryſm, the Cauſes, Signs, and Effects of which, are eaſily ſeen. An Aneuryſm of the Heart, its Origin, Signs, and Effect, are hence to be accounted for, and underſtood.

We have already obſerv'd what Misfortunes follow when an Artery is entirely divided, or when a Wound penetrates into the Cavity of an Artery, ſo as not entirely to divide it: But in this Aphoriſm are conſider'd thoſe Misfortunes which are to be dreaded when Arteries are ſo wounded, that the Wound does not penetrate their Cavities, but only divides their external Coats. For it is certain, from Anatomy, that the Arteries, eſpecially of the larger Kind, have pretty thick Coats, the exterior of which generally ariſes from the common Membrane, which lines that Cavity of the Body thro' which the Artery paſſes. Under this exterior Coat lies a thin cellular Coat, thro' which run many Veſſels ſubſervient to the Nutrition of the Arteries; under this lies the glandular Coat, which, perhaps, is no more than a Part of the former; and under the glandular lies the muſcular Coat, which is thick, ſtrong, ſeparable into ſeveral Laminæ, and conſiſting of orbicular Fibres; and the laſt Coat, conſtituting the internal Cavity of the Artery, is thin, and compos'd of longitudinal Fibres.

Whilſt the Blood is, by the Action of the Heart, continually forc'd into the full Arteries, they are obſerv'd to be manifeſtly and equally dilated thro' all their Circumferences; the Strength of

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of the Coats compoſing the Arteries reſiſts their too great Dilatation; and when the Action of the Heart ceaſes, by the Strength, eſpecially of their orbicular Fibres, they are again contracted into their former Dimenſions. Now if by the Separation of Coheſion, eſpecially in the orbicular Fibres of any Part of an Artery (for Wounds of the external and cellular Coats are leſs dangerous) the Strength of the Sides is diminiſh'd, whilſt the diſtending Cauſe remains, it will forthwith dilate the Artery more in that Part, change its equable conical Figure, and expand the weaken'd Part into a Sack; and this is call'd a true Aneuryſm, which properly ſignifies no more than the Dilatation of an Artery.

The Cauſe, therefore, of an Aneuryſm is, every thing which leſſens the Coheſion of the Coats in any Part of an Artery; and it is certain, from frequent Obſervation, that this principally happens when Arteries are prick'd or cut: For in Veneſection it frequently happens, that a Ramification of an adjacent Artery is wounded by the Point of the Lancet, a few Days after a Tumor begins to ariſe, which raiſes the Skin, has a manifeſt Pulſation, and is daily enlarg'd, unleſs it is in the Beginning check'd by the Application of Compreſs and Bandage.

As for Contuſions of the Arteries; it has been frequently obſerv'd, that violent Contuſions of an Artery have produc'd an Aneuryſm; and a memorable Inſtance of this is found in *Lanciſi, de Motu Cordis & Aneuryſmatibns:* And I myſelf, ſays *Vanſwieten*, ſaw a remarkable Example of the ſame Kind.

As for Diſtractions of the Arteries; in practical Authors many Inſtances occur, in which, after violent Efforts, lifting too heavy Burdens, exceſſive Sneezing or Coughing, the diſtracted Arteries have degenerated into Aneuryſms. Of this an Inſtance is found in *Hiſt. de l'Acad. Royal. des Sciences, l'An.* 1700. It is, alſo, obſervable, that thoſe Horſes which are forc'd to ſtrain hard in drawing great Weights up aſcending Ground, have Aneuryſms, and varicoſe Tumors, in the Veins of their poſterior Legs. The like Misfortune is, alſo, ſometimes obſerv'd, in Porters.

As for Corroſions of the Arteries; it is certain, that in ſome Diſeaſes the Humours may ſo degenerate, that, becoming highly acrid, they corrode the hardeſt Parts of the Body; by the Scurvy the hardeſt Teeth are conſum'd, and a *Lues Venerea* renders the largeſt and ſtrongeſt Bones in the Body carious. A virulent Cancer, by its dire Contagion, conſumes all the adjacent Parts. Thus in a Scurvy we often ſee, that when the Veſſels are corroded, the extravaſated Blood under the Integuments produces livid Spots, and mortal Hæmorrhages have been ſometimes obſerv'd to proceed from the ſame Cauſe. Hence we may eaſily conceive how the Coats of the large Arteries may be ſo corroded as to be extended into an aneuryſmatic Sack. Two Inſtances of this Kind are found in *Lanciſi de Motu Cordis & Aneuryſmatibus.*

By whatever of theſe Cauſes any Part of an Artery is weaken'd, it will in that Place yield more, and be expanded by the diſtending Blood: And as at every Pulſation of the Heart the diſtending Cauſe is afreſh applied to the weaken'd Part of the Artery, the Capacity of the Aneuryſm will be gradually increas'd. Hence Aneuryſms are ſometimes expanded to an incredible Bulk, eſpecially if they happen in the large Trunks of Arteries. A memorable Inſtance of this we have in *Ruyſchii Obſervat. Anatom. Chirurg. Cent. Obſervat.* 38. In the largeſt Aneuryſms it frequently appears, that the Membranes of the extended Sack are very thick; whereas they might be ſuppos'd to be render'd thinner, on account of their Diſtraction. But this ſeems to happen becauſe the Blood accumulated in ſuch dilated Sacks, is concreted into polypous Maſſes, which being applied to the dilated Coat of the Artery, may greatly increaſe its Thickneſs.

We now come to inquire by what Signs an Aneuryſm may be known, and diſtinguiſh'd from other Tumors; ſince it is certain from ſeveral Obſervations, that very ſkilful Surgeons in other Reſpects, have in this committed egregious Blunders, and by imprudently opening the Aneuryſm, kill'd, inſtead of curing the Patient. An Aneuryſm is, therefore, known to be preſent when the Cauſes already ſpecify'd have preceded, and a Tumor ariſes in that Part where, from Anatomy, we know that a large Artery is ſituated; when a manifeſt Pulſation is perceiv'd in ſuch a Tumor; and when, by a gentle Preſſure, it diſappears, or is greatly diminiſh'd, but immediately returns to its former Bulk when the Preſſure is remov'd. But it is to be obſerv'd, that the Colour of the Skin is rarely chang'd by an Aneuryſm, unleſs it is of long ſtanding, or very large; for then the Skin being corroded or attenuated by the Diſtraction, its Colour appears red: Beſides, in a ſmall and beginning Aneuryſm there is always a Pulſation; whereas when it has grown to a greater Bulk, the Pulſation is often not perceiv'd, partly becauſe the Coats of the Aneuryſm are become thicker, and partly becauſe the Impetus of the Blood propel'd from the Heart cannot act ſo ſtrongly on the Aneuryſm, when large, as to elevate it at each Pulſation of the Heart. But when an Aneuryſm is compreſs'd, eſpecially if it is large, and near the Heart, unleſs the Compreſſion is made gently and gradually, there is great Danger leſt the Patient ſhould be ſuddenly ſuffocated, whilſt the concreted Blood expreſs'd from the Cavity of the Aneuryſm ſo reſiſts the Blood forc'd from the Heart thro' the Artery, that the Motion of the Heart is ſuddenly ſuffocated. Nor is a large Aneuryſm, when compreſs'd by the Hand, to be all at once ſet at Liberty from the Compreſſion, but gradually; otherwiſe the Patient falls into a *Deliquium*; becauſe the Blood ſuddenly ruſhes into this empty Sack. For this Reaſon, upon compreſſing a large Aneuryſm, the Patient immediately complains of an intolerable Oppreſſion about his Breaſt. But when an Aneuryſm happens in the internal Parts, it is not to be known without great Difficulty: But if the known Cauſes have preceded; if an unuſual Pulſation is perceiv'd by the Patient; if the Motion of the Heart is diſturb'd, and almoſt ſuffocated by an increas'd Velocity of the Blood ariſing from muſcular Motion, or any other Cauſe, it is highly probable that there is an Aneuryſm in the internal Parts.

The Misfortunes produc'd by an Aneuryſm depend on this, that it, by its Bulk, compreſſes the adjacent Parts, and by that means diſturbs and hinders their Action; that it changes the Cavity of the Artery, and deſtroys the equable Circulation of the Blood thro' it; by which means the Action of the Heart is at laſt greatly hinder'd. Hence it is obvious, that very various Diſorders may be produc'd by an Aneuryſm; but that all the Misfortunes ariſing from it are the worſe, the larger, and the nearer the Heart it is.

Another Source of the Misfortunes ariſing from an Aneuryſm depends on this, that the Fluid contain'd in the aneuryſmatic Sack begins gradually to degenerate: For in a large Aneuryſm the Blood is almoſt at Reſt, or at leaſt moves very ſlowly; hence the Blood has leſs Attrition and Heat, by which means it acquires a Diſpoſition to that Degeneracy which happens from a Diminution of Motion and Heat; for polypoſe Concretions begin to be produc'd; and, when theſe are once form'd, they have a Power of aſſociating to themſelves ſimilar Parts of the affluent Blood, by which means the former Maſs is augmented, as is obſerv'd under the Article FIBRA: Hence in large Aneuryſms, when diſſected, very often much Blood is not found, but a ſurpriſing polypoſe Texture form'd of ſtagnant Blood, which by the Application of its own Subſtance ſo ſtrengthens the weak Part of the Artery, that it does not ſoon break, but the Patient often lives a great while: At laſt the concreted Blood, together with the Blood ſtagnant between the *Laminæ* of the polypoſe Subſtance, begins to be corrupted, and to acquire ſo remarkably a reſolvent Acrimony, as totally to conſume the adjacent Veſſels, Membranes, Cartilages, and even the hardeſt Bones. Practical Authors abound with Obſervations of this Kind. But whilſt the Blood continually acts on that corrupted Subſtance lodg'd in the Sack of the expanded Aneuryſm, a putrid Cacochymy begins to be form'd; and hence an hectic Fever, gradually conſuming the Body, ariſes. That large Aneuryſms have terminated in this manner, is certain from Experience, unleſs by a Suffocation of the Circulation, or a Rupture of the Aneuryſm, the Patients died before the Contents of the Sack acquir'd ſuch a Degree of Malignity.

There is Danger of inſtantaneous Death from the Rupture of ſuch an Aneuryſm; for by this means the Patients die in a Moment, when they leaſt expect it. Of this there is a memorable Inſtance in *Mem. de l'Acad. des Sciences, l'An.* 1733.

When an Aneuryſm happens in the internal Parts of the Body, there is but ſmall Hope of a Cure; all that can be done is, by weakening Life by means of Veneſections, and a ſlender Diet, to diminiſh the Impetus and Velocity of the Circulation: For thus the Increaſe of the Aneuryſm is as much as poſſible prevented. The greateſt Reſt both of Body and Mind, are, alſo, to be order'd, for the ſame Purpoſe. When there is Acceſs to the Hands, if the Aneuryſm has not already grown to a great Bulk, ſomething may be hop'd from a prudent Compreſſion; in which it is to be obſerv'd, that it is at the ſame time greatly expedient, gently to compreſs the Artery above the Aneuryſm: Thus the Impetus of the Blood thro' the Artery is diminiſh'd, and when the Aneuryſm is compreſs'd the Blood will not ſo eaſily regurgitate to the Heart. When nothing is to be expected from Compreſſion, or when it has been us'd in vain, the Extirpation of the Aneuryſm is the only Method remaining, which may be happily inſtituted, as we learn from Experience. *Ruyſch*, in *Obſ. Anatom. Chirurg. Centur. Obſ.* 2. gives us an Inſtance of this Kind, in which the Event was happy, tho' the Arm was already ſeiz'd with a Gangrene.

To this we may, alſo, refer an Aneuryſm of the Heart, together with its Origin, Signs, and Effects. An Aneuryſm of the Heart is a preternatural Dilatation of its Cavities. This Diſorder frequently occurs in Practice, tho' it has not hitherto been very accurately deſcrib'd. We may eaſily conceive, that all

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all those Misfortunes may happen to the Heart, which produce Aneurysms of the Arteries when their exterior Coats are destroy'd or weaken'd by Wounds, Contusions, Distractions, or Corrosions. For Observations made on Carcases evince, that Wounds have penetrated to the Heart; and that Inflammations, Suppurations, and Erosions, have been found in it. A memorable Instance of this occurs in *Act. Phys. Med. Tom.* 2. But besides these Causes, other Circumstances occur, from which a preternatural Dilatation of the Heart frequently arises: For the Action of the Heart consists in forcing the Blood receiv'd from the Veins into its Cavities, into the Arteries; so that, by every Contraction of the Heart, its Cavities are totally evacuated: The Force of the Heart must, therefore, surpass the Resistance of the Arteries. But if this Resistance is so far increas'd as to surmount the Force of the Heart, that Organ cannot be totally evacuated; but the Blood being gradually accumulated in its Cavities, will dilate them. In the Heart is observ'd a surprising Property, by which, even after Death, it is excited to Contraction, by forcing Air, or tepid Water, thro' the Veins into its Cavities: Hence, when the Blood is not totally expel'd from its Cavities, the irritated Heart is frequently contracted, so as to expel its Contents, as appears evidently at the Point of Death, when the Heart is no longer able to expel the Blood into the Arteries: For then the Heart palpitates very quickly, till, being overcome by an invincible Obstacle, it at last ceases totally; but whilst the Heart endeavours, by its strong and frequently-repeated Efforts, to overcome the Resistance of the Arteries, the Fibres constituting the Sides of the Cavities of the Heart are strongly distracted, whilst the Fluid contain'd in the Cavities of the Heart, not capable of being express'd, is compress'd, and makes as great a Resistance as the hardest Body. Hence the Cohesion of the too much distracted Fibres of the Heart is weaken'd, and consequently the Dilatation of its Cavities is augmented.

Hence it is obvious that slight Causes are sufficient to render the Heart aneurysmatical: For whilst the Force of the Heart is able to surmount the Resistance of the Arteries, its Cavities remain in their natural Dimensions; but as soon as the Resistance of the Arteries begins to prevail over this Force of the Heart, its Cavities will begin to be dilated.

This Dilatation may happen either in the Right Cavity alone, when the free Circulation of the Blood thro' the pulmonary Artery is hinder'd; or it may happen in the Left Cavity of the Heart, when there is any Impediment in the Aorta; or when both these concur, a Dilatation will happen in both Cavities of the Heart. But it is to be observ'd, that an Impediment in the pulmonary Artery may produce a preternatural Distention of the Right Cavity of the Heart, whilst the Left Cavity retains its proper Dimension; but when the Left Ventricle is not able to expel its Blood, the pulmonary Veins cannot empty themselves into it: Hence neither can the pulmonary Arteries convey their Blood to the pulmonary Veins; by which means the Resistance to the Right Ventricle will be increas'd, so that it may be dilated by the same Causes. The Right Ventricle, which is far weaker than the Left, more easily yields to distending Causes: Hence all other Circumstances being alike, it will be more frequently distended, and dilated to a larger Capacity.

Many Observations evince, that in Carcases the Heart has been found thus dilated, memorable Instances of which occur in the *Medical Essays*, *Vol.* II. *Hist. de l'Acad. des Sciences l'An.* 1735. and *Lancisi de Subitaneis Mortibus.*

Every thing therefore which increases the Resistance to the Blood forc'd from the Cavities of the Heart may produce a preternatural Dilatation of it; too great a Quantity of Humours in plethoric Persons, an Increase of the Circulation in acute Diseases, an Obstruction of the Blood thro' the Extremities of the Arteries by an inflammatory, atrabiliarious, or polypose Condition, Faults of the Arteries, by which the Blood cannot pass freely thro' them, such as their excessive Callosity, their Degeneracy into a cartilaginous, or even a bony Substance, and Aneurysms of them, are the principal Causes why the Cavities of the Heart are distended beyond their natural Dimensions. It, also, happens, tho' rarely, that Air contain'd in the Cavities of the Heart surprisingly distends them. An Instance of this is found in *Ruysch. Epist. Problem.* 16. In this Case perhaps the Blood, by an intensely quick animal Motion, or by Diseases, sends off its contain'd Air, which being collected in the larger Cavities, and rarefy'd by Heat, distends all the Parts.

That this Misfortune is present, or at least to be dreaded, may be known, if continual Palpitations of the Heart are present; if the Signs evince that the Lungs are so obstructed as not to allow a free Passage for the Blood; if the Pulse is very hard and full, with an intolerable Anxiety upon an Increase of Motion; then we justly conclude that such an Obstacle is lodg'd in the Aorta.

Then the Circulation is surprisingly disturb'd, and so various and astonishing Phenomena appear, as seem to surpass the Laws of Nature; the Pulse is in every respect unequal, sometimes defective, and immediately after strong and brisk; Respiration becomes highly difficult, and Convulsions are often produc'd, whilst the Heart is at Rest, and immediately after contracted by a violent Spasm; thus for a Moment the Motion of the Blood thro' the Arteries of the Brain ceases, and immediately after is mov'd with the greatest Velocity; by which means the Secretion and Motion of the Spirits are greatly disturb'd; all the Senses, both external and internal, are often disturb'd; there is an intolerable Anxiety; and there is a violent Struggle between Life and Death, till the latter puts an End to the Patient's Misery.

Hence it appears why, after a long-continu'd Asthma, and violent inflammatory Diseases of the Breast, such terrible Disorders often remain.

When this Disorder is once form'd, no Recovery can be hop'd for, since a Weakness of the Heart being at the same time produc'd, the Difficulty of removing the Obstacle is increas'd: Hence the terrible Disease is augmented, together with all its Symptoms, especially if Life is pretty vigorous.

The Whole of what can be done by Art is, for some time to prevent the Increase of the Disorder, and by that means render Life more tolerable than it would otherwise be: This is done by keeping the Patient so easy and quiet, that the Motion of the Heart may not be greater than is absolutely necessary to the Continuation of Life. Hence great Rest, both of Body and Mind, is requisite; great Quantities of thin Fluids ought, also, to be drank, the best of which are Whey, Milk, and Water, edulcorated with Honey, and Spaw-waters mix'd with Milk; but the Aliments ought to be mild, thin, and exhibited in small Quantities at proper Intervals, that only a small Quantity of mild Chyle may be mix'd with the Blood. All stimulating Substances are, also, to be carefully avoided, and such Medicines used as dilute the Blood, open the Vessels, and lubricate the Passages; that there may be a quick and expeditious Circulation of the diluted Humours through the lubricated and opened Vessels.

If by the same Causes an Artery wounded in the like manner, remains infirm after the Cure, the same Misfortunes happen.

When in the most violent Diseases, and obstinate chronical Pains, especially of the Head, Surgeons open the temporal Artery, they are always careful, after a proper Quantity of Blood is discharged, so to secure the Wound of the Artery, by a Plate of Metal, or something of a like Nature, that the Force of the Blood distending the Artery at each Pulsation of the Heart, may not extend the Rudiments of the beginning Cicatrix beyond the equable Dimension of the Artery, and produce an Aneurysm: And if this Compression of the wounded Artery is neglected, such a Misfortune will almost always happen. This is frequently observed when unluckily in the Flexure of the Cubit, the adjacent Artery is opened with the Vein, and the Wound not secured by a proper Pressure; which is, also, far more difficultly obtained here than in the Temples, where the wounded Artery may be so pressed to the hard Cranium, that no Dread of a future Aneurysm remains. Hence in this Place, especially, we may safely institute Arteriotomy, which is perhaps too much abstain'd from by Physicians, tho' it may be safely perform'd by a skilful Surgeon; and, as *Severinus, de Efficac. Medic. Lib.* 1. *Part* 2. evinces, has often removed Disorders, after all other Means have been tried in vain.

When from the same Causes all the Coats of the Artery are destroyed together, and the Artery pours out its Fluids into the adjacent distended Parts, from whence it can find no Passage, there is formed a Collection of extravasated Blood, which is perpetually increased, and without any determinate Measure. This Tumor is soft, has scarcely any Pulsation, is livid, does not disappear by Compression, soon putrefies, and by that means causes a Gangrene of the neighbouring Parts. This is a spurious Aneurysm, the Cause, Signs, and Effects, of which, are known by this Description.

If an Artery is so wounded that the Cohesion of its Sides, being destroy'd, the Blood contain'd in its Cavity may be discharg'd, whilst this Blood is pent up by the entire Skin, or Fat, or Blood coagulated in the Wound; it will make a Way for itself in the *Membrana Adiposa*, which it will fill, and often raise to a large Tumor: For the distending Mass will be increased by the Blood continually flowing from the ruptured Artery, till the Skin can yield no farther, or the adjacent Parts hinder the farther Collection of the Blood in the *Membrana Adiposa*, or a Thrombus of coagulated Blood closes up the Aperture of the wounded Artery. After violent Contusions, such large Tumors often arise, and are of a livid, and often of a totally black Colour, in consequence of the extravasated and coagulated

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coagulated Blood appearing through the Skin. In ſcorbutic Patients, after the Veſſels are corroded, the like Misfortunes often happen; but as this generally happens in the ſmaller Arteries, the Part is not raiſed to a very great Tumor, but flat black Spots are form'd. That enormous Tumors are, however, ſometimes produced by this Cauſe, is certain from an Inſtance recorded in *Severinus de Efficac. Med. Lib.* 1. *Part.* 2. which Obſervation evinces how large a Quantity of Blood may be collected in the *Membrana Adipoſa*, and how long it may remain without Corruption after it is extravaſated, provided a free Acceſs is not given to the Air.

Becauſe ſuch a Tumor has ſome Signs in common with a true Aneuryſm, Surgeons have given it the ſame Appellation, tho' for the ſake of Diſtinction they have given it the Epithet of ſpurious; for in a true Aneuryſm the Coats of the Artery, tho' weakened, remain coherent, and hinder the Diſcharge of the Blood; but in a ſpurious Aneuryſm the ruptured Coats afford a free Paſſage for the Blood. The Antients uſed a leſs ambiguous Word, and called ſuch a Diſorder *Ecchymoſis*, which, according to *Galen*, in *Method. Medend. Lib.* 4. *Cap.* 1. generally happens with a Contuſion and Rupture of the Veſſels; tho' he, alſo, tells us, that it ſometimes happens from an Anaſtomoſis, a Tranſudation, or a Corroſion. Small Tumors, ariſing from extravaſated Blood under the entire Skin, are ſtill ſo called by Surgeons: And if from the Laceration of a large Artery a conſiderable Tumor is produced, eſpecially if any Pulſation is perceived in it, it is generally called a ſpurious Aneuryſm.

So far as I know, no mention is made of an Aneuryſm in *Hippocrates*; and that Definition of an Aneuryſm given by *Galen*, in *Tr. de Tumoribus præter Naturam*, *Cap.* 11. ſeems rather to agree with what we call a ſpurious Aneuryſm. For he tells us, "That the Diſorder of an opened Artery is called an "Aneuryſm. This happens when the Artery, being wounded, "the adjacent Skin is brought to a Cicatrix, whilſt the Wound "of the Artery is neither united, covered with a Cicatrix, nor "ſtop'd by Fleſh." But the Signs by which he diſtinguiſhes this Diſorder from other preternatural Tumors, rather agree with a true Aneuryſm. For he adds, "Diſorders of this Kind are "known by the Pulſations of the Arteries; and when they are "compreſſed, the whole Tumor diſappears, the Subſtance pro-"ducing it returning into the Arteries; and this Subſtance is a "thin yellow Blood mixed with a large Quantity of fine Spi-"rits. But this Blood is much hotter than that contained in "the Veins, and when the Aneuryſm is wounded, burſts out "with ſuch Violence, that it can hardly be ſtopt."

The Cauſe, therefore, of a ſpurious Aneuryſm, may be every thing which deſtroys the Continuity of the Sides of an Artery, whilſt the Skin remains entire; or in caſe there is a Wound, whilſt the Aperture of the Skin is ſo cloſed up as to hinder the free Evacuation of the extravaſated Blood: Hence, being congeſted in the *Tunica Celluloſa*, it diſtends the Part by a Tumor.

It is of great Importance to diſtinguiſh between a ſpurious and a true Aneuryſm. Hence their reſpective Signs ought to be accurately known. We know that a ſpurious Aneuryſm is preſent, from the preceding Cauſes, eſpecially violent Contuſions, becauſe the Tumor increaſes far more quickly in a ſpurious than in a true Aneuryſm. Beſides, the Tumor is not circumſcribed by very diſtinct Limits, becauſe it is every-where diſperſed thro' the *Tunica Celluloſa*; but in a true Aneuryſm the Circumference of the Tumor is limited by the dilated Coats of the Artery: Add, that a true Aneuryſm, at leaſt in the Beginning, before it grows to a great Bulk, has a manifeſt Pulſation correſponding to that of the Arteries; whereas a ſpurious Aneuryſm has not ſo manifeſt a Pulſation, tho' this Sign is ſometimes fallacious, as is obvious in the Inſtance referred to in *Severinus*. A true Aneuryſm, unleſs very large, totally diſappears when preſſed, becauſe the Blood is forced into the Cavity of the Artery; but this does not happen in a ſpurious Aneuryſm, which when preſſed, yields indeed, but the Tumor is then augmented in the adjacent Parts. In a true Aneuryſm, at leaſt in the Beginning, the Colour of the Skin is rarely or ever changed; whereas in a ſpurious Aneuryſm, the Blood extravaſated under the Skin tinges it with a preternatural Colour.

The principal Effects of a ſpurious Aneuryſm are, that the extravaſated Blood, by its Bulk, hinders the Action of the adjacent Parts, and at laſt, by its Continuance, becoming corrupted, may acquire ſuch an Acrimony as may produce the moſt violent Inflammations, Gangrenes, and Corroſions. But if the Acceſs of the Air is hindered, the extravaſated Blood may remain long incorrupted, eſpecially if antiſeptic Fomentations are applied. For the Cure of this, and other Diſorders of a like Nature, ſee CONTUSIO.

Other Effects of a large wounded Artery are eaſily underſtood, from Phyſiology; as, alſo, the Phenomena of a Nerve wounded. All theſe are before explained.

But that the Cauſe may appear plain of thoſe ſurpriſing Effects which ariſe from a Puncture, or partial Diviſion of the Nerves; the following Conſiderations, from Anatomy and Theory, are to be adverted to.

Nothing is more ſurpriſing in medicinal Obſervations, than that in the ſoundeſt Perſon the gentle Puncture of a Nerve ſo diſturbs all the Parts of the Body, that nothing of his former Health remains: For intenſe Pain, an acute Fever, *Deliriums*, violent Convulſions, Inflammations and Suppurations, a Gangrene, and ſometimes Death, ſucceed a very ſlight Wound of the Nerves: Beſides, it is certain from Experience, that very inconſiderable Changes induced on the Nerves, ſometimes ſurpriſingly diſturb all the Actions of the Body.

Thus tickling the Soals of the Feet produces great Changes in the Body; for almoſt all the Muſcles and Tendons of the Body are forthwith agitated, Laughter is forcibly extorted, and the Strength immediately deſtroyed. There have, alſo, been Inſtances in which Convulſions and Death have been produced by ſo ſlight a Cauſe, and even a feigned Attempt to produce this uneaſy Titillation has produced the like Phenomena, in Perſons who have before experienced it. The ſimple Agitation of a Feather in the Nares or Fauces, the Crawling of Worms in the Stomach, or the Fluctuation of Phlegm, thereby inducing a ſlight mechanical Change on the Nerves diſperſed thro' theſe Parts, greatly diſturb the whole Body.

Tho' from the hitherto known Structure of the human Body the ſurpriſing Effects ariſing from a Change of the Nerves in the human Body cannot be accounted for; yet from ſuch a Knowledge we acquire great Light in thoſe Diſorders which ſucceed Wounds of the Nerves. Hence we are from Anatomy and Theory to conſider the following Things:

Every viſible Nerve is a Congeries of ſmaller Nerves mutually connected by extremely fine Membranes, Arteries, and Veins, with interwoven Lymphatics, and then all covered with a common Membrane.

Thro' all theſe Veſſels compoſing a Nerve, their proper Liquid flows perpetually from the Heart, *Cerebrum*, *Cerebellum*, and *Medulla Spinalis*. Theſe Veſſels have always a conſiderable contractile Force.

As for viſible Nerves; we have only treated of ſuch as can be viewed by the Eye: For, as is already obſerved, Anatomiſts have found that theſe may be ſeparated into other ſmaller Nerves, which are ſtill ſo many Congeries of Nerves as yet ſmaller. *Lewenhoeck*, in *Tom.* 3. *Epiſt.* 36. informs us, that he found a Nerve no larger than an Hog's Briſtle to conſiſt of at leaſt thirty other Nerves, each of which was covered with its proper Membrane: He afterwards obſerved the ſame thing in far ſmaller Nerves. He, farther, obſerved minute and tender Blood-veſſels running between theſe nervous Fibrils. Anatomical Injections, eſpecially in young Carcaſes, ſufficiently evince, that a large Number of Veſſels run thro' the Subſtance of the Nerves; all viſible Nerves, therefore, derive the ſmalleſt Part of their Bulk from the nervous Subſtance properly ſo called, which draws its Origin from the medullary Subſtance of the *Cerebrum* and *Cerebellum*, collected into the *Medulla Oblongata*, and ſpinal Marrow. Slender Coats covering the ſmall Fibrils, connecting Membranes, and Veſſels of all Kinds diſperſed thro' them, conſtitute the principal Part of every viſible Nerve: Thus theſe inconceivably tender Veſſels are defended, and ſafely conveyed to thoſe Parts of the Body, where, laying aſide their thicker Coats, they ought to perform the Functions of Nerves. The optic Nerve, furniſhed with Coats from both Membranes of the Brain, in its Courſe appears tough and firm; but when, laying aſide its Coats in the Bottom of the Eyes, it is expanded on the Retina, it is ſo ſoft, that unleſs it was ſuſtained by the equable Preſſure of the circumambient Liquid, it would fall into a kind of ſhapeleſs Mucus. But it is certain, from anatomical Injections, that numberleſs arterial Veſſels run thro' the Middle of the Retina.

All the Veſſels which conſtitute a viſible Nerve, receive proportional Liquids propel'd by the Force of the Heart and Arteries; nor are we to doubt the Exiſtence of thoſe ſmall Veſſels which conſtitute the Coats covering the nervous Fibrils, ſince anatomical Injections evince, that arterial Ramifications convey the impell'd Fluids thither. But that the Nerves themſelves, properly ſo call'd, are pervious, and that there is a perpetual Motion of a ſubtile Liquid thro' them, cannot be demonſtrated to the Senſes: But if we conſider that the medullary Subſtance of the *Cerebrum* and *Cerebellum*, which is all continuous to the cortical and vaſcular Subſtances, is ſpent in conſtituting the nervous Fibrils, and is continuous to them; that ſo large a Quantity of the pureſt arterial Blood is convey'd to the

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the Brain; that when the medullary Substance of the *Cerebrum* and *Cerebellum* is either destroy'd or compress'd, the whole Function of the Nerves arising thence is abolish'd; that when the Nerves are ty'd in their Course, all their Action is destroy'd under the Ligature, but remains entire above it, it will be sufficiently obvious that the nervous Fibrils receive an highly subtile Fluid secreted by the Fabric of the *Cerebrum* and *Cerebellum*, and convey it, during the Whole of Life, thro' highly-distinct Canals, to all the Parts of the Body; that the different Operations of Sensation and Motion may be perform'd.

Every wounded Nerve, therefore, suffers, not only as it is a Nerve, but, also, because it contains all Kinds of Vessels, the Soundness of which, and their Action depending upon it, is injur'd by the Wound.

But because in their Origin from the medullary Substance of the Brain, the nervous Fibrils, being distinct, are in their Course cover'd with their proper Membranes, and thus remain separated from their adjacent Fibrils; and as the whole Congeries of Nerves constituting the visible Nerve is cover'd with a pretty thick Coat; the Reason is obvious, why every visible Nerve appears tough and hard, tho' that which is properly call'd a Nerve arises from the soft Pulp of the Brain. The whole Contractility, therefore, of a visible Nerve, by which its divided Extremities retire from each other, depends on the Coats covering the nervous Fibrils, and the Vessels dispersed thro' them.

When therefore the Parts of a Nerve are intirely cut thro' and divided, they recede from the Place of the Wound, towards the fix'd Parts to which they are connected, and hide themselves in the surrounding Solids, by which they are compressed; and by this means their own Orifices, and those of their Vessels, are closed; so that no other Damage happens, besides what is already mention'd.

If such a Nerve as is describ'd in the preceding Aphorism is intirely divided, the Coats covering all the Fibrils, as, also, the Covering surrounding the Whole of them, collected together by their Elasticity and Connection with the other Parts, are retracted on both Sides: But as considerable Arteries, when divided and retracted, are by the Pressure of the adjacent Parts, under which they are lodg'd, and their own Contractility, so closed up, as to discharge no Blood, it is sufficiently obvious, that the tender nervous Vessels, and those distributed thro' their Coats, are forthwith closed, and can no longer transmit the Humours convey'd to them. All the Functions, therefore, which depend on the Soundness of these Vessels, will be destroy'd, and the Symptoms before-enumerated will happen.

If a Nerve is cut, or prick'd, in such a manner that some of the small Fibres are dissolv'd which compose the large Nerve when united, the dissolv'd Parts receding, will draw the smallest Fibres which connected the small Nerves to each other, and to the Vessels; from whence there will arise a perpetual and slow Laceration, and therefore a very great, acute, and continual Pain: But the Parts still cohering, will alone sustain the Force which the entire Nerve sustain'd before. They will therefore be more distracted and lacerated, and consequently afflicted with a more acute Pain. By their Distraction they will, also, be so compressed, as to prevent the Circulation of their Fluid. When the one Part divided, and the other cohering, are thus affected, the intermediate Vessels are compressed; hence the Blood, Lymph, and Spirits, are compressed, acted upon, and accumulated; for which Reason there is an Inflammation produc'd by the Blood, Lymph, and Spirits, about the Parts.

Hence the adjacent Nerves and Tendons, together with their Coats, as, also, the Muscles and Vessels, are stretch'd, constricted, and convulsed; by which means the Membranes of the *Cerebrum*, *Cerebellum*, and spinal Marrow, are contracted and vellicated, and the Action of the Brain is disturb'd.

Hence naturally follows a Series of all the Phenomena before enumerated.

If a visible Nerve, consisting of many small Nerves, cover'd with their proper Coats, and inclosed in a common Membrane, is so wounded, that some of these nervous Fibrils, by their Union constituting the large Nerve, are divided, whilst others remain entire, all those Functions will be destroy'd which depended on the Soundness of those Fibrils, whose Cohesion is now abolish'd. Besides, as has been already observ'd, these separated Extremities of the Fibrils will more recede from each other: But this cannot happen without a Distraction and Laceration of the slender Membranes connecting the nervous Fibres mutually applied to each other, and thus an acute and continual Pain will be produc'd. But the Fibrils left intire, will now alone sustain all that Force which before they bore united, whilst by the various Actions of the Muscles, the Flexions and Extensions of the Joints, and the Pulsations of the Arteries, the Situation of the Parts is chang'd: They will, therefore, be necessarily more distracted; whence an intense Pain will, also, be produc'd. For if we suppose an intire Nerve to consist of an hundred nervous Fibrils collected into one Congeries, and that by a Wound fifty of these are divided, the remaining entire fifty will be more than doubly distracted by the same Causes; because half of the Cohesion, by which they resisted the distracting Causes, is remov'd: It is shewn under the Article OBSTRUCTIO, that every Cause which distracts and lengthens the Vessels, lessens their Capacities, and may consequently produce an Obstruction; whence numberless Misfortunes may arise. Thus we begin to perceive what Misfortunes arise from Nerves wounded, but not intirely divided; for the divided Parts receding on both Sides, will contract the Orifices of the divided Vessels, and hinder the free Passage of the Humours thro' them. The Fibrils, as yet cohering, are less able to resist the distracting Causes; hence they will be elongated, and lessen the Diameters of their Vessels: By this means the free Circulation of the Humours thro' those Vessels will be hinder'd; and by the Impetus of the succeeding vital Fluid on the obstructed Places, an Inflammation will be produc'd, not only in the large Blood-vessels, but the same may, also, happen in the other decreasing Series of Vessels, as far as those of the smallest, that is, the nervous Kind. What enormous Symptoms may happen from this, is evinc'd by the Gout, the Rheumatism, and arthritic Pains; in which Disorders an Inflammation of the tender Vessels produces the most racking Tortures: But an Inflammation once form'd, may be succeeded by all its different Terminations, which are very various, according as the Inflammation is in larger or smaller Vessels. After a Phlegmon, a mild Suppuration happens: An exulcerated Erysipelas in the small Vessels, discharges a thin ichorous Fluid: A true Rheumatism never suppurates; and a Gout lodg'd in the most subtile nervous Vessels, consumes the most solid Parts into a kind of Calx. Hence numberless other Misfortunes may arise.

As for the adjacent Nerves; such is the Frame of the human Body, that when one small Nerve is wounded, the adjacent Parts, and sometimes those considerably distant, are affected. When the external hard Crust of a Tooth, being divided or corrupted, lays bare the tender nervous Fibrils dispersed thro' the Substance of the Tooth, the Access of the cold Air alone afflicts with an intolerable Pain, not only the affected Tooth, but, also, the whole Side of the Head in which it is fix'd: So that the adjacent Parts are frequently raised to a considerable Tumor. But when the pain'd Nerve is destroy'd, by the Application of Alcohol, or the Extirpation of the Tooth, all the Pain ceases. In *Hildanus*, and other practical Authors, there are various Instances in which the slight Puncture of a Nerve or Tendon, has not only immediately affected all the adjacent Parts, but, also, so far disturb'd all the Functions of the Body, as sometimes to induce Death. But whether the Propagation of a Disorder in one Nerve to all the adjacent Nerves, and to the Brain, happens by a Continuation of the Membranes covering the Nerves, and which are esteem'd Productions of the Meninges; or whether it happens from the Irritation of the nervous Substance, properly so call'd, and which arises from the medullary Substance of the Brain, we shall not here dispute: It is sufficient for our Purpose, that, after Wounds of the Nerves, these Misfortunes ensue, and perhaps both these Causes may concur to their Production. Thus the Membrane lining the Pelvis of the Kidneys is, by a continu'd Course, convey'd to the Ureters, Bladder, and *Urethra*; and when a sharp Stone, lodg'd in the narrow Part of the Pelvis, vellicates this internal Membrane, a Pain, and troublesome Strangury, are often perceiv'd in the Extremity of the *Urethra*. When, in Venesection, the tendinous Membrane covering the Muscles of the *Humerus* and *Cubitus*, is wounded by the Point of the Lancet, soon after Pain, Inflammation, and other terrible Symptoms, are produc'd throughout this whole Membrane.

He who compares the Phenomena before-mention'd with what has been said in this and the two preceding Aphorisms, will easily see why so many, and so terrible Disorders, are produc'd by Wounds of the Nerves.

Hence, also, we understand what Sort of Puncture, Laceration, or Wound of a Nerve, is so dangerous, and why; as, also, why the same Things happen, with respect to Tendons, Membranes, and many Kinds of Vessels.

The more tense the Nerve is, and the fewer Fibres of the wounded Nerve remain entire, the greater their Distraction will be, the more violent Symptoms will be produc'd, and the more intense Pain will be present: But such terrible Disorders do not accompany a Nerve, which is by no means tense, and which is entirely divided. But that the like Misfortunes should happen to the Membranes, is not surprising, since they have many Nerves dispersed thro' their Substance; as, also, to the Tendons, which being

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Continuations of the muſcular Fibres, and conſequently ſeem to ariſe from the Nerves, as has been already obſerv'd. The ſame will, alſo, happen in the Veſſels form'd of a Convolution of the Membranes; thro' which, alſo, are diſſeminated the Nerves ſubſervient to Senſation, Motion, and Nutrition.

Having already treated of the Definition, Cauſes, Effects, Diagnoſtics, Prognoſtics, and other Circumſtances, of a ſimple Wound; it now remains that we conſider its general Cure.

In order, then, to the healing of a Wound, it is neceſſary,

Firſt, To take away whatever being left there, hinders its Union, whether it proceeds from the Liquids and Solids corrupted, from the wounding Inſtrument, or any other Cauſe.

Secondly, To ſupply what is loſt by a Regeneration of what is taken away.

Thirdly, To unite the ſeparated Parts, and keep them in Union.

Fourthly, To form a Cicatrix as like as poſſible to the natural Skin.

A Cure is ſuch a Change of a living Body, as removes that Condition which is call'd a Diſeaſe, and reſtores that the Removal of which produc'd the Diſeaſe. But a Wound is a recent and bloody Solution of Continuity in ſoft Parts, made by an hard and ſharp Body. The Cure, therefore, of a Wound, is the Reſtitution of the natural Coheſion of the Parts ſeparated by the wounding Cauſe. Now whether there is a ſimple Diviſion of Parts, before cohering; or whether there is a great Loſs of Subſtance, made by the wounding Cauſe, the remaining Life in the Patient, by an inimitable Artifice, unites what is ſeparated, and reſtores what is loſt. Phyſicians and Surgeons remove whatever can hinder this ſalutary Effort of Nature, and ſupply what can aſſiſt it; and this is all that Art can do. Let thoſe who think they can do more, attempt the Conſolidation of the ſlighteſt Wound in a Carcaſe; let them apply the moſt celebrated vulnerary Balſams, and cheriſh the Part with an Heat equal to that of a ſound Body; and ſtill the Event will evince, that the Nature of a created Body is alone ſufficient for a Cure, and that, without that Nature, nothing can be produc'd by Art. In the following Numbers are recounted all thoſe Things which are always requiſite to the Cure of Wounds.

1. Every thing lodg'd in a Wound of a Nature foreign to the Parts of the human Body, can never adhere to them, and will, ſo long as it remains there, always hinder the Union of the ſeparated Parts. When the elevated Skin is divided by the Lancet, and a Ball of pure Gold put into the Wound, its Lips will never unite; but, for many Years, there will remain an Ulcer, daily diſcharging Pus: But if that foreign Body is remov'd, its Lips, unleſs become quite callous by their continual Attrition with the hard Body, will in a few Days be conſolidated. It is no matter whether that foreign Body is a Part of the wounding Inſtrument, or ſomething elſe, which has penetrated the Wound along with it; or whether the extravaſated Humours, or ſolid Parts, are ſo chang'd by the wounding Cauſe, as to loſe thoſe Properties requiſite to their being again united to the live Parts. In Battles, Balls diſcharg'd from Guns, when they penetrate the Cloths, often carry into the Wounds large Portions of the Cloths; by which means the Conſolidation of ſuch Wounds is often protracted for ſeveral Months, and often for ſeveral Years. A memorable Inſtance of this occurs in *Memoires de l'Acad. Royale des Sciences, l'An.* 1731. It is therefore obvious, that ſuch Things are, if poſſible, to be remov'd.

2. If a Wound is accompanied with great Loſs of Subſtance, the Lips cannot be united and conſolidated till the loſt Subſtance is reſtor'd by a new Regeneration; for they are, as yet, too far diſtant from each other: And tho' they ſhould be forcibly brought into Contact by Suture, or adheſive Plaiſters; yet under the united Lips there would ſtill remain a Cavity, in which the extravaſated Humours would be collected, and form a ſinuous Ulcer.

3. The Parts of the Body between which the wounding Cauſe is forced, gradually recede more and more from each other; but that a Wound may be cur'd, it is requiſite the ſeparated Parts ſhould be again render'd contiguous. Here Art aſſiſts Nature, by uniting the ſeparated Parts, and ſo fortifying them, that they may remain in that State.

4. But this cannot often be done when a ſtrong Suppuration has conſum'd a large Portion of the *Membrana Adipoſa*; or when a conſiderable Quantity of the Skin is carried off by the Wound: For, in this Caſe, the Cicatrix is always more ſolid, ſmooth, and ſhining, than the adjacent Skin.

Theſe are the general Intentions to be purſu'd in the Cure of all Wounds; and how theſe Intentions may be obtain'd, ſhall be hereafter ſpecified.

Impacted Fragments of Metals, Stones, Wood, Glaſs, Balls diſcharg'd from Guns, Thrombuſes of Blood, mortified Fleſh or Membranes, and broken Bones, are firſt of all to be remov'd, if they are diſcover'd.

Such Caſes frequently occur in modern Battles, when warlike Machines, loaded with various Fragments of Stones and Metals, are exploded upon the Enemy, and render the Cure of the Wounds highly difficult: All theſe, if left in a Wound, when the Wound begins to ſwell, and be inflam'd, contuſe the Parts they touch, render them callous, augment the Inflammation, and at laſt make them degenerate into fiſtulous Ulcers, not to be cur'd unleſs they are extracted by Art, or diſcharg'd by a Suppuration excited in the adjacent Parts. The ſame Caution is to be obſerv'd, if Thrombuſes of concreted Blood, or ſolid Parts of the Body, cut off, and remaining free from all Connection with the live Parts, are lodg'd in the Wound: But if the Fragment of a Bone as yet coheres with the live Parts, there is ſome Hope that it may be again united with them: But it is to be always obſerv'd, that if the Extraction of ſuch foreign Bodies, lodg'd in a Wound, cannot be made, without the Dread of more terrible Misfortunes, then they are rather to be left, and their Separation committed to Nature.

But how we may determine whether they are to be remov'd, or left, will be ſhewn in the next Aphoriſm.

We are to judge whether any Body is to be left, or taken away, by conſidering the Nature of the Wound, of the wounded Part, of the impacted Matter, the Strength of the Patient, and the Symptoms that will follow.

In Wounds, eſpecially thoſe of a dangerous Kind, great Caution is requiſite, in determining whether foreign Bodies, lodg'd in the Wound, are to be remov'd, or left: If after a due Conſideration of all Circumſtances, it appears that the Patient will, by an Extraction of ſuch Bodies, live more commodiouſly, or longer, then they are certainly to be remov'd: But if from Anatomy, and the Functions injur'd, the Condition of the Wound appears ſuch, that certain and ſudden Death is juſtly to be dreaded, they are to be left, leſt the ſucceeding Death of the Patient ſhould be imputed to the Phyſician or Surgeon: For it is prudent not to meddle with Patients whoſe Caſes are abſolutely deſperate. If the wounded Part cannot be reach'd with Inſtruments, in order to the Extraction of foreign Bodies lodg'd in it, ſuch Bodies are, in like manner, to be left. Thus, for Inſtance, foreign Bodies lodg'd about highly-tendinous Places, large Nerves, or the Brain itſelf, cannot be remov'd without the greateſt Danger. But ſome Bodies, according to the different Matter of which they conſiſt, may be more ſafely left in Wounds, than others. Thus numberleſs Obſervations evince, that leaden Balls have without any Inconvenience been lodg'd for many Years in the Body, and afterwards often made ſurpriſing Ways for their own Diſcharge: But if they had been made of Iron, or Copper, becoming corrupted by the Ruſt, they would have far more irritated the Parts they touch'd. We ought, alſo, to have a due Regard to the Strength of the Patient: For if the Weakneſs of his Pulſe, the Coldneſs of his Extremities, and the cadaverous Paleneſs of his Countenance, evince that his vital Strength is already much impair'd, we ought in Prudence to abſtain from ſearching the Wound with chirurgical Inſtruments: For ſurpriſing Inſtances evince, that foreign Bodies left in Wounds have afterwards ſpontaneouſly diſcharg'd themſelves, tho' they could not before be extracted without the greateſt Danger. A memorable Inſtance of this occurs in *Journal des Scavans, l'An.* 1735. *Avril.* Many other Obſervations occur in practical Authors, which ſufficiently prove that it is ſometimes expedient to leave foreign Bodies in Wounds, ſince they will afterwards be excluded by the Aſſiſtance of Nature alone.

From what has been ſaid we may determine the Inſtrument, and Manner by which ſuch foreign Bodies are to be remov'd.

We muſt firſt examine whether by the Wound made, a Part of the wounding Inſtrument left may be extracted, without a Dilaceration of the Parts; or whether the Wound ought to be dilated; or whether the Body may be more commodiouſly extracted, by making a freſh Wound in the oppoſite, or any other Part. Thus feather'd Darts cannot be extracted from the Wound they make, without a great Dilaceration of the adjacent Parts: Hence, in ſuch a Caſe, the Wound is rather to be dilated, or, if it is poſſible, the Dart is to be protruded thro' the oppoſite Part, after making a new Wound. Forceps, of various Bulks and Figures, are deſcrib'd by chirurgical Authors, for extracting foreign Bodies from Wounds; but they are not all at once, and with a great Impetus, to be extracted; ſince it is more expedient, after the Dart is laid hold of by the Forceps, gently to agitate it, in order to know whether in any Part it is ſo fix'd, that it cannot be extracted, without a great Dilaceration;

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ration: For in this Caſe it is rather to be left. But ſince in Battles Gunpowder has been uſed, the Balls diſcharg'd from Guns could not be commodiouſly extracted by the Surgeon's Forceps; hence they invented other Machines, eſpecially a ſpiral Perforator, ſo conceal'd in a hollow Pipe, that it might be ſafely paſſed to the Bottom of the Wound, till it reach'd the Ball there lodg'd; then, by gently twiſting about the Perforator, they ſo fix it in the ſoft Lead, as to extract it.

After a Wound is depurated in this manner, if any thing is taken away from the Body, it ought to be reſtor'd, by a Regeneration of Matter ſimilar to that which was loſt. This comes to paſs,

Firſt, If the arterial, lymphatic, and nervous ſmall Veſſels, are in ſuch a Condition, as to receive and tranſmit their own laudable Liquids. And,

Secondly, If this laudable natural Liquid is carried into theſe Veſſels in a fit Quantity, and with a proper Impetus.

After all foreign Bodies are remov'd from a Wound, we are to conſider whether the Wound is ſuch, that only a ſimple Diviſion of Parts, before cohering, is made by the wounding Inſtrument; or whether ſome Part of the Subſtance of the Body is carried off by the wounding Cauſes. In the former Caſe nothing more is requiſite, but an Union of the ſeparated Parts; but in the latter it is neceſſary there ſhould be a Regeneration of the loſt Subſtance. Tho' it is commonly believ'd that Parts of the Body cut off will no more grow to the Parts to which they before adher'd, tho' applied to them, yet ſome Obſervations evince, that this is not always to be deſpair'd of. Inſtances of this are found in *Garengeot's Operat. de Chirurgie, Tom.* 3.

Obſervations of this kind prove the Poſſibility of *Taliacotius's* Method of reſtoring ſome loſt Parts of the Body; ſuch as Noſes, Ears, and Lips. An Inſtance of this kind is given by *Paré*, in *Lib.* 23. *Cap.* 2. and another by *Hildanus*, *Centur.* 3. *Obſ.* 31.

But ſuch Inſtances rarely occur; when, however, ſome Part of the Subſtance of the Body is carried away by a Wound, the adjacent Veſſels, being lengthen'd, by a ſurpriſing Artifice of Nature, again form or reſtore that which was loſt. But that this may be done, two Things are requiſite:

1. By the inevitable Effect of Life and Health, ſome Parts of the Body are neceſſarily loſt, and theſe are reſtor'd by the Aliments converted into our Nature by the Action of the Veſſels and Viſcera. There is therefore in a ſound Body, ſuch a Property, as enables it, from the ingeſted Aliments, to ſupply as much as was loſt, and of the ſame Qualities: But all this is perform'd by the vital Motion of laudable Humours thro' Veſſels that are ſound, and proportion'd to the Liquids. It is therefore requiſite the Veſſels ſhould have theſe Conditions, by which they may receive, convey, and return ſuch Liquids, as in Health flow'd thro' theſe Veſſels. Hence if, by too ſtrong Compreſſion, or powerful Deſiccatives, the Veſſels are too much contracted, the Surface of the Wound will become dry, and inflam'd; nor can the Veſſels tranſmit thoſe Fluids which, in Health, mov'd thro' them. If, on the contrary, the Wound is treated with too emollient Subſtances, the relax'd Veſſels will yield to the impel'd Fluids, and conſequently be dilated ſo as to admit Humours which ought not naturally to be in them; and the Veſſels, thus expanded beyond their natural Capacity, by their contain'd Fluids, will form fungous Fleſh, which will always retard the Cure of Wounds. The happy Reſtitution, therefore, of the Subſtance loſt by a Wound, ſo far as it reſpects the Veſſels, depends upon procuring a due Strength to thoſe Veſſels, ſo that they may neither too greatly reſiſt, nor too eaſily yield to the impel'd Fluids. But as, in order to reſtore the loſt Subſtance, all the Veſſels, conſtituting the Surface of a Wound, muſt be elongated; hence it will be expedient the Parts ſhould be kept a little more ſoft and relax'd, than in a natural State. When a Surgeon daily views the Surface of a Wound, he may ſee whether a greater or ſmaller Degree of Softneſs is requiſite to the Regeneration of what is loſt: For if the Surface of the Wound appears dry, and of a deep-red Colour; and if a little Pus is generated, he immediately knows that the Veſſels in the Surface of the Wound too ſtrongly reſiſt the impel'd Liquids, ſo as not to tranſmit them: But if, in every Point of the Wound, an equable Humidity, and moderate Heat, appear; if the Bottom of the Wound begins daily to be equally elevated, and its Sides equally extended to the Centre, he ſufficiently perceives that the Veſſels have a due Degree of Laxity, ſo that they may yield to, and be elongated by the impel'd Fluids. But if a Wound is overflow'd with too much Humidity, and its Sides and Bottom are ſuddenly and unequally raiſed, we conclude, that the Veſſels are too much relax'd. Hence Medicines oppoſite to this become neceſſary.

Theſe are the Things to be obſerv'd in a Wound, with reſpect to the Veſſels, in order to the Regeneration of loſt Subſtance: We ſhall now conſider what is requiſite in the Fluids, in order to produce the ſame Effect.

2. The Subſtance loſt by the Wound is to be regenerated; but this Subſtance conſiſts of Fluids and Solids, or containing Veſſels, and contain'd Fluids: There muſt, therefore, be convey'd to the Part of the Wound a Matter in which are lodg'd the Parts requiſite to the Regeneration of the loſt Subſtance. But a natural and laudable Liquid, according to the Laws of Health, mov'd thro' the Veſſels, contains in itſelf all the Parts requiſite for this Purpoſe; for by its means are daily reſtor'd, both in the Solids and Fluids, the Parts loſt from the Body by the Actions of Health; for Aliments do not nouriſh till they are by the Fabric of the Body chang'd into a Quality like that of the human Fluids, and, loſing their own Nature, aſſume that of the Body. It is therefore requiſite that ſo much Health ſhould remain as is ſufficient, from the Aliments taken, to produce laudable and natural Humours. Hence the Reaſon is obvious, why the Reſtitution of loſt Subſtance is highly difficult, and often abſolutely impoſſible, in cacochymic Habits, but very eaſy in good Conſtitutions: It is, alſo, requiſite there ſhould be a due Quantity of this good and natural Liquid, ſo as equably to fill all the Veſſels. Hence appears the Reaſon why the Cure is difficult in Patients who, by an Hæmorrhage, have loſt a large Quantity of laudable Fluids; and this Difficulty is ſtill augmented, becauſe it is principally by the due Quantity of laudable Humours that the crude Aliments are chang'd into our Nature, and mix'd with the good Juices. Nor are theſe Circumſtances alone ſufficient; but it is, alſo, requiſite, that the natural Liquids ſhould be, with a proper Impetus of Motion, convey'd thro' the Veſſels: For when this Motion is languid, Nutrition is defective, or at leaſt deprav'd; as evidently appears in weak Habits. When the Fluids are with too great a Velocity carried thro' the Veſſels, the Body is deſtroy'd, but not recruited; as appears in Animals fatigued by too hard Labour, and in thoſe Diſeaſes where the Velocity of the Circulation is too great.

All that Art can do is, to render the Veſſels ſuch as they were in Health, and procure a Circulation of laudable Fluids thro' them with a due Force: The reſt will be perfected by Nature, who is generally ſufficient for her own Purpoſes.

By this means there will be an Impletion, Humectation, Extenſion, Elongation, of the wounded, retracted, obturated, compreſs'd, and almoſt juiceleſs Canals; an Implication of them with the adjacent Veſſels; an Application to others, which are near them; and this is brought about by the Aſſiſtance of the reticular *Plexuſes*; and at laſt, by the Help of a good Fluid, Conglutination is accompliſh'd.

It is already demonſtrated, that Arteries, even of a conſiderable Bulk, when divided, are gradually contracted, and cloſed up; and that, in conſequence of this Circumſtance, unleſs they are very large, the Hæmorrhage ſtops ſpontaneouſly: It is therefore ſufficiently evident, that when ſmall Veſſels are divided, they are cloſed by the ſame Cauſes, and the Effuſion of the Humours is, by that means hinder'd. Hence, by the Action of the Fluids on the obſtructed Orifices of theſe Veſſels, are produc'd an Inflammation, and ſlight Fevers; by which the Humours, being forc'd with a conſiderable Force into the conſtricted Extremities of the Veſſels, protrude, elongate, and open them; or, by a benign Suppuration, ſeparate from the live Parts the totally dry and mortified Extremities of the Veſſels. But theſe Veſſels no longer confin'd by the Skin, are, by the Force of the Liquid mov'd thro' them, gradually extended and elongated, and their Mouths, being open'd, they diſcharge their Liquids into the Cavity of the Wound: Hence the whole Surface of the Wound appears moiſt with Pus, and rough, as it were, with ſmall *Papillæ*, which are gradually more and more elevated, and are only the pulpous Extremities of the protuberating Veſſels; and when this happens equably in all the Circumference of the Wound, the Mouths of the growing Veſſels mutually meet each other, are applied and united, and thus the loſt Subſtance is reſtored. If, after the Wound is clean, the mucous Congeries of the growing Veſſels is daily deterg'd by the Surgeon, that which ought to reſtore the loſt Subſtances is deſtroy'd; hence the Cure is retarded, and the Surface of the Wound degenerates into the Nature of a ſordid Ulcer. The Whole, therefore, that Art can do, in order to the Regeneration of loſt Subſtance, conſiſts in procuring to the Veſſels, and the Liquids mov'd thro' them, thoſe Qualities which are requiſite to perfect Health; and taking care that the Impetus of the Fluids mov'd thro' the Veſſels, be neither too ſtrong, nor too languid: All the reſt is perform'd by Nature, as is already obſerv'd.

But this Conglutination ſeems to happen by the Application of a new Subſtance, and not by the Interpoſition of a ſoldering Juice, which, like Glue, unites the divided Extremities of the Veſſels.

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Veſſels. For we obſerve, that if the Veſſels free from the Skin and *Epidermis* are contiguous, they forthwith grow together. Thus the Edges of the Eyelids, if excoriated, have in one Night's time been found to grow ſo ſtrongly together, that there has been a Neceſſity for dividing them with a Lancet. The Fingers, alſo, when left contiguous, after the *Epidermis* has been deſtroy'd by Gunpowder, have grown very firmly to each other; ſo great is the Tendency of the open Extremities of the Veſſels to unite with others like themſelves.

And whilſt theſe are with an equal Force happening from every Point, eſpecially of the Bottom and Sides, the Cavity of the Wound, from every Part to the Centre, is fill'd with ſolid and liquid Matter, like thoſe which were loſt.

If all the Extremities of the Veſſels in the Bottom and Sides of the Wound are equably open'd, the Motion of the Humours thro' the Veſſels will act equally on all the Parts: Hence, if there is not a greater Reſiſtance in one Part than in another, there will in every Point be an equable Elongation of the Veſſels; but if there is a greater Relaxation in one Part, than in thoſe adjacent, the Veſſels will be there more diſtended, and elongated: Thus there will be form'd a fungous Excreſcence, which, by compreſſing the adjacent Veſſels, will hinder the equable Conſolidation of the Wound. But whilſt, from all the Circumference of the Cavity of the Wound, the lengthen'd Veſſels meet each other, and are united, ſuch a Structure of the Veſſels is reſtor'd, as regenerates the loſt Subſtance. But tho' we cannot affirm, that this regenerated Subſtance is preciſely the ſame with that which was loſt, yet it is certain, from all the Phenomena, that it is highly ſimilar to it; ſince Experiments evince, that not only large Blood-veſſels, but, alſo, thoſe of the ſmall perſpiratory kind, are thus regenerated: For if the mucous Congeries of growing Veſſels in the Cavity of the Wound is rudely touch'd with a linen Cloth, red Blood is diſcharg'd; and if that Congeries is but gently touch'd, a thin Fluid is evacuated. If a poliſh'd Plate of Metal, or a Looking-glaſs, is applied, there will be form'd on the ſmooth Surfaces of theſe Bodies a moiſt Spot, which will ſoon diſappear, without leaving any Sordes; a ſure Proof that there is ſuch a Congeries of Veſſels, which contain and emit a ſubtile exhaling Fluid. Hence we may, with a great deal of Probability, conclude, that ſince in the regenerated Subſtance there are Blood-veſſels, and ſmall exhaling Veſſels; there are, alſo, intermediate Series of decreaſing Veſſels to be found in it.

But this Regeneration of loſt Subſtance in the human Body has its proper Limits; for no one ever ſaw ſo much as the leaſt Articulation of the Finger reſtor'd after it was cut off. The Veſſels, indeed, on the Surface of the Wound, are ſo concreted, as to form a Cicatrix; but the Part remains defective during the whole Remainder of the Patient's Life. Hence the loſt Subſtance of the human Body ſeems poſſible to be regenerated, when, from all the Circumference of the Wound, the elongated Veſſels can concur and unite in its Centre. But when, by a ſimple Elongation of the Veſſels remaining in the maim'd Part, ſo many organical Parts are to be reſtor'd, after they are cut off, Nature proves defective, and, by a good Cicatrix, ſecures the Part. Philoſophers are, however, juſtly ſurpriſed that an Advantage denied to the human Species ſhould be granted to ſome other Animals. Thus the celebrated *Reaumur*, in *Mem. de l'Academie des Sciences, l'An.* 1712. has ſhewn, that the Claws of Crabs and Crayfiſh, when totally ſeparated from their Bodies, may grow again, and that oftener than once: Nor has it, as yet, been evinc'd by Experiments, whether, in theſe Animals, the Power of producing new Members can be exhauſted. Thus we ſee, that, in phyſical Affairs, particular Obſervations teach us a great many Things; but that general Concluſions, deduc'd from a few known Obſervations, often prove fallacious.

Therefore to this End is requir'd firſt a proper Diet, that the Chyle, Serum of the Blood, and nutritious Matter, may be mild, glutinous, not eaſily putrefying, but of eaſy Digeſtion and Aſſimilation. Farinaceous Decoctions, either crude or fermented, Emulſions, Milk, Broths, ripe Fruits boil'd, and mild Pot-herbs, are particularly proper, if given in ſmall Quantities, and often repeated; above all Things taking care to guard againſt Repletion, Hunger, and Thirſt.

The Parts of the loſt Subſtance regenerated are reſtor'd by the Fluids convey'd to the Wound; but the Liquids flowing thro' the Veſſels are either crude, in conſequence of the Aliments not being totally chang'd into our Nature; or ſuch as, by the Action of the Veſſels and Viſcera, having loſt their own Nature, have aſſum'd all the Properties of our Fluids. The Chyle, by the chylopœetic Organs form'd from the Aliments, is for many Hours convey'd thro' the Veſſels along with the Blood, as is obvious, from the Experiments of Mr. *Lower*. Hence ſuch a crude chylous Juice is, together with the other Humours, convey'd to the wounded Part, and that in a greater Quantity than to the other Parts of the Body; becauſe there is leſs Reſiſtance in the wounded Part. Hence it has been obſerv'd, in large Wounds, that almoſt the whole nutritious Matter has been diſcharg'd from them, in conſequence of which, the Body, depriv'd of its daily Recruits, has waſted away of a ſlow Conſumption. Unleſs, therefore, by a proper Diet, mild Chyle is produc'd, the Wound will, by the acrid Chyle, be daily irritated, and cur'd with great Difficulty. But we here ſpeak of conſiderable Wounds; for ſlight Wounds do not require ſo great Caution: Beſides, the open Orifices of the Veſſels diſcharge into the Cavity of the Wound a large Quantity of a Liquid, which, after its thinner Part is reſorb'd, or diſſipated, is converted into Pus. If, therefore, the Chyle convey'd hither with the Blood, conſiſts of ſuch Parts as naturally incline too much to a putrid Degeneration, the extravaſated Humours will by their Stagnation, and the Heat of the Place, degenerate into a putrid ichorous Matter, but will not be chang'd into laudable Pus: Such Things are, therefore, to be avoided. But ſince Reſt is neceſſary to wounded Patients, and ſince, at the ſame time, as is ſhewn under the Article FIBRA, muſcular Motion, and Exerciſe of Body, contribute much to the Aſſimilation of the crude Aliments to our Nature; hence it is obvious, that we ought not to exhibit to ſuch Patients Aliments of hard Digeſtion, but ſuch as may be eaſily digeſted and aſſimilated; otherwiſe a large Quantity of crude, and very little concocted, Juice is convey'd to the Wound. But the Regeneration of loſt Subſtance in a Wound can only be obtain'd from ſuch Humours as are concocted, and converted into our Nature.

We ſhall now enumerate the Aliments which, by their mild Quality, and eaſy Aſſimilation, are principally ſubſervient to this Intention. Oats, then, Barley, Buck-wheat, and Rice, boil'd with Water, or the Broth of Fleſh, yield ſuch a mild and eaſily-digeſted Nouriſhment; nor do they putrefy. From the Meals of theſe, excellent Aliments are, alſo, prepar'd, by a gentle Fermentation, by which means the farinaceous Lentor is taken away. Hence well-fermented Bread, eſpecially Biſcuit, and weak Fleſh-broths without any Fat, are of ſingular Service in Caſes of this Nature. Emulſions of ſoft farinaceous Seeds, prepar'd by Trituration with Water, have almoſt the Nature of Chyle. Milk, diluted with an equal Quantity of Water in the Winter-time, but in the Summer mix'd with more Water, may be uſed for common Drink: Milk, alſo, gently boil'd with farinaceous Subſtances, yields a mild Aliment. Ripe Summer Fruits, by their grateful Taſte, and mild cooling Quality, are of ſingular Service; but they are to be gently boil'd, in order to remove all their flatulent Qualities. All ſoft Pot-herbs, ſuch as Lettuce, Endive, Spinage, Skirret, Vipers-graſs, Carrots, Goats-beard, and Parſneps, boil'd in Broth, are excellent.

But tho' all theſe Things are ſalutary, they may, nevertheleſs, prove noxious, if exhibited in too large a Quantity: For by this means the Body of the Patient will be oppreſſed, a large Quantity of crude Chyle will be mix'd with the Blood, and the Condition of the Wound chang'd. But if the Quantity of the Aliments to be taken is ſo divided, that ſome of it may be taken every two Hours, it will eaſily be aſſimilated, and the Humours convey'd to the Wound, will always have nearly the ſame Properties: But when the Patients take a large Quantity of Aliments only twice a Day, the Blood, loaded with a large Quantity of crude Chyle, will at one time be convey'd to the Wound; but at another time the Blood, when the Chyle is ſubdu'd, will have another Quality: So that, by this alternate Viciſſitude, the Condition of the Wound will be diſturb'd. Hunger is equally to be avoided with exceſſive Repletion; for Hunger denotes that the Body requires freſh Supplies: And all the Humours, unleſs qualified by a freſh mild Chyle, will become more acrid, and half putrid. For the acrid and putrid Urine, and the cadaverous Breath of Perſons who have ſuffer'd Hunger for a long time, ſufficiently evince this Degeneracy of the Humours. But we ought, in a particular manner, to take care that the Patients ſhould not be afflicted with Thirſt; for Thirſt denotes the Dryneſs of the Body, or a Stagnation of the Fluids, or ſomething of an acrimonious Nature mix'd with them: But all theſe are highly prejudicial to a Wound, ſince, in order to the Reſtitution of the loſt Subſtance, an equable Humidity, in every Point of the Wound, and a free Circulation, and mild Quality of the Fluids, are abſolutely requiſite. Hence moiſt Aliments, and the liberal Uſe of mild Liquors, are requir'd. For, by this means, the whole Body will be moiſten'd in all its Parts, the Fluids will be more diluted, and capable of a freer Circulation; and the acrimonious Particles, which would otherwiſe

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wise prove injurious, being diluted by the large Quantity of Drink, will be eliminated by Sweat, or Urine.

A Consideration of the Temperament of the Patient, the Season of the Year, the usual Way of Living, and the Nature of the concomitant Disease, will direct us in the Choice and Preparation of these Things, that they may be useful to the Patient.

All the Directions laid down, with respect to the Diet, vary according to the different Constitutions of the Patients, so that no general Rule can be given: When, in the time of War, large Numbers of wounded Men are in the Hospitals, many of them die, who might otherwise have been preserv'd, only because the same Aliments are given to all; for the Whole that is requisite here is, that the remaining Health be preserv'd in the wounded Person, or restor'd, if it is defective. But every Person has a kind of Health peculiar to himself; hence, tho' different Persons may have their Solids and Fluids composed of highly different Parts, yet they may both be sound: This is call'd the constitutional Sanity; to which we are, therefore, carefully to advert. For Physicians, by their proper Signs, distinguish the hot and the cold, the moist and the dry, the bilious, the sanguine, the phlegmatic, and the atrabiliarious Constitutions; and observe, that various, and even opposite, Aliments are proper for Persons of different Habits: So that each may preserve a perfect Health. Thus, for Instance, when the Constitution of the wounded Person is known to be aqueous, and cold, thin diluting Drinks are to be avoided, and corroborating and rousing Substances exhibited: But if the Humours are thick and compact, the solid Parts tense and firm, the Constitution is said to be hot and dry; and then these Things are beneficial, which would have been hurtful in the other Case. *Hippocrates*, in *Tr. de salubri Victus Ratione*, tells us, that "Those who are of a fleshy soft Habit of Body, and of a reddish Colour, ought for a great Part of the Year to use a dry Diet; for their Constitution is moist: But such as are of hard slender Constitutions, or of a yellowish or blackish Colour, ought to use moist Aliments for a considerable time; because their Constitutions are dry."

But the various Seasons of the Year require a different kind of Life in the same Person: For, during the Summer Heats, Degeneracies of the Humours quickly happen; but in the Cold of the Winter they are brought on more slowly: For the Flesh of Animals can, in the Winter Cold, be preserv'd for several Weeks without Corruption; whereas the same Flesh would have been wasted to a putrid Gore, in a few Days, during the Heat of the Summer. Hence the sagacious Antients carefully distinguish'd the various Methods of Life, according to the various Seasons of the Year. Thus in the Winter they recommended liberal Eating, generous Liquors, but in a small Quantity, eating few Pot-herbs, and only such as were of an heating and drying Nature, and all roasted Aliments: But in the Summer they recommended a large Quantity of thin Drink, boil'd Aliments, and a large Quantity of Pot-herbs. In the Spring they order'd the Quantity of Drink to be gradually increased, but to be more diluted; instead of roasted Meat, they substituted that which was boil'd: They, also, gradually lessen'd the Quantity of the Aliments, lest a great Change should be suddenly induc'd on the Body; and thus they proceeded to their Summer Diet. Then, in the Autumn, they increased their Aliments, and diminish'd their Drink, tho' they order'd it to be more generous, till at last they came gradually to their Winter Diet. But as Battles generally happen in the Summer-time, and Flesh-broths are then only given to the wounded Persons, they are often in a very languishing Condition, and earnestly desire acidulated Drinks, and ripe Fruits, which, however, they are often forbid.

Besides, the various Ages of Patients indicate different Regimens, with respect to Diet.

Custom, also, which justly deserves to be call'd a second Nature, is, in this Case, to be consider'd. If the hardy Ploughman, accustom'd to live on coarse Bread, and salted or smok'd Flesh, in order the better to sustain his daily Fatigues, is wounded, and constrain'd to live on Flesh-broths alone, his Strength will be soon impair'd. Hence more solid Aliments safely may, and even ought to be exhibited to such a Patient. Thus *Hippocrates*, in *Aphor.* 50. *Sect.* 2. tells us, "That "Things we have been long accustom'd to, tho' worse, are "usually less troublesome than those Things we are not "accustom'd to." The same Author, also, in his Treatise *de Victu Acutorum*, tells us, that People easily bear Aliments they have been accustom'd to, tho' they are not naturally good; whereas they ill bear those Aliments they have not been accustom'd to, tho' they are not of themselves bad. He, also, asserts the same concerning Drink. Hence the prudent Physician ought to make a due Allowance for the Custom of the Patient, tho' in so doing he should run counter to the general Rules of his Profession.

As for the Nature of the concomitant Disease; we have hitherto treated of the Methods to be pursu'd, when a healthy Person is wounded: But if there is a considerable Cacochymy before the Infliction of the Wound, such a Regimen, with respect to Diet, ought to be order'd, as is most contrary to that Degeneracy of the Humours which is to be dreaded from the Disease, or the Cacochymy accompanying the Wound. If, for Instance, a putrid scorbutic Cacochymy is present; or if, by a violent Fever, all the Parts tend to a Putrefaction; we use scarcely any thing but Preparations of Milk, Oats, Rice, and acescent Summer Fruits: But we ought carefully to abstain from Eggs, Flesh, and Broths prepar'd of them. If a languid mucous Sordes is lodg'd in the whole Body, the languid Strength of the Patient is to be excited, by roasted Flesh, Wine, and Aromatics.

From all these, accurately known, and mutually compar'd, we conclude what Meats and Drinks are to be exhibited, and in what manner they are to be prepar'd: For a great Diversity of the same Aliment arises from the different Method of its Preparation. Recent Veal, when boil'd, yields a Broth which may be exhibited even when there is some Dread of a putrid Degeneracy in the Humours, especially if it is mix'd with a small Quantity of Lemon-juice; but if the same Flesh, left for some Days in the open Air, is boil'd, it yields a Broth which becomes putrid much sooner: But when Veal is roasted, it is still more disposed to Putrefaction; because its Salts and Oils are render'd more acrid by the Fire. Crude farinaceous Substances are hurtful to People of phlegmatic Constitutions, but they may be used when fermented. The same holds true with respect to many other Preparations of Aliments.

Whatever is acrid, or too much augments the Impetus of the Blood, is to be carefully avoided; for which Reason, saline, aromatic, and acid Substances, together with acrid Pot-herbs, and Wine, are bad for Wounds.

So mild and benign is the Disposition of our Humours in Health, that the Blood itself, and all the Liquors secreted from it, except the Bile and Urine (which, however, owe their Acrimony chiefly to Rest and Stagnation), that, instil'd into the Eye, they excite no Pain: Wherefore, since the Loss of Substance, which we suffer in Wounds, is to be regenerated and recruited by Supplies from these Humours convey'd to the Part affected; it seems highly to deserve our Care, that nothing acrid or stimulating, or that is easily susceptible of an acrimonious Quality, be receiv'd into the Body: For acrid Things are noxious to Wounds, by irritating the crude Parts, and, by their *Stimulus*, exciting a greater Motion in the Humours, and so increasing the *Impetus* of the vital Liquid upon those extremely tender Vessels which repullulate in the Wound; whence they often degenerate into a fungous Flesh; or an Inflammation, excited by that Increase of Motion, renders the Superficies of the Wound imperspirable, by obstructing the Capillaries, whence the Cure is further retarded: For whatever is thus affected, must again be separated by undergoing a Suppuration.

All Stimulants, therefore, by whatever Title recommended, are in their own Nature prejudicial to Wounds, the Body of the wounded Person being supposed to be in Health. But if, for Instance, the Patient at the same time labour'd under a putrid Cacochymy, an Ingestion of Acids would be of Service, instead of being detrimental. But we would not be understood as if a few Grains of Salt, or some Drops of Juice of Lemon, added to Broths, would hurt the Patient; for the Addition of so small a Quantity might be useful, by way of Precaution, against a Degeneracy of these Liquors towards a Putrefaction; and can by no means prove Stimulants of the vital Forces: For if some such thing was not mix'd with the Broths, the Patient would in a short time abhor them.

The Use of Wine is disapprov'd, for the same Reasons, unless where Custom, or a Languor, demand the contrary: For Multitudes indulge themselves every Day in drinking Wine, and other spirituous Liquors; and if they should be compel'd to abstain from them, would immediately languish, and be disturb'd in all the Functions of their Body. For such Subjects, therefore, a moderate Quantity of Wine, either pure, or diluted, as Custom, or the Measure of Strength, shall seem to require, cannot but be proper.

Meats, also, subject to Putrefaction, Broths too thick, with alcalescent Herbs, as Radishes, Cresses, Cabbage, and the like, are improper, and prejudicial.

We are not only to attend to the Nature of Aliments at the time of their Ingestion, but to the Mutations to which they are subjected by the Heat of the Body during their Residence in the internal Parts. For, as we before observ'd, the nutritious Humours, which are generated of the Aliments, will be convey'd to

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to the Wound, and there be partly discharg'd thro' the open Orifices of the Vessels, into its Cavity: If these Aliments, therefore, are in their own Nature very subject to Putrefaction, it is to be fear'd that the Humours which take their Course to the Wound will be converted not into good and laudable Pus, but into a putrid Ichor. And since Fish, especially Sea-fish, will very soon putrefy, nor can be kept unless season'd with much Salt; for this Reason they are forbidden. Thick Flesh-broths, Jellies prepar'd of Shavings of Hartshorn, or Scrapings of Ivory, will, within the Space of four-and-twenty Hours, in Summer-time, dissolve into a putrid kind of Liquament. To this it may be added, that such thick Broths oppress the Stomach, and are not easily digested. It is a Property in some Plants, after a spontaneous Putrefaction, not to become acescent, as do Multitudes of others, but to be resolv'd into a fetid, volatile, pinguious Alcali. In some Plants there is an acrid, alcaline, volatile Salt, to be found even before Putrefaction; as in Radishes, Mustard, Cresses, and the like; which are all hurtful to Wounds; because they are too much inclin'd to putrefy, and irritate the Part with their acrid *Stimulus*. But the greatest Danger is from those which are subject to putrefy; because all our Humours have a natural Tendency to a putrid Degeneracy. But those Vegetables which in their own Nature are acescent, resist the spontaneous Degeneracy of our Humours; whereas the former conspire with it, and promote it. See the Catalogue of alcalescent Plants, which are injurious in this Case, under the Article ALCALI.

Foods difficult to be converted into Chyle and Blood, as are those harden'd by Salt, Smoak, or the Air, or abounding with Fat, as Bacon, fat Fishes, as, also, Geese, Ducks, and the like Birds, which feed on Fish; with viscid Aliments, as gross, leguminous, crude, farinaceous Foods, and Eggs, are bad Aliments.

They who daily exercise their Bodies with hard Labour, feed heartily on the hardest Meats, and very well digest them, but care not for lighter Food, which, indeed, would not supply the Strength necessary for sustaining the Body under so much Toil and Fatigue as they are oblig'd to undergo. But they who lead an idle Life, find themselves very much disorder'd after eating Meats of hard Digestion; whence it may be taken for a general Rule of Diet, with respect to Persons in Health, that *the harder the Labour, the harder must be the Food*. For hard Meats, which are not easily converted into good Chyle, add Weight and Inertness to a Body at Rest: And since Rest is necessary in Wounds, such Foods will not, in that Circumstance, admit of a good Digestion, and due Assimilation, which latter is absolutely requir'd, in order to the Regeneration and Restoration of the lost Substance in the Wound. But here some Allowance is always to be made for Custom, since they who have all their Life-time been accustom'd to such hard Meats, cannot, without Difficulty, be brought to live on lighter Foods.

The Flesh of Animals and Fishes, harden'd with Salt, or in the Smoak, or dried in the Air, are far more difficult to be converted into good Chyle and Blood, than if they were fresh and new; but fat Things are most prejudicial in this Case, as being always very difficult of Digestion, and being long retain'd in the Body, contract a very bad sort of rancid Acrimony. If a weak Person eats plentifully of Bacon at Dinner, he will be subject, in the Evening, to Eructations of a fat Oil, which burns the Fauces, and, being thrown into the Fire, kindles up a Flame; so long is this pinguious Substance retain'd in the Stomach undigested; and, tho' fluid, is not transmitted thro' the *Pylorus*. The same is true of fat Fishes, as Eels, Salmon, and others, and particularly of the Livers of Fishes; in which there is such a Redundance of Oil, that it may be expressed pure: And tho' this mild kind of Oil be extremely grateful to the Palate, it is very speedily converted into a very noxious rancid Matter. Hence a skilful Surgeon will know whether his Patient has indulg'd himself in such Food, by an immediate Alteration in the Wound for the worse: For the oleous Particles, being convey'd to the Wound, there obstruct the Capillaries, and, being render'd more acrid by Settlement and Heat, excite an Inflammation difficult to be resolv'd. And because this oily Matter very much abounds in many Fishes, whose external Superficies is defended by its Transudation, and their Bodies secur'd from Diffluence and Maceration in the Water in which they live; hence Birds which feed on Fish are difficult of Digestion. For tho' Aliments receiv'd are, by the natural Functions, converted into the Nature of the Receiver, yet there often remains something of its former Qualities; whence we observe such different Tastes in the Flesh of Animals, according to the Variety of Foods in which they live. Ducks, Geese, and the like Birds, if they live only on Fishes, their Flesh will have the nidorous and ungrateful Smell of Fish; and tame Hares, fed upon Cabbage-leaves, will have an abominable Fœtor at the Table: The Patient, therefore, is directed to abstain from such Foods.

Again; all the grosser Kinds of leguminous Foods, or Pulse, and crude, farinaceous Vegetables, generate a viscid Chyle, whose Viscidness, by hard Labour and Exercise, may be subdu'd; but in Persons at Rest is productive of numerous Disorders.

And, in the last Place, Eggs, tho' justly recommended as an Aliment proper for restoring weak Bodies, if they are recent, and diluted in Broths, and especially their Whites; yet as they are subject to Putrefaction, are, in such Cases, sparingly to be used; but if they are harden'd by Boiling, they are observ'd to be difficult enough of Concoction.

To the due Cure of Wounds are conducive such Medicines as remove the Impediments to Consolidation, and are generally exhibited in the Form of a Decoction. These Medicines are various, according to the Variety of the Impediments which are to be remov'd; for none will suit all Cases.

We have hitherto treated of such things as are to be observed in a Regimen of Diet for Wounds, to the end that good Liquids, being convey'd through sound Vessels to the wounded Parts, may procure a Restoration of the lost Substance. But the wounded Person was there supposed to be healthful in other respects; and, therefore, if there be either in the Body of the Person affected, or in the wounded Part itself, any corporeal Circumstance which proves an Obstacle to a Regeneration of the lost Substance, it is to be removed. Inquiry, therefore, is to be made about this Impediment, whether it be seated in the Fluids or Solids, or in both; whether it lies in the Wound itself, or in such things as are convey'd to the Wound by means of the Circulation; or, whether the Humours by too impetuous, or too remiss a Conflux to the Part, disturb or hinder a Regeneration. Since, therefore, the Nature of such an Impediment may be so various, and even so far, that the Consolidation of a Wound may be impeded by opposite Causes, it plainly appears, that there can be no such thing as an universal Remedy, and that they are vain Boasters who pretend to it. *Helmont*, under a false Persuasion that Pus was generated in a Wound by an Acid, would have every vulnerary Potion contain an occult Alcali, and that of the volatile Kind. *Blas humanum*, *No.* 53. Others cry up their own Nostrums; and hence it is that we are over-stock'd with such a Variety of celebrated Formulæ of vulnerary Decoctions. But let there be only a just Motion of good and laudable Fluids through the Vessels to the Wound, and the thing is done which was required. The Art of Medicine, therefore, can do no more than remove or correct an Impediment, when it is known, by proper Remedies: And this is the full Extent of its Power; all the rest of the Work is perform'd by Nature. But those vulnerary Remedies were generally prepared in the Form of Decoctions, because by this means the Virtue of the Medicines diluted with Water might conveniently mix with the Blood, and be equally distributed through the whole Body. The various Sorts of Medicines required in these Decoctions are comprised under the following Heads:

For this Reason they are chosen, as the Nature of the Case requires, out of Attenuants, Inspissants, Mitigants, or Stimulants, such as are endued with a singular Virtue of correcting the contrary Quality, Aperitives, Laxatives, and Astringents, and consequently oftentimes out of Opposites.

Attenuants: If it appears by Observation of Signs, that the Impediment to the Cure depends on too great a Spissitude of the Humours, which incommodes their Course through the Vessels, it is plain, that the proper Vulneraries in this Case, are all such Remedies as divide and attenuate the Humours to such a Degree as to facilitate their Passage through those Vessels, in which, by the Laws of Health, they are to flow. It has been demonstrated under the Article OBSTRUCTIO, that this Immeability, or Incapacity of Circulation of the Fluids, may proceed from various Causes, for which several Remedies are recommended under the same Article, by which these Causes may be removed or corrected. Hence again arises a vast Variety of vulnerary Medicines with regard only to their Way of Action by Attenuation. For quite other Remedies are required for attenuating an inflammatory Spissitude, than what are adapted to an atrabilious Tenacity, or cold glutinous Lentor of the Humours, by which they are incapacitated for Circulation. The following vulnerary Decoction and Drink are of an attenuating Virtue:

Take of the Leaves of Spurge-laurel, Male Speedwell, Rue, each one Handful and an half; Root of Avens, one Ounce; Flowers of the Lesser Centaury, two Pugils: Boil them in three Pints of Water, and with it mix Salt of Carduus Benedictus, one Dram; Syrup of the Five opening Roots, three

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three Ounces. The Dose is four Ounces, four times in a Day, warm.

Inspissants.] In too great a Thinness, or aqueous Languor of the Fluids, inspissating Remedies take place. But this Thinness of the Humours is either attended with an Acrimony, as it often happens in the Scurvy, where the thin and acrid Blood is frequently extravasated from the Capillary Vessels, and forms scorbutic Ecchymoses, [See ECCHYMOSIS.] and in this Case very soft and glutinous Invíscants are required; or else this Tenuity and Incompactness of the Humours is owing to the Weakness of the Vessels, and their not acting with sufficient Force upon the contained Fluids; and then the proper Remedies are all such vulnerary Inspissants as augment the Force of the Vessels; and of these we have treated under the Article FIBRA. And hence it appears, also, that opposite Remedies are recommended under the same Head, *Inspissants*; for such Medicines as are proper in the former Case, would be very prejudicial in this last. The followihg is a vulnerary inspissating Drink:

Take of Orpine, *Consolida major & minor*, Mallow, Pellitory of the Wall, each one Handful: Boil them in three Pints of Water, and mix with it two Ounces of Syrup of Marshmallows. The Dose is four Ounces warm four times in a Day.

Mitigants.] These are such Remedies as by their soft and particularly oily Particles, involve and obtund all the acrid Corpuscles in such a manner as to render them unactive. Hence the Medicines here meant, are not such as are indued with a singular Quality opposite to a certain kind of Acrimony, but such as by a soft Viscidity obvolve, or envelope and mitigate all manner of acrid Particles. Such especially are all those Remedies which the Shops call *Emollients*, which mitigate the Acrimony of the Fluids, and soften and lubricate the solid Parts of the Body.

A vulnerary mitigating Drink:

Take of Seeds of White Poppies bruised, three Ounces; Flowers of Mullein, two Ounces; Leaves of Bugle, two Handfuls; Root of Scorzonera, two Ounces; Root of Liquorice, an Ounce: Boil them in three Pints of Water. The Dose is four Ounces warm four times in a Day.

Exciting Remedies, or Stimulants.] When the vital Forces are in a languishing State, and a Coldness, Inertness, Paleness, and a mucous State of the Humours are predominant, without Signs of an attending Acrimony, then all such Medicines as by a grateful aromatic Stimulus increase and quicken a languishing Motion, are proper to be advised; of which Nature are Aromatics, Wine, and the like.

A vulnerary stimulating Drink:

Take Roots of Masterwort, and Swallow-wort, each one Ounce; Leaves of Rue, Scordium, each one Handful; Seeds of Burdock bruised, ten Drams; Seeds of Cardamom bruised, four Drams; Flowers of Lavender, and the Lesser Centaury, each two Ounces: Boil in three Pints of Water, and exhibit four Ounces warm four times a Day.

Such as are endued with a singular Virtue of correcting a contrary Quality.] This Disorder must first be known and discovered, before we can fix on an opposite Remedy endued with this singular Property; and the Fault here must lie either in the Solids or Fluids, or in both. As to the Solids, the Disorder may consist in their too great or little Cohesion; for Remedies in these Cases, consult the Article FIBRA.

Vulnerary Drinks endued with a singular Virtue of correcting their opposite Quality:

1. For a Corrective of a glutinous Quality, see the Attenuating Drink prescribed above.

2. For a peccant Acid:

Take of Mustard-seed, half an Ounce; Root of wild Radish, Leaves of Hedge-mustard, and Cresses, each two Ounces: Give them a slight Boiling in two Pints of Water, covering the Vessel. The Dose is two Ounces four times in a Day.

3. For an Alcali:

Take of the Root of sharp-pointed Dock, two Ounces; Leaves of Sorrel, two Handfuls; Root of Wood-sorrel, one Ounce; Flowers of Borage, twelve Drams: Boil them slightly in two Pints of Water, and exhibit as the preceding.

4. For a peccant oleous Quality:

Take of Tamarinds, two Ounces; Crystal of Tartar, six Drams; Roots of Grass, five Ounces: Boil in two Pints of Water, and with the strained Liquor mix two Ounces of Rob of Elder; exhibit as before.

Aperitives.] By this Name are called all those Remedies which promote a free Circulation through all the Vessels; for which Purpose are required a due Mobility of the Fluids, and a just Aperture of the Vessels. Medicines for these Effects are, also, various, as they are adapted either to the Diseases of the Solids or the Fluids, which obstruct the free Passage of the Humours through the Vessels.

Laxatives, Astringents.] Either of these will be found necessary with regard to the undue Measure of Strength or Weakness in the solid Parts.

From the Premises it appears, that there is no such thing as a general Remedy, which is of Virtue sufficient for removing all these Impediments; but that there are particular Medicines accommodated to each Case.

In our Choice of these Medicines we are directed by the Nature of the Disease, and the general Titles of the Medicines, under the two foregoing Aphorisms.

When we are acquainted with the Age, Sex, Temperament, and Way of Life, of the Patient or wounded Person, and the Diseases which may have preceded, or now attend the Wound, we thence furnish ourselves with Indications of what ought to be done, and by what Remedies. To illustrate the Matter by an Example: If a Person of a close Contexture of the Solids, and an atrabilious Tenacity of Blood, happens to be wounded, the Wound will be dry, and not discharge good Pus; and if it be in the Summer-season, the Patient very hot and thirsty, and makes but little Urine, and that high-coloured, and of a rank Smell, in that Case Decoctions of Avens, Borage, Bugloss, and the like remarkably mollifying and demulcent Herbs in Whey, or pure Water, with an Addition of Syrup of Violets, Juice of Lemons, Rob of Elder, or the like, drank in good Quantities, with an Application of warm Cloths dipt in the like emollient Decoctions to the wounded Part, will in a short time change the State of the Wound, the Dryness will be corrected, the diluted Humours will take their free Course thro' the relaxed Vessels, and the Wound will be happily cicatrized. But if another Person happens to be wounded in the Winter-time, who is of a pale and cold Complexion, and appears all over bloated from a lax Contexture of the Solids, and a mucous Coldness and Inactivity of the Humours, and has besides lived an idle Life, his Wound will appear pale, cold, and somewhat swelled, and will continue in the same State without much Alteration. If the Patient in this Case be treated in the same Manner as the other wounded Person, he would become much worse, both as to his Wound, and the Condition of his whole Body. But if, on the contrary, you treat him with Infusions, or small Decoctions of the Roots of Avens, Masterwort, Elecampane, Angelica, Contrayerva, *Virginian* Snakeweed, and the like, with a moderate Addition of Wine, he will in a few Hours begin to be heated, and to sweat; and the Colour of his Wound will be changed from pale to red, and a new Life, as it were, will return into the flaccid Parts, the lost Substance will be regenerated, and the Wound will be consolidated. If the wounded Person be very hot and feverish, after Venesection administered, Decoctions of Tamarinds, Sorrel, and the like, will be of Service. But where we cannot attain to so clear a Knowledge of the latent Impediment, and the vital Forces are in a pretty firm State, and capable of putting in Motion a large Quantity of such Decoctions, in this Case we exhibit Decoctions of *China* Root, Sarsaparilla, Scorzonera, Skirrets, and the like; for these are Remedies which dilute, attenuate, dissolve without Violence, relax and open the Vessels, and by that means cause a just and equable Circulation, and a plentiful Elimination, by way of Urine and Sweat, of many Corpuscles, which by their Stay would be very injurious to the Body; this is all that can be done in the present Circumstance.

A dry and moderately warm Temperature of the Air, free from putrid Exhalations, and frequently renewed, is always best for Wounds.

When Multitudes of wounded Persons lie sick together in Hospitals, in one Room, the Air is filled with putrid Exhalations

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tions, whence the Sick are very much incommoded, and many of them die, who might otherwiſe have been ſaved; for which Reaſon thoſe Places ought frequently to be aired by opening the Windows, that freſh Air may be admitted, and the putrid Vapours diſſipated. Suffumigations are much recommended for this Purpoſe; but freſh Air is more comfortable to the Patients. But a Want of freſh Air is moſt of all prejudicial in Wounds of the Head, as we are taught by Obſervation. Moreover ſuch a Temperature of the Air is required, as is qualified for chearing and refreſhing the Patient by its mild, and, as it were, vernal Warmth. For a cold Air is always hurtful to Wounds; for the Parts which are ſtript of their Integuments by the Wound, are immediately ſenſible of the Cold, to which they are unaccuſtomed, and are very much incommoded by it. Hence it is that we are told by *Hippocrates*, 5 *Aph.* 20. that "Cold is "biting to Ulcers, hardens the Skin, excites Pain without "Suppuration, and produces Blackneſſes, feveriſh Rigors, Con-"vulſions, and a Tetanos." But beſides a Warmth, a Dryneſs of the Air is, alſo, required, ſince an hot and moiſt Air is very much diſpoſed to Putrefaction; for in ſuch a Seaſon the Fleſh of ſlaughtered Beaſts is ſoon corrupted, and diſſolves into a putrid Sanies. We know indeed how to procure a Temperature of the Air by artificial Means, in what manner we pleaſe, according to the Exigencies of the wounded Patients; for by kindling a good Fire, particularly of aromatic Woods, we diminiſh the Cold of the Air, and correct its Humidity. If the Seaſon be too hot and dry, by ſprinkling the Floor ſeveral times in a Day with cold Water, or ſtrewing the ſame with the green and flouriſhing Branches of the Elder, Lime, or Willow-trees, dipt in Water, we can procure a very grateful Refrigeration of the Air. Such a Temperature of the Air, as the preſent Exigence requires, is demonſtrated by the Thermometer and Hygrometer.

The Belly is to be kept ſoluble by the Uſe of Emollients, Laxatives, and Eccoprotics.

We ſpeak not here of ſuch Medicines as cauſe an Evacuation of the Belly or Inteſtines in a violent manner, for this is not the thing here required; but the Intention to be anſwered is, that the Patient may go to Stool without much forcing and ſtraining himſelf. For we ſee Perſons who diſcharge their hard Fæces with great Difficulty, hold their Breath with ſtrong Efforts, and have their Faces ſtrained and red, and ſometimes even livid. By ſuch Efforts an Hæmorrhage may poſſibly return to the Wound, and thoſe Parts which began to unite in a Coalition be again dilacerated, eſpecially if the Wound be inflicted on the Parts near the Anus. Hence it is prudently ordered, that ſuch Patients as on account of extracting the Stone, or for a Fiſtula in Ano, are to have a Wound inflicted on thoſe Parts, ſhould, ſome Days before the Operation, have their large Inteſtines evacuated by ſome gentle Cathartic and Clyſters, ſo that no Fæces may remain; after which, for ſome time, they are allowed nothing but Broth of Fleſh, ſufficient to ſuſtain Life, but ſcarce leaving any Fæces in the Inteſtines; ſo that after the Operation is performed, they can live for a long time commodiouſly enough without going to Stool. Hence we are told by *Hippocrates*, *Lib.* 1. *de Morb.* that Coſtiveneſs is bad for a wounded Perſon.

The Belly is evacuated without much Straining, if the Fæces be ſoft, and the inteſtinal Tube ſufficiently lubricous to admit an eaſy Deſcent of the Fæces. Hence it is, that, in lean and ſlender Bodies, the Belly is often coſtive; for in ſuch Subjects every thing that is ſoluble in the Fæces is exhauſted by the ſtrong Force of the Inteſtines, whence they become very dry, compact, and hard; and at the ſame time the Inteſtines, for want of being ſufficiently lin'd with a ſoft ſmectic Matter, afford but a difficult Paſſage for the Fæces. For this Reaſon, very fat Broths, very ſoft Greens, emollient Decoctions, and mild expreſſed Oils, by mollifying the Fæces, and lubricating the Paſſages, will anſwer this Intention. The like Subſtances injected in Form of Clyſters have the ſame Effect, and are of particular Service in Adheſions of the hard Fæces to the laſt Inteſtines, or near the *Anus*; for, in that Caſe, they give immediate Relief: Whereas other Exhibitions require a longer Time for their Conveyance to the affected Places. And it is often to be fear'd, that a ſudden *Teneſmus*, or Deſire of going to Stool, being excited, the wounded Perſon will be obliged to ſtrain hard, and make ſtrong Efforts, for the Excretion of the indurated Fæces.

Emollient Remedies, *for the Purpoſe aforeſaid, are*,

1. Fat Broths, of freſh or unſalted Beef.
2. Mollifying Greens boiled in Broth, a Catalogue of which you have under the Article Fibra.
3. Emollient and moiſtening Drinks and Clyſters, ſpecified under the aforeſaid Article.
4. Oils, eſpecially ſuch as are expreſſed and recent, particularly Oil of ſweet Almonds, and Oil of Olives.

Laxatives are almoſt the ſame as Emollients.

After the Exhibition of theſe emollient and lubricating Subſtances, or, as it is often practiſed, in Conjunction with them, are given ſuch Things as, by their gentle *Stimulus*, promote the Excretion of the abdominal Fæces, without diſturbing the Body, or rendering the Excrements liquid: For after taking Purgatives, the Belly is always obſerved to be bound. But ſuch Medicines as are for our Purpoſe, are called *Eccoprotica* [ſee that Article], Eccoprotics, becauſe they only expel the groſs Fæces contained in the Inteſtines.

Eccoprotics *are*,

1. Ripe, Summer, acido-dulcid, pulpous, and ſucculent Fruits; particularly Winter-cherries, Berries of Elder and Dwarf-elder, Figs, all Sorts of Garden-cherries, Cloudberries, Berries of the Stone-bramble, Strawberries, Jujubes, Apricots and Peaches of the common Sort, white and blue Garden-plums, Damaſk Prunes, common Prunes, Prunellas, and red Plums, white, black, and red Currants, Blackberries, white and red Raſpberries, Sebeſtens, Tamarinds, all Kinds of Grapes, Craneberries, and Gooſberries.
2. The recent Juices and Muſts of theſe Fruits.
3. Caſſia, two Ounces; Manna, two Ounces; Tamarinds, two Ounces; Pulp of Tamarinds, two Ounces; Juice of pale Roſes, one Ounce; roſated Aloes, ſix Grains; Raiſins, four Ounces; Galbanum, half a Scruple; Roots of Polypody of the Oak, an Ounce and an half; Rhubarb, a Scruple and an half; Infuſion of Rhubarb, one Dram; Syrup of Marſhmallows, three Ounces; Syrup of Succory with Rhubarb, one Ounce and an half; Syrup of Fumitory, two Ounces; ſolutive Syrup of Roſes, one Ounce and an half; ſimple Syrup of Violets, two Ounces; ſimple Honey diluted in Water, two Ounces; *Pilulæ Ruffi*, ſix Drams.

Whether the Remedies above-mentioned are really *Eccoprotics*, that is, Evacuators merely of the abdominal Fæces, in the ſtrict Senſe of the Word, ſeems a Queſtion; for all of them, exhibited in a large Doſe, purge the Fluids by Stool. Thus the recent Juices of Summer Fruits, and the Muſts made of them, Manna, Caſſia, Honey, Tamarinds, taken in large Quantities, or repeated Doſes, not only cauſe a Diſcharge of the abdominal Fæces, or Contents of the Inteſtines, but moſt effectually ſuſe the Humours, and evacuate them by Stool; and ſuch Medicines are properly called *Cathartics*. The antient Phyſicians made a juſt Diſtinction in this Caſe; for *Aſclepiades* was of Opinion, that *Cathartics* cauſed a Colliquation of the Body [συλλύειν τὸ σῶμα], and then evacuated the colliquated Matter, which exiſted not before. *Galen*, *de Natural. Fac. Lib.* 1. *Cap.* 13. And *Theſſalus*, as appears from his own Words cited by *Galen*, *Lib. adverſus Julian. Cap.* 8. concludes, that Matter was converted into Corruption by the purging Medicine, and then excreted either upwards by Vomit, or downwards by Stool; and proves the ſame by an Inſtance of an Athlete, of a good Habit of Body, in which all things were diſpoſed according to Nature; and yet, after a Cathartic exhibited, the ſame Perſon voided very corrupt Matter by Stool, which doubtleſs in ſo ſound and robuſt a Body, did not exiſt before. *Galen*, who believed that Cathartics attracted things in the ſame State as they were pre-exiſtent in the Body, is very earneſt in his Invectives againſt this Opinion; but his Arguments ſeem not ſatisfactory. Certain it is, that Scammony, given to the ſoundeſt Perſon, fuſes the Blood into a putrid Water, which is evacuated by Stool; and the whole Body may be quite emaciated by its repeated Uſe; ſo that the Paleneſs, the collapſed Veſſels, and the Decay of Strength, are a ſufficient Proof, that there was no Evacuation of corrupt Matter which was pre-exiſtent, but that the good Humours were corrupted by the virulent Force of the Medicine, and diſcharged from the Body.

Since, therefore, all thoſe Medicines which have the Name of *Eccoprotics*, when given in large Quantities, have a cathartic Virtue; and ſince Numbers of Cathartics, exhibited in ſmall Doſes, only irritate, by a gentle Stimulus, in ſuch a manner as to procure an Expulſion of the Fæces contained in the Inteſtines alone, it appears, that this Effect may be obtained, if both the one and the other be exhibited only in ſmall Doſes, ſo as to cauſe no great Diſturbance in the Body, nor induce any conſiderable Alteration in the Humours, but only keep the Belly in a ſoluble State, which is the ſole Intention to be anſwered in this Caſe.

Hippocrates, alſo, carefully diſtinguiſhed an Evacuation of the Fæces alone from Purgation in his Book of *Prognoſtics*, where, after he had treated of the Matter diſcharged by Spu-

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he says, " For whatever in these Places cease not upon Expecto-
" ration, nor a Discharge of the abdominal Fæces, [πρὸς τὴν
" τῆς κοιλίης ἐκκόπρωσιν] nor Phlebotomy, nor Diet, nor Pur-
" gations [φαρμακείας], will be sure to excite a Suppuration."

Sleep is to be procured by Anodynes, moist Food, and Narcotics.

Nature has but one Way to repair the Waste, or Defect, of that very subtile Fluid, I mean the Spirits, and that is, by maintaining only a vital Motion during a total Cessation of animal Motion, or, in other Words, by a quiet Sleep. When a Person is fatigued with hard Labour, or spent with Meditation, and makes a Repast on very wholsome Food, unless at the same time he refreshes his Body with gentle Sleep, he will find himself oppressed with a Dulness of Spirits, and an Heaviness of Body. But after a good and quiet Rest by Sleep, what an Agility of Body, and what a Serenity of Mind, immediately succeeds! and what a Clearness and Perspicuity of Thought and Apprehension does the Student experience, when he addresses himself to his Morning Meditations, after a full and quiet Night's Sleep! Hence, though by an Ingestion of Meat and Drink, we are able to restore what, by the established Laws of Life and Health, is daily lost from the Body, yet Sleep is the principal Time for the Accomplishment of this End, and for rendering the Aliment fit to succeed in the Room of the lost Substance. For a stronger Respiration with a more potent and equable Action of the Heart and Arteries in the time of Sleep, perfects and disposes all the Humours in such a manner as to render them extremely well qualified for restoring what was lost, whilst the changing, applying, and consolidating Causes, act with so great Liberty. This was perhaps meant by *Hippocrates*, *de Insomniis*, where he says, " For the Soul is waking, and
" since it is employed in ministering Supplies to the Body, has
" no Leisure for itself, but furnishes Recruits for every Part of
" the Body, particularly the Senses of Seeing, Hearing, Feel-
" ing; for Walking, Acting, and all bodily Motions are accom-
" panied with Cogitation; but is not employ'd about itself.
" And when the Body is at Rest, the Soul is in Motion; and
" extending itself into the several Parts of the Body, has the
" Government of them as of its own House, and discharges
" itself all the Actions of the Body." Hence it appears how pernicious long Watching is to wounded Persons, and how necessary Sleep is to the Regeneration of the lost Substance, and the Consolidation of the Wound. If Sleep, therefore, be wanting, it is to be procured by means of Anodynes which remove Pain; for Watchings, especially in wounded Persons, proceed from Molestation by Pain, though anxious Cares, or violent Passions of the Mind, may produce the same Effect. But Remedies which remove Pain operate three different Ways; for they act either by removing the corporeal Cause which makes such an Alteration in the Body, as to occasion in the Mind that troublesome Perception called Pain; or by effecting such a Disposition in the Part of the Body to which the dolorific Cause is apply'd, that it can either not at all, or but weakly be affected by it; or, in the last place, though the Cause of the Pain be not removed, and the Condition of the Part affected remains unaltered, they operate, however, by taking off the Sense of the Pain. Thus, for Instance, when a Part under an Inflammation is pained, the Cause of the Pain is an inflammatory Blood, which, on account of its Denseness, is incapacitated for Circulation, and sticks in the Vessels, and by the Impetus of the vital Liquid presses with great Force upon the obstructed Vessels. Every thing, therefore, which is capable of rendering the impacted Blood moveable in such a manner as that it may flow with a free Current through the obstructed Vessels, will remove the Pain by removing the Cause. But if by an Application of very soft Cataplasms, or Fomentations, the solid Parts are relaxed to such a Degree, as easily to give Way to the distending Causes without Danger of a Rupture, though there remains the same inflammatory Denseness of the Blood, and the same protrusive Impetus of the vital Liquid, yet the Pain will either cease, or at least be very much diminished. And, in the last Case, when neither of the former Effects is produced, but the Cause of the Pain remains, and the Condition of the Part affected continues the same, yet let there be exhibited a Grain or two of Opium to a Patient not accustomed to it, and all Sense of the Pain will cease, tho' the exciting Cause continues to act. Hence all Remedies which one or other of these three Ways are the Means of removing Pain, ought to be called *Anodynes*. But established Custom has now appropriated that Name to such Medicines as either remove the Cause of Pain, or cause such an Alteration in the pained Part that it shall not be affected, or at least in a very slight measure, by the same Cause. And as for those Remedies which only take away the Sense of Pain, without affecting any Mutation either in the Cause of the Pain, or in the Part affected, they are called *Narcotics*, that is, *Stupefactives*. In former times, however, stupefactive Remedies were called *Anodynes*; for *Cœlius Aurelianus*, treating of the Tooth-ach, says, that " Many of the antient Physicians at the time of the Paroxysm,
" prescribed the Application of such Medicines as the *Greeks*
" called *Anodynes*, and which we may call *Removers of the Pain*,
" which, as they are to be used in the Night-time, remove the
" Sense of Pain, but not the Pain itself." And *Celsus*, in *Lib.* 5. *Cap.* 25. tells us, that " Those Medicines are called
" *Anodynes*, which, by Sleep, alleviate Pain; but that it is
" wrong ever to use such Medicines, unless absolute Neces-
" sity calls for it."

Besides, the Causes of Pain in a Wound are, the Distraction of the Parts as yet cohering, whilst the Lips of the Wound are retracted; the Tension of the nervous Fibres from a Retraction of large divided Trunks, which, also, draw the small lateral Nerves; or, a Distraction of the Fibres which remain entire, when tense Nerves are half divided or punctured: An inflammatory Tumor of the Bottom and Lips of the Wounds, and the Acrimony of the Humours discharged into the Cavity of the Wound, and irritating the raw Parts. Anodynes, therefore, are all those Medicines which by diluting, relaxing, moistening, correcting, or obtunding Acrimony, and resolving distending Tumors, remove the Cause of the Pain; or so change the Part affected, as that it is not by the Cause of the Pain so stimulated, as to excite in the Mind the ungrateful Perception called *Pain*.

ANODYNES *are*,

1. Diluents.
2. Laxatives.
3. Moistening Substances; for all which, see FIBRA.
4. Correctors of Acrimony.
5. Such as resolve distending Tumors. See FIBRA.

As for a moistening Diet; all farinaceous Seeds bruised may, by a strong Pressure, yield a large Quantity of Oil; and the same Seeds, when triturated with Water, yield Emulsions, in which the mild Quality of the Oil remains, without any Dread of a rancid Corruption. From these, therefore, or Decoctions of such farinaceous Seeds with Water, Milk, or Broth, we have a moistening Diet in which Water predominates, but so adheres to the farinaceous Lentor of the Seeds, that it does not easily slip out of the Body, but remains long in it. Such Food, long persisted in, alleviates the most obstinate Pains, by relaxing all the Solids, and rendering the Quality of all the Humours mild.

As for Narcotics; if the Pain neither remits, nor yields to the preceding Medicines, or is so intense that it cannot be borne without great Injury, till the Cause of the Pain is remov'd; then there are such Medicines as, without removing the Cause of the Pain, destroy the Sense of it in the Mind: For the highest Cause of Pain may be lodg'd in the Body, without any Sense of Pain in the Mind; as is obvious in apoplectic Patients, who are not sensible of the Application of live Fire to any Part of their Bodies. There are many Substances of a narcotic Quality, such as Henbane, Nightshade, Dutroy, and many others; but the Use of all these is suspected, especially if exhibited internally; because they greatly disturb the Operations of the Mind. The Use of Poppies is, by numberless Experiments, found to be far safer. As the *European* Poppies are of small Efficacy, a pretty large Dose of them must be exhibited. The Juice of the *Asiatic* Poppy, known in the Shops by the Name of *Opium*, if exhibited prudently, and in a due Quantity, excellently sooths Pain; which, however, if its Cause is not remov'd, will return a few Hours after, when the Efficacy of the Medicine ceases. *Galen*, in *Method. Medend. Lib.* 12. *Cap.* 8. tells us, that *Opium* proves hurtful, by its cold Intemperature. Many others have embraced the same Opinion, and for that Reason have either used it with great Terror, mixing it with the hottest Substances, in order to correct this formidable Coldness, or absolutely condemn'd it as a deleterious Substance. The Person who has once tasted the hot Bitterness of *Opium*, will easily believe that a cold Quality is unjustly ascrib'd to *Opium*; but this excellent Medicine has long been branded with this Mark of Infamy; so that many Physicians have not only rejected, but even abhorred the Use of it. A great Part of the Fame and Reputation *Paracelsus* acquir'd was owing to the surprising Cures he perform'd by his *Laudanum*. The Inhabitants of *Asia*, especially such of them as are by their Religion debarred from the Use of Wine, daily use large Quantities of *Opium*, without any Injury: They, also, who most condemn *Opium*, use it, without any Dread, in the grand officinal Compositions, as the *Theriaca*, Mithridate, and *Philonium*, in all of

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of which there is a large Quantity of *Opium:* Others, with a ſordid View to Intereſt, ſecretly give *Opium* diſguiſed with other Medicines, that they may ſeem, by other *Arcanums*, to do that which is owing to *Opium* alone. It is true, moſt Phyſicians were once of Opinion, that the medicinal Efficacy of Mithridate, the *Theriaca*, and other Compoſitions of a like Nature, did not depend on the concurring Force of all the Ingredients, but that, from a certain Union of them all, a new and highly-efficacious Medicine was produced: For which Reaſon, they recommended old *Theriaca*, and preferred it to that which was newly prepared. Tho' this Opinion ſeems pretty ſpecious, yet any Perſon, who conſiders the Matter, will eaſily perceive, that there is an hot Quality in theſe grand Compoſitions, but that their principal Virtues depend upon *Opium*. The Mithridate of *Damocrates*, older than any of the reſt, conſiſted of ſo many different Ingredients, that *Pliny*, in *Lib.* 29. *Cap.* 1. ſaid, "Some of the Gods muſt have been Author of ſuch a Fraud, "ſince the Craft of Man could never have invented ſuch a "Medicine, which diſcovers a ridiculous Oſtentation of Art, "and a monſtrous Pretence to Science." But *Andromachus*, who liv'd under *Nero*, and was one of his principal Phyſicians, retain'd moſt of the Ingredients in the Mithridate of *Damocrates*, and added ſome others, eſpecially the Fleſh of Vipers, and thus made a new Antidote, which, from that Circumſtance, he call'd *Theriaca*. He wrote a ſmall *Greek* Poem, dedicated to *Nero*, in which he gives a Deſcription of his *Theriaca*, which he calls γαλήνη, that is, *Tranquil*. Nor is this to be wonder'd at; for the cunning *Andromachus* added a third Part more of *Opium* to his *Theriaca:* So that the Mithridate of *Damocrates* began to loſe its Credit, and the *Theriaca* alone was highly extol'd, and has ever ſince retain'd its Reputation: A ſure Proof that *Opium* was not only daily uſed, but, alſo, produc'd ſalutary Effects, even in the Times when it was condemn'd almoſt by all Phyſicians.

All the officinal Preparations from the Flowers, Leaves, and Juice of the Poppy, may be ſo exhibited, as only gently to obtund the Senſes, or, by a larger Doſe, to induce a profound Sleep, or, by an unſkilful Uſe of them, a mortal Apoplexy. It often happens, that a ſmall Doſe of them alleviates Pain without inducing Sleep, but a gentle Eaſe of Body and Mind is produced, which cannot be deſcrib'd, even by thoſe who have experienc'd it. But this Medicine, tho' exhibited in the ſame Quantity, does not produce the ſame Effects on all Patients. Whilſt, therefore, a Phyſician is ignorant of the particular Conſtitution of the Patient, it is expedient to diſſolve a few Grains of *Opium* in ſome proper Vehicle, and give it in Spoonfuls every Quarter of an Hour, till the Senſe of Pain is alleviated: But the ſame Quantity of *Opium* exhibited all at once, produces a greater Effect than when it is given in ſeparate Doſes. They who have often uſed this Remedy, are no longer reliev'd by it, unleſs its Quantity is gradually augmented: And it is certain, from undeniable Obſervations, that by gradually augmenting the Doſe, ſome Perſons have, without any Injury, daily taken incredible Quantities of *Opium*. Narcotics are always attended with this Diſadvantage, that they render the Patient coſtive; but this Symptom is eaſily remov'd by a gentle Clyſter: Such Medicines, however, externally applied to the Part affected, afford great Relief. Hence Cataplaſms and Fomentations of emollient Herbs, with the Addition of the Leaves of Henbane and Garden-poppies, are of great Uſe.

Narcotics are ſuch Medicines as blunt the Quickneſs of the Senſes; and are either,

1. The moſt mild Paregorics; ſuch as the bruiſed Seeds of white Poppies, two Ounces;
The Syrup of white Poppy-heads, one Ounce and an half;
The Syrup of *Diacodium*, one Ounce and an half; and
The Syrup of wild Poppy-flowers, three Ounces:
Of all which various ſafe Medicines may be prepar'd. Thus,

For a mild Draught.

Take of the diſtilled Water of wild Poppy-flowers, three Ounces; of the diſtilled Water of Bean-flowers, one Ounce; of the diſtilled Waters of Peony and Elder-flowers, each one Ounce and an half; of the diſtilled Water of the Flowers of the Lime-tree, one Ounce; and of the Syrup of wild Poppy-flowers, one Ounce and an half: Mix for a Draught.

The ſame, ſomewhat more hypnotic.

To the former Mixture, inſtead of the Syrup of wild Poppy-flowers, add the ſame Quantity of the Syrup of *Diacodium*, or of the Syrup of white Poppy-heads.

A mild Emulſion may be prepared thus:

Take of ſweet Almonds, Pine-kernels, and the Seeds of white Poppies, each one Ounce; and of the diſtilled Water of wild Poppy-flowers, a ſufficient Quantity: Make into an Emulſion; with ten Ounces of which mix one Ounce of the Syrup of wild Poppy-flowers.

The ſame, a little more paregoric.

To the former Emulſion add, inſtead of the Syrup of wild Poppy-flowers, the ſame Quantity of the Syrup of *Diacodium*, or of the Syrup of white Poppy-heads. Or,

2. Stronger Narcotics: Thus,

For PILLS.

Take of the pureſt *Opium*, two Grains: Make into three Pills; of which let the Patient take one for a Doſe, taking a ſecond an Hour after, if the firſt produces no Effect; and the third after that, if the two firſt prove ineffectual.

For a POWDER.

Take of the pureſt *Opium*, a little dry, two Grains; and of red Coral, and Pearl-ſugar, each half a Dram: Mix into a Powder, to be divided into three Doſes; to be exhibited in the ſame manner with the preceding Pills.

For a PRESERVE.

Take of the preceding Powder of *Opium*, one Doſe; and of Marmalade of Quinces, one Dram: Make into a Bolus; to be uſed and repeated in the ſame manner with the preceding Preparation.

For DROPS.

Take of the beſt *Opium* dried, one Dram; and of rectified Spirit of Wine, one Ounce: Make into a Tincture; the Doſe of which may be thirty Drops, in two Ounces of diſtilled Baum-water, and half an Ounce of the Syrup of wild Poppy-flowers. Or,

Take of *Opium*, a little dried, one Dram; and of the Spirit of Vinegar, one Ounce: Make into a Tincture; the Doſe of which may be thirty Drops, in two Ounces of the diſtilled Water of wild Poppy-flowers, and half an Ounce of the Syrup of wild Poppy-flowers.

A hot MIXTURE.

Take of the Tincture of *Opium*, prepar'd with rectified Spirit of Wine, ſeventy Drops; of the Syrup of white Poppies, ſix Drams; and of the diſtilled Waters of Citron and Orange-peel, and Cinnamon, each two Ounces: Make into a Mixture; of which let the Patient take one Spoonful every Half-hour, till the Pain is allay'd.

A cold MIXTURE.

Take of the Tincture of *Opium*, prepar'd with Spirit of Vinegar, eighty Drops; of the Syrup of Mulberries, ſix Drams; and of the diſtilled Waters of Borage, and wild Poppies, each three Ounces: Make into a Mixture; to be uſed, in the ſame manner with the former.

An Emulſion may be prepared thus:

Take of the bruiſed Seeds of white Poppies, two Ounces: With Barley-water reduce to an Emulſion; with ten Ounces of which mix of the Syrup of *Diacodium*, one Ounce and an half; of the Tincture of *Opium* prepared with rectified Spirit of Wine, twenty Drops; of diſtilled Cinnamon-water, two Drams; and of diſtilled Citron-peel-water, ten Drams: Of this Preparation let the Patient take an Ounce and an half every Half-hour, till the Pain begins to be alleviated.

An Epithem may be prepared thus:

Take of the Tincture of *Opium*, prepared with Spirit of Vinegar, three Drams; of the diſtilled Waters of Elder and Roſe-flowers, each three Ounces; of the Vinegars of Elder and of Roſes, each half an Ounce: Mix all together; to be applied with Cloths to both Temples.

It is of great Service, in Caſes of this Nature, ſo to apply Demulcents to the Part affected, as to remove the Cauſe which deprives the Patient of Sleep, which is the Pain in the Part affected. This Intention is anſwered by the following Preparations, applied tepid, and preſerved in the ſame State of Tepidity, till the Pain is alleviated. A Cataplaſm may be prepar'd thus:

Take of the recent Leaves of Garden-poppies, one Handful; of the recent Leaves of black Henbane, half an Handful; and of the recent Leaves of Marſhmallows, four Handfuls:

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Handfuls: Boil in new Milk, and towards the End add of the Meal of Linſeed, one Ounce; and of the recent expreſſed Oil of Linſeed, two Ounces: Make into a Cataplaſm.

A Fomentation may be thus prepar'd:

Take of the thin expreſſed Juice from the preceding Cataplaſm, three Pints: With which mix half a Dram of pure *Opium*, for a Fomentation.

The Patient's Mind is to be kept ſerene, Venery is to be avoided, and Reſt enjoin'd.

As violent Commotions of Mind are capable of inducing ſtrange Changes on the Body, and diſturbing all its Functions, they muſt always prove hurtful to wounded Patients: But a calm Serenity of Mind, undiſturb'd either by the Conſciouſneſs of Guilt, or the Dread of Want, and ſupported by the chearing Hopes of future Proſperity, is of great Service to wounded Perſons: An Exceſs of Joy is equally prejudicial with other Commotions of Mind. *Sanctorius*, and others who have wrote on the ſtatical Part of Medicine, have obſerv'd, that Chearfulneſs renders the Body highly perſpirable, and ſenſibly lighter than at other Times: But this denotes a free Circulation thro' all the Veſſels, and an expeditious Exerciſe of all the Functions, that is, perfect Health.

Venery is to be avoided; nothing more throws the nervous Syſtem into Commotions, than the Uſe of Venery: Hence it is, by the unanimous Conſent of Phyſicians, accounted prejudicial to wounded Patients; and the fatal Event has been prov'd, by melancholy Inſtances. Hence, in the Diet of wounded Perſons, all thoſe Things are to be avoided, which may ſtimulate to Venery; ſuch as Oyſters, Crabs, and Lobſters.

That Reſt is abſolutely neceſſary to wounded Perſons, is ſufficiently obvious: For by Motion thoſe tender Veſſels which are regenerated in the Wound, under the Appearance of a ſoft *Mucus*, are deſtroy'd.

There are two Circumſtances requiſite to the Regeneration of loſt Subſtance in a Wound; that is, that a laudable Fluid ſhould, in a due Quantity, and with a proper *Impetus*, be convey'd to the Wound; and that the Veſſels, receiving the Humours convey'd to it, ſhould only receive and tranſmit ſuch Liquids as, in a State of Health, ought to be convey'd thro' them. Hitherto we have treated principally of thoſe Things which ought to be obſerv'd in the Diet, and the Uſe of Remedies, that a good Diſpoſition of the Fluids, convey'd to the Wound, may be produc'd. We now come to treat of that Diſpoſition of the tranſmitting Veſſels in a Wound, which is requiſite to the Reſtitution of the loſt Subſtance, and the Union of the ſeparated Parts.

That the Canals may be kept in a due Condition, and the Fluids in the Wound preſerv'd from corrupting, and by that means hindering the Actions above-mentioned, the Part is to be defended from the Air; the Wound is to be fomented with mild balſamic Vulneraries, fill'd with Lint for the ſake of an equable Compreſſion, and treated with ſuch Medicines as are friendly to the Nerves.

After the Infliction of a Wound, the Extremities of the divided Veſſels are retracted, leſſen'd, and reſiſt the Fluids forc'd thro' them: Then an Inflammation begins to be form'd in the Bottom and Lips of the Wound; this is ſucceeded by a Generation of Pus; and whilſt this happens, the Extremities of the open Veſſels are gradually protruded from the Bottom of the Wound upwards, and from all its Circumference towards the Centre; and theſe Extremities reſemble a tender *Mucus*, of which is regenerated the Subſtance loſt in the Wound. It is therefore obvious, that, to this Purpoſe, it is requiſite theſe pulpous Veſſels ſhould retain a due Softneſs; and that the Humours, diſcharg'd from the Veſſels into the Cavity of the Wound, ſhould be of a mild Quality. For if, by a ſpontaneous Degeneracy, they ſhould acquire an Acrimony, the pulpous Subſtance growing again, will be deſtroy'd. Both Intentions are in ſome meaſure anſwer'd by preventing a free Acceſs of the Air: For it is certain, from Experience, that the Parts of Animals may, for a very long time, be preſerv'd from Corruption, if they are carefully kept from all Acceſs of the Air; whereas they often become putrid in a few Days, when expoſed to the free Air. *Boyle*, in his Treatiſe of the Uſefulneſs of Experimental Philoſophy, tells us, that the roaſted Fleſh of Goats and Fowls, cut in ſmall Pieces, immerſed in melted Butter, and kept in a cloſe Veſſel, were preſerv'd free from Corruption, and retain'd their natural Taſte for above ſix Months, in a Ship returning from the *Eaſt-Indies*, tho' the Air was intenſely hot. Beſides, the Air, acting freely on a Wound, dries and deſtroys the tender Extremities of the growing Veſſels; ſo that theſe, becoming mortified, *Sordes* are produc'd in a Wound, before pure; and theſe *Sordes* muſt be ſeparated, before a Conſolidation can happen. For this Reaſon, many have imagin'd that ſomething of a poiſonous Quality was lodg'd in the Air, when they ſaw that ſo great Changes were produc'd in Wounds by its free Acceſs to them. For this Reaſon, alſo, the moſt ſkilful Surgeons order Wounds to be dreſſed as ſeldom as poſſible.

The whole Surface of the Wound ought, therefore, to be ſo cover'd, as to be defended from the Air: This is beſt done by vulnerary Balſams, eſpecially of the native kind; which, by their thick Unctuoſity, adhere to the Parts, and contain in themſelves a mild Aromatic, and at the ſame time an Acid, which reſiſts Putrefaction, but which is, however, ſo ſheath'd up in a pinguious Subſtance, as not to prove prejudicial by its Acrimony: For by a chymical Analyſis all native Balſams yield an acid Liquor, and a fragrant, thin, aromatic Oil; whilſt a tough Reſin remains in the Bottom of the Veſſel. When theſe native Balſams, gently warm'd, that they may ſpread equably, are in a ſmall Quantity applied to the Surface of a Wound, they cover the tender Veſſels, prevent the Acceſs of the Air, hinder the drying of the Parts, and preſerve the extravaſated Humours from Putrefaction. Hence it is obvious, that only a ſmall Quantity of theſe Balſams is requiſite; and that thoſe Surgeons act prepoſterouſly, who incumber Wounds with too large a Quantity of them: For they are heterogeneous Bodies in a Wound, which, by the Interpoſition of their Bulk, hinder the Concretion of the Parts. Moſt native and artificial Balſams act almoſt in the ſame manner.

The mild vulnerary Balſams for pure Wounds, are,

1. The native Balſams of *Capivi* and *Gilead*, Liquidamber, that of *Mecha*, *Opobalſam*, the Palm Balſam, thoſe of *Peru* and *Tolu*, and that of Turpentine.

2. Simple artificial Balſams, ſuch as rectified Oil of Wax, the thick Oils of Turpentine, Linſeed, St. John's-wort, Roſes, Nightſhade, ſweet-ſcented Trefoil, and freſh Butter.

3. Artificial compound Balſams. Thus,

Take of the Flowers of Sulphur, four Drams; and of the Oil of Linſeed, or Olives, four Ounces: Boil over a gentle Fire, till the Sulphur is totally diſſolv'd.

Take of the beſt *Gum Elemi*, cut ſmall, one Part: Diſſolve over a gentle Fire, and add an equal Quantity of pure native *Venice* Turpentine: Paſs the Solution thro' a linen Cloth, and add two Parts of the Marrow of Beef, boil'd, and ſeparated from its Membranes. This, like the *Linimentum Arcæi*, is an univerſal Balſam.

Take of the Wood of red Sanders, one Pound; and of common Water, four Pints: Boil for two Hours; ſtrain and inſpiſſate to the Conſiſtence of a thick Extract, with which mix two Drams of Dragon's-blood reduc'd to a fine Powder. Mix a little of this with the preceding Balſam, till it acquires an agreeable red Colour; and this is the red Balſam.

Take of the Oil of Olives, one Pound and an half; and of the Wood of red Sanders, half an Ounce: Boil gently, till the Oil is of a deep red Colour; then ſtrain it boiling-hot thro' a linen Cloth, and diſſolve in it of yellow Wax, one Pound; and of the beſt Turpentine, one Pound and an half. This reſembles the Balſam of *Lucatellus*, and is render'd ſtill better by the Addition of one Ounce of *Peruvian* Balſam.

All theſe are to be dropt warm into the Wound, which is to be cover'd with a Pledget dipt in the Balſam; and the Dreſſings are to be renew'd every twenty-four Hours.

We are, alſo, to conſider, that the equable Covering of the Skin is wanting in the Wound: Hence the pulpous growing Veſſels, cover'd with a ſoft Balſam, and fomented with a moiſt Warmth, will eaſily yield to the diſtending Liquids, will be augmented in all their Dimenſions, and, being dilated, will admit foreign Humours. Hence the whole Surface of the Wound will degenerate into a flocculent Subſtance call'd fungous Fleſh. This will be prevented, if ſuch a Degree of Preſſure is applied to the Wound as is ſufficient to ſupply the Defect of the Skin which before compreſſed it: This may be done by filling the Cavity of the Wound with ſoft and dry Lint, ſlightly anointed with a mild Balſam, in that Part where it touches the Surface of the Wound; then let the Lint be ſo ſecur'd, by a Plaiſter or Bandage, as by a gentle Preſſure to prevent the exceſſive Dilatation of the Veſſels; guarding, at the ſame time, againſt too ſtrong a Preſſure, which might deſtroy the tender Veſſels, or ſuffocate the Motion of the vital Humours thro' the Parts. By

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ſuch a gentle Preſſure the *Membrana Adipoſa*, every-where in the adjacent Parts confin'd by the Skin, is hinder'd from riſing in the Wound, where it would degenerate very ſoon.

Plaiſters are of Uſe to retain theſe Things in Wounds, and are hardly of any other Service than that produc'd by their ſafe tenacious Quality.

This will not eaſily be believ'd by thoſe Surgeons who generally aſcribe the happy Cure of Wounds to their Plaiſters; and in this Caſe almoſt every one pretends to an *Arcanum* of his own: But if the before-enumerated Conditions of a Wound are preſent, it is cur'd, whatever Plaiſter is applied, provided it contains nothing in itſelf which may prove hurtful by diſturbing the begun Work of Nature, or by removing the Conditions requiſite to the Regeneration of the loſt Subſtance, by its exceſſive *Stimulus*, or any other Cauſe. That it is ſo, is obvious, from this, that altho' every Surgeon has his favourite Plaiſter, known only to himſelf, yet they are all equally ſucceſsful in their Cures, if the other Remedies have been in the ſame manner applied to the Wound. It is true, Plaiſters, applied to the Skin, may, beſides their requiſite Tenacity, contain ſuch Ingredients, as being mov'd, and render'd active by the Heat of the Body, may inſinuate themſelves into the bibulous Veſſels, and by that means conſiderably affect not only the Part to which they are applied, but, alſo, the whole Body: Such as bliſtering Plaiſters, mercurial Plaiſters, and many others. But ſuch Plaiſters we do not here conſider, ſince, in this Caſe, it is only requiſite the Dreſſings applied to the Wound ſhould be retain'd in their Place; for which Intention Tenacity alone is ſufficient. Hence Plaiſters, prepar'd of Lead, or its various Calxes, boil'd in Oil to a due Degree of Tenacity, are of great Uſe; becauſe they are eaſily borne by thoſe whoſe Skins are inflam'd by the Application of almoſt any pinguious Subſtance. Such are the red Lead Plaiſter, *Diapalma* Plaiſter, the *Emplaſtrum Diapompholygos*, the Ceruſs Plaiſter, the red defenſive Plaiſter of *Vigo*, and many others, which in this Caſe produce the ſame Effect.

The red defenſive Plaiſter is prepar'd thus:

Take of the Oil of Roſes, and white Wax, each ſix Ounces; of *Armenian* Bole, and Dragon's Blood, each an Ounce and an half; and of the Powder of red Roſes, half an Ounce: Mix all together over a Fire, and agitate till cold.

The ſame End is, alſo, anſwer'd by the *Emplaſtrum Defenſivum Cæruleum*, and the red Lead Plaiſter.

The Fluids convey'd to the Wound, and extravaſated in it, the half-mortified Fibres, and the obſtructed and tumefied Veſſels, produce in the Wound Pus, Ichor, Sordes, and fungous Fleſh.

At the renewing of each Dreſſing, the Wound is to be carefully view'd, in order to obſerve whether there is any Change induc'd on its Surface, which may hinder the Regeneration of the loſt Subſtance, and the Conſolidation of the Wound: For if all the Parts are red, clean, and equably moiſt, we know that the Veſſels and Humours have the due Conditions requiſite to the Cure: But if the Wound is dry, or ſordid, we certainly know, that it cannot be conſolidated till theſe Sordes are remov'd, and the Humours equably convey'd thro' the Veſſels in every Point of the Surface of the Wound. But theſe Impediments to the Conſolidation ariſe either from the extravaſated Fluids degenerating into a foreign Nature, or from an Obſtruction and Tumefaction of the Veſſels, or from both theſe Cauſes together: For many Parts in a Wound may be partially divided, and yet adhere to the ſound Parts, tho' they are totally depriv'd of the vital Influx of the Fluids. Hence they are mortified, and ought to be ſeparated from the ſound Parts; for ſo long as they remain there, they, like an heterogeneous Body, hinder the Conſolidation of the Wound: But after the Orifices of the Veſſels, on the Surface of a Wound, begin to diſcharge their Humours, theſe collected Humours, by their Stagnation, the Heat of the Place, and the Diſſipation of their thinner Parts, are chang'd into a mild unctuous Liquid call'd Pus; which, tho' always a good Sign, as we have already obſerv'd, may yet prove hurtful, when too long left in the Wound; for then it is corrupted, and becomes acrid: But if the Surface of the Wound is moiſt with a thin Ichor, but not with a laudable Pus, there will never be a good Conſolidation ſo long as this Symptom is preſent. But this is underſtood, if ſuch a thin Sanies appears in the Wound after it has been cover'd with a proper Dreſſing for twelve Hours, or more: For if, an Hour after all the Pus is remov'd, the Wound is uncover'd, no Pus will appear, but a far thinner Liquid; which, however, when left there, will be converted into Pus. But by Ichor we here mean that thin Liquid, generally of an acrid Quality, which, by its Continuance in the Wound, will never be converted into a laudable Pus, but always become more and more acrid. But ſuch an Ichor is either form'd from an Extravaſation of ſuch Fluids as cannot be converted into laudable Pus; or from Pus too long left in the Wound: For in this Caſe it is again attenuated, and becomes acrid. For when a ſuppurated Part of the Body is, at a proper time, laid open with a Lancet, a laudable and thick Pus is diſcharg'd: But if ſuch a Part remains too long before it is open'd, the contain'd Pus is again attenuated, and, upon opening the Place, a thin Sanies is diſcharg'd, inſtead of a laudable Pus.

Sordes are form'd in a Wound, either by the half-divided Parts, or the mortified Parts, as yet not ſeparated from ſuch as are ſound, or by the Veſſels dilated and diſtended with a ſtagnant Liquor; in which Caſe, the Surface of the Wound does not appear pure and red, but white, almoſt like Bacon. And unleſs theſe *Sordes* are ſeparated from the live ſubjacent Parts, they are chang'd into a yellow, and ſometimes a brown Colour, and denote the worſe Degeneracy, the more their Colour recedes from white, and inclines to brown.

Fungous Fleſh is principally form'd, when the Surface of the Wound is not compreſſed with a Force equal to that with which the entire Skin compreſſes the adjacent Parts: Hence the *Membrana Adipoſa* riſing, ſwells, and ſoon degenerates into fungous Fleſh, as is already obſerv'd; and eſpecially if, by a Fever, the *Impetus*, and Velocity of the Circulation, are increaſed: For, in this Caſe, the dilated Veſſels riſe, if not prevented by a due Compreſſion. For we ſee that almoſt every Part of the Body, when the equable Preſſure upon it is remov'd, riſes into a Protuberance, which makes leſs Reſiſtance than the Part in its natural State did. Thus in Wounds of the Head, or after the Application of the Trepan, when a Part of the *Cranium* is remov'd, and at the ſame time the *Dura Mater* divided, the Subſtance of the Brain riſes in ſurpriſing *Funguſes*. If the Integuments of the Abdomen are divided by a Wound, and the *Peritoneum* at the ſame time is left entire, unleſs the Part is ſecur'd by a proper Bandage, ſoon after the Contents of the Abdomen, being preſſed into the leſs-reſiſting Place, and the *Peritoneum* being dilated, will produce an *Hernia*. The Origin, therefore, of fungous Fleſh, in a Wound, is the natural Conſequence of the Diminution of the equable Compreſſion.

So long as all theſe are preſent in a Wound, they will hinder its Conſolidation; for they are heterogeneous, and conſequently ought to be remov'd: And how this is done, is ſhewn in the next Aphoriſm.

Theſe Things are generally remov'd by the Help of Digeſtives, Abſtergents, Corroſives, Exſiccants, and often by Compreſſion.

When ſkilful Surgeons ſee the Surface of a Wound ſo degenerating that it is not every-where red and moiſt, but white, yellow, or brown *Sordes* appear, they know that the beſt Balſams are not ſufficient: Nature, indeed, alone, by a benign Suppuration, endeavours to ſeparate theſe corrupted Parts; but the ſubjacent live Veſſels, incumber'd with theſe adhering *Sordes*, are not able eaſily to remove them: Hence theſe half-mortified Parts, adhering long to them, are corrupted, and degenerate into a worſe Quality: Then they apply ſuch Remedies as mollify theſe ſordid Parts, but at the ſame time reſolve them by their ſaponaceous Quality, and by their gentle *Stimulus* irritate the ſubjacent live Parts, that there may be a more eaſy Separation of thoſe *Sordes* from the vital Veſſels to which they adhere. Theſe are call'd Digeſtives, a chirurgical Word, taken from the Digeſtion of the Stomach. For this Purpoſe, Surgeons take any native Balſam, ſuch as Turpentine, for Inſtance; this they triturate with the Yolk of an Egg, ſo as to ſubdue the oleous Tenacity of the Balſam to ſuch a Degree, that it may be diluted in Water; then they add a certain Quantity of Honey, which, by its ſaponaceous Quality, divides and reſolves Concretions. Such a Medicine, laid upon a Pledget, they apply to the ſordid Surface of the Wound: The *Sordes*, thus ſoften'd and reſolv'd by the ſaponaceous Quality of the Medicine, are, by the Formation of a laudable Pus, ſeparated from the ſound Parts, and the Wound is render'd pure. *Hippocrates*, in *Tract. de Affectionibus*, beautifully repreſents the Uſe of ſuch Medicines in impure Wounds, in the following manner: "Pinguious Subſtances are improper for Parts that are either inflam'd, ſordid, or inclining to Putrefaction; for cooling Medicines are adapted to inflam'd Parts; and for ſuch as are ſordid, and inclining to Putrefaction, acrid Remedies, which cleanſe by exciting a certain *Stimulus*, are moſt conducive." And in his Treatiſe *de Locis in Homine*, he informs us, that the laudable Humours convey'd through the Veſſels to the Wound, remove the *Sordes*, ſoften'd, and render'd capable of a more

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more eaſy Separation by ſuch Medicines: His Wordsare, "If an "Ulcer is to be clos'd or filled, theParts are to be rendered tumid; "for the Fleſh regenerated by the nutritive Juices in Con- "junction with the Aſſiſtance of Nature, propels and forces "out that ſordid Fleſh, which by the Medicine was diſpoſed "for a Separation."

A Digeſtive may be thus prepared:

Take of Native Turpentine, one Ounce; and one Yolk of an Egg: Mix intimately; and then incorporate with half an Ounce of Honey of Roſes.

As for Abſtergents; theſe are ſomewhat more acrid than Digeſtives. If, therefore, to Digeſtives we add a little Aloes, Myrrh, and *Venice* Soap, we have an Abſtergent, which only differs in Degree from a Digeſtive, ſince it is ſomewhat more ſtimulating.

As for Corroſives; theſe are far more acrid than the preceding Medicines, and mortify the Parts they touch, ſince they induce a Cruſt on the Surface of the Wound to which they are applied; and under this Cruſt the vital Veſſels by their Motion, and the Fluids conveyed to them, gradually ſeparate and expel the mortified Parts. All theſe Medicines, indeed, totally deprive the Sordes, adhering to the live Veſſels, of a vital Influx of the Fluids; but by this means alone we can never obtain a Separation of the mortified Part, which Nature alone produces by a benign Suppuration. But Corroſives are of this Uſe, that in a Moment, and, as it were, by a ſingle Touch, they prevent the Influx of the Humours into the obſtructed and dilated Veſſels which produce the Sordes in Wounds, and which obſtinately reſiſt the Efficacy of milder Abſtergents. Hence they induce a kind of gangrenous Cruſt on the Surface of the Wound, to which Cruſt the ſofteſt Digeſtives are now-and-then to be applied, that the Eſchars formed by the Corroſives, being ſoftened by their means, may, by the Action of the live ſubjacent Veſſels, be ſeparated from the ſound Parts to which they adhere; and thus the Surface of the Wound be rendered pure. Hence it is obvious, that the prudent and rare Uſe of Corroſives is requiſite, unleſs after the Eſchars are fallen off, the Wound ſtill appears impure. Thoſe Surgeons are, therefore, in the Wrong, who believe that a Wound can be cleanſed by Corroſives alone, ſince they only hinder the Increaſe of the Sordes, by converting them into a mortified Eſchar, which ought afterwards to be ſoftened and ſeparated by a Suppuration. Beſides, by a too frequent Application of Corroſives, the pure and live Parts are affected in the ſame manner, by which means the Sordes are increaſed, not diminiſhed. *Galen*, in *Methodo Medend. Lib.* 3. *Cap.* 6. furniſhes us with a beautiful Inſtance of this Kind.

Corroſives are divided into various Claſſes, according to their different Degrees of Acrimony. Thoſe are moſt efficacious which conſiſt of an highly ſtrong Acid united with a metallic Glebe. Among theſe the moſt uſeful is the Lunar Cauſtic; for it conſiſts of an highly concentrated Spirit of Nitre, and the pureſt Silver mutually united; and as this Corroſive is of a ſolid Conſtence, and may be moulded into any Form, it may be applied more ſafely than almoſt any other Corroſive; for other Corroſives applied to a Wound act equally on all its Surfaces; but this may be applied to each Point in it, and by a momentaneous Touch produces an Eſchar. Hence the Effect of this Corroſive is greater or leſs, according as it is applied for a longer or ſhorter time; and as often all the Parts of the Surface of a Wound are not covered with equally thick Sordes; hence they do not require an equally ſtrong Action of a Corroſive. And this Caution is beſt of all obſerved by the Application of the Lunar Cauſtic.

Firſtly, The mildeſt Corroſives are burnt Alum, the Aſhes of green Wood burnt, *Mercurius Dulcis*, white precipitate Mercury, and White Vitriol.

Secondly, Stronger Corroſives are red precipitate Mercury, Colchar of Vitriol, and *Vigo*'s Troches of red Lead. And

Thirdly, The ſtrongeſt Corroſives are Butter of Antimony, the *Lapis Infernalis*, corroſive Sublimate Mercury, Oil of Tartar *per Deliquium*, and Oil of Vitriol. The ſtronger Corroſives are, the more prudently they ought to be uſed.

The following may ſerve as a Formula:

Take of Aloes, and Myrrh, each one Dram; of the Salt of Tartar, two Drams; and of common Water, two Ounces: Mix and boil them to an Elixir.

But the Eſchars formed by Corroſives, are to be ſoftened by the Application of the mildeſt Remedies, that they may be ſoon ſeparated from the ſubjacent live Parts; and when they are fallen off, it appears, whether the repeated Uſe of Corroſives is neceſſary, or whether the Wound may be rendered pure by mild Digeſtives, and Abſtergents.

As for Exſiccant Medicines; when a Wound is moiſtened with a large Quantity of too thin an Humour, then ſuch Medicines as abſorb the Liquids, and corroborate the Veſſels, are highly beneficial. Of this Kind are the earthy bibulous Subſtances reduced to an impalpable Powder, leſt by the Roughneſs of their Parts, they ſhould irritate the raw Wound, ſuch as the Aſhes of burned Bones, Maſtich, Olibanum, and Sarcocolla, which not only abſorb the Fluids, but, alſo, corroborate the Veſſels.

An Exſiccant may be prepared thus:

Take of Verdegriſe, five Ounces; of crude Alum, one Ounce; of ſtrong Vinegar, ſeven Ounces; and of pure Honey, fourteen Ounces: Boil up into an Ointment.

The following Subſtances are, alſo, exſiccant: Alum gently calcined, Quick-lime-water, Blood-ſtone, Maſtich, Dragon's-blood, and Gum Sarcocol.

As for Compreſſion; this Method is principally expedient when Sordes are formed by the dilated Veſſels degenerating into a fungous Excreſcence: for after ſuch a ſpongious Fleſh is deſtroy'd by Corroſives, a ſimilar Excreſcence will ſoon be produced afreſh, unleſs the Luxuriancy of the Parts is prevented by a due Compreſſion, as is obvious from the ſo frequent Regeneration of fungous Excreſcences of the Brain. For this Reaſon, ſkilful Surgeons often fill the Wound with nothing but dry Lint, which they ſecure by a moderately tight Bandage; or they ſometimes, alſo, uſe a thick Pledget, one Side of which is applied to the Surface of the Wound, whilſt the ſuperior Part, being covered with ſome vulnerary Balſam, prevents the Acceſs of the Air.

Theſe things are to be uſed till a white, mild, viſcid, ſmooth, equal, and inodorous Pus is formed; under which the Sordes are abſterged, the contuſed and tumid Parts conſumed, and thoſe corrupted by the Air ſeparated, the Cavities filled, and the divided Parts conglutinated.

All the Medicines, mentioned above may check the Veſſels when too eaſily diſtended, and convert the half-mortified Parts, together with a Part of the live Veſſels, into a gangrenous Eſchar; but they cannot ſeparate this Cruſt from the ſubjacent live Parts; for this Nature alone performs by means of a Suppuration; nor is there any other Way in which it can be done. But the Sign of a Suppuration is the Generation of Pus, as is already obſerved. When, therefore, a laudable Pus appears in a Wound, we know that the Veſſels are ſo diſpoſed as to tranſmit their proper Fluids, and that theſe Fluids have the Properties requiſite to Health. We have already ſpoke of the things requiſite, that the Humours conveyed to the Wound, ſhould be of a laudable Kind. But here we only treat of thoſe Impediments which are lodged in the Wound itſelf, and hinder the Regeneration of the loſt Subſtance, and the due Conſolidation of the ſeparated Parts; for ſo long as theſe Sordes are lodged in the Wound, they will hinder the Cure as much as any other foreign Body would. But when by proper Medicines laudable Pus is formed in a Wound, we know, that by this means all that may be ſeparated from the live Veſſels which could hinder the Cure of the Wound. But this Pus ought not only to have the Conditions here ſpecified, but ought to be of the ſame Kind, and in an equal Quantity in every Point of the Surface of the Wound; for it often happens, that the whole Surface of the Wound is not covered with Sordes, but only a certain Part of it. In this Caſe the pure Parts will yield a laudable Pus, and the others will diſcharge a Liquid of a different Quality. The Pus will not, therefore, be every where of the ſame Kind, but various in different Parts of the Wound. And in this Caſe, the ſordid Places alone require the Application of the Medicines ſpecified above, but which are improper for the pure and live Parts of the Wound.

Under this Pus, whatever half-lacerated Subſtance adheres to the live Parts, and all the Extremities of the obſtructed Veſſels, together with the obſtructing Matter, are diſengaged and ſeparated, and the pervious Veſſels freely tranſmit the Humours. Hence all the Tumor of the Lips of the Wound ariſing from an Obſtruction of the free Circulation of the Humours, begins to diſappear; the Parts that were contuſed, or corrupted by the Admiſſion of the Air, ſeparate; the tender Veſſels, covered with a laudable Pus, as with a mild and natural Balſam, are elongated, meet thoſe adjacent to them, are united with them, and form a new Texture of Veſſels, by which the loſt Subſtance is regenerated in the Wound, and the ſeparated Parts united.

The Whole, therefore, that Art can do, is to remove the Impedi-

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Impediments which hinder the Generation of a laudable Pus in the Wound, and Nature alone is ſufficient for the reſt.

Then ſuch things as generate Fleſh, are to be applied, which are mild Digeſtives.

Theſe Remedies are by Surgeons called *Sarcotics*, though, ſtrictly ſpeaking, there is only one *Sarcotic*, which is Nature herſelf, reſtoring the loſt Subſtance under the mild Pus. This, as is already obſerved, is beautifully deſcribed by *Galen*, when he ſays, that the Matter of the Fleſh to be generated is laudable Blood; and that the Producer or Author of ſuch Fleſh is Nature. All other Remedies, to which an incarning Quality is aſcribed, only remove Impediments, and afford Aſſiſtance; and they are none elſe than ſuch as by a due Preſſure confine the Veſſels, and procure the ſame Diſpoſition of them, which they generally have in a State of Health. Theſe Effects they produce by preventing the Acceſs of the Air, by cheriſhing the Parts, and ſo confining the extravaſated Humours, that they may by a due Continuance be converted into laudable Pus.

For a Wound, when pure, is injured by the Application of every acrid Subſtance, ſince by this means the tender Veſſels beginning to grow, are deſtroyed; and when theſe are mortified, new Sordes are produced from them, which muſt be again ſeparated. Hence, in this Caſe, mild vulnerary Balſams are only proper: But we know, that the Cure of a pure Wound proceeds well if there is a reddiſh Colour in the Wound; for too red a Colour denotes an Inflammation; if there is a due Quantity of laudable Pus; if the Bottom and Lips of the Wound grow equably; if nothing is raiſed above the equable Surface; if the Lips of the Wound are not higher than the adjacent Skin, but appear equal and not corroded; and, if in the Lips of the Wound a pale-bluiſh Colour begins to appear, which indicates that a Cicatrix is forming.

Sarcotic, or incarning Medicines, are the vulnerary Balſams.

Take of yellow Wax, black Pitch, and common Roſin, each half a Pound; and of Linſeed-oil, two Pounds: Mix all duly together. This is the Baſilicon, or Tetrapharmacum: Or,

Take of yellow Wax, ſix Ounces; of the Oil of the Flowers of St. John's-wort obtained by Infuſion, two Pounds and an half; to which, when fuſed over a gentle Fire, add of dried Reſin of the Pine triturated, and of the beſt common Colophony, each one Ounce and an half; when they are melted, take them off the Fire, and ſtraining them through a Linen Cloth, add two Ounces of the beſt *Venice* Turpentine, ſtirring them with a Stick. When they begin to thicken, ſprinkle into them of the beſt Maſtich, and Olibanum, each one Ounce; and of Saffron finely triturated, one Dram. This is the *Unguentum Aureum*.

But if when thoſe things are done which anſwer the firſt Intention, it appears, that none of the Subſtance of the Body is taken away, the Lips are to be united in ſuch a manner, that the Parts naturally united, may again be applied to each other, and retained in that Situation.

The general Intentions to be purſued in the Cure of every Wound are already enumerated, and it has been obſerved, that all heterogeneous Bodies, whether left in the Wound by the wounding Inſtrument, or form'd by a Corruption of the Fluids or Solids, ought to be removed, becauſe they hinder the Union of the ſeparated Parts. It has, alſo, been ſhewn how, by what means, and with what Cautions, theſe foreign Bodies ought to be removed. If, therefore, after theſe Meaſures are taken, it appears, that ſome of the Subſtance of the Parts is loſt, that is firſt to be reſtored, before there can be an Union of the ſeparated Parts. And how this Reſtitution of the loſt Subſtance is to be obtain'd, has been, alſo, ſhewn. But if there is only a ſimple Diviſion of Parts before cohering, made by the wounding Cauſe, without any Loſs of Subſtance, or any foreign Body left between the ſeparated Parts, the Intention of Cure is, of all others, the moſt ſimple; and that is, ſo to apply the ſpontaneouſly receding Lips of the Wound to each other, and to retain them in that Situation, that there may be ſuch a Situation of all the Parts, as there was before the Diviſion. The Union of the Parts thus diſpoſed, is very ſoon performed by Nature alone, even in the largeſt Wounds, if the now mentioned Conditions are preſent. In this Caſe, the beſt vulnerary Balſams interpoſed between the Lips of the Wound, are injurious, becauſe they are heterogeneous Subſtances, which can never unite with the Parts of the Body. But the Application of the Parts ſeparated, to each other, is only requiſite, without the Interpoſition of any other Remedy.

How eaſily wounded Parts grow, not only to thoſe with which they were naturally united, but, alſo, to thoſe with which they never before cohered, may be ſeen in ſome memorable Inſtances recorded by *Hildanus*, *Cent.* 6. *Obſ.* 7. *Schenckius*, *Obſerv. Medicin. Lib.* 6. *Obſ.* 23. and *Celſus*, *Lib.* 5. *Cap.* 28. If, therefore, this Concretion is ſo eaſy in Parts which never before naturally cohered, it is much more to be expected, when Parts before united again become contiguous.

The firſt of theſe is done,

Firſt, By procuring to the Part the ſame Situation it had whilſt in a State of Reſt, before it was wounded.

Secondly, By a gentle and equable Compreſſion of the Parts to each other, that they may be contiguous to each other in every Part of their Surface, and remain at Reſt.

1. It is of great Uſe to know the Situation of the Parts in a Man at Reſt, and eſpecially in an healthy Man when ſleeping; for then all voluntary Motion ceaſes, and the Parts of the Body left to themſelves, are diſpoſed in their moſt natural Situation. It will then appear, that no Articulation of the Body is extended, but that they are all gently bended; for in a ſound Perſon, when ſleeping, the Fingers are never extended, nor are the Legs ever ſtretched out in a ſtrait Line with the Os Femoris, but all the Articulations are gently bended. The ſame holds true with reſpect to the reſt; for the Muſcles which bend the Articulations, are generally found ſtronger than the Extenſors; for which Reaſon the Articulations, when at Reſt, always appear gently inflected. This, alſo, appears in a perfect Palſy, in which Caſe all voluntary Motion ceaſes; for if the whole Arm is paralytic, the Fingers are always found inflected, and remain in that Condition; ſo that after the Palſey is cured, it is often impoſſible to extend the Fingers, becauſe the Ligaments of the Articulations are become rigid, and the Flexor Muſcles not elongated for ſo long a time, are by their proper Contractility ſhortened. Hence the Extenſors of the Fingers cannot ſurmount theſe Obſtacles. *Hippocrates*, who carefully obſerv'd the natural State of the Parts of the Body, in order to know how far in Diſeaſes it receded from it, and to diſtinguiſh their various Degrees of Violence, has in his *Prognoſtics*, when treating of the Manner in which the Patient lies, beautifully taken notice of this in the following manner: "The Patient ſhould "be found by the Phyſician lying on his Right or Left Side, "with his Arms, Legs, and Neck, a little inflected, and his "whole Body moiſt; for in this manner many ſound and "healthy Perſons lie." When this is neglected in the Cure of Wounds, the Parts often grow together in another Situation than they had naturally, or an unſeemly Deformity ariſes from the diſtracted Parts, or the natural Motion of the Parts is often much depraved. A memorable Inſtance of this is found in *Hildanus*, *Cent.* 1. *Obſerv. Chirurg. Obſ.* 83.

In the firſt Dreſſing of a Wound this is carefully to be attended to; for the raw Parts, when united, are ſon conglutinated. Hence the Error committed cannot b corrected, without a cruel Diviſion of the concreted Parts.

2. The Parts of the Body ſeparated by a Woud, by their proper Contractility, gradually recede more and mo from each other, as is already obſerved. But that they may b again agglutinated, it is requiſite they ſhould remain in Contct. Hence by an artificial Preſſure, that Force is to be ſurmunted, by which they endeavour to recede from each other. ut it is in a particular manner to be obſerved, that this Union the Parts ought to be made in the whole Surface of the Woud; for if the Lips of a deep Wound are contiguous, whilſt he ſubjacent Parts are at a Diſtance from each other, there ill remain in the Wound a Cavity, in which the extravaſated Humours will be collected, and make the Wound degenerate int a ſinuous Ulcer. This is performed by the Application of Compreſſes, and a proper Bandage, ſo compreſſing the adjacent arts, that the Lips of the Wound may be contiguous in the Ittom, as well as in the Skin itſelf. But it is requiſite this Compreſſion ſhould be moderate, leſt there ſhould be too great a Anguſtation of the Veſſels in the compreſſed Parts, by which means an Inflammation, and all its Conſequences, may be procced. It is, alſo, requiſite there ſhould be a perfect Reſt of the wounded Part. Hence the wounded Limb is to be ſecured in ſuch manner as that it may be immoveable; for often during Sleep or thro' the Careleſneſs of the Patient, the Motion of the wounded Member changes the Situation of the Parts, by whi means the Lips of the Wound are ſeparated, and the concred Parts dilacerated. Hence the happy Event of the Cure is deoyed.

The Parts are retained in Union,

Firſt, By adheſive indented Plaiſters, with Loops or Eyes at their Extremities, applied on both Sides of the Wound, and

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and drawn together by Threads; these are used in long transverse Wounds of the Skin, and the more lax Parts.

According to the Diversity of Wounds, various Methods are requisite to keep the contiguous Parts in a due Union, and this is done,

1. By what Surgeons call the *dry Suture*, in order to distinguish it from Sutures made by the Needle; they take some adhesive Plaister, capable of adhering strongly to the sound Skin. For this Purpose they use common Glue, Ising-glass, or any other Substance of a proper Tenacity. This they spread upon strong Linen Cloths which will not easily yield; these, when gently warm'd, that they may adhere the more strongly, they apply on both Sides at some Distance from the Lips of the Wound. Then at Pleasure they draw together these Plaisters by Threads affixed to them, and the Skin adhering to these Plaisters, is on both Sides so drawn together, that the Lips of the Wound may become contiguous; and as these Plaisters do not cover the Wound, the Surgeon can commodiously see whether the united Lips of the Wound have their natural Situation; and if they deviate from it, this Deviation may be easily corrected. As the Bulk of Wounds varies, so a different Number and Figure of these Plaisters are requisite. In small Wounds, whose Lips are at a small Distance from each other, such digitated Plaisters are sufficient without Loops. But in large Wounds, whose Lips recede much from each other, it is safer to apply Plaisters which may be drawn together by Cords fixed in their Loops. See *Tab.* XXV. with the Explications; and the Article SUTURA.

But it is sufficiently obvious, that only the Skin is drawn together by these Plaisters, whilst, if the Wound is deep, the subjacent Fat being highly moveable and lax, will not follow the Skin. Hence such Plaisters are generally only of Use, where the Skin alone is divided, and the Parts being sufficiently lax, can easily follow it. Hence they are principally of Use in slight Wounds of the Face, and Integuments of the Head; as, also, in slight Wounds of any other Parts of the Body.

When the Lips of the Wound are united by an adhesive Plaister, we must apply a Pledget dipt in some vulnerary Balsam, in order to prevent the Access of the Air. And leaving the Plaisters on, we are daily to view the external Surface of the Wound, in order to discover whether every thing is right.

Adhesive Plaisters may be thus prepared:

Take of the Diapalma Plaister, a sufficient Quantity; and a little Olive-oil: Dissolve together for a Plaister.

Or,

Take of common Pitch, a sufficient Quantity: Spread on a Linen Cloth, and apply.

Secondly, The Parts are retained in Contact by Bandages, and the Application of Compresses, that the divided Parts being equably applied to each other, may remain in that State, and be united, which is easily obtained by a proper Method of Compression. And this Method is proper in longitudinal Wounds.

Superficial Wounds do not require this, but only deep Wounds, in which it is requisite, that the Parts in the Bottom of the Wound should be as contiguous as the external Surface, before a good Cure can be obtained. In the right Application of these, the Skill and Dexterity of the Surgeon are principally known. Bandages rolled round any Part, equably compress the Surface thereof. But by the Application of Compresses, the Compression of the Bandage, though remaining the same, may act more upon some Places than others. By this means we can determine and regulate the Degree of Compression, so as that all the Points of the Surface of the Wound may become contiguous. But it is sufficiently obvious, that this Method is of no Use, unless the Parts adjacent to the Wound are soft, and consequently capable of yielding: If, for Instance, a deep Wound is longitudinally inflicted in the Thigh, by the Application of Compresses to both Sides, and the Use of a proper Bandage, the soft Parts may be equably compressed, so that the divided Parts in the whole Surface of the Wound may again be rendered contiguous. In other less fleshy Places, this is not so easily obtained. But in such Places rarely Wounds happen so deep as to require this. *Hippocrates*, in his Treatise *de Medici Officina*, when treating of the various Uses of Dressings, seems to point at this Method in the following manner: "But when any Parts are divided, they are to be contracted, "but the Contraction is to be made at a certain Distance from "the Lips of the Wound, and the Compression is to be made "gradually, at first very small, then greater, and its greatest "Degree is to be terminated by the mutual Contact of the "Parts divided."

Though this Method is, of all others, most successfully used in longitudinal Wounds, yet it may, also, be sometimes used to Advantage in transverse Wounds of the Parts. A memorable Instance of this is found in *Mem. de l'Acad. des Sciences, l'An.* 1722.

Thirdly, The Parts are retained in Contact by Sutures made with Needles of Steel, which in small Wounds may be strait, but in large Wounds crooked, with a sharp Point, and waxed Thread in their Eyes. These Needles are to be introduced at a sufficient Distance from the Wound, and are to pass to its Bottom in such a manner, that the Point may emerge at an equal Distance on the opposite Lip of the Wound. Then taking the Needle quite through, the Thread is to be so drawn as to retain the Lips of the Wound in Contact; and after the Application of a slight Compress, a Knot is to be tied on it. This Method is to be repeated as often as the Length of the Wound requires, beginning either at the Middle, or one of the Ends of the Wound. Then the Lips are to be anointed with some proper Balsam, and applying slight Compresses over the Knots, the Whole is to be covered with a Plaister.

This Union of the Parts separated by a Wound, is called the *bloody*, or *true Suture*, since the Conjunction of the Parts by adhesive Plaisters hardly deserves the Name of a *Suture*. In this Case it is particularly requisite, that the Union should be made with as little Pain, and Irritation of the Parts, as possibly may be; for when such an Operation is roughly performed, it is often succeeded by a violent Inflammation, which hinders the Union of the Parts brought into Contact. For this Purpose, pretty strong Steel Needles are requisite, though not too brittle, lest they should break. A conical Figure in these Needles would be prejudicial, because the gradually augmented Thickness would make them pass with Difficulty through the Parts. Hence such are used, whose anterior Part being prismatical with sharp Edges, easily passes through the Flesh, and makes Way for the rest of the Needle which is conical or cylindrical. In Wounds which are not deep, strait Needles of this Kind are sufficient; but in deep Wounds, crooked ones are necessary, that being protruded to the Bottom of the Wound, the Points may the more easily emerge. A different Curvature of these Needles is requisite, according to the different Deepness of Wounds. Unless the Eyes of these Needles had on each Side a Groove for containing the Thread, whilst the Needle was drawing through their Eyes, the Threads protuberating on each Side could not follow, without a Dilaceration of the Parts. The Thread is to be waxed, that it may easily pass through the Parts, and not imbibe the Humours; for tumefied Threads would compress the Parts through which they pass: Besides, the Humours reserb'd by the Thread, becoming acrid by their Continuance, and the Heat of the Place, may irritate the Parts. The Needle with a Thread in it is to be entered at a sufficient Distance from the Wound, lest there should afterwards be a Dilaceration of the Parts, if it was entered too near the Wound. These Needles ought to be thrust to the Bottom of the Wound, and then protruded upwards, that they may again emerge at an equal Distance on the opposite Side of the Wound; for unless they penetrate to the Bottom of the Wound, the superior Parts will be brought together, whilst the inferior will remain at a Distance, and form a Cavity in which the extravasated Humours being corrupted by their Stagnation, will of the pure Wound form a fistulous Ulcer. Hence the Parts united must again be divided.

When the Threads are passed through, by a gentle Compression of the Hands, by which, as *Celsus*, in *Lib.* 5. *Cap.* 26. expresses it, "the Skin, as it were, spontaneously follows its "Guide," the Lips of the Wound are to be rendered contiguous, and retained in that Union by drawing the Threads together. But in order to avoid Pain, and the Dilaceration of the Parts as much as possible, Compresses, especially of waxed Linen, lest by imbibing the Humours they should prove injurious, are to be applied before the Knots are tied. According as the Length of the Wound is greater, or its Figure more or less angular, more or fewer of such Sutures are required; for if the Stitches, as *Celsus* in the Place before quoted, informs us, "are at too "great a Distance from each other, they do not retain the "Parts in Contact; but if they are too near each other, they "excite an intense Pain, because the oftener the Needle passes "through the Parts, the more of them are galled by the "Thread, and the greater Inflammations arise, especially in "the Summer." A Pledget dipt in a mild vulnerary Balsam is laid upon the Wound. Then by a proper Bandage, or the Application of a Plaister, the whole Apparatus is retained in its due Situation.

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If a violent Inflammation, or an intenſe Pain, do not ariſe, the Wound is to be left in this Situation for two or three Days; then removing the Bandage, or Plaiſter, we are to obſerve, whether from the Smell any Corruption is formed by the extravaſated Humours, and if it is ſo, the Pledget is to be cautiouſly removed, and another dipt in the like Balſam applied; or a few Drops of the Balſam may be dropt upon the old Pledget, ſo that it may be ſtill left on the Wound. When it appears, that the Lips of the Wound are grown ſufficiently firmly together, the Threads are gently and prudently to be drawn, in order to know, whether they may be commodiouſly taken out; and this, for the moſt part, is very eaſily done; and the ſmall Wounds left are ſoon filled up.

But if a violent Inflammation, and intenſe Pain, and an exceſſive Tenſion of the Parts ſucceed the Suture, it is better to cut it again, and cure the Wound without Suture; for unleſs this is done, a Train of terrible Symptoms will ſucceed; and when it is too late, force the Surgeon to do that, which if it had been ſeaſonably done, might have proved more beneficial.

The various Kinds of Sutures, and the different Methods of performing them, are deſcribed by the Authors who have wrote on chirurgical Operations, and under the Article SUTURA.

Theſe Sutures are proper in Wounds that are recent and not bloody; but, however, without any violent Hæmorrhage; in ſimple Wounds, without any Contuſion, or Fracture of the Bones; full, that is, without any Loſs of Subſtance, tranſverſe, oblique, or angular Wounds.

But they are prejudicial in Wounds attended with any conſiderable Hæmorrhage, old, ſanious, purulent, ſordid, contuſed Wounds, thoſe with Loſs of Subſtance, ſuch as are covered with Cruſts, ſuch as are dangerous in conſequence of a Wound of ſome large Veſſels, ſuch as are very deep, ſuch as are greatly inflamed, ſuch as are poiſoned, and ſuch as are inflicted in Parts which neceſſarily move.

In this Aphoriſm is determined for what Wounds Sutures are beneficial, and for what they are prejudicial.

They are proper, then, for recent bloody Wounds: For if the Wound has been inflicted for ſome time, and eſpecially if there has been a free Acceſs of the Air to it, the Extremities of the Veſſels in the Surface of the Wound will be mortified. Hence they muſt be ſeparated from the live Parts by a Suppuration, nor can they grow together; ſo that it would be to no Purpoſe to make an Union by Suture.

They are proper in Wounds not accompanied with great Hæmorrhages: Becauſe the extravaſated Blood will diſtract the Lips brought together by Suture; hence a Dilaceration, Pain, an Inflammation, and all its Conſequences, will be produced.

They are proper in ſimple Wounds: That is, Wounds in which there is no Contuſion, or at leaſt a very inconſiderable one. Hence *Hippocrates*, in *Tract. de Ulceribus*, informs us, that Wounds made with a ſharp Inſtrument may be cured without Suppuration; but if a Contuſion is preſent, they are to be ſo treated as to bring on a Suppuration as ſoon as poſſible; for it is neceſſary the contuſed Fleſh ſhould become putrid, and be converted into Pus.

They are proper in full Wounds: That is, Wounds in which there is only a Diviſion of the Coheſion without any Loſs of Subſtance; for if any Part is taken away by the Wound, the ſeparated Parts cannot be rendered contiguous without diſtracting them from their natural Situation. Hence ſuch a violent drawing together of the Parts will always be ſucceeded by an unſeemly Cicatrix, and an Injury of the Functions.

They are proper in pure Wounds: That is, Wounds in which nothing of an heterogeneous Nature is left by the wounding Cauſe, in which there are neither Sordes, grumous Concretions of Blood, nor fungous Fleſh; for all theſe muſt be ſeparated and eliminated from the Wound before a Conſolidation can be expected.

Sutures are, alſo, proper in tranſverſe, oblique, and angular Wounds: Becauſe in theſe Caſes, neither adheſive Plaiſters, nor artificial Application of Bandages and Compreſſes, are ſufficient to render the Parts contiguous, and retain them in Union.

But Sutures are prejudicial in Wounds where there is a large Hæmorrhage: Unſkilful Surgeons, whilſt without any Diſtinction they unite all Wounds by Suture, often do a great deal of Harm; for what Advantage is it to unite ſeparated Parts, when after they are united, they cannot grow together; or when the extravaſated Humours, retained by the Lips of the Wound, muſt afterwards be evacuated by cutting the Suture? A ſhameful Inſtance of this Kind is given by *Paré*, in *Lib.* 10. *Cap.* 32. Unleſs, therefore, the whole Surface of the Wound is pure and ſound, and no Subſtance loſt, Sutures will always be injurious. Beſides, if a Wound is inflicted in a Part of the Body, through which large Blood-veſſels or conſiderable Nerves run, nobody will dare to force a Needle deep into ſuch a Part, except one, who being ignorant of Anatomy, is not appriſed of the Danger. There is the ſame Danger when the Wound is too deep, becauſe the Needle may eaſily hurt the Tendons, and membranous Parts; and when theſe are injured, violent Symptoms generally ſucceed. Beſides, when a Wound is very dry, the divided Parts cannot be ſo brought together, as to be contiguous in all the Points of their Surface, unleſs the Threads paſſed through the Parts, are ſtrongly draw'd together. Hence a Dilaceration, and violent Inflammation, are greatly to be dreaded. If an Inflammation has ſeized the wounded Part, and if it is roughly treated by Suture, the Inflammation will frequently be ſo increaſed as to bring on a Gangrene, and the obſtructed Extremities of the inflamed Veſſels, together with the obſtructing Matter, muſt, by a mild Suppuration, be reſolved and ſeparated, before the Surface of the Wound can be pure and fit for Union.

If the wounding Inſtrument is infected with Poiſon, ſo as to produce anomalous, malignant, and virulent Symptoms, unleſs a particular Antidote, capable of deſtroying the Force of the Poiſon, is known, the whole Hope of a Cure conſiſts in increaſing the Afflux of the Humours to the wounded Part by Suction, or the Application of Cupping-glaſſes, and thus eliminating the virulent Matter; or by the actual Cautery, the infected Part is in a Moment to be deſtroyed, leſt the Infection ſhould be communicated to the reſt of the Body. It is, therefore, ſufficiently obvious, that Suture retains the virulent Matter of the Wound, which ought to have been expelled with all poſſible Expedition.

It is, alſo, ſufficiently evident, that an abſolute Reſt of the Parts, united by Suture, is requiſite; for if theſe Parts are moved, the ſame will happen as if the Threads paſſed thro' them were continually drawn. Hence a perpetual Irritation, Pain, Inflammation, and all their Conſequences, will happen. We can check all thoſe Motions which depend on the Will; but thoſe Motions which are abſolutely neceſſary to the Continuation of Life, will always continue; and this is the Reaſon, why Wounds of the Thorax do not admit of Suture, eſpecially if they are inflicted on the convex Surface of the Ribs; for at every Inſpiration the Breaſt being dilated, the united Parts will be diſtracted with the moſt intenſe Pain. For this Reaſon, alſo, when Surgeons by Suture unite Wounds of the Abdomen, leſt the Viſcera ſhould be expreſſed through the Wound, they ſo ſecure the Abdomen by Swaths, that the Patient reſpires almoſt without moving it. The Raſhneſs, therefore, and Imprudence of thoſe Surgeons, who indiſcriminately ſtitch up every Wound like a Piece of torn Cloth, are greatly to be condemned.

Fourthly, The Parts are retained in Contact by a Needle paſſed through the Lips of the Wound, and a Thread ſo wrapt about it as to hinder them from receding from each other, but keep them united. This Method is proper in large and gaping Wounds of the pendulous Parts of the Body.

The former Suture was performed by Thread paſſed through the Holes made by the Needle, and then bringing the Lips of the Wound together by a drawing of the Threads. But in this Method, the Needle is not taken out of the Parts perforated, but left in them, and then a Thread is on both Sides ſo wrapt about, that the Lips of the Wound perforated by the Needle, and brought together, may remain contiguous. This Method was principally uſed in the Cure of the Hare-lip, that is, when that Part of the ſuperior Lip, which is under the Noſe, is divided. But afterwards Surgeons, with great Succeſs, ventured to unite large and gaping Wounds of the pendulous Parts of the Body by the ſame Suture: But becauſe in the Hare-lip the Parts are divided from the Birth of the Patient, hence the callous Surface is on both Sides cut off with a Pair of Sciſſars, and in the ſuperior Angle a ſlight Wound is, alſo, made with the Sciſſars, that the Parts to be united may acquire the Nature of a freſh Wound; for if any thing of a callous Nature is left, there will never be a laudable Union of the Parts there. Then when the Lips of the Wound are duly applied to each other, the Needle is entered at the Diſtance of four Lines from the Wound, and forced thro' the Middle of the Subſtance of the Lips, till on the oppoſite Side the Needle emerges at the like Diſtance from the Wound. Thus the Needle is left in the Wound, and the Parts are retained in Union, by wrapping a Thread croſs-ways about it. According to the different Largeneſs of Wounds, more or fewer of theſe Needles are uſed, that in every Point the ſeparated Parts may be rendered perfectly contiguous. But leſt the ſharp Points of the Needles left in the Wound ſhould hurt the Patient, they are to be cut off by the Sciſſars, and ſmall Pieces of Sponge are to be laid under the Extremities of the Needles, becauſe

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cauſe theſe accommodate themſelves far better to the Figure of the Parts than Compreſſes. But that ſuch Needles may be paſſed through the Parts expeditiouſly, and without Vacillation, they are fixed in an Handle, becauſe by the Fingers of the Surgeon alone they cannot be ſo ſurely convey'd throught the Parts. Beſides, in order to avoid thoſe Misfortunes which might ariſe from the ſharp Extremities of the Needles remaining, (for hard Steel cannot be cut by Sciſſars without great Force, ſo that by this Concuſſion the Situation of the united Parts may be changed) Surgeons uſe Steel Needles, but whoſe poſterior Parts are made of pure Silver: Then paſſing the Needles through the Parts, they leave the Silver Part in the Wound, cutting off the Steel Part, together with a certain Portion of the Silver which is cut with a far leſs Force than Steel. The ſame Operation is, alſo, excellently performed by pretty large Steel Needles, which can be firmly held by the Fingers alone, and whoſe cloven Tops contain Silver Pins blunt at both Ends, which are left in the Wound, and ſecured by Threads paſſed about them. See *Garengeot, Traité des Operations de Chrirurgie, Tom.* 3.

When the united Parts are firmly grown together, theſe Pins are to be taken out, and the Wounds left by them are eaſily conſolidated.

The laſt Intention is anſwered by taking care, that the Parts correſpond to each other juſt in the manner they did in Health; and that they are thus retained in ſuch a manner as not to be too much preſſed, nor too much relaxed, by avoiding all burning, ſtyptic, and aſtringent Applications, but eſpecially by taking care, that the Preſſure be equal on all the Parts of the Wound.

All theſe Ends are obtained by doing as is above directed, and then applying mild deſiccative Medicines; and, laſtly, by waſhing the Cicatrix with ſpirituous Liquors.

We have already enumerated the four general Intentions of Cure in Wounds; and having conſidered the firſt three, we now come to treat of the fourth and laſt, which is, after having reſtored the loſt Subſtance, and united the Parts ſeparated by the wounding Cauſe, to induce a Cicatrix as like to the natural Skin as poſſible; for if there is only a ſimple Diviſion of the Parts made by a very ſharp Inſtrument, and the divided Parts are immediately united in their natural Situation, they will ſo grow together, as that no Mark of the inflicted Wound will be left; and in this Caſe the Wound is cured without a Cicatrix; for a Cicatrix after a perfect Cure of a Wound, is that Mark by which the Part of the Integument where the Wound was, is diſtinguiſhed from the adjacent Skin. The moſt perfect Cure, therefore, of a Wound is, when no Mark of it remains. But when this cannot be obtained, the Beauty of the Cure conſiſts in rendering this Mark as like as poſſible to the adjacent Skin; for when by the wounding Cauſe, or a Suppuration ſucceeding the Wound, any Part of the Subſtance of the Body is loſt, ſomething new will be generated in its ſtead, and this new Subſtance will never have abſolutely the ſame Qualities with that which was loſt. Hence it may be diſtinguiſhed from the adjacent Parts.

The Beauty of a Cicatrix depends principally on the three following Circumſtances:

1. If the Cure is ſuch, that the united Parts are in the ſame Situation they had before the Wound was inflicted.

2. If the Cicatrix does not riſe beyond the equable Surface of the adjacent Skin. And,

3. If the Cicatrix is not hollow.

The firſt is obtain'd by taking care that the Lips of the Wound, by means of adheſive Plaiſters, Suture, or proper Bandage, may correſpond to each other as in Health. The ſecond is obtain'd, if, by a moderate Preſſure, the Defect of the confining Skin is ſupplied, leſt the Veſſels, depriv'd of this Covering, being diſtended by their Liquids, ſhould riſe above the equable Surface of the Skin; for when this is neglected, or the Wound treated with very emollient Medicines, a Ridge is form'd, and an unſeemly Cicatrix produc'd. And the third is obtain'd by procuring a laudable Reſtitution of the loſt Subſtance. An hollow Cicatrix generally happens, becauſe the Preſſure of the adjacent Skin forces the *Membrana Adipoſa* into the Place of the Wound, and makes it riſe, which there degenerating into *Sordes*, and fungous Fleſh, is by a Suppuration conſum'd, ſo as not to grow again. Hence the ſoft Fat, which ought to ſupport the Skin, being deſtroy'd, the Cicatrix will remain depreſſed and hollow. Hence it is obvious, that a deep and hollow Cicatrix cannot, often, be prevented, when, for Inſtance, the Fat is deſtroy'd by the wounding Inſtrument, or a violent Suppuration. Thus *Hippocrates*, in *Aph.* 45. *Sect.* 6. tells us, "That "if Wounds continue a Year, or longer, Abſceſſes will neceſ- "ſarily happen in the Bone, and cauſe deep and hollow Scars." And in *Tr. de Ulceribus, Cap.* 4. he tells us, "That if a Part "of the Bone is remov'd, either by Burning, Cutting, or any "other Method, the Cicatrices of ſuch Wounds will be hol- "low." It is ſufficiently known, what deep and unſeemly Cicatrices remain after the *Membrana Adipoſa* is conſum'd by venereal Ulcers.

Hence the Reaſon appears, why, if the Surgeon intends to form a beautiful Cicatrix, he ought to avoid burning, ſtyptic, and aſtringent Medicines: For by means of all theſe the live Veſſels are either deſtroy'd, or ſo conſtricted, as not to tranſmit the Fluids; but a Suppuration coming on, the mortified or obſtructed Extremities of the Veſſels muſt be ſeparated. Hence there will be a Loſs of Subſtance, a Conſumption of the Fat, and conſequently a proportionably hollow Cicatrix. Hence it is, alſo, obvious, how much the Beauty of the Cicatrix is aſſiſted by an equable Preſſure, which prevents the riſing of the too much diſtended Veſſels.

The Signs of a beginning Cicatrix are theſe following: The Margins of the Wound or Ulcer, about to be conſolidated, begin to appear more white and ſolid, and this Whiteneſs is gradually convey'd from all the Circumference to the Centre: In the mean time, in the open Surface of the Wound a like Whiteneſs begins to appear here-and-there; and if this Surface equably meets the Edges of the Lips, a laudable Cicatrix is form'd: A pure Wound, alſo, before moiſt in every Point of its Surface, becomes dry in thoſe Places where the white Rudiments of the Cicatrix appear. Hence thoſe cicatrizing or epulotic Medicines are always moſt commended, which are gently drying and corroborating. Hence Plaiſters prepar'd of Lead, or its Calxes, and the fine Powders of Colophony, *Olibanum*, and *Sarcocolla*, are generally with Succeſs applied to Wounds or Ulcers tending to a Cicatrix.

Cicatrizing and epulotic Medicines are theſe following; the red deſiccative Ointment, the *Unguentum Diapompholygos*, the *Unguentum Calcis*, the *Unguentum Nutritum*, the white Ointment of Roſes, the *Emplaſtrum Album Coctum*, the *Emplaſtrum de Lapide Calaminari*, or the grey Plaiſters, the *Emplaſtrum de Minio Rubrum*, the *Sparadrapum* of *Gualtherus*, Colophony from boil'd Turpentine, and reduc'd to Powder; Frankincenſe, *Olibanum*, and Maſtich.

Hence we may perceive the Vanity, and fooliſh Boaſting, of thoſe who pretend, that, by their *Arcanums*, they can cure all Kinds of Wounds, without leaving a Cicatrix. Prudent and ſkilful Surgeons, after a large Loſs of Subſtance, or a long Suppuration, will never foretel that the Cicatrix will be beautiful; and of this the Patient ought always to be admoniſh'd, leſt he ſhould aſcribe the Deformity of the Part to the Careleſſneſs of his Surgeon.

It is, alſo, expedient, now-and-then to foment the Cicatrix with the Spirit of Roſemary, the *Spiritus Matricalis*, or ſome other of a like Nature; for all theſe ſpirituous Liquors have a Power of rendering the Fleſh of Animals firmer: For the Part of the Cicatrix remains weak, being only cover'd with a thin Pellicule; ſo that it is more eaſily hurt than the adjacent Parts. Hence it is often expedient, that the Part, after its Conſolidation, ſhould for a conſiderable time be cover'd with a mild lead Plaiſter, or a Piece of ſoft Alum Leather; leſt, by the Attrition of the Cloths, or the Injuries of the Air, the Wound ſhould again break out.

Hæmorrhage consider'd as a symptom of Wounds.

If a large Quantity of Blood flows from a Wound, by the Cauſes already ſpecified; it is to be ſtopt,

Firſt, By the actual Cautery.
Secondly, By Corroſives.
Thirdly, By Aſtringents.
Fourthly, By tying up the Artery.
Fifthly, By cutting quite thro', or entirely dividing the wounded Artery. And,
Sixthly, By Bandage, and pyramidal Compreſſes.

Having conſider'd the Things belonging to the general Cure of Wounds, we ſhall now treat of ſome Symptoms incident to them, which are often ſo violent, as greatly to endanger the Life of the Patient. Hence it is requiſite theſe Symptoms ſhould be remov'd, or at leaſt greatly diminiſh'd, before the Cure can be attempted. The principal Symptoms of this kind are, Hæmorrhages, Pain, and Convulſions.

A large and impetuous Diſcharge of Blood from a Wound, always denotes that large Veſſels, containing red Blood, are wounded, and eſpecially arterial Veſſels: Becauſe Veins, unleſs large, or render'd tumid by the Application of a Ligature, rarely diſcharge much Blood, and never with ſo great an *Impetus* as that which flows from the Arteries. If there is ſo great a Loſs of Blood, that fatal Effects are juſtly to be dreaded from it; and if there is no Hope that by a Debilitation of the vital Force, or the Contraction of the Artery, it will ſpontaneouſly ſtop, then we are to have recourſe to the Methods known in Surgery, in order to ſtop the Eruption of the Blood. But moſt of the Means which check the Effuſion of the Blood, retard the Cure of

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of the Wound: For the Extremities of the Veſſels, being deſtroy'd by the actual Cautery, Corroſives, Ligatures, or Compreſſions, muſt be ſeparated, before the Conſolidation of the Wound can be obtain'd.

Various Means are uſed for ſtopping Hæmorrhages; but all of them act either by conſtricting the Orifice of the divided Veſſel, or by coagulating the Blood in the Extremity of the Veſſels, or by producing both theſe Effects at once.

1. The moſt inſtantaneous Method of ſtopping Hæmorrhages is reckon'd that of touching the Veſſel, diſcharging the Blood, with a red-hot Iron; for, by this means, the Blood is forthwith burnt into a thick Maſs, no longer capable of Reſolution: So that it cloſes up the Orifices of the open Veſſel. The Veſſel itſelf is, at the ſame time, ſhrivel'd up, and conſtricted, by the Action of the Fire; by the Concurrence of which two Effects, the Blood is ſtopt. This Method was long uſed by Surgeons; for which Reaſon, in the Amputation of Limbs, and in other Operations where a great Hæmorrhage was dreaded, they had always actual Cauteries, of various Figures and Sizes, in Readineſs; that, by their Application, they might ſtop the Blood.

Thus, by the later *Greeks* and *Arabians*, by *Paulus Ægineta*, *Avicenna*, and others, Hæmorrhages were ſuppreſs'd by the actual Cautery, after the Amputation of Limbs. *Guido de Cauliaco*, and after him ſome others, uſed boiling Oil for the ſame Purpoſe. *Veſalius*, in *Chirurg. Mag. Lib.* 5. *Cap.* 12. in the Amputation of Limbs, orders the Fleſh to be cut with a red-hot Knife, that by this means the Hæmorrhage may be ſtopt. But this Method is attended with ſo many Diſadvantages, that it is ſcarcely ever uſed; for it is a difficult Matter to procure a due Degree of Heat to the Iron; ſince, if it is too hot, that which is burnt is often carried off with it; and if it is not ſufficiently hot, the Hæmorrhage is not ſtopt by it. Beſides, actual Cauteries produce intenſe Pain, a violent Inflammation, and all its Conſequences; and all that which is deſtroy'd by the Burning, muſt afterwards, by a Suppuration, recede, and be ſeparated from the live Parts. Hence there is great Danger, leſt, the Eſchar falling off in a few Days, the Hæmorrhage ſhould return; in which Caſe, it is ſtopt with greater Difficulty than at firſt: For the cauterized Veſſel, when the Eſchar is fallen off, will be ſhorter; for which Reaſon it cannot at all, or at leaſt without the greateſt Difficulty, be laid hold of, and ty'd. Hence the cruel Application of the Cautery muſt be again repeated, whilſt the ſame Danger remains, leſt the Hæmorrhage return, after the new Eſchar is fallen off. Hence, after ſkilful Surgeons knew how to ſtop Hæmorrhages by a Compreſſion or Ligature of the Veſſels, the actual Cautery was more rarely uſed. And *Galen* himſelf condemns the Uſe of Eſcharotics, as unſafe in ſtopping Effuſions of Blood. For in *Method. Medend. Lib.* 5. *Cap.* 4. he tells us, "That as much of the Part as is burnt into a "Cruſt, ſo much of the natural Fleſh is loſt and remov'd "when the Cruſt falls off: For which Reaſon the Wound "appears naked, and without Fleſh; and in many, after the "Separation of the Eſchar, a Profuſion of Blood has happen'd, "which could not be ſuppreſs'd without great Difficulty." Hence *Galen* is againſt the Uſe of Eſcharotics, except in the greateſt Neceſſity; and he affirm'd, that they were principally uſeful where the Hæmorrhage proceeds from the Corroſion of the Veſſels, by a putrid Blood: For, by this means, the Blood is ſtopt, and the ſpreading Putrefaction forthwith deſtroy'd, by the Action of the Fire.

2. The Application of live Fire, by means of hot Irons, or the Uſe of boiling Oil, were call'd, ſimply, Cauteries, or actual Cauteries; but there are ſome highly acrid Remedies which deſtroy the Parts to which they are applied, and burn them into Eſchars, in the ſame manner as the Application of Fire does: Theſe, from the Similarity of their Effects, were, alſo, call'd Cauteries; but becauſe they did not actually contain Fire, they were diſtinguiſh'd from the others by the Epithet potential: They are, alſo, call'd Corroſives, becauſe, by corroding, they conſume and deſtroy the Parts to which they are applied; but the Eſchars, form'd by theſe, muſt, alſo, be ſeparated, and fall off: Hence ariſes the ſame Danger of a freſh Hæmorrhage as if actual Cauteries had been applied. Beſides, as all Corroſives are highly acrid, they often greatly irritate the adjacent nervous or tendinous Parts, whence it is certain violent Symptoms ſometimes ariſe. The moſt celebrated Remedy of the Antients, for this Purpoſe, was, *Cyprian* Vitriol, form'd into a ſmall Ball, or reduc'd into a fine Powder, laid upon Lint, and applied to the Orifice of the divided Veſſel: The Blood, almoſt by the ſingle Touch of this Vitriol, is coagulated into a *Thrombus*, which, like a Covering, cloſes up the divided Veſſel, conſtricts it, and burns its Extremity into an Eſchar; but a Ball of Vitriol cannot remain applied to the Orifice of the Veſſel, unleſs ſecured by a proper Bandage, which alone might prove ſufficient.

Corroſives are, white Vitriol, the *Lapis Infernalis*, and Oil of Vitriol.

Under the Article FIBRA, Aſtringents, ſo far as they ſtrengthen the Coheſion of the ſolid Fibres of the Body, are conſider'd; but here we only treat of the Uſe of Aſtringents in ſtopping Hæmorrhages: This Effect, then, they produce, either by conſtricting the Orifice of the divided Veſſel; or by coagulating the Blood as it flows out, ſo as to cloſe up the Orifice of the Veſſel; or by producing both theſe Effects at once: Beſides, there are, alſo, other Remedies, which, tho' they do not in a great meaſure coagulate the Blood, nor conſtrict the Veſſels, yet ſtop the Hæmorrhage, and in this reſpect only deſerve the Name of Aſtringents. Such are volatile Mill-duſt, the Powder of Plaiſter of *Paris*, and other bibulous Bodies, which abſorb every Liquid they touch, and, with it, grow into a pretty hard Maſs, which is capable of cloſing the divided Veſſel, and ſtopping the Hæmorrhage. But if large Arteries are divided, theſe Powders will be carried off by the *Impetus* of the diſcharg'd Blood; ſo that they are not much to be truſted to. Hence, after the Amputation of large Members, when Surgeons applied theſe bibulous Subſtances to the Surface of the Wound, both Night and Day a Servant was order'd to preſs the whole *Apparatus* with his Hand, that they might remain firmly applied. Hence it is obvious, that little is to be expected from theſe bibulous Subſtances, unleſs they are ſecur'd and aſſiſted by a proper Compreſſion.

Among the Remedies which act by coagulating the Blood, or conſtricting the Veſſels, the moſt celebrated is *Alcohol*, eſpecially when warm, which in a Moment converts the *Serum* of the Blood, notwithſtanding its Fluidity, into a ſolid Maſs, and at the ſame time ſtrongly contracts the ſolid Parts of the Body. Hence the ſoft Parts of Animals, preſerv'd in *Alcohol*, become hard, and are diminiſh'd in Bulk: By both theſe Effects *Alcohol* may effectually ſtop Hæmorrhages. But the Extremity of the divided Veſſel, being, by the Application of the *Alcohol*, contracted and indurated, will afterwards be ſeparated; and the *Thrombus* of Blood, harden'd by the *Alcohol*, will either be remov'd ſpontaneouſly, or protruded by the *Impetus* of the Blood acting upon it. Hence the Hæmorrhage will return, unleſs, by a proper Bandage and Compreſſion, the *Thrombus*, form'd by the *Alcohol*, is retain'd in the Orifice of the divided Veſſel. Beſides, by the Heat of the Body, the volatile *Alcohol* is immediately diſſipated: Hence its Action is only momentaneous, unleſs it is continually applied afreſh, and its too ſudden Exhalation prevented, by the Application of a Bladder anointed with Oil. It is therefore obvious, that the Uſe of *Alcohol* is not ſafe without a proper Compreſſion. *Vanſweiten* gives a memorable Inſtance, in which the Blood flowing from a very ſmall Artery could not be ſtopt by *Alcohol*. Hence it is obvious, that if Hæmorrhages from ſmall Arteries cannot ſometimes be ſtopt by *Alcohol*, it may, alſo, often prove fallacious, in Caſes where large Arteries are divided.

Oil of Turpentine, unleſs hot, ſcarcely ſtops Hæmorrhages. The ſoft Parts of Animals, immerſed in this Oil, become hard, tho' ſlowly; but Oils require a far greater Degree of Heat, before they boil, than Water: Hence warm Oil of Turpentine, by burning the Solids, and coagulating the Blood, may ſtop an Hæmorrhage; in which Caſe, it will act like an actual Cautery, which is already deſcribed. But highly ſtrong and acrid foſſil Acids, ſuch as the Spirits of Nitre and Sulphur, are Corroſives, of the Uſe of which we have already treated. But the other mild Aſtringents, ſuch as Dragon's-blood, the Bark and Flowers of Pomgranates, and others of a like Nature, ſeem not to be ſo efficacious, that much Good can be expected from them alone, in ſtopping Hæmorrhages. Hence, alſo, it appears, what Judgment we are to form of the many ſtyptic *Arcanums* ſo much extol'd by many Surgeons. Small Arteries, and even ſuch as are conſiderably large, when entirely divided, cloſe ſpontaneouſly, eſpecially when the vital Principle is weaken'd by a liberal Hæmorrhage. Many of theſe boaſted Specifics were acrid Corroſives, and others of them milder Corroſives, which were, by Bandage, preſſed to the wounded Veſſel: Hence the Blood was often ſtopt rather by the Compreſſion alone, than by the Application of the Remedy. Whilſt *Petit*, as he tells us in *Mem. de l'Acad. des Sciences, l'An.* 1735. about the End of the laſt Century, made many Experiments, with reſpect to theſe *Arcanums*, he found, that ſlight Hæmorrhages might ſometimes be ſtopt by them; but that, in the Amputation of Limbs, they did not produce the deſir'd Effect. Hence it is obvious, that thoſe who boaſt of ſuch *Arcanums*, are not raſhly to be truſted.

Aſtringents are,

1. Thoſe Subſtances which contract the Veſſels, ſuch as *Alcohol*, Spirit of Turpentine, recent Juice of unripe Quinces, Dragon's-blood, Puff-ball, and *Crocus* of *Mars*.

2. Thoſe Subſtances which coagulate the Blood; ſuch as *Alcohol*, Spirit of Nitre, Spirit of Sulphur, calcin'd Vitriol, Sugar of Lead, the Bark and Flowers of Pomgranates, and the Blood-ſtone.

4. If

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4. If the Surgeon's Hand can have Acceſs to the divided Artery, ſo as that it may be ty'd, the Hæmorrhage will ſoon be ſtopt, by the Application of a Ligature. This Method was commended by *Galen:* For, in *Method. Medend. Lib.* 5. *Cap.* 3. after having enumerated various Methods of ſtopping Hæmorrhages from Wounds, he adds, "Another Method of cloſing the Extremities of the Veſſels is, by applying a Ligature "to them, or by compreſſing and conſtricting them with the "Fingers." But he ſeems to have uſed this Method only in Wounds: For, ſo far as I remember, he has not deſcrib'd the Amputation of ſphacelated Limbs. In Amputations of the large Limbs, where violent Hæmorrhages are dreaded from a Diviſion of large Arteries, *Celſus*, in *Lib.* 6. *Cap. ult.* makes no mention of the Ligature of the Veſſels; tho', in *Lib.* 5. *Cap.* 26. when deſcribing the Cure of Hæmorrhages from large Wounds, he tells us, that when all other means have been tried in vain, "the Veins, diſcharging the Blood, are to be laid hold of, and "about the Part where the Wound is made, ſo ty'd in two "Places, that they may unite, and have their Orifices cloſed up." After *Galen*, all Phyſicians and Surgeons ſtopt the Hæmorrhages, ſucceeding Amputations, with Cauſtics; and *Veſalius*, in *Chirurg. Magn. Lib.* 5. *Cap.* 12. when deſcribing this Operation, orders the Fleſh to be cut to the Bone with an ignited Razor, and the large Veſſels to be afterwards burnt with ignited Irons. As *Paré* abhor'd this cruel Method, and obſerv'd that many, on whom it was practiſed, died, and that only a few eſcaped, after the moſt intenſe Pain, he was the firſt, as he informs us, in *Lib.* 12. *Cap.* 35. who ty'd the Veſſels after Amputations, drawing them out with a Forceps, and with a double Thread tying them together with a Portion of the adjacent Fleſh: But if the Ligature ſlipping off, the Hæmorrhage return'd, he with a Needle perforated the fleſhy Parts adjacent to the divided Veſſel, and, by drawing the Thread upon a Compreſs applied, he cloſed the Orifice of the divided Veſſel, as he tells us in the ſame Book, *Cap.* 33. Afterwards, almoſt all Surgeons, neglecting actual and potential Cauteries, uſed Ligatures, which they applied two Ways; for they either drew out the Extremity of the divided Artery with a Forceps, and ty'd it by paſſing a Thread about it; but if the Thread was too tightly applied, it often gradually cut the Artery; in conſequence of which, the ty'd Extremity fell off too ſoon, and the Hæmorrhage not only return'd, but was more dangerous than before; becauſe the Veſſel, being render'd ſhorter, could not be ſo eaſily cloſed by a new Ligature: Hence *Dionis*, in his *Cours d'Operations de Chirurgie*, *Demonſtrat.* 9. after the Thread is paſſed about, and a Knot ty'd on it, orders, that one End of the Thread ſhould, by a Needle, be paſſed thro' the Subſtance of the Veſſel, in order to hinder the Ligature from falling off too ſoon. But this Method, as being too difficult, was afterwards rejected. But if a ſlight Ligature is applied to a naked Artery, the Blood, continually acting on the Part ty'd, protrudes the Ligature, and makes it fall off: So that *Paré*'s Method prevail'd, which is, tying the Artery together with a Part of the adjacent Fleſh; for thus the Extremity of the Artery is excellently cloſed; nor is there any Danger of the Ligature's ſlipping off ſo eaſily. It will be ſufficiently obvious, that tying the Veſſels is preferable to burning them, if we conſider the following Circumſtances: Whilſt by live Fire, or potential Cauſtics, the Extremity of the Veſſel is burnt, and the Blood in it coagulated, the burnt Parts produce an Eſchar, which covers the Orifice of the divided Veſſel; to this Covering there adheres a *Thrombus* of coagulated Blood, which fills the Cavity of the divided Artery; and when the Eſchar falls off, the *Thrombus* alone, lodg'd in the Cavity of the Veſſel, ſuſtains the *Impetus* of the impel'd Blood: But the Extremity of the Veſſel, being open by the Separation of the Eſchar, will eaſily tranſmit the *Thrombus*, which will therefore be expel'd, and make a free Paſſage for the Eruption of the Blood: But whilſt the Veſſel is cloſed by Ligature, its Sides will be brought together, and hence the *Thrombus* beyond the Ligature will touch it with a narrow Apex, whilſt its broader Baſis will block up the Cavity of the Veſſel. After, therefore, by a Suppuration, the Part ty'd, together with the Thread, falls off, tho' the Artery is not, as yet, totally conſolidated, yet the *Thrombus*, being broader at its Baſe, cannot be tranſpreſſed thro' the narrow Extremity of the contracted Artery: Perhaps the narrower Part of the *Thrombus* may come out, but its larger Part will cloſe up the Veſſel, and ſtop the Hæmorrhage. Mr. *Petit*, in *Mem. de l'Acad. des Sciences*, *l'An.* 1731. has beautifully explain'd this, and illuſtrated it by the Addition of a Figure of the *Thrombus*.

This Method is, therefore, far more ſafe than any of the reſt, tho' it is not abſolutely free from Diſadvantages; for it is often ſucceeded by an intenſe Pain, and violent Inflammation, whilſt the Arteries are ty'd, together with the adjacent Fleſh, eſpecially if the divided Nerves are at the ſame time comprehended within the Ligature. Hence convulſive Motions often happen in the Part, by which the Ligature may be deſtroy'd, and the Hæmorrhage return.

5. The entire Diviſion of the Artery is principally uſeful when the wounded Artery, being neither too large, nor too near the Heart, is only partially divided; for, in this Caſe, the Hæmorrhage will proceed, becauſe the Fibres being retracted by their own Elaſticity, the Wound of the Artery will be enlarg'd: But if ſuch an Artery is entirely divided, we have already ſhewn, that its Extremities recede, and are conceal'd under the adjacent Parts, where, by their own Contractility, and the Preſſure of the contiguous Solids, they are entirely cloſed, and the Hæmorrhage is, by that means, ſtopt. When, therefore, the Blood continually flows in a ſmall Quantity from a Wound, the Place of the Wound whence the Hæmorrhage ſeems to proceed is to be ſcarified with a Knife, in order to make a total Diviſion of the wounded Artery. *Galen*, in *Tr. de Curandi Ratione per Venæſectionem*, *Cap. ult.* tells us, that he uſed this Method with Succeſs, "in "a Man who by a Wound in the *Malleolus* had the Artery wound-"ed, in ſuch a manner, that the Hæmorrhage did not ceaſe, till "*Galen*, being call'd, made a total Diviſion of the Artery." He afterwards adds, that the Wound was cur'd without an *Aneuryſm*, which is greatly to be dreaded in ſuch a Wound of an Artery, whilſt the weak Cicatrix is, by the Blood, extended into a dilated Sack.

But it eaſily appears, that ſuch an entire Diviſion is not ſafe, unleſs the Artery is ſmall, and not near the Heart: For, in this Caſe, the Hæmorrhage would not ceaſe, tho' the Artery was entirely divided; but the divided Veſſel muſt be cloſed up by a Ligature, or ſome other Method.

It has happen'd, that an Artery wounded, and not entirely divided, has been ſo ſecur'd by Compreſſion, that the Blood has ſtopt; but, in this Caſe, ſo ſtrong a Compreſſion of the Artery is not always requiſite, as entirely to aboliſh its Cavity: Such a Compreſſion is ſufficient, as hinders the free Efflux of the Blood from the Wound of the Artery, and retains the bloody *Thrombus* between the Lips of the Wound, which is the principal Impediment to the Diſcharge of the Blood; and which, afterwards, growing firmly to the Margins of the Wound, reſtores the Soundneſs of the wounded Part. An Inſtance of this is found in *Mem. de l'Acad. des Sciences*, *l'An.* 1735.

6. Compreſſion of the divided Veſſel is, of all others, the beſt, and moſt natural Method, of ſtopping Hæmorrhages, and that which all Men ſpontaneouſly uſe when they ſee the Blood flowing from a Wound, that is, by compreſſing the wounded Part with their Fingers. But this Compreſſion may act either perpendicularly on the open Surface of the divided Veſſel, or it may be applied to the Sides of the Veſſel, and thus render them contiguous to each other. In the former Caſe the Efflux of the Blood is hinder'd; but as the *Thrombus*, form'd by the coagulated Blood, is of the ſame Bulk with the Orifice of the Wound, when the Compreſſion is remov'd, it is eaſily expel'd, by the *Impetus* of the Blood acting upon it. Hence, in this Caſe, the Preſſure ought to act upon the divided Veſſel till the *Thrombus* of coagulated Blood is concreted with the Sides of the Veſſel, which does not happen ſoon: But ſuch a Compreſſion, when ſtrong, and long applied, may produce many bad Symptoms; an Inflammation, for Inſtance, and all its Conſequences.

But if the compreſſing Cauſe acts on the lateral Part of the divided Veſſel, its Sides will come together, and, being render'd contiguous, will grow together in a pretty broad Surface: And as the *Thrombus* of coagulated Blood, lodg'd behind the compreſs'd Part, is almoſt cylindrical, it cannot be forc'd out by the Sides of the Veſſel, tho' a perfect Union is not, as yet, form'd. It is therefore ſufficiently obvious, how much this Method is preferable to all others: For if the Aperture of the Veſſel is only cloſed, the Hæmorrhage ceaſes. But this is excellently obtain'd by ſuch a Compreſſion, and the contiguous Sides of the Veſſel will ſoon grow together, without any Neceſſity for a Separation of the mortified Parts, which muſt happen after the Application of actual and potential Cauſtics, and even after the Ligature of the Veſſels: Beſides, when the Veſſel is ty'd, there is only an Union of its Sides in a ſmall Surface, where the Thread is plac'd: But, by a lateral Preſſure, the Sides of the flatten'd Veſſel are united in a greater Surface; for which Reaſon they will adhere more firmly, and make a ſtronger Reſiſtance to the Action of the Blood attempting its Diſcharge. But the Parts never ſooner and better grow to each other, than when they are divided by a recent Wound; for, in this Caſe, only the Union of the Parts is requiſite, and Nature performs the reſt. But this is moſt perfectly obtain'd by this Method, whilſt to the raw Wound, not irritated by Corroſives or Ligatures, ſuch a Compreſſion is applied in thoſe Parts where large Veſſels are divided.

But that the Hæmorrhage may be happily ſtopt, and the Wound at the ſame time cur'd, it is principally requiſite, that the Preſſure ſhould act only on the Sides of the divided Veſſel, but not on the reſt of the Surface of the Wound. Hence Sur-

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geons prepare a ſmall Ball of Paper, long chew'd between the Teeth, or of Lint, which they apply to the Part of the Wound which ought to be compreſs'd; upon this they lay one ſomewhat larger, and over it one ſtill larger, and ſo on, till the *Apparatus* is ſo prominent, that, by a Bandage, it may be commodiouſly preſs'd to the divided Veſſel; for thus an inverted Pyramid, as it were, is form'd, whoſe Apex, being applied to the Side of the Veſſel, only communicates the Preſſure of the Bandage applied, to that Part of the Wound where it is requiſite. *Petit*, in *Mem. de l'Acad. des Sciences*, *l'An.* 1731. has deſcrib'd and repreſented, by a Table, a beautiful Inſtrument, by the Application of which, the divided Veſſel might be ſafely compreſs'd, and the Trunk of the Artery above the Wound contracted at Pleaſure: The Compreſſion, alſo, of the divided Veſſel, may be augmented or diminiſh'd, at Pleaſure, by the Uſe of the ſame Inſtrument, the Sureneſs, Safety, and Uſe of which, he has there confirm'd, by a memorable Example. See TORCULAR.

It is therefore obvious, that an artificial Compreſſion of the Veſſel ſtops the moſt dangerous Hæmorrhage, when other Remedies have been try'd to no Purpoſe; and that this alone is ſufficient, in all Caſes; whereas the other Remedies are only uſeful in particular Circumſtances. But this Compreſſion acts beſt, if, being apply'd to the Side of the divided Veſſel, it compreſſes its open Orifice, tho' in the moſt difficult Caſes a perpendicular Preſſure on the Surface of the divided Veſſel has ſometimes happily ſtopt Hæmorrhages; a memorable Inſtance of which is found in *Mem. de l'Acad. des Sciences*, *l'An.* 1732. It ſometimes, alſo, happens, in the Amputation of a Leg, that the Artery which perforates the ſuperior and poſterior Part of the *Os Tibiæ*, and ſometimes runs an Inch thro' the Subſtance of the Bone, being divided, continues perpetually to diſcharge the Blood, if, being lodg'd in that bony Canal, it is by the Saw divided with the Bone. It is ſufficiently obvious, that in this Caſe a Ligature can be of no uſe: And in the laſt-quoted Part of the *Mem. de l'Acad. des Sciences*, we have an Inſtance, in which Compreſſion alone, by Lint apply'd to the Orifice of the divided Veſſel, remov'd ſo dangerous a Symptom.

But in Caſes of this kind a ſtronger Compreſſion is requiſite, than if, by lateral Compreſſion, the Sides of the flatten'd Veſſels were render'd contiguous; becauſe the Largeneſs of the divided Veſſel remains always the ſame. Hence the *Thrombus* of concreted Blood, cloſing up the divided Veſſel, may be eaſily expel'd, unleſs it is retain'd by a ſtrong Compreſſion.

In this Caſe Revulſion is of no Service, unleſs the wounded Arteries are ſmall, and there is a *Plethora*. The ſame is true with reſpect to Aliments, Drink, and internal Medicines: What has been ſaid of an Hæmorrhage, may be apply'd to a Flux of Ichor; tho' the greateſt Help we have, in this Caſe, is from the thicker Balſams.

In this Caſe Revulſion is of no Service. *Galen*, in *Method. Medend. Lib.* 5. *Cap.* 3. when laying down the Method of ſtopping Blood diſcharg'd from Wounds, tells us, that this is done "by cloſing up that which is divided, and by deriving and "tranſlating what was carried thro' it, to ſome other Part." But as he was ignorant of the modern Doctrine of the Circulation of the Blood, it is not to be wonder'd at, if he embrac'd the Opinion, that Revellents may be of great Uſe in ſtopping Hæmorrhages from Wounds. But if a large Artery is divided, Veneſection in another Part of the Body will be of no Uſe, ſince the Blood will certainly flow thro' the open Wound of the Artery, till the Patient dies, or, at leaſt, falls into a *Deliquium*. I ſaw, ſays *Vanſweiten*, an Inſtance, in which repeated Veneſection could not ſtop the Hæmorrhage ariſing from the drawing of a Tooth. It can therefore be of no Uſe when a large Artery is divided, ſince it cannot prevent the Efflux of the Blood from ſo ſmall an Artery; nor can any Good be expected from other Revellents, which act by any Friction or Irritation of the Parts diſtant from the Wound, ſince they are rather injurious, becauſe they increaſe the Motion firſt in the Part, and then in the whole Body.

But where there is a large Quantity of Blood, and when that Quantity is not ſufficiently diminiſh'd by the Hæmorrhage, Veneſection may be beneficial, where the wounded Veſſels are ſmall; that the Quantity and *Impetus* of the Blood being diminiſh'd, the wounded Veſſels, when not too much diſtended, may contract themſelves.

As for Aliments and Drink; when an Hæmorrhage is ſtopt by the Remedies ſpecified in the preceding Aphoriſm, we ought always carefully to avoid ſuch Aliments and Drinks which can ſuddenly too much increaſe the Quantity and *Impetus* of the Blood till the wounded Veſſel is ſufficiently conſolidated: And in this Reſpect a proper Regimen with regard to Diet, is of great Importance. But it is ſufficiently obvious, that nothing can be expected from it, in order to ſtop the Hæmorrhage; for an exceſſive Loſs of Blood requires a preſent Remedy: And tho' it ſhould be granted, that Meat and Drink could contribute any thing to this Effect, yet too great a Time is requir'd, before the Chyle, produc'd from the Aliments, can come to the Wound. The ſame holds true with reſpect to Medicines taken internally, which are, by ſome, falſly ſaid to be efficacious in ſtopping Hæmorrhages: For it appears, from what has been ſaid, that the ſtrongeſt Aſtringents cannot ſo ſtop a dangerous Hæmorrhage, that they may be ſafely truſted to, even tho' applied in large Quantities to the divided Veſſel. Nothing is, therefore, to be expected from them whilſt, being taken internally, mix'd with the Blood, and chang'd by the Force of the Body, they are, by the Action of the Circulation, convey'd, in a ſmall Quantity, to the wounded Part: For, in this Caſe, they will paſs thro' the open Orifice of the Wound, along with the Blood. Beſides, all the Remedies capable of ſtopping an Hæmorrhage, produce their Effect by conſtricting the Veſſel, or by coagulating the Blood, or by doing both theſe at once. If, therefore, theſe Remedies, when mix'd with the Blood, and flowing thro' the Wound, had ſuch a Quality, they would prove mortal, by conſtricting the minute Veſſels of the Lungs, or coagulating the Blood, and ſo hindering its Paſſage thro' the Lungs, before they could come to the wounded Part. When ſmall divided Arteries, by their proper Contractility, and a Diminution of the *Impetus* of the Blood, in conſequence of the Loſs of it, are ſpontaneouſly cloſed, as is already obſerv'd, then the ſtopping of the Hæmorrhage, which is owing to quite different Cauſes, is aſcrib'd to the Uſe of ſuch Remedies, many of which are greatly extol'd, and may be ſafely exhibited, ſince they neither do Harm, nor Good. No prudent Surgeon will, however, confide in them, and, neglecting more efficacious Remedies, expoſe his Patient to the greateſt Danger.

As for a Diſcharge of Ichor; it ſometimes happens that Wounds, even of a ſlight kind, are accompanied with a terrible copious Diſcharge of thin Lymph, the large arterial lymphatic Veſſels being probably wounded; ſince it is hardly to be ſuppoſed that the venous lymphatic Veſſels, being divided, could diſcharge ſo large a Quantity of Lymph; becauſe the ſanguiferous Veins, when wounded, unleſs they are very large, diſcharge but a very ſmall Quantity of Blood, unleſs a Ligature, or ſome other Obſtacle, is plac'd between the Heart and the Wound. But we ought carefully to diſtinguiſh that Flux of Ichor which ariſes from Wounds of the lymphatic Veſſels, from that which ſucceeds Punctures of Nerves and Tendons, or violent Inflammations: For, as we have already obſerv'd, far other Remedies are requiſite in the latter, from thoſe proper in the former Caſe. Here we only treat of that Flux of Ichor which ariſes from Wounds of the Veſſels; in which Caſe, the Remedies proper for ſtopping Hæmorrhages, may be beneficial. We have already obſerv'd, that an artificial Compreſſion of the Veſſel was the ſafeſt, and moſt efficacious Method of ſtopping Hæmorrhages, even of the moſt violent kind. It is, alſo, certain from Experience, that the ſame Method may remove a Flux of Ichor: Of this we have a memorable Inſtance in *Ruyſch. Obſerv. Anatom. Chirurg. Centur. Obſ.* 41. But when a Flux of Ichor ſucceeds the Puncture of a Nerve, ſuch a Compreſſion would ſoon make the inflam'd Parts paſs into a Gangrene. Excellent Effects are, alſo, produc'd by the native Balſams, eſpecially of the thicker kind, which, by their oleous Lentor, are capable of cloſing up the Wound of ſuch a Veſſel, and are obſerv'd to be friendly and ſalutary to the wounded Parts, tho' they are only uſed in Punctures of the Nerves and Tendons: And when theſe are applied pretty warm to the Wound, as they generally are, perhaps the tender Veſſels, by the greater Heat, contract and cloſe themſelves.

PAIN CONSIDER'D AS A SYMPTOM OF WOUNDS.

If any nervous Fibre, ariſing from the Brain, is ſo extended as to threaten its Diſſolution, the Idea of Pain is produc'd.

Pain is a Perception, in the Mind, of ſomething which produces Uneaſineſs, and to which we have naturally ſuch an Averſion, that, with our utmoſt Efforts, and even without the Concurrence of our Will, we mechanically attempt the Removal of that which we believe to be the Cauſe of the ungrateful Perception: For a ſound Perſon has a Power which he can by no means remove from himſelf, of perceiving certain Ideas, on account of a Change induc'd on ſome Nerves. If an ignited Iron is apply'd to any Part of the Body of a Philoſopher, wrapt up in the moſt profound and abſtruſe Meditations, the Train of his Thoughts is immediately chang'd, and that ungrateful Perception, call'd Pain, forthwith excited in his Mind. But it is impoſſible, by Words, to explain what that Perception in the Mind is, ſince it is only known to him who endures the Pain; for there is not form'd in the Mind a Repreſentation of any Object different from the Thought of the Pain, but there is a perceiving Power preſent: For no one, when in Pain, imagines that there

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there is without himself any external Object similar to that Pain which he feels; but all affirm, that they themselves are in Pain.

The Idea of Pain, properly speaking, leaves in the Mind no Remembrance of itself; for the Person who is in Pain, and is next Moment freed from it, is sensible, indeed, that the Cause of Pain was present; but he has no longer an Idea of Pain, nor can he, by any means, excite it in his Mind, without the Presence of a fresh Cause of Pain, which, first changing his Body, may induce a proportionable Change on the Ideas of his Mind.

But what that Change of the Body is, and in what Parts it happens, from which the Idea of Pain arises in the Mind, we may know from Experiments: For it is demonstrable, that only the Nerves arising from the Brain are capable of being so affected, as to excite the Idea of Pain in the Mind: For if a Nerve, which is alone distributed to any Part of the Body, is destroy'd, such a Part may be cut, or burnt, without exciting the Idea of Pain in the Mind, tho' all the other Parts remain sound: But all the Nerves in the Body arise either from the *Medulla Oblongata*, which contains the medullary Substance of the *Cerebrum* and *Cerebellum*; or from the spinal Marrow, which is a Continuation of the *Medulla Oblongata*, and, besides, contains a medullary Substance, arising from its own cortical Part: Yet that Affections of those Nerves only, which arise from the medullary Substance of the *Cerebrum*, are capable of exciting the Ideas of Pain in the Mind, is obvious from this, that in all those Disorders in which the Action of the *Cerebrum*, by means of the Nerves, is remov'd, no Pain is felt. Persons excessively drunk, or perfectly apoplectic, in consequence of the Humours extravasated in the Brain, have no Sense of Pain, tho' live Fire is apply'd to the Parts of the Body; the same, also, frequently happens to Patients under excessive epileptic Fits: Hence it appears, that a Change of those Nerves alone which arise from the Brain, is capable of exciting the Idea of Pain in the Mind: But this Change of the Nerves arising from the Brain, which is capable of exciting the Idea of Pain, seems to be such a Disposition of them as if long continu'd, or render'd very intense, would produce a Solution of Continuity in these Nerves: For if the healthiest Person, who has no Pain in any Part of his Body, and has no Fault either in his Solids or Fluids, is prick'd under the Nail of the Finger or Toe, with the smallest Pin, an excessive Pain, capable of rendering the Patient convulsive, immediately arises, only from such a mechanical Change of the nervous *Papillæ:* Nor is it of any Importance what the Cause is, or how it acts; for, provided it so disposes such a nervous Fibre arising from the Brain, that it is very near to a Rupture, without breaking (for when the Nerve is destroy'd, the Pain ceases), that ungrateful Perception call'd Pain will be excited in the Mind.

But that the chang'd Condition of the Nerve may produce the Idea of Pain in the Mind, it is requisite the Action of this Nerve on the Brain, and of the Brain on it, should remain free and uninterrupted by any Obstacle: For if the Nerve, in its Course, is ty'd, tho' its Extremity should be distracted, lacerated, or cut, the Sense of Pain will not be excited in the Mind. The same will happen, if, whilst the Nerve remains free in all its Course, the Functions of the Brain are injur'd: Hence it is obvious, that, by this Change of the Nerve, something is chang'd in the Brain; and that, from this Change in the Brain, the Idea of Pain arises in the Mind. It therefore seems highly probable, that the Idea of Pain may sometimes arise in the Mind, tho' no Change happens in the Nerves; that is, when the Brain, from any other Cause, receives such a Change as it would have receiv'd, if a nervous Fibre, in any Part of the Body, had been so dispos'd, as to be in Danger of a Dissolution. This is confirm'd by practical Observations; for it frequently happens, that those who, by the Calamities of War, or other Misfortunes, lose their Legs, complain of a Pain in the Toes of the Leg they have lost: And in some it has been observ'd, that a Sense of such a Pain was the Sign of imminent Convulsions; the Brain, which is the Origin of all the Nerves, being chang'd. Nor does this happen only soon after the Amputation, but a long time after. See *Miscellan. Curios. Decur.* 1. *An.* 2. and *Hildan. Obs. Chirurg. Cent.* 3. *Obs.* 15. Whilst, therefore, in some Persons, the Brain, which is subservient to Sensation and Motion, and from which all the Nerves arise, is more easily affected than in others, the former will be obnoxious to many Disorders and Pains, which they ascribe to external Causes, but which really derive their Origin from the too easy Mobility of the common Sensory.

Hence, when *Sydenham*, as he tells us, in *Dissert. Epistolar.* perceiv'd that Venesection, Purging, and some other Measures, were of no Use in those surprising Disorders which proceed from a disturb'd Motion of the Spirits, he concluded, "That as "the exterior Portion of a Man's Body consisted of Parts ob- "vious to the Senses; so, without doubt, his interior Frame is "to be consider'd as consisting of a due Series, and, as it were, "Fabric of Spirits." But this interior Frame, being intimately "join'd, and, as it were, united with the Constitution of the "Body, is more easily or difficultly chang'd from its proper "State, according to the greater or less Strength of the con- "stituent Principles we receive from Nature." Hence, in such Disorders, when Pains, in various Parts of the Body, resembled the most different Distempers, he justly accus'd the Irregularity, and inordinate Motion, of the animal Spirits alone, and apply'd the Whole of his Care and Skill only to sooth and regulate them; by which means, he knew, from Experience, all the Pains, and Variety of Symptoms, which in this Disease imitated the most different Distempers, were mitigated. This is sufficiently confirm'd by this, that, in delicate Constitutions, Perturbations of Mind alone are able to produce a Train of terrible Symptoms, tho', immediately before, no manner of Change was discover'd in the Solids and Fluids.

If, therefore, we should suppose that all the perceiving Points in the Body remain, and that all the not-perceiving Points were abolish'd, we should have an Idea of that interior Frame mention'd by *Sydenham*; but, by this means, a great many Parts of the Body would be taken away. The whole Heart, so much agitated and inflam'd in the most acute Distempers, is not itself sensible of Pain, but an uneasy Sense of Anxiety arises; the whole Lungs are often consum'd by a purulent *Tabes*, without any Pain: The same, also, happens to the Kidneys, tho', at the same time, the *Pelvis*, and interior Membrane of the Ureters, when indispos'd, are subject to intense Pains. The whole Liver is sometimes consum'd by an Abscess, without any Pain; but if the exterior Membrane of the Liver is affected, an intense Pain is present.

The Idea, therefore, of Pain, in the Mind, follows such a Disposition of a nervous Fibre in the Body, as endangers its Dissolution; tho', at the same time, it seems highly probable, that the Idea of Pain may be excited, tho' no Change happens to the Nerves, but only to the Brain, from which these Nerves derive their Origin. Nor does this appear only in those Nerves which, as it were, guard the Body, and, being dispers'd every-where, warn the Person to remove or avoid every thing, which, being about to act, or at present acting, would destroy the Part: But we, also, observe, that the same infallibly happens in other Nerves, from a Change of which, the most distinct Ideas arise in the Mind, and such as are equally lively with any others, tho' no external Object has acted on the Organs of Sense, but a Change is only induc'd in the common Sensory by Diseases. Thus phrenetic Patients see strange Objects, and frequently hear terrible Noises, tho' there is no external Object to excite these Ideas, by inducing a Change of the Nerves. The same happens in melancholic *Deliriums*, and maniacal Ravings.

The Pain is the more intense, the nearer the Fibre is to a Rupture; and the gentler, the nearer it is to its natural Tension.

Since, from the Definition of Pain, it is obvious, that Pain is perceiv'd when a nervous Fibre is so dispos'd as to be in Danger of a Dissolution; it naturally follows, that the Pain is the more intense, the more the Cause, exciting it, distracts the Fibres; provided the Cohesion, as yet, remains: For when the Cohesion is destroy'd, the Pain ceases; and, on the contrary, the less the Distraction of the Nerve is, the less will the Sense of Pain be. This is obvious, in the Racks us'd by Judges, in order to extort from Malefactors a Confession of their Crimes: For, hanging the Person up by the Hands, they apply to his Feet Weights, which are gradually increas'd: Hence, by the greater Distraction of the Parts, the Pain is gradually increas'd, to the greatest Degree; but as soon as these Weights are remov'd, the Pain is diminish'd. Many Nerves, in the human Body, are so lax, that they bear Extension without any Pain; but when the Nerves, dispers'd thro' the *Periosteum*, are stretch'd upon the Bones, the smallest Increase of Tension produces the most intolerable Pain. Hence arise those excessive Pains, whilst, in a *Lues Venerea*, bony Tumors distend and dilacerate the incumbent *Periosteum*. Hence arises the Severity of that sort of Torment us'd by Executioners, when, by a Screw, they force the *Periosteum* on the Spine of the *Tibia*, to the hard Bone, gradually augmenting the Pressure. For the same Reason, the most intense Pains happen in the smallest Nerves: For the largest Nerves have but a small Part of their Bulk which may be call'd truly nervous. Hence it may easily happen, that such large Nerves may be distended without a Distraction in their nervous Fibrils, but only in the callous Coats covering those Fibrils. But when a Nerve is small and tense, and especially when it is destitute of such Coats, an intense Pain is produc'd in it by the slightest Cause. This is obvious in the Tooth-ach, when the adamantine Crust of the Tooth, being corroded, and the minute Nerves dispers'd thro' the internal Substance of the Tooth, destitute of their Coats, are, by the Action of the Air, seiz'd with intolerable Pain, which cannot be allay'd till the affected Nerve is destroy'd, by an

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an increas'd Distraction, the Application of proper Remedies, or the Drawing of the Tooth.

Hence it is obvious, that the greatest Degree of Pain, in the same Part, is but short; but a less Degree may continue long, and be increas'd, or remit.

Since Pain supposes such a Condition of a Nerve as endangers its Rupture, that is, a Solution of its Continuity; and since the Pain is the more intense, the nearer the nervous Fibre is to a Rupture; it is obvious, that the greatest Pain is then present, when the nervous Fibre is breaking; but when it is broken, all the Pain ceases, which before arose from the too great Distraction of this Fibre. The greatest Pain, therefore, denoting that the nervous Fibre will soon break, will be short; because, when the Fibre is broken, it ceases. Thus, when a Wound is inflicted with a sharp Razor, a short and momentaneous Pain is only produc'd; and, in the Gout, the Violence of the Paroxysm is observ'd to end the sooner, the more intense the Pain is; when a Tooth becoming carious, the Nerves dispers'd thro' its Substance are divested of their Coats, sometimes, by Suction, such Nerves are distracted, and such an intense Pain is produc'd, that the most robust Man cannot bear it, even for a few Moments: But when the nervous Fibrils are broken, the Pain soon ceases. The Drawing of a Tooth is attended with great Pain, which immediately ceases, after the Operation is over: The highest Pain will therefore soon destroy the affected Nerve, or so affect the Brain, as that all Perception of Pain ceases: On which Occasion, a Syncope, or an Abolition of all vital Motion, generally happens. Nor can the most racking Pains proceed any farther; for Persons in such a Condition, like a Carcase, feel no more. Thus it is certain, from many Experiments, that Malefactors, condemn'd to the Rack, become immediately, as it were, dead; and are no longer sensible of the most exquisite Torments.

It seems to be repugnant with this Circumstance, that violent Tooth-achs torment People for several Days, or even Weeks: But the Reason of this is, that the small Nerve which enters the Tooth, and is divided into minute Fibrils, is distributed thro' all its Points: Hence tho', by the greatest Pain, one such Fibril is destroy'd, the Misfortune proceeding to the others may long protract the excessive Torments.

But as a milder Pain supposes a smaller Tension of the affected Nerve, and consequently less Danger of a Rupture, it is sufficiently obvious, that such a Pain may be long protracted: And as between the natural Tension of a Nerve, and the greatest Distraction, next to a Rupture, numberless intermediate Degrees may be conceiv'd, it appears, that such Pains may continue long without the Destruction of the affected Nerve, and be increas'd or diminish'd according to the greater or less Degree of Distraction. But these Pains, which happen in Parts of the Body pretty near the Heart, and are accompanied with a violent Fever, soon cease; the affected Part being destroy'd: But in Parts remote from the Heart, and free from a great Agitation of the Humours, long-continu'd, and often returning Pains, may happen, without a sudden Destruction of the affected Parts. A violent and inflammatory Iliac Passion often takes off the strongest Man, in a few Hours: But the Gout, by repeated Paroxysms, often racks the Patient for twenty Years, before it destroys the affected Nerves; in which Case, the Pain in the Extremities is diminish'd, or ceases: But the Matter which before prey'd upon the Limbs, is convey'd to the internal Parts, and produces the most terrible Misfortunes.

The Cause, therefore, of Pain, is every thing capable of producing such an Extension or Disposition of a Nerve.

Under the general Name of the Cause of Pain is comprehended every thing which so distracts or disposes a Nerve, before not affected with Pain, as that it is in Danger of a Rupture: Nor is it of any Importance, whether this is done by Pressure, Distraction, or Corrosion; since the Effect will always be the same; that is, the Idea of Pain will be excited in the Mind. With respect to Intensity, or Duration, there may be a Difference between the Pains excited by different Causes, but in other respects the Effect will be the same.

Hence it is obvious, that a great Variety of Causes may excite Pain in the healthiest Body: But that the latent Cause of Pain may be regularly trac'd by the Physician, and, when known, remov'd, we ought to reduce the hitherto-known Causes of Pain to certain Classes; which is done in the next Aphorism.

To this, then, belong,

First, The Force of natural Contraction sustain'd by fewer Fibres, whilst some are divided.

Secondly, Whatever, by over-filling a Vessel form'd of a Contexture of nervous Fibres, distends it. To this belong an Obstruction, a *Plethora*, a redundant Cacochymy, and an Increase of the circulatory Motion.

Thirdly, Whatever distracts the nervous Fibres; as Luxations, Tumors, and external Force. And,

Fourthly, Whatever wounds, or corrodes.

1. This is already treated of, when, speaking of the worst Species of *Paronychia*, in which this happens, when the Tendon of the Flexors of the Finger being affected, an intense Pain is produc'd: For the Bone of the last Phalanx of the Finger often falls off, after the Patient has suffer'd the most racking Pain: But before the Bone can fall off, the Tendon affix'd to it must be separated from it, which is not done all at once, but by a slow Distraction; for no Parts of the Body, so small as the Fingers, have so strong Muscles affix'd to them: And, in this Disorder, those Muscles being contracted, the Fingers always appear bended. When, therefore, the Tendon begins to be separated from this small Bone, the remaining Fibres sustain the whole Force of the contracted Muscle, and are, by a slow, but continual Laceration, torn from the Bone to which they adhere. Hence an intense Pain often so disturbs the whole Brain, that an acute *Phrenitis*, Convulsions, and often Death, succeed. No Degree of Patience is able to support those Torments, by which the Parts are gradually torn from the live Bones. A singular Instance of this we have in the Conduct of *Philotas*, mention'd by *Quintus Curtius*, in *Lib. 6. Cap. 11.*

2. It is shewn, under the Article FIBRA, that the large Vessels consist of Membranes which contain Vessels of all Kinds, even the least in the Body, such as the Nerves: Every thing, therefore, which distends the Sides of the large Vessels, will, by a Parity of Reason, distract the Nerves dispers'd thro' them: But from such a Distraction, as is before observ'd, arises the Idea of Pain in the Mind. It may be doubted, whether all the Vessels in the Body have in their Membranes perceiving Nerves; since, as we have already observ'd, many of the *Viscera*, which are, from Anatomy, known to consist of a Congeries of Vessels, are, however, often gradually consum'd and destroy'd, almost without Pain. Hence this will only be true so far as the Membranes, constituting the Vessels, have Nerves arising from the Brain, and subservient to Sensation, distributed thro' their Substance: But that this happens in many Vessels, is obvious; because no Point in the Surface of the Body can be wounded by the Point of the smallest Pin, without a Discharge of the contain'd Humours from the wounded Vessels, and a Perception of Pain: The principal Causes which distend the Vessels furnish'd with nervous and perceiving Fibres, are these following:

Obstruction: This always supposes a Blocking-up of the Canal thro' which the Fluids ought to be convey'd by the vital Motion: Hence it necessarily follows, that the Fluids convey'd to the obstructed Place of the Vessel, and not able to make their Way thro' it, must dilate, attenuate, and at last resolve or open the Sides of the Vessel, as is shewn under the Article OBSTRUCTIO. It is therefore obvious, that the nervous Fibres constituting the Sides of the obstructed Vessels, becoming highly tense, and at last breaking, may excite the Idea of Pain, which will have various Degrees of Intensity, according to the different Degrees of Distraction. When, in a Pleurisy, the Arteries, obstructed by the stagnant Blood lodg'd in the intercostal Parts, are distended by the succeeding Blood, an intolerable Pain is produc'd, and is always the more intense, the greater the *Impetus* is with which the Blood acts on the obstructed Parts. Hence, when this *Impetus* is lessen'd by Venesection, the Pain either ceases, or is diminish'd. Hence Obstruction, properly speaking, is not the Cause of Pain; but the succeeding Blood, by dilating the obstructed Vessel, excites the Pain.

As for a Plethora; it is shewn, under the Article PLETHORA, that a Redundance of laudable Blood not only distends the Vessels, but may, also, produce a Rupture in them: Hence all the Degrees of Pain which can arise from a preternatural Tension, or a Rupture of the Vessels, are excited by this Cause alone. This is sufficiently evinc'd by violent Head-achs arising from Repletion alone, and which are happily cur'd by Venesection. Women, also, before their excessive Plenitude is remov'd by the menstrual Discharge, from this Cause perceive Pains in various Parts of their Bodies; which, however, are happily remov'd, when the redundant Blood is evacuated thro' the dilated Vessels of the Uterus.

As for a redundant Cacochymy; every Degeneracy of the Humours from the Conditions requisite for Health, is comprehended under this Name: Now too great a Distention of the Vessels may be produc'd by a Congestion of other Humours, as well as by a Redundance of laudable Blood: Hence, also, Pain will be excited, in consequence of the Distraction of those nervous Fibres which constitute the Membranes of the Vessels. Here we do not treat of that Acrimony which degenerating Fluids may acquire, and by which they may excite Pain, by corroding or irritating the Parts. When a stagnant aqueous *Collavies*, congested

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geſted in the *Membrana Adipoſa*, in an *Anaſarca* of the Legs, the Pain ariſes from this Cauſe alone.

As for an Increaſe of the Circulation; it is ſhewn, under the Article SANGUIS, that an Increaſe of the Circulation alone, by an Augmentation of the Heat, produces a greater Rarefaction of the Fluids: Hence follows a greater Diſtention of the Veſſels; and the thicker Parts of the Fluids, entering the dilated Veſſels, produce Obſtructions, Diſtractions, and Inflammations. But all theſe cannot happen without a Diſtraction and Dilaceration of the nervous Fibres diſpers'd thro' the Membranes of the Veſſels: Hence it is ſufficiently obvious, that Pain is excited by that means. In Fevers, by an increas'd Motion of the Blood alone, a Pain of the Head and Limbs may be produc'd, which again ceaſes when the Fever is diminiſh'd, or remov'd.

Every thing which forcibly diſtracts the Parts of the Body, diminiſhes their Coheſion, and may, conſequently, induce a Solution of Continuity, if this Diſtraction is continu'd, or augmented: But, according to the Definition of Pain, ſuch a Condition of a Nerve as threatens the Solution of its Continuity, excites the Idea of Pain in the Mind: A Diſtraction, therefore, of the Parts furniſh'd with nervous Fibres, by whatever Cauſe, will produce Pain. Hence when Bones, luxated from the Cavities which naturally contain'd them, diſtract the Ligaments ſecuring the Articulation, an intenſe Pain is produc'd, which, upon the Reduction of the Bone, immediately ceaſes, unleſs the Ligaments diſtracted by the Luxation, or the adjacent compreſs'd Parts, are already inflam'd: A ſufficient Proof, that the Pain, happening after a Luxation, ariſes only from this Diſtraction of the Ligaments. Hence *Hippocrates*, in *Tr. de Articulis*, *Text.* 29. tells us, that they who have the *Humerus* luxated and reduc'd without Pain, or any Inflammation of the adjacent Parts, and for that Reaſon are negligent, ought to take great care that the reduc'd Bone do not again ſlip out: For which Reaſon he orders Phyſicians to warn them of this; becauſe, in ſuch Caſes, the Luxation returns far more eaſily than if the Parts were inflam'd.

Hence it is obvious, that the Effect will be the ſame if a Tumor, form'd by whatever Cauſe, diſtracts the Parts: For in an inflammatory Gout, and ſome other Diſorders, ſuch as a *Spina Ventoſa*, or an *Exoſtoſis*, a Diſtraction of the Nerves diſpers'd thro' the Ligaments of the Joints produces exquiſite Pain. How great Pain may be excited by external diſtracting Force, is obvious, from the Method of racking Malefactors; in which, by the Application of Weights, or the Uſe of Pulleys, the Parts of the Body are diſtended.

Every Wound, as is obvious, from its Definition, is the Solution of Continuity in a ſoft Part; but when the wounding Inſtrument divides Parts before united, that Condition of a Nerve is produc'd by which its Diſſolution is threaten'd: Pain is therefore excited; but it is only momentary, if the Parts are divided by a quick Action of the Inſtrument; yet there is Pain at the Moment the Wound is inflicted: But the Pain which ariſes ſome time after the Wound is inflicted, depends on the Diſtraction of the Parts, in conſequence of the Receſſion of the Lips of the Wound from each other. Hence this Pain ſucceeds the Wound inflicted, but does not ariſe from the Wound as its immediate Cauſe, but from the Change induc'd on the Wound from the Contractility of the Parts: For a Nerve, next to Rupture, produces the Idea of Pain in the Mind; but when the Nerve is totally divided, the Pain ceaſes. Hence, when a Wound is making, Pain is produc'd; but when it is made, it ceaſes.

All Corroſives, apply'd to the Body, and render'd active by the Heat thereof (ſince, except Fire alone, they hardly act upon a Carcaſe) divide and deſtroy the Parts, by numberleſs minute Wounds. Hence, as is evident, a pretty intenſe and long-continu'd Pain is produc'd.

Hence the various Cauſes of Pain in a Wound are known.

If the things hitherto taken notice of are apply'd to a Wound, it appears, that a great Number and Variety of Cauſes, exciting Pain in a Wound, may happen: For the wounding Inſtrument, at the time the Wound is inflicting, is the Cauſe of Pain. The Parts of the wounding Inſtrument, left in the Wound, may produce Pain: The Lips of the Wound, receding from each other, half-divided Nerves, and large Nerves divided, retracted, and diſtracting the ſmall Ramifications above the Wound, may excite the moſt intenſe Pain. When the Lips of the Wound are afterwards inflam'd, render'd tumid, and retorted, and, at the ſame time, the Celerity of the Circulation is increas'd by a ſlight Fever, new Cauſes of Pain are preſent. When the Humours, diſcharg'd into the Cavity of the Wound, acquire an acrid Quality, they excite Pain, by corroding and irritating the Parts: The ſame Effect will, alſo, be produc'd, by the Application of acrid Subſtances, of whatever kind. When, by a Suppuration, the obſtructed Extremities of the Veſſels are gradually ſeparated from the live Parts, Pain is, in like manner, produc'd, but ceaſes when the Pus is form'd: All theſe Things are to be carefully diſtinguiſh'd, that, knowing the Cauſes of Pain in a Wound, we may apply proper Remedies.

Hence, alſo, we underſtand the Effects of a Wound; which are, Inquietude, Jactation, Watching, Fever, Heat, Thirſt, Dryneſs, Convulſions, and Gangrene.

When Pain is preſent in the Body, its Effects ſucceed, which are principally obſerv'd to be theſe following:

Inquietude and Jactation: When we perceive Ideas, there ariſes in the Mind a certain Change, which is either grateful, or diſagreeable, or, ſometimes, rather totally void both of Pleaſure and Pain: Thus, when a Perſon thinks that a Circle is divided into two equal Parts by its Diameter, the Idea affords neither Pleaſure nor Pain; but if the Hand, when cold, is put near a moderate Fire, all ſay that this is pleaſant; and if live Fire is apply'd to the Hand, all will affirm, that this is diſpleaſing. In what manner this happens, perhaps, cannot be explain'd, tho' every one finds ſuch Things in himſelf. But the Senſe of Pleaſure and Pain, which accompanies the perceiv'd Idea, produces ſome Effects in us which the ſtrongeſt Efforts of Reaſon cannot overcome, whatever arrogant Philoſophers have aſſerted to the contrary. For the Will endeavours by all means to retain the grateful Senſation preſent to the Mind, and to deſtroy the ungrateful one; and then ſucceed mechanical Motions not determin'd by the previouſly-conſcious Mind, but truly neceſſary and phyſical, by which we endeavour to remove or avoid that which excited the ungrateful Perception in the Mind. This is a certain Ingredient in the human Nature, of which it cannot divеſt itſelf. If a Philoſopher, involv'd in profound Meditations, receives a Prick of a Pin in his Finger, he will immediately draw back his Hand, tho' there is not in his Mind any Conſciouſneſs of that Motion excited: Hence the Senſe of Pain, like a faithful Guardian, adviſes us, as it were, to remove that which would deſtroy the Body. Thus we ſee that Men in Pain, by a various Poſition of the Parts of their Bodies, and often by a continual Agitation, endeavour to find ſuch a Situation as may remove, or at leaſt diminiſh the Senſe of Pain. Hence ariſes the Inquietude and Jactation in exceſſive Pains: But when, by the leaſt Motion, the Pain is increaſed, the Patients remain immoveable, as is obvious, in the moſt racking Gouts, and Rheumatiſms.

As for Watchings; when an healthy Perſon has all his Senſes lock'd up by a natural Sleep, he is rouz'd and awak'd by all thoſe Things, which ſtrongly affect the Organs of Senſation: Much more, therefore, will Sleep, when not preſent, be prevented by Pain, which ſo efficaciouſly affects the Brain. For this Reaſon, the antient Phyſicians, in lethargic Diſorders, pull'd the Hairs from the Noſtrils, laſh'd the Limbs with Nettles, and apply'd acrid Subſtances to the Parts of the Body; that, being rouz'd by the Senſe of Pain, the exceſſive Drowſineſs might be remov'd.

As for a Fever; this almoſt always ſucceeds exceſſive Pains, even in thoſe Diſeaſes which naturally have no Tendency to a Fever; ſuch as a Gout, and *Lues Venerea*: For when ſuch an intenſe Pain racks the Patient, ſome Degree of a Fever is generally preſent.

Hence *Hippocrates*, in many Paſſages, acknowledges Pain to be among the Cauſes of Fevers: For in *Prænot. Coac.* N° 75. he tells us, "That from violent Pains ariſe long-continu'd Fevers." And in N° 31. *ibid.* and in *Lib.* 1. *Prorrhet.* he informs us, "That malignant Fevers ariſe from Pains of the *Hypochondria*." When the Articulation of the *Humerus* ſlips towards the poſterior Parts, he tells us, that it is intenſely painful, and excites the moſt violent Fevers. And in his *Tr. de Fracturis* he informs us, "That unleſs any luxated Articulation is ſpeedily reduc'd, a Fever will, in the healthieſt Perſon, be produc'd by the Pain."

Since, therefore, a Fever almoſt always ſucceeds an intenſe Pain, we may eaſily underſtand how Heat is the Effect of an increaſed Circulation by the Fever; and Dryneſs, the Effect of a Diſſipation of the Fluids by a briſker Circulation, may ariſe from Pain: But when Dryneſs and preternatural Heat are preſent in the Body, Thirſt always forces the Patient to alleviate theſe Symptoms by copious Drinking.

As for Convulſions; theſe principally happen in thoſe, the Whole of whoſe nervous Syſtems is highly delicate, and ſuſceptible of the ſmalleſt Impreſſions: Hence Infants are ſo often ſubject to Convulſions, on account of Gripes in the Inteſtines, ariſing from an Acid.

As for a Gangrene; this is ſuch an Affection of a ſoft Part, as, in conſequence of an Abolition of the vital Influx and Efflux of the Humours, tends to a Mortification. Hence, with reſpect to a Nerve in great Pain, a Gangrene is ſuch a State of that Nerve, by which it tends to a Mortification, ſince it will ſoon

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soon be totally ruptured in consequence of its violent Distraction. When a violent Pleurisy, accompanied with intense Pain, is not suddenly relieved, or when Respiration is by the Violence of the Pain so hindered, that the Patient is in Danger of being suffocated, livid Spots appearing on the Part affected, denote a mortal Gangrene. In an inflammatory Iliac Passion, after the most intense Pains, a Gangrene in a few Hours arises, upon which the Pain ceases, but Death soon succeeds. In a malignant Paronychia, within a few Hours, the Part is often affected with so intolerable Pain, that the corrupted soft Parts are dissolved into a gangrenous Gore, and the Bone of the affected Finger falls off mortified. But a Gangrene principally succeeds Pain, when an Inflammation and violent Fever are present at the same time; for then, by the increased Impetus of the Circulation, the Parts are quickly destroy'd.

In this Case the Difference of Anodynes is to be estimated and determined by the Diversity of the Causes producing Pain.

There is only one proximate Cause of Pain, and that is such a Disposition of a nervous Fibre arising from the Brain as threatens its Dissolution. Every thing, therefore, which removes such a Disposition of the nervous Fibre, will be a Remedy for the Pain: But because such a Condition of the Nerve may depend on a great many different Causes, hence a proportionable Variety of Anodynes is requisite, since distinct Remedies must be applied for removing each particular Cause. Hence it is necessary, that the particular Cause of the Pain should be known before we can determine what will weaken or remove this Cause. We have already enumerated the Causes of Pain, and reduced them to distinct Classes; and the following Aphorism proposes the Remedies suited to these Causes.

The Cause of Pain is, therefore, taken away,
1. By relaxing the distended Fibre.
2. By resolving whatever is concreted.
3. By diminishing the Motion of the Fluids, and lessening the distending Matter.
4. By removing the unequal and violent Traction.
5. By correcting the present Acrimony.
6. By discussing it; and,
7. By removing that which dissolves the Fibres.

1. Such a Distraction alone as is ready to produce a Rupture, excites Pain: Now if we can by any Art manage things in such a manner as that the Fibre may be distracted without Danger of a Rupture, the Pain ceases, tho' the Cause distracting the nervous Fibre continues to act. If we attempt to break a Piece of dry and rigid Wood it breaks; but if it is macerated in Water, it may be bent. Thus a green sallow Twig may be twisted without breaking; but when dry, an Attempt to bend it, breaks it. Hence in Disorders, accompanied with the most intense Pain, such Remedies have in all Ages been used as relax'd the solid Parts of the Body. In the Iliac Passion, *Hippocrates* ordered the Body to be fomented and anointed with Oil. In a Pleurisy he commanded the affected Side to be covered with the most soft and tepid Substances, injoining at the same time, the internal Use of things of a like Nature. *Galen*, as is already observed, on himself allay'd the most intense Pain, and prevented the Convulsions to be dreaded from it, by continually applying warm Oil to the Part affected. Whilst a Phlegmon, by an inflammatory Tumor of the subjacent Membrana Adiposa, distends the Skin, and by a Distraction of the cutaneous Fibres produces Pain, tho' such a Tumor being entirely irresolvable, tends to a Suppuration, and consequently the distending Cause not only remains, but is rather increased, yet if Cataplasms of the most emollient Substances are continually applied, the Pain will be mitigated, since the nervous Fibres are so relaxed, that they may be distracted, without Danger of a Rupture. A large Quantity of any soft expressed Oil taken internally, greatly alleviates iliac, colical, and nephritic Pains. The Steam of tepid Water affords great Relief to Parts affected with the greatest Pain. When by the Puncture of a Nerve immense Pains are produced, skilful Surgeons continually foment the Parts affected, with the most emollient Substances. Hence they affirm, that emollient and relaxing Medicines are an universal Remedy against Pains, because they remove the proximate Cause of Pain which is the Danger of Rupture in the nervous Fibre; whilst other Remedies act only on the remote Causes of the Pain. And tho' we should be ignorant of the particular Cause so disposing the nervous Fibres as to produce a Sense of Pain, yet these Medicines may always be used with Safety and Advantage; for they have this good Property, that they are sufficient for removing many of the remote Causes of Pain, without augmenting those which they cannot remove; for the Vessels being relaxed, the distending stagnant Fluid passes more easily through them, and at the same time, all Acrimony is corrected by such Medicines. But every thing which augments the Strength and Contractility of the Parts of the Body, whilst the Cause distending the Fibres remains the same, will increase the Pain. Thus a Pleurisy is observed to be far more violent in robust Persons accustomed to Exercise, than in Patients of weak and lax Constitutions; in whom, also, luxated Bones are far more easily reduced than in Persons of firm Habits; for in some, the Elongation of the Ligaments is so easy, that the Reduction may be made without Pain. When Executioners, in racking Malefactors, forcibly distract all the Parts of the Body, they greatly increase the Pain by sprinkling cold Water upon them. When, therefore, the Efficacy of emollient and relaxing Substances can reach the Part affected, it will never fail to produce an Effect: If, for Instance, the nervous Fibril in the middle Substance of a Tooth is pain'd by too great a Tension, that Pain must necessarily be allay'd by relaxing Medicines. The same holds true, when from a Disorder of the Marrow of a Bone intolerable Pains arise; as, also, when in a malignant Paronychia, the Cause of the Disorder is lodged under the cartilaginous Part which covers the Tendons of the Flexor Muscles of the Fingers. It may, also, sometimes happen, that tho' the Pain is very intense, yet other Symptoms prohibit the Use of relaxing and emollient Medicines. Thus, for Instance, if from a latent or exulcerated Cancer, an intense Pain should arise, Emollients would prove hurtful, because they would greatly increase the Putrefaction, and fungous Excrescence of the Cancer. But almost in all other Cases, relaxing Medicines are universally used for alleviating Pains.

2. When a Stone impacted in the Ureters produces Pain, the Persons who could dissolve that calculous Concretion would remove the Pain. All those things which are capable of resolving Blood concreted by an inflammatory Density, will alleviate pleuritic Pains. The same holds true in all other Cases, where an obstructing Matter stuffing the Vessels, or Tumors arising from a Concretion of congested Matter, press or distend the adjacent Parts. Under the Article OBSTRUCTIO, are considered the various Manners in which the Molecules of the human Fluids before separate, may become concreted; and under that Article are, also, specified the Remedies capable of dividing these Concretions. Hence the Nature of the Concretions ought to be investigated from what has been said, before we can find a Remedy, which, by resolving that Concretion, will remove the Pain arising from it.

3. All Pain supposes a remaining Principle of Life; and if it arises from a stagnant Humour distending the obstructed Vessels, it will be the more intense the more brisk the Circulation of the Blood is. Hence in a Pleurisy when a violent Fever is present, an intense Pain is produced, because the Humours are impetuously forced on the obstructed Part, and by dilating the Vessels, forcibly distract the nervous Fibres constituting the Texture of these Vessels. Every thing, therefore, which diminishes the Impetus and Velocity of the Circulation of the Humours, will alleviate the Pain, as is certain from daily Experience; for Venesection till the Patient falls into a Deliquium, forthwith either removes, or at least greatly abates, the most acute pleuritic Pains. Hence the antient Physicians in the most violent Pains, recommended Venesection till a Deliquium was brought on. And *Galen*, in *Comment.* 1. in *Aphor.* tells us, that he removed a long and fixed Pain in that Part of himself where the Liver is joined to the Diaphragm, by opening the Artery between the Thumb and fore Finger of his Right Hand, and permitting the Blood to flow till it stopt spontaneously. For the same Reason, the Antients, as we find from *Cap.* 23. of the last quoted Work, recommended great Rest in the most acute Diseases, which are generally accompanied with an intense Pain of the Head. Nor in such Cases is Venesection only useful, because by weakening Life it diminishes the Motion of the Blood, but, also, because by means thereof the Quantity of the distending Humours is lessened. In plethoric Patients intense Head-achs are frequently present, tho' the excessive Motion of the Blood is checked, and almost suffocated by the Redundance of the Humours to be moved. But as soon as by a spontaneous Hæmorrhage from the Nose, or a liberal Venesection, the Redundance of the Blood is diminished, the Pain forthwith ceases, because the Matter which distends the too full Veins is removed.

But a Diminution of the Motion of the Blood is not only beneficial in those Cases, where an excessive Velocity of the Circulation, or too great a Distension of the Vessels produce Pain, or augment it when produc'd by any other Cause; but it is, also, highly beneficial in alleviating those Pains which arise from an acrimonious Quality of the Humours; for acrid Substances rendered active by the Circulation of the Blood and Heat of the Body, may produce bad Effects: But in a Carcase where there is no Motion,

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Motion, except only the common Heat of the Atmosphere, they produce scarcely any Effect. Thus *Helmont* and *Petit* inform us, that Cantharides applied to a Carcase, produce no Effect. And in *Mem. de l'Acad. Royale des Sciences l'An.* 1732. we are told, that a potential Caustic applied to the Skin of a Carcase produced little or no Effect in fifteen Hours; but when the Part to which it was applied was cherished by warm Linen Cloths, it destroy'd the Skin, and a Part of the subjacent Fat. It is observable, that those Diseases in which the Pain arises from an Acrimony of the degenerating Humours, are always rendered worse by an Increase of the Circulation, or an Augmentation of the Heat, which succeeds that of the Circulation. The nocturnal Pains, which so severely afflict those labouring under a *Lues Venerea*, are by the Heat of the Bed so increased, that the miserable Patients are forced every Night to get out of Bed in order to cool their Bodies, and by that means alleviate their Pain. When an acute Fever seizes a Person labouring under a malignant Scurvy, the Pains are greatly increased, and sometimes the Vessels being suddenly burst by the augmented Impetus of the acrid Humours, the Blood is discharged every-where. Thus, in *Mem. de l'Acad. Royale des Sciences l'An.* 1699. we have an Instance of a malignant Scurvy greatly increased by the Heat of the Air. The same is evinced by many other Observations.

In what Manner, and by what Means the Motion of the Fluids thro' the Vessels may be diminished, is shewn under the Article SANGUIS; but the distending Matter can only be removed by Evacuants.

4. When by a Luxation the Bone slips out of the Cavity of its Articulation, it distracts the Ligaments, and presses upon the adjacent Parts. Hence arises Pain, which soon ceases, or at least is greatly diminished, as soon as the Bone is replaced; for some Degree of Pain often remains after the Reduction, in consequence of the Ligaments; for which Reason they are frequently inflamed. The same holds true, when the tendinous Parts half-torn, and continually elongated by an unequal Traction excite an intense Pain; for if, in that Case, by a proper Situation of the Part affected, and a due Application of Compress and Bandage, this unequal Traction is hindered, the Pain ceases. This is evinced by a memorable Case related in *Mem. de l'Acad. Royale des Sciences l'An.* 1728. But if the distracting Force cannot be removed, when, for Instance, the luxated Bone cannot be reduced on account of the Tumor, and violent Inflammation, then emollient and relaxing Substances are alone proper, since by their means the Fibres may be elongated without Danger of a Rupture.

5. When without a too great Motion of the Humours, any Signs of an excessive Distension of the Parts by a Concretion or Accumulation of the Fluids, or without any external distracting Force, a Pain arises, then we begin to think of the Acrimony of the Humours, which is often said to produce that Pain which arises from other Causes. For a great Degree of Acrimony is very rarely found in the Blood, since the tender Vessels of the Brain would soon be destroy'd if the acrid Humours passed through them. Hence acrid Humours are scarcely ever found, except in the *Primæ Viæ*, or when stagnant or extravasated Humours lodged in any Part of the Body become acrid, either from their own Nature, or a particular Cacochymy, as in a *Lues Venerea*, and Scurvy. Hence such an Acrimony of the Humours in particular Parts is always bad. If it is, therefore, certain, that Acrimony is the Cause of the Pain, it is sufficiently obvious, that the Pain is removed or mitigated by correcting that Acrimony. But this is done either by a specific Medicine opposite to the known Acrimony; when, for Instance, an acrimonious Acid is enervated, and rendered mild by terrestrial Absorbents, or by alcaline Salts; or the same End is obtained by the general Remedies against Acrimony of all Kinds, such as diluent, obtunding, and invisceating Substances, by which all Acrimony is subdued and corrected.

6. When in a malignant *Lues Venerea* the Bones are affected, intolerable Pains arise from a slow Corrosion and Tumor of the affected Bones distending the highly sensible Periostium: But when in such Cases the Body is filled with a large Quantity of the Decoction of Guaiacum, and a Sweat excited by kindled Spirit of Wine, that Decoction is convey'd thro' all the Vessels, the latent Poison is deterged and carried out of the Body, and the Pain either greatly alleviated, or totally removed. The same will happen when there is a considerable Cacochymy of the acrid scorbutic Kind; for Instance, in the Body of a wounded Person: For in that Case, the Humours convey'd to the Wound, soon acquiring a greater Degree of Acrimony, may excite Pain. This acrid and irritating Matter is washed away and corrected by highly soft and gently diaphoretic Medicines, such as all the vulnerary Decoctions exhibited in large Quantities.

7. So long as the Remains of the wounding Instrument, the Fragments of the wounded Bone, or any other Substances, which can by their acute Figure and Rigidity injure the Parts, remain in the Wound so long, the Pain will continue, especially because the Parts perpetually irritated become inflamed and tumid. Hence the Parts pressed to this foreign Body left in the Wound are more lacerated, till it is extracted by chirurgical Instruments, or expelled by a due Suppuration. But in what Manner, and with what Cautions such Bodies should be removed from Wounds, has been already specified.

The Sense of Pain is taken away whilst the Cause remains;

First, by rendering the Nerves insensible by means of Compression, Cutting, or Burning: And,

Secondly, By obtunding the common Sensory by the Force of Narcotics; and by these some of the Effects arising from the Sense of Pain are taken away.

The most perfect Cure of Pain is the Removal of its Cause. But sometimes the Causes even of the greatest Pains are latent, and when they are known they cannot often be removed. But the ungrateful Sense of Pain requires an Alleviation, since by its Effects such as Restlessness, Watchings, and Fevers, the Body will be so changed that terrible Misfortunes may succeed. In this Case, the only remaining Method to be taken is to remove the Sense of Pain, tho' its Cause remains. But the Sense of Pain is produced when there is a free Commerce between the Brain and the affected Nerve, and when the Functions of the Brain remain entire: All things, therefore, which destroy the Sense without removing the Cause of Pain, act either on the affected Nerve, or on the Brain itself.

1. It is certain from Experience, that when a Nerve which alone runs to any Part of the Body is destroyed, all Sense of Pain in that Part is abolished, as has already been observed; for the Change produced in the Extremity of the Nerve, so affecting the common Sensory, that an Idea of Pain arises in the Mind, is by the Soundness of the affected Nerve convey'd to the Brain. Every thing, therefore, which destroys the Soundness of the Nerve between the Brain and that Part of the Body to which the Cause exciting Pain is applied, will remove all Sense of Pain, tho' the Cause of that Pain not only remains, but, also, continues to act with the greatest Violence. They who in consequence of a Luxation of the Spine of the Back, have the spinal Marrow compress'd, feel no Pain from the Application of live Fire to their Legs. Nor is it of any Importance, whether by a violent Compression the Commerce is hindered between the Brain and the compressed Part of the Nerve, or whether by Cutting or Burning, the Continuity of the Nerve is destroy'd. When in the Amputation of Limbs the Vessels are by a tight Ligature compressed, in order to stop the Hæmorrhage, there arises at the same time such a Stupor and Insensibility of the Parts from a Compression of the Nerves, as greatly diminishes the Pain of the Operation. A certain Empiric of *Amsterdam* cured the Tooth-ach by twisting the Patient's Hairs about his Fingers, and then by a strong Pressure of his Thumb below the Lobe of the Ear, contusing the Nerve lodged there, which distributes Ramifications to the superior Jaw. The same Effect was produced by compressing the Nerve which on both Sides enters the inferior Jaw, under the first *Dens Molaris*. The most violent Tooth-ach is allayed by all those things which destroy the pain'd Nerve in the Tooth. Hence, if by a Corrosion of the Tooth, free Access may be had to the Nerve, they burn it with an Iron Probe red-hot, which affords present Relief, provided the Heat of the ignited Iron reaches the pain'd Nerve. This Method was commended by *Hippocrates*, who in *Tract. de Affectionibus*, tells us, "That in a Tooth-ach, if the Tooth is corroded and loose, "it is to be drawn; but if it is neither corroded nor loose, it "is to be burned." Others with a similar Effect, put highly acrid distilled Oils, such as those of Cloves, and Origanum, into the hollow Tooth, which by their hot Quality immediately destroy the Nerve they touch. In many other Pains which obstinately resisted the Efficacy of other Medicines, *Hippocrates* used live Fire, or Scarifications, by both which means he removed the Sense of Pain, by destroying the Nerves. Thus, in *Tract. de Affectionibus*, after recommending many Remedies against Head-achs, he adds, "But if the Disorder of the "Head is so violent and long-continued, that it cannot be re-"moved by purging the Head, the Patient's Head must either "be scarified, or the Veins in its Circumference must be "burned, since there is no Hope of Relief from any other Re-"medy." And in his *Tr. de Locis in Homine*, he tells us, "That in Head-achs we are to use Venesection; but "if the Pain does not cease, but continues for a considerable "time, we are to burn the Veins in the Head, by which

"means

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" means the Patient will recover." In several other Passages he gives the same Directions with respect to the Cure of an Head-ach. In *Tr. de Affectionibus*, in a violent ischiadic Pain, he orders " the Part affected, where-ever it is, to " be softened by Baths, Fomentations and Liniments, the " Body to be rendered soluble, and a Purge to be exhibited " after the Pain is alleviated; after which the Patient is to " drink Asses Milk. But if the Pain seizes one Part, fixes in " it, and cannot be removed by Medicines, it is to be burned " whatever Part it is." In *Tr. de Internis Affectionibus*, when treating of the same Disorder, he tells us, that if after the Use of various Remedies, the Pain is not alleviated, the Part where-ever it is, is to have many deep Crusts burned upon it, in the bony Parts by Fungi, but in the fleshy Parts by ignited Iron. The same Directions are, also, given in *Aph.* 59. and 60. of *Sect.* 6. and in other Passages of his Works.

Hence, in *Asia*, the *Moxa* is greatly used for removing arthritic Pains, and even the Gout; whilst the Inhabitants take the old Leaves of a sort of Mugwort triturated, and freed from all their hard and fibrous Parts; and having thus reduced them to a soft Kind of Down, they make them up into pyramidal Bodies, the Base of which they apply to the Part affected. Then kindling the Apex or Top of the Pyramid, the Fire gradually descends and burns the Part; this is so mild a Cure, that *Kempferus*, in *Amœnitat. Exotic.* tells us, he has an hundred times seen Children submit to it without shrieking, or testifying the least Sign of Pain. Hence, in *Asia*, the Use of the *Moxa* is so frequent, that every six Months, for the sake of Health, many submit to have some Parts of their Bodies burned by it; and even those who are confined to perpetual Imprisonment, are permitted to come abroad, in order to enjoy that Advantage.

But because in consequence of the Destruction of the Nerve, all the Functions depending on its Soundness, are abolished, so this Method of alleviating Pain is not used, except when the Pain is very intense, and the Medicines specified above have been used in vain, or when the Condition of the Part affected is such, that these Remedies cannot be so applied, as by their Efficacy to remove or correct the Cause of the Pain.

1. When the Cause of the Pain cannot be removed, or when it is of no Importance, or absolutely impossible to destroy the pained Nerve, without injuring the Soundness of which it cannot without great Loss or Danger be remov'd, then the only Method remaining is so to change the common Sensory, as to render it insensible of Pain; for that the Cause of the highest Pain may be in the Body, without any Sense of Pain, even tho' the Soundness of the Nerves remains, is obvious from apoplectic Patients, and Persons excessively drunk, who are entirely deprived of all Sensation. Now there are in Nature Medicines, which, for a certain time, remove the Sense of Pain in the Mind, tho' they by no means take away or correct the Causes of that Pain. These, from the Stupor they induce, are call'd *Narcotics*, which we have already treated of. The principal of these is Opium, which by a surprising Quality removes the Sense of Pain, whilst it remains in the Stomach; for a Grain ar two of Opium, when swallowed, by its resinous Tenacity, which renders it difficult to be dissolved, remains long in the Stomach, and generally for eight Hours at least, allays the Sense of Pain; and which is surprising, a Pill of undissolved Opium is frequently vomited up next Morning. Hence it does not seem to act, because being dissolved and mixed with the Humours, it is, by the Laws of the Circulation, convey'd to the Brain; but because it remains applied to the internal Surface of the Stomach, and induces such a Change on the Nerves dispersed there, as is able to obtund the sensitive or perceiving Power of the Brain; for the great Influence of the Nerves dispersed through the Fabric of the Stomach, on the common Sensory, is sufficiently evinced from many Diseases in which the Functions of the Brain are greatly disturb'd, tho' the material Cause of all these Symptoms is only lodged in the Stomach. Corrupted Bile lodged in the Stomach, excites violent Head-achs, Vertigos, and Deliriums; but when that sordid Matter is carried off by Vomits, all these Symptoms cease. This is confirmed by many Poisons, which even when they remain in the Stomach, induce surprising Changes on the Body; but as soon as they are removed from it, all the Symptoms produced by it cease. This is confirmed by *Wepfer*, in *Cicut. Aquat. Histor. & Noxæ*, where he gives us the History of two Boys, and six Girls, who eat the *Cicuta Aquatica*.

It is, therefore, highly probable, that Opium lodged in the Stomach may, only by its touching the Nerves there, produce such a Change in the common Sensory, as that tho' the Cause of Pain, and the Soundness of the Nerves remain, yet the Idea of Pain is not excited in the Mind. And Heaven, whose Designs are always pregnant with Compassion to the wretched State of Mortals, seems to have granted us these Remedies, in order to allay for a time these intolerable Pains, whose Causes cannot be removed, or at least weaken'd, except in a long time. Hence *Sydenham*, being convinced by many Experiments, concluded, that without Opiates, Medicine would be very imperfect; and adds, that the most celebrated Preparations of Opium neither increased its Virtues, nor corrected that Malignity, of which many falsly supposed it to be possessed. Certainly the prudent Exhibition of due Doses of Opium produces no bad Effects, even tho' continued for some Months. Hence the learned *Joannes Terentius Lyncæus*, in his Notes on *Hernand. Rerum Mexican. Novæ Hispan. Thesaur.* justly affirmed, that as all the Inhabitants of the Eastern and Southern Parts of the World every Day used Opium, Thorn-apples, and Bang, with Safety, it was to be lamented, that such a Number of Mortals should, through Ignorance of this Remedy, be cut off by violent and racking Pains, who might be preserved, if induced by the universal Consent of Physicians, they used it more frequently. And though *Prosper Alpinus*, in *Med. Lib.* 4. *Cap.* 1. condemns Opium as poisonous, yet he is obliged to confess, that the *Egyptians*, who used it daily, perceived no Harm from it, though some of them gradually increasing the Dose, used three Drams of it each Day. But if such as were long habituated to it suddenly gave over the Use of it, they were seized with Syncopes, and other violent Symptoms, till they again used it, or drank large Quantities of the most generous *Aretan* Wine with Aromatics.

It is not to be denied, that the imprudent Use of Opium exhibited in large Doses, has produced Deliriums, Convulsions, and mortal Apoplexies. But many Medicines which are every Day safely exhibited in moderate Doses, prove injurious when used to Excess. A memorable Instance of this with respect to Opium, is found in *Hist. de l'Acad. des Sciences l'Ann.* 1735. But though that surprising Case proves, that a large Quantity of Opium exhibited to one not accustomed to it, may produce numberless terrible Symptoms, and Death; and even that by its poisonous Quality the Fluids of the human Body may be corrupted, yet it is certain from numberless Experiments, that it is a safe Medicine when prudently used; for in Diseases it is a matter of great Importance to alleviate Pain; and nothing prevents the Removal of the known Cause of the Pain by other Remedies, whilst by Narcotics the Sense of Pain is obtunded. But it is carefully to be remembered, that though there is then no Sense of Pain, yet the Cause of Pain continues to destroy the Body. For when in the most painful inflammatory Disorders, such as a Pleurisy for Instance, the Pain is soothed by Narcotics, a violent Inflammation proceeding to destroy the affected Vessels, produces a Gangrene, and the Patient awaking out of his Sleep often dies suddenly: Such fatal Events are then ascribed to the Remedies, whereas they are only owing to this, that the Physician hearing no more of the Patient's Complaints, falsly imagines, that the Disease is become milder, though it continues with equal, and sometimes, perhaps, with greater Violence, after the Exhibition of such Medicines; for when by a Suppression of all animal Motion a profound Sleep is induced, the vital Motions are augmented. But in inflammatory Disorders there is too great a Velocity of the Circulation. Hence in these the Use of Narcotics seems never to be safe, unless by Venesection, and other liberal Evacuations, the excessive Force of the Disease is previously broken. *Sydenham*, in *Febr. Contin. Ann.* 1661. carefully gives the same Caution, though from Experience he had learn'd the salutary Effects of Narcotics in many Diseases, and used them boldly. In what Manner, and with what Cautions, Narcotics are to be exhibited, has been already specified. The Remedies adapted to this and the preceding Aphorism are before enumerated, when treating of the Means of procuring Sleep.

By these Remedies are removed all the Effects produced by the Sense of Pain, such as Restlessness, Jactation, and especially Watching: But the other Effects depending on the Cause of Pain, so far as it endeavours to destroy the pain'd Nerves, continue, tho' the Sense of Pain is soothed.

Convulsions consider'd as a Symptom of Wounds.

A Convulsion is a violent, unavoidable, and alternately repeated Contraction of a Muscle.

Here we only treat of a Convulsion which arises from a Wound as its Cause; for a febrile Convulsion arises from quite different Causes, and consequently requires a different Cure.

Every Convulsion is an Affection of a Muscle; and when the Muscles act, their Tendons are stretched; and since this is done alternately, the Tendons are at one time stretched, and at another relaxed. Hence, when Physicians, in feeling the Pulse, perceive the Tendons, as it were, to leap, in consequence of a Convulsion of the Muscles of the Arm, they generally call that Symptom a *Subsultus* or *Leaping of the Tendons*. But as the Antients included the Tendons under the general Name

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Name of *Nerves*; for the Ligaments and Tendons were by them call'd νεῦρα, as well as the Nerves arising from the Brain and Spinal Marrow, as we find from *Galen*, *de Usu Part. Lib.* 15. *Cap.* 1. Hence *Celsus* calls that Disorder, which is at present commonly call'd *Convulsions*, a *Distension of the Nerves*.

In every Convulsion there is a Contraction of the Muscle, which if it was voluntary, would not constitute a Disorder. Hence it is added in the Definition, that it is an involuntary Contraction of a Muscle. Besides it is requisite this Contraction should be violent, otherwise there would be no Difference between a Convulsion and a Tremor, in which the Muscles are, without the Concurrence of the Will, alternately relaxed and contracted; but these Contractions are only weak, whereas in a Convulsion they are violent. It is, also, added in the Definition, that this Contraction is alternately repeated, that is, ceases for a short time, and then begins again.

But it is to be observed, that if the Cause, whatever it is, which produces the involuntary Contraction of the Muscle, continues to act without an alternate Intermission, then the Muscle remains constantly contracted so long as the Action of that Cause continues. That this Disorder is to be ranked among Convulsions, is sufficiently obvious, because the same occasional Causes at one time produce the alternate involuntary Contractions of the Muscles, and at another, their steady, though involuntary, Rigidity. This appears in epileptic Patients, in whom, during the Paroxysm, the alternate Convulsions are at one time present, and a little after they become rigid like Statues, almost all the Muscles of the Body being contracted, whilst soon after they again fall into the alternate Convulsions. What the antient *Greek* Physicians call'd σπασμοὶ, is by the modern Physicians call'd Convulsions. A Tetanus was by them call'd, that Species of Disorder in which the Muscles, being involuntarily contracted, became rigid; which Distemper *Celsus*, in *Lib.* 2. *Cap.* 1. calls a *Rigor*; but gives the Name of *Distension of the Nerves*, to what they call'd *Spasmus*; for the Name of *Convulsion* in this Sense is only found among the modern Physicians; though in *Aretæus de Morb. Acut. Lib.* 1. *Cap.* 6. when treating of a Tetanus, and its Differences, the Word ξυνολκὴ occurs, which is properly enough translated *Convulsio* in the Version. But the Author seem to have used *Tetanus* and *Spasmus* promiscuously for the same Disorder, as is sufficiently obvious from the same Chapter. And *Galen*, in *Comment. in Sect.* 4. *Aphor. No.* 57. tells us, "That a Tetanus is a Convulsion, though the Parts seem not "to be convulsed, because they are equally drawn forwards and "backwards."

Hence we may conclude, that though at present the Word *Convulsion* is used, when an involuntary violent and alternately repeated Contraction of a Muscle is present, yet under its more general Signification, we may, also, include that involuntary and violent Contraction of a Muscle which remains without alternate Remissions, since these Words were formerly promiscuously used, and since the Disorders often arise from the same Causes, and seize the same Parts, that is, the Muscles. That Species of Convulsion in which the Muscles remain'd contracted, they divided into the *Tetanus*, in which the Patient was strait, but so rigid, that he could not be bended in any Direction; the *Emprosthotonus*, in which the Body being bended forward, remain'd stiff and inflexible in that Position; and the *Opisthotonus*, in which the Body was incurvated backwards in the like manner. Besides, a *Tetanus* may be either universal, when all the Muscles of the Body being thus affected become rigid in a Moment; or it may be partial, when, for Instance, by a spasmodic Contraction of the Muscles of the Jaw, the Mouth is obstinately closed.

The Cause of Convulsions is, whatever drives the nervous Fluid with alternate Force into the convulsed Muscles.

An human Creature has a surprising Faculty by which it can at Pleasure, by means of the Muscles subservient to the Will, excite a Motion, sustain and direct it, augment and diminish it, suppress it after it is excited, and again renew it after it is suppressed. And these so delicate Motions excited in the Body, and which by so great a mechanical Force change other Bodies, seem to be hardly corporeal with respect to their Principle, and are all performed without any Knowledge of the Cause, or Instruments requisite to this Purpose; for the most skilful Anatomist can perform these Motions no better than the most ignorant and illiterate Child. But what is most surprising is, that in exciting these Motions, no physical Change appears in the Body, except in the thing changed; and when by the Influence of the Will such an arbitrary Motion is suppressed, no Mark of so great a Change remains. And all these things may be done in an almost imperceptible Portion of Time; for whilst one wills to elevate his Arm, it is elevated In order to this, as is obvious from Physiology, it is only requisite, that there should be a free Commerce between the Brain and Muscles, by means of the Nerves convey'd from the medullary Substance of the Brain to the Muscles subservient to the Will. Since, therefore, a Convulsion from its Definition is such an alternate Excitation of Motion, and a Suppression of it when excited; and since we can at Pleasure imitate such a Convulsion, as Beggars feigning epileptic Fits do, it is obvious, that a Convulsion may be excited by every Cause, which without a Concurrence of the Will, by means of the Nerves, induces such a Change on the Muscles, as a sound Person could bring about by the Act of Volition: And as we are ignorant of the Manner in which, by the Will, we excite Motion, but only observe the Effect, so we may be equally ignorant of that last Change in the common Sensory, by which a Convulsion is produced. All that Art can do is, to observe those Changes of the Body which are succeeded by such an involuntary Contraction of the Muscles, and then to remove or correct these known Changes, though we by no means understand in what manner these Changes of the Body affect the common Sensory, or that Part of the Brain where the Mutability of Thought is produced by the Change of the Body, and the Mutability of the Body by the Change of Thought.

But because it is certain from medicinal Observations, that many things capable of exciting Convulsions may happen to the Body, and as we only here treat of Convulsions as they succeed a Wound as their principal Cause, so we are to inquire what things there may be in a Wound itself, by which Convulsions have been observed to be excited: And these are enumerated in the following Aphorism.

And, therefore, the Cause of Convulsions may be inherent in the Wound itself, whether it be foreign Matter irritating the Parts, or the Condition of the wounded Nerve, or a previous excessive Evacuation of Blood.

As for a foreign Matter irritating the Wound; if that tender pulpous Production of the medullary Substance of the Brain, which constitutes the Substance of a *Nerve*, properly so called, and which in the larger Nerves is fortified by so many Coats, that it may be safely convey'd to the destin'd Parts, is irritated by an acrid Substance, or by any other Body, which by its mechanical Figure or Hardness, is capable of injuring or destroying that soft Pulp, Convulsions may be produced by that means. Now there may be lodged in the Wound, Nerves and Tendons divided, or so stript of their Coverings, that acrid Substances may be easily convey'd to the internal Part of that pulpous Substance which is so easily irritated: Thus it is certain, that when naked Nerves are only touched by Fluids to which they are not naturally accustomed, violent Pains and Convulsions are produced. When by the Caries of a Tooth, the hard Crust covering the small Nerves dispersed through its Substance is corroded, the cold Air acting on these naked Nerves, a Particle of Sugar, or the softest Butter touching them, throw the Patient into Convulsions, on account of the intense Pain. The touching of a Tendon divested of its Coats, in a Moment renders the Patient rigid, by producing an universal Tetanus, as is already observed; whereas Tendons covered with their mucous, or pinguedinous Coats, may be protracted, elongated, or sewed together, without any great Pain. Since, therefore, in a Wound these highly sensible Parts are often rendered naked, a Part of the wounding Instrument, Fragments of the Bones, or other things of a like Nature left in the Wound, may, by irritating the Parts, produce the most violent Symptoms. The same will happen from the Humours discharged into the Cavity of the Wound, and acquiring an acrid Quality; as, also, from acrid Substances applied to the Wound.

As for the Condition of the wounded Nerve; it is already shewn, that Nerves and Tendons pricked, or half torn, produce Convulsions, and other violent Symptoms, which is evinced by many practical Observations.

As for a previous excessive Evacuation of Blood; when so great a Quantity of Humours is discharged from the Body, that the remaining Part, by the Force of the Heart convey'd thro' the Vessels, is not able to fill them equably, the Pressure on the Arteries of the Brain is wanting; hence the Motion of the Spirits through the Nerves of the Brain ceases; and hence arises a Palsy of all the Muscles, and from a similar State of the *Cerebellum* a *Deliquium*, so that all the nervous and arterial Fluids begin to stop. In the mean time the Parts being contracted by the greater Cold succeeding a Diminution of the Circulation, convey the venous Blood to the Heart, which, being fill'd, contracts itself, and with the greatest Velocity moves the Blood through the empty Arteries, since nothing resists it when thus impel'd. In this Case, therefore, the Blood is moved with a violent Impetus through the Vessels of the Brain. Hence the Motion of the Spirits into the Muscles becomes very quick, but ceases immediately, though it will return again when the Heart, which is gradually fill'd, contracts itself. In one Moment, then, the strongest Cause of Motion is apply'd to the Muscles, but next Moment ceases. Hence arises that alternate, violent, and involuntary Contraction of the Muscles, which we call *Convulsions*.

This is evinced by what daily happens in the killing of Animals; for when by a Division of the Carotid Arteries in Calves, Sheep, and Hogs, the Blood flows out with a full Stream, about the Death of the Animal the Flux of Blood begins to cease, and only return at certain Intervals for the Reasons now alleged; and then the Animal is always strongly convulsed till it dies. When by Abortion, or after Labour, Women lose large Quantities of Blood from the open Vessels of the Uterus, they are often seized with Convulsions, and frequently die suddenly.

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denly. The same is, also, to be observed, when by an excessive Purging, too great a Quantity of Humours is carried out of the Body. Hence *Hippocrates*, in *Aphor.* 3. *Sect.* 5. tells us, "That after the Loss of much Blood, Convulsions, or "an Hiccup, are bad Signs." In *Aphor.* 39. *Sect.* 6. he tells us, "That Convulsions proceed both from Repletion and Inani-"tion." Thus, also, in *Aphor.* 4. *Sect.* 5. he affirms, "That "Convulsions, and an Hiccup, succeed excessive Purging;" for Convulsions arising after excessive Evacuations denote, that there is so great an Evacuation of Fluids from the Body, that the empty Vessels collapse, and the Blood propel'd from the Heart, cannot propagate the Motion it has receiv'd, through the full Vessels, but rushes freely into the empty Vessels. Hence the due and equable Pressure on the Vessels of the Brain on which Life and Health depend, is wanting. Hence it is obvious, how great Danger accompanies Convulsions arising from excessive Inanition.

Hence, also, the Effect of a Convulsion, which is a Perturbation of all the Functions, is known.

The Effects of Convulsions are not only surprising, but almost numberless; for not only all the Solids and Fluids, but, also, the Actions depending upon them are disturbed; for when by this alternate and violent Contraction the Muscles are at one time rigid, and at another time flaccid, the Motion of the Blood through the Muscles is at one time hindered, whilst next Moment it freely passes through the flaccid Muscles with the greatest Impetus. The Veins adjacent to the convulsed Muscles are quickly emptied, in consequence of which, the Impetus of the venous Blood towards the Heart is accelerated. Hence the equable Reception of the Blood into the Heart, and its Expulsion from it, are greatly disturbed. Respiration is, also, surprisingly disturbed, since it becomes laborious, and cannot be performed without the greatest Uneasiness. Sometimes, also, a violent Suffocation happens, as *Aretæus de Causis & Signis Morb. Acut. Lib.* 1. *Cap.* 6. has observed, when describing the Effects of a *Tetanus*. Nor is a less Disturbance observed in the animal Actions; for those enormous Motions of the Muscles are not determined by the Will, but happen in an involuntary manner, and often without the Knowledge of the Patient. Often, also, all the external and internal Senses are totally abolished, or surprisingly disordered; nor is it to be wondered at, since the Convulsions testify, that the Brain, on which Life and Health depend, is affected. In the natural Actions surprising Changes are, also, often observed, since when the *Jaw-bones are frequently so constricted and closed*, that they cannot be separated by a Wedge, Deglutition is impossible. Inflations of the Stomach and Intestines, often distend the Abdomen, so that it is ready to burst. Sometimes neither the Fæces nor Urine are discharged, whilst at other times, both are evacuated without the Knowledge of the Patient. In a word, every thing in the Body is so surprisingly chang'd by Convulsions, that nothing of the former Health remains, and the miserable Patients are hardly known by their intimate Acquaintances. All these Changes are accurately observed and described by *Aretæus*, who in the Passage last quoted, concluded, that it was lawful to wish for the Death of such Patients, that their miserable Lives, and excessive Torments, might end together.

For if such Patients survive, violent Symptoms often remain, such as Distortions of the Limbs, Distractions of the Muscles, and a Destruction of the Functions of the Brain. Thus it is certain from Experience, that Palsies, Atrophies, and Folly, have remained incurable, during Life, after violent Convulsions.

Sometimes, also, Convulsions are succeeded by an Abolition of all the vital, animal, and natural Functions, which is Death. *Hippocrates*, in *Aphor.* 2. *Sect.* 5. tells us, "That Convul-"sions accompanying a Wound, prove mortal." *Aretæus*, in the Passage last quoted, when treating of Convulsions, tells us, "That they generally happen on account of Wounds; when "for Instance, Membranes or Muscles, or Nerves, are punc-"tured, in which Case, the Patient generally dies; for Con-"vulsions happening after a Wound are mortal."

Convulsions are cured, 1. By artificially removing whatever irritates the Parts. 2. By correcting or dissipating the Acrimony. 3. By removing the morbid Condition of the Nerve by proper Remedies. 4. By Repletion with some mild, friendly, liquid Aliment, often taken in small Quantities. And, 5. By stopping the Hæmorrhage.

Though Authors abound with antispasmodic Remedies, yet every one must perceive, that as Convulsions arise from so different, and even often, opposite Causes, there can be no universal Remedy for them. But after investigating the Cause, we must determine the Remedy capable of removing, or weakening this known Cause. But as Convulsions after Wounds arise, either from some irritating Matter lodged in the Wound, or from a Puncture or partial Division of the Tendons, Membranes, and Nerves, or lastly, from an excessive Loss of Blood, so the whole Intention of Cure must be directed to these three Indications. Hence, in the first and second Numbers following, we shall treat of those means which remove or mitigate the irritating Matter. In the third, we shall consider these Methods which remove the preternatural Condition of the affected Nerve or Tendon. And in the two last Numbers we shall specify those Remedies by which a Loss of Blood may be stopt, and that Portion of it which is lost, restored.

1. *As for a Removal of irritating Substances*; if a Thorn is fix'd in any nervous Part, under the Nail, for Instance, in such a manner as to wound the nervous Papillæ, after an intense Pain Convulsions frequently arise, which cannot be easily removed so long as the Thorn is lodged there. Hence we are as much as is possible, in the first Dressing, to enquire, whether such a Substance is lodged in the Wound. But how this is to be done, and with what Cautions such Substances are to be removed, we have already specified.

2. *As for correcting or dissipating the Acrimony*; Acrimony rarely arises in a Wound from the Humours convey'd to it, unless there is a great Cacochymy in the Body before, or large Quantities of acrid Aliments have been eaten. This far more frequently happens from the imprudent Application of acrid Remedies, such as Arsenic, or other corrosive Medicines to the wounded nervous or tendinous Parts. But these Applications when known, are to be removed or weakened by Medicines, which by an opposite Virtue are able to correct the known Acrimony. In this respect nothing universal can be determined, but a Remedy suited to each particular Acrimony is to be applied. The softest Balsams are, however, beneficial, because they hinder the Parts from being corroded by the acrid Substances, and at the same time weaken them by sheathing them up in their mild Fat as has been already observed. The Medicines belonging to this Number are found under the Article ACIDA, and ALCALI.

3. *As for a Removal of the Condition of the Nerves by proper Remedies*; the Cause of Convulsions arising from a Wound, is frequently such an Injury done to a Nerve, as that being partially divided, its remaining entire Fibres are distracted. Hence arise excessive Pain, Convulsions, and the other Symptoms already enumerated. But all these arise from a slow and continual Distraction of the nervous Fibres, which is always accompanied with Pain, as is obvious from the Definition of it already given. Those Remedies, therefore, which remove the Pain, will, also, cure the Convulsions arising from it. But these Remedies act either on the Cause of the Pain, or render the Nerve incapable of Sensation, by destroying the Commerce between it and the Brain; or lastly, they so obtund the common Sensory, as that it cannot perceive that Change of the Nerve produced by the Cause exciting the Pain. But that all these things have been with Success used for the Cure of Convulsions, will be obvious from what follows.

For among the things recommended above for removing Pain, the most considerable and universally useful, are relaxing and emollient Substances, by the Application of which the nervous Fibres may be so disposed, as that they may be distended without Dread of a Rupture; and these have in all Ages been used for removing Convulsions: Thus for the Cure of a Tetanus, *Hippocrates*, in *Tr. de Morb.* recommends warm and fat Broths prepared of Fowls, together with tepid, moist and pinguious Fomentations, contained in Bladders and Bottles, and applied every-where, but especially to the Parts affected. He, also, orders the Patient to be liberally and frequently anointed with warm Oil. And in his *Tr. de internis Affection.* for the Cure of a Tetanus arising from a Wound, he orders Unctions with pinguious Substances before a Fire, Fomentations, Steams of hot Liquors, Sweats excited by pouring warm Water on the Patient, and the drinking of tepid Milk and Water, if the Patient can; if not, he orders it to be pour'd into his Nostrils. Besides, in *Aphor.* 22. *Sect.* 5. when mentioning the Use of warm Substances, he says, that they alleviate Pain, Rigors, Convulsions, and a *Tetanus*. And on the other hand, in *Aphor.* 39. of the same Section, he affirms, that Cold produces Convulsions, and a *Tetanus*; for Heat relaxes all Bodies, so that they may be distracted and bended without Danger of breaking; whereas Cold contracts and renders every thing brittle, as is obvious from daily Experience. The same Measures are recommended by *Celsus*, in *Lib.* 4. *Cap.* 3. who orders Patients thus affected, to bathe in warm Oil, or warm Water in which Fenugreek has been boiled, with an Addition of a third Part of Oil. *Galen*, when afflicted with a violent Distraction of the Ligaments, freed himself from approaching Convulsions by continually anointing with warm Oil, and perceived the Convulsions just coming upon him, as soon as the Use of the Oil was intermitted. *Aretæus, de Curat. Morb. Acut. Lib.* 1. *Cap.* 6. orders the like Measures to be taken for the Cure of a *Tetanus*. Hence it is obvious, that the antient Physicians unanimously recommended the most emollient Remedies which so effectually allay Pain, for the Cure of Convulsions.

It is, also, sufficiently obvious, that if a Nerve, the Wound of which disturbs the common Sensory, can, without the Danger of a greater Evil, be destroy'd by Compression, Division, or Caustics, there is no longer any Dread of Convulsions, because the Commerce between the Brain and the affected Nerve, is removed. This is evinced by practical Observations in the Cure of

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of a certain Species of Epilepsy, in which there is felt, in a particular Part of the Body, the great Toe, for Instance (a Case of which Kind, says *Van Sweiten*, I myself have seen) a certain Titillation, as if Ants crept through the Part (See ALBADARA). And this titillary Motion ascends through the Leg, Thigh, and Abdomen, to the Præcordia, upon which the Patient falls down convulsed all over his Body. If, when he first perceives the Disorder beginning in his great Toe, he speedily applies a tight Ligature below the Knee, he is freed from the Paroxysm. In similar Cases it is often beneficial to burn deep, by means of a Caustic, into the Part where this surprising Motion first begins, in order to destroy the small Nerve, the Disorder of which is capable of disturbing the whole Body in so surprising a manner. Something like this is found in *Celsus*, *Lib.* 5. *Cap.* 26. where he tells us, "That a Muscle when wounded, is to be divided, "because when wounded it proves mortal; but when it is di-"vided, the Disorder of the Part may be cured."

But those things, which by their narcotic Quality so obtund the common Sensory, as to remove the Sense of Pain, are often surprisingly efficacious in checking these convulsive Motions, as is often observed, especially in hysteric Convulsions; though among the Antients we do not find, that these Remedies were frequently used in such Cases. But *Hippocrates*, in *Lib. de intern. Affection.* for the Cure of a *Tetanus*, among other Remedies, orders the Head and Body to be anointed with a warm Infusion prepared of the Seeds of Henbane and Wine, with the Addition of an equal Quantity of Oil.

4. *As for a Repletion with some mild, friendly, liquid Aliment*; *Hippocrates*, in *Aphor.* 22. *Sect.* 2. in the Cure of Diseases, lays it down as a general Rule, "That the Diseases "arising from Plenitude, are cured by Evacuation, and those "proceeding from Inanition, by Repletion." When, therefore, in consequence of a Division of the Blood-vessels, there is a great Loss of Blood, so that the equable Pressure on the Vessels of the Brain is by that means disturbed, the Convulsions arising thence, have an excessive Inanition for their Cause, so that they will be cured by Repletion. The most celebrated Antispasmodics, such as Spirit of Hartshorn, and of Raw Silk, the Tincture and Oil of Amber, of Castor, and the finest distil'd aromatic Oils, which in other Cases are so efficacious in checking the inordinate Motion of the nervous System, are in this Case prejudicial by their Stimulus, by which, augmenting the Motion of the Blood, they expel that small Quantity of it which remains in the Body through the divided Vessels till the Patient dies. The whole Cure consists in distending with a new and laudable Liquid the Vessels collapsed, in consequence of too great an Inanition. But here there is a considerable Difficulty; for the Aliments by the concurring Action of the Viscera and Vessels, and by their Mixture with a large Quantity of laudable Humours pre-existing in the Body, are assimilated to our Natures, and acquire the Properties requisite in human Fluids, as is shewn under the Article FIBRA: But after a great Loss of Blood, this Quantity of laudable Humours is wanting, which in a State of Health absorbs that small Quantity of crude Juice convey'd through the Thoracic Duct into the Subclavian Vein. By the same Cause, also, the Action of all the Viscera and Vessels is weakened. Hence the two most efficacious Causes which change crude into concocted Juices are wanting, or at least, very languid. All, therefore, that can be done with Success, is to exhibit such Liquids as are most similar to the Humours in a sound State, such as contain nothing of a stimulating Acrimony, but may be easily borne by a weak Body, and subdued by the remaining languid Action of the Viscera and Vessels. All these things will, therefore, be beneficial which contain a Nourishment almost like that prepared in a sound and robust Body, but especially Broths prepared with Flesh, and in which the Juices before elaborated in the Body of the Animal are dissolved by the boiling Water. And such Broths are still better with the Addition of a small Quantity of Citron-juice, which hinders their easy Degeneracy to Putrefaction. For the same Reason a little Sorrel may be boiled in them, with the Addition of Rice, Barley, Oats, and other soft Grains. All these are to be exhibited frequently, but in small Quantities, lest the weak Body should be overpowered, and that there may gradually be such a Repletion as may sustain Life, and at the same time keep it so low, that the wounded Vessels may be consolidated, without any Dread, lest by a sudden Repletion of the Vessels, or an increased Circulation, those Parts should be again lacerated, which had begun to be united; for unless it was confirmed by unexceptionable Facts, it could hardly be believed, how small a Quantity of Blood is sufficient for the Support of Life. The Propriety of this Method is evinced by its happy Success in Women, who, by Abortions, have lost so much Blood as to be seized with Convulsions, and given over for irrecoverable. A memorable Instance of the surprising Efficacy of Broth, after a great Loss of Blood, may be seen in *Lower de Corde*.

5. *As for stopping the Hæmorrhage*; We have already explained, how an Hæmorrhage from a Wound may be stopt and shewn, that many Hæmorrhages may be stopt by different Applications and Operations. But when the Hand has no Access to the wounded Vessels, as, for Instance, when the Vessels of the internal Parts of the Body are wounded, then tight Ligatures applied to the Arms and Thighs, are highly beneficial, that thus the Veins being compressed, the easy Return of the Blood to the Heart from these Parts may be prevented. By this means the Hæmorrhage is, at least for a time, stopt, and, perhaps, an Opportunity given to the wounded Vessels to contract themselves, and be consolidated. But after the Hæmorrhage is stopt, these Ligatures are not to be removed all at once, but gradually slackened, lest the Hæmorrhage should return. If the Patient enjoys great Ease both of Body and Mind, if Life is kept as low as possible, and the Patient not supported by Cordials, there is still some Hope of a Cure even in the most dangerous Cases.

A small Tumor, and Inflammation in a Wound, are good; but they prove hurtful if too much increased. Baths, and Fomentations, together with anodyne and antispasmodic Substances, applied to the wounded Parts, and to the Whole of the Patient, are beneficial; for which see INFLAMMATIO.

It is already observed, that on the second or third Day there appears in the Lips and Bottom of a considerable Wound, a greater Heat, Pain, Redness, and Tumor, and that all these Symptoms continually happen to a Wound inflicted even in the soundest Body. Such a slight Inflammation, therefore, which is almost always accompanied with a gentle Fever, is never bad; for the divided Extremities of the Vessels being contracted, resist the impel'd Fluids. Hence arises an Obstruction; and by the Force of Nature, accompany'd with a slight Fever, acting with a greater Impetus on the obstructed Extremities of the Vessels, a gentle Inflammation is produced, which is succeeded by a benign Suppuration separating the Extremities of the obstructed Vessels, together with their stagnant Fluids, and restoring a free Circulation of the Humours through the whole Surface of the Wound; by which means a Regeneration of the lost Substance, and an Union of the divided Parts are brought about. The same Observation is made by *Hippocrates*, who pronounces it a bad Sign when Tumors do not appear in large Wounds. In another Part he commends lax Tumors in a Wound, but condemns such as are crude, as being Signs of a greater Inflammation. *Celsus*, in *Lib.* 5. *Cap.* 26. beautifully expresses this in the following manner: "When a Wound "swells too much, it is dangerous; but if it swells not at "all, is still more dangerous. The former is a Sign of "a violent Inflammation, and the latter of a Mortification; "nor is a Fever terrible in a large Wound, when it lasts only "whilst the Inflammation is present. But that Fever is dan-"gerous which either succeeds a slight Wound, lasts beyond the "time of the Inflammation, or brings on a Delirium." But when by a great Obstruction about the Wound, or an Increase of the Circulation by means of a Fever, the Pain, Tumor, Redness, and Heat, are greatly increased, we know from the Obstruction of the Phenomena common to all Wounds, that there is a greater Inflammation than is requisite. If, therefore, this Inflammation should proceed, it would destroy the Part by a gangrenous Corruption; or at least, a far stronger Suppuration would ensue, separating the irresolvable inflamed Parts from the other live Parts, which cannot happen without a great Loss of the Substance of the Body, especially of the *Membrana Cellulosa*, which seems to be the principal Seat of a Suppuration. Hence a slow Consolidation of the Wound, an unseemly Cicatrix, and all the Misfortunes arising from too great a Consumption of the Parts by a strong Suppuration, may ensue. It is, therefore, requisite the too violent Inflammation should be removed by proper Remedies, which is done by relaxing the Vessels, and resolving the Fluids, which by their inflammatory Tenacity, had become stagnant. Hence Baths, and Fomentations prepared of the most emollient Herbs are of great Use. It is, also, carefully to be observed, whether the Cause of the Inflammation is lodged in the Wound itself, or whether it is owing to the Violence of the Fever, or the inflammatory State of the Blood. In the former Case, Topics are often sufficient, but in the latter, an universal Remedy, checking the increased Circulation, or resolving the inflammatory Spissitude, is requisite. With respect to such Medicines see OBSTRUCTIO, and INFLAMMATIO.

Antispasmodics are, 1. Laxatives. 2. Diluents. 3. Resolvents. 4. Absorbents, such as Crabs-eyes, Pearls, Ivory, Hartshorn, Goat's-blood, Boar's-tooth, and Elk's-hoof. See ACIDA. And, 5. Opiates, which are already considered.

Extravasated Blood fallen into any Cavity of the Body, should be immediately brought away by a proper Situation of the Body; by Suction with a Pipe, if recent, otherwise after proper Dilution, by dilating the Aperture of the Wound, or by making a fresh Incision.

Besides those Parts of the Body in which the Humours secreted from the Blood are accumulated for their proper Use, or being collected, are eliminated from the Body, there are hardly found any Cavities in the Body: Thus the Cranium, Thorax, and Abdomen, are full; for when Wounds are made into the Cavities, their Contents burst out as soon as they can find a Passage. But the Blood flowing from the di-

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vided Veſſels may ſo compreſs the Parts contained in theſe Cavities of the Body, as to poſſeſs the Place naturally occupied by the Viſcera lodged in them. Blood, therefore, extravaſated into theſe Cavities, by its Preſſure, injures the Action of the Viſcera contained in them, and afterwards becoming corrupted, it may, by its Acrimony, corrode and corrupt every thing it touches. Whilſt it is, alſo, attenuated and render'd putrid, being reſorbed by the bibulous Veins every-where open, both in the external and internal Parts of the Body, it infects the whole Maſs of Blood with a putrid Taint, and produces the moſt terrible Diſorders. *Hippocrates*, in *Aphor.* 20. *Sect.* 6. tells us, "That if Blood is preternaturally diſcharged into the Abdomen, "it naturally corrupts and ſuppurates." And *Galen*, in his Comment on this Aphoriſm, by the Word κοιλίην, underſtood any preternatural Cavity, and tells us, that by the Word *Suppuration*, any Degeneracy of the Blood is here meant. But by the Word ἐκπυοῦνται, is probably meant, not a *Suppuration*, properly ſo called, but only that the Blood extravaſated, and contained in a preternatural Cavity, after a Suppuration makes a Way for itſelf through the Parts, tho' the extravaſated Blood is not converted into *Pus*, properly ſo call'd.

Beſides theſe large Cavities of the Body, there is under the Skin, and every-where in the Inteſtines of the Muſcles, the cellular or pinguedinous Coat, which being eaſily dilated, yields to the extravaſated Blood, and may be diſtended often to an inordinate Bulk, as is obvious in ſpurious Aneuryſms, and Sugillations, after violent Contuſions. The Blood lodged in theſe preternatural Cavities may, in like manner, by its Preſſure and Corruption, produce many Misfortunes; for which Reaſon it ought to be ſoon removed, if it can be commodiouſly done. But it is to be obſerved, that extravaſated Blood may for a long time remain incorrupted, provided the Air has not free Acceſs to it; and that ſometimes by the Application of diluting and reſolvent Medicines, it may be ſo attenuated as to be reſorbed by the bibulous Veſſels, and gradually diſappear. See CONTUSIO.

But when Blood is extravaſated into any Cavity of the Body, and proves injurious by compreſſing the Parts; or if its Corruption is dreaded, and no Hopes of its Diſſipation remain, it is then to be evacuated by Art: And this is done

By the Situation of the Body: Which ought to be ſuch, that the extravaſated Blood may, by its proper Gravity, be diſcharg'd from the Orifice of the Wound. In order to this, it is of great Importance to know the Poſture of the Patient when he received the Wound; and he is then to be placed as nearly as poſſible in the ſame Poſture, otherwiſe the *Membrana Adipoſa* often ſo cloſes up the Wound of the Skin, that no Blood can be evacuated. Then let the Orifice of the Wound be put in a declining Situation, that the Blood may have a free Paſſage. Thus, for Inſtance, if there is extravaſated Blood in the Cavity of the Abdomen, it will be expedient to lie flat on the Belly. *Paré* evacuated Blood lodged in the Cavity of the Breaſt, and ſaved the Patient by ordering him to lie with his Feet elevated, and his Head low.

As for Suction with a Pipe; this is uſeful when Blood is extravaſated into the Cavity of the Abdomen, and eſpecially that of the Breaſt. In which Caſes they take a flexible Pipe of Lead, Leather, or Whalebone, with an obtuſe Point, leſt it ſhould injure the Parts. By means of this introduced into the Cavity of the Body, the extravaſated Blood may be evacuated either by Suction, or the Application of a Syringe. But when the Blood is collected under the Skin in the Cells of the *Membrana Adipoſa*, it is ſufficiently obvious, that this Method is of no Uſe.

But unleſs the extravaſated Blood is ſufficiently fluid, it can neither be evacuated by Suction, nor the Situation of the Body. If, therefore, the Blood is formed into grumous Concretions, it is to be ſo diluted as that it may eaſily paſs through the Orifice of the Wound, or the Aperture of the Pipe. In this Caſe we take Water, with an Addition of a proper Quantity of Honey, or *Venice* Soap, and a little Sea Salt and Wine. This Liquor is to be injected tepid, and ſhaken gently, or agitated by the Motion of Reſpiration with the concreted Blood, which it dilutes and diſſolves. Then by the Situation of the Body, or Suction, the injected Liquor is to be evacuated, and this is to be repeated till the injected Liquor returns pure, and not ting'd with any bloody Colour. Thus *Paré*, by a ſimple Decoction of Barley with Honey, brought out the Blood lodged in the Cavity of the Breaſt; and when next Day he injected an Infuſion of Centaury, Wormwood, and Aloes, in order to cleanſe the Parts the better, he found the Patient complain of a certain ungrateful Bitterneſs and Nauſea. But it is ſufficiently obvious, that theſe Meaſures cannot be taken ſo long as there is any Danger of an Hæmorrhage.

The extravaſated Blood, when coagulated, is diluted by theſe or other Preparations of a like Nature.

Take of common Honey, two Ounces; of *Venice* Soap, two Drams; of Sea Salt, four Drams; and of Rain-water, twelve Ounces: Mix all together. Or,

Take of Sal Ammoniac, and Nitre, each three Drams; of the recent Urine of a ſound Perſon, twelve Ounces; and of common Honey, two Ounces: Mix all together. Or,

Take of Aloes diſſolved in Water, duly cleanſed from its reſinous Fæces, and again gently inſpiſſated, four Drams; of Sal Ammoniac, two Drams; of Borax, two Drams; of pure Honey, two Ounces; of Rain-water, nine Ounces; and of *French* White Wine, two Ounces: Mix all together.

The prudent Injection of theſe Preparations when tepid, and a gentle Conquaſſation of them with the ſtagnant Blood, dilutes it, reſolves it, preſerves it from Putrefaction, and prepares it for an Evacuation. Hence ſuch Preparations are much uſed, when extravaſated Blood becomes ſtagnant or coagulated in the large Cavities of the Body.

As for a Dilatation of the Aperture of the Wound, or a freſh Inciſion; if the Wound is too narrow, or if the *Membrana Adipoſa* forced into its Aperture obſtructs its Orifice, then Dilatation becomes requiſite. It ſometimes, alſo, happens, that the Aperture of the Wound is pretty high, and the extravaſated Blood ſituated in a Place ſo far below it, that it cannot be evacuated through the Orifice of the Wound, unleſs the Poſture of the Body is inverted, which the Patient cannot bear without great Uneaſineſs. Thus, when in a Wound of the ſuperior Part of the Thorax, a large Quantity of Blood is from the divided Veſſels diſcharged into the Cavity of the Thorax, that Blood lodg'd towards the poſterior Part of the Thorax, where the Diaphragm deſcending deep, much enlarges its Capacity, will remain, nor can it eaſily be evacuated through the Wound, unleſs the Patient was to ſtand on his Head. Hence that Blood is rather to be evacuated by making a new Aperture towards the poſterior and inferior Part of the Thorax on the affected Side. The ſame holds true, when by a Wound inflicted about the Loins, Blood is lodged in the Cavity of the Abdomen, and this Blood by its Gravity falls to the anterior and inferior Part of the prominent Abdomen. Hence it will be far more eaſy, by the *Paracenteſis* perform'd in this Place, to evacuate the Blood, than, by a Compreſſion of the Abdomen, and a Change of Poſture in the Body, to eliminate it thro' the Aperture of the Wound: It is, in like manner, requiſite, there ſhould be a new Aperture of the Wound, when Blood, extravaſated in the *Membrana Adipoſa*, deſcends into a lower Part.

If the Wound deſcends among the firm Parts of the Body, way muſt be made for the *Sordes*, by Preſſure, Lotion, Ligature, and a freſh Aperture, or Dilatation of the Wound.

It ſometimes happens that the Inſtrument, when forcibly applied, deſcends pretty deep into the Parts, eſpecially into the *Membrana Adipoſa*; then the Liquids, diſcharged from the divided Veſſels into the Cavity of the Wound, and the Pus collected, will remain there, and, by their proper Gravity, deſcending into the eaſily-dilated *Membrana Adipoſa*, will augment the Depth of the Wound; nor can they eaſily be diſcharged from the Orifice of the Wound, which is ſituated higher. The collected Matter, alſo, often makes ſurpriſing and ſinuous Ways for itſelf thro' the *Membrana Adipoſa*, between the Muſcles; from which Circumſtance there afterwards ariſes a great Difficulty in the Cure: This is beſt diſcovered, if, by a Syringe, tepid Water is gently injected into the Orifice of the Wound; for the greater or leſſer Quantity of the Water injected will determine the Deepneſs of the Wound, and the Largeneſs of the concealed Cavity: For when the Deepneſs of a Wound is examined by the Probe, whilſt this Operation is rudely performed, the Probe, paſſing thro' the *Membraua Adipoſa*, will form a new Cavity: Hence the Cure will afterwards be more difficult. A memorable Inſtance of this is found in *Hildanus*, *Obſervat. Chirurg. Cent.* 4. *Obſ.* 84. So that it is far ſafer to inject Water, provided it is gently done; for if it ſhould be injected with Violence, the Water might lacerate the *Membrana Adipoſa*, and form ſurpriſing *Sinuſes*.

As for Preſſure and Ligature; when, by an Injection of tepid Water, or the prudent Introduction of the Probe, we know how far the Wound penetrates, we then apply to that Place a Compreſs, which is to be ſecured by a Bandage; by which means the collected Humours are hindered from deſcending farther into the Cavity of the Wound; then, at each Dreſſing, the Situation of the Compreſs is to be gradually changed, ſo as to proceed more and more towards the Aperture of the Wound; thus aſcending ſlowly from the inferior Parts: The Orifice of the Wound is, in the mean time, to be kept open, that the Contents of its Cavity may be diſcharged; hence the Bandage is to be ſo ordered, as only to compreſs the lower Part of the Wound, but leave its Orifice entirely open, which, for the ſame Reaſon, is never to be cloſed by a Tent.

As for Lotions; when the extravaſated Humours become ſtagnant in the Cavity of the Wound, and remain long there, as they cannot be eaſily evacuated, on account of the ſuperior Situation of the Orifice of the Wound, they are corrupted by their Continuance and the Heat of the Place, and may, therefore, acquire a very malignant Degree of Acrimony. The moſt laudable *Pus*, when long retained in a Wound, becomes ichorous, thin, and acrid: By this means, the whole Surface of the Wound will be ſo affected, as to become ſordid; but ſo long as the Surface of the Wound is not pure, there will never be

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be an Union and Conſolidation of the Parts, tho' they are rendered contiguous, by proper Compreſſion and Ligature. It is, therefore, requiſite the Wound ſhould be firſt depurated by Digeſtives: But theſe cannot be applied to all the Surface of the Wound, unleſs they are previouſly ſo diluted, that, when injected into the Aperture of the Wound, they may penetrate thro' all the Parts of it. The Medicines, therefore, before recommended for cleanſing ſordid Wounds, are proper in this Caſe; but they ought to be diluted in Water, or ſome other ſuch Vehicle, that they may be of a duly-penetrating Quality. Aloes and Myrrh, mixed with the Yolk of an Egg, together with a little *Sal Ammoniac* and Honey, and then diluted with a little Water, are the beſt Medicines for anſwering this Intention.

As for a new Aperture, or Dilatation of the Wound; after ſome Days Trial of Compreſſion, and the Application of a Ligature acting on the Bottom of a deep Wound; as, alſo, after injecting depurating Digeſtives, if the Condition of the Wound is not changed for the better, we are to think of other Expedients. If the Orifice of the Wound is ſo ſmall, that the Liquids, collected in the Cavity of the Wound, cannot be diſcharged, then the former is to be dilated: But if the Situation of the Orifice of the Wound is ſuch, that the Liquids contained in its Cavity can neither, by their proper Gravity, nor a Change of the Patient's Poſture, be eliminated, then we are to think of a new Aperture, thro' which all thoſe Things, which, being left in the Wound, would prove prejudicial, may be commodiouſly removed: In order to this, the Orifice of the Wound is cloſed with a Tent, ſo that nothing can be diſcharged; then the congeſted Humours will be ſpontaneouſly collected in the lower Part of the Wound, and there form a Tumor, which will indicate the Part where the new Aperture is to be made. The ſame may be done, when, by injecting Water, the Bottom of the Wound protuberates outwards; as, alſo, when a Probe, introduced into the Aperture of the Wound, can ſo reach its Bottom, that its Point may be felt by the Surgeon's Finger; for then the Integuments may be ſafely cut upon the Point of the Probe, in order to make a new Aperture: But if the Wound deſcends deep through thick muſcular Parts, though in ſuch a manner as that the Bottom of the Wound does not lie near the Skin, but is concealed in the more internal Parts, it is far more difficult to make a new Aperture with Succeſs: In this Caſe it is moſt expedient, after cloſing the Aperture of the Wound, to apply the moſt emollient Cataplaſms to that Part where the Bottom of the Wound is ſuſpected to be, that the external Parts, being ſoftened, may eaſily yield to the Liquids collected in the Cavity of the Wound; by which means, the Place proper for the Inciſion will be found.

Dilatation is made by the Knife, Lint, Sponge, Gentian-root, and other ſuch Subſtances, introduced dry, with a Thread ty'd to them, which ſwelling, and abſorbing the Humours, by this means dilate the Wound.

The beſt Dilatation of a Wound is made by the Knife; the Pain is, indeed, intenſe, when the live Parts are dividing, but it ſoon ceaſes, whilſt the other Things, ſubſervient to the Dilatation of a Wound, by a ſlow Dilaceration, excite a pretty acute and long-continued Pain, and, at the ſame time, contuſe the Margins of the Wound; and theſe contuſed Parts muſt afterwards be ſeparated by a Suppuration: Hence thoſe, who, thro' a groundleſs Dread, will not permit the Inciſion to be made by the Knife, are racked with greater Torments.

But, in order to dilate a Wound without the Knife, they introduce into its Orifice Lint, or the like dry and bibulous Bodies, which, by abſorbing the Humours convey'd to them, are diſtended; by this means they diſtract and enlarge the too narrow Orifice of the Wound. Nor is the Force of bibulous Bodies, render'd wet, ſmall, in removing from each other the Subſtances which confine them; for Water has a ſurpriſing Property, known from Fact tho' not eaſily explain'd, by which it diſtends and enlarges the Bodies into which it inſinuates itſelf, and that ſo effectually, that, by this Force alone, immenſe Weights are rais'd, and the hardeſt Stones cloven by dry wooden Wedges, introduc'd into them, and afterwards moiſten'd, as the Quarry-diggers generally do in ſeparating from the Rocks thoſe enormous Stones from which the Mill-ſtones are work'd. See *Mem. de l'Acad. des Sciences, l'An.* 1730. and *Boyle, on the Uſefulneſs of Experimental Philoſophy*. Nor do we, as yet, know the Limits of this ſurpriſing Power. It is, however, ſufficient for our preſent Purpoſe to know, that it is capable of ſurmounting very great Obſtacles. They, therefore, put into the Orifice of the Wound dry Lint, wrapt up into a Tent, or a Piece of the moſt fungous Gentian-root, or a Piece of compreſs'd Spunge; then, by an adheſive Plaiſter, or proper Bandage, they ſo ſecure theſe, that they cannot ſlip out, whilſt, by a Reſorption of the Humours convey'd to them, they begin to ſwell: Thus the whole Force, by which theſe bibulous Bodies are diſtended, is employ'd in dilating the Wound. But among the various Subſtances us'd for dilating Wounds in this manner, none can be compreſs'd into ſo ſmall a Space, and yet afterwards ſwells ſo much, by the Reſorption of the Fluids, as Spunge; for which Reaſon, it is generally prefer'd to the others, eſpecially if, by an artificial Preparation, its Efficacy, for theſe Purpoſes, is augmented. Some uſe ſtrongly to compreſs a Bit of Spunge, by wrapping a Thread about it, and then introducing it into the Orifice of the Wound, in ſuch a manner, that the Knot of the Thread may remain without the Wound, and be cut off with Sciſſars: But as this cannot be done without Difficulty, the Deſign is far better obtain'd, in the following manner: They melt Roſin and Wax with a little Oil, in order to make a Plaiſter of a pretty tenacious Conſiſtence; in this Plaiſter, melted over the Fire, they immerſe a pretty large Piece of pure and dry Spunge, which is to be every-where penetrated by the melted Plaiſter; then they place the Spunge between two Plates of Iron, moderately warm, and, by the ſtrong Action of a Preſs, expreſs as much of the pinguious Subſtance from it as they poſſibly can, leaving it in the Preſs till it is totally cold; then the Spunge is compreſs'd into its ſmalleſt Bulk, and is ſo compact, that, like Wood, it may be cut into any Shape: That Subſtance, of an emplaſtic Nature, which remains in the Spunge after its ſtrong Expreſſion, keeps the dry Parts of the Spunge apply'd to each other, whilſt, at the ſame time, it does not hinder Water, and all aqueous Fluids, from entering into the bibulous Spunge, and diſtending it to its former Dimenſions. When, therefore, a Spunge, by ſtrong Preſſure reduc'd to the narroweſt Compaſs, and introduc'd into the Orifice of a Wound, is, by the Humours, diſtended to the greateſt Dimenſion which it is capable of, it is ſufficiently obvious, how great a Dilatation may be produc'd by this means: Beſides, a Spunge, thus prepar'd, has this Advantage, that it can be cut into the ſmalleſt Shreds capable of entering the narroweſt Orifices of Wounds and *Fiſtulas*; which Advantage cannot be obtain'd by Lint, Gentian-root, or any other Subſtance us'd for that Purpoſe.

But to all theſe Tents, whether of Spunge, or any other Subſtance, a Thread muſt be ty'd, leſt they ſhould ſlip into the wider Cavity of the Wound, and there produce many bad Conſequences; for without this Caution, they could not be extracted, without great Difficulty. *Van Swieten. Com. in Boerh. Aphor.*

Of Gun-shot Wounds.

Gun-ſhot Wounds are attended with worſe Conſequences than thoſe which are inflicted with ſharp Inſtruments, as the Parts are more bruis'd and ſhatter'd, eſpecially when the Bones, Joints, or ſome of the principal Members, receive the Shot.

As Wounds of this kind have generally an Eſchar form'd upon them, little or no Effuſion of Blood at firſt enſues, unleſs ſome of the large Veins or Arteries be wounded; but when, after ſome Days, the Eſchar falls off, a violent Hæmorrhage is produc'd, which, without the Aſſiſtance of a Surgeon, may occaſion the Death of the Patient. For the firſt Days, alſo, little or no Matter is diſcharg'd; whence it is not ſurpriſing, that no Wounds are ſo ſubject to Inflammations, Pains, Gangrenes, and Putrefaction, as Gun-ſhot Wounds.

As theſe Eſchars reſemble thoſe produc'd by the Application of a red-hot Iron, they were formerly imagin'd to be produc'd by the Heat of the Bullet; but they rather appear to be produc'd by the ſudden Colliſion of the Parts: And to this Colliſion may be aſcrib'd all thoſe Inconveniences which accompany thoſe Wounds. Formerly it was thought that theſe Wounds were poiſonous; but this Opinion ſeems to be ill-grounded, as neither the Powder, nor the Ball, have any poiſonous Subſtance in their Compoſition.

Gun-ſhot Wounds are more or leſs deep: In ſome the muſcular Parts, in others the larger Blood-veſſels, the Bones, or *Viſcera*, are wounded. Sometimes the Ball penetrates thro' the Part, and ſometimes remains fix'd in it; ſometimes Pieces of the Cloths, or Wadding, are forc'd into the Wound.

Wounds of this kind, in the *Cranium*, are commonly extremely dangerous: For tho' they may appear but ſlight, and the Ball may ſeem only to have lightly graz'd upon the Part; yet their Conſequences are ſo pernicious, that either the *Cranium* itſelf is fiſſur'd in ſeveral Places, or the internal Blood-veſſels are broke, and the Blood is diſcharg'd into the *Sinuſes* of the Brain. It is ſometimes ſurpriſing how ſlight a Wound of this kind, will occaſion a ſpeedy Death, unleſs the Blood in the *Cranium* be timely evacuated, by the Aſſiſtance of the Trepan. But theſe Wounds, in the *Cranium*, are dangerous, in Proportion to their Violence.

Internal Wounds, of this Sort, are difficult to heal; but if none of the larger Veins or Arteries are lacerated, they may admit of a Cure. When the Bones or Joints are ſhatter'd by the Ball, violent Inflammations, a Gangrene, *Sphacelus*, *Caries*, and incurable *Fiſtulas*, can ſcarcely be avoided; which either require Amputation, or deprive the wounded Part of Senſe and Motion.

If any Part of the Cloths, Linen, Skin, or Wadding, is lodg'd in the Wound, it ought not to be heal'd before the extraneous Subſtance be extracted: This Caution muſt be obſerv'd with regard to carious Bones, and oſſeous Splinters.

In the Cure of theſe Wounds, obſerve the following Rules:

1. To extract any foreign Subſtance lodg'd in the Wound. 2. To ſuppreſs the Hæmorrhage. 3. To promote Suppuration. 4. To fill the Wound with new Fleſh. 5. To induce a Cicatrix.

As ſoon as the Surgeon is call'd, he ſhould carefully ſee if he can find any extraneous Subſtance conceal'd in the Wound; if there is, he ſhould immediately extract it with his Hand, if poſſible,

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poſſible, or elſe with a toothed or hollow Forceps, or with a two-prong'd Hook (as repreſented in *Tab.* XXIV. *Fig.* 3, 4, 5, & 8.). If the Subſtance lodg'd in the Wound be deeply ſeated, the Wound muſt be ſearch'd with the Probe, and the Subſtance with all convenient Expedition be extracted; for this Operation is much eaſier perform'd when the Wound is recent, than when it becomes tumefy'd and inflam'd. Another bad Conſequence, attending a Delay in this Caſe, is, that the Balls, ſinking deep under the Muſcles, cannot be taken out, and, conſequently, malignant *Fiſtulas*, a Stiffneſs of the Limb, and other bad Symptoms, are produc'd. In extracting theſe Balls, the Operator muſt take particular Care, not to break any of the Veins, Arteries, Nerves, or Tendons, which would occaſion very dangerous Conſequences; upon which account, he ſhould introduce the Forceps ſhut, and not open them till the Point touches the Ball.

If the Ball, or other extraneous Body lodg'd in the Wound, has ſunk deep, or if the Wound be ſo narrow, that it cannot be conveniently extracted, the Orifice muſt be enlarg'd by Inciſion, on that Side which may ſeem moſt ſafe and proper: But particular Care muſt be taken, not to wound a Nerve, Vein, Artery, Ligament, or Tendon. When an extraneous Subſtance is lodg'd in a Wound of this kind of ſome Standing, the Orifice of which is contracted, with the Swelling and Inflammation, this Sort of Inciſion is often very beneficial; for it not only opens a convenient Paſſage for diſcharging the inſpiſſated Blood, but, alſo, prevents violent Inflammations, and the like Inconveniencies. But as two Balls frequently happen to be lodg'd in the ſame Wound, the Surgeon, after one is extracted, muſt carefully ſearch for another; for as long as any extraneous Subſtance is conceal'd in the Wound, the Cure will be protracted.

In extracting theſe foreign Subſtances, the Patient ſhould be plac'd in the ſame Poſture he was in when the Shot enter'd his Body; for, by changing the Poſture of the Body, the Shot is ſubject to be loſt in the Muſcles, Membranes, or Fat, ſo as not to be reach'd by the Probe, or other Inſtrument: But when the Ball has penetrated ſo deep, as to be felt by the Finger on the oppoſite Part of the wounded Limb, the Surgeon ought to conſider, from the Diſpoſition of the wounded Parts, whether it be preferable to extract the Ball by the Orifice of the Wound, or by laying the oppoſite Part of the Member open by Inciſion: But if the Wound can neither be enlarg'd, nor the Shot extracted, without endangering the Nerves and Arteries, it ought to remain in the Wound, till the Pain is abated, or till the Paſſage is render'd ſo eaſy by Suppuration, that they work themſelves out. On the other hand, extraneous Bodies ought to be extracted, without Delay, when, by their Continuance in the Wound, they threaten to raiſe Convulſions, Pain, and other pernicious Symptoms. If the Ball has penetrated into any of the Cavities of the Body, whence it cannot be conveniently or ſafely extracted, the beſt Method is, to leave it where it is lodg'd, and heal the Wound: In this manner they have long continu'd, and often, during Life, without any Danger, or Inconvenience; and ſometimes they will work themſelves into other Parts of the Body, whence they may be ſafely and eaſily extracted.

When the Shot is lodg'd in the Bones, it ought to be extracted in the ſame manner, with the notch'd Forceps, or Hook: If that Method proves unſucceſsful, it may be brought out with a Screw: But where the Shot is cover'd with much Fleſh, as in the Calves of the Legs and Thighs, a peculiar Sort of Screw is requir'd, like that delineated in *Tab.* XXIV. *Fig.* 7. But if the Shot is too firmly fix'd to yield to any of theſe Methods, it muſt be ſuffer'd to remain in the Wound till it is looſen'd by Suppuration. Balls lodg'd in the Joints muſt be extracted with the utmoſt Expedition; for, in this Caſe, Delays are extremely dangerous: Nor can violent Pains, Inflammations, and Caries of the Bones, which generally require Amputation of the Limb, be, without Difficulty, prevented.

When, in a Gun-ſhot Wound, the Joint or Bone is extremely bruiſed, it is better to remove the Limb immediately by Amputation, than to labour long in vain, to obtain a Cure: For as the natural Form of the Joints can never be reſtor'd, ſo the Nerves, Tendons, and Ligaments, which adhere to the ſhatter'd Bone, being broken, violent Inflammations, a Gangrene, and *Sphacelus*, are by theſe means induc'd: But when the Colliſion of the Bone is not very violent, the Surgeon ſhould gently remove any Splinters of the Bone, or extraneous Subſtance lodg'd in the Wound, which may then be cur'd after the uſual Method.

If a large Artery, of the Arms or Legs, ſhould be wounded by the Shot, which may appear from the Effuſion of Blood, the *Tourniquet* muſt be immediately apply'd, to ſtop the Hæmorrhage, till the Artery can be ſtitch'd up with a crooked Needle and Thread: and this Method I have ſucceſsfully try'd. But if this ſhould be impoſſible to be perform'd, the Limb muſt neceſſarily be amputated, taking care, firſt, to apply the *Tourniquet*, a little above the Wound, in order to ſtop the Hæmorrhage.

The Wound being cleanſed, and the Effuſion of Blood ſtopt, if neceſſary, the firſt Intention of Cure is, to prevent, or, at leaſt, alleviate the Swelling and Inflammation: For this Purpoſe, let the Wound be fill'd with Lint dipt in warm Spirit of Wine, and apply Compreſſes, moiſten'd in the ſame Liquor, or in camphorated Spirit of Wine, or in Spirit of Wine diluted with Lime-water.

The next Intention is, to forward the Suppuration of the bruiſed and corrupted Parts; and, for this Purpoſe, beſides the common digeſtive Ointment made of Turpentine and the Yolk of an Egg, the following may be uſed:

Take of *Unguentum Baſilicon*, and *Arcæus*'s Balſam, each an Ounce; Spirit of Wine, and Oil of Eggs, each a Dram: Mix, and make them into an Ointment.

Add to theſe, if the Corruption is violent, a little Myrrh, and Aloes, *Theriaca*, *Unguentum Fuſcum*, and, in Parts not very nervous, a little red Precipitate.

In Wounds where the Ball has quite penetrated the Limb, paſs a long, blunt Needle (ſee *Tab.* XXVI. *Fig.* 1.), arm'd with a ſmall linen Cord, well moiſten'd in the Ointment above-preſcrib'd, thro' the Middle of the Wound, like a Seton; let this Cord be drawn backwards and forwards, and kept in the Wound, till, from its Redneſs, it appears that the corrupted Parts are thrown off, and that the Wound is ready to heal; then the Cord may be drawn out.

You may now proceed to incarn, and induce a neat Cicatrice, with balſamic Medicines, as in other Wounds. Some uſe here a vulnerary Water, call'd, by the *French*, *L'Eau d'Arquebuſade*. See AQUA SCLOPETARIA.

The concomitant bad Symptoms of Gun-ſhot Wounds, ſuch as the Hæmorrhage, Fever, Swelling, Inflammation, Pain, and Convulſions, may be treated as in other Wounds, unleſs where the Violence of the Colliſion and Contuſion make them more ſubject to Corruption and Putrefaction. If, as it almoſt always happens, the Lips of the Wound become black, livid, flaccid, and fetid, Care muſt be taken to ſeparate the corrupted Fleſh from the ſound: For this Purpoſe, apply the *Unguentum Ægyptiacum*, diluted with Spirit of Wine, or mix'd with an equal Quantity of the digeſtive Ointment; or a little red Precipitate may be added to the digeſtive Ointment; then put on the Compreſſes, after they have been thoroughly moiſten'd with warm camphorated Spirit of Wine, mix'd with *Theriaca*; or with Lime-water ſtrengthen'd with Spirit of Wine. If the Corruption penetrates deep into the Fleſh, Scarifications and Inciſions muſt be made, till the latent corrupted Humours are diſcharg'd, and the Applications reach to the ſound Parts: If theſe Remedies are not effectual, more powerful Medicines muſt be uſed for conſuming the Fleſh; ſuch as the *Aqua Phagedenica*, made of Lime-water and Mercury Sublimate; or one Pound of Lime-water mix'd with one Ounce of crude Quickſilver diſſolv'd in two Ounces of *Aqua Fortis*. Theſe Applications are, alſo, uſeful, in a Caries of the Bone; but in Wounds of the Joints or Ligaments, as theſe acrid Applications cannot be made with Safety, we muſt have recourſe to Balſamics; ſuch as the *Eau d'Arquebuſade*, *Peruvian* Balſam, Tincture of Myrrh and Aloes, prepar'd with *Sal Ammoniac*, and Spirit of Wine, Eſſence of Amber, Spirit of Maſtich, *Hungary* Water, Oil of Turpentine diluted with this Water, and the like; which muſt be inſtil'd into the Wound moderately warm.

Internal balſamic Medicines which reſiſt Putrefaction, are, at the ſame time, not to be neglected: Of this kind are, the *Elixir Proprietatis*, the Eſſence of Myrrh and Aloes, the Eſſence of Amber, *Peruvian* Balſam, and the like; thirty or forty Drops of which may be given to the Patient, for ſeveral Days. If the Patient be very weak, let him take ſome cordial Pills, with the *Confectio Alkermes*, and ſome cordial Syrup: Proceed in the Remainder of the Cure as in other Wounds.

By the Exploſion of Guns it often happens, that ſome Grains of Gunpowder enter the Skin of the Face, and produce unſeemly Spots, if they are not timely taken out: When the Grains do not entirely penetrate the Skin, they may be taken out with a Forceps, or a Quill ſhap'd like a Tooth-pick, or an iron Inſtrument in the Form of an Ear-pick; but if they reach below the Skin, before they can be laid hold of, the Skin muſt be laid open with a ſlender Knife, or Lancet, and then they may be extracted as before: The Operation muſt be repeated till all the Grains are taken out, and Care muſt be taken, that they are not broken in the Extraction, otherwiſe the Spots will continue. *Heiſt. Chirurg.*

Mr. *Ranby*, in his *Method of treating Gun-ſhot Wounds*, tells us, that, in removing the Accidents produc'd by the Ball of a Muſquet or Piſtol, the firſt Intention is, if poſſible, to extract the Ball, or any other extraneous Bodies which may be lodg'd in the wounded Part; and whenever Misfortunes of this kind are attended with an exceſſive Effuſion of Blood, in conſequence of the Rupture of ſome conſiderable arterial Veſſel, it is abſolutely neceſſary, with all Expedition, to ſtop the Hæmorrhage, by taking up the Artery with a proper Needle, and ſo carefully, that the Hold may not prove eluſive; becauſe, in Caſes of this Nature, no Applications, however ſtyptic, are to be depended on.

In order to get at the Ball, or any other foreign Matter infeſting the Wound, Searches by the Probe are to be uſed as ſparingly as poſſible; ſince it is certain, from Experience, that ſuch a Practice is highly detrimental to the Patient: And where there is an abſolute Neceſſity for this Method, the Finger is always to be prefer'd, as the beſt, and leaſt dangerous Probe.

If the Ball, or any other Subſtance, is lodg'd near the Orifice of the Wound, or is, by the Finger, perceiv'd to be under the

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the Skin, tho' at ſome Diſtance from the Mouth of the Wound, we muſt, in the former of theſe Caſes, remove the extraneous Matter, with all Expedition; and, in the latter, cut upon it, and take it out: But if the Ball, or other Subſtance, ſhould be ſunk ſo deep, as to be abſolutely beyond the Reach of the Finger, it is by no means adviſeable to extract it, by forcibly introducing a Pair of long Forceps: Since it is certain, from Experience, that ſuch a Practice ſeldom fails to produce a Train of terrible Symptoms; and ſince numberleſs Inſtances occur, in which Balls, after having been lodg'd in the Body for many Years, without incommoding the Patient, have, in Proceſs of time, work'd their Paſſage to the Surface, and were, conſequently, eaſily extracted.

As Wounds, made by the Balls of a Muſquet, or Piſtol, are but ſmall; ſo it is neceſſary to dilate them, with all Expedition; but if they ſhould be inflicted near a Joint, or in a very membranous or tendinous Part, the Knife, as well as Forceps, ſhould be uſed, with the greateſt Caution, and no larger a Dilatation made, than is abſolutely requiſite for the free Diſcharge of the Matter lodg'd within: For Wounds in the Joints, whether produc'd by a Bullet, a cutting Inſtrument, or any other Cauſe, are always dangerous. And ſuch Parts as are membranous, or tendinous, never fail to ſuffer, by being expoſed to the ſenſible Impreſſions of the Air.

If a Ball has gone entirely thro' any Part, both Orifices, where it can be done with Safety, are to be dilated, and both carefully kept open, eſpecially that in the moſt depending Part. Tents are never to be uſed where there is a Poſſibility of avoiding them; light, eaſy Dreſſings, are always beſt, and ought to be ſecur'd with a Bandage of thin Flannel, if it can be had, no tighter than is neceſſary to keep them on the Part.

When the wounded Perſon has not ſuffer'd a great Loſs of Blood, it is expedient, immediately, to take a large Quantity from a Vein open'd in the Arm, and to repeat Veneſection the ſecond, and even the third Day, if Circumſtances call for it: This timely Precaution will prevent a good deal of Pain and Inflammation, promote the Digeſtion, and contribute to prevent a numerous Train of complicated Symptoms, which otherwiſe generally interrupt the Cure, miſerably haraſs the poor Patient, and too often endanger his Life.

During the firſt twelve Days after the Reception of the Wound, it is proper to obſerve a cooling Regimen, both with reſpect to the Medicines preſcrib'd, and the Diet requiſite for the Support of Nature: And as, in Circumſtances of this Nature, the Body ſhould, by all means, be kept ſoluble, a Stool ſhould every Day be procur'd, either by emollient Clyſters, or ſome gentle Laxative taken internally.

All Applications of an hot and ſpirituous Nature are remarkably injurious, and productive of ſuch Pain, that the wounded Part can by no means bear them. The firſt Dreſſing ſhould conſiſt of Lint, either dry, or moiſten'd with a little Oil, and ſecur'd by a very ſlight Bandage; the next ſhould conſiſt of a proper Digeſtive, warm'd, and cover'd with the Bread and Milk Poultice, mix'd with a Quantity of Oil ſufficient to keep it moiſt; and where there is great Tenſion, and the Wound large, a proper Fomentation is to be uſed: This Courſe is to be continu'd till the Wound is clean, after which, it is to be heal'd in the ordinary manner: This Method generally promotes a conſtant and eaſy Perſpiration, abates the Pain, greatly facilitates the Digeſtion, and removes all Apprehenſions of an approaching Inflammation. The Reaſon why the Lint ſhould be moiſten'd with Oil is, the great Eaſe procur'd to a contus'd Wound from ſuch an Application, in compariſon of a drying and abſorbent Dreſſing; which, inſtead of giving a free Diſcharge to the ſanious Blood, and preventing an Inflammation by unloading the Part, would poſſibly obſtruct the Mouths of the capillary Veſſels, and hinder Nature from getting rid of that Incumbrance, which, it is obſervable, ſhe ſo much endeavours to throw off.

When an Inflammation ſeizes any Part, in conſequence of the Lodgment of a Bullet, or any other foreign Body which might have been ſafely extracted immediately after the Reception of the Wound, all Attempts to diſlodge ſuch extraneous Matter muſt be poſtpon'd, till the Swelling is, in ſome meaſure, abated, and the inflammatory Diſpoſition of the Fibres nearly remov'd; unleſs the Ball, or other offending Matter, lies at no great Diſtance from the Orifice, and there is, on that Account, a Certainty of removing it, without any great Uneaſineſs to the Patient.

When a Wound is of ſuch a deſperate Nature, as to render Amputation neceſſary, which frequently happens when it is inflicted in any important Joint, it is expedient to perform the Operation immediately, and without Delay; leſt, by poſtponing it, an Inflammation, which is reaſonably to be dreaded, ſhould prevent a Work which ought rarely to be attempted during the Continuance of ſo unlucky a Circumſtance. The neglecting this favourable Juncture of taking off a Limb, frequently reduces the Patient to ſo low a State, and ſubjects the Blood and Juices to ſuch an Alteration, as muſt unavoidably render the ſubſequent Operation, if not entirely unſucceſsful, yet, at leaſt, exceedingly dubious: And even in Wounds where Amputation is not neceſſary, it is equally adviſeable, not to defer the Meaſures proper to be taken, leſt, in conſequence of the expoſing the Parts to the Air, a Series of very dangerous Symptoms ſhould be brought on.

Wounds contiguous or adjacent to any conſiderable Artery are ready to bleed afreſh, upon any Motion of the Patient, or the Return of a free Circulation of the Blood into the Part, which was at firſt obſtructed by the Violence of the Injury done it; and this generally happens when the Eſchar begins to ſeparate: For this Reaſon, we ſhould never attempt a forcible Removal of the Eſchar, but patiently wait for its perfect Separation, without being in the leaſt ſhock'd at the Opening of the Arteries, which is found to be almoſt inevitable: But the Approach of this Accident may be frequently predicted, from the Patient's complaining of an exceſſive Weight and Fulneſs of the Limb, which Symptoms are always accompanied with more or leſs Pulſation; an infallible Prognoſtic of the Conſequences: When theſe Symptoms appear, Bleeding, and the uſe of the Bark, are inſtantly to be order'd, in whatever Part of the Body the Wound is inflicted.

I have known, ſays our Author, ſeveral Inſtances of Perſons loſing their Lives, from the ſtarting of an Artery, before the Surgeon could come to their Aſſiſtance, eſpecially where an Amputation has preceded; and I dare affirm, the Quantity of Blood loſt, particularly after an Amputation, has not amounted to twelve Ounces; which I cannot account for otherwiſe than by the Drain which had been made from the Maſs of Blood, both before and during the Operation: Whence the ſudden Diſcharge, tho' of ſo ſmall a Portion of Blood, after the great Quantity before loſt, gives a Check to the Circulation, and produces immediate Death. This Reflection ought to be a Leſſon of Inſtruction to every Practitioner, to be particularly careful in tying the Veſſels.

Repeated Bleedings in the Beginning are attended with many Advantages, ſince they generally prevent, and always leſſen any feveriſh Paroxyſms, and ſeldom fail to guard againſt Impoſtumations: The Body muſt always be kept in a laxative State, and when the Patient is rack'd with Pain, we muſt have immediate recourſe to proper Preparations of *Opium*.

Probes, Forceps, Mallets, Chiſſels, and various other Inſtruments, ought never to be us'd, except in Caſes of abſolute Neceſſity; ſince, without doing any Honour to the Surgeon, they not only rack the Patient with Pain, but, alſo, expoſe his Life to Danger. But, for a farther Confirmation of this, let us ſuppoſe a Ball lodg'd in any Part beyond the Reach of the Finger, and entirely out of the Way of being perceiv'd by the external Touch: In ſuch a Caſe, it muſt evidently appear, upon the leaſt Reflection, that thruſting firſt a long Probe in queſt of the Bullet, and then a Pair of long Forceps, either with or without Teeth, into a Wound of this kind, tho' with a kind of Certainty, to extract the foreign Matter, muſt either contuſe, or irritate and inflame the Parts to a great Degree, and, conſequently, do as much, or, perhaps, more Miſchief, than the Ball did at firſt by forcing its Paſſage ſo far into the Parts: And ſhould the Forceps lay hold of any Nerve, Artery, or even common Membrane of a Muſcle, together with the Ball, which, in all Probability, muſt continually happen, very ſhocking Conſequences muſt neceſſarily attend ſuch a Practice: Nor would Attempts of this kind prove leſs injurious, in Caſes where Bullets are lodg'd in the Cavities of the Abdomen, or Thorax; whereas it is certain, from Experience, that Lead may lie for a long time in ſeveral Parts of the Body, without producing any conſiderable Pain, or even Inconveniencies.

Chiſſels ought, on no Occaſions, to be us'd, ſince they too frequently ſplit the Bone up to the next Joint, or ſhatter it in ſuch a manner, that, inſtead of promoting a Cure, by ſafely removing the Part affected, they generally bring on Symptoms worſe than the original Diſorders they were intended to remedy. A good Knife is certainly all that is neceſſary, for taking off a Finger; or ſhould one of the Bones of the *Metacarpus* require Amputation, a ſmall Spring-ſaw does the Work, with great Eaſe and Safety. With reſpect to the uſe of the *Peruvian* Bark in Gun-ſhot Wounds, ſee the Article QUINQUINA.

VULPANSER. Offic. Bellon. des Oyſe, 159. *Vulpanſer ſive Chenalopex.* Jonſ. de Avib. 94. *Chenalopex, Vulpanſer.* Mer. Pin. 179. *Tadorna.* Bellon. des Oyſe. 172. *Tadorna, quibuſdam Vulpanſer.* Raii Ornith. 362. *Tadorna Bellonii, Vulpanſer quibuſdam.* Ejuſd. Synop. A. 140. THE SHELL-DRAKE, BURROUGH-DUCK, or BER-GANDER.

It is obſerv'd in maritime Places; and the Fat, which is the Part uſed in Medicine, is recommended, by ſome, againſt the Herpes, and Tumors of the Face. *Dale.*

VULPECULA MARINA. The Sea Fox, otherwiſe called *Simia Marina*, or *Alopecias Oppiani.* This is a very large Fiſh, of the cetaceous kind, the Fat of which is eſteem'd emollient, and reſolvent.

VULPES. Offic. Schrod. 5312. Aldrov. de Quad. Digit. 195. Raii Synop. A. 177. Schw. Quad. 133. Ind. Med. 125. Jonſ. de Quad. 92. Charlt. Exer. 15. Gein. de Quad. Digit. 966. Mer. Pin. 167. THE FOX.

Adapted to medicinal Uſes are the *Fat, Lungs, Liver, Gall, Milk, Skin, Blood, the whole Animal*, and its *Dung*. The *Fat* is of uſe in Convulſions, Contractions, Tremblings, and the like Diſorders; alſo, in Pains of the Ears, Wounds of the Head, and an *Alopecia*. The *Lungs* are conſolidating, and abſtergent, and therefore of Efficacy in Diſeaſes of the Lungs, and

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and Straitneſs of the Breaſt: The *Liver* of a Fox is of uſe in hepatic and ſplenetic Caſes; the *Gall* cures a *Pterygium* of the Eyes; the *Spleen* removes a Hardneſs and Tumor of that Part; the *Skin*, with the Hair on it, is ſucceſsfully wrapt about ſuch Limbs as are refrigerated, or infeſted with arthritic Pains; the *Blood*, dry'd and triturated, cures the Stone in the Kidneys and Bladder; for which Purpoſe, it is ſaid to be more effectual if taken recent: *The whole Fox*, or its Fleſh, burnt, is commended for Diſorders of the Breaſt: The Animal, boil'd in Water, or Oil, is a Remedy for Affections of the Nerves, and therefore good in Contractions, and Pains of the Joints; and the *Dung*, in the laſt Place, clears the Skin from Aſperities. *Dale*, from *Schroder*.

VULSELLA. The ſame as VOLSELLA.

VULSIO. This is ſometimes us'd to expreſs a Convulſion, or Spaſm.

VULTUR. Offic. Schrod. 5. 324. Schw. A. 373. *Vultur niger*. Aldrov. Ornith. 35. Geſn. de Avib. 707. Raii Ornith. 66. Ejuſd. Synop. A. 9. Jonſ. de Avib. 7. *Vultur nigricans*. Charlt. Exer. 71. *Vautour brun*. Bellon. des Oyſe. 85.

THE VULTURE.

The Parts in uſe are, the *Fleſh*, *Fat*, *Brain*, *Gall*, and *Dung*. The *Fleſh* is eſteem'd effectual in cephalic Affections, as the Epilepſy, *Hemicrania*, and the like: The Decoction of it is ſaid to be good for cutaneous Diſeaſes; and the *Fat* is proper for the Nerves: The *Brain* ſtrengthens weak Heads; the *Gall* is ſaid to cure the Epilepſy, being taken in Wine; and the *Dung*, by its nidorous Smell, to precipitate the Birth. *Dale from Schroder*.

VULVA. The Female *Pudendum*.

VULVARIA. A Name for the *Chenopodium Fœtidum*.

UVULA. See PALATUM.

Of an exceſſive Extenſion of the UVULA.

It ſometimes happens, from various Cauſes, that the *Uvula* ſwells, and extends itſelf to ſuch a Degree, as to deſcend almoſt upon the Larynx, or *Aſpera Arteria*, and, by that means, to cauſe a Difficulty not only of Reſpiration, but of Speech, and Deglutition. If the Diſorder be recent, and excited by an Inflammation, as may be known from the Pain attended with a Heat and Redneſs, it will be proper to treat it with Gargarizations and Injections, endu'd with a lenient and reſolvent Virtue, ſuch as ſimple Water mix'd with a little Spirit of Wine, or a Decoction of the Funguſes of the Elder-tree, Barley-water, a Decoction of the Flowers of the *Liguſtrum*, or Mallows, mix'd with a ſmall Quantity of Nitre, Alum, or *Sal Ammoniac*: With theſe muſt be uſed internal, temperating Medicines; and if the Inflammation be more violent than ordinary, Blood is to be taken away from the Arm or Foot, the Belly is to be evacuated, and Clyſters are to be adminiſter'd, in order to prevent a Quinſy, or Inflammation of the *Fauces*, which may prove of very pernicious Conſequence: Scarifications, alſo, are not improper in this Caſe; for I have long ſince found them of Service, when try'd upon myſelf, as well as others, not only by allaying, but preventing an Inflammation of the *Uvula*. If the Swelling of the *Uvula* be occaſion'd by a pituitous Humour, it is generally white, and void of all Pain and Inflammation. In this Caſe there is nothing better than the uſe of a Gargariſm of warm Spirit of Wine, temper'd with a little Water, or one prepar'd of ſome aſtringent Decoction, as that of Roſes, Flowers of the *Liguſtrum*, Rinds of Pomgranates, and the like, mix'd with a little Spirit of Wine, or Spirit of *Sal Ammoniac*: But if the Diſorder will not yield to theſe Remedies, we muſt take another Method for the Cure, or Digeſtion of the pituitous Matter; which is, to take ſome pounded Ginger, or Pepper, mix'd with an equal Quantity of Pomgranate-rinds, in Form of a Powder, or made up with Honey, and with a ſmall Spoon, *Tab.* XXII. *Fig. N.* apply it to the diſeaſed Part, not neglecting, however, the uſe of internal Medicines, both purgative and digeſtive: Sometimes all theſe means prove of little Effect, and the affected *Uvula*, from a Redundance of the pituitous Matter, becomes ſwell'd, and extended to ſuch a Degree, as to hang down upon the very *Aſpera Arteria*, and, by that means, prove a conſiderable Impediment to Reſpiration, as well as Speech and Deglutition. In this Caſe, the Uſe of Medicines is inſignificant, and there remains no Remedy, but to ſeparate as much of the *Uvula* as extends beyond its natural Dimenſions. There are ſeveral Ways of making this Separation: The firſt is, by Ligature; and becauſe this Way of Operation cannot be performed merely by the Hand, there is a proper Inſtrument contrived for the Purpoſe, and repreſented *Tab.* XLII. *Fig.* 6. from *Heldanus* and *Scultetus*. Here a thick Thread, *A*, is, by help of a pretty long Needle, *Fig.* 7. drawn thro' this hollow Inſtrument, ſo as to make a Nooſe within the Ring *B*; thro' this Nooſe ſo much of the *Uvula* is depreſſed as is judged to be ſuperfluous, and, by drawing the Thread *C*, it comes under a ſtrong Conſtriction, or Ligature: This done, the Inſtrument is withdrawn, and the Ligature left on the *Uvula*, and is to be ſtraitened, now-and-then, every Day, till the lower Part of the *Uvula* falls off. But this Method, tho' ingenious enough, is too ſlow, and troubleſome, as well to the Patient as the Surgeon. A more expeditious Way is, firſt, to depreſs the Tongue with a flat Probe, or Spatula, *Tab.* XXII. *Fig. P* or *R*, and then, with long Sciſſars, to cut off the ſuperfluous Part of the *Uvula*; but Care is to be taken, in this Operation, that no more nor leſs of the *Uvula* be ſeparated, than juſt as much as is required: For if too ſmall a Part be cut off, the Operation is both troubleſome, and of little uſe to the Patient: On the contrary, if too little be left, the Speech is injured. If the Surgeon be not dexterous enough to hold the Spatula right, and, at the ſame time, to manage the Sciſſars as exactly as he ought, the beſt, and moſt commodious Method of Operation, as it is eſteemed by ſome, is, what is performed by help of an Inſtrument invented by a Peaſant of *Norway*, in which Country this Diſeaſe, it ſeems, is very frequent. *Bartholine* and *Scultetus* have given us a pretty accurate Deſcription of this Inſtrument. A Knife, adapted to the Purpoſe, is faſtened to a broad Iron Plate, perforated in its fore Part, in ſuch a manner, that the Knife is impelled by a Spring, and cuts off the ſuperfluous Part of the *Uvula*. The famous *Rau* has, I think, made ſome Alterations in this Inſtrument [ſee *Tab.* XLII. *Fig.* 8.], ſo as that the Spring is wanting; but the *Uvula*, being extended, and depreſs'd through the Perforation *A*, as far as is required, is, with the Knife *C*, by ſtrongly depreſſing the Stick *B*, ſeparated at one Stroke. In this Operation the Inſtrument is, by means of the Handles *D*, *D*, *D*, ſo held in the Mouth, as to depreſs the Tongue in the moſt convenient manner, and render the Uſe of a *Speculum Oris* unneceſſary.

The ſuperfluous Part of the *Uvula* being thus cut off, it will be proper to let the Blood flow for a little while; and then, in order to ſtop the ſame, and to comfort the diſeaſed Part, it will be proper to gargarize with red Wine warm, or with Vinegar, or *Oxycras*, alſo, warm. If the Blood be not, by this means, repreſſed, it is to be ſtopped, by an Application of burnt Alum, with the Spoon, *Tab.* XXII. *Fig. N.* or, after the manner of the Antients, with an Iron heated, but not to the Degree of Redneſs, and held to the Place till the Blood ſtops: But when the *Uvula*, as it ſometimes happens, beſides its Intumeſcence, is, at the ſame time, infeſted by ſome venereal Contagion, the Surgeon is not to put his whole Confidence in his Dexterity of Hand, but to make uſe, alſo, of proper Medicines, if he hopes to make a perfect and effectual Cure. *Heiſter*, *Chirurg.*

UZEG. *Lycium Indicum creditum Alpino*. Park. *Indicum Alpino putatum*. J. B. *Lycium Indicum alterum*. C. B.

This is a Shrub riſing up with a Multitude of very ſtrait Branches, three Cubits and more in Length, which ſhoot forth firm, numerous, hard, and ligneous Roots, which run obliquely; the Branches are furniſhed with many long and very ſharp Spines, ſome of which are cloathed with Leaves; about the Baſes of the Spines grow four or more Leaves, of unequal Sizes, ſmaller and tenderer than Olive-leaves, and not narrow'd into a Point, but rounded like Box-leaves; the Flowers are ſmall, and numerous, not bellied, but from a pretty narrow Tube gradually dilating, open at laſt into a labiated Figure, of a pleaſant and ſmiling Aſpect; they have their inner Boſom tinctured with yellow, with ſome purple Spots where the Petals part; and in all other Parts have a Mixture of the Colour of the Hyacinth with the Violet, but far excel them, both in the rich and moſt grateful Fragrancy of their Smell. *Veſſingius*. Theſe Flowers are ſucceeded by ſmall black Fruit, reſembling that of the *Ebulus*, ſmooth, and of a bitter and aſtringent Taſte. *Proſper. Alpinus*, *de Plantis Ægypti*.

Whether the Juice prepared of this Shrub be the *Lycium Indicum* of the Antients, may be more eaſily gueſſed, from the Characters of the Plant, than the Language of the *Egyptians*, as *Veſſingius* obſerves.

P. Alpinus found it upon a Branch of the *Nile*, called *Calig*, ten Miles above *Alexandria*.

The Juice brought into *Egypt* from the neighbouring Parts of *Arabia* and *Ethiopia*, condenſated in Bottles, has manifeſt Characters of the *Lycium Indicum*, ſays *Veſſingius*, eſpecially when it is rightly prepared; but *Alpinus* believes the *Lycium* in uſe among the *Egyptians*, and brought from *Arabia*, to be ſpurious; for it is hard, he ſays, and black on the Outſide, like the Juice of *Acacia*, and, when broken, is of the Colour of Aloes on the Inſide; is of a faint, tho' not unpleaſant Smell, of a ſweetiſh Taſte, aſtringent, but not at all bitter; viſcous, and, when handled, ſticks to the Fingers: For which Reaſon, he believes it not to be the true *Lycium*, eſpecially ſince it has neither Bitterneſs, nor, when kindled in the Fire, yields a rediſh Spume, as it is recorded by many of the true *Lycium*.

The *Egyptians* uſe this Juice for all Sorts of Ulcers, particularly of the Mouth, Ears, Noſtrils, Anus, and Inteſtines; as, alſo, for an Hæmoptoe, Dyſentery, and Diarrhœa, and for other Fluxes of the Belly and *Uterus*. Being anointed on any Part, it effectually ſecures it from a Flux of Humours.

There is, in the *German* Ephemerides, *An.* 13. *Obſ.* 1. *p.* 9, 10, 11. a Method of preparing *Lycium Indicum* from a Species of *Acacia*. *Raii Hiſt. Plant.*

UZIFIR. Cinnabar. *Rulandus*. *Uſifur*, is the ſame.

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W.

WAAGENBOOM. A Name for the *Lepidocarpodendron, folio ſaligno lato, caule purpuraſcente.*

WAGA H. M. A ſiliquous *Indian* Tree, with a tetrapetalous, ſtellated Flower, and flat Pods three Inches in length. It is very like the *Intſia*, but without Spines, and climbs about high Trees. The Pods are two Inches in Breadth, thin and very flat, when dried of a reddiſh Colour, and have a Cortex of a Snow-white Colour on the Inſide. The Beans are aſtringent, bitter, round, and ſmooth, a little flattiſh, lying in a tranſverſe Poſition, with reſpect to the Pod, and of a green inclining to a Cheſnut Colour.

It is an Ever-green, and grows in the thick Woods of *Warapouli*, and other Parts of *Malabar*.

The Juice of this Tree, together with Lemons, and green Turmeric, boiled for a conſiderable Time in Oil of the Cocoa-Nut, is good to anoint for the Leproſy; it is of great Uſe alſo in inveterate Ulcers. *Raii Hiſt. Plant.* 1766.

WAMCABEC *Inſulæ Maragnanæ* De Laet. The Name of a Tree reſembling an Apple-tree. The Fruit is yellow; the Kernels are acrimonious, and, therefore, not eatable. *Raii Hiſt. Plant.*

WARICORAMARI FRUCTUS. The Fruit of the *Waricoramar*. The Name of a Fruit, ſaid to grow near the River *Arriwar*, of no Uſe in Medicine. *Raii Hiſt. Plant.*

WARNAS. Vinegar of the Philoſophers. *Rulandus.*

WATTA-TALI. The Name of a Tree which grows in *Malabar*. The Leaves bruiſed and infuſed together with green Tobacco and Rice, are ſaid to cure inveterate and verminoſe Ulcers. Of the ſame boiled in Water, Baths are prepared, ſaid to be good againſt chilly Fevers: Of the Flow and Fruit contuſed, tied in a Rag, and boiled in Woman Milk, an Errhine is made, which is recommended in the ſame Fevers. *Raii Hiſt. Plant.*

WELLIA TAGERA H. M. A ſiliquous Plant of *Malabar*, with a pentapetalous Flower, and long flat Pods, with tranſverſe Partitions between the contained Seeds. It grows to the ordinary Heighth of a Man, with a Stem as big as a Man's Arm, and is tranſplanted from Woods into Gardens, only on Account of its Beauty; it is an Ever-green.

All the Parts of this Plant, the Root excepted, are exhibited with an Addition of Cummin, white Sugar, and Milk, againſt a virulent Gonorrhæa. The Leaves boiled in Cows Milk, or uſed in Baths, expel the Gout. The Bark triturated with Sugar and Water is proper in the Diabetes. The Bark of the Root, and green Saffron mixed with Milk, give Relief under the nodous Gout, called by the *Malabrians*, *Sonida badda*. *Raii Hiſt. Plant.*

WINTERANUS CORTEX. See CORTEX WINTERANUS.

WISANCK. A Name for the APOCYNUM SYRIACUM.

WISMAT. *Rulandus* explains this, *Leproſum, non tractabile, vel malleabile, rude ſtannium.*

WITTEBOOM. The *Dutch* Name for the *Conocarpodendron, foliis argenteis, ſericeis, latiſſimis.*

WURTZII UNGUENTUM FUSCUM. This is an Ointment invented by *Felix Wurtzen*, not unlike the *Unguentum Ægyptiacum*, and of much the ſame Virtues.

X.

XAGUA MARTYRIS *Nieremberg.* A Kind of *Indian* papyriferous Tree. The Fruit is ſaid to fatten Swine.

XALXOCHILT. A Name for the GUAJAVA.

XANTHIUM. See BARDANA MINOR.

XANTHOBALANUS. The ſame as CHRYSOBALANUS. *N. Myrepſus*, Sect. 1. C. 349.

XANXUS. A large Sea Shell, found near *Ceylon*, like thoſe with which Tritons are painted. It is, like other Teſtacea, alcaline and abſorbent.

XELSES. The Name of a Star in *Paracelſus*, which, he ſays, ſhines upwards, but not downwards.

XENEXTON. An Amulet worn at the Neck as a Preſervative againſt the Plague. *Paracelſus.* It is, alſo, wrote *Xenechton.*

XENINEPHIDEI. Certain imaginary Spirits mentioned by the Adepts, ſaid to delight in diſcovering the occult Properties of Things to Men.

XENOPHILI ANTIDOTUS. The Name of an Antidote deſcribed by *Aetius*, Tetrabib. 3. Serm. 3. C. 13.

XENOPREPES. ξενοπρεπὴς. *Hippocrates*, in his Treatiſe of Fractures, uſes this Word, to expreſs, unuſual, uncommon, or foreign.

XERANTHEMUM.

The Characters are;

The Root is fibrous and annual; the Leaves are ſomewhat hoary, reſemble thoſe of the Olive-tree, and are diſpoſed in alternate Order. The Calyx is ſquamous, ſmooth, ſilver-colour'd, and conſiſts of a quadruple or quintuple Series of Scales lying one upon another. The Flowers are dry, conſiſting of flat Bracteæ, barren, deſtitute of Ovary or Stamina, rigid, cuſpidated, with a floſculous Diſh, whoſe Florets are of the ſame Compoſition. The Seeds have a foliaceous Head.

Boerhaave mentions ſeven Sorts of *Xeranthemum*, which are;

1. Xeranthemum; flore ſimplici, purpureo, majore. *H. L. Jacea, Oleæ folio, capitulis ſimplicibus*, C. B. P. 272. *Ptarmica Auſtriaca*, Dod. p. 710.
2. Xeranthemum; flore pleno, purpureo, majore, *H. L.*
3. Xeranthemum; flore ſimplici; albo, *H. L.*
4. Xeranthemum; flore pleno, albo, *H. L.*
5. Xeranthemum; flore ſimplici, purpureo, minore, *T.* 499. *Jacea, Oleæ folio, minore flore*, C. B. P 272.
6. Xeranthemum; capitulo variegato. *Jacea, folio oleæ, capite variegato.* Sher.
7. Xeranthemum; flore purpureo, ſimplici, minimo, ſemine maximo. *H. L. Flor.* 2. 37. *Boerh. Ind. Alt. Plant.*

Xeranthemum is from ξηρὸς (*Xeros*) dry, and ἄνθος (*Anthos*) a Flower, that is to ſay, a dry Flower. *Cluſius* calls it *Ptarmica*, not becauſe it provokes Sneezing, but becauſe it has ſome ſmall Reſemblance of the *Ptarmica* of *Dodonæus.* It is commonly called *Immortalis Herba*, the immortal Herb, becauſe its Flower may be preſerved many Years, as conſiſting of rigid Bracteæ, which ſound like ſo many thin Plates of Metal. The Virtues of this Plant in Medicine are unknown. *Hiſt. Plant. aſcript. Boerhaave.*

XERAPHIUM. The Name of a drying Topic deſcribed by *Aetius.* Tetrabib. 4. Serm. 2. C. 13.

XERASIA. ξηρασία, from ξηρὸς, dry. A Species of *Alopecia*, conſiſting in a Dryneſs of the Hairs, for want of due Nutriment.

XERION. ξήριον. A dry Medicine reduced to Powder: The ſame as *Catapaſma.*

XEROCOLLYRIUM. A dry *Collyrium.*

XEROMYRON. A Compoſition of dry Aromatics reduced to Powder; called, however improperly, a dry Ointment.

XEROPHTHALMIA. It is the ſame as SCLEROPHTHALMIA.

XEROTRIBIA. ξηροτριβία. from ξηρὸς, dry, and τρίβω, to rub; a dry Friction.

XESTES. ξέστης. A Sextary.

XIPHIUM.

The Characters are;

It has the Fruit and Flower of the *Iris*, with a bulbous Root.

Boerhaave mentions eleven Sorts of *Xiphium*, which are;

1. Xiphium;

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1. Xiphium; Perſicum; præcox; flore variegato. *T.* 363. *Iris, bulboſa, Perſica*, Park. Parad. 172.

2. Xiphium; anguſtifolium; flore albo; labio inferiori rictus aureo. *Iris bulboſa* III. *ſive verſicolor.* Cluſ. H. 211.

3. Xiphium; anguſtifolium; flore variegato, petalis repandis flavis cum maculâ aureâ; petalis incumbentibus pallidè cæruleſcentibus, petalis erectis pallidè cæruleſcentibus cum lituris violaceis.

4. Xiphium; anguſtifolium; flore ex violaceo-purpureo & cæruleo palleſcente variegato notata.

5. Xiphium; anguſtifolium; flore luteo, inodoro. *T.* 364. *Iris, bulboſa, lutea.* J. B. 2. 705.

6. Xiphium; anguſtifolium, cæruleo-violaceum; non odorum. *Iris, bulboſa, flore cæruleo & purpureo.* H. Eyſt. Æſt. 4. F. 10. Fig. 1.

7. Xiphium; anguſtifolium; petalis repandis aureis; petalis incumbentibus pallide flavis; bifidis, erectis verò ex cæruleo & pallido ſtriatis.

8. Xiphium; anguſtifolium; petalis repandis ex viridi ferrugineis, petalis incumbentibus vietè cæruleis, bifidis erectis verò violaceis.

9. Xiphium; anguſtifolium; cæruleo-violaceum; non odorum; majus.

10. Xiphium; anguſtifolium; petalis repandis albis; erectis dilutè cæruleis; incumbentibus pallidè cæruleſcentibus.

11. Xiphium; anguſtifolium; petalis repandis aureis; incumbentibus pallidè flavis, erectis dilutò cæruleis. *Boerh. Ind. Alt. Plant.*

The Name is from the *Greek* ξίφος (*Xiphos*) or ξιφίδιον (*Xiphidion*) a ſmall two-edged Sword with a ſharp Point, to which its Leaves have a Reſemblance; ſo that the *Greek* Name *Xiphium*, is the ſame in Senſe with the *Latin Gladiolus*.

The Plant is of an acrimonious Quality like the *Gladiolus*. *Hiſt. Plant. aſcript. Boerhaave.*

XIPHION, is alſo a Name for the *Gladiolus*; *floribus uno verſu diſpoſitis*; *major*; *floris colore purpureo rubente.*

XIPHOEIDES. ξιφοειδὴς. An Epithet for the Enſiform Cartilage of the Sternum.

XIPHYDRIA. Limpins. Oribaſius, Collect. Medic. L. 2. C. 58. mentions them as the Product of *Ægypt.*

XIR. Mercury. *Theatrum Chymicum.* Vol. 5.

XISINUM. Vinegar. *Rulandus.*

XOCHINACAZTLIS, *ſeu Flos Auriculæ*, Hern. 30. Raii Hiſt. 2. 1671. *Fructus oblongus, cineraceus, acidulus*, C. B. P. 406. *Orejuelas ſeu Orichelas*, Hughes.

It grows in *New Spain*, and the Flower enters the Compoſition of Chocolate, in order to give it a fine Smell, and a pleaſant Taſte.

The Plant is hot and dry, diſcuſſes Flatulences, attenuates Phlegm, and heats and ſtrengthens a weak and cold Stomach.

XOCHIOCOTZO QUANHUITL. The ſame as *Liquidambra.* See AMBRA.

XOCOXOCHITL, *ſeu Piper Tavaſci* Hernandez. A Name for the *Caſſia Caryophyllata.* See CARYOPHYLLUS.

XYLAGIUM. A Name for the *Lignum Sanctum.* See GUAIACUM.

XYLOALOE. Aloes Wood. See AGALLOCHUM.

XYLOBALSAMUM. See BALSAMUM.

XYLOCASIA. The ſame as CASIA LIGNEA. See CINNAMONUM.

XYLOCINNAMOMUM. The Wood of the Cinnamon Tree.

XYLOCOCCA. ξυλοκοκκα. The internal Grains of the Fruit of the Carob Tree. *N. Myrepſus.* Sect. 1. C. 6.

XYLOCOLLA. The ſame as TAUROCOLLA.

XYLOGUAIACUM. Guaiacum Wood.

XYLOEBENUM. Ebony Wood.

XYLON.

The Characters are;

It has the Leaves of the *Malva* or *Alcea*. The Flower is monopetalous, Bell-ſhaped, open, multifid, adorned with a pyramidal ſtaminous Tube. The Fruit is divided into four or more Cells, gaping at the Top, and full of Seeds covered with Cotton.

Boerhaave mentions three Sorts of *Xylon*, which are;

1. Xylon; arboreum. *J. B.* 1. 346. *Goſſypium, arboreum, Gotnemſegiar.* Alp. Ægypt. 2. 38.

This is a ſhrubby Plant, cultivated in ſome Gardens in *Ægypt*, and differs from the herbaceous Goſſypium only in Tallneſs, and the Figures of its Trunk, Branches and Leaves. It grows to the Heighth of ten Cubits, and has a hard and ligneous Trunk and Branches. The *Ægyptian* Surgeons make their Tents of the Cotton which this Tree produces, inſtead of Lint, which is in Uſe among us, for the Cure of Wounds and Ulcers, for they uſe no Lint: They employ it, alſo, as we do Lint, in ſtopping an Hæmorrhage. They alſo make very frequent Uſe of the Mucilage of the Seeds in all burning Fevers, and Poiſons, which threaten an Eroſion of the Stomach and Inteſtines, and for Coughs proceeding from Diſtillations of acrid and ſalt Humours. *Proſper Alpinus de Medicina Ægyptiorum, Vol.* 2. *p.* 38.

2. Xylon; ſive Goſſypium Herbaceum. See BOMBAX.

3. Xylon; ſive Goſſypium ex Cypro. *Volk. Boerh. Ind. alt. Plant.*

It has the Virtues of the *Alcea* and *Althæa*. The Seeds are very ſerviceable in Diſeaſes of the Breaſt, and in violent Coughs, and promote Expectoration. *Hiſt. Plant. aſcript. Boerhaave.*

XYLOSTEUM.

The Characters are;

The End of the Pedicle forms a Calyx, conſiſting of two larger and four ſhorter Leaves, two of which latter are interpoſed, one on each Side, between the greater. In this Calyx grow two round Ovaries, which have their Apex adorned with a quinquefid Calycle, and ſhoot out from the Centre of their Top a long Tube furniſhed with a globous Apex. The Flower grows on the Apex of the Ovary within the Calyx, and is monopetalous, oblong, tubulous, Bell-ſhaped, quinquefid, expanded, and furniſhed with five Stamina, which grow out of the Inſide of the tubulous Part of the Flower.

Boerhaave mentions but one Sort of this Plant, which is;

1. Xyloſteum; Pyrenaicum. *T.* 609. *Chamæceraſus, Pyrenaica, folio Oleæ, fructu gemino, rubro, Groſſulariæ ſimili.* Schol. Bot. Par? H. R. D. *Boerh. Ind. alt. Plant.*

It is called *Xyloſteum* from ξυλον, (*Xylon*) Wood, and ὀστεον, (*Oſteon*) a Bone, becauſe its Wood in Whiteneſs and Hardneſs reſembles a Bone. *Hiſt. Plant. aſcript. Boerhaave.*

There is no Mention made of its Virtues.

XYLOSTEUM. A Name for the *Chamæceraſus*; *Alpina*; *fructu gemino, rubro*; *duobus punctis notato*, and alſo for the *Chamæceraſus*; *dumetorum*; *fructu gemino, rubro.*

XYMPATHESIS. Sympathy.

XYMPHYSIS. The ſame as SYMPHYSIS.

XYNAGOGEES. ξυναγωγεῖς. The Sphincter Muſcles.

XYNCLERIÆ. ξυγκληρίαι, of ξύν, Attice for σύν, and κλῆρος, a Prepoſition importing ſome Tye or Union, State, Condition, are Concerts or Agreements in Circumſtances. Thus ξυγκληρία παθημάτων, 6 *Epid. Sect.* 7. *Aph.* 2. are Conjunctions or Complications of morbous Affections, and here ſpoken of a Cough, in Conjunction with a Quinſey and Peripneumony. Others underſtand by ξυγκληρίαι, in that Place, no more than a fortuitous Concourſe of Affections, which happened in the ſame Manner as if they were appointed to meet together by the Chance, τῷ κλήρῳ, "of a Lot."

XYNERISIS. ξυνέρεισις, of ξὺν for σὺν, and ἐρείδομαι, to eſtabliſh, fix firmly, to reſt upon; is a firm Coheſion or Connexion. Thus ξυνέρεισις ὀδόντων, 7 *Epid.* is a firm Connexion, or what we call clenching of the Teeth, expreſſed 5 *Epid.* by ὀδόντων σύληψις, (*Syntripſis*) Contrition, or rather Conſertion of the Teeth. The Verb ξυνερείδομαι is uſed in the ſame Senſe, *Lib.* 2. περὶ γυναικ. *Lib. de Morb. Sacro*, and ξυνερείδω in *Coac.* 235. where, for συνερίζειν, I read ξυνερείδειν, *Foeſius.*

XYRIS, *Iris fœtidæ, ſpatula fœtida*, Offic. *Spatula fœtida, pleriſque Xyris*, J. B. 2. 731. *Xyris*, Ger. 53. Emac. 60. Raii Hiſt. 2. 1190. *Xyris ſive ſpatula fœtida*, Park. Theat. 256. *Gladiolus fœtidus*, C. B. P. 30. *Iris ſylveſtris quam Xyrim vocant*, Raii Synop. 3. 375. *Iris fœtidiſſima ſeu Xyris*, Tourn. Inſt. 360. STINKING GLADDON.

The Root of Gladwyn, which is a Species of wild Iris, or Flower de Luce, is thick and ſpreading in the Earth, with many Fibres, from which ſpring many Leaves, longer, narrower, and ſharper pointed than the common Flower de Luce, of a very ſtrong Smell: The Stalk ariſes from among the Middle of the Leaves, ſmooth and round, and bearing two or three Flowers on the Tops, included in thin Skins or Huſks before they are opened, each Flower conſiſting of nine Leaves, whereof the three Falls are of a dull Colour, full of Purple Veins; the Arches are of the ſame dull Colour, and the Uprights are of a whitiſh Purple towards the Top. They are ſmaller than moſt other Flower de Luces, and are ſucceeded by large, ſomewhat triangular Pods, which, when ripe, burſt open into three Parts, like Pionies, ſhewing the roundiſh Seed. It grows in Hedges, Thickets and Buſhes, particularly by *Jack Straw's Caſtle* beyond *Iſlington*, and in the Back Road or Lane which goes from the End of *Newington* to *Southgate*, and flowers in *June*. The Root only is uſed, and but ſeldom.

It is reckoned by ſome a Specific againſt the King's Evil and ſcrophulous Swellings, both given inwardly, and applied outwardly. It is ſaid likewiſe to provoke Urine, and to be uſeful in hyſterick Diſorders. *Miller's Bot. Off.*

The Root ſmells like the *Cotula*, or Buggs, but is endued with ſuch Virtue and Acrimony, as to render it, as we are aſſured by *Dioſcorides*, effectual in Wounds of the Head, and Fractures, and in drawing out Splinters, and all Kinds of miſſile

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missile Weapons without Pain. Made into a Compoſition, with a third Part of *Flos Æris*, a fifth Part of the Root of Centaury, and with Honey, and applied with Vinegar, it cures Tumours and Inflammations. The Root bruiſed in Paſſum is taken for Convulſions, Ruptures, Sciatica, Strangury, and Fluxes. The Weight of three Oboli of the Seed taken in Wine, is a moſt effectual Medicine to provoke Urine; the ſame drank in Vinegar, waſtes and conſumes the Spleen.

It is taken for a Looſeneſs, in the ſame Manner as *Rhabarbarum* and *Aſarum*, and cures the Diſeaſe by diverting the morbific Matter, and diſcharging it by Urine. It is uſual with the poorer Sort and Ruſtics in *Somerſetſhire*, to take the Decoction, or even Infuſion of the Root, after the Manner of Iris, for a Purge.

I ſhould be loth, ſays *J. Bauhine*, to uſe ſo very hot a Root for all Kinds of Fluxes of the Belly, perhaps its Uſe might be tolerated in a pituitous Flux. The Root taken inwardly is of extraordinary Service in the Scrophula, ſays Dr. *Needham*.

The Powder of the dry'd Roots is a very uſeful Remedy in the hyſteric Paſſion, Orthopnæa, and hypochondriac Affections. *D. Bowle*, *Raii Hiſt. Plant.*

XYSMA. ξύσμα. A Strigment: Any Thing ſcraped off from a Body; from ξύω, to ſcrape.

XYSTER. ξυστὴρ. A Lenticular, or Raſpatory.

XYSTOS. ξυστὸς. Scrap'd Lint.

Y.

YARIN. *Flos Æris*. *Rulandus*. See Æs.

YAWS.

The *Yaws* is a Diſtemper epidemical, or rather endemical to *Guinea*, and the hotter Climates in *Africa*, ſeldom failing to attack each Individual of both Sexes one Time or other in their Lives, but moſt commonly in Childhood or Youth; it makes its firſt Appearance in little Spots on the Cuticle, level or ſmooth with the Skin, at firſt no larger than the Point of a Pin, which increaſe daily, and become protuberant like Pimples; ſoon after the Cuticle frets off, and then, inſtead of finding *Pus* or *Ichor* in this ſmall Tumor, you only find white Sloughs or *Sordes*, under which is a ſmall red *Fungus* growing out of the *Cutis*, increaſing gradually to very different Magnitudes, ſome leſs than the ſmalleſt Wood-ſtrawberry, ſome as big as a Raſp-berry, and others even exceeding in Bigneſs the largeſt Mulberries, which Berries they very much reſemble, being knobbed as they are. While they are coming to this Height, the black Hair that grows out of the Parts now covered with the *Yaws*, changes gradually to white; I do not mean appears white by the *Ichor* of the *Yaws* drying upon it, as all the Skin does towards the End of this Diſtemper, but the Subſtance of the Hair itſelf is changed from black to a tranſparent white, like the white Hairs of old Men.

I think it impoſſible to calculate the exact Time that the Diſtemper requires to go through theſe different *Stadia*: Some Conſtitutions may be more adapted to produce this nauſeous Diſtemper, or to receive it from others by Infection; nay the ſame Conſtitution may be apt to receive or produce it at one Time more than at another; and if it is produced by external Infection, the Degree and Quantity of Infection may haſten or retard the Symptoms. This I know by Experience, that Negroes who were luſty, in good Plight, and had full Nouriſhment allowed them, in a Month after diſcovering the white Spots, have had ſeveral *Yaws* as big as a Mulberry; and in Negroes that were low in Fleſh, and have had but a poor ſcanty Diet, in three Months Time none of the *Yaws* have exceeded a common Straw-berry in Size.

The *Yaws* appear indeterminately on all the Parts of the Body, but the moſt and biggeſt are generally on the Groins, about the Privities and *Anus*, in the Armpits and Face. When the *Yaws* are very large, they are few in Number, and when many in Number, they are ſmall in Size. All this Time the Patient is in good Health, does not loſe his Appetite, and ſeems to have no other Uneaſineſs but what the Naſtineſs of the Sores occaſion, for they are not painful except they are touched too roughly. This is the natural Appearance of the Diſtemper, when left to itſelf, and in this State it will continue a long Time, without any ſenſible Alteration; and what might be the Conſequence in Time, I cannot pretend to tell you, whether it might not conſume itſelf, and cure as ſoon as the peccant Matter is thrown entirely out and exhauſted: Or, whether theſe *Funguſes* might not turn corroſive Ulcers, and at the ſame Time affect the Bones with *Nodes*, *Exoſtoſes* and *Caries*, as it does when the Cure is attempted without Succeſs: Or, whether it might not alter the Diameter of all or ſome of the Excretory Ducts of the miliary Glands, and adapt them to excrete a Fluid more viſcid than the natural Sweat, or inſenſible Tranſpiration, which drying on the Skin would render the Patient ſcorbutick or ſcabby, that is, leprous. This I imagine to be the moſt probable Conjecture, and that as ſoon as the *Funguſes* are dry, the Infection is exhauſted. This Diſtemper being infectious, it is the Buſineſs of the Negro's Maſter to ſeek for a Cure, as well for the Sake of the Negro affected, as for himſelf, Family, and other Negroes on the Eſtate, that have not had it before, who are in danger of being infected.

The *Yaws* do not prove often dangerous, if the Cure is undertaken ſkilfully at a proper Time, and the Patient has not undergone any Courſe of Phyſic for them before; but if the Patient has been once ſalivated, or taken any Quantity of Mercury, and the Skin once cleared, and they appear again, they are always difficult to cure, and often incurable; and indeed I am of Opinion, that the following Train of terrible Symptoms owe their Original as much to the untimely and unſkilful Uſe of the Mercury, as to the Diſtemper itſelf. I am induced to this Belief by theſe Reaſons:

All the Negroes that have had the *Yaws* in *Africa*, and have been cured there, never have them again here, or any bad Symptom that ſeems to proceed from them; and in the Courſe of nine Years Practice here, I never had any Patient that relapſed when I was firſt employed, nor ever loſt one, tho' I have cured Numbers of both Sexes, and of all Ages. Nor is it to be admired that the *Africans* ſhould underſtand their Country Diſtemper better than we *Europeans*; they, probably have had above three thouſand Years to gain Experience of it by Obſervation, we have not had one hundred Years.

As ſoon as a Negro is perceived to have the *Yaws* coming out upon him, he muſt be removed to a Houſe by himſelf, or, if you cannot be ſure whether it is the *Yaws* or not, ſhut him up ſeven Days, and look upon him again as the *Jews* are commanded to do with their Lepers, *Levit.* xiii. and in that Time you may commonly be certain. As ſoon as you are convinced that the Eruptions are really the *Yaws*;

Take Flowers of Sulphur, one Scruple; Camphire diſſolved in Spirit of Wine, five Grains; *Venice* Treacle one Dram, and of Syrup of Saffron a ſufficient Quantity to make a Bolus, which is to be taken every Night at Bed-time.

Repeat this Bolus every Night for two or three Weeks, or till the *Yaws* are at their Height, which is eaſily diſcovered by their being at a Stand, neither increaſing in Size or Number; then is the Time to throw your Patient into a gentle Salivation by Calomel, without any further Preparation of the Body. Give the Calomel in ſmall Doſes at a Time, that it may neither vomit nor purge. I never exceeded five Grains at a Time in Pill or Bolus, and repeated the Doſe, once, twice, or thrice a-day, as I found the Patient could bear it, and never deſignedly raiſed the Salivation to above a Quart ſpitting in twenty four Hours: Very often by the Time you have got the Salivation to this Height, all the *Yaws* will be covered over with a dry ſcaly Cruſt or Scab, which in Patients that have been full of them, makes a very terrible Figure. Theſe Cruſts or Scabs fall off daily in ſmall white Scales, and in ten or twelve Days leave the Skin ſmooth and clean: Then I leave off giving any more Calomel, and let the Salivation go off gradually of itſelf. After the Salivation, ſweat them twice or thrice in a Frame or Chair with Spirit of Wine, and preſcribe the following Electuary:

Take of Æthiops Mineral, an Ounce and an half; Gum Guajacum, half an Ounce; *Venice* Treacle and Conſerve of red Roſes, of each one Ounce; Oil of Saſſafras twenty Drops; and Syrup of Saffron a ſufficient Quantity to make an Electuary. Let two Drams of this Preparation be taken Morning and Evening.

I like-

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I likewise order them to drink the Decoction of Guajacum and Sassafras, fermented with Syrup or Molasses, for their constant Drink, while they take the Electuary, and to be continued for a Week or a Fortnight after the Electuary is done.

Sometimes after all the other *Yaws* are fallen off, the rest of the Skin is clear, and the Salivation is over, there remains one large *Yaw*, high knobbed, red and moist; this is commonly called the *Master Yaw*, and has cost many a Negro his Life, by the Practitioners believing that this required another and another Salivation; in reality this requires no more than being destroyed by a gentle Caustick, or mild Eschoratic, about an eighth or tenth Part of an Inch lower than the Skin, and then it will cure up as easy, and as soon as any other Ulcer of the same Bigness and Figure. I commonly have used red Precipitate and burnt Alum, of each equal Parts, for my Escharotic; digested with yellow Basilicon one Ounce, and red Precipitate one Dram; and cicatrized with Lint pressed out of Spirit of Wine, and with the Vitriol Stone.

After the *Yaws* are cured, some Patients are afflicted with Carbuncles in their Feet, which sometimes render them incapable of walking, or if they do walk, it is with much Pain.

This Distemper seems to be owing intirely to the yawy Matter being confined by the Hardness of the Cuticle in the Soles of their Feet, by continually walking barefooted. Sometimes the whole Sole of the Foot will be affected, and they cannot bear any touching it, and at other Times there is only one Spot, no bigger than an *English* Shilling. In Time the Pain brings on an Inflammation and Suppuration, and the Patient is easy; it seems to be cured, and often is so, by the whole *yawy Fungus* being consumed by the Suppuration. At other Times, in five or six Weeks, as the Skin hardens, the Pain, Inflammation, *&c.* begin again, and thus the Symptoms go and return for Years, till either the *Fungus* is consumed by the frequent Suppurations, or destroyed by Art. The Planters and Negroes try many *Nostrums* for this Malady, but the only effectual Method is by Bathing and Paring to destroy the Cuticle, and then proceed as in the *Master Yaw*. The gentle Escharotics are to be preferred, especially here, and all imaginable Care is to be taken to avoid the Tendons and *Periosteum*.

In Children under six or seven Years old, who cannot be supposed to have Sense enough to go through a Salivation, at the proper Time of salivating, I begin to give them a Grain or two of Calomel in white Sugar once a-day, once in two Days, or once in three Days, so as only to keep their Mouths a little sore till the Yaws dry, and falling off in white Scales, leave the Skin clean. This succeeds always, but requires a longer Time than in Adults.

I have thrice had the Mother with her sucking Child under my Care for the *Yaws*; both Mother and Child were full of them. Two of the Children I cured by curing their Mothers, without giving the Children any Medicine but what they received from their Mothers in sucking their Milk; the third Child, who was both bigger and older than the former two, when his Mother was well, his *Yaws* were dry, and in one white Crust or Scab, but did not scale off, and I was obliged to finish his Cure with three or four small Doses of Calomel, and a Course of Æthiops. I have been well informed, that even in Adults the Æthiops Mineral, given in large Doses for three or four Months, will make a perfect Cure: I never tried it, because it requires so long a Time, and there is no trusting a Negro to take his Medicines himself, and the Planters neither care to lose their Labour, nor to take the Trouble of attending them so long; but I am convinced it would succeed with Safety.

Some may be surprised, that in my Mercurial Course for this Distemper, I neither prepare the Body with blooding and purging before the Salivation, nor purge after it. As to the first, the Distemper is cutaneous, or rather the Skin is the natural emunctory by which the peccant Humour is thrown off in this Disease, by a very extraordinary and preternatural Crisis. All that I mean by a preternatural Crisis is, that the Cause of this Distemper, like the Small-Pox, can never be concocted, so as to go off by any of the natural Secretions; and the Funguses here are as natural as the Pustules in the Small Pox; for if you salivate your Patient before the *Yaws* are at their Height, the best that you can expect is their appearing again soon after the Salivation: And what can be expected from Bleeding and Purging, but retarding the Yaws in coming out to their Height, and probably carrying off some Fluids that are absolutely necessary to Nature in her Operation, or perhaps intimately mixing the Cause of this Distemper with the Fluids, so that an intire Separation can never be procured afterwards?

And as to purging after Salivation, if the morbifick Matter is intirely exhausted, what Occasion is there for Purges? Can we propose carrying the Matter off by the Intestines, which naturally seems to go off by the Yaws themselves? Is it not more probable, that some small Particles that are left about the Skin, might be washed off by the natural Perspiration and Heat, which by purging may again be returned to the Blood, and create fresh Disorders? Add to all this, the *Master Yaw*, when in full Bloom, is merely topical, and easily cured by Topics, tho' it contains Infection enough to produce the Yaws in Hundreds by Inoculation.

The venereal Disease and the *Yaws*, as far as I have described the latter, are very distinct Distempers, but the Symptoms, in consequence of the *Yaws* ill-cured, coincide so exactly with the Symptoms of an inveterate *French* Pox, and too promiscuous Copulation of the Negroes renders them so liable to the venereal Taint, that in most Cases it will be very difficult, if not impossible, to distinguish them, especially if the Patient has had both Distempers at any Time in his Life before his present Complaints.

The Symptoms are, violent Pains in the Limbs, even nocturnal, which with some are attended with Nodes and Exostoses, in others with Ulcers, which render the Bones carious. I shall not pretend to determine which Distemper they belong to; but I think if a Patient, that never had any Symptoms of the venereal Disease, and had the *Yaws*, was to labour under these Symptoms, I should make no doubt of their proceeding from the *Yaws*, and more so, if these Symptoms did not yield to the Method of Cure that either palliates or cures the Pox, but rather irritates and increases them. I shall give an Observation or two, where I think the Case proceeded from the *Yaws*, and leave you to judge for yourself.

In the Year 1727 I was desired to look upon a young Negro Man, long afflicted with Ulcers in his right Leg and Foot, occasioned, as was supposed, by the *Yaws* being ill-cured in his Child-hood; he seemed to be healthy in every other Respect, and had undergone several Salivations and Courses of Physic unsuccessfully. I found two of the *metatarsal* Bones consumed, and the other three carious, the *Os Calcis*, and the lower *Epiphysis* of the *Tibia* were likewise carious. I told the Lady to whom he belonged, that it was not in my Power to serve him; these Bones would rot, and not exfoliate, and if I proceeded to Amputation, as they desired, I either should not be able to cure up the Stump, or if I did, he would not long survive it: However, upon the continual Entreaties of both the Mistress and Negro, I at last condescended to amputate his Leg.

I bled and purged him twice or thrice, and made him an Issue in the opposite Leg, and one in each Arm. Some Days after they were digested, I took off his Leg at the usual Place, and cured the Stump with all the Ease imaginable, and he was very glad to walk about on his wooden Leg. About a Month after the Stump was perfectly cicatrized, he was seized with a Fever, and in a few Days after, with a violent Pain and Inflammation in his Thigh and Knee of the amputated Leg; in a Fortnight after the Approach of the Fever, I found a Fluctuation of Matter in his Ham, and opening it by Incision, discharged a Pint of Matter at first. As the Imposthume digested, the Fever wore off, and he recovered; he is now alive and in Health, but keeps the Incision still open as an Issue.

A young Woman of a good Education came from *England* here, as a School-mistress to a Gentleman's Daughter; some time after, she married an Overseer, who gave her the *Yaws*; as soon as she perceived the Distemper, being much frightned, she went to a Planter, who used to cure a great many Negroes; there was then but just *Yaws* enough to show that Distemper. He immediately shut her up in the Hot-house, (as they call it here), and that Night anointed her with the mercurial Unction, according to *Serjeant Wiseman*'s Proportion of the Quicksilver. This once anointing threw her into a deep Salivation, which lasted between six and seven Weeks: Four Weeks of that Time she could not speak a Word, and the Saliva was deeply tinged with Blood. After the Salivation she seemed perfectly well, soon recovered her Strength, and engaged to go to *England* with a Gentleman's Lady as her Chamber-maid, and accordingly embarked in *May* or *June* 1728.

Some Weeks after she arrived in *London*, she was attacked with violent Pains in her Arms and Legs, and applied herself to a Surgeon or Apothecary of her Acquaintance, who gave her many Medicines to no Purpose; for while she was under his Care, an Ulcer broke out in her Leg, and another in her Arm: Upon this her Money beginning to fall short, and thinking she had a better Chance of getting well in a Country where her Distemper was known, than where they knew little of it, (at least those she applied to) she got a Passage to this Island again.

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In *Auguſt* 1729, ſhe came to me begging my Aſſiſtance; ſhe was really an Object of Charity, and I promiſed to give her my utmoſt Endeavours to ſerve her, without the leaſt Proſpect of Gain. The Pains of her Limbs then continued ſevere, and ſhe had five or ſix Ulcers in different Parts of her Arms and Legs, all covered with an *Hyperſarcoſis*.

I told her ſhe muſt be very ſincere in anſwering what Queſtions I aſked her; for as her Huſband had given her the *Yaws*, he might as well have given her the *venereal Diſeaſe*, and that I ſhould have more Hope of curing her, if the preſent Symptoms proceeded from the laſt, than if they were the Conſequence of the firſt. She told me ſhe never had any venereal Symptom in her Life, either before ſhe had the *Yaws* or ſince, that a few Days before ſhe diſcovered ſhe had the *Yaws*, her Husband left her, and went to Sea, his firſt Profeſſion; that ſhe had never ſeen him ſince nor converſed criminally with any other Man. Her ſincere and ſenſible Way of anſwering every Queſtion I could aſk her, as they occurred to me, and the good Character ſhe bore among her Acquaintances, as well as its being her Intereſt to tell me the Truth, which ſhe might without any Shame, convinced me ſhe was ſincere, and had no Deſign to deceive me, or ruin herſelf.

I immediately dreſſed the Ulcers with gentle Eſcharotics to deſtroy the *Hyperſarcoſis*, and put her into a Courſe of *Æthiops*, with the Decoction of the Woods in Lime-water, and gave her gentle Cathartics twice a Week with *Mercurius Dulcis*. After a Month or ſix Weeks ſpent in this Method, I found it had no Effect; for after the *Funguſes* were conſumed, the Ulcers ſeemed to digeſt a few Days, and then gleeted again, and never in the leaſt contracted. I then threw her into a gentle Salivation with *Calomel*, deſigning to keep her long in it gently; after ſhe had ſpit about a Quart a-day for four Weeks, finding it not anſwer, the Ulcers enlarging, and the Pains becoming more violent, I was reſolved to let it go off: But at Night there fell a great Rain, and the Room not being tight in the Roof, was very wet. The next Day the Salivation ſtopt, and ſhe had a Fever for a Fortnight, which at length went off, and left her ſo weak and emaciated, that I was afraid ſhe would die conſumptive at laſt.

I then put her into the Milk-Diet, and ordered her a Decoction of *Sarſaparilla* and *China* Roots, to be drunk for her conſtant Drink, with one third Milk. In about eight or ten Weeks ſhe recovered her Strength and Fleſh, and was adviſed by ſome of her Neighbours to uſe a Diet-drink that a certain Negro made, which they ſaid had cured Numbers in her Caſe, after all other Means had failed. This ſhe uſed ſix or ſeven Months, and dreſſed the Ulcers with Tincture of Myrrh, bathing them every Dreſſing with warm Lime-water: But both they and her Pains increaſed; the Bones became carious in every Ulcer, and ſhe lingred under the Diſtemper to the End of the Year 1734, and died.

When I come to this Iſland, it was the Practice here, as ſoon as the *Yaws* appeared, to give the Patient 25 Drops of a Solution of two Drachms of *Mercur. ſublimat. corroſiv.* in eight Ounces of ſtrong Rum in the Morning, drinking warm Water after every Puke, and they would vomit and ſpit all the Forenoon. This Doſe they repeated every Morning, increaſing the Quantity five Drops every Doſe they took, in a few Days they were ſeemingly well: But I obſerved that moſt that had been treated after this manner, either broke out again, or in proceſs of Time complained of gnawing Pains in their Bones, or were ſubject to Ulcers in ſeveral Parts of their Bodies. The Diſeaſe at its ſecond Appearance was long in coming to an Height, and required a longer Courſe of Mercury to clear their Skin; and ſometimes, after all, they would relapſe a third and fourth Time.

Of thoſe Patients that were affected with Ulcers, I have ſucceeded with ſome by Salivation, and long Courſes of the *Æthiops*, with the Decoction of the Woods in Lime-water, many I have been foiled in, and never been able to cure, but left them, I think, rather worſe than I found them, to linger out their Days miſerably. Nor can I pretend to better Succeſs in thoſe that have complained of Pains in their Bones, they have generally ended in *Nodes*, *Exoſtoſes*, and *Caries*, and the Bones of the Arms and Legs break without any external Violence.

A Negro Man, called *America*, belonging to Sir *William Stapleton*, after having had the *Yaws*, complained of Pains in his Limbs, and had been uſeleſs in the Plantation for nigh twenty Years, moſt of his Bones being full of *Nodes* or *Exoſtoſes* and *Caries*. In the Year 1733 his *Os humeri* broke in the Middle, without any external Accident. I reduced and dreſſed it as a common Fracture. About ſix Weeks after, when the *Callus* ought to have been grown ſtrong, I found the Ends of the Bones move eaſily one on another; and upon a gentle Extenſion of his Arm, the Ends of the Bones were a full Inch diſtant from each other. In about twelve Months more the *Os humeri* was conſumed entirely within an Inch of the *Scapula*, and about the ſame Diſtance from the Elbow. Soon after this he died tabid.

It is worth while to compare the Deſcription of the *Leproſy* among the *Jews* in *Chap.* xiii. of *Leviticus*, with the Account which I have here given of the *Yaws*; the two Diſtempers ſeem to have a great Reſemblance to each other. *Edinburgh Med. Eſſays.*

Upon the Coaſt of *Antigua*, they have a large turbinated Shell, which they call the *Conch*. This they calcine, and give to the Negroes and others labouring under the Yaws, as is ſaid, with great Succeſs, inſomuch that they eſteem it an almoſt infallible Remedy; but it muſt be continued for ſome Time.

YAYAMA. A Name for the *Ananas*; *aculeatus*; *Fructu Pyramiditato*; *carne aurea*.

YC. Good. *Rulandus.*

YEAR. A Medicine. *Rulandus.*

YDRARGYROS. Quickſilver. *Rulandus.*

YECOTL. The ſame as PALMA-PINUS.

YELION. A barbarous Word for *Yalos*, Glaſs.

YERVA. The ſame as CONTRAYERVA.

YERVA MORA. The *Spaniſh* Name for the *Arbor baccifer Canarienſis*, *Syringæ ceruleæ foliis*, *purpurantibus venis*, *fructu monopyreno*. The Name of a Plant now very common in the *Engliſh* Gardens, but of no Uſe in Medicine.

YETTUS. The Name of an opake, hard Stone of a red Colour, uſed inſtead of the *Lapis Lydius*, or Touch Stone.

YGROPISSOS. Liquid Pitch.

YLECH. See ILECH.

YLEIDOS, or YLIADOS. See ILIADUS.

YLIASTER. The ſame as Iliaſter. See ILIADUS.

YOMO. YOS, or YN. Verdigriſe. *Rulandus.*

YPSILOGLOSSI. A Name for the Muſcles called *Baſioglooſſi*.

YPSILOIDES OS. The *Os Hyoides*.

YQUETAIA. A Plant of *Braſil*, as yet but little known, but whoſe Virtues are highly extolled by a *French* Surgeon ſettled in *Portugal*, who found it in *Braſil*. M. *Marchand*, with the Aſſiſtance of M. *Homberg*, has made a Diſcovery that this rare and foreign Plant is every Day trodden under our Feet, and is no other than the *Scrophularia aquatica major*. They aſcribe to the *Yquetaia* the Property of depriving Senna of its ill Taſte and Smell without diminiſhing its Virtue, which would much facilitate the Uſe of a Cathartic ſo excellent on other Accounts. And the very ſame Property is found to belong to the Species of *Scrophularia* before mentioned, but was unknown before it came to be diſcovered by the Reſemblance of this Plant to the *Yquetaia*. If this *Braſilian* Plant proves as good as it is ſaid to be for the Pleuriſy and Apoplexy, poſſibly the *Scrophularia* may carry on the Reſemblance thus far, and come in for an equal Share of the ſame Virtues. M. *Marchand* is perſuaded that we beſtow not enough of our Time in ſtudying the Plants of our own Country, which are often of as much Value as Exotics, and that the Misfortune they lie under in being Natives of our own Soil, and growing among us, has too much injured them in our Eſteem. *Hiſtoire de l'Acad. des Sciences* 1701.

YRCUS. A male Cony, whoſe Blood is ſaid by the Spagiriſts to mollify Glaſs, and Flints. *Dornæus. Rulandus* calls it *Yrius*.

YRIDES, or YRIDE. Orpiment. *Rulandus.*

YRIS. Iron. *Rulandus.*

YSAMBRA. A Species of Poiſon, prepared in *Spain* of Hellebore; or Hellebore itſelf.

YSIR. The Powder, or Philoſopher's Stone in a dry Form.

YSOPUS. The Art of Separation in Chymiſtry. *Rulandus.*

YSPAR. The ſame as YSIR. *Rulandus.*

YTZAMOTL. A very large *Indian* Tree, from which a Species of Manna is procured not unlike ours, but ſomewhat harder, and more glutinous. *Raii Hiſt. Plant.*

YUCCA.

The Characters are;

The Root is thick, and as it were tuberous, and the Plant has the Appearance of a Tree. The Leaves reſemble thoſe of the Aloe, are rigid, with an aculeated Apex, narrow and long. The Flowers are monopetalous, Bell-ſhaped, divided into ſix Segments, naked, diſpoſed in long Spikes, with a ſingle Row, and embracing an Ovary, which becomes a tricapſular Fruit, as in the Aloe.

Boerhaave mentions but one Sort of *Yucca*, which is;

Yucca; foliis Aloes, *C. B. P.* 91. *Exerb. Ind. A.* 2. 132. *Yucca*, Offic. *Yucca ſive Yucca Peruviana*, Ger. Emac. 1543. Raii Hiſt. 2. 1201. *Yucca ſive Jucca*, Park. Parad. 434.

INDIAN BREAD.

It grows in *America* ſpontaneouſly, but is cultivated with us in Gardens.

It is of no Uſe in Medicine, and is even ſaid to be poiſonous, tho' erroneouſly, ſince it conduces to the Suſtentation of Life, by affording a Sort of eatable Bread prepared of the Root reduced to a Flour. And the Root itſelf may be eaten with Safety, and even with Advantage, without any Preparation. This

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This Plant is not the ſame as that of whoſe Root they make the Bread called *Caſſavi*, commonly eaten in *America*, as ſome have erroneouſly thought. *Raii Hiſt. Plant.*

The thick and fleſhy Root affords a ſoft Pulp, which ſome condemn as Poiſon, others affirm to be eſculent. Conſult the Hiſtorians. The recent Root eaten is poiſonous, but being bruiſed, then dried in the Sun, affords a Bread commonly eaten by the *Indians*. The Juice of the Root is ſo poiſonous that they take Care to convey it deep under Ground, that it may not come to the Taſte of Animals, to which it would certainly prove mortal. *Hiſt. Plant. aſcript. Boerhaave.*

YXIR. A good Medicine.

YZTACTEX. *Caltcacotl, ſeu virga nigra Saxorum.* Hernandez.

It has the fibrous Root of the Aſarum, and the Fibres, which appear, a great Part of them, above Ground, are in Taſte and Smell not inferior to the Nardus, and far ſuperior to the common Valerian. The Leaves are ſerrated, like thoſe of the Nettle, the Stalks Purple, round and ſmooth, and four Cubits in Length, on the Tops of which the Flowers grow in Tufts, and are of a white Colour, inclining to a Purple.

It grows in rocky Places in *Braſil*. The Taſte of this Plant is exactly like that of Aniſe. A Pugil of the Root bruiſed, and taken in Water or Wine provokes Sweat in thoſe who labour under any Pains, and mitigate the ſame in a ſurpriſing Manner. *Raii Hiſt. Plant.*

Z.

Z. This Letter formerly ſtood as a Mark for ſeveral Sorts of Weights. Sometimes it ſignified an Ounce and half, and very frequently ſtood for the eighth Part of an Ounce, that is, a Dram or half a Sicilicus. From an ancient Copper-plate it appears to be the Character of a *Duella*, or the third Part of an Ounce, conſiſting of eight Scruples. *Rhodius ad Scribonium Largum.*

ZZ. This double Letter among the ancient Phyſicians uſed for *Myrrh*, σμύρνη, becauſe ζμύρνη, *Zmyrne*, was as much as σμύρνη, *Smyrne*. At preſent by ZZ is generally underſtood *Zingiber* or *Zinziber*. *Gorræus.*

ZAAR, with the *Arabians* and *Perſians*, ſignifies Poiſon, whence *Belzaar*, for *Bezoar*, is as much as to ſay, *the Lord* or *King of Poiſons*. Caſtellus.

ZAARA in *Avicenna*, is a Name for the *Vigilia morboſa*, or morbous Watching.

ZACCHARUM, uſed by ſome for *Saccharum*, as is alſo *Zuccarum*, by *Salmaſius de Manna & Saccharo.*

ZACCON. Caſt. *Zaccon Hiericuntea, Foliis Oleæ*, J. B. *Prunus Hiericonthica, Folio anguſto Spinoſo*, C. Bauh.

This is a Species of exotic Plum-tree, growing in the Plain of *Jericho*, about the Bigneſs of an Orange-tree, with Leaves reſembling thoſe of an Olive-tree, but ſmaller, narrower, more pointed, and very green. The Flowers are white, and the Fruit of the Bigneſs of a Plum, round, green at firſt, but as they grow ripe, yellow, and incloſing a Stone like that of a Plum. From the Fruit they extract an Oil by Expreſſion, which is good to diſcuſs and reſolve cold and viſcous Humours. The Tree is called *Zaccom*, becauſe it grows near the Churches of *Zacchæus* in the Plains of *Jericho*. *Lemery des Drogues.*

ZACINTHA.

The Characters are ;

The Calyx is ſquamous. The Ovary becomes a little ſtriated Head, having in the Middle an erect Axis, in which grow a Multitude of Eggs, which, when ripe, fall off with their Involucrum or Cover, and are as ſo many Capſules, containing ſmall downy Seeds.

Boerhaave mentions but one Sort of *Zacintha*, which is ;

Zacintha ; ſive Cichoreum vernicarium. *Tourn. Inſt.* 476. *Boerh. Ind. A.* 90. *Park. Theat.* 779. *Zacintha, Cichoreum verrucarium*, Offic. *Cichoreum verrucarium ſive Zacintha*, Ger. Emac. 289. Raii Hiſt. 1. 255. *Cichoreum verrucarium ſive Zacintha, Hieraciis adnumerandum*, J. B. 2. 1013. *Chondrilla verrucaria foliis Cicherei viridibus*, C. B. P. 130. *Inhybus ſive Endivia lutea, verrucaria*, Hiſt. Oxon. 3. 53. WART SUCCORY.

It grows ſpontaneouſly and plentifully in ſome Parts of *Italy*, but is cultivated with us in Gardens, and flowers in *June*. The Plant is diuretick and edulcorating, and allays the immoderate Heat of the Blood. *Mont.* It is reported to be of ſurpriſing Virtue in removing Warts, whether it be eaten in Sallads, or the Juice thereof rubbed on them. *Raii Hiſt. Plant.*

ZACYNTHIUS. A patronymic Epithet of liquid Bitumen. *Galen. de C. M. G. Lib.* 4. *Cap.* 13.

ZADURA. ζάδαρα, a barbarous Name, but adopted by the latter *Greeks*, for an exotic Root, round and ſmooth, and of the Colour of Ginger ; it is imported from the *Indies*, and is good againſt the Peſtilence. *Gorreus.*

ZAFFABEN. Putty. *Rulandus.*

ZAFFRAMEN. Crocus. *Caſtellus.*

ZAFRAN, ZAFFRAN. Signifies *Crocus* principally, and next to that *Oker*. *Rulandus Johnſon.*

ZAGU. Ferd. Lopez. *Sagu pigafettæ.* Cluſ. *Arbor farinifera* Cluſ. extot. *Arbor vaſta in Regno Fanfar.* Polo Veneto.

This is a large Tree, reſembling the Palm-tree, and growing in the Iſland of *Ternate* near the Equator. At the Top it bears a round Head like a Cabbage, in the middle of which is a kind of farinaceous Subſtance, of which the Inhabitants of the Country make Bread.

ZAHIR. An Arabic Name in *Avicenna*, for a kind of dyſenteric Flux from the Inteſtinum Rectum, attended with a tenſive and abraſive Senſation. *Caſtellus.*

ZAIBAC, *Zaibach, Zaibar*, Names for Mercury, or Quickſilver. *Rulandus, Schroder.*

ZAIDIR. Copper, or Verdigreaſe. *Dorn. Rulandus.*

ZALE. ζάλη, in *Mohſcion de Morb. Mulier.* ſignifies a Storm.

ZAMIÆ. Are thoſe Nuts of the Pine-tree which have looſen'd themſelves, and unleſs they be gather'd will hurt the reſt which are not yet fully ripe. *Plin. Lib.* 16. *Cap.* 26.

ZANDIK. Aqua foliate. *Rulandus.*

ZANTHOXYLUM. See LIGNUM FLAVUM.

ZAOCEL. Taxus. *Rulandus.*

ZAPHARA, *Zaffara.* The mineral Matter of Biſmuth, which belongs to *Smalt* or *Amanſa*, which ſtains Glaſs with a bluiſh Colour, whence it is uſed by Potters for the ſame Purpoſe. *Cæſalpinus* call'd it a Stone, others Earth, and ſome *Lazurius ex Biſmutho. Caſtellus.*

ZAPHIRUS. Corruptly for *Saphirus.*

ZAPOTUM, *Zapote.* Is a Fruit of *New Spain* in *America*, called by the *Spaniards Zapote blanco*, of the Shape and Size of a Quince, of an agreeable Taſte, but not wholeſome, and incloſing a Kernal which is ſaid to be dangerous Poiſon. This Fruit grows on a large Tree called by the *Indians Cochitſapotl*, whoſe Leaves are like thoſe of the Orange-tree, diſpoſed by Threes at Intervals, and its Flowers very ſmall, and of a yellow Colour.

ZARAS. Gold. *Rulandus.*

ZARUTHAN. A hard and unequal Tumor of the Breaſt attended with a Pain which is not quite continual, and a burning, Heat much reſembling that of a Cancer, whence it is called *a ſpurious Cancer*. The Cauſe is ſuppoſed to be an ichorous, aduſt and acid Blood. *Caſtellus.*

ZARDA. A Diſeaſe in Horſes. *Caſtellus.*

ZARIFU. Tin. *Rulandus.*

ZANNA. A Medicinal Earth, found in that Part of *Armenia* which borders on *Cappadocia*, very drying, of a pale Colour, and very eaſily diſſolv'd like Calx. It is called by the Natives *Zarina*. but in *Syria, Zarnacha*. The Mountain whence it is taken is near the City called *Bagauona*, and the Territories about it *Agarra*. The Earth itſelf, without the Mixtures of any heterogeneous Subſtance, is ſuppoſed to be of a drying Quality, without Stimulation. But ſince there is no Body perfectly free from Mixture, the Nature of what enters its Compoſition is to be examined, with reſpect to Gravity and Taſte. If there be any Aſtringency diſcover'd, its Coldneſs is to be eſtimated in Proportion to that Aſtringency ; if it appears to be acrimonious, its Heat is in Proportion to that Acrimony. With reſpect to Lightneſs, and Gravity, the firſt ſhews a cupious Mixture of Air throughout its whole Compoſition ; but the more ponderous it is found, the more of pure Earth it contains. Now it is the Property of Earth not to be fuſed when ſubjected to the Fire, and to be eaſily diſſolved into Clay when it is moiſtened with Water. *Oribaſius, Med. Collect. Lib.* 15.

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ZARNACHA. See the preceding Word.

ZARNEG, *Zarneg*, *Zarnich*. Orpiment. *Rulandus*.

ZARSA PARILLA. See SARSAPARILLA.

ZATANEA. The Flower of *Agnus Caſtus*; it is alſo called ZUCCAJAR. *Rulandus*.

ZATA-HENDI *Raii*. A Name for the *Majorana*; *rotundifolia*; *ſcutellatu*; *exotica*.

ZAUHIRON. Oriental Crocus. *Rulandus*.

ZEA SPELTA. Offic. *Zea ſive Spelta*, I. B. 2. 412. Raii Hiſt. 2. 1242. Ger. 62. Emac. 69. *Zea dicoccos*, *ſive Spelta vulgo*, Park. Theat. 1122. *Zea dicoccos vel Zea major*, C. B. P. 22. Theat. 413. SPELT WHEAT.

Zea is a Sort of Wheat with the Husk or Chaff, ſo cloſely adhering to it, as not to be ſeparated by Threſhing. They will have it called ζεια, Zeia, or ζεα, Zea, απο τα ζην, from Living, becauſe before the Invention of Wheat, Men lived thereon. The moſt ancient *Romans*, as we are informed by *Dionyſius Halicarnaſſeus*, called *Zea* by the Name of *Far*, which, however, is a Word of ambiguous Signification.

Zea, or Spelt, is not unlike Wheat, with a manifold Root, whence ariſe numerous, ſlender, jointed, firm Stalks, higher than thoſe of Barley, but ſhorter than thoſe of Wheat. The Spike, or Ear, which is in Flower about Midſummer, is a Palm, or a Palm and half in length, rough, compreſſed, generally without a Beard, tho' ſometimes furniſhed with a longer or ſhorter one, and bearing a double Row of Grains, or the Grains ſo diſpoſed that the Middle of one Grain ſhall anſwer alternately to the Beginning of another. The Grains are cloſely included in a manifold Huſk, a Pair of Huſks being joined to a Pair of Grains, and are longer than thoſe of Wheat, of a ſharp Back, and a ruſſet Colour. The Huſk pertinaciouſly adheres to the Grain, and will not be ſeparated from it by the Stroke of the Flail, by which, ſays *J. Bauhine*, you may diſtinguiſh it from the common Wheat, which it otherwiſe ſo well reſembles, that when both are ſtript of their Coats and Huſks, it will be difficult to know the one from the other.

It grows in many Parts of *Italy*, *France* and *Germany*, thriving well enough in any Sort of Soil, even tho' more humid than ordinary, tho' delighting moſt in a rich and fat Soil.

Zea is ſown, in Flower, and reaped at the ſame Times with Wheat. If *Zea* be huſked and cleanſed, and afterwards ſown, it is changed into Wheat on the third Year, if we may believe *Theophraſtus*. And *Pliny* ſays, "We are told that "*Zea* and *Tiph* being a degenerate Kind of Grain, return to "Wheat, if huſked and ſown, tho' not immediately, but on "the third Year." We deny not but that it may ſometimes happen for *Zea* to paſs into Wheat, but ſee no Reaſon why ſuch an Effect ſhould always follow, when it is ſown decorticated; let the Authors ſpeak for themſelves.

The *Germans* make Bread of *Spelt*, as white as thoſe of Wheat, but lighter, and leſs nutritive; while new it is ſweet, and eaſy of Concoction, but when ſtale it is not ſo grateful, and is beſides difficult to be digeſted. Puddings are prepared of the ſame with Milk, Almond Milk, Wine, or Beer and Sugar, which are good for ſound as well as ſick Perſons. Broth or Gruel made of the Flour is aſtringent, and therefore adapted to the ſame Purpoſes as one prepared with Rice, being proper in a Hæmoptyſis, Dyſentery, Diarrhæa, and the like, eſpecially when boiled with the Feet of Calves or Weathers; outwardly, alſo, it ſerves the ſame Intentions.

The Antients, we may obſerve, unanimouſly condemn Bread made of *Zea* or *Spelt*, whence it is plain, ſays *C. Bauhine*, that this *Zea* was different from that which *Pliny* ſays, the *Romans* called *Seed*, [See ALICA.] of which was prepared that excellent Food *Alica*. *Raii Hiſt. Plant. p.* 1242.

ZEBD. Butter. *Rulandus*.

ZEBET. Dung. *Idem*.

ZEC. *Traganthum*, or *Tragacanthum*. *Rulandus*.

ZEDOARIA. Zedoary.

We have two Kinds of this Root, one named *Zedoaria longa*, C. B. P. the other *Zedoaria rotunda*, C. B. P. But they are both the Roots of the ſame Plant, the Body of which is round, and the Protuberances, or Ramifications, long. The Plant they belong to is a kind of *Colchicum*, deſcribed by *Herman* in the *Paradiſus Batavus*. They are brought from the *Eaſt Indies*, and have an aromatic, camphorated Taſte. They are reckoned attenuant, detergent, emmenagogue, carminative, anthelmintic, cordial, alexipharmic, ſtomachic, diuretic, &c. The Doſe is from five Grains to half a Dram in Subſtance, and it may be uſed in Infuſion like Tea. Some correct Opium with this Root. *Simeon Pauli* pretends it is the beſt Carminative now known, and values it as a grand Specific for voiding Wind. *Geoffroy*.

The firſt Sort is thus diſtinguiſh'd.

ZEDOARIA LONGA. Offic. C. B. P. 31. Park. Theat. 1612. Raii Hiſt. 2. 1340. *Zedoaria*, Ger. Emac. 1623. *Gedwar aut Geid. var.* Ejuſd. *Zedoaria Zeilanica Camphoram redolens*. Boerh. Ind. A. 2. 128. *Haronkaha*, Herm. Muſ. Zeyl. 50. ZODOARY. *Dale*, p. 251.

This has a Root two, three or four Inches in Length, and as thick as the little Finger, and ending at both Extremities in a blunt Point. It is white on the Outſide, and within of an Aſh Colour inclining to brown, of a denſe, ſolid, fat and ponderous Subſtance, and of a fine Taſte and Smell, bitteriſh, moderately acrimonious, with a kind of Heavineſs, and emitting, while pounded or chew'd in the Mouth, a Fragrance highly aromatic, a very ſmall Portion of it ſweetening the Breath, and penetrating into the Head.

Chuſe what is large, thick, full, and not wrinkled, of a fattiſh, viſcous Subſtance, reſiſting in ſome meaſure the Teeth, on account of its Solidity, remarkably fragrant, and without Perforations; the longer to preſerve it, it muſt be kept in a dry Place. It grows ſpontaneouſly in the Woods of *Calecut* and *Cananor* in the Kingdom of *Malabar*, and is ſuppoſed to be the *Zerumbet* of the *Arabians*, the *Ciſtus Arabicus* of the *Anguillara*.

The Part in uſe is the Root, which is tuberous, nodous, ſomewhat compreſſed, Aſh-colour'd on the Outſide, of an acrid, bitteriſh, aromatic Taſte, and a fragrant Smell.

It is heating, drying, inciding, diſcuſſive of Flatulences, and Alexipharmic; and is principally uſed in Pains of the Cholic, and of the Stomach: It cures the Bites of venomous Animals, ſtops a Lientry, repreſſes Vomiting, provokes the Menſes, and kills all manner of Timæ infeſting the Belly. *Dale* from *Schroder*.

The ſecond Sort is thus diſtinguiſh'd.

ZEDOARIA ROTUNDA. Offic. C. B. P. 31. Park. Theat. 1612. *Raii Hiſt.* 2. 1340. *Malankua*. Hort. Mal. 11. 17. Tab. 9. *Colchicum Zeylanicum flore violæ odore, & colore Ephemero*. Herm. Par. Bat. Prodr. 324. ROUND ZEDOARY. *Dale*, p. 251.

This Species in Weight, Solidity, Colour, Taſte and Smell is altogether like the *Long Zedoary*, and differs only in its Figure, which is globous, an Inch in Thickneſs, or Diameter, with a Superficies ſomewhat uneven, and tuberous, with the Marks of the Fibres which have been cut off, reſembling the Bulb of the Arum, and ſometimes ending in a ſhort Mucro, or Point, at which, while it yet adheres to the Ground, it uſually ſhoots forth a Bud. It grows plentifully in *Java* and *Sunda*.

The *Round Zedoary* ſeems not to differ from the *Long*; but only in being a diſtinct Part of the ſame Root. For *C. Bauhine* thinks that *Avicenna* called the round Part *Zedoary*, and the long Appendix *Zerumbeth*, not knowing from what Plant, or in what Country the Root was produced; but when he happen'd to ſee it imported into the *Perſian Gulf*, ſometimes cut into round, ſometimes into oblong Portions, imagin'd them to be diſtinct Species.

The Root cut into Slices, dry'd, and preſerved in Sugar, is more excellent and commodious for Uſe than Ginger. C. B.

It agrees in Virtues with the *Long Zedoary*, but is ſeldom found in our Shops. *Dale*.

Beſides the two before-mention'd, *Raii* gives us from *C. Bauhine* two others, which are,

Firſt, *Zedoaria tuberoſa foris nigricans*. C. B.

This Sort is of a round Figure, like the *Ariſtolochia rotunda*, blackiſh without, and ſometimes of an Aſh-Colour, and whitiſh within, and of the uſual Taſte of *Zedoary*. It is to be had, as *Cluſius* writes, at ſome Perfumers at *Antwerp*, who call it *Black Zeduar*. *Lobel* joins it with the common *Round Zedoary*.

The ſecond is the *Zedoaria Geidwar*. *Avicenna Garſiæ*. C. B.

This is a Root of the Size of an Acorn, almoſt of the ſame Figure, and of a ſublucid Colour; but it may more properly be ſaid to be like the ſmaller Bulb of the *Anthera* or *Aſphodelus*; it is of an Aſh-Colour without, and yelloviſh within, hard and ſolid, and of an acrid and heating Taſte.

Garcias obſerv'd this to be ſold at a great Rate in the neighbouring Provinces to *China*; and ſays, it is difficult to be obtain'd, unleſs it be from ſome ſtrolling ſort of Mountebanks, which the *Italians* call *Jogues*. The ſame Author ſuppoſes *Zedoaria* to be a corrupt Word, and that it ought to be called *Geiduar*.

C. Bauhine thinks that the *Arabians* gave the Name of *Zerumbeth* to three ſorts of Plants. The firſt was the *Long Zedoary* of the Shops, which was the *Zerumbeth* of *Avicenna*, as appears from its Deſcription. The ſecond was what we call the *Zedoaria rotunda*, or *Round Zedoary*, which is the *Zerumbeth primum Serapionis*, and the *Zedoaria Avicennæ*. And the third is that remarkable Tree on Mount *Libanus*, with the Leaves of the *Salix*, and the Smell of the *Limon-Tree*, the

Zarnabe

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Zaruabo at present unknown to us, unless, perhaps, it be the *Sassias-Syrorum Rauwolfii.*

Zedoaria was unknown to the ancient *Greeks*; the more modern as *Aetius* and *Actuarius*, call it Ζαδαρ, (*Zadar*) Ζαδάρα, (*Zadara*) and Ζαδέρα (*Zadera*) borrowing the Name from the *Arabians.*

It has the Leaves of *Zingiber*, or Ginger, but larger, longer and broader, and also the Root of the same Plant; it has much the Taste too of Ginger, whence in *Calicut* it is called *wild Ginger*, as we are told by *Garcias.*

They make three Species, which, by some of the most skilful Botanists, are supposed to be all Roots of one and the same Plant.

The Root of *Zedoary* is esteemed hot and dry, fattens the Body, and strengthens it when weak, as the *Arabians* say, and discusses Flatulences. It takes away the Smell of Onions, Garlick and Wine, is good for the Bitings of venomous Beasts, stops a Looseness, resolves Abscesses of the Uterus, represses Vomiting, and is effectual in the Wind-Cholic. The modern Physicians use it as a Preservative against pestilential Airs, and mix it with a Multitude of Compositions. It is good for the Stomach in promoting Concoction, and heating that and the other Viscera. The *Germans* prepare a *Vinum Zedoriatum*, or Wine of *Zedoary*, for the before-mention'd Purposes, by bruising *Zedoary*, and hanging it in a Bag in a Vessel full of boil'd Must. *Raii Hist. Plant.*

ZEFR. Pitch. *Rulandus.*

ZEGI, *Zetus*, *Zezi*, Vitriol. *Idem.*

ZEHERECH. Flowers of Copper, called also *Alkas. Idem.*

ZEIA, ζεία. See ZEA.

ZEITRABRA, in the Jargon of the Alchymists, signifies *fluxile. Rulandus.*

ZELOTUM. Mercurius lapideus. *Idem.*

ZELOTYPIA, ζήλωσις, Jealousy, is a vehement Affection of the Mind, in which one of the conjugal Pair suspects the other of Adultery, and is here mention'd because it comes within the List of morbific Causes. *Castellus.*

ZELPHO. See ZENDO.

ZEMA, ζῆμα, from ζέω, to boil; Broth, Decoction; in *French*, *Bouïlon*, is a Term sometimes used for *Decoctum*, in *Apicius de Re Culinaria.* It is also read ζίμα, in *Dioscorides*, *Lib.* 6. *Cap.* 7.

ZEMASARUM, *Cinabrium*, *vel Cynobrium. Rulandus.* I suppose he means Cinnabar. *Rulandus.*

ZEMECH. Lapis Lazuli. *Idem.*

ZENDA. A general Term coin'd by *Paracelsus*, by which he would signify extraneous or equivocal Generations, effected without a seminal Principle. But *Zerenda*, *Zerunda*, or *Zerundis*, signifies such a monstrous Generation of Men in particular, as in other Animals, the same is expressed by *Zelphi.*

ZENECHDON, an *Arabic* Term from *Zenech*, signifying in that Language *Arsenic*; it means the same as *Diarsenicum*, or a Composition of Arsenic. *Blancart.*

ZENEXTON. See XENEXTON.

ZENEXTOR. Mercury. *Paracelsus.*

ZENGIFUR. The same as *Zemasarum*, that is, Cinnabar. *Rulandus.*

ZENICON, ζηνικὸν, the Name of a Poison in use among the *Gauls*, called *Celtæ.* It had the Denomination of *Venenum Cervarium*, or *Deer's Poison*, and was of so great and speedy Efficacy, that as soon as a Deer, or other Beast, fell down under a Wound from an Arrow ting'd with this Poison, the Hunters were obliged to run immediately, and cut away the Flesh, for the Breadth of a Span, round the wounded Place, before the Poison could disperse itself, and induce a Putrefaction. The Antidote to this Poison was said to be the Leaf of an Oak, or a Beech, or of the *Laurus Alexandrina. Castellus.*

ZENITH, besides its proper Signification, is, in a very improper and enigmatical kind of Sense, made to signify the first menstrual Efflux. *Castellus.*

ZEOCRITHON. *Boerh.* A Name for the *Hordeum*; *distichum*; *Spica breviore & latiore*; *Granis confertis.*

ZEOPYRON, ζεόπυρον, a kind of Corn which is a Medium between Zea and Wheat, as the Term imports: It grew in *Bithynia*, and is mentioned by *Galen de Alm. Fac.* It is also a Name for the *Triticum spica Hordei Londinensibus.*

ZEPHENUM, ZEPHENA, Terms in *Paracelsus* to signify the Extremity or external Periphery of any Perforation of the Ears or Lips. The Contraction of this Periphery into a preternatural kind of Roundness, constitutes the first Sign of the Leprosy. *Castellus.*

ZEPHYRUS. The same as FAVONIUS, which see. *Zephyrius fœtus*, in *Hartman*, is an Expression for a Mole.

ZENI. Vitriol. *Rulandus.*

ZERICUM. Arsenic. *Idem.*

ZERNA. An ulcerated Impetigo. *Dornæus. Ruland.* We meet, also, with *Zerna* for *Lepra* or *Impetigo*, in Writers of the Alchymistic Strain. *Castellus.*

ZEROS. A Name in *Pliny*, *Lib.* 37. *Cap.* 9. for a pellucid Gem, resembling another called *Iris*, and having its Crystal distinguish'd with black and white Spots.

ZERTA, the Name of a Fish which lives both in Sea and Rivers; and therefore called by *Gesner*, *Capito Anadromus*, because it passes out of the Sea into the River *Elb.* It is reckon'd among Fishes of good Juice. *Castellus.*

ZERUMBET. Offic. *Garz. Zinziber latifolium Sylvestre*, Herm. Cat. Hort. Lugd. Bat. 636. Prod. Par. Bat. 386. Comm. Hort. Amst. 371. 1. *Kua*, Hort. Mal. 11. 13. Tab. 7. *Walinghuru*, Herm. Mus. Zeylan. 51. ZERUMBETH.

This is set down in the Catalogue of Simples in the Dispensatory; but it is not known what it is, being never seen in our Shops, the round Zedoary being taken for it. *Herman*, in his *Catalogus Hortens. Lugd. Bat.* gives the Figure of a *Zingiber latifolium Sylvestre*, which he proposes for the *Zerumbet* of the *Arabians*; but the Descriptions they give both of this, and several other Parts of the *Materia Medica*, are so short and lame, that little is to be learn'd from what they say of them. *Miller's Bot. Off.*

It grows spontaneously in the Kingdom of *Malabar*, and agrees in Virtues with the long Zedoary. *Dale.*

ZERZERA. The same as QUERQUERA or EPIALOS, which see.

ZESTOLUSIA, ζεστολουσία, from ζέω, to be of a fervent Heat, and λοῦσις, Washing or Bathing; a Bathing in hot Water, as oppos'd to ψυχρολουσία, (*Psychrolusia*) Cold Bathing. The Word occurs in *Galen*, *Lib.* 3. *de sanit. tuend. Cap.* 8.

ZETÆ, with the Antients, were *Vaporaries*, or Rooms which had a Stove underneath, on whose Floor they diffused hot or cold Water, as the Season requir'd; and by transmitting the Vapours through Pipes placed in the Wall, heated or cooled the *Zetæ* at Pleasure. *Castellus.*

Zetæ, or *Zeteculæ*, were also private Rooms in Baths, and other Edifices, furnished with Beds for the Entertainments of Feasting and Gallantry.

ZEUS. The Name of a Fish, called also *Faber. Pliny*, *Lib.* 9. *Cap.* 18. See FABER.

ZIAZAA. The Name of a Gem, from the Place where it is found, of so various Colours that it cannot be said to be of any Colour. It is said to render the Wearer litigious, and to excite terrible Visions in Sleep. *Castellus.*

ZIBACH. The same as *Zeibar*, which see.

ZIBELLINA, *vulgo Sebela*, or *Zobela*; a kind of Weasel, which we call *Sable*, whose Skin is well known to bear a great Price.

ZIBETHUM.

The Animal which produces the Civet, is distinguished by Authors after the following Manner. *Animal Zibethicum*, Offic. Raii, Synop. A. 178. *Animal Zibethi*, Caius de Animal. 43. Aldrov. de Quad. Digit. 340. *Catus Zibethinus*, Schrod. 5. 280. *Zibethicum Animal Americanum*, Rech. in Hern. *Hyæna veterum*, Bellon. Obs. ed. Clus. 94. THE CIVET CAT.

The Animal which yields Civet, is a kind of wild Cat, called by the Antients *Hyæna.* There are two kinds of it; one that comes from *Holland*, and another that comes from *Guinea*, which is browner than the former. When Civet is mix'd with Musk and Ambergrease, or lower'd by a Mixture of any other Powders, it has a very fine Smell; but alone, the Smell is disagreeable. It is very little used in Physic. Some rub Children's Navels with it, to cure their Colics; and it was formerly applied to the Pudenda of Women in Hysteric Fits; but this last Practice is not only useless, but hurtful. *Geoffroy.*

Civet is a fat and unctuous Substance, of the Consistence of Honey or Butter, and of a most fragrant and grateful Smell.

It is hot, moist and anodyne, of frequent Use in the Pain of the Colic, and to anoint the Navels of Children for Pains in the Belly; it is also applied to the Pudenda, or the Pit of the Navel, in hysteric Fits. *Dale* from *Schroder.*

Civet is not the Seed, nor Sweat, nor Testicles, nor Scrotum of the Animal call'd the *Civet Cat*, as some would persuade us, for these have no Smell; but it is a peculiar Excrement, secreted by Nature, and collected in some little Bags of a glandulous Substance, which in the Male are seated between the Penis and Testicles, in the Female between the Uterus and Anus. The best is what comes from *America*, and is not adulterated with Butter; the black imported from the *East Indies* is not good. *Dale.*

ZIBIBÆ, or *Zibebæ*, are a large sort of Raisins, much resembling the Stones of Dates, whence they are also called *Dactyli*; they consist of much Pulp, but very little Juice.

ZICCARA

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ZICCARA. *Guatimalenſium. Capote, De Laet.*
It is a Fruit reſembling a Pine-Nut, and contains twenty, and ſometimes thirty Kernels. *Raii Hiſt. Plant.*

ZIGIR, ζιγιρ, in *Dioſcorides, Lib.* 1. *Cap.* 7. is an Epithet of a kind of aromatic Caſſia, of a Purple Colour inclining to black, and eſteemed of greater Value than ordinary, and more fragrant. Some read the Word *Gizir*, γιζιρ.

ZIMEX. Verdigreaſe. *Rulandus.*

ZINARIA, is an *Arabic* Term, and Epithet of a vicious and preternatural kind of Bile, called by the antient Phyſicians *Æruginous.*

ZINCHUM.
Zinch, named *Zinchum* Officin. *Zinchum ſeu Marcaſita pallida Schrœderi*, *Zinch* vel *Tutenague* Gallor. is a metallic, ſulphureous, heavy Subſtance, reſembling Lead in Colour, fuſible and ductile to a certain Degree, being very hard to break, inflammable and volatile. It ſeems to have been quite unknown to the Antients, and even the Moderns knew very little about its Nature or Origin, till *Stahl* explained it in his Diſſertation *de Mettallurgia*. It is extracted from the Lead-Ore of the Mines of *Goſſelar*, which Ore is very hard to melt, though it appears neither ſtony nor barren to the Eye, but rich and ſhining. Three Subſtances are ſeparated from it; Lead, Zinch, and a kind of *Cadmia Fornacea*, which being melted with Copper, makes a Prince's or Bath Metal.

The Furnace, in which this Ore is melted, is ſo diſpoſed as to have the Side and Back Wall of Brick, but the Foreſide is ſhut by Plates of a greyiſh fiſſile Stone, about a Finger's-breadth in Thickneſs. During the Time of the Fuſion, this Foreſide being much thiner than the reſt, remains conſiderably cooler; and they increaſe this Cold by often ſprinkling it with Water, and covering it with wet Clothes. The Ore, which is put in the Furnace at one Time, is about twelve Hours in melting; and as ſoon as the Fuſion is begun, Bellows are ſet a blowing upon it, by which the Zinch mixed with the Lead is driven in form of Flowers or Vapour againſt the Brick Walls, to which it ſticks, to about the Thickneſs of a Writing-Pen, and of the Conſiſtence of very hard and half-vitrified Grey Tartar. At proper Intervals of Time, they open the Furnace, and beat this Subſtance off from theſe Walls, becauſe otherwiſe, it would in time become ſo thick as to make the Capacity of the Furnace too ſmall for Uſe.

On the Front, or ſtony Part of the Furnace, is found not only a Subſtance like that juſt mentioned in Form of melted Stone, but alſo another reſembling melted Metal, with Streaks of a Subſtance half-burnt, or reduced to Aſhes, running through it. Therefore at the End of each Operation, or Period of melting, having removed the burning Coals from the Bottom of this Part of the Furnace, they ſubſtitute others in their Room, reduced to ſmall Pieces, and not burning. Then, by repeated Strokes of Hammers, they ſhake the Wall, and the Zinch which ſticks to it runs down between the Laminæ of the half-burnt Subſtance in form of a melted Metal, emitting a white lucid Flame, and in few Minutes Time would all fly off in a whitiſh or Aſh-colour'd Vapour, if it were not received and extinguiſhed by the Coal-duſt placed under it; for as ſoon as it mixes therewith, the Flame ceaſes, and it hardens into Metal. When it is cold, they remove it, ſeparate it from the Coals; and having melted it again over ſuch a gentle Fire as is ſufficient to melt Tin, it is caſt into proper Maſſes or Pigs.

The Advantage to be made of this Metal is very uncertain, becauſe ſometimes the Workmen loſe all their Labour employed about it, either becauſe the Heat has been too great, the Bellows have been blown too fiercely, or through ſome other Neglect.

That Part which ſticks to the Brick-Walls, from whence it is broke off at proper Intervals, as has been ſaid, makes the Cadmia uſed in Princes Metal; but before it is fit for that Uſe, it is mixed with the Scoriæ, and other Refuſe of Metals, and expoſed in Heaps for a long time in the open Air, where being penetrated to ſome Degree by the Air, or ſomething contained in it, it rarifies a little, and ſwells, and then it becomes fit to communicate a Gold Colour to Copper, by being melted with it. This Subſtance is called, very properly, *Cadmia Fornacea*, by *Stahl*; for tho' its Origin be different from that of Tutty, the *Cadmia Fornacea* of *Agricola*, yet its Nature and Effects are nearly the ſame, for both equally give a yellow Colour to Copper.

The Lead is found melted at the Bottom of the Furnace; and the Workmen are of Opinion, that no Part of the Zinch remains in it, becauſe they think the Fire to which the Lead continues ſo long expoſed, is more than ſufficient to evaporate all the Zinch.

Zinch is a Metallic Subſtance, but ſulphureous and perfectly volatile. M. *Homberg* obſerved, long ago, that when thrown into a red-hot Crucible, it emitted many Fumes, and when ſtirred with an Iron-Rod, it preſently took Fire, and a white ſhining Flame appeared, like that which is ſeen by firing a Mixture of Nitre and Sulphur. At the ſame Inſtant, the whole Cavity of the Crucible was filled with very ſmall, white, light, ſmooth Filaments, like Threads of Cotton, or of a Cob-web. If theſe Filaments be carefully collected, and afterwards the remaining Zinch be ſtirred in the ſame Manner as before, this Operation may be continued ſo long till almoſt the whole Subſtance of the Zinch ſhall be converted into theſe Filaments or Flowers. By macerating theſe Flowers in diſtilled Vinegar, M. *Homberg* prepared an inflammable Oil of very great Subtilty, which he judged to ariſe from the Zinch; but I ſhould rather think was owing to the diſtilled Vinegar. The white Flowers taken inwardly are ſudorific, and ſometimes purge both upwards and downwards, being given from four to twelve Grains. Externally applied, their Effects are in nothing different from thoſe of *Pompholyx* or *Nihil Album* of the Shops. They dry very powerfully, without Acrimony; and gently aſtringe and conſolidate. They are much recommended by *Barbette* as a ſure Remedy in an *Ophthalmia*, and Flux of ſharp Lymph, being diſſolved in Roſe-Water; by another in Fiſſures of the Nipples, being ſpread on a fine Linnen Rag; and by *Emanuel Koning*, in Ulcers, ariſing from a long Confinement in Bed. They are likewiſe of Service in drying Ichorous Ulcers.

Of Zinch and Copper melted together is made the fineſt kind of Princes Metal, ſo called from Prince *Rupert*, who is ſaid to have invented it. It is made in this Manner:

Take of Copper, three Ounces; melt it in a Crucible; and while it remains in Fuſion, add an Ounce and a half of Zinch. Mix them well, and then immediately remove them from the Fire. The Maſs, when cold, will be of a beautiful Gold Colour, and in ſome Degree ductile.

The Pewterers uſe Zinch in whitening and purifying Tin, mixing it in the Proportion of one to ſix hundred. *Geoffroy.*

ZINDULUS. A River-Fiſh, much commended for its Tenderneſs and Friability.

ZINETUS. A Species of Mercaſite, much reſembling Copper. *Paracelſus Archidox. Lib.* 3.

ZINGAR. Verdigriſe, or Flowers of Copper. *Rulandus.*

ZINGI. *Fructus ſtellatus ſive Aniſum Indicum.* I. B. 1. 586. Raii Hiſt. 2. 1835. *Aniſum Indicum.* Offic. *Aniſum ſtellatum ſeu ſinenſe & Philippenſe.* Cod. Med. 10. *Aniſum Indicum ſtellatum*, Ger. Emac. 1035. *Aniſum peregrinum*, C. B. P. 159. *Aniſum exoticum Philippinarum Inſularum*, Park. Theat. 1569. *Fœniculum Sinenſe*, Redi Exper. Nat. 172. *Cardamomum Siberienſe Patavinorum*, Hort. Beſian. *Euonyma ad Philippinarum Inſularum, Aniſum ſpirans, nuculas in capſulis ſtelliformiter congeſtis, proferens*, Pluk. Almag. 140. INDIAN ANISE.

The Kernel of this Fruit, which is brought from the *Eaſt Indies*, is good for the Cholic.

ZINGIBER. Offic. *Zingiber*, *Zinziber*. C. Comm. Plant. Uſu. 92. *Zinziber*, Ger. 54. Emac. 61. *Zingiber*, C. B. P. 35. Theat. 651. Raii. Hiſt. 2. 1314. J. B. 2. 743. *Zingiber Orientale*, Park. Theat. 1613. *Zingiber Indigenis Gingibil fœmina*, Piſon. Mant. Arom. 187. *Iris latifolia, tuberoſa, Zingiber dicta, flore albo*, Hiſt. Oxon. 2. 350. *Mangaratia*, Piſon. 227. *Chilli Indiæ Orientalis ſeu Zingiber fœmina*, Hern. 169. *Inſchi*, Com. Flor. Mal. 148. *Inſchi vel Inſchi-kua*, H. M. p. 11. 23. GINGER.

This is a yellowiſh, white, and flattiſh round Root, ſomewhat knotty and branch'd, of an aromatic Smell, and a very hot biting Taſte. We have two Sorts, white and black. The White is the beſt, being the Root only dryed and cleanſed; the other is the ſame ſcalded, and of a darker Colour, more ſhrivel'd, and is leſs uſed in Medicines. *Moriſon* and *Herman* believed Ginger to be a Species of Iris; but others, as *Piſo* and *Hernandez*, ſay it is a Reed or Cane, to which, by the Figure of the Leaf, which I have ſeen, it ſeems to come nearer than to an Iris. It is brought at preſent principally from *Jamaica*, and the *Carribbee* Iſlands, though it grows in both the *Eaſt* and *Weſt Indies.*

Ginger is uſed in Food as well as in Phyſic. It heats and comforts the Stomach, expels Wind, helps Digeſtion, prevents the Colic, and ſtrengthens the Bowels. It is brought over, preſerved in Syrup, from the aforeſaid Places, which is much better than any preſerved here. *Miller's Bot. Off.*

Zingiber, by the *Greeks* called ζιγγιβερις, took its Name from the *Indian* Word *Zengebil*, and has one and the ſame Name among all Botaniſts. It is deſcribed by C. *Bauhine* as having a Root which runs three or four Palms deep in the Ground, after the Manner of the *Arundo*, and is of an irregular Figure, ſomewhat flat, divided by frequent Joints into many lateral Parts or Branches creeping on all Sides, of the Length of an Inch and half, or more, and of the Thickneſs of a Man's Thumb, or leſs, whitiſh, or of a light brown on the Outſide, and of a white friable, tender Subſtance within, interſperſed with

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with Veins running lengthways, of a Taſte like Pepper, very hot and acrimonious, and of an aromatic Smell. It has ſomewhat of a fervid Taſte, when green, as we are aſſur'd by *Acoſta*, but is not ſo biting as when dry; and the more humid the Places are in which it grows, the leſs Acrimony it retains. It has the Leaves, as *Garcias* writes, of the *Iris Aquatica*, or *Gladiolus*, not of the *Arunda*; but *Acoſta* gives it the Leaves of the *Lachrima Jobi*. Others, as *Lindſchoten* and *Ruellius*, make it have the Leaves of the *Arundo*, which ſeems moſt probable to us, ſince *Lobel*, and *Bodæus a Stapel*, who ſaw the Plant when green, tell us, that in Stalk and Leaves it has the Appearance of an *Arundo* newly ſprung up; and therefore *Marggrave* and *Hermandez* ſeem to be the leſs exact in their Compariſon, when they make it reſemble the *Iris* or *Gladiolus*. The Stalk is not of any conſiderable Thickneſs, but riſes to the Height of a Foot, or a Foot and a half, and is adorn'd with a ſmall Head, reſembling in ſome meaſure that of *Stæchas*. *Hernand.*

There are two ſorts of *Zingiber*, the Male and the Female; the laſt is what we have deſcribed, the Male, called by the *Mexicans*, *Anchoas*, has Leaves which grow not above three Feet in Height, and are rougher and thicker than thoſe of the common or Female *Zingiber*, and are diſtinguiſh'd by one ſingle ſtrait Nerve running lengthways, growing on both Sides to the Stalk without Pedicles, ſingle towards the Bottom, but thicker and more frequent towards the Top; the Root is alſo larger and thicker, and has a more acrid Taſte mix'd with a kind of Bitterneſs. *Hernand.*

The Roots are of different Weight and Bigneſs, but all ſmooth and tuberous, and ſpreading upon the Surface of the Ground like thoſe of the young *Arundo*.

It grows in all Parts of the *Eaſt Indies*, and is propagated from the Root or Seed by way of Culture; for what grows ſpontaneouſly is of no Value. It does not ſeem natural to *America*, but was tranſported from the *Eaſt Indies*, or the *Philippine Iſlands*, to *Braſil* and *New Spain*. That of *Malabar* is moſt eſteemed; and they plant it in a fat, well dung'd and manured Soil, ſetting a Root, which has one or two Joints, in a Pit, and immediately watering it more or leſs, according to the Dryneſs of the Ground. The next Year after planting they take it up again, and paſs it for *Zingiber*. The uſual Seaſon for collecting it is the Beginning of *January*, when the Leaves are wither'd. After theſe Roots are a little dry'd, they cover them with Mud, leſt being deprived of their native Humidity, they ſhould be eaten by the *Teredo*, to which on other Accounts they are very obnoxious: But *Linſchoten* aſſures us that they collect the Roots into a Heap of a certain Bulk, which they cover with Potters Clay, and carefully ſecure it from all Injuries by Air or Winds; and this is the Method by which they manage the recent Roots, and defend them from the Worms. In the Spicery Shops we meet with white and red Roots, but they are of the ſame Kind with the others, only ſtained with Oker, or whiten'd with Chalk, to keep them from the *Teredo*.

To preſerve the Roots, they firſt take off the Bark, and then put them into Brine or Vinegar, and let them macerate for an Hour or two; after which they expoſe them to the Sun for almoſt an equal Space of Time, then take them again under Covert, heaping Clothes upon them, and ſuffering them to lie till all their Humidity be exhaled. If the Roots are to be tranſported to a diſtant Place, they incloſe them in Boxes, and watering them, cover them at Night with Earth, but leave them open in the Day-time. Being thus prepared, they ſeaſon them not only with Sugar, but Brine and Vinegar; after which they have no remarkably hot Taſte, nor leave any ungrateful Filaments in the Mouth: But if there be too much Cookery uſed about them, or they paſs through too many Waſhings and Cleanſings, they loſe not only their hot Taſte, but Part of their aromatic Acrimony.

Green *Ginger*, preſerved with Sugar, is imported from the *Eaſt Indies*, and is proper for old Perſons, and thoſe of cold and phlegmatic Conſtitutions, eſpecially when it is new; it is alſo good for viſcid Phlegm in the Lungs.

The *Indians* uſe the Leaves in Broths, Sallads, and other culinary Preparations; the green Roots cut ſmall with ſome other Herbs, and ſeaſon'd with Oil, Salt and Vinegar, ſerve them for a Sallad. New *Ginger* is alſo an excellent Remedy with them againſt the Cholic, Cæliac Paſſion, and Lientery, a long Diarrhæa proceeding from Cold, Wind and Gripes, and other like ſevere Diſorders, as *Bontius*, while in the *Indies*, often happily experienced, as he himſelf aſſures us. It ought, however, to be adminiſter'd with proper Cautions, that they who abound with hot Blood, whether ſick or ſound, ſhould be very ſparing in the Uſe of it, becauſe all *Ginger* kindles a Heat in the Blood, and opens the Mouths of the Veſſels. *Piſo.*

Ginger, as well as Pepper, is more uſed in culinary than medicinal Preparations; becauſe, among all Spices, thoſe two only have very much of an acrimonious, and but little of an aromatic Quality. C. B. *Galen* infers, that *Ginger* is not of ſo fine Parts as Pepper, becauſe its Heat, tho' equally ſtrong, is not ſo ſoon felt, but laſts longer; hence he concludes *Ginger* to be of a groſſer, and more humid or aqueous Subſtance: For as in dry Reeds, a Flame is very ſoon kindled and diſperſed, whereas in moiſt, like green Wood, it is more ſlowly kindled, and laſts the longer; ſo it is in Medicines.

Dioſcorides ſays, that *Ginger* greatly looſens the Belly; but this muſt be underſtood of the tender and freſh Roots, which contain a conſiderable Quantity of Humidities, capable of lubricating and opening the lower Paſſage, as we obſerve in the *Iris*; for when they are old, they are rather drying, and bind the Belly, by promoting a good Digeſtion.

The Roots are ſometimes added to Cathartics, to increaſe their Force, tho' being exhibited with the more violent Medicines of that Kind, they correct their Malignity. *Ginger* obſterges and diſſipates Infractions of the Stomach and Lungs, by conſuming the ſuperfluous Humour, and comforts and ſtrengthens the Brain and Memory: It is alſo of Service in Dulneſs of Sight, proceeding from Humidity; it ſtimulates to Venery, and diſcuſſes Flatulences. In whatever manner taken, whether freſh or dry, it corroborates the Stomach, and promotes Concoction; it is an Ingredient in Antidotes.

ZINGIBER FUSCUM. C. B. *Zingiberis ſpecies* Mechinum *dicta*. I. B. This is different from the common Sort, not only in being leſs mature, and worſe, but as it is of a more compact Conſiſtence, harder, and interwoven with fewer Fibres, of an Aſh-Colour inclining to black, of a more acrid Taſte, and not ſo ſubject to be eaten by the *Teredo*; this is alſo preſerved, and ſold in the Shops.

ZINGIBENI AFFINIS CORTICE SQUAMATO. C. B. *Zingiberis Mechini rara Varietas*. J. B. This is a Root reſembling the common *Zingiber*, or *Mechinum*, but has a finer Appearance, is diſtinguiſh'd by many Nodes, and jointed almoſt like the *Doronicum*. It has a Bark like the *Gingiber*, of a Lemon kind of Colour, is of the Thickneſs of a Man's Thumb, and deſtitute of Fibres; it is alſo ponderous and ſolid, and being broken ſhews white Veins. The Taſte is acrimonious and aromatic; and if it be not eaten out with Rottenneſs, much more acrid and dryer than that of *Zingiber*. *Raii Hiſt. Plant.*

Ginger is good for the Stomach, Thorax, and the other Viſcera, reſtores loſt Appetite, and reſiſts the Putrifaction and Malignity of the Humors. *Dale.*

ZINGITES, or ZINGRITES. The Name of a fabulous Stone, of the Colour of Glaſs, mention'd by *Albertus Magnus*, to which he aſcribes many imaginary Virtues, as that, if worn about the Neck, it cures the *Nyctalops*, reſtrains Hæmorrhages, and prevents Alienation of Mind.

ZINIAR. Verdigreaſe. *Rulandus.*

ZINIAT. Ferment. *Rulandus.*

ZINK. See ZINCHUM.

ZINZALA. A ſmall Fly, or Gnat.

ZINZIBER. See ZINGIBER.

ZINZIFUR, or ZENGIFUR. Cinnabar. *Libavius.*

ZINZILLA. The Shingles.

ZIRBALIS HERNIA. A Rupture cauſed by the Deſcent of the *Omentum*; from,

ZIRBUS. The *Arabic* Name for the *Omentum*.

ZIZANION. Ζιζάνιον. The ſame as LOLIUM.

ZIZERIUM. The Inteſtines of Fowls of the Gallinaceous Kind. *Apicius.*

ZIZIBI, or ZIBEBÆ. *Rulandus* uſes this Word, as *Caſtellus* imagines, to expreſs Raiſins of the Sun; or, perhaps, Jujubs.

ZIZIPHA. A Jujub.

ZIZIPHUS.

The Characters are;

The Leaves are conſpicuous for three Nerves or Fibres; the Calyx is monophyllous and quinquefid. The Flower is roſaceous, pentapetalous, herbaceous, ſmall, ſeſſile, and almoſt deſtitute of a Pedicle. The Ovary in the Bottom of the Calyx becomes an Oval Fruit reſembling an Olive, and including under its Pulp a Stone divided into two Cells, each full of an oblong Kernel; the Pedicle is ſhort.

Boerhaave mentions two Sorts of *Ziziphus*, which are;

1. Ziziphus, *Tourn. Inſt.* 627. *Boerh. Ind. A.* 2. 245. *Jujuba.* Offic. *Jujube Arabum ſive Zeiziphus Dodonæi.* Ger. 1318. Emac. 1501. *Jujubæ majoras oblongæ.* C. B. P. 446. *Ziziphus ſive jujuba major.* Park. Theat. 250. Raii Hiſt. 2. 1533. *Zizyphus rutila.* Jonſ. Dendr. 86. THE JUJUBE TREE.

The Jujube-Tree has ſeveral crooked Branches with ſmall whitiſh Twigs, on which grow winged Leaves made of ſeveral Pinnæ, growing not directly oppoſite, with an odd one at the End; they are ſmall, oval, and finely ſerrated about the Edges. Towards the Top of the Twigs, at the ſetting on of the Leaves, grow ſmall, yellowiſh five-leaved Flowers, followed by roundiſh red Fruit, in ſhape of a ſmall Olive, of a pleaſant

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a pleaſant, ſweet, ſomewhat clammy Taſte, including an hard oblong Stone, pointed at both Ends. They grow in *Italy* and *Spain*.

Jujubes are mollifying and pectoral, good for Coughs, Pleuriſies, and hot ſharp Humours, falling on the Lungs; they help the Heat and Sharpneſs of Urine, and the Gravel; but they are now quite out of Uſe, and are hardly to be met with in the Shops. *Miller's Bot. Off.*

The *Jujube-Tree* flowers in *May* and *June*, and the Fruits are gather'd in Autumn, or later, together with the Sprays; and being collected into Bundles, after an Inſolation of ſome Days, are hung up at the Roofs of the Houſes. Some crop the Jujubes, and ſtrewing them on Hurdles, or Matts, expoſe them to the Sun ſo long as till they grow wrinkled. They are ſold freſh in great Quantities by the Fruiterers at *Venice*.

It is doubted whether this Tree were known to the ancient *Greeks*. *J. Bauhine* ſays, he is much inclin'd to think that the *Lotos* of *Theophraſtus*, and the *Oſteo-Lotos* of *Pliny* are the ſame with the *Lotos* of *Athenæus*, and that the *Lotos* of *Athenæus* is the *Jujuba*.

The *Serica* in *Galen*, which moſt ſuppoſe to be *Jububes*, are judg'd by that Author to be of ſmall Efficacy towards the Preſervation of Health, or Cure of Diſeaſes, being eaten only by Women and Children who ſet no Bounds to their Appetite, and affording but little Nouriſhment, tho' difficult of Concoction. By the later *Greeks*, however, and *Arabians*, they have been received into the *Materia Medica*, and applied to medicinal Uſes. They are moderately hot and moiſt, and therefore uſed in Julaps or Decoctions, mitigate the Heat of burning Fevers, and correct the Acrimony of the Blood. They are alſo good for Diſorders of the Breaſt and Lungs, ſtubborn Coughs, Roughneſs of the Aſpera Arteria, and Difficulties of Breathing. They are alſo of Service in Diſeaſes of the Kidneys and Bladder, Heat of Urine, and the like Diſorders. *J. Bauhine* thinks Syrup of *Jujubes* proper to be exhibited in pulmonic Diſorders proceeding from a cold as well as a hot Cauſe, contrary to *Matthiolus* and others, who judge it convenient only in hot Affections of the Lungs, for they are ſweet and moderately hot. We are aſſured, from Reaſon and Experience, ſays *C. Hoffman*, that *Jujubes* have the Virtue of cooling and correcting hot and acrimonious Humours.

2. *An* Ziziphus; quæ Jujube Americana; ſpinoſa; Loti Arboris foliis & facie; fructu rotundo, parvo, dulci. *Cat. Hort. Beumont? Leguanaria vulgò.* H. A. 1. 141. *Boerh. Ind. Alt. Plant.*

Jujubes are pectoral and aperient, and enter the Compoſition of pectoral and nephritic Decoctions; they are compar'd with Dates and Figs. *Hiſt. Plant. aſcript. Boerhaave.*

Beſides the foregoing Species of *Jujube*, *Dale* mentions the following;

ZIZYPHA. Offic. *Zizyphus Cappadocica*, Ger. 1306. Emac. 1491. *Zizyphus Cappadocica Olea Bohemica*, J. B. 1. 27. *Olea Sylveſtris folio molli, incano*, C. B. P. 472. Raii Hiſt. 1576. *Oleaſter Cappadocicus*, Park. Theat. 1441. *Elæagnus Orientalis anguſti folius, fructu parvo Olivæ formi, ſubdulci*, Tourn. Cor. 54. WILD JUJUBE.

This is a Tree of a moderate Bigneſs, of the Size of the *Salix*, according to *Dalechampius*, with a whitiſh Bark, which is very much wrinkled and thick in the Trunk, but thinner and ſmooth on the Branches, and cover'd with a ſoft kind of Down. The Leaves are ſoft, and much unlike thoſe of the *Ziziphus*, but reſemble more thoſe of the Salix, or rather are like thoſe of the Garden-Olive, ſometimes diſpoſed alternately, ſometimes irregularly, about an Inch and half in Length, and near an Inch in Breadth, or narrower, whitiſh all over, eſpecially the lower Part, furniſhed with a ſhort and ſoft Down, moderately obtuſe, and adhering to a ſhort Pedicle. From the Boſom of the Leaves proceed the Flowers, which are of a Silver Colour, cut into ſix cuſpidated Parts, and ſweet-ſcented, or, as *Cluſius* ſays, of a ſtrong tho' not unpleaſant Smell, which affects the Head. The Berries are oblong, reſembling ſmall Olives, or Jujubes, white, fungous, and cover'd with a ſweet Fleſh or Pulp, which has an Apex like a Pin, and includes a Stone containing a hard channel'd Kernel.

It grows in *Syria*, *Ethiopia*, and on Mount *Libanus*, as *Rauwoffius* obſerved; it alſo grows ſpontaneouſly in the Woods of *Bohemia*, as we are told by *Matthiolus*, and it is found in the Hedges, together with the *Rannus* and *Vitex*, near the City of *Guadix*, in the Kingdom of *Granada*, in *Spain*. *Cluſ.* It flowers in the Beginning of Summer, and the Fruit is ripe in Autumn.

I doubt not, ſays *Dalechampius*, quoted by *J. Bauhine*, but from the Flowers might be diſtill'd a Water of a very fine Smell, and an Oil might be prepared of an exquiſite Fragrancy; but there are no medicinal Uſes mention'd of this Plant. *Raii Hiſt. Plant.* p. 1576.

ZMILACES. A ſort of Gem, ſaid, by *Pliny*, L. 37. C. 10. to be found in the River *Euphrates*.

ZOARCHIA, or XOARCHIA. The Name of an Antidote deſcrib'd by *N. Myrepſus*, Sect. 1. C. 241.

ZOEPHILOS. The pompous Name of an Antimonial Medicine, invented by *Quercetan*, and deſcrib'd by *Schroder*, L. 3. C. 17.

ZONA. The Shingles.

ZONITIS. A Name for a Species of *Cadmia*, collected in Furnaces in the Shape of a Zone, or Girdle.

ZOOMINERALIA. A Name for certain Subſtances, which have the Appearance of an Animal, and Mineral Nature; as Pearls, and all ſorts of *Teſtacea*.

ZOOPHTHALMOS. A Name for the AEIZOON.

ZOOPHYTON. A Subſtance which partakes of an Animal and Mineral Nature.

ZOOTOME. The Anatomy of Brutes.

ZOPISSA. Some call the Pitch and Roſin ſcrap'd off Ships by this Name: Some call it *Apoclyma*: It is ſaid to have a diſſipating Virtue, becauſe it has been long macerated in Sea-Water. Others underſtand by *Zopiſſa*, the Reſin of the Pine-Tree. *Dioſcorides*, L. 1. C. 98.

ZOPYRI ANTIDOTUS. The Name of an Antidote deſcribed by *Scribonius Largus*, No. 169. *Celſus*, L. 5. C. 23. takes Notice of another Antidote, given by *Zopyrus* to King *Ptolomy*, which he there deſcribes.

ZORABA. Vitriol. *Rulandus*.

ZORONISIOS. The Name of a Gem, ſaid to be found in the River *Indus*.

ZOSINIS ILLITIO. The Name of an Unguent, recommended againſt Tremors, by *Paulus Ægineta*, L. 8. C. 19.

ZOSTER. The ſame as ZONA.

ZOTICUS. A Name given by *Hartman*, to a Species of *Calomel*.

ZUB, or ZUBD. Crude Butter. *Rulandus*.

ZUCCAIA. See ZATANEA.

ZUCCARUM. Sugar.

ZUCCHA. The Gourd, or the Pumpion. *Raii Hiſt. Plant.*

ZUITTER, or ZITTER. A Marcaſite. *Rulandus*.

ZULAPIUM. A Julap.

ZYGÆNA. The Name of a Fiſh with a monſtrous Head, deſcrib'd by *Aldrovandus*.

ZYGIS. A Name for a Species of *Serpyllum*. Raii Hiſt. Plant.

ZYGOMA, or *Os Jugale*. The Name of a Bone of the ſuperior Jaw. See CAPUT.

ZYGOMATICUS MUSCULUS. The Name of a Muſcle of the Lip, thus call'd, and which ariſes fleſhy from the *Os mali*, near its Conjunction with the long Proceſs of the *Os Squamoſum*, and is inſerted near the Angle of the Lips. Its Uſe, is with its Partner, to draw both Lips upwards.

ZYMAR, ZYNAR, or ZINSER. Verdigreaſe.

ZYME. Ζύμη. Ferment. Leaven.

ZYMOMA. Ζύμωμα. Ferment; or, fermenting Liquor.

ZYMOSIS. Ζύμωσις. Fermentation. In *Hippocrates*, *Epidem. L.* 4. it imports a flatulent or Œdematous Tumor of the Liver.

ZYTHOGALA Beer Poſſet-Drink.

ZYTHOS. Ζῦθος. Beer. *Dioſcorides*, *L.* 2. *C.* 119.

F I N I S.

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THOSE who have ever been concern'd with the Mechanical Manufacturers of Books and Plates, will not be ſurpriz'd to find ſome Typographical Errors, and Inaccuracies of the Engravers, tho' all poſſible Care has been taken to prevent them. But there are ſome Errors of greater Moment than thoſe of the Preſs. Thus under the Article *Amygdalus*, in a Preſcription quoted from *Paulus Ægineta*, οινόμελι is tranſlated, *Wine and Water*, inſtead of *Honey and Water*. And under the Article BUSSII SPIRITUS BEZOARDICUS, in the Preſcription for this Medicine, *three Pints of the higheſt rectify'd Spirit of Wine*, which ſhould be added after *Oil of Cedar, or of Juniper, half an Ounce*, is entirely omitted.

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A N

EXPLICATION

OF

The TABLES *in Volumes* II. *and* III.

TABLE XXXVI.

FIG. 1.

REPRESENTS an actual Cautery for making Iſſues in the Head. A, the Handle; B, the Part applied to the Head.

FIG. 2.

A Shews the Cannula, or Tube, for receiving the actual Cautery of the laſt Figure.

FIG. 3.

Is a Trepan. A repreſents the Crown; B, the Place where the Crown is fixed by a Screw; C, the ſuperior Part on which the Hand is fixed in the Operation; D, the Handle or Arch by which the Trepan is turned round; E, the Spike in the Crown. Some chuſe the Crown fixed otherwiſe than with a Screw, but *Heiſter* ſays the Difference is not material.

FIG. 4.

Is the Spike ſcrew'd out of the Crown.

FIG. 5.

Repreſents the Key which ſerves to ſcrew in and out the Spike.

FIG. 6.

Denotes the Lenticular Kniſe for ſmoothing the rough Edges of the Perforation of the Bone made by the Trepan.

FIG. 7.

An Inſtrument called a Depreſſor, with a circular, flat Button at its End, for preſſing down the Dura Mater, in order to diſcharge the latent Blood. By ſome it is named a *Menyngophylax*.

FIG. 8.

A pointed Inſtrument, which, after the Crown is unſcrew'd, is to be fixed in the Trepan at B, in *Fig.* 3. for beginning the Perforation in order to introduce the Spike, and, alſo, for perforating Bones affected with the Spina Ventoſa, whence it is called the perforating Trepan, or Perforator. A, the Point. B, the Screw by which it is faſtened to the Trepan.

FIG. 9.

A Hair-bruſh for cleaning the Crown of the Trepan.

FIG. 10.

An Inſtrument called the exfoliating Trepan, uſed in abrading Bones affected by a Caries. A, the Point; B B, the Sides or Wings, which, in turning round, ſcrape the Bone.

FIG. 11.

A Linen Ball, with a long Thread, uſed in dreſſing Wounds of the Cranium made by the Trepan.

FIG. 12.

A Pledgit, or round Compreſs made of Lint, armed with a Thread.

FIG. 13.

Another round Pledgit of Lint, but without a Thread, for filling the Perforation of the Cranium.

FIG. 14.

The Leaden Plate of *Belloſte*, which is ſometimes proper to be applied over the Dreſſings.

FIG. 15.

Shews how the Plate ſhould be bent before it is applied.

FIG. 16.

A repreſents an encyſted Tumor, or *Atheroma*, on the ſuperior Eye-lid; B, another on the inferior Eye-lid.

FIG. 17.

A large, depreſſed Wart, on the ſuperior Eye-lid, with a ſlender Root, which obſtructed the Opening of the Eye, and was extirpated by *Heiſter* with a Ligature made of a ſilken Thread.

FIG. 18.

An external Tubercle on the Eye-lid, ſprouting from a ſmall Root, commonly called an Excreſcence, and, alſo, a *Sarcoma*.

FIG. 19.

Shews a *Phalangoſis*, or *Ptoſis*, of the ſuperior Eye-lid. A repreſents the Diſorder itſelf in the left Eye; B B the Inſtrument contrived by *Bartiſch* for removing the Diſorder C, adapted to the right Eye; D D, the Screw by which the Arms or Plates of the Inſtrument are ſcrewed hard together.

FIG. 20.

A ſimilar Inſtrument, improved by *Verduyn*, and repreſented by *Ruyſch. Epiſt. Anatom.* 13. A A and B B repreſents the two Plates, or Arms, without Perforations; C C the Screw for conſtricting and removing the Tubercles. D, the Hinge.

FIG. 21.

An Inſtrument of the ſame Kind, but larger, contrived alſo by *Verduyn*, with Perforations *a. a. a. a. a.* for making a Suture in this Diſorder of the Eye.

FIG. 22.

An Inſtrument for the ſame Purpoſe, improved by *Rau*, in his Epiſtle *de Septo Scroti*, which is incurvated, and ſhuts differently. A, ſhews how the Needle is introduced through the Perforations; B, the Thread drawn through for uniting the Wound of the Eye-lid.

FIG. 23.

Repreſents an Eye with the Eye-lids, A A conglutinated or concreted; a Diſorder called by the *Greeks Ancyloblepharon*.

FIG. 24.

Is a ſlender grooved Probe, uſeful in the Cure of the *Ancyloblepharon*.

FIG. 25.

A ſmall crooked Biſtory, with ſpherical Point, uſed in various Diſorders of the Eye.

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FIG. 26.

A. A. Shews the Form of an Inciſion in the lower Eye-lid, when they are two ſhort, or retracted.

FIG. 27.

A repreſents a Tubercle in the greater *Canthus* of the Eye, called in *Greek Encanthis.*

FIG. 28 and 29.

Repreſents *Sarcomata*, *Hyperſarcoſis*, or fleſhy Excreſcences, ſprouting between the Eye and its Lids; A is one growing under the inferior Eye-lid; B another under the ſuperior Eye-lid.

FIG. 30.

A ſmall Hook uſed in removing theſe Tubercles, and other Diſorders about the Eyes; whoſe curved Point A may be ſometimes ſingle, and ſometimes double, by the Help of the moveable Ring B. as in *Fig.* 31. C. C. D. D. are the Handles.

TABLE XXXVII.

FIG. 1.

Is an obtuſe Hook, bent in a particular Manner, uſeful for ſeparating the Eye-lids in ſome Operations on the Eye and Eyelids, call'd by the *French Hameçon Plat.* A. is the obtuſe Part of the Hook; B the Handle.

FIG. 2.

Repreſents a Needle A. fixed in a Handle B. for elevating and dividing the Blood-Veſſels of the *Tunica Adnata*, and for the ſame Purpoſes in a *Pterygium.*

FIG. 3.

A Beard of Rye for making the *Ophthalmoxyſtrum*, or Eye-bruſh. A. denotes the Hooks with which the Veins of the Eye are lacerated in Scarification.

FIG. 4.

Is the Eye-bruſh, compoſed of ten, twelve, or fifteen of theſe Beards, tied together and cut; A. the Handle; B. the Part with the Hooks, with which the Scarification of the Eye-lids, and ſometimes of the Eye, are performed.

FIG. 5.

Is the Eye-raſp of *Celſus* and *Ægineta*, made like a Spoon; A. the Handle; B. the rough convex Part, with which the Antients uſed to ſcarify the Eye.

FIG. 6.

Repreſents the left Eye, the *Puncta Lachrymalia* of which are ſeen at *a. a.* and the lachrymal Caruncle between theſe is ſhewn at *b.*

FIG. 7 and 8.

Repreſent the lacrymal Ducts, as they proceed from the Eyes to the Noſe; *a a.* the lacrymal Sac; *b b.* the *Puncta Lachrymalia*; *c c.* the Ducts leading from the *Puncta* to the Sac; *d d.* the naſal Duct; and *e e.* the Opening of this Duct into the Noſtrils.

FIG. 9.

Shews how the lacrymal Duct is conjoined with the Left Eye; *a a.* are the *Puncta Lachrymalia*, *b.* the Caruncle; *c c.* the Ducts between the *Puncta Lachrymalia* and the lacrymal Sac; *d.* the lacrymal Sac; *e.* the naſal Duct; *f.* the Opening of the Naſal Duct into the Noſtrils.

FIG. 10.

A B, repreſent the Tumor, or *Hernia*, of a relaxed lacrymal Sac, called a lacrymal *Hernia*, and, alſo, an *Anchylops.*

FIG. 11.

A very ſmall, ſlender Silver Probe, a little bent, armed with a ſmall Olive-ſhaped Head at *a*, uſed for clearing Obſtructions in the naſal Duct when the Eye is watery or fiſtulous, as propoſed by *Anel.*

FIG. 12.

Anel's Probe, which that it may more eaſily penetrate the obſtructed Naſal Ducts, is made ſtronger, by being made thicker towards the other Extremity *b.*

FIG. 13.

Another Probe for the ſame Purpoſes, but more convenient, as it is ſhorter.

FIG. 14.

A Silver Syringe after *Anel*'s Manner, for injecting proper Liquids by the *Puncta Lachrymalia*; A is the ſmall Tube, the Extremity of which only can be introduced into the *Punctum Lachrymale*; B, the Piſton; C, the upper Part to be held in the Right, and D the Part to be held in the Left Hand.

FIG. 15.

A, Another ſmall Tube of a different Shape, but for the ſame Purpoſe, which may be joined to the ſame, or a like Syringe, by the Screw B.

FIG. 16 and 17.

Shew different Ways in which the lacrymal Sac may be relaxed or diſtended.

FIG. 18.

Repreſents how Abſceſſes and Tubercles may ſometimes be formed, which may corrode them near the lacrymal Ducts; *a*, one upon the ſuperior Duct; *b*, another on the inferior Duct.

FIG. 19.

a is a *Fiſtula Lachrymalis* perfectly formed, with a large Orifice; *b* is another with a ſmaller Orifice. The prick'd Line *c. d.* ſhews where the Lachrymal Fiſtula may be cut.

FIG. 20.

Is a Steel Inſtrument for compreſſing the lacrymal Sac, taken from *Platnerus*; A is the Button to be placed upon the Sac; B, the Hinge; C, the Screw which preſſes the Button on the Sac; D, its upper Part, which riſes over the Forehead; E, the Hook with which the Strap, F, with many Holes, is tied, for fixing and ſecuring the whole Inſtrument on the Head.

FIG. 21.

Is an Iron Inſtrument for burning the *Os Lachrymale*, when affected with a Caries; A, the Part with which the Bone is burnt; B, the Handle.

FIG. 22.

An Iron Cannula adapted to the preceding Cautery, of which the Part A is to be fixed upon the Bone affected with a Caries before the Cautery be applied; B is the Handle.

FIG. 23.

Is an Inſtrument made of Silver or Braſs, which at *a* is concave like a Spoon, to cover and ſecure the Eye, while the Cautery is paſſed through the Aperture *b*, to the carious Bone; *c* is the Handle. This Inſtrument may, alſo, be uſed for covering the Eye, when an Inciſion is to be made in the *Fiſtula Lacrymalis.*

FIG. 24.

Is an Inſtrument for perforating the Integuments, lacrymal Sac and Bone, or even the *Os Unguis*, after the Sac is opened; A, the Point; B, the Handle.

FIG. 25.

A B, are ſmall Tubes, which, according to *Woodhouſe*'s Method, are to be inſerted into the Perforation of the *Os Unguis*, and the Wound is to be healed up over it.

FIG. 26.

A Tube of the ſame Kind, but a little larger, which may be uſed for the ſame Purpoſe, and may be moſt properly made of Lead or Gold.

FIG. 27 and 28.

Are Silver Tubes, uſed by *Platnerus*, furniſh'd with Margins, to keep open the new made Paſſage to the Noſtrils, till it becomes callous.

FIG. 29.

The Forceps of *Lemoriere*; A, its ſharp, crooked Point, with which the *Os Unguis* is perforated; B B, its Handles for opening and ſhutting its Points.

FIG. 30.

The upper Part of the ſame Forceps opened, as it is uſed when the Perforation of the *Os Lacrymale* is required to be larger.

FIG. 31.

Is the Shape of the Wax-Candle which *Lemoriere* uſed for keeping open the Perforation of the Noſe, inſtead of a Tent; A, its Head; B, the End which is introduced into the Noſtrils.

TABLE XXXVIII.

FIG. 1.

Shews the proper Poſture of the Patient, Surgeon, and Aſſiſtant, in couching for a Cataract. See CATARACTA.

FIG. 2.

Is a Silver Couching-Needle, uſed by the Antients, with a ſlender, round Point like common Needles.

FIG.

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An EXPLICATION *of the* TABLES *in Vol.* II. *and* III.

FIG. 3.

Another Needle for the ſame Purpoſe, with a triangular Point.

FIG. 4.

Another Couching-Needle, with one ſteel Point A ſmall, the other B broader; C is the Handle, which may be made of Silver, Braſs, Ivory, or Wood.

FIG. 5.

Another Couching-Needle, with a broader Point, but ſharp, properer for the Purpoſe than thoſe with ſmaller Points.

FIG. 6.

A Needle ſimilar to the laſt, but groov'd towards the Point, which is recommended by *Briſſeau*, and deſcribed under the Article CATARACTA.

FIG. 7 and 8.

Are two Needles from *Solingen* and *Nuck*, ſaid to be invented by *Smalſius*, which are uſed together in the ſame Operation. That repreſented by *Fig.* 7. is grooved and ſharp, like that of *Briſſeau*. But that at *Fig.* 8. is blunt, and ſo fitted, that it may be introduced into the Eye thro' the Groove of the other, in order to depreſs the Cataract, while the other is drawn back.

FIG. 9 and 10.

Are two Needles for the ſame Intention with the two laſt. They are taken from *Albinus*.

FIG. 11.

Is a Needle contrived, alſo, by *Albinus*, for extracting membranous Cataracts, which is ſo contrived, that the Point A, by depreſſing the Handle B, opens like a Pair of Pliers in the Eye; though I queſtion if it was ever uſed ſucceſsfully.

FIG. 12 and 13.

Repreſent the Parts of this Needle ſeparate. *Fig.* 12. is the grooved Point which receives the other Point, *Fig.* 13. made ſo ſlender that it may be received into the former, and together with that commodiouſly introduced into the Eye. Near B, *Fig.* 12. is a ſmall Perforation, fitted to receive the prominent Part D of *Fig.* 13. which are faſtened together with a ſmall Pin at C, *Fig.* 11. like a Joint. *Fig.* 13. E is a Spring which firmly retains the two Points, *Fig.* 11. in contact, and prevents them from receding, till by depreſſing the Handle B, they open like a Forceps, for taking hold of and extracting the Membrane.

FIG. 14.

Shews how the Eye ſhould be held in one Hand, whilſt the Needle is introduced by the other at A; and, alſo, how the Needle appears behind the Pupil in depreſſing the Cataract.

FIG. 15.

Is called a *Speculum Oculi*, or an Inſtrument contrived to keep the Eye ſteady in Couching and other Operations.

FIG. 16.

Is another Inſtrument of the ſame Kind, but more commodious, as the two Arches A A, and B B, may be widen'd or contracted by the Button C. D is the Handle.

FIG. 17.

Is a Needle, directed by ſome, for depreſſing a Cataract in the Right Eye with the Right Hand. A, the Point of the Needle; B, the Handle; C, an Incurvation for reſting on the Noſe.

FIG. 18.

A Sheath for the Point of this Needle.

FIG. 19.

Is taken from the Appendix to the fourth Edition of *Cheſelden*'s Anatomy, to ſhew how the Needle ſhould be directed in opening and dividing the cloſed or contracted Uvea.

FIG. 20.

A denotes the Manner of dividing the Uvea, in its Middle, by the ſame Inſtrument, to tranſmit the Rays of Light to the Eye.

FIG. 21.

Shews how Mr. *Cheſelden* cut a concreted Uvea in the lower Part A, becauſe of an *Albugo* in the middle Part of the *Cornea* of this Eye.

TABLE XXXIX.

FIG. 1.

Repreſents an *Unguis* on the Eye, *a*; and, alſo, the Method of paſſing a Needle and Thread under it, *b b*, for its Removal.

FIG. 2.

Repreſents another Sort of *Unguis*, or *Pterygium*, *a a*, with a Thread drawn through *b b*, the Extremities of which are tied in a Knot, making a Kind of Loop, having been firſt tied with a double Knot *a a*, that the *Unguis* may not ſlip out in the Separation.

FIG. 3.

Is a Hook uſed in curing *Ungues*, and other Tubercles of the Eyes.

FIG. 4.

Is a front View of a *Staphyloma*, or Protuberance on the *Tunica Cornea*, which was cured by *Heiſter*.

FIG. 5.

A lateral View of the ſame *Staphyloma*.

FIG. 6.

A front View of another *Staphyloma*, larger and more depending, cured alſo by *Heiſter*.

FIG. 7.

A lateral View of the ſame *Staphyloma*.

FIG. 8.

Is a ſmaller *Staphyloma*, *a a*, having a Needle with a double Thread paſſed under it, from *Solingen*.

FIG. 9.

A concave Raſp for abrading carious Bones in a *Fiſtula Lacrymalis*, from *Platernus*.

FIG. 10.

An Inſtrument invented by *Meekren* for penetrating the *Cornea* in an *Hypopyon*. A A, the Handle; B, the Knife, or rather the Point of a Knife, armed with a Button at its Baſe, that it may not penetrate too deep into the Eye; C, a Screw to fix in the Caſe, *Fig.* 11.

FIG. 12.

A large Needle for making Setons, which may alſo ſerve to perforate the *Tunica Cornea* in a *Hypopyon*, if a Piece of Plaiſter be put round the Part A, which anſwer the ſame Intention with the Button mentioned in the laſt Fig.

FIG. 13.

Repreſents an Inſtrument deſigned to perforate the *Cornea* in an *Hypopyon*. A, its Handle; B, its triangular Point a little bent like the Needle. Its Point muſt, alſo, be armed with a Piece of Plaiſter.

FIG. 14.

A B repreſents a ſcirrhous Eye, ſwelled to the Size of a Hen's Egg; C, a Tubercle growing out of the large Tumor, like a black Berry; D, the vitiated Cornea and Tumor; E, the lower Eye-lid greatly depreſſed by the Tumor.

FIG. 15.

A prodigious Fungus of the Left Eye, which weighed half a Pound, and, as well as the laſt, was cured by *Heiſter*.

FIG. 16.

A Bandage contrived by *Solingen*, for curing ſquint Eyes in Children. A A, are two concave Plates of Silver, Ivory, or Ebony; B B, are ſmall Perforations in the Middle of the Plates; C C, the Bandage itſelf for keeping the Plates fixed upon the Eyes; thus the Children may acquire a Habit of turning their Eyes forwards to the Perforations, and by Degrees acquire a better Way of looking.

TABLE XL.

FIG. 1.

An Inſtrument inſerted in a Tube, uſed in burning the external Part of the Ear called Antitragus, in order to remove the Tooth-ach; A, the Tube; B, its Handle; C, the Cautery appearing without the Tube; D, the Handle of the Cautery.

FIG. 2.

An acouſtic Inſtrument, ſhaped like a Horn or Trumpet; of which the narrow Part A, is put into the Ear, and the broad Part B B, is held in the Hand, and oppoſed to the Sound, which greatly augments the Faculty of Hearing.

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FIG. 3.

Is another acouſtic Inſtrument, with its Tube wreathed ſeveral Times; it is held by the Handle B, and its narrow Part A, is applied to the Ear, and the broad Part C, receives the Sound.

FIG. 4.

Another Inſtrument for the ſame Purpoſe contrived by *Deckers*; it is made of Silver, and the turbinated Part A, is applied to the Ear, and then it is tied faſt with the Strings B B, ſo as to be concealed by the Wig or Hair, and without the Trouble of holding it in the Hand.

FIG. 5.

An Inſtrument for holding the Lobes of the Ears while they are boring.

FIG. 6.

A Needle of Silver or Steel; A, its Point; B, its other End, with a Tube for receiving a leaden Wire. This Needle not only ſerves to bore the Lobe, but alſo to introduce the leaden Wire into the Perforation.

FIG. 7.

The leaden Wire to be left in the Perforation till it heal.

FIG. 8.

Another Needle for the ſame Purpoſe, but ſlit at one End like a larding Needle, for receiving the leaden Wire.

FIG. 9.

A Pair of blunt Forceps, from *Palfyn*, for extracting the Polypus of the Noſe.

FIG. 10.

Another Pair, perforated towards the Extremities, for taking firmer Hold of the Polypus.

FIG. 11.

Another Pair of Forceps, with the Extremities crooked, for extracting Polypuſes of the Noſtrils which depend towards the Fauces.

FIG. 12.

An Inſtrument for applying a Ligature to a Polypus, which is not too deeply rooted. A, the Handle; B, the obtuſe Point, with an Eye like a Needle, through which paſſing a waxed Thread, it may, by means of the Inſtrument, be brought round the Root of the Polypus. The Curvature C, is uſeful for the eaſier ſurrounding and laying hold of the Root of the Polypus.

FIG. 13.

Repreſents a Polypus extracted by *Heiſter* with the laſt mentioned Inſtrument. A, the Root which grew to the internal and middle Part of the Noſe; B, the Part appearing without the Noſe.

FIG. 14.

Shews Part of a Face, in which not only the Noſtrils were concreted, but the upper Lip bent backwards, and firmly joined to the Noſe.

FIG. 15. and 16.

Are two Pipes of Lead or Braſs, with Wings deſigned to keep open the Noſtrils, after they have been opened by Inciſion. Fig. 15. for the Right Noſtril, and Fig. 16 for the Left.

TABLE XLI.

FIG. 1.

Repreſents the Head of an Infant about two Years old, afflicted with a Hare-lip A; and the whole of whoſe Palate was fiſſur'd, and in the Left Side two *Dentes Inciſores* appearing.

FIG. 2.

Exhibits a Needle, or rather a ſmall Inſtrument furniſhed with a Head, as alſo a triangular Point, and contriv'd for joining Hare-lips.

FIG. 3.

Repreſents a like Inſtrument with a flat Point, and made of Braſs or Silver.

FIG. 4.

Exhibits another Needle or Inſtrument, with a flat Point, but without a Head.

FIG. 5.

Repreſents two Needles of this Kind paſſed through a Hare-lip, and a Thread twiſted orbicularly about them.

FIG. 6. and 7.

Repreſent two *Tenacula*, by ſome uſed to prevent the too large Effuſion of Blood in the Operation for the Hare-lip. The Edges of the Lip are to be laid hold of by the Part AB, and ſecured by moving the Ringlets CC to B.B.

FIG. 8.

Is a Needle in Form of a larding Pin, invented by Mr. *Petit*, a *French* Surgeon, for the commodious Perforation of Hare-lips, and the Inſertion of the Pins for their Retention. A denotes the Fiſſure into which, after the Needle is half paſſed through, a certain Fibula is introduced, and by that Means conveyed into the Lip.

FIG. 9.

Repreſents a flexible Silver Fibula, with a Head at each End, and recommended by Mr. *Petit*.

FIG. 10.

Exhibiting another Fibula, with a Head at one End only, and which Mr. *Heiſter* prefers to the foregoing in ſeveral Reſpects.

FIG. 11.

Repreſents the Face of a Man afflicted with a Cancer of the inferior Lip. The Letters *a a a* exhibit the corroded Lip, or the open and exulcerated Cancer, the Teeth and Gums in the mean time appearing; and the Letters *b b b* repreſent the cancerous Tumor ſituated in the internal Part of the Left Corner of the Mouth.

The remaining Figures of this Table, which relate to the Inſtruments uſed in Operations on the Teeth, are explained at the Concluſion of the Article DENS.

TABLE XLII.

FIG. 1.

Repreſents the Method of dividing the Frenum of the Tongue in Children with the Knife.

FIG. 2.

Shews how the ſame Operation is to be performed with a Kind of Fork and a Pair of Sciſſars.

FIG. 3.

Is the Fork uſed in this Operation for ſuſtaining the Tongue, according to its proper Size.

FIG. 4. and 5.

Are thin Plates of Gold or Silver for ſupplying ſuch Parts of the Palate as may be conſumed, having a Piece of ſoft Spunge fixed at *a a*.

FIG. 6.

Repreſents the Braſs Inſtrument of *Hildanus*, for taking off the Uvula by a Ligature. AA is the Thread or Ligature properly diſpoſed and faſtened in the Inſtrument; B, the Part which takes Hold of the Uvula; C, that Part of the String to be drawn with the Hand. But the true Size of the Inſtrument is three Fingers Breadth larger than it is in the Figure.

FIG. 7.

Is a Braſs or Steel Wire, furniſhed with an Aperture A, to convey the Strings through the preceding Inſtrument, to the Size of which it ſhould be proportioned. B, its Handle.

FIG. 8.

Repreſents an Inſtrument to make an Abſciſion of the Uvula. A, the Part which is to receive the Uvula; B B, the Part by which the Knife C is thruſt forward to cut off the Uvula; D D D is the Handle of the whole Inſtrument, to be held in the left Hand.

FIG. 9.

Is an Inſtrument that may be call'd *Pariſthmiotomus*, ſerving to ſcarify the Tonſils, when inflamed, or open them when ſuppurated. A, the concealed Scarificator; B, the Button by which it is to be gently thruſt out in the Operation; C, the Handle by which the Inſtrument is to be held firm. The true Size of the Inſtrument exceeds the Figure about two or three Fingers Breadth.

FIG. 10.

Is an Inſtrument contrived for extracting from the Fauces the ſmall Bones of Fiſh, Thorns, *&c.* A A. is a Spunge; B B. a Rod of Whalebone to which the Spunge is to be faſten'd.

FIG. 11.

A Bruſh for the Stomach, *Ventriculi Excutia*, A A, the Bruſh, made of fine Hairs; B B, the Handle of Braſs-Wire, covered with Silk, by which it is to be introduced into the Stomach.

FIG. 12.

Exhibits the wry Neck; A A, the two Maſtoide Muſcles, which are to be divided in their lower Parts, when preternaturally contracted.

FIG.

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An EXPLICATION *of the* TABLES *in Vol.* II. *and* III.

FIG. 13.

Repreſents an Inſtrument for ſtraitening the Wry-Neck; A, the Collar, lined with Fur, which ſhould be exactly fitted to go round the Neck; B B, an Iron Arch which is connected to the Collar, and furniſhed with the Ring C, by which the Patient is to be ſuſpended.

FIG. 14.

A A, Exhibit the Part and Manner in which the Integuments are to be divided in *Tracheotomy*.

FIG. 15.

Is a Kind of *Trocar* with a ſharp and triangular Apex for piercing the *Aſpera Arteria* in that Operation.

FIG. 16.

Is another Kind of theſe Inſtruments propoſed by *Dekker*; A A, is the Point; B B, the Pipe which contains the Point, and is left in the perforated *Trachea*.

FIG. 17.

Is that Part of the Neck in which the tranſverſe Seton ſhould be made.

FIG. 18.

Is a Glaſs Inſtrument, whoſe Bowl A, being applied to the Nipple, and the Part B B, in the Patient's Mouth, the Nipple, if too ſmall, and the Milk may be both drawn out by Suction.

FIG. 19.

Is a ſmall Cucurbit of Ivory or Alabaſter, for drawing out ſmall Nipples, and covering them when ulcerated.

FIG. 20.

Is a ſmall Glaſs Cucurbit to draw out the Nipple, but eſpecially the Milk.

TABLE XLIII.

FIG. 1.

A B, exhibit a latent or occult Cancer, occupying but Part of the Breaſt, and reaching from the Nipple almoſt towards the Shoulder.

FIG. 2.

A B, repreſent the ſimple and rectilinear Cicatrix left after the Cure of that Cancer.

FIG. 3.

A. B. Shew a large occult Cancer occupying the whole Breaſt; which weighed twelve Pounds, when it was extirpated by *Heiſter* with the Knife.

FIG. 4.

Shews the Method formerly practiſed in extirpating a cancerous Breaſt, *a a*, with large Needles *b b*, and Threads *c c*, perforating the lower Part.

FIG. 5.

Exhibits the Manner of joining theſe Threads after they are drawn through, in the Hand A, to elevate the affected Breaſt, and afterwards amputate it with the large Knife B.

FIG. 6.

Is a Fork propoſed by *Solingen* and *Bidloo* for piercing large cancerous Breaſts, and afterwards amputating them.

FIG. 7.

Is a large Knife for amputating cancerous Breaſts.

FIG. 8.

Is an Inſtrument of *Bidloo*, reſembling a Sword, for elevating ſmall cancerous Breaſts, when they are intended to be cut off.

FIG. 9.

A, Is a large, broad, crooked Needle, for making a longitudinal Seton, which may alſo be furniſhed with a wooden Handle at the Part B, to force it more eaſily through the Skin of the Neck.

FIG. 10.

Shews the Point of this Needle, in its true Size, viewed on the internal or concave Side.

TABLE XLIV.

FIG. 1.

Is the Forceps or Tenaculum of *Helvetius*, ſerving to ſqueeze and hold up the cancerous Breaſt by its two Arches A A, while the Surgeon takes it off by cutting below them.

FIG. 2.

Shews another Inſtrument for this Purpoſe, alſo invented by *Helvetius*; A, B, its two Sides or Wings; C C, the Rings for the Fingers by which it is held or ſhut; D, the Hinge on which it moves.

FIG. 3.

Repreſents a new Inſtrument for amputating cancerous Breaſts. A A, is a double ſemicircular Braſs Plate, ſo joined at the lower Part, C, as to leave an Interſtice, D D D, to receive and direct the crooked Kniſe, E F. The undermoſt Part of the double Plate appears by the Letters *a a a*. B B, is a ſemicircular ſingle Plate, ſo joined with the other by the Button or Screw at G, that they together form a compleat Circle, and exactly compreſs the Breaſt. C C, the Handles of the ſemicircular Plates. F, the Handle of the Kniſe; which, when the Legs of the Plates are ſhut may paſs through the Fiſſure D, as is ſhewn in the following Figure.

FIG. 4.

A, repreſents the cancerous left Breaſt of a Woman; B, the Arm extended; C C, the ſemicircular Plates, which compreſs and raiſe the Breaſts from the Under-parts; D, the left Hand of the Surgeon holding the two ſemicircular Plates; E, his right Hand, with the Handle of the Kniſe, guiding it upwards, in the Direction F, G, H, to divide the Breaſt.

FIG. 5.

Is a particular Needle for making a tranſverſe Seton; A, the Eye of the Inſtrument through which the Cord or Thread is to be drawn; and when it has paſſed through the Integuments to B, the Cord is to be drawn out of the Eye, and left in the Wound whilſt the Inſtrument is drawn back again; C, the Part of the Inſtrument which is to be faſten'd in a Wooden Handle.

For the Explanation of TAB. 45, and 46, ſee HERNIA.

TABLE XLVII.

FIG. 1.

Repreſents an *Enterocele* on the right Side, as it appears before any Inciſion is made in the Integuments out of *Mauchart's Diſſert. de Hernia incarcerata Scroti*, whence the two ſubſequent Figures are alſo taken.

A A, the Thighs drawn aſunder, that the Hernia may be more diſtinctly viewed; B, the right Groin diſtended by a Prolapſum of the Inteſtine; C, the left Groin, ſound, flat and more depreſſed than the other; D, the Penis retracted, as it uſually appears in this Diſorder; E E, one Side of the Scrotum, very much ſwelled and diſtended from the Groin almoſt to the Bottom; F F, the Bottom of the Scrotum, neither ſwelled nor diſtended, in which the Teſticle may be felt ſeparate, and not confuſed with the Inteſtine; G G, the other half of the Scrotum, in its natural State and Figure; H H, the Suture which divides the Scrotum in the Middle.

FIG. 2.

Exhibits the affected Side of the Scrotum laid open by Inciſion; AA, the Skin opened the whole Length of the Scrotum, and drawn aſide that the ſubjacent Parts may come in View; BBB, the Membrana Adipoſa divided and drawn aſide in the ſame Manner; C C, the Ring of the *Muſculus Obliquus Externus* which being preternaturally dilated, permits the Peritonæum, or Bag with its included Inteſtine, to fall through; D D, the Aponeurotic Coat of the Teſticle, called Dartos, which inveſts the whole external Surface of the Bag, including the Inteſtine and Teſticle, divided in the Middle, and ſeparated from the Bag, to which it internally adheres, and then drawn on each Side; E, the Cellular Membrane of the Peritonæum which is here conſpicuous, and inflated with the Pipe F; G, the internal Hernial Sac formed by a Dilatation of the internal Membrane of the Peritonæum, immediately containing the Inteſtine, and divided in the Middle, ſo that the Inteſtine appears marked H H.

FIG. 3.

Repreſents the Situation of the Inteſtine and other Parts in the Scrotum, together with the internal Hernial Sac. A tendinous Fibres from the Aponeuroſis of the oblique external Muſcles, marked D D, in the preceeding Figure; B, the external Membrane of the Peritonæum, turned a little backward, which being naturally elongated, is called the Proceſs of the Peritonæum, or *Tunica Vaginalis* of the ſpermatic Veſſels and Teſticle; but when preternaturally diſtended, it makes, together with the Aponeurotic Membrane, (See D D, Fig 2.) the external Part of the Hernial Sac; which could

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not be here repreſented without Confuſion; C, the interior Membrane of the Peritonæum, which, by preternatural Diſtenſion, being protruded into the Scrotum, forms the internal Hernial Sac next the Inteſtine; D D D, the ſame Membrane continued to the Septum, which uſually forms the *Tunica Vaginalis* upon the Teſticle, turned a little aſide, as is the lower Side E E, that the ſubjacent ſpermatic Veſſels may appear; F F, the Tunica Vaginalis looſely inveſting the Teſticle opened; opened, ſo as to ſhew, G, the Body of the Teſticle, now covered only with the Tunica Albuginea; H, the Epididymis or Paraſtata; II, the *Corpus Pampiniforme*, or the ſpermatic Artery and Vein, between the external and internal Membranes of the Abdomen, thus burſt through the Ring of the Abdominal Muſcles; L, the Canal called *vas differens*; M M, Part of the Inteſtinum Ilium, included in the internal Bag, but here taken out and laid on one Side, variouſly convolved.

FIG. 4.

Is a Knife contrived by *Guillimeau*, for dividing the Preputium in a Phimoſis, and denudating the Glans.

FIG. 5.

Is an Inſtrument contrived by Dr. *Trew* for retracting the Preputium in a Phimoſis; A A, are two elaſtic Plates which are contracted or dilated by the Screw B.

FIG. 6.

A kind of very thin Trocar, deſign'd for perforating the Glans of the Penis, eſpecially in Children and new born Infants.

FIG. 7.

Repreſents the Braſs or Steel Receptacle, recommended to be faſten'd between the Thighs for receiving the Urine in Caſes of Incontinency. It ſhould be large enough to hold about half a Pint. B, denotes the Mouth of the Veſſel to receive the Penis; and C C, the Strings for tying it round the Body.

FIG. 8.

Is an Inſtrument made of two Iron Plates cover'd with Leather, A A, which is deſign'd to ſtop an involuntary Flux of Urine, by being applied to the Penis, and compreſſing the Urethra. B, is the Hinge on which the Plates move; C, a Turn-ketch to open and ſhut the Inſtrument at Pleaſure.

FIG. 9.

Is nearly the ſame Inſtrument, only a little improv'd; the Difference conſiſting in having a graduated Ketch, C, whereby it may be contracted or enlarged at pleaſure, according to the Size of the Penis. The reſt is explained by the Letters in the preceding Figure.

FIG. 10.

Repreſents another Inſtrument for the Incontinency of Urine taken from *Nuck*. A A, the Steel Girt or Belt to paſs round the Body: B, the Buckle, by which the Leather-part, C, is faſten'd. D, the Screw, which preſſes againſt, and raiſes the Plate E, whoſe Button, F, being defended with a Compreſs, is urged againſt the Urethra in the *Perinæum*.

TABLE XLVIII.

FIG. 1.

Repreſents the Copper or Silver Pipe called a Catheter, uſed principally in Women either in ſearching for the Stone, or in procuring a Diſcharge in a Suppreſſion of Urine.

FIG. 2, 3, 4, 5.

Are Silver Catheters of various Sizes, to be applied for the ſame Purpoſes in Male Subjects, according to the Patient's different Age and Size of Body. A A, is the Handle of the concealed Silver Wire, by which it is to be drawn out of the Cannula, when that may be neceſſary; B B, oblong Apertures on both Sides of the Extremities of the Inſtruments which admit the Urine to be diſcharg'd; C C, the Handles of the Catheters.

FIG. 6.

Repreſents a flexible Silver Catheter, which is ſometimes very neceſſary to diſcharge the Urine, when another Catheter muſt be introduced ſeveral times ſucceſſively, which might occaſion an Inflammation of the Urethra, or it may be conveniently left in the Bladder, when the Paſſage of the Urine is entirely ſtopt by a Stone. The Letters A, B, and C, denote the ſame Things here as in the preceding Figures.

FIG. 7.

Exhibites another Silver Catheter without lateral Apertures, having only one Opening at its End, marked A, which is ſhut by the Button marked B, which is in a manner the Extremity of the included Wire: If the Handle of the Wire, C, be preſs'd, the Button comes out in the Manner repreſented by D. in the adjacent Figure, by which means the ſuppreſs'd Urine will enter by the Mouth of the Catheter, and be diſcharged through it.

FIG. 8.

Is a large open Knife, or Biſtory, which has been hitherto moſtly uſed in the Operation of Lithotomy; and is by ſome termed Lithotomus.

FIG. 9.

Is the ſame Inſtrument, armed with a Piece of narrow Linnen wound round it, in ſuch a manner as not to leave above an Inch of the Edge uncovered, ſufficient to make the Inciſion.

FIG. 10.

Is the Hook which is ſometimes neceſſary for extracting the Stone in the ſeveral Methods of Lithotomy; it being furniſhed with ſmall Teeth in its concave Part for more firmly holding or retaining the Stone.

FIG. 11.

An Iron Inſtrument, having a long narrow Spoon at one End; and, being round at the other, is alſo furniſhed with a round Button for performing the Office of a Probe and Director, which is often uſed with various Intentions for the Stone in the Bladder by the Lithotomiſts.

FIG. 12, 13, 14, and 15.

Denote Steel and groov'd Catheters, which are commonly uſed in cutting for the Stone by the *Apparatus major*, that the Kniſe might be guided in the Groove. D D, repreſent their Handles; E F, their Grooves.

FIG. 16, 17.

Are two Stones of an unuſual Size, which *Heiſter* ſucceſsfully cut out of a ſort of Hernia of the Urethra before the Scrotum.

TABLE XLIX.

FIG. 1.

Repreſents the Manner in which a Boy ſhould be held in the Operation of cutting for the Stone, according to the Direction of *Celſus* and *Tolet*; which is neither proper nor convenient.

FIG. 2, 3.

Repreſent the enſiform Directors, often uſed in the Apparatus major, and in the lateral Operation. FIG. 2. is furniſhed with a ſmall oblong and obtuſe Beak A, and is generally denominated Male: The other, at Fig. 3. B. has a Groove, and is generally the Female Director.

FIG. 4.

The Concave or canulated Director, called by the *French* Gorgeret, which is generally preferr'd to the two preceding. A, the Beak of the Inſtrument which is introduced by the Groove of the Catheter; B B, its crucial Handle; C C, the Channel or Groove through which the Finger is paſs'd, and then the Forceps into the Bladder.

FIG. 5.

A Pair of ſtrait Forceps for extracting the Stone out of the Bladder, furniſhed with Teeth, of which Kind it may be neceſſary to have ſome larger.

FIG. 6.

A crooked Pair of Forceps, to be uſed principally when the Stone lies towards the Side of the Bladder.

FIG. 7.

Repreſents a Pair of large Forceps, furniſhed with large and ſharp Teeth; of a pyramidal Figure, fitted for breaking large Stones within the Bladder: But the Inſtrument may be made as large again as the Figure, to exert the greater Force.

FIG. 8.

Repreſents an Inſtrument called a Dilatator, being deſigned to widen the Wound in Lithotomy, though it is now little uſed. The Beak A, like a Crane's Bill, is inſerted in the Wound; and the two Arms, B B, being preſs'd together, the Beak of the Inſtrument opens by means of the Hinge marked C.

FIG. 9.

Shews a commodious Table, adapted for performing the Operation of Lithotomy, marked at each Corner with the Letters A A A A. The Letter B, denotes the Place on which the Patient is to be ſeated, being hollow, that the Corners may more commodiouſly ſupport the Feet. C, the Prop for ſupporting the Patient's Back; which for the greater Convenience, is capable of being elevated or depreſſed more or leſs, to raiſe the Patient higher or lower, as the Surgeon may ſee proper, by means of the Iron Rod marked D.

TABLE

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TABLE L.

FIG. 1.

Repreſents the Urethra of a Male Subject, freed from the other Parts of the Penis, together with the Bladder, proſtate, Gland, and Inteſtinum Rectum, all viewed on their left Side, and figured as much as poſſible to the Life, ſo as to exhibit the natural Diſpoſition of them as they appeared in a Lad aged fourteen. A, the Glans Penis; B C D E F, the Urethra in its natural Curve Poſition; E, the Bulb of the Urethra; F, a Part of the Urethra, termed membranous; G, the Body of the Bladder itſelf; H, its Bottom; I K L, the Neck or Entrance of the Bladder, inveſted with the proſtate Gland, and deprived of its muſcular Fibres, which compoſe the Sphincter of the Bladder, to render it the more conſpicuous; I, is the Beginning or Apex of the Gland; K, the Body of it; L, its Extremity or Margin next the Bladder; M N, denote the lower Part of the Bladder next the Inteſtinum Rectum, in which is formed the left Cavity, which often makes as it were a kind of Depreſſure in the Rectum, in which Stones are lodg'd; N O P, denote the back Part of the Bladder, which lies next the Os ſacrum, and Cavity of the Abdomen, being covered with the Peritonæum; Q R, is the anterior Part of the Bladder in our erect Poſition, but the uppermoſt when we lie ſupine: It is this Part which is divided in the high Operation, being not inveſted with the internal Membrane of the Peritonæum, but is free and ſeparated from the Cavity of the Abdomen, as may be plainly perceived by inflating or injecting ſome Liquor into the Bladder of a dead Subject; but concerning this we ſhall be more particular in our Explanation of the ſucceeding Table. S S, repreſent the Inteſtinum Rectum connected to the Bladder; T, the Sphincter Ani, or Muſcle deſtined to cloſe the Mouth of the Rectum; V, is part of the left ſeminal Veſicle; X X, the Interſtice between the Inteſtinum Rectum, Bulb of the Urethra, and Neck of the Bladder, filled partly with the Membrana Adipoſa, and partly compoſed of muſcular Fibres detached from the Sphincter and elevating Muſcles of the Anus.

FIG. 2.

Repreſents the Poſition of the Bladder and Urethra in Women, as they are ſeen on the left Side, together with their Connection to the Uterus and Vagina, taken from *Alghiſi*. A, denotes the Bladder; B B, its Sphincter Muſcle, including the Urethra, marked C C; D, the external Orifice of the Urethra opening into the Vagina; E, the Clitoris and its Preputium; F F, the Nymphæ; G G, the Labia Pudendi; H, the external Orifice of the Uterus called the Os Vaginæ; I I, the Body of the Vagina; K, the Uterus itſelf; L, the internal Orifice of the Womb ſeen through a lateral Slit made in the Vagina.

FIG. 3.

Shews the Manner in which the Catheter is to be introduced into the Urethra: A, denotes the Surgeon's left Hand elevating the Penis; B, his right Hand introducing the Catheter into the Vagina, ſo that the convex Part of the Catheter looks towards the Abdomen.

FIG. 4.

Denotes the Poſition into which the Catheter is to be turned in the Urethra: When it has reached the Bulb, marked E, in *Fig.* 1. it is to be then inverted, ſo that the concave Part of the Inſtrument may be turned towards the Abdomen; and the Extremity of it marked B, gradually inſinuated through the Neck of the Bladder into its Cavity. C, denotes the Handle of the Catheter, by which it is to be guided by the right Hand.

FIG. 5.

Exhibits the ancient Method of Lithotomy uſed by *Celſus*, performed by introducing the two Fore-fingers into the Anus, whereby the Stone and Neck of the Bladder are thruſt outward in the Perinæum, and the Inciſion, B B, is there made upon the Stone in the moſt preminent Part of the Perinæum, marked A.

FIG. 6.

Shews the Method of extracting the Stone marked A, by the Hook B, when it ſticks in the Wound ſo as not to be extracted from the Bladder by the Fingers alone.

FIG. 7.

Is a Braſs Inſtrument of Mariners, adapted to extract Stones out of the Urethra. A, that Part of the Inſtrument, which is to be inſinuated into the Urethra behind the Stone, and by means of which the Stone may be laid hold of and cautiouſly drawn out. B, the round Handle, by which the Inſtrument and Stone are to be then drawn out of the Urethra.

FIG. 8.

Repreſents an anterior View of the Bladder taken out of a Boy. A A, denote the Necks of the Bladder and Beginning of the Urethra; B B, the Body of the Bladder; C, its Bottom, with the adjacent Parts of the *Urachus*; D D, the proſtate Gland inveſting the Urethra; E E, the ſeminal Veſſels, in part viſible on each Side, which in Adults are more protuberant, and extended up to F F; where, being hollow internally, they form a ſort of Sinus in the Bladder on each Side, in which the Stone often lies concealed; they may therefore not improperly be called the Sinuſes of the Bladder, which are yet wanting in the Bladders of Infants and Children; the Figure of the Bladder in Adults is therefore ſomewhat different from that in Children. The Bladder indeed reſembles the Form of a Pear in both of them; but with this Difference, that in Children the Apex of the Pear is downwards to the Urethra, as in this Figure; but in Adults the Apex of the Pear is upwards, the Bladder being broadeſt downward, as may be ſeen in Fig. 1. of this Table, and in Fig. 1, and 2. of Table 51.

FIG. 9.

Repreſents the Manner in which the adult Patient ſhould be placed and held for Lithotomy, according to *Alghiſi*, which is in part different from the Method of *Tolet*, and other modern Operators. A, denotes the Poſture of the Patient, and B, the Surgeon with the Catheter in his left Hand, and the Inciſion-Knife in his Right; C C, two of the Aſſiſtants, who are placed on each Side of the Table, to ſecure the Patient's Limbs, holding the Foot in one Hand, and the Knee in the other; D, the Aſſiſtant, who kneels upon the Table, and, by ſtriding over the Patient, keeps his Body from riſing or moving, while with his Hands he draws up the Scrotum, and extends the Skin of the Perinæum; E E, a Cuſhion placed under the Patient's Buttocks; F, a Veſſel placed beneath the Patient to receive the Blood, and perhaps the Fæces, diſcharged in the Operation; G, denotes the Part of the Perinæum in which the Inciſion is to be made; H, the Caſe for containing the Inſtruments, to be faſtened about the Waiſt of the Operator; this is repreſented by itſelf in Tab. 51. Fig. 6.

FIG. 10.

Exhibits one of the open Nooſes with which *Raw* uſed to faſten the Patient's Hands and Legs together; A, the Loop for containing the Wriſt; B B, its two looſe Ends to be faſtened round the Leg.

TABLE LI.

FIG. 1, 2, 3.

Are taken from Mr. *Cheſelden*'s Treatiſe of the high Operation, in order to the Poſition and State of the Bladder when diſtended with Liquor, preparatory to the Operation. Theſe Figures have been already ſufficiently explained under the Article LITHOTOMIA.

FIG. 4.

Repreſents the Abdomen opened, the Bladder being but ſlightly diſtended, either by the Urine or any other Liquid, to ſhew how ſmall a Space is remaining between the *Oſſa pubis* and Bottom of the Bladder covered with the Peritonæum A A A, being the Part where the Inciſion is to be made in the Bladder, B B. This Figure has been alſo explained under the Article LITHOTOMIA.

FIG. 5.

Is alſo taken from Mr. *Cheſelden*, and denotes the Pipe or Tube by which the Liquor is conveyed into the Bladder, in order to diſtend it for the Operation. A A, is a Silver and inflexible Catheter which is to be paſſed through the Urethra into the Bladder; B, the Aperture in each Side, by which the injected Liquor enters the Bladder; C, a Braſs-Pipe which is to be adapted to a ſizeable Syringe. D D D, a flexible Pipe made of Leather, or of the Ureter of an Ox which joins the Braſs Pipe and the Catheter; and thus the Injection will be more eaſily performed than if the whole was an inflexible Tube, as was uſed by *Reſſetus*. E, the Part of the flexible Tube which is tied with a Thread to the Catheter, where there is alſo a tranſverſe Handle, which ſerves to hold the Catheter ſteady, that it may not hurt the Patient during the Injection.

FIG. 6.

Repreſents the Caſe for holding the ſeveral Inſtruments for Lithotomiſts, diſpoſed in their proper Order. This is to be faſtened

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faſtened round the Lithotomiſt in the Manner repreſented at *Fig.* 9. *Tab.* 50. and was always uſed by *Raw*, as being more ready and expeditious, than to truſt to an Aſſiſtant, who may chance to be attending ſomething elſe. A A A A, the Caſe itſelf; B B, the Inſtruments diſpoſed in their proper Order; C C, the Side or Cover of the Caſe; which may be faſtened with the Buttons marked D D, that ſo the Inſtruments may be concealed from the Patient's Sight, to prevent him being intimidated; E E, the Strings by which the whole is faſtened round the Waiſt of the Lithotomiſt.

TABLE LII.

FIG. 1.

Repreſents a lateral View of *Raw*'s groov'd Catheter, as it is delineated in its true Figure and Thickneſs by *Albinus*. But *Heiſter* obſerves, that, in 1706 and 1707, while he was *Raw*'s Pupil, he uſed a common groov'd Catheter, like that repreſented in *Tab.* 48. only it was a little thicker than thoſe commonly uſed. A, denotes a lateral View of its Handle; B, the Part which he aſſerts to be more crooked than the common ones; tho' it ſeems to be leſs crooked than thoſe which have been figured for the *Apparatus major*, by *Tolet*, *Alghiſi*, *Garengeot*, *Le Dran*, *Heiſter*, and others. C, denotes the Beak of the Catheter, which is longer and ſtraiter than the common.

FIG. 2.

Exhibits an oblique View of the Handle of this Catheter, which may as well be made in the Form of a Heart, like that in *Tab.* 48. or elſe flat and ſolid, as that of Mr. *Cheſelden* in *Fig.* 6. of this Table, or with a Ring like that of M. *Le Dran* in *Fig.* 17. of this Table.

FIG. 3.

Repreſents the Beak or Groove of *Raw*'s Catheter, in which may be ſeen its thin, but ſmooth and obtuſe Sides, marked *a a*, between which is the large Groove marked *b b*; C, is the Termination of the Groove in a ſmooth and obtuſe Point.

FIG. 4.

Is a tranſverſe Section of the groov'd Part of this Catheter, to ſhew its Form and Depth, that the Knife may not eaſily ſlip out of it.

FIG. 5.

Exhibits the grooved Catheter of *Cheſelden*, which is more ſlender and leſs crooked than that of *Raw*, and the common Sort; *a a*, denotes the Edge of its Handle in the Shape of a Heart; *b b*, the Body of it in a rectilinear Form; *c c*, the Curve and grooved Part; *d*, the Beak of the Inſtrument, which has little or no Incurvation.

FIG. 6.

Repreſents the flat Side of the Handle of this Catheter *a*, with Part of its Groove, *c c*, aud its whole Body, *b b*.

FIG. 7.

Denotes the ſtrait Beak of the Groove in *Cheſelden*'s Catheter, whoſe Sides, marked *a a*, are ſmooth and obtuſe like *Raw*'s; but its End, *b*, is left open, and not made obtuſe or cloſed as in the other Catheters. But I am not ſenſible of any Advantage that attends this particular Make, nor does its Author mention any.

FIG. 8.

Is the Inciſion-Knife of Mr. *Cheſelden*, which he uſes in cutting for the Stone, whoſe Blade is fixed to the Handle, *a a*, and its Point directly in the Middle.

FIG. 9.

Shews the concave Part of Mr. *Cheſelden*'s Director, B B, having its Handle, A A, inclined to the left Side, for the commodious Introduction of the Forceps through it into the Bladder; C, the Extremity of its Beak terminating in a flat Point, ſhewn ſide-ways in *Fig.* 10. and in *Fig.* 11. its Handle is repreſented ſeparate.

FIG. 12.

Is the common ſmall Forceps of *Cheſelden*, moſt frequently uſed by him in extracting the Stone; but for large Stones, *Douglaſs* repreſents a Pair three Inches longer. A A, the Handles, ſhaped like Hooks, which are commonly in others in the Form of Rings; and in the large Forceps one Handle is repreſented annular, and the other like a Hook. B B, are the two Ends of the Forceps made ſo as not to ſhut quite cloſe, leſt in ſearching for the Stone they ſhould lay hold on and hurt the Bladder.

FIG. 13.

Repreſents the internal Surface of one of the Jaws of theſe Forceps, which is concave, and furniſhed with many ſmall Teeth inclining backwards, towards the Handle, that it may hold the Stone firm.

FIG. 14.

Gives a lateral View of a Needle, uſed by *Cheſelden* in taking up any Artery that may be divided in the Operation.

FIG. 15.

a, Repreſents the convex and angular Point of the ſame Needle towards the Point; *b*, its Concave or internal Part, which is ſmooth.

FIG. 16.

The Biſtory or Inciſion-Knife of *Le Dran*; A, its Point; the Lines B B, ſhew how far the ſharp Edges extend; C C, the two Sides of the Handle.

FIG. 17.

Is a new Catheter of *Le Dran*, which he uſes for the lateral Operation inſtead of *Raw*'s; *a a*, its Handle; *a b*, its Body; *b b b*, its Concave or crooked Part; *c c c*, the Groove in its convex Part; *d*, its obtuſe Point; the Lines, *e e*, denote the Length of the Fiſſure in its Groove.

FIG. 18.

Is the Inciſion-Knife recommended by *Garengeot* in the lateral Operation.

TABLE LIII.

FIG. 1.

Repreſents a human Bladder taken from a Male Subject, in the anterior Part of which may be ſeen various empty Tubercles, or Cells, which are diſtended by inflating the Bladder, in which Cells the Stone lies ſometimes concealed. AAAAA, ſhew the pyramidal Figure of the Bladder; B, denotes the proſtate Gland inveſting the Neck of the Bladder, which is tied with a Thread near the Urethra; C, is the preternatural Cavity formed on the right and poſterior Side of the Bladder; D, repreſents a leſs Cavity of the ſame kind; E, ſhews a like Cavity on the left Side, another of which is at the Bottom of the Bladder, marked F; *a a a*, are the Blood-Veſſels which are diſtributed on the Bladder.

FIG. 2.

Repreſents a poſterior View of the ſame Bladder, being explicable by the ſame Letters; to which add, G G G G, Cells which are ſtill ſmaller, and not to be diſcerned on its anterior Part.

FIG. 3.

Exhibits the Trocar of *Denys* in its Silver Canula, which differs from the common, in its having three Apertures at the End of the Canula, two of which are viſible at AA, the other being in the back Part; through theſe Apertures the Urine paſſes into the Pipe; B, the triangular Point; C C, the Plate of the Canula perforated with two Openings. D, the Handle of the Inſtrument.

FIG. 4.

Repreſents the Canula of the Trocar alone, in which A A, denote the Apertures at the End of the Canula in the preceeding Figure; B B, repreſent other correſponding Apertures through which the Urine flows, after it has entered by thoſe at A A; theſe Apertures do not appear in *Fig.* 3. being obſcured by the Plate C C.

FIG. 5.

Exhibits the Perforator out of its Canula. D D, the Part of its Body immediately below the Point, which is made cylindrical to fit the Canula; but the Part between D D, and its Handle E E, is triangular, and made a little concave on each Side, ſo as to give a Paſſage to the Urine; F, its Handle.

FIG. 6.

Repreſents a Stone of an uncommon Size and Figure, which *Heiſter* extracted without much Difficulty by the high Operation; it weighed near four Ounces; and its Repreſentation was given by that Author, for the Conviction of thoſe who deny that large Stones can be extracted by the high Operation. A A, the Baſis of the Stone, which lay near the Neck of the Bladder; B, a ſmall Eminence of it which lay near the Neck of the Urethra; C, the upper Part which lay next the Bottom of the Bladder.

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FIG. 7.

Repreſents the Silver Catheter, which is ſtrait and hollow for Women, being of a particular Make, different from that repreſented in *Tab.* 48. *Fig.* 1. A A, are two Rings near its Handle; B, an Aporture in its Side near that Extremity, which is to be paſſed into the Bladder, oppoſite to which there is another ſimilar Opening; C C C, a Groove in the convex Part of the Catheter, ſerving for various Uſes, and particularly for directing the Male Conductor into the Bladder, and for guiding the Knife when the Neck of theBladder is to be divided, as in grooved Catheters.

TABLE LIV.

FIG. 1.

Shews the Method of examining the State of the *Os Uteri* with one or two of the Fingers, to diſcern whether it be in an oblique or ſtrait Direction, or whether it be dilated or contracted; whence the Operator may form a Judgment concerning the Delivery, whether it will come naturally, or preternaturally, eaſily, or difficultly, ſpeedily, or after a conſiderable Time. A, denotes the Uterus; B B, the Vagina laid open; C C, the internal Orifice of the Uterus as yet contracted, but in its right Situation; D, repreſents the Manner of examining the Mouth of the Uterus with one or more of the Fingers, which, if obliquely ſituated, either forwards toward the Os Pubis, backwards on the Os Sacrum, or towards either Side, denotes a difficult Delivery.

FIG. 2.

Repreſents the natural Poſture of the Child in the Birth, with its Head protruding into the Os Uteri, under the Arch of the Oſſa Pubis. A, the Infant; B B, the Uterus laid open that the moſt uſual Situation of the Fœtus in a natural Birth may be viewed; C C, the Oſſa Pubis; D D, the Oſſa Iſchii; E E, the Oſſa Ilei; F, the Umbilical Cord; G, the Secundines adhering to the Uterus.

FIG. 3.

An Infant preſenting with its Feet foremoſt.

FIG. 4.

Shews the Buttocks offering firſt, the Method of applying the Fingers to extract them and promote the Birth.

FIG. 5.

Repreſents the Fœtus in a tranſverſe Poſition, with its Back towards the Mouth of the Uterus; with the Hand of the Surgeon endeavouring to find the Feet by turning the Infant in the Uterus.

FIG. 6.

Exhibits the Manner of apprehending the Infant's Feet, turning and extracting them.

FIG. 7.

Shews a Fœtus alſo in a tranſverſe Poſition, with its Belly towards the Os Uteri and Vagina; in which Poſture the Navel-ſtring frequently protrudes to the great Danger of the Child's Life.

FIG. 8.

Repreſents the Head obſtructed by the left Side of the Bones of the Pelvis, and the Neck being violently contorted, by the Contraction of the Uterus, the Birth is thus rendered extremely difficult, and ſometimes impracticable.

FIG. 9.

Shews the Infant's Head inclined towards the right Side of the Pelvis, and how it may be brought by the Hand to a direct Situation, immediately after the Diſcharge of the Waters.

FIG. 10.

Is a Fœtus preſenting the Elbow or Shoulder to the Mouth of the Uterus, and the Method of introducing the Hand and Arm as far as the Elbow, for finding the Feet in this and other preternatural Poſtures, by which the Child ſhould be turned and extracted, as ſhewn in *Fig.* 6.

FIG. 11.

Shews the Method when the Arm of the Infant is protruded, of introducing the Hand to ſearch for the Feet, and extract the Fœtus.

FIG. 12.

Repreſents the Infant with one Foot protruded, and the Method of ſearching for and extracting the other.

FIG. 13.

Exhibits the Manner of ſeparating the Secundines from the Uterus, when they do not immediately follow the Child. The Navel ſtring, A A, is held by the left Hand, B, while the right Hand, D, is guided into the collapſed Uterus, C C, to the Placenta, E, which is hereby ſeparated from the Uterus.

FIG. 14.

Repreſents a Chair frequently uſed in delivering Women. A A, its Back; B B, the Sides; C, the Seat, having a ſemicircular Piece cut out of the Middle, that the Os Coccygis may be free, and yield to the Egreſs of the Fœtus; D D, the Handles of the Chair, which are graſped by the Patient in each Hand.

FIG. 15.

Is another Chair for the ſame Uſe, with a flexible Back, that if the Birth ſhould be preternatural, it may be let down, and the Patient inclined on it, as if upon a Bed, to facilitate the Delivery; but, in defect of this Chair, a common Bed or Table may ſuffice.

FIG. 16.

Gives an Idea of the broad Steel Hook uſed by *Palfyn* for extracting a live Infant without Injury, when its Head obſtinately ſticks in the Vagina; but its true Size is as large again as the Figure. It is neceſſary to be ſupplied with two of them, that one may be applied to each Side of the Head.

FIG. 17, and 18.

Repreſent lateral Views of the Hooks generally uſed by *Heiſter*, in extracting a Fœtus; A A, their Points; B B, their Backs.

FIG. 19.

The Handle of theſe Hooks with Notches, *a a a a a*, in that Part which correſponds to the Back of the Inſtrument, that, by feeling with the Thumb, the Operator can know how the Point is directed toward the Fœtus, without hurting the Uterus. And in the Groove, *b b*, a String may be faſtened, by which the Extraction may be alſo forwarded by an Aſſiſtant.

FIG. 20.

Repreſents a View of the anterior Part of the Hook ſeparate.

FIG. 21.

Exhibits a double prong'd Hook, which may be ſometimes uſed for the ſame Purpoſe.

TABLE LV.

FIG. 1.

Repreſents the Uterus, with a Mole adhering to it. A, is a Mole, ſuch as *Sigiſmunda* happily extirpated, with a Pair of large obtuſe pointed Forceps, in a Lady of Quality.

FIG. 2.

Exhibits a Prolapſus Uteri without Inverſion. A A, the Pudenda; B, the Uterus appearing externally; C, the internal Orifice of the Uterus, which here appears on the Outſide of the Pudenda.

FIG. 3.

Shews a Prolapſus Uteri, which is at the ſame time inverted. A A, the Pudenda; B, the inverted Uterus protruded, without any Appearance of its internal Orifice ſhewn by C, in the preceding Figure; C, the lower Part of this inverted Uterus.

FIG. 4.

Repreſents a peculiar kind of Prolapſus Uteri, as it was firſt denominated; though it was in reality no more than a falling down of the Vagina, according to the Obſervation of *Widmannus*, in *Ephem. Nati Curios. Cent.* 8. *Obſ.* 98. where the Hiſtory of the Caſe is more fully delivered, and the Figure of the Parts repreſented as large as the Life. A A, the Labia Pudendi; B B, the Nymphæ; C, the Clitoris lodged between them; D, the protruded Body, reſembling a falling down of the Uterus, though it is only a Relaxation of the whole interior Coat of the Vagina, which is prolapſed and changed into a Tumor. E, its Root at the external Orifice of the Vagina; F, its Baſis or broader Part, with a Mouth reſembling the internal Orifice of the Uterus; this derives its Origin from the Receſs of the Coat of the Vagina from the

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internal Mouth of the Uterus, which it naturally covered; G H, the Uterus itself seated in the Pelvis. We have omitted here the Tubes, Ovaria and Ligaments, as not necessary for our Purpose.

FIG. 5.

Is taken from the chirurgical Observations of *Meckren*, to shew a Prolapsus of the Vagina and Uterus together. A, the Uterus; B, its Neck; C, its internal Orifice; D, the Pudenda; E E, the Vagina laid open; F, the Root of the Tumor appearing without the Vagina, resembling a Prolapsus Uteri; G, the Ligature with which the Root of the Tumor was compressed during its Removal.

FIG. 6, 7, 8, 9, and 10.

Represents various sorts of Pessaries. Fig. 6. is round like a Ring, to which are fastened Strings for extracting it out of the Vagina. That at Fig. 7. is of an elliptic or oval Figure; Fig. 8. is quadrangular; Fig. 9. triangular; they are made of Cork, or Wood wax'd over, or else of Silver or Gold made hollow. Fig. 10. is solid like an Egg, but less convenient than the former.

FIG. 11.

Is an elastic Pessary of Iron Wire, turned into a conical Form, as described by *Goelicke*. This has also a String fastened to it; but if there was another fixed to the opposite Side, it might be drawn out so much the more easily.

FIG. 12.

Represents the Machine used in *Germany* and *Holland*, for injecting Clysters. A A, is the Bladder for containing the Liquor, which, for Adults, is about two or three times larger than the Figure, and holds about a Pint or more. B B, the Pipe of Bone or Ivory to transmit the Liquor into the Intestines; C C, the superior Ligature which should be untied after the Pipe is introduced into the Patient's Anus; D D, the inferior Ligature, by which the Bladder is closed, and the Liquor prevented from running out.

FIG. 13.

Represents a Machine for impelling the Smoak of Tobacco into the Anus and Intestines; A, is the Brass Bowl or Capsuli, which contains the burning Tobacco; B, the Ivory Pipe which is to be introduced into the Anus; C, the Pipe, which being in a Person's Mouth when the Tobacco is on fire, the Smoak E, is thereby blown through the flexible leathern Pipe D D, into the Patient's Bowels.

FIG. 14.

Denotes a Brass Pipe for conveying Fumes or Vapours into the Vagina. A, is the upper Part full of small Holes, which must be inserted in the Vagina; B, the lower Part, open, for receiving the Pipe of the Funnel.

FIG. 15.

Is a Speculum Ani, or Instrument for dilating the Anus or Vagina, in order for inspecting these Parts when diseased. A A, and B B, represent the hollow Beak shaped like a Cone, consisting of two Sides or Canals, AA, and BB, which being shut, a little warmed and lubricated with Oil, are to be gently passed into the Anus or Vagina. When the Handles C, and D, are pressed together, the two Sides of the Beak gradually widen, and dilate the Anus or Vagina, for Inspection; E, is the Hinge in manner of a Ginglymus.

TABLE LVI.

FIG. 1.

Exhibits the two kinds of Fistulas in the Anus. A A, is part of the Intestinum Rectum; B, the Sphincter Ani; C C, a perfect or complete Fistula of the Anus, terminating with one Aperture externally, and the other in the Intestine; D D, a flexible Probe or Silver Wire passed through the two Orifices of the Fistula, and bent so as to come through the Anus, E; the two Sides of the Wire intercepting the fleshy Parts to be divided, are drawn gently outward, for the more safe and convenient Performance of the Incision. F, represents an imperfect or incomplete Fistula, having only the Orifice G, opening into the Intestine; H H, denote the two Extremities or Heads of the Silver Wire.

FIG. 2.

Represents an Instrument like a large Needle from *Garengeot*, made of flexible Silver, having an Eye marked A, for the Transmission of a Thread, when the Intention is to use a Ligature in cutting the Fistula after the Manner of the Antients; it may also serve to convey a Slip of Linen through a Wound or Ulcer in the Manner of a Seton; B, the Point of the Instrument, which is to perforate the Intestine in an incomplete Fistula, and then to be bent and brought out through the Anus; it has a Groove running through its whole Length by which it may serve to guide the Knife instead of a Director.

FIG. 3.

Is a kind of Syringotomus taken in part from *Garengeot*. AAA, denotes the concave and sharp-edged Part for cutting; BBB, the convex Back which is obtuse; C D, the Silver Wire or probe End which is flexible, and beginning at the Letter C, terminates at the Point D; the Part marked E E, being bent in Form of a Hook, serves as a Handle to facilitate the cutting of a Fistula when it is very hard or callous. F, denotes where the Instrument terminated, as made according to *Heister*'s Directions, without the Part D F; by which means he found it more commodiously perform its Office, than if it were of the whole Length here represented.

FIG. 4, 5, 6, and 7.

Represent several common Syringotomi of the Antients, of different Sizes or Curvatures, and furnished either with obtuse or sharp Points, according to the different Circumstances of Fistulas; in which A B, denotes the cutting Part; C, the probe End; D, the convex and obtuse Back.

FIG. 8.

Is a Knife or Syringotomus, first published by *Bassius*. AAA, denote the Edge of this falciform Knife; B B, the flexible probe End made of Silver; C, its Point; D D, its Handle.

FIG. 9, 10, 11, 12, and 13.

Represent Instruments recommended to *Heister* by *Rungius* a Surgeon in *Bremen* in curing these Fistulas; especially Fig. 9. which is a sort of grooved Probe or Director, furnished with a peculiar Handle; A B, its grooved Probe or Director; C D, the Handle; E, the Part where the Probe is bent in a peculiar Manner, according to the Use for which it is designed. Fig. 10. gives a direct View of the Groove in the Director, as the former gave an oblique one. Fig. 11. A B, is a large Canal to be passed into the Anus, for the Reception of the Edge and Point of the Knife, Fig. 13. in cutting Fistulas, that it may not injure the adjacent Parts; C B, its Handle inclined to the opposite Side. Fig. 12. gives a direct View of the Cavity of this Canal, that its Width may be the better perceived. Fig. 13. is a long and narrow Knife, which, in cutting for a Fistula, is conducted through the Groove of the Director, Fig. 9. into the Cavity of the Canal, Fig. 11.

FIG. 14.

Is a flexible Silver Probe or Wire, so inflected that the bent Part A, may be introduced through the Intestine into the internal Orifice of the Fistula, F, for the more convenient and certain Incision of it.

TABLE LVII.

FIG. 1.

Represents *Meckreen*'s Method of removing Ganglia, by beating with the Fist on the Tumor, A.

FIG. 2.

A A, Shews a small, slender, strait Needle, with a flat Point, for the Suture of Tendons of the Hand; B B, a strong but slender waxed double Thread, with a Knot, C, at the End; with a square Bit of Leather, D, through the middle of which the Needle and Thread are passed up to the Knot.

FIG. 3.

A, and B, exhibit two Pieces of Leather, perforated in the Middle, used in making the Suture of the Tendon of *Achilles*, as at Fig. 7. E F.

FIG. 4.

Represents three different Methods of performing the Sutures of Tendons; *a a*, *a a*, *a a*, shew the Places where the exterior Tendons of the Fingers are divided in the Back of the Hand; A, the Manner of fixing the Knot of the double Thread on a square Piece of Leather on the superior Part of the Tendon; B, shews the Method of tying the double Thread with a slip Knot upon a small round Compress in the other inferior Part of the Tendon. C, shews the Knot of the double Thread intercepted upon the End of the Tendon by a round Compress instead of a square Piece of Leather, the other Ends of the Thread D, being fastened with a Slip-knot, on a like Compress as before. E, denotes the Method of Suture used by

Nuck,

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Nuck, in which the upper End of the Tendon is perforated in two distinct Places, *b b*, with two small Needles and one Thread, the Loop-end of the Thread being intercepted by a Bit of Leather, or round Compress, E, after which the other End of the Tendon is perforated on its Inside in two Places by the same Needles, and the Ends of the Thread tied upon a Compress or Bit of Leather.

FIG. 5.

Represents a Splint, made of thin Wood or the stiffest Pasteboard, used in a Suture of the Tendons of the Back of the Hand, which, being applied to the Palm of the Hand, keeps the Fingers properly extended.

FIG. 6.

Is the small crooked Needle of *Garengeot*, for making the Sutures of Tendons, which is preferr'd by the Moderns to the strait Needle, because it can be better held, and more easily transmitted through the Tendon; but it has no sharp or cutting Edges at its Point, like the common crooked Needles, Tab. 22. lest it should wound the transverse Fibres of the Tendon. *Garengeot* thinks there may be a sharp Edge in its concave Part, A, but *Heister* prefers it on the Convexity, B. The Eye of this Needle is not made sideways, as is common, but answering to its Concavity and Convexity, for the more easy Transmission of the Thread. This small Needle is for the lesser Tendons, as those of the Hand; but for the larger, as the *Tendo Achillis*, the Needle must be proportionably stronger, as at Fig. 9.

FIG. 7.

Shews the Method of uniting the *Tendo Achillis* by Suture, as taken from *Kisneri Dissertatio de Tendinum Læsionibus*. A, the Bottom of the Calf of the Leg; B, the Heel into which this Tendon is inserted or fixed; C, the Wound or Division of the Tendon; D, the Knot of a strong double Thread, with a Piece of Leather, E, under it; F, the same Thread fastened with the Slip-knot, G G, upon another square Piece of Leather. But the generality of Surgeons chuse to perforate the upper Part of the Tendon first, and to make the Slip-knot upon its lower End.

FIG. 8.

A exhibits a large, strong and strait Needle with a flat Point, recommended by some for the Suture of the *Tendo Achillis*, and the Tendon of the *Extensores Tibiæ*; B B, the double waxed Thread armed with the Knot, C, at its Extremity.

FIG. 9.

Is a large crooked Needle, shaped like that at Fig. 6. for the Suture of the *Tendo Achillis*.

FIG. 10.

Shews *Cowper*'s Method of performing the Suture of the Tendon of *Achilles* with two Needles. A, B, the two Ends of the divided Tendons; C, D, two strait Needles with Threads, by which the Tendon is again united; *a b*, the Incision of the Integuments, for the easier Access to both Ends of the Tendon.

FIG. 11.

Is a kind of Stocking made of Leather or coarse Linnen, to be fasten'd tight about the naked Leg, by the Lace B, to be constantly wore for Varices and œdematous Swellings of the Legs, especially when recent.

FIG. 12.

Represents a Pair of strong Scissars for extirpating Part of the Nail of the great Toe, when it runs into the Flesh; it has one obtuse Point A, to rest easy upon the Flesh; B B, its two Handles, by the Compression of which the Scissars cut, and they are again opened by the Spring C.

FIG. 13.

Is a Pair of Nail-Scissars described and recommended by *Garengeot* for the same Purpose. The cutting Parts, A A, are concave and sharp-pointed; and its two Handles, B B, are closed by Compression and opened by the Spring C.

FIG. 14.

Exhibits the Boot of *Paré* open, for Children who are either Vari, having their Feet inflected inward, or Valgi, having their Feet turned outward.

FIG. 15.

Shews the same shut by three small Hooks.

FIG. 16.

Another Machine for reducing distorted Legs to their natural Figure, proposed by *Hildanus* in Cent. 6. Obs. 89, and 90. A A, the two Sides, made of stiff Leather, or of Plates of Iron or Brass, according to the Strength of the Child, which must be exactly fitted to his Leg; B B, is a Piece of soft and flexible Leather, by which the two Sides are connected; C C, the two Ligatures on each Side, by which the Machine is fastened tight about the crooked Leg.

FIG. 17.

Represents the preceding Instrument fastened upon the Leg, which is explained by the same Letters; but only the Innerside of the Instrument can be here viewed.

TAB. LVIII, and LIX. See FASCIA.

TABLE LX.

FIG. 1.

A convenient Forceps made use of in the Operation to take out the circular Piece of Bone, of the Trepan when it does not stick to the Saw; the Contrivance by which they readily lay hold of it, is to make the Extremities that are to grasp it, with an Arch of the same Circle as the Saw is. Upon one of the Handles there is adeed a little Elevation to lift up any small Splinter, but it is not of much Use.

The Remainder of this Plate is explained in the Tables.

TABLE LXI.

This is already explained in the Plate.

TABLE LXII.

This is already explained in the Table.

TABLE LXIII.

FIG. 1.

Represents the Backside of the Leaf of the *Asa Fœtida* taken from *Kempfer*.

FIG. 2.

Represents the Foreside of the same Leaf.

FIG. 3.

Represents the Seeds of the same Plant.

FIG. 4, 5, and 6.

Represent the Roots of the same Plant.

FIG. 7.

Is a Medal of *Alexander*, the Son of *Ammon*. The Reverse is the *Silphium* of *Cyrene*, in token of the Oracle of that Country, which declar'd him to be the Son of *Hammon*.

FIG. 8.

Is another Medal, either of *Hammon* or *Old Battus*. The Reverse, as the first, is the *Silphium*, with the Legend XY for *Cyrene*.

FIG. 9.

Represents the whole *Asa Fœtida* Plant, as preserv'd in a very ancient Manuscript of *Dioscorides*, and now in the Imperial Library of *Vienna*.

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Table XXXVI.

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Table XXXVIII.

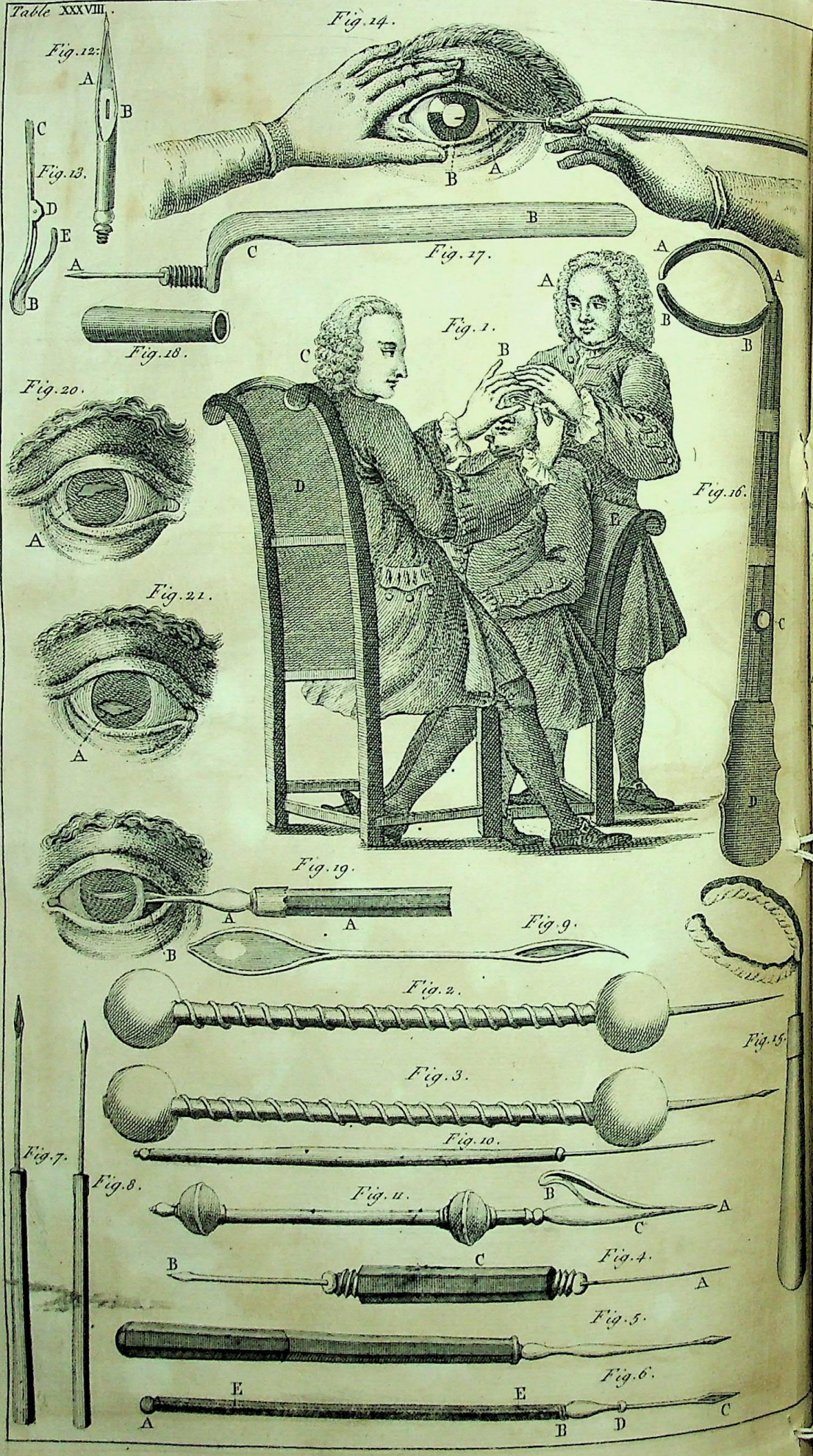

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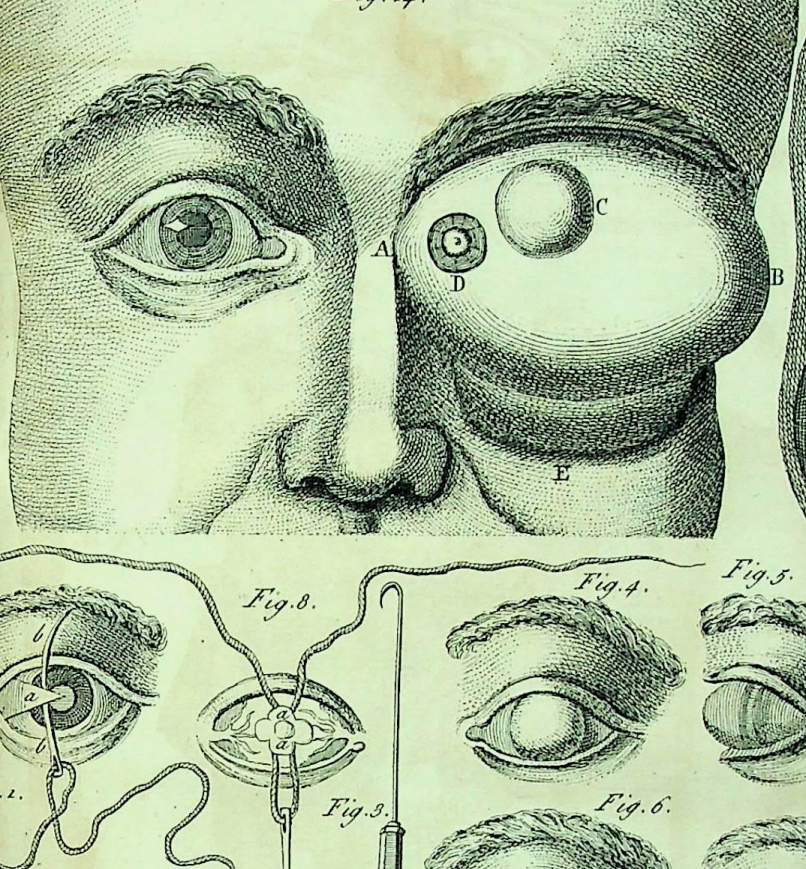
Fig. 14.



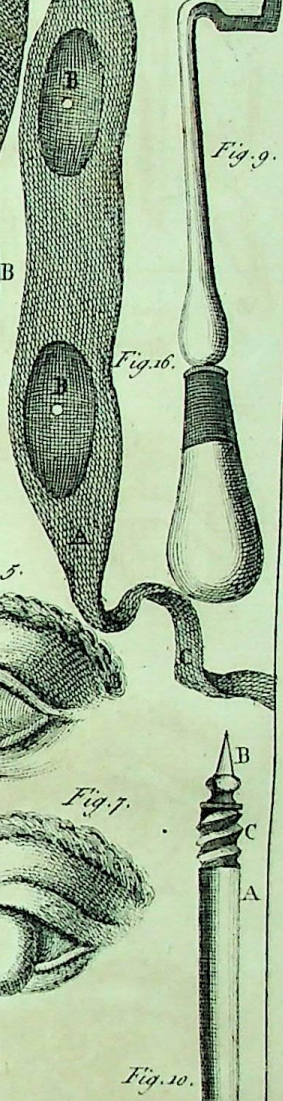


Fig. 9.

Fig. 16.

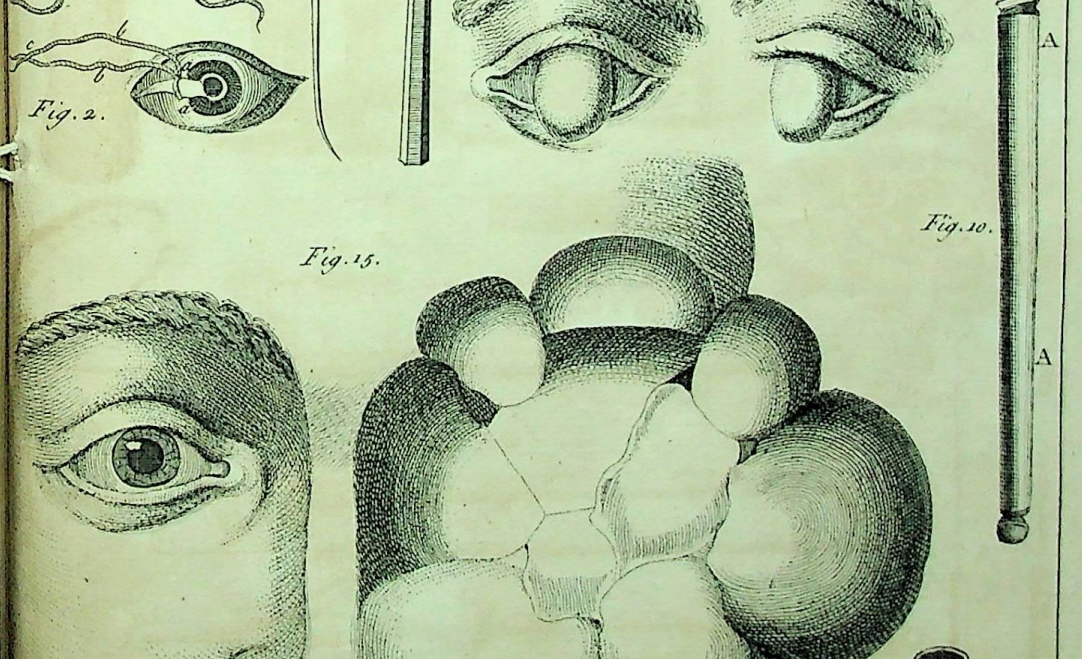


Fig. 10.

Fig. 15.

Fig. 11.

Fig. 13.

Fig. 12.

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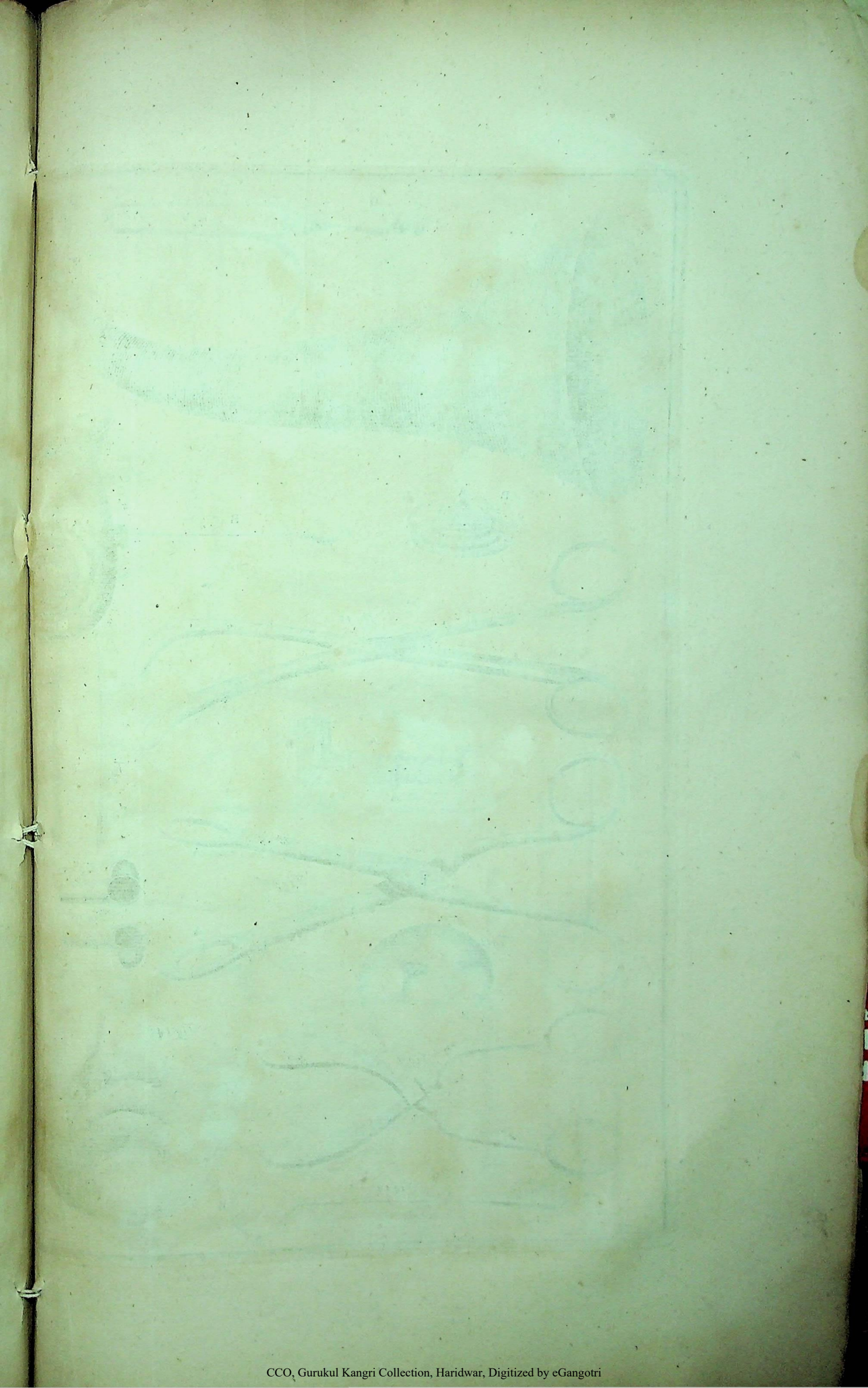

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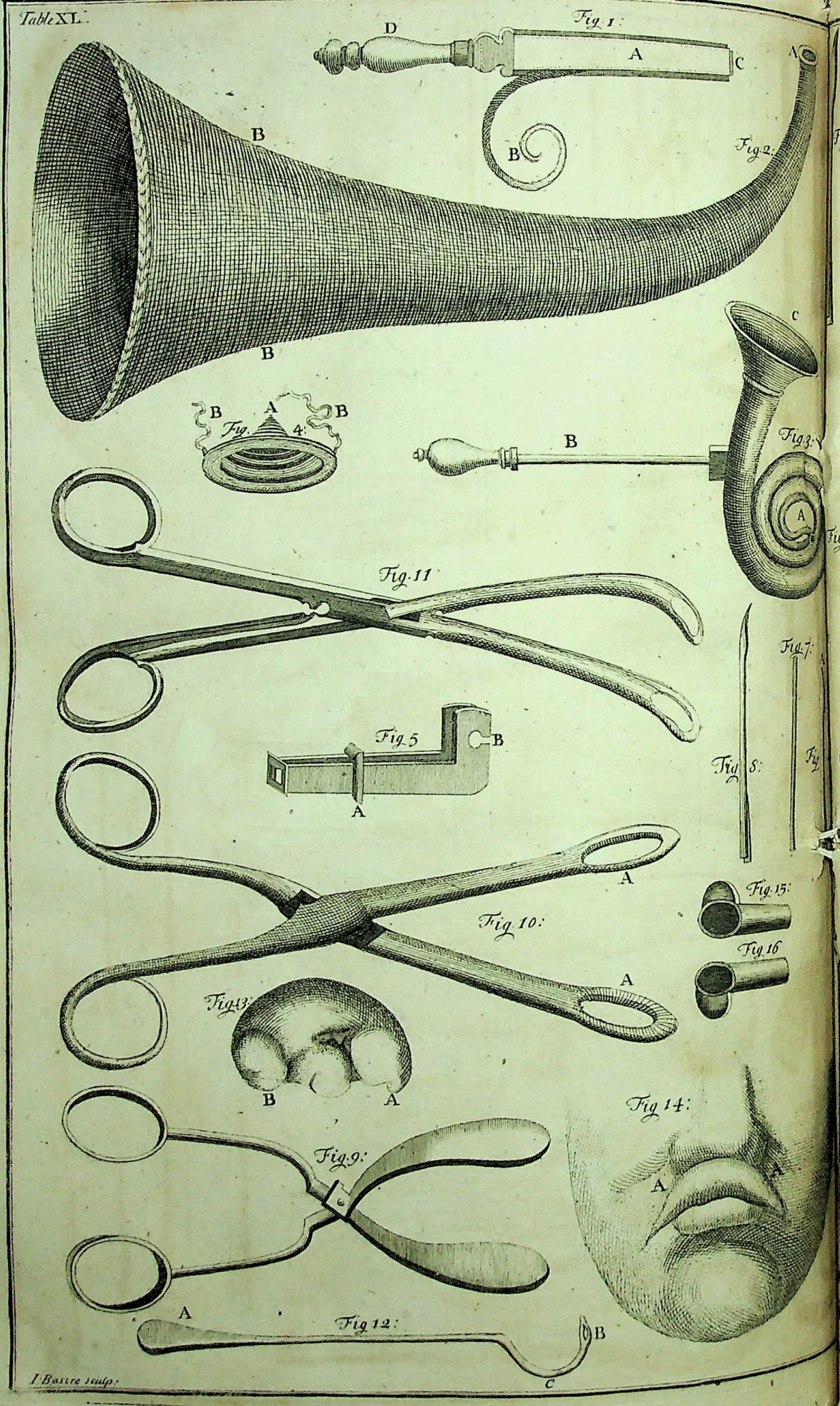
Table XL.



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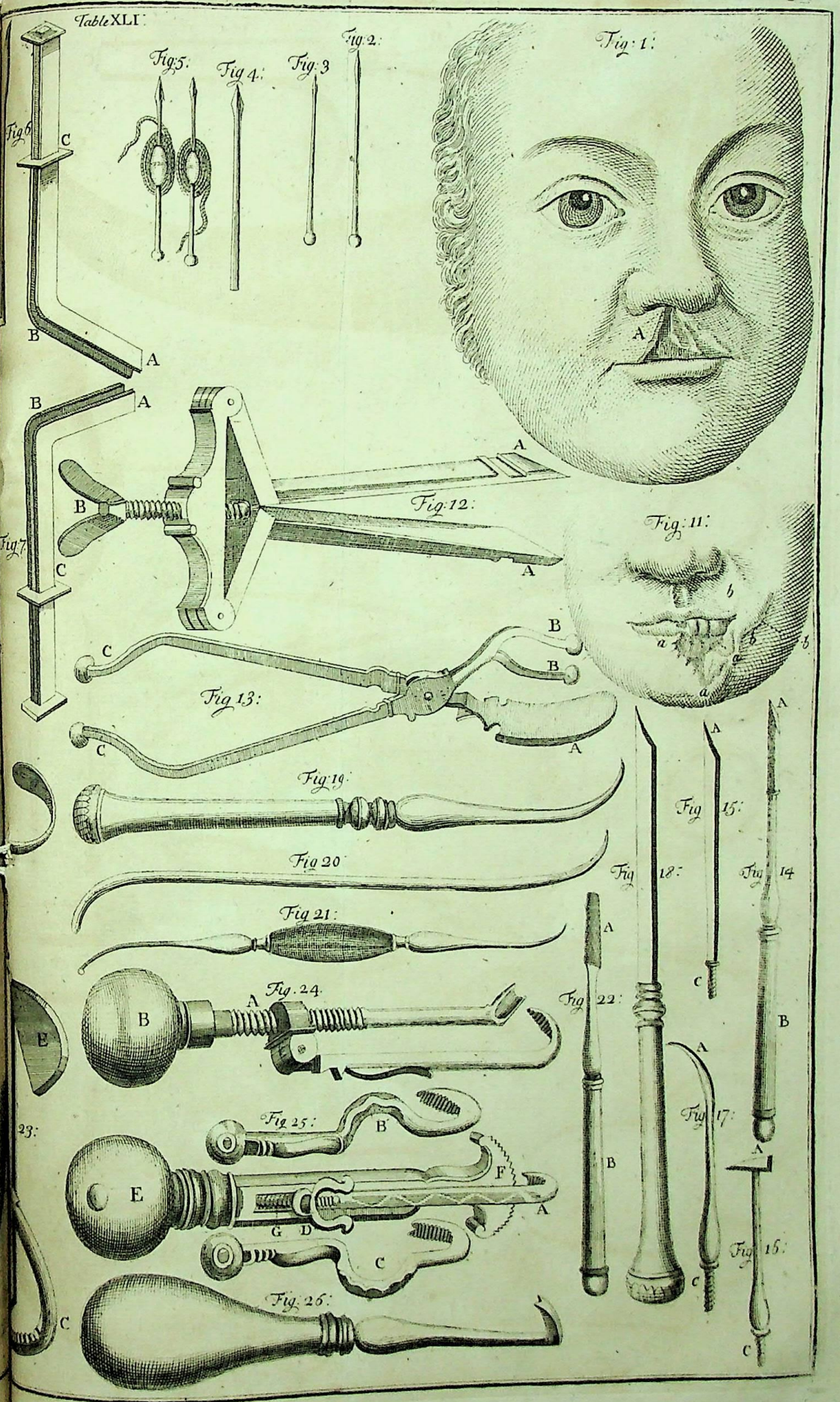

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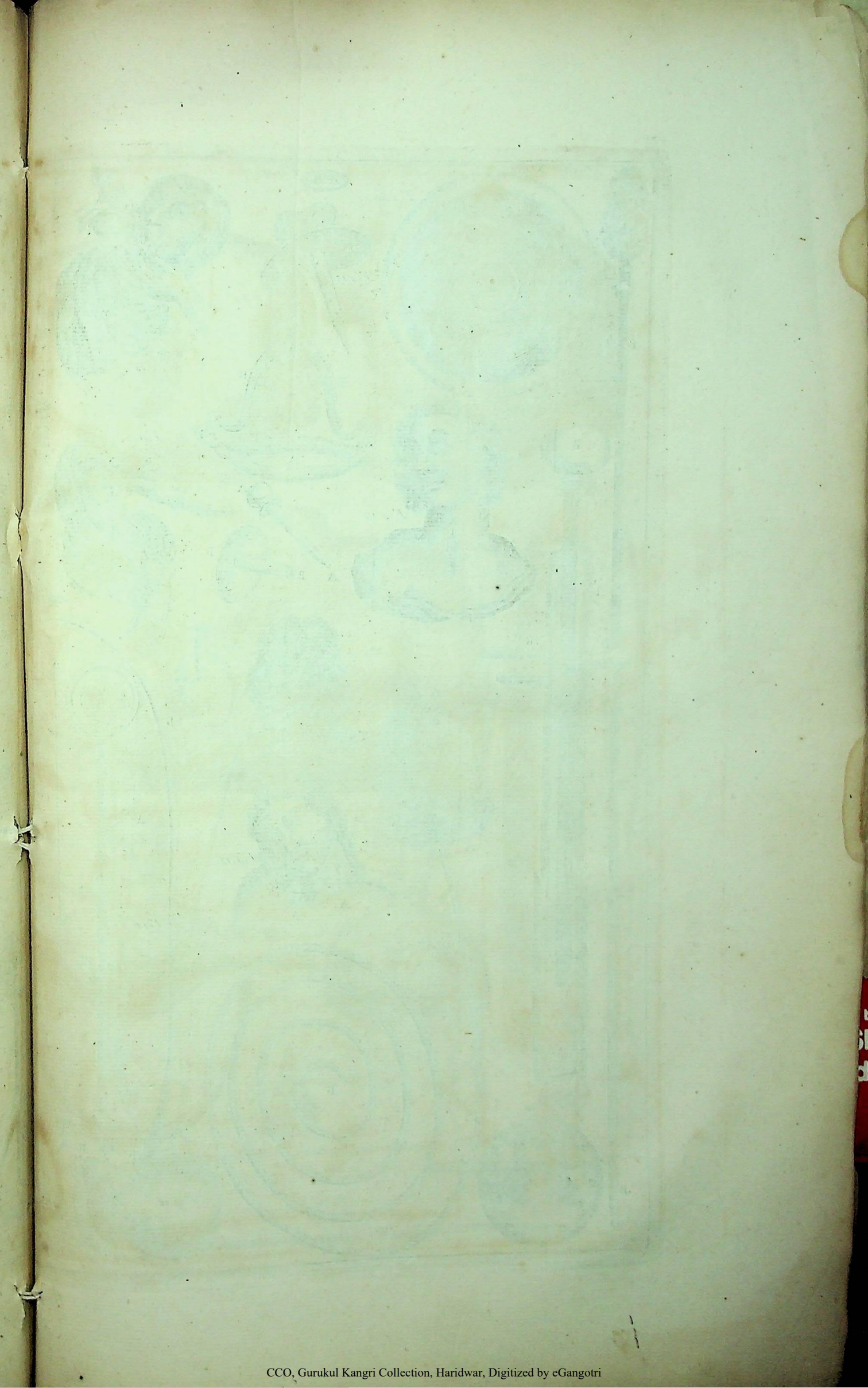

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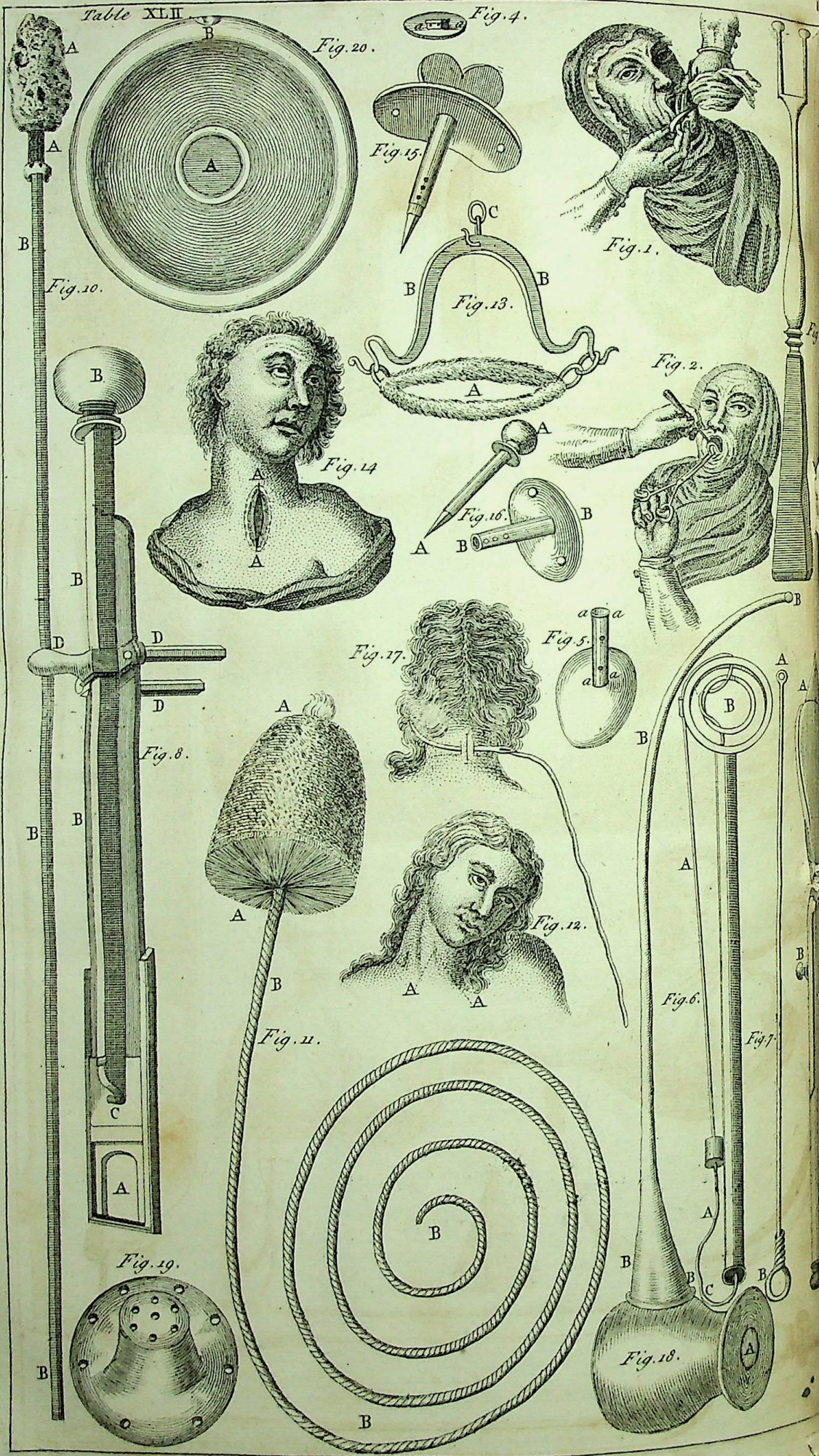

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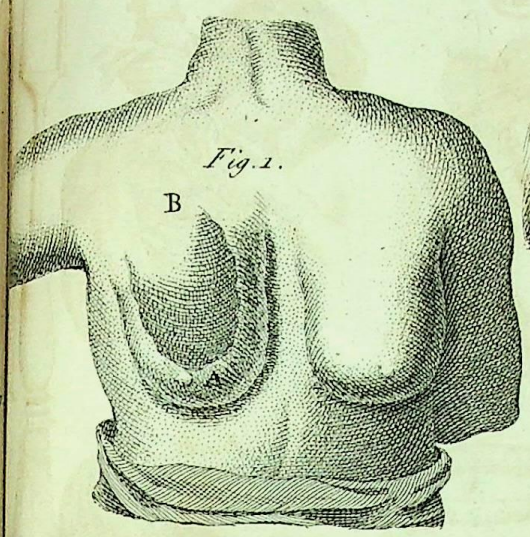

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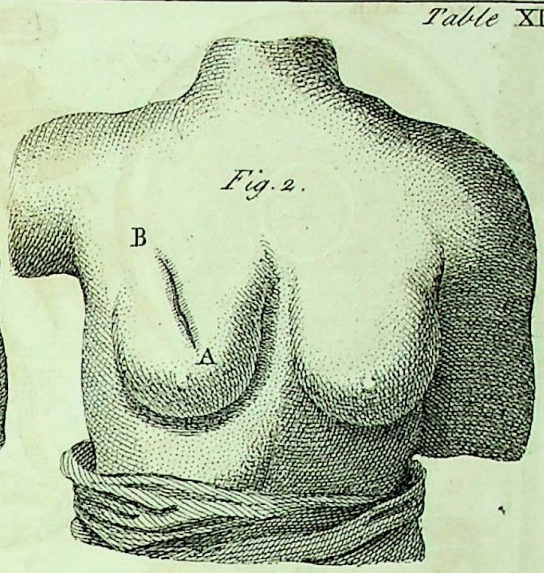

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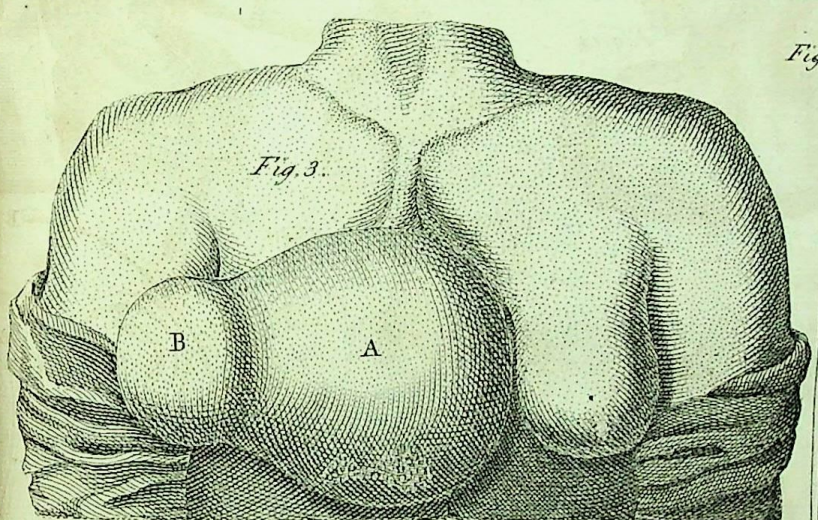
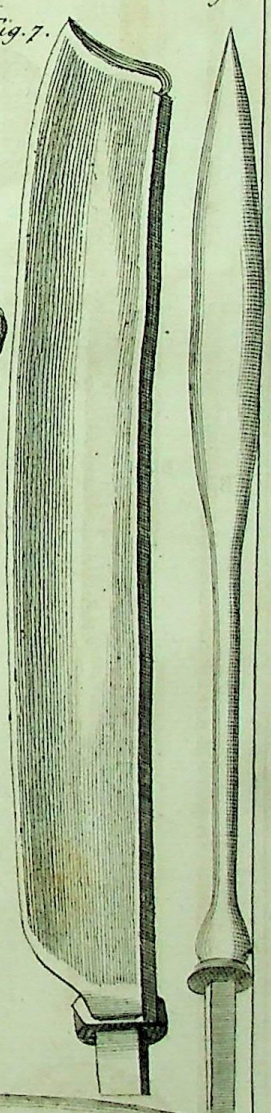


Fig. 3.

Fig. 8.

Fig. 7.



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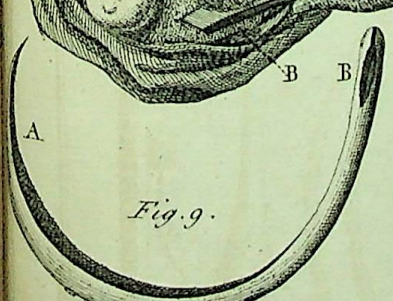

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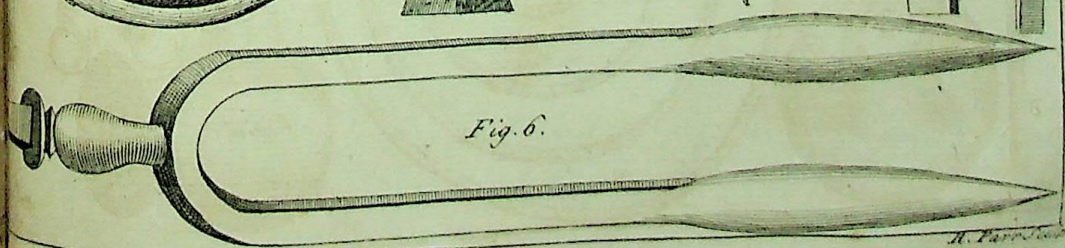
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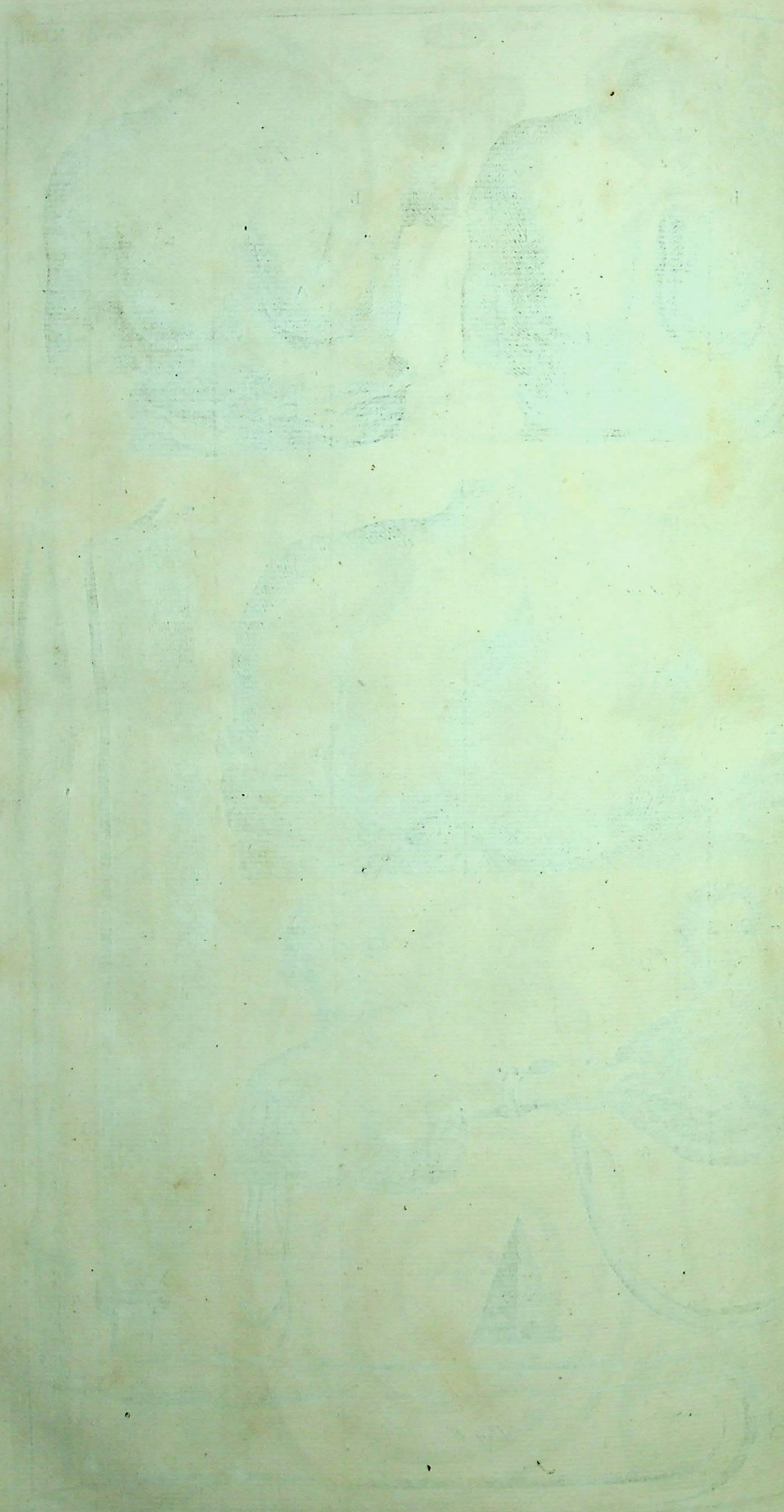

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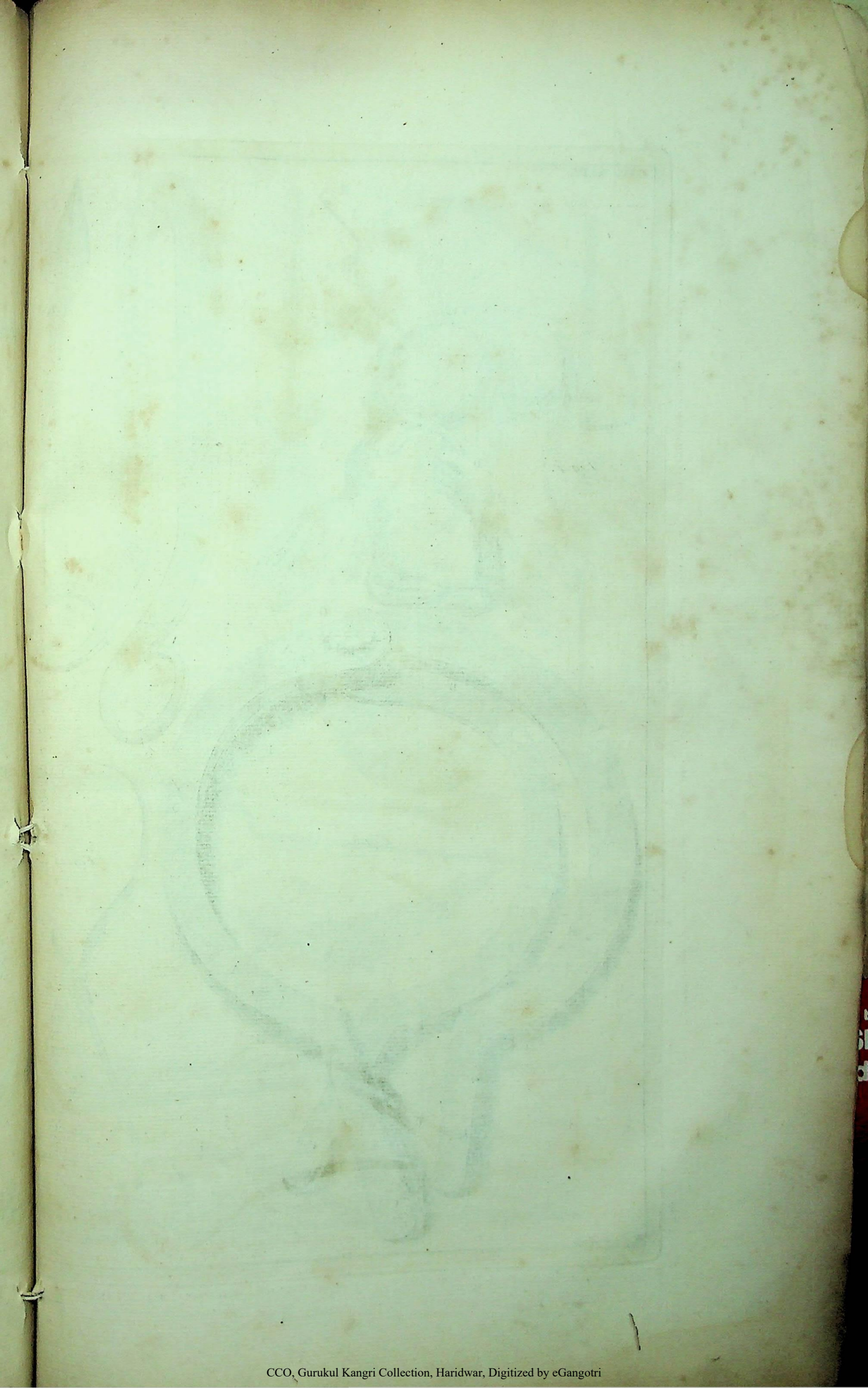

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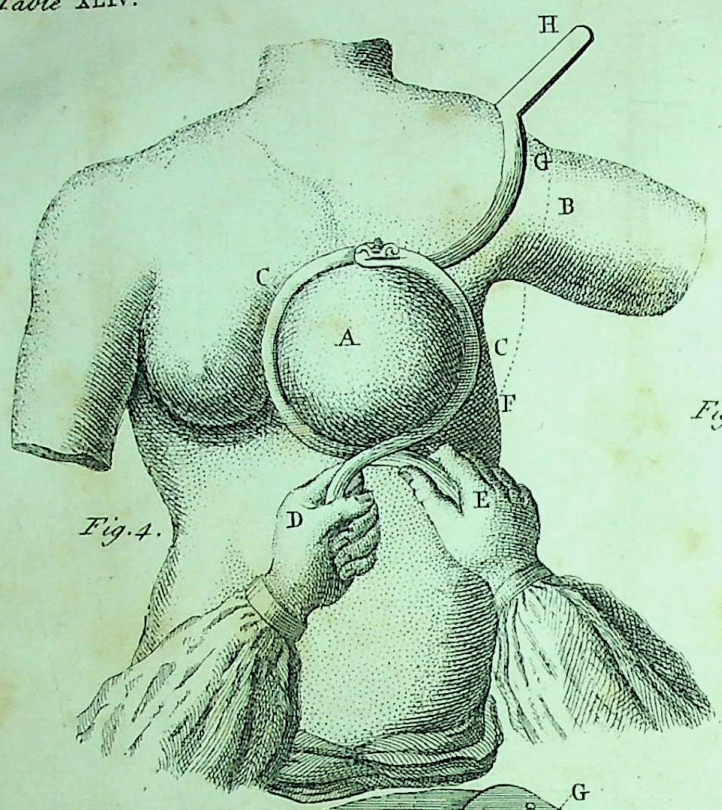

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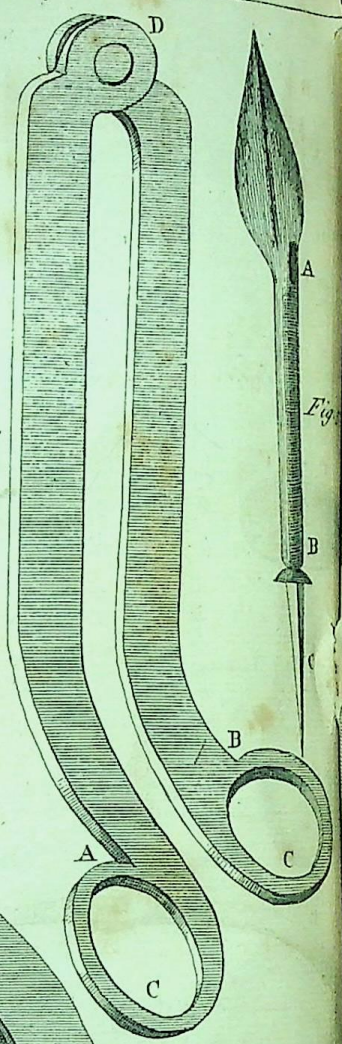

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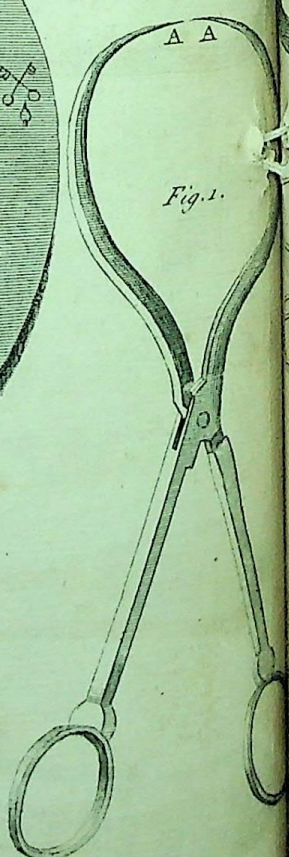

Fig. 1.

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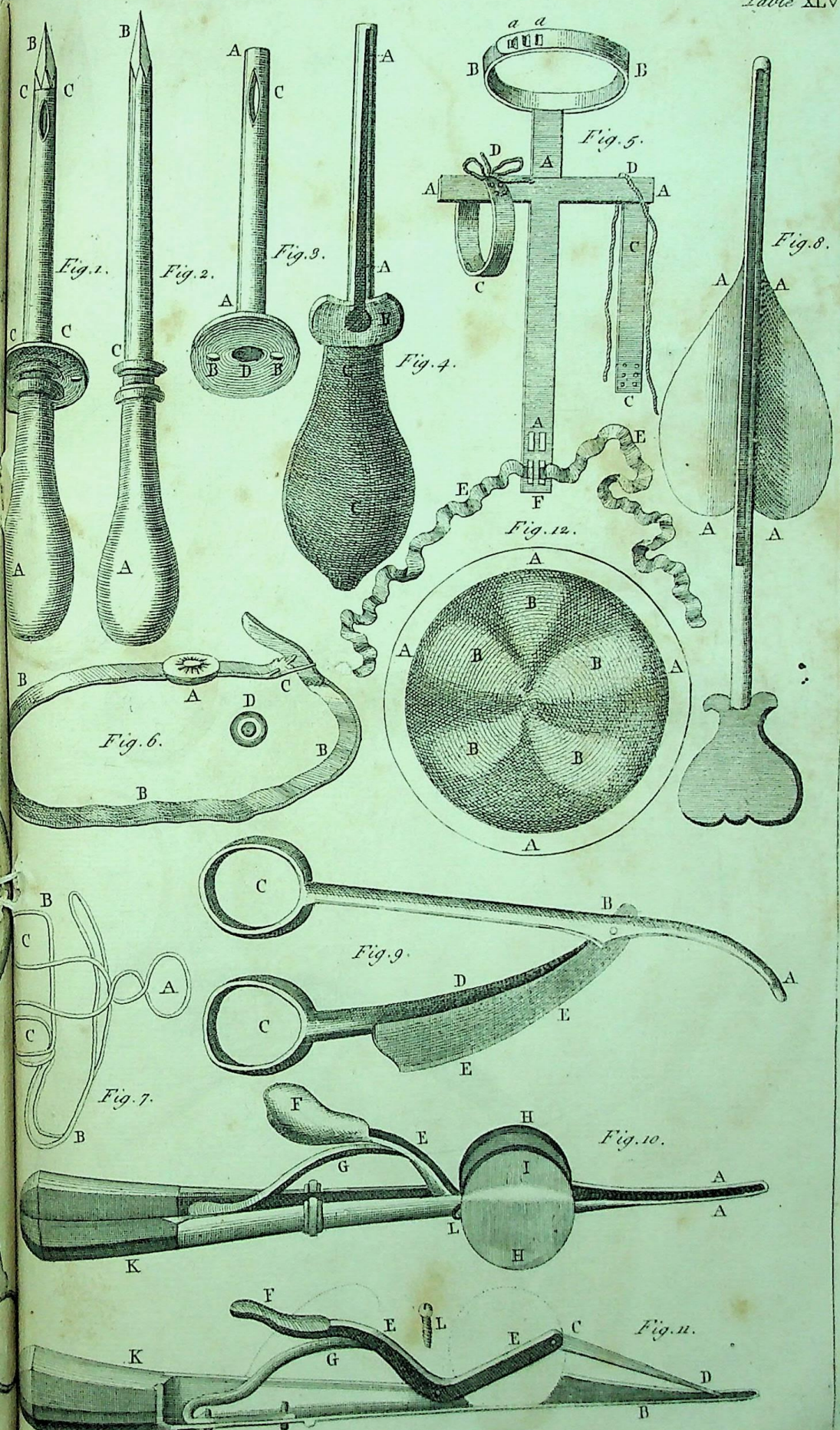

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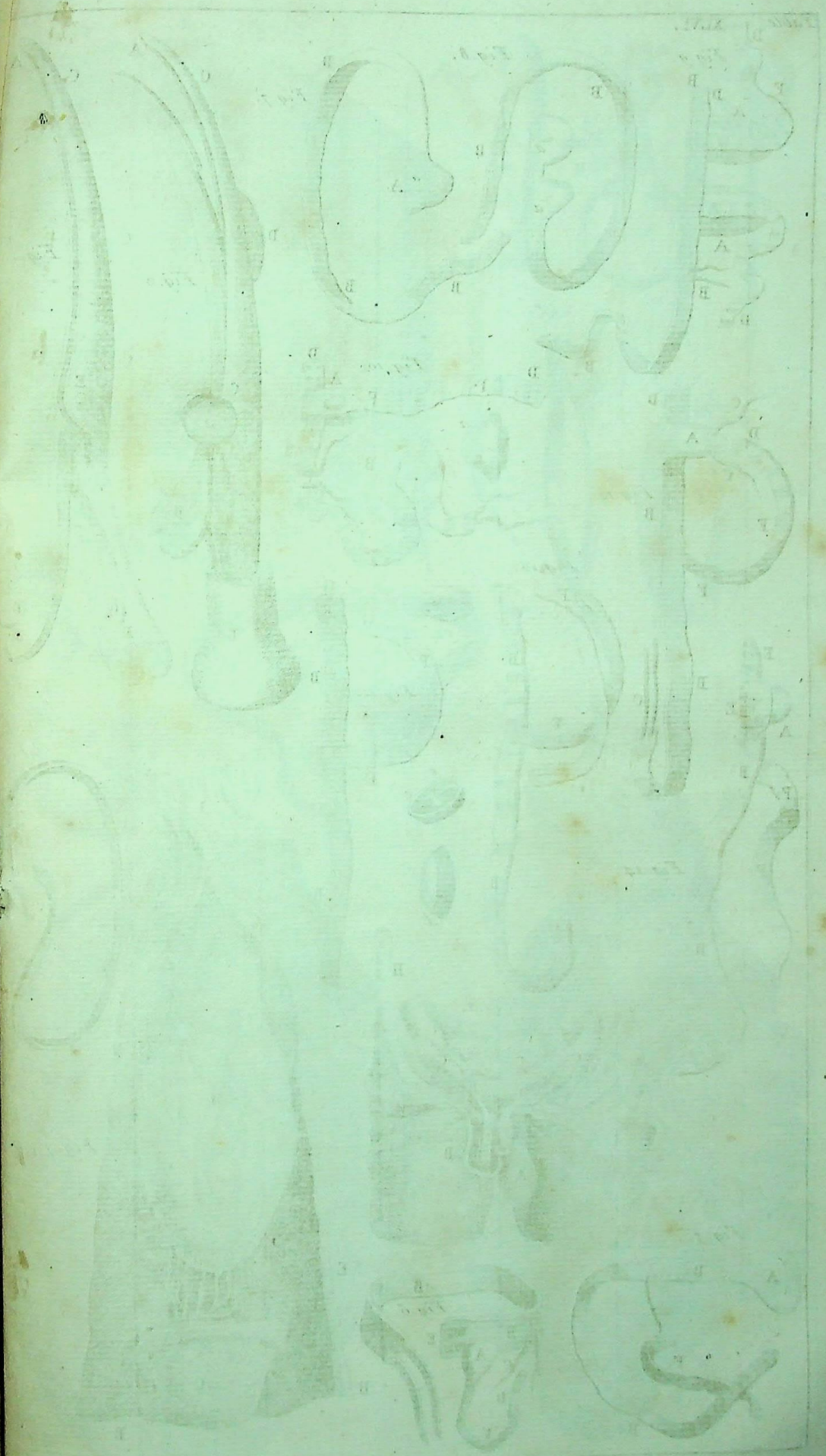

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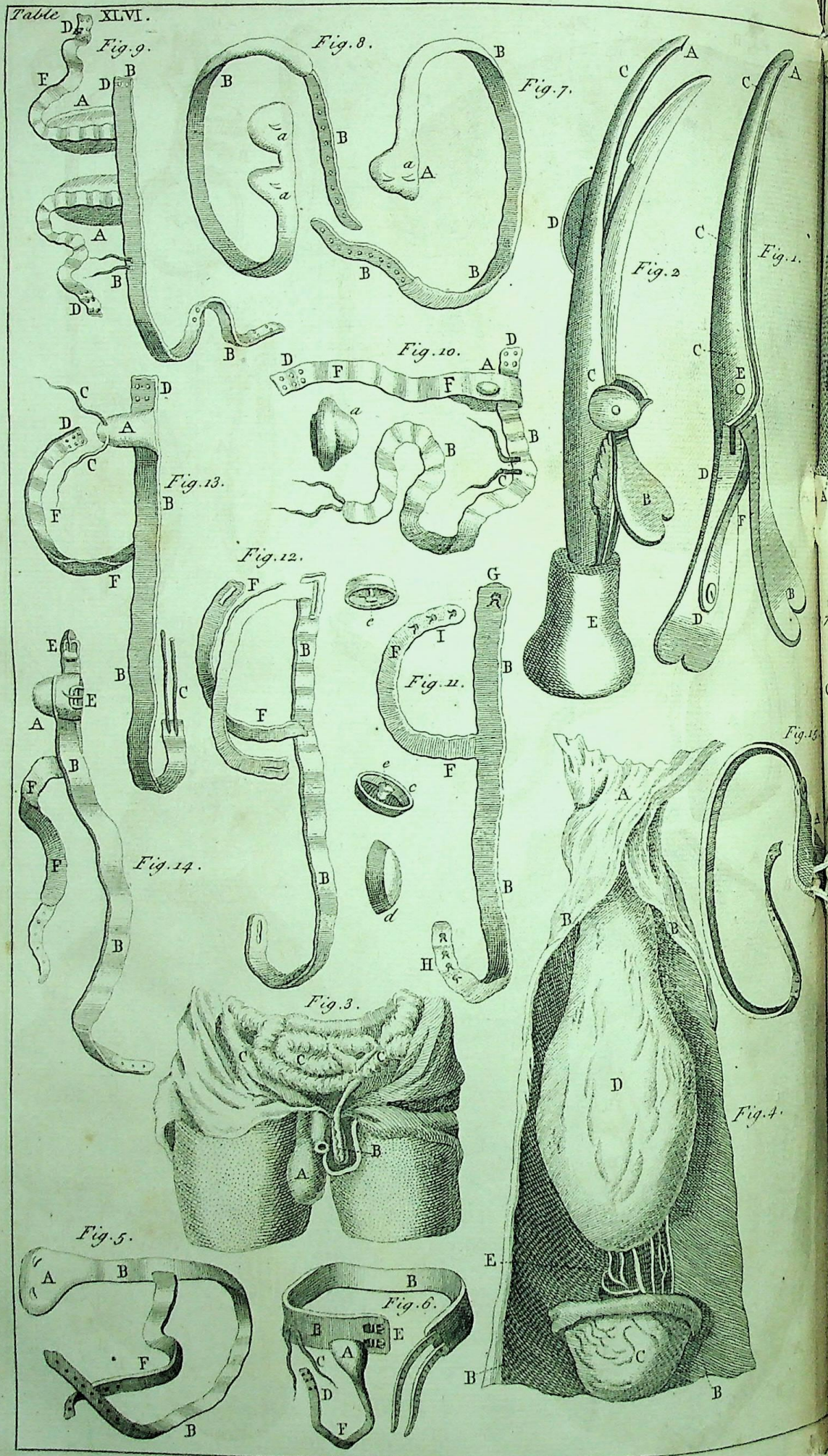

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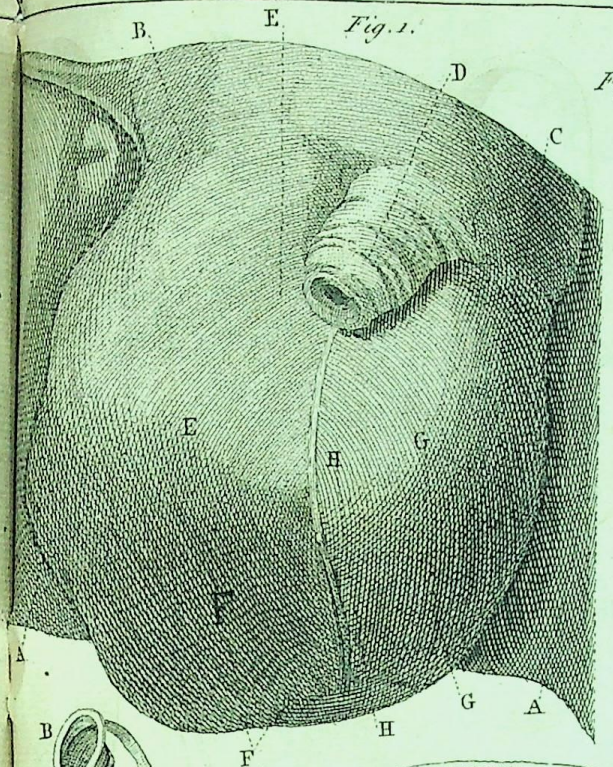

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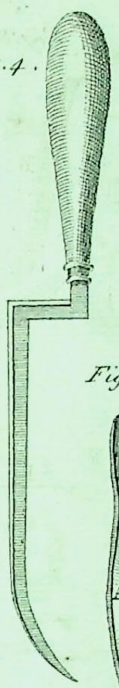

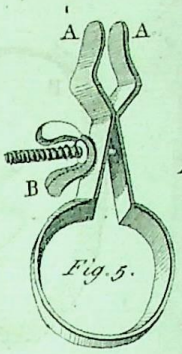

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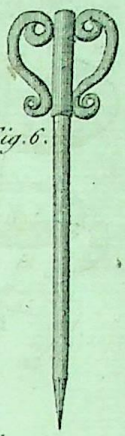

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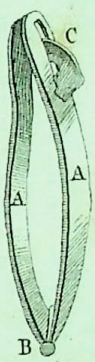

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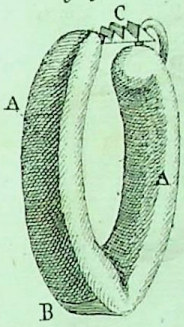

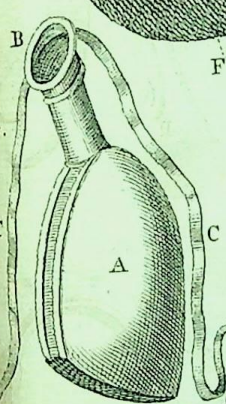

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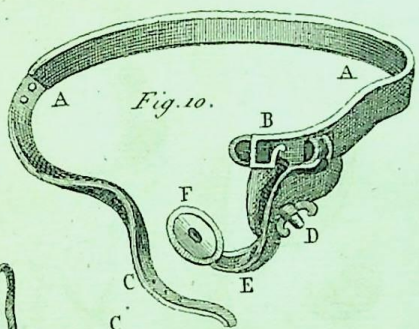

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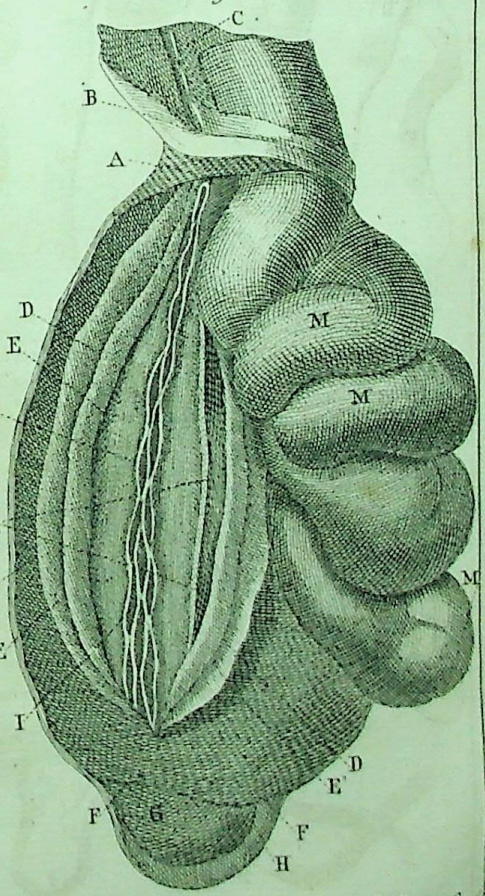

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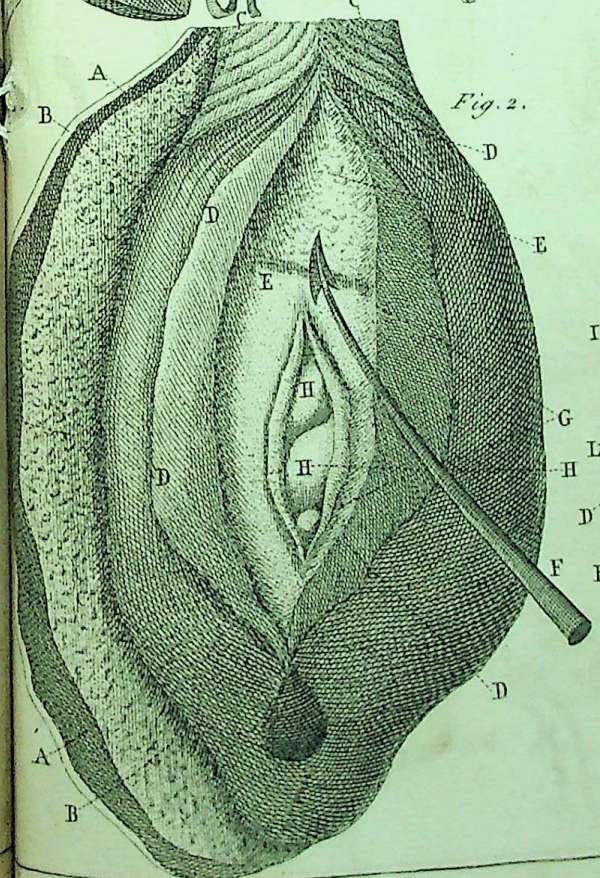

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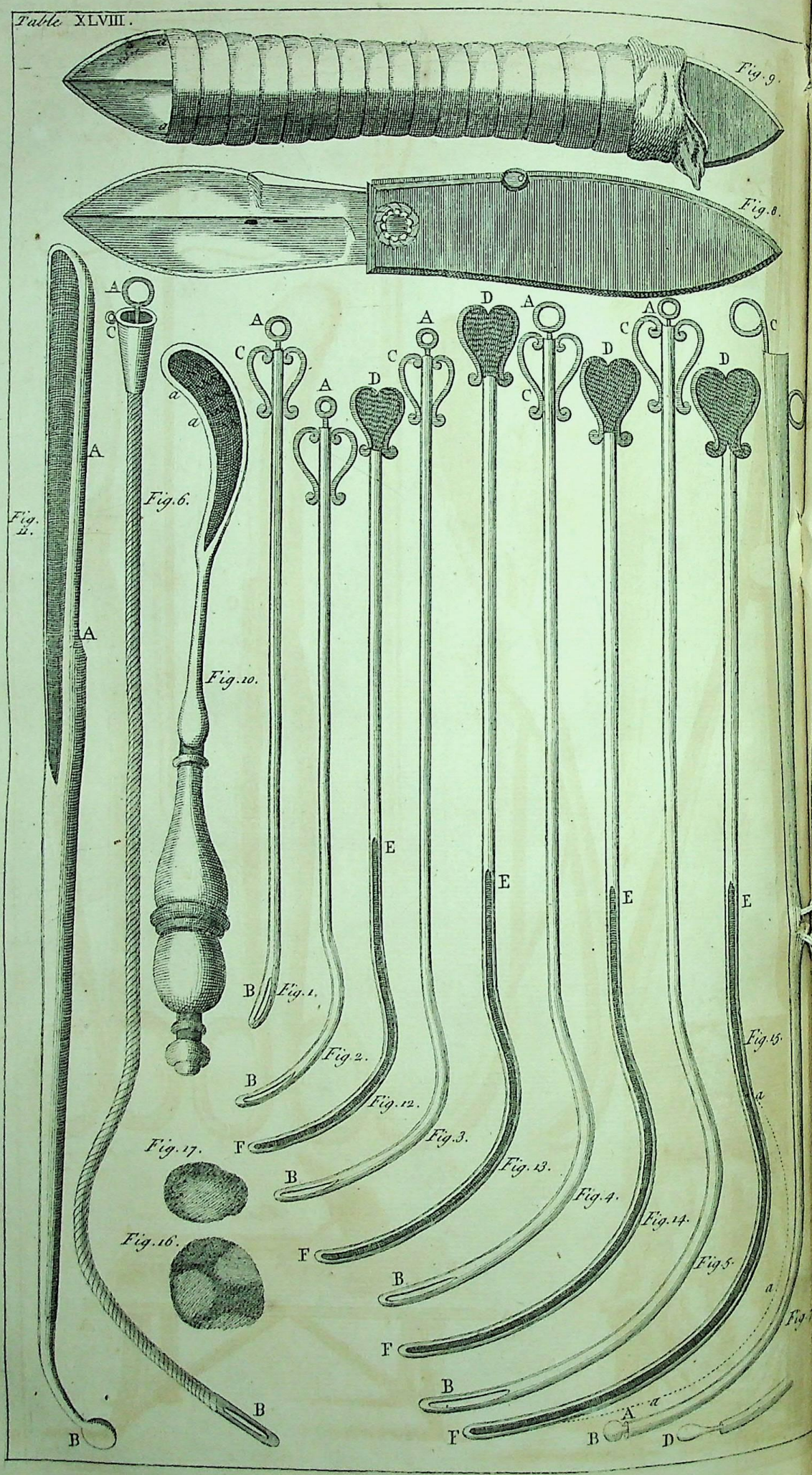

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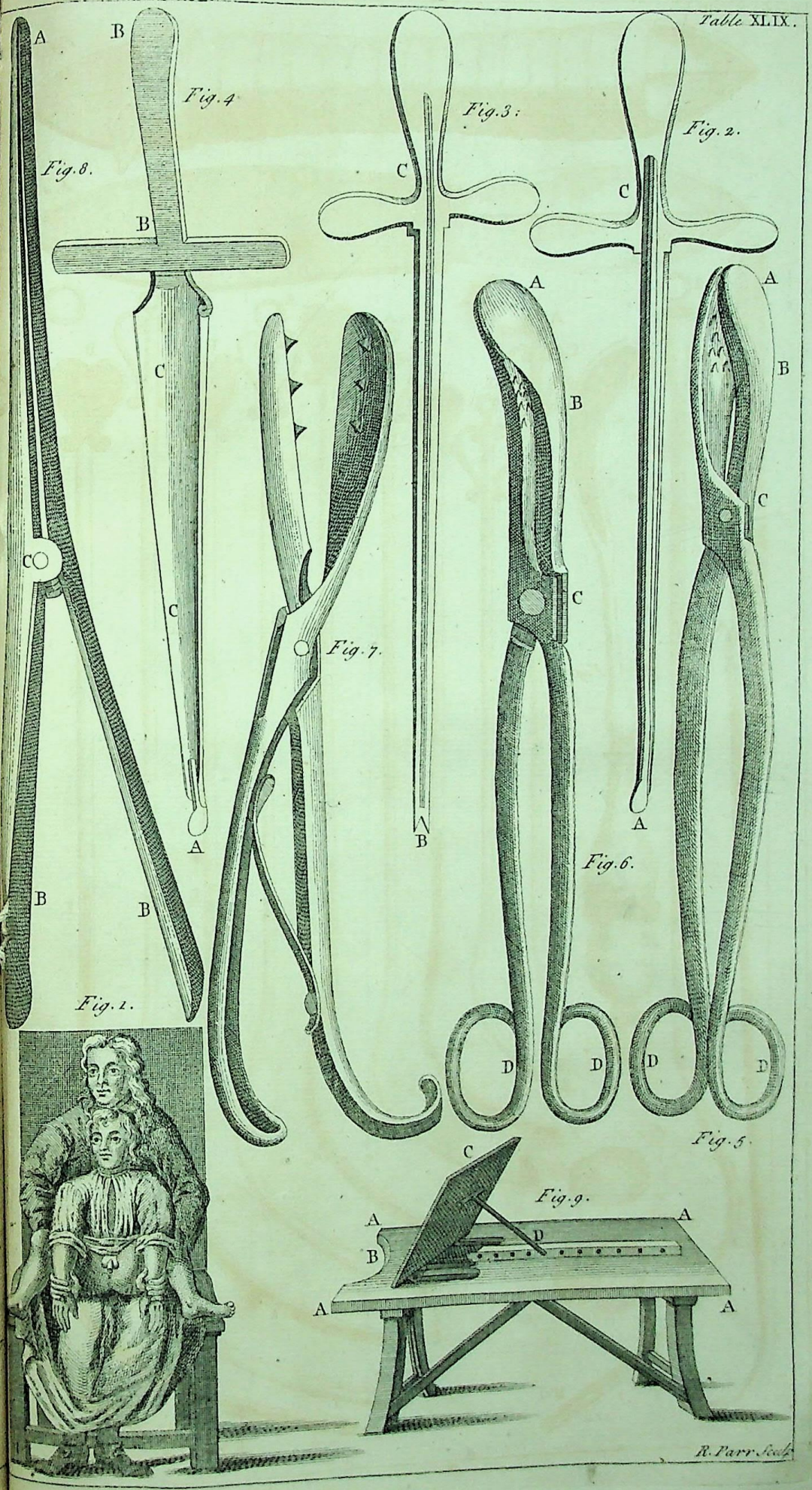

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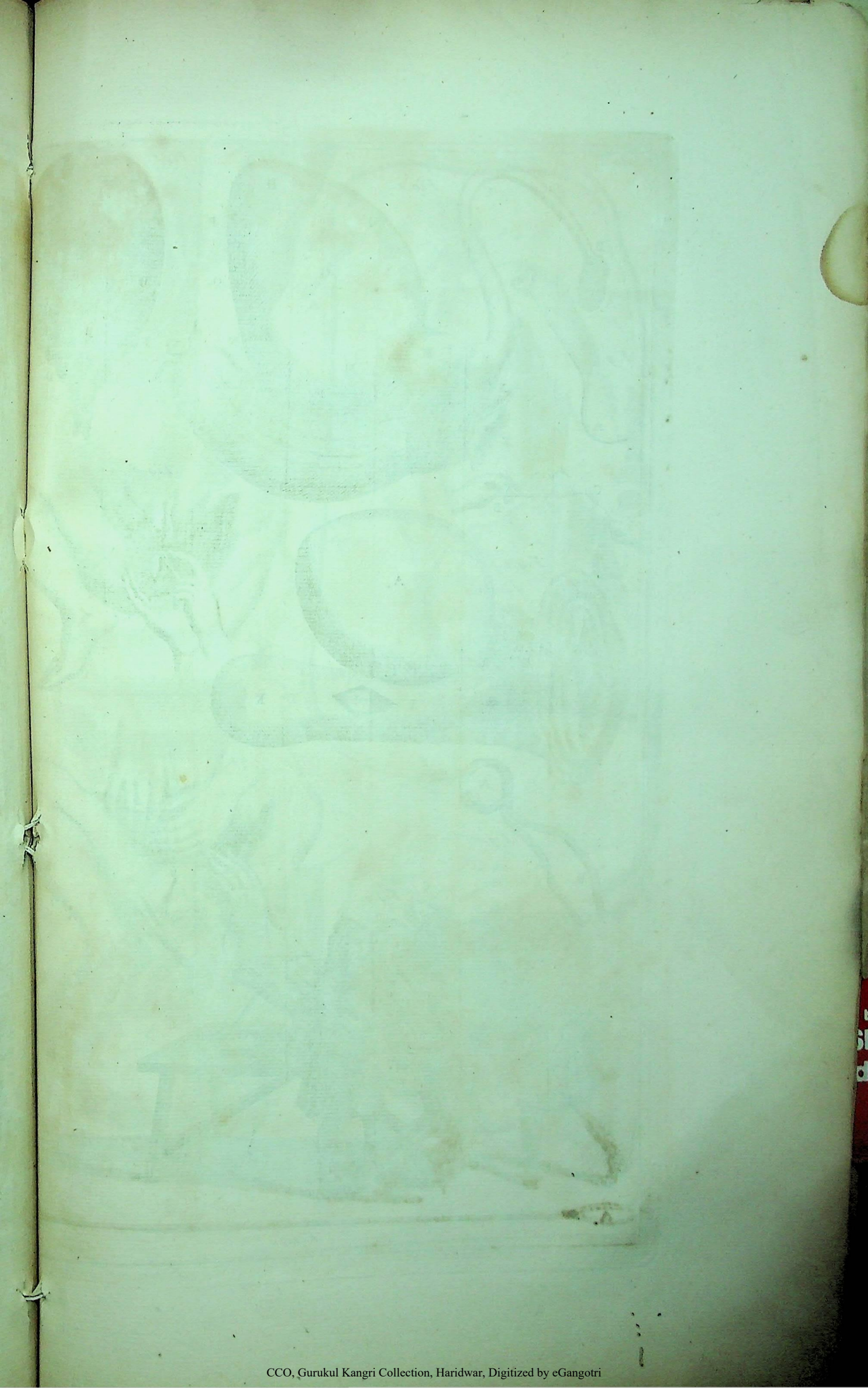

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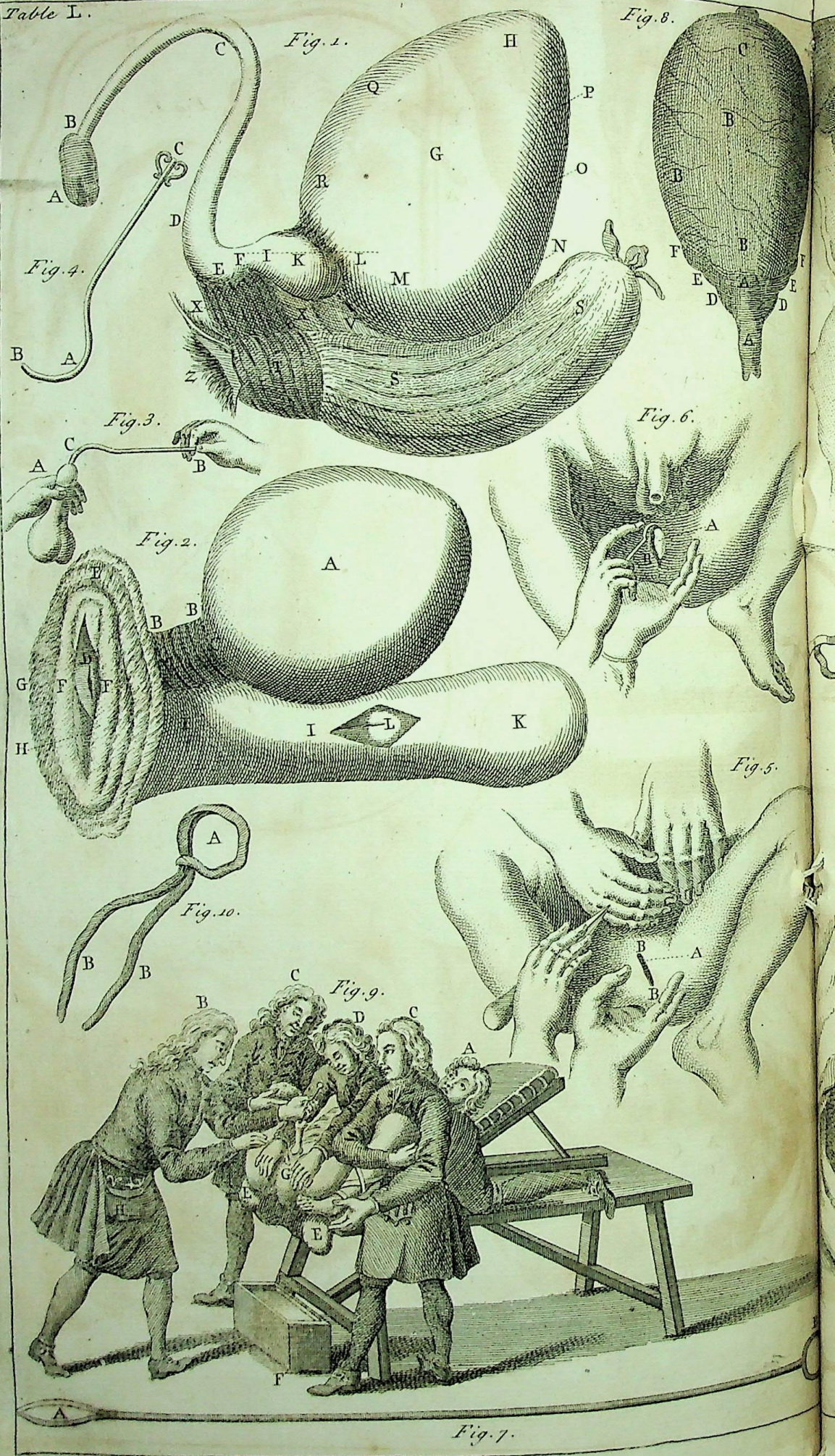

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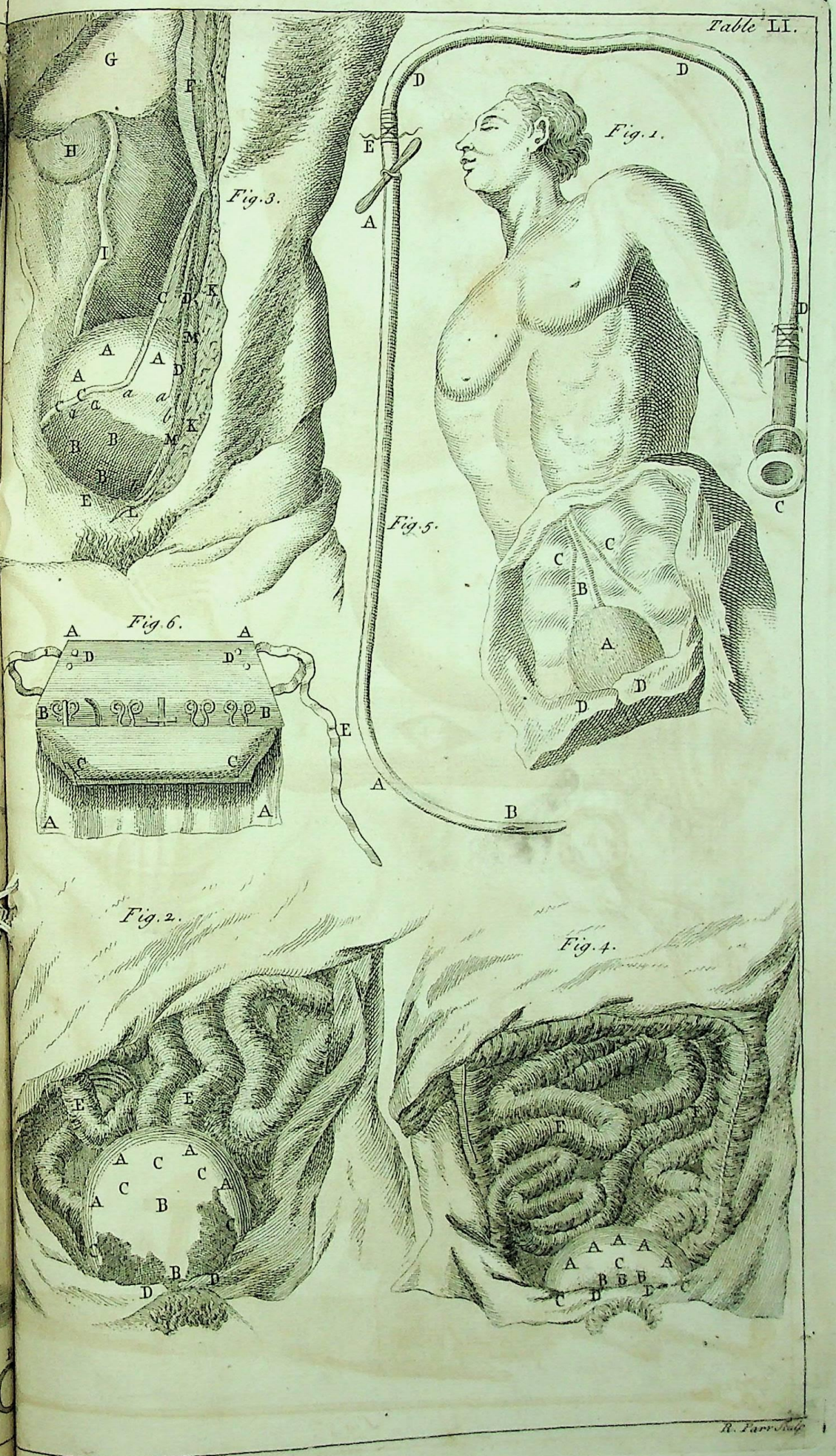
Table LI.



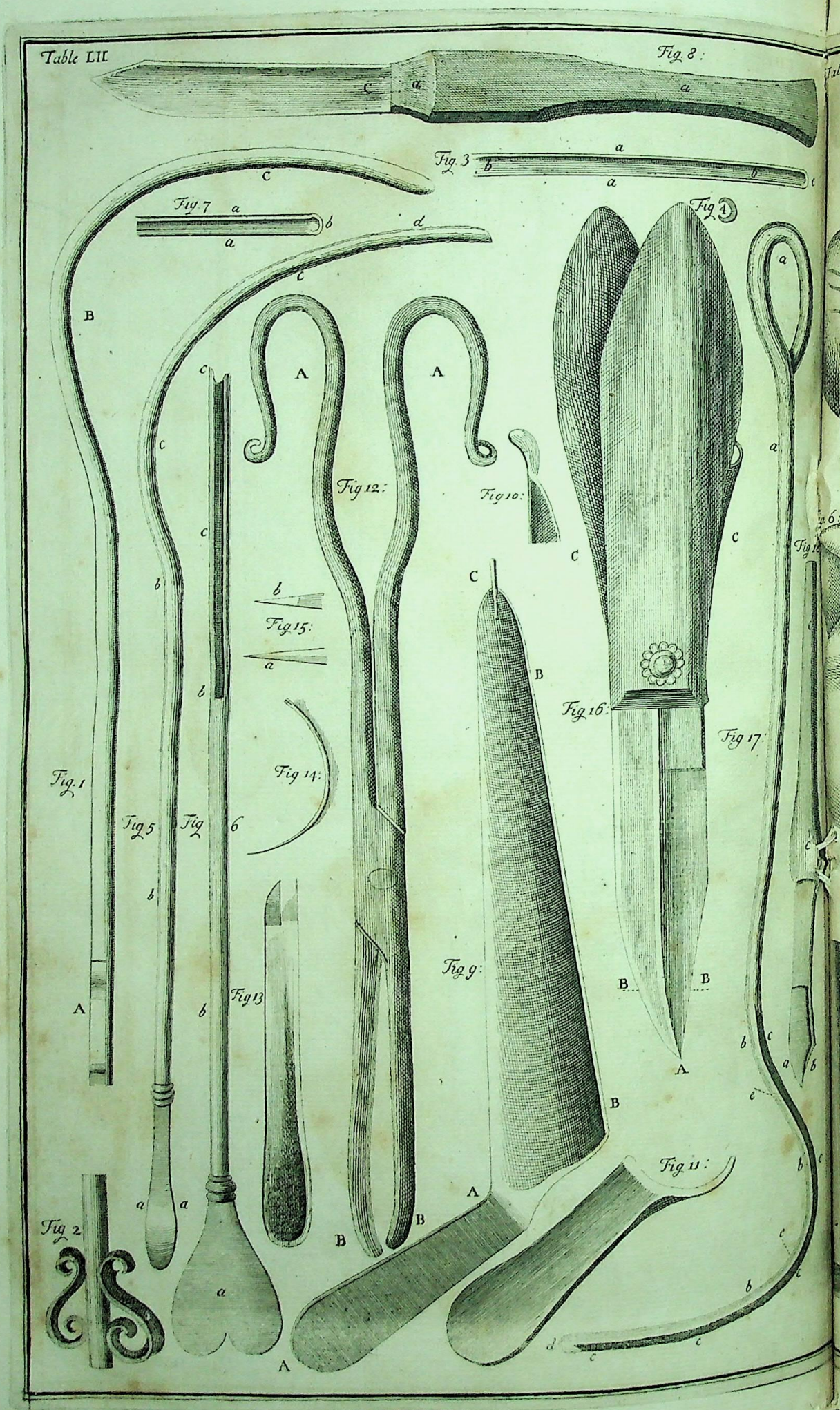
R. Parr Sculp.

CCO, Gurukul Kangri Collection, Haridwar, Digitized by eGangotri

CCO, Gurukul Kangri Collection, Haridwar, Digitized by eGangotri

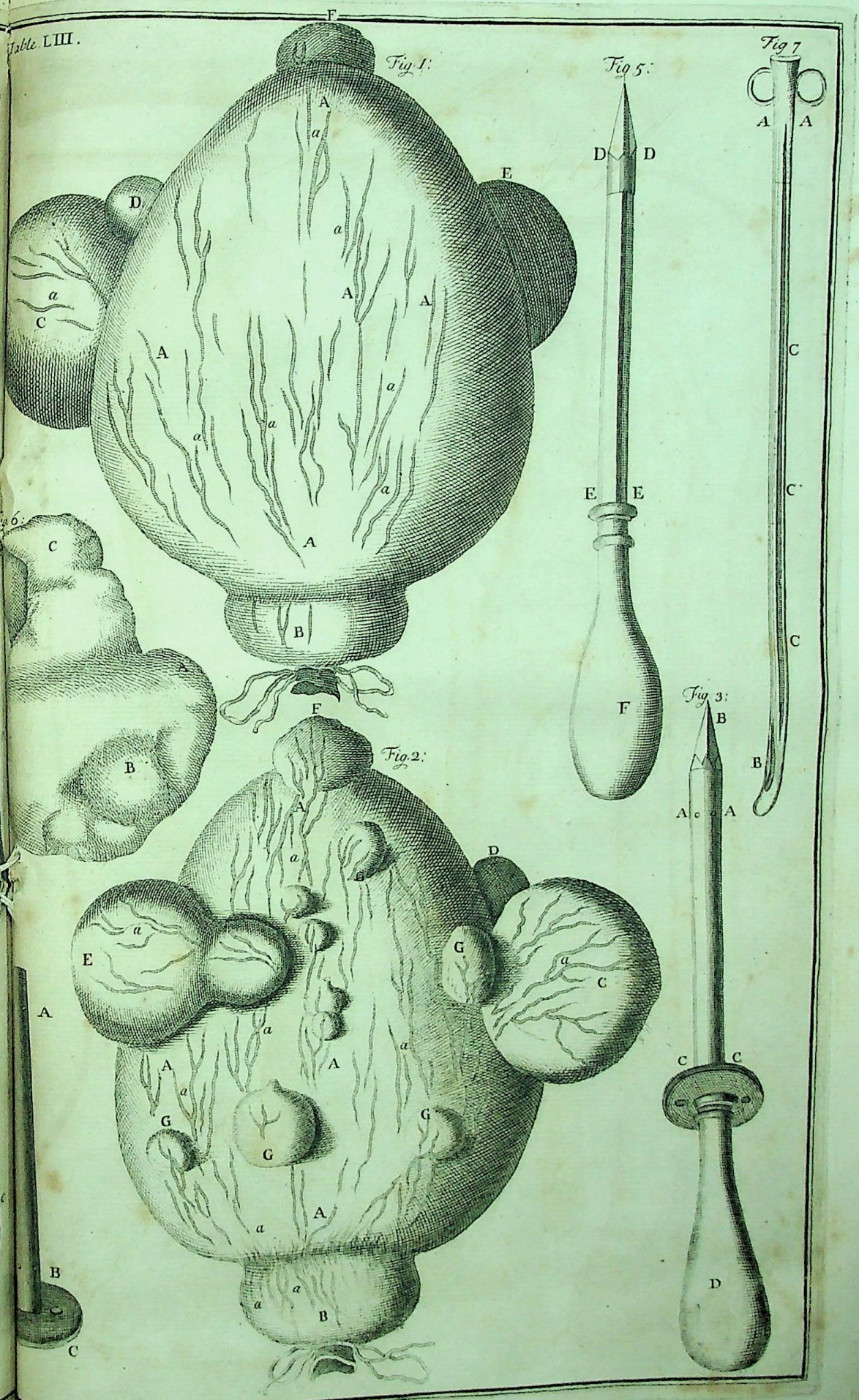
CCO, Gurukul Kangri Collection, Haridwar, Digitized by eGangotri

Table LII.



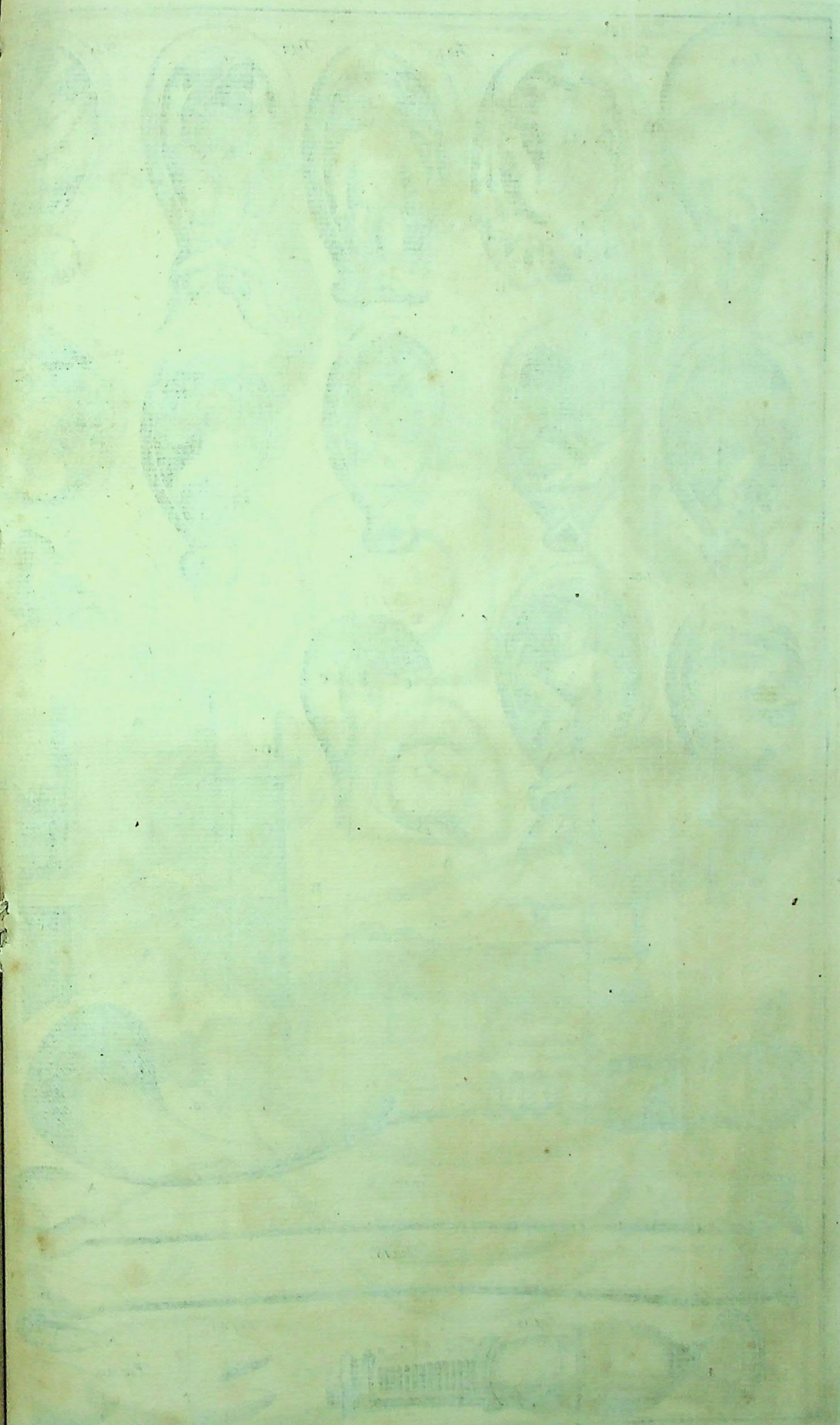
CCO, Gurukul Kangri Collection, Haridwar, Digitized by eGangotri

Table LIII.



CCO, Gurukul Kangri Collection, Haridwar, Digitized by eGangotri

CCO, Gurukul Kangri Collection, Haridwar, Digitized by eGangotri



CCO, Gurukul Kangri Collection, Haridwar, Digitized by eGangotri

Table LIV.

Fig. 1.

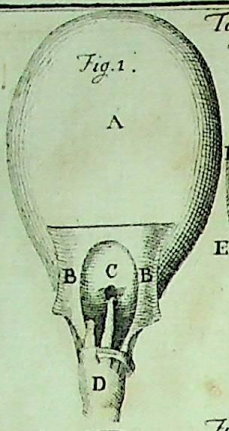
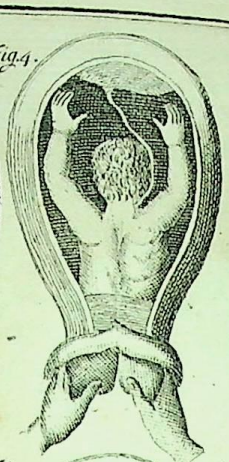


Fig. 2.

Fig. 3.

Fig. 4.



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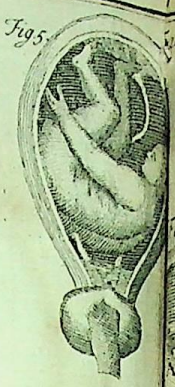

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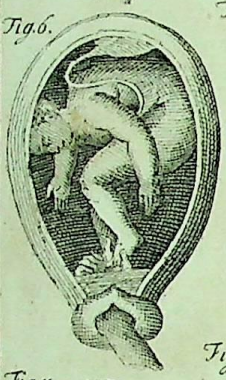

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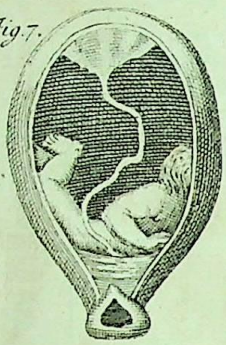


Fig. 8.

Fig. 9.

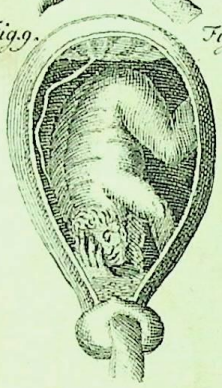


Fig. 10.

Fig. 11.

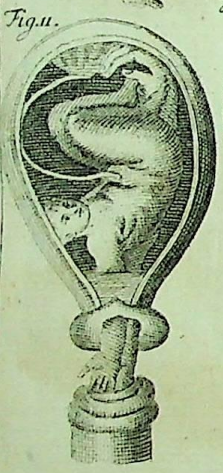
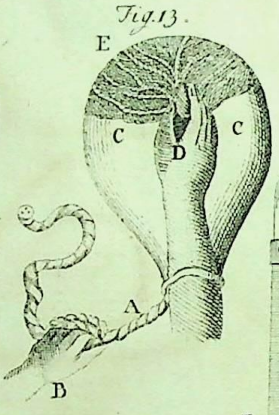


Fig. 12.

Fig. 13.



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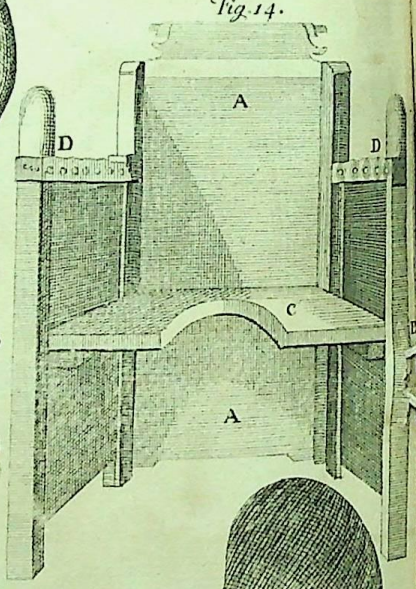

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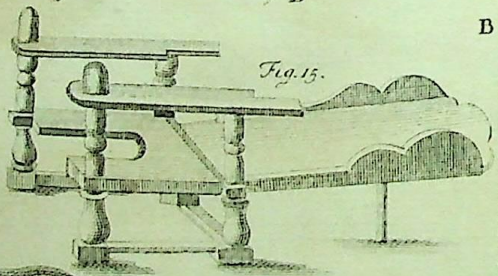

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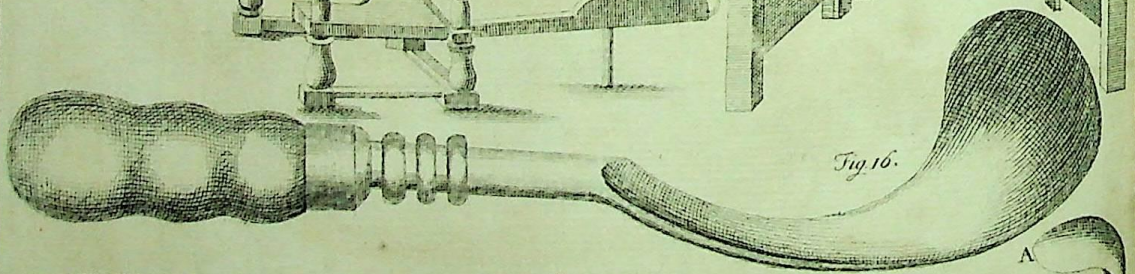

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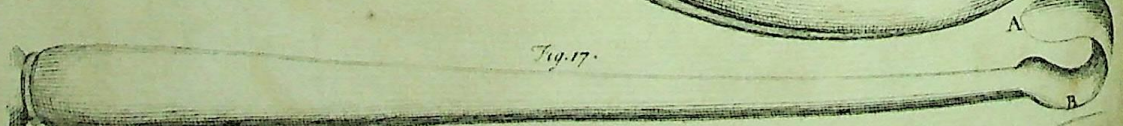

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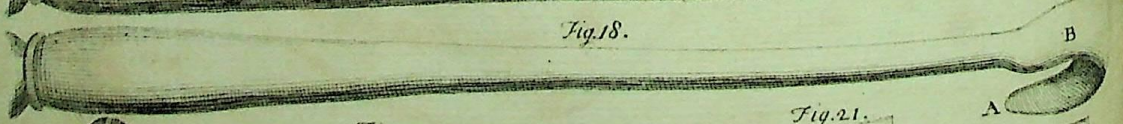


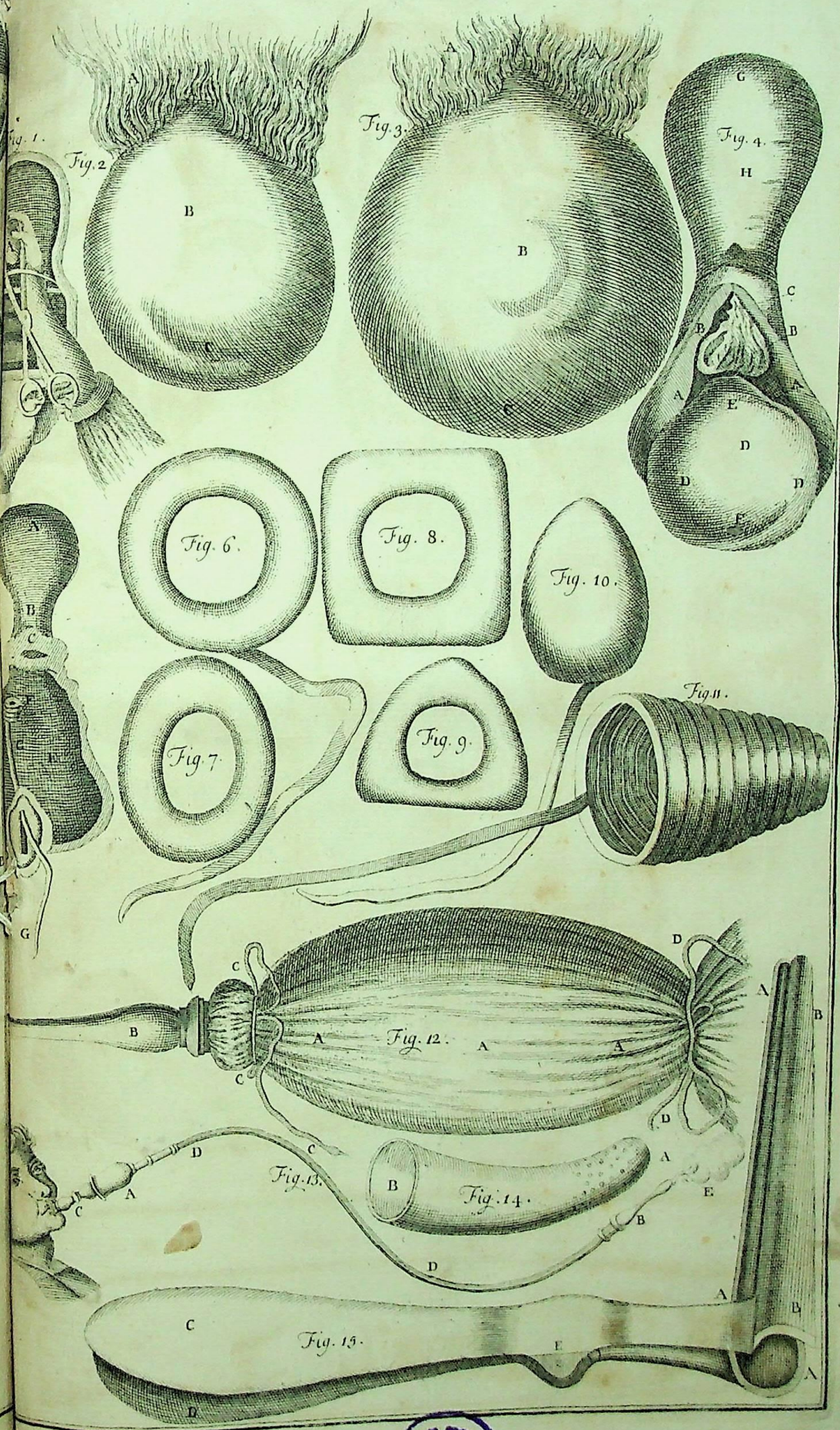
Fig. 19.

Fig. 21.

Fig. 20.

CCO, Gurukul Kangri Collection, Haridwar, Digitized by eGangotri

Tabula LV.

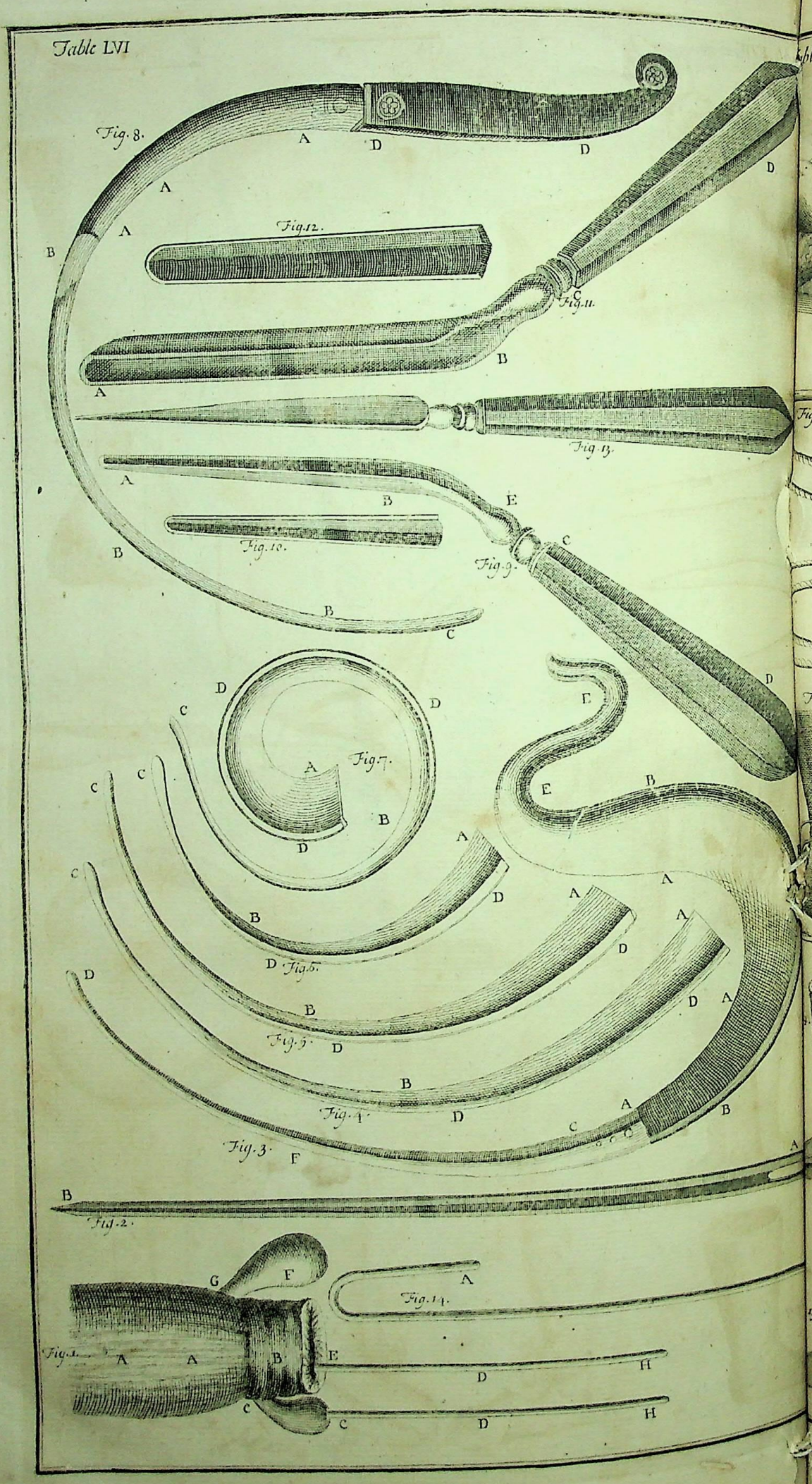


CCO, Gurukul Kangri Collection, Haridwar, Digitized by eGangotri

CCO, Gurukul Kangri Collection, Haridwar, Digitized by eGangotri

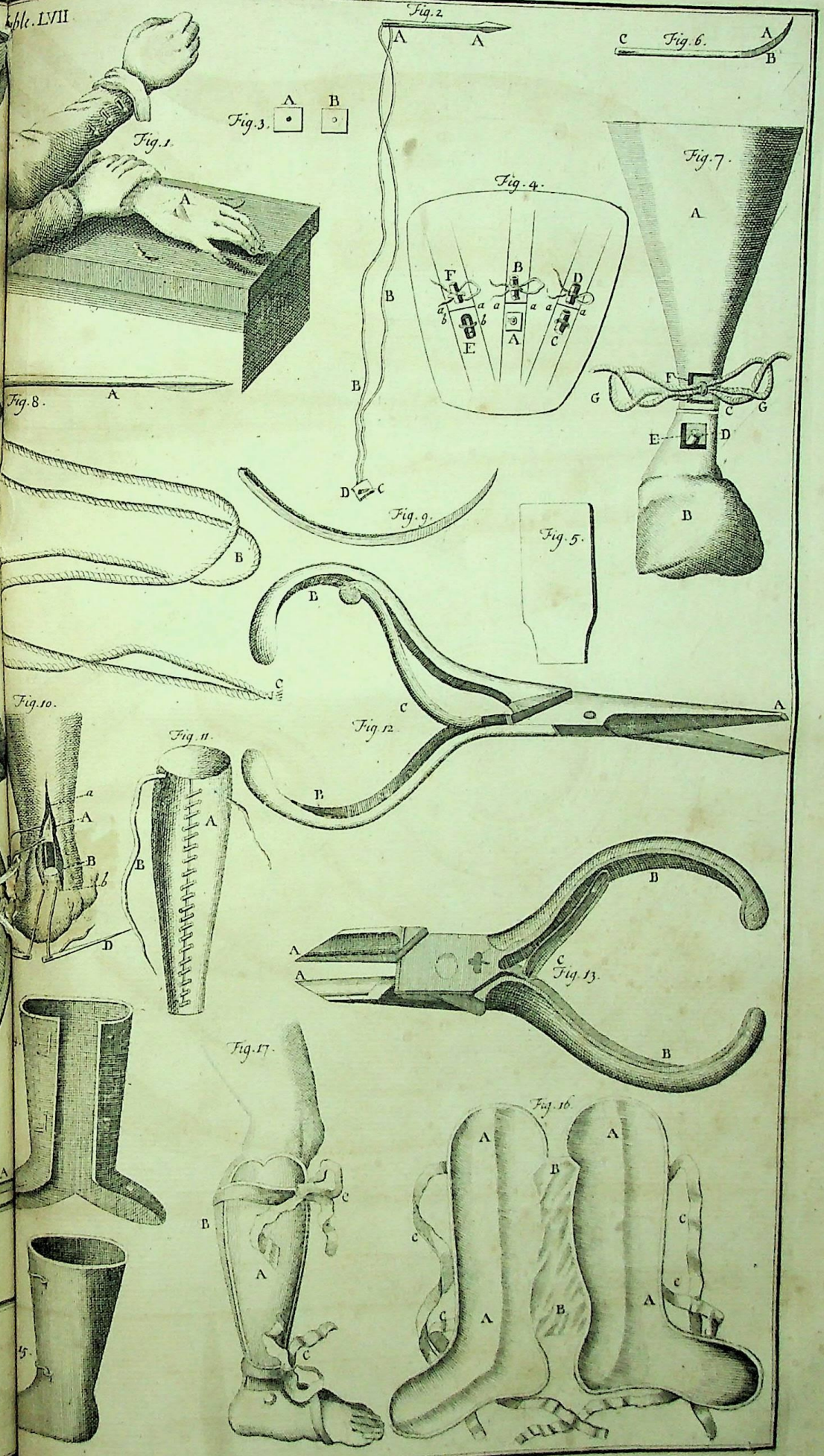
CCO, Gurukul Kangri Collection, Haridwar, Digitized by eGangotri

Table LVI



CCO, Gurukul Kangri Collection, Haridwar, Digitized by eGangotri

Table. LVII

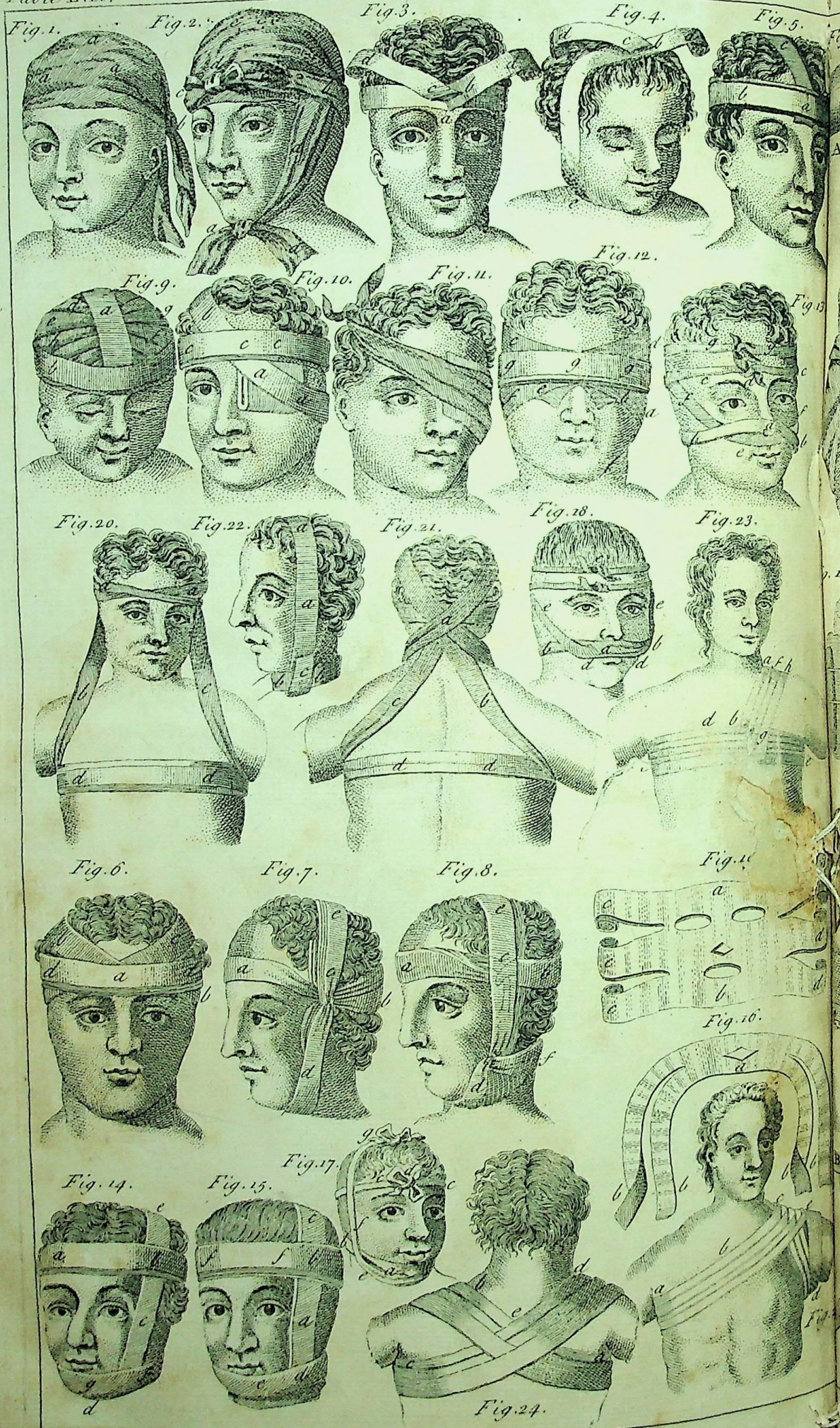


CCO, Gurukul Kangri Collection, Haridwar, Digitized by eGangotri

CCO, Gurukul Kangri Collection, Haridwar, Digitized by eGangotri

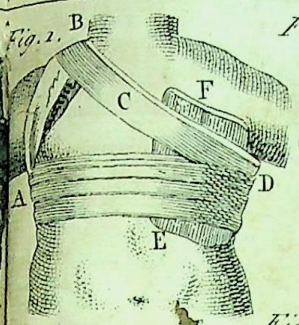
CCO, Gurukul Kangri Collection, Haridwar, Digitized by eGangotri

Table LVIII.



CCO, Gurukul Kangri Collection, Haridwar, Digitized by eGangotri

Fig. 1.



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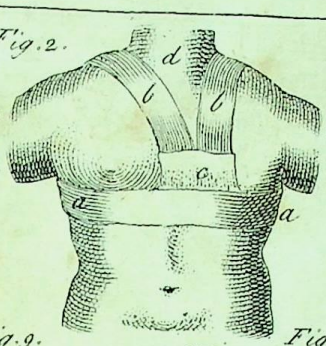
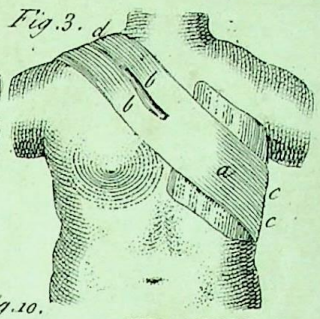


Fig. 3.



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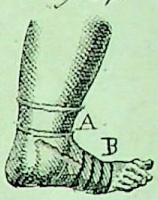

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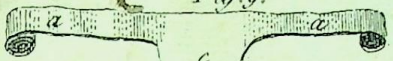


Fig. 10.

Fig. 11.

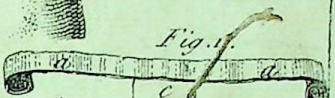


Fig. 8.

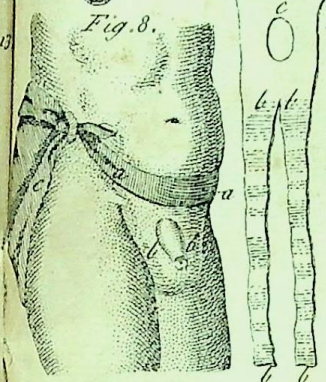


Fig. 16.

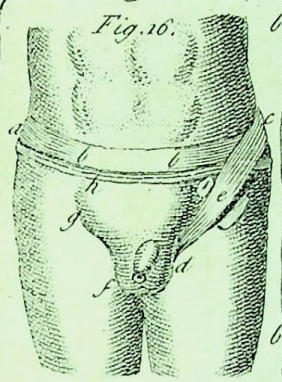
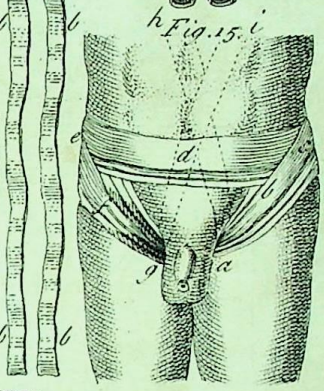


Fig. 15.



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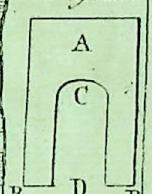


Fig. 17.

Fig. 18.

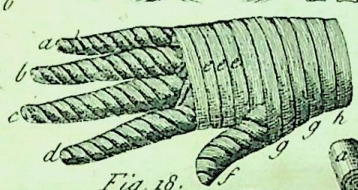


Fig. 21.

Fig. 19.

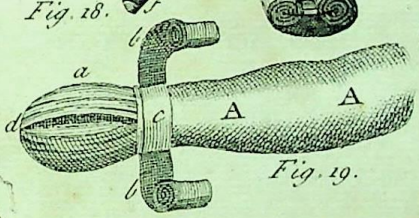


Fig. 4.

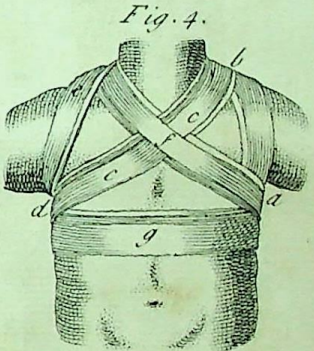


Fig. 6.

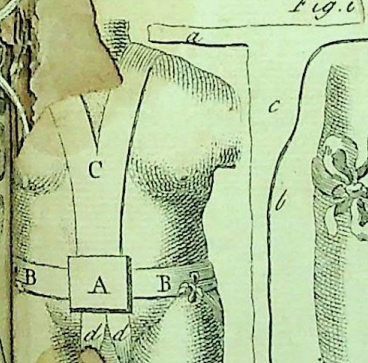
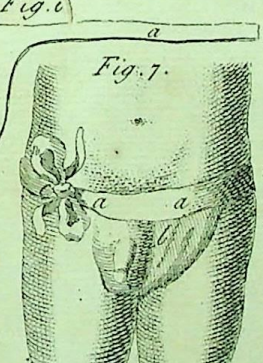


Fig. 7.



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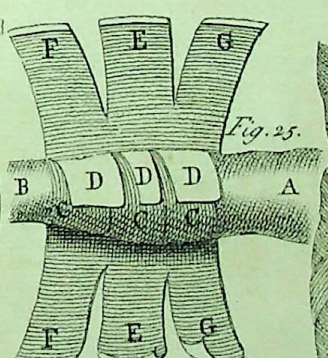

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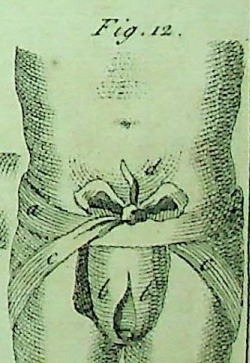
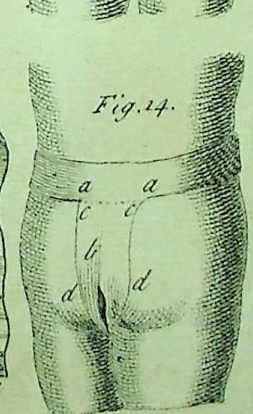


Fig. 13.

Fig. 14.



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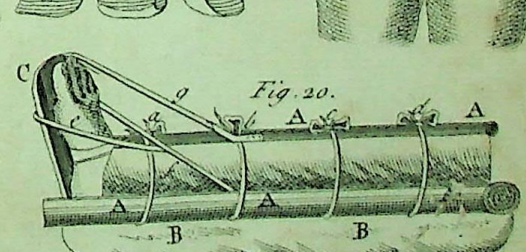
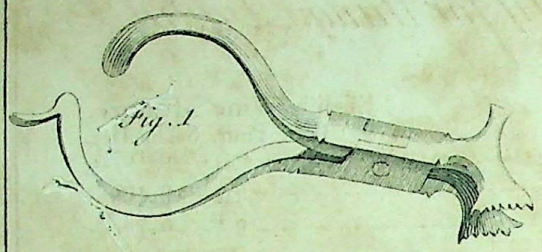


Fig. 22.

CCO, Gurukul Kangri Collection, Haridwar, Digitized by eGangotri

CCO, Gurukul Kangri Collection, Haridwar, Digitized by eGangotri

CCO, Gurukul Kangri Collection, Haridwar, Digitized by eGangotri



The ROMANS divided their As, Libra or any Integer, after the following manner.

	Unciæ
1	As 12
11/12	Deunx 11
5/6	Dextans .. 10
3/4	Dodrans .. 9
2/3	Bes 8
7/12	Septunx .. 7
1/2	Semis 6
5/12	Quincunx . 5
1/3	Triens 4
1/4	Quadrans . 3
1/6	Sextans ... 2
1/12	Uncia 1

ATTICK *Measures of Capacity for things Liquid.*

										English Wine Measure. Gall. Pints. Sol. Inch. Dec.
κοχλιάριον										0 – – 1/120 – – 0, 035 5/12
2	χύαθος									0 – – 1/60 – – 0, 071 2/6
2 1/2	1 1/4	κύμελον								0 – – 1/48 – – 0, 089 11/48
5	2 1/2	2	κύλιξ							0 – – 1/24 – – 0, 178 11/24
10	5	4	2	κύαλος						0 – – 1/12 – – 0, 357 6/12
15	7 1/2	6	3	1 1/2	ὀξύβαφον					0 – – 1/8 – – 0, 5
60	30	24	12	6	4	κοτύλη				0 – – 1/2 – – 2, 1
120	60	48	24	12	8	2	ξέστης			0 – – 1 – – 4,
720	360	288	144	72	48	12	6	χοῦς		0 – – 6 – – 25, 69
8640	4320	3456	1728	864	576	144	72	12	μετρητὴς	10 – – 2 – – 19, 626

ATTICK *Measures of Capacity for things Dry.*

								English Corn Measure. Pecks. Gall. Pints. Sol. Inch.
κοχλιάριον								0 – 0 – 0 – 0, 2
10	κύαλος							0 – 0 – 0 – 2, 7
15	1 1/2	ὀξύβαφον						0 – 0 – 0 – 4, 4
60	6	4	κοτύλη					0 – 0 – 0 – 16, 5
120	12	8	2	ξέστης				0 – 0 – 0 – 33, 1 5/8
180	18	12	3	1 1/2	χοῦς			0 – 0 – 1 – 15, 7 05/8
8640	864	576	144	72	48	μέδιμνος		4 – 0 – 6 – 3, 501

N.B. *Besides this* Medimnus *which is the* Medicus *there was a* Medimnus Georgicus *equal to* 6 Roman Modij

N.2d *There are some other Measures (mention'd by Authors) of uncertain Value easily reducible to those of the Table.*

CCO, Gurukul Kangri Collection, Haridwar, Digitized by eGangotri

ROMAN *Measures of Capacity for things Liquid.*

										English Wine Measure. Gall. Pints. Sol.Inc.Dec.
Ligula										0 – – 0 1/48 – – 0,117 1/2
4	Cyathus									0 – – 0 1/12 – – 0,469 2/3
6	1 1/2	Acetabulum								0 – – 0 1/8 – – 0,704 1/2
12	3	2	Quartarius							0 – – 0 1/4 – – 1,409
24	6	4	2	Hemina						0 – – 0 1/2 – – 2,818
48	12	8	4	2	Sextarius					0 – – 1 – – 5,636
288	72	48	24	12	6	Congius				0 – – 7 – – 4,942
1152	288	192	96	48	24	4	Urna			3 – – 4 1/2 – – 5,33
2304	576	384	192	96	48	8	2	Amphora		7 – – 1 – – 10,66
46080	11520	7680	3840	1920	960	160	40	20	Culeus	143 – – 3 – – 11,095

Note 1. Quadrantal *is the same with the* Amphora, Cadus, Congiarius, & Dolium *denote no certain Measure.*

Note 2. *The* Romans *divided the* Sextarius *as the* Libra *into 12 equal parts called* Cyathi *and therefore they denominated their* Calices, Sextantes, Quadrantes, Trientes *according to the number of* Cyathi *which they contain'd.*

ROMAN *Measures of Capacity for things Dry.*

							English Corn Measure. Pecks. Gall. Pints. Sol.Inc.Dec.
Ligula							0 – – 0 – – 0 1/48 – – 0,01
4	Cyathus						0 – – 0 – – 0 1/12 – – 0,04
6	1 1/2	Acetabulum					0 – – 0 – – 0 1/8 – – 0,06
24	6	4	Hemina				0 – – 0 – – 0 1/2 – – 0,24
48	12	8	2	Sextarius			0 – – 0 – – 1 – – 0,48
384	96	64	16	8	Semimodius		0 – – 1 – – 0 – – 3,84
768	192	128	32	16	2	Modius	1 – – 0 – – 0 – – 7,68

EXPLANATION *of some of ye more usual* Characters *of* Weights *and* Measures *found in* Greek & Roman Authors.

⌀...Amphora.	Κ...μετρητης	℔...Libra.	=...Sextans.	Ψ...ψηφος
S.Urna.	χους	℔℔.Dupondium.	⁼.Quadrans.	ΛΛ λιτρα
ℇ..Congius.	ξεστης	–..Uncia.	⁼⁼.Triens.	ξ...ξυγιον
⊤..Sextarius.	Χ...χοινιξ	ℇS..Semiuncia.	⁼⁼.Quincunx.	Ω...δοαχμη
..Hemina.	ξ...ὑξυβαφον	)9..Sicilicus.	S.S.ˢ.Semilibra.	ϛ...γεμινα
..uartarius.	Κ...κοτυλος	U...Sextula.	V...Septunx.	ϕ...ὀβολος
..yathus.	ϰ...κυαθος	⌐..Drachma.	-S-.Bes.	Κ℥...μετρητ.
..lodius.	Χ...χοινιξ	Ƚ.ℨScriptulus.	S⁼.Dodrans.	χ...χοινιξ
⊤S.Semimodius.	ψ℥...ψεδνιμνος	⊂...Obolus.	S⁼⁼.Dextans.	
	χ...χοινιξ	N..Siliqua.	S⁼⁼.Deunx.	
		Qu.Chalcus.	⊤..Semisextula.	
		0..Granum.	⌽.Bina Sextulæ.	
		X.Denarius.	⌐⁼.Drachmæ sex.	

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Tab. LXII.

The most Antient GRECIAN Weights reduced to Troy Weight.

					lb.	Ounces.	Pen.Wt	Grains.
Δραχμα					00	00	06	2 22/49
100	Mina				01	01	00	4 44/49
6000	60	Talantov			65	00	12	5 43/49

The Antient GRECIAN and ROMAN Weights reduced to English Troy Weight.

										lb.	Ounces	Pen.Wt	Grains
Lentes										0	0	00	0 5/112
4	Siliquæ									0	0	00	3 1/16
12	3	Obolus								0	0	00	9 5/28
24	6	2	Scriptulum							0	0	00	18 5/14
72	18	6	3	Drachma						0	0	02	6 9/14
96	24	8	4	1 1/3	Sextula					0	0	03	0 6/7
144	36	12	6	2	1 1/2	Sicilicus				0	0	04	13 2/7
192	48	16	8	2 2/3	2	1 1/3	Duella			0	0	06	1 5/7
576	144	48	24	8	6	4	3	Uncia		0	0	18	5 1/7
6912	1728	576	288	96	72	48	36	12	Libra	0	10	18	13 7/7

The Roman Ounce is the English Avoirdupois Ounce which they divided into 7 Denarij, as well as 8 Drachms & since they reckond their Denarius equal to the Attic Drachm this will make the Attic weights 8/7 heavier than the Correspondent Roman Weights.

Note The Grecians divided their Obolus into Chalci and λεπτα some as Diodorus and Suidas divided the Obolus into 6 Ch and every Chalcus into 7 λεπτα, others divided the Obolus into 8 Chalci and every Chalcus into 8 λεπτα or minuta.

The greater Weights reduced to English Troy Weight

			lb.	Ounces	Pen.Wt	Grains
Libra			0	10	18	13 5/7
1 1/24	Mina Attica communis		0	11	07	16 2/7
1 1/3	1 7/25	Mina Attica Medica	1	02	11	10 1/7
62 1/2	60	46 7/8	Talentum Atticum commune	56	11	00	17 1/7

Note There was another Attic Talent by some said to consist of 80 by others a 100 Minæ.

Note every Mina contains 100 Drachmæ and every Talent 60 Minæ but the Talents differ in Weight according to the different Standard of the Drachmæ and Minæ of which they are compos'd. The value of some different Minæ and Talents in Attic Drachmæ, Minæ and English Troy Weight is exhibited in the following Table.

MINA

			lb.	Ounces	Pen.Wt	Grains
Ægyptiaca	est Drachm. Atticar	133 1/3	1	05	06	22 26/49
Antiochica		133 1/3	1	05	06	22 26/49
Cleopatræ Ptolemaica		144	1	06	14	6 11/49
Alexandrina Dioscoridis		160	1	08	16	0

TALENTUM

			lb	Ounces	Pen.Wt	Gr
Ægyptiacum	est Minarum. Atticar	80	86	08	16	
Antiochicum		80	86	08	16	
Ptolemaicum Cleop.		86 2/3	93	11	11	
Alexandriæ		96	104	00	19	
Insulanum		120	130	01	04	
Antiochiæ		360	390	03	13	11

The Antient ARABIAN Weights reduced to Troy Weights.

										Lib.	Ounces	Pen.Wt	Gr
Kestuf										00	00	00	01
2	Kirat									00	00	00	03
4	2	Danich								00	00	00	06
6	3	1 1/2	Onolosat							00	00	00	09
12	6	3	2	Garme						00	00	00	18
36	18	9	6	3	Darchimi					00	00	02	
41 1/7	20 5/7	10 3/7	6 6/7	3 3/7	1 1/7	Denarius				00	00	02	
144	72	36	24	12	4	3 1/2	Sextarium			00	00	09	
288	144	72	48	24	8	7	2	Sacros		00	00	18	13 7/7
3456	1728	864	576	288	96	84	24	12	Ratel	00	10	18	10 7/7
4608	2304	1152	768	384	128	112	32	16	1 1/3	Minæ Alicatica 01	02	11	10

The FRENCH Weights reduced to Troy Weights.

									lb.	Ounces	Pen.Wt	Grains
Grain									0	0	00	00 101/128
7 7/8	Felin								0	0	00	05 77/128
14 3/4	2	Maille							0	0	00	11 53/128
24	3 3/8	1 1/2	Denier						0	0	00	19 5/8
28 4/5	4	2	1 1/3	Esterlin					0	0	00	23 1/16
72	10	6	3	2 1/2	Grosse				0	0	02	11 1/2
576	80	40	24	20	8	Ounce			0	0	19	16
4608	640	320	192	160	64	8	Mare		0	7	17	12
9216	1280	640	384	320	128	16	2	Pound	1	3	15	00

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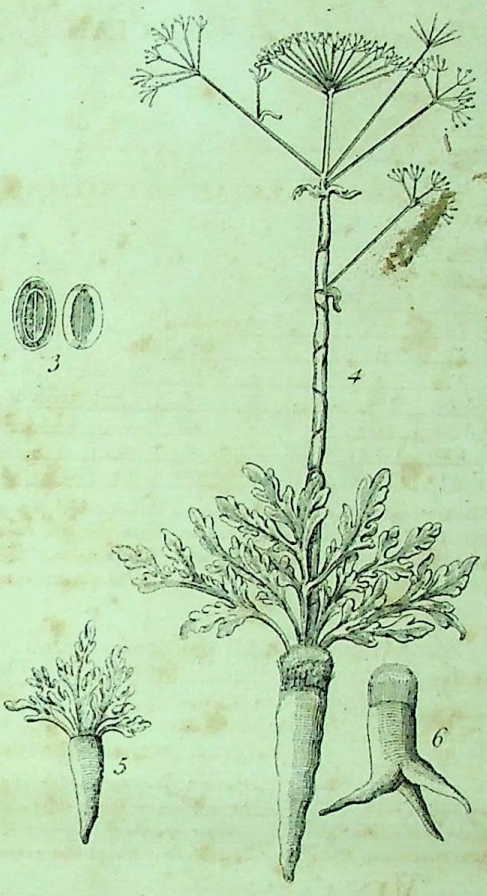

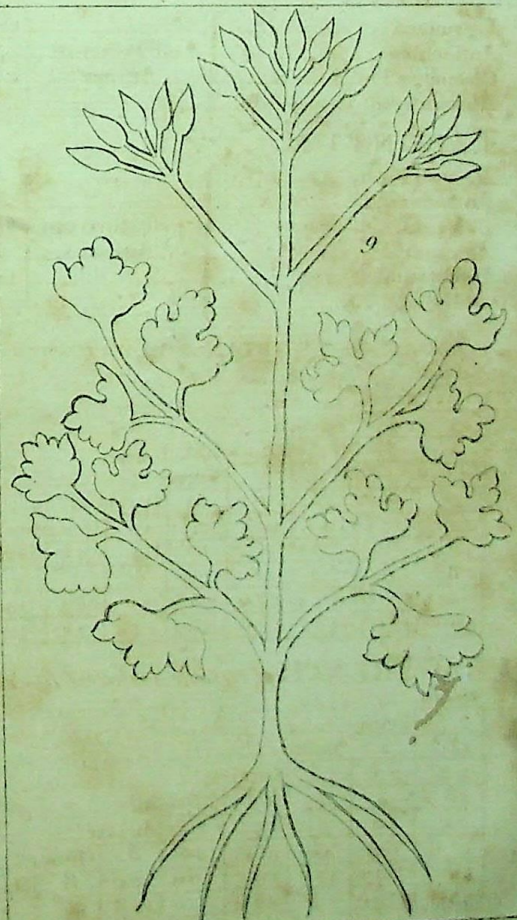

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